Catalogue

Surge Protection / Lightning Protection/Earthing

2023

DEHN protects.

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DEHN protects.

Dear business associates,

For more than 110 years, our family-owned company DEHN SE has stood for safety and pioneering spirit in the fields of lightning protection, surge protection and safety equipment. We have the right protection solutions and components for the key issues of this day and age. From the expansion of renewable energy to e-mobility and the associated infrastructure.

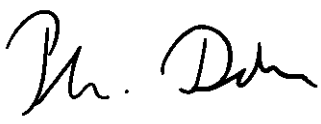
We work with you to find the right solutions for your applications. You can place your trust in us and our long experience in lightning protection, surge protection and safety equipment.

We are thinking ahead and creating the right solutions for tomorrow with you today. To this end, we invest in the future to provide you with real competitive advantages – for example, by extending our range of high-voltage-resistant insulated conductors, innovative technologies such as ACI (Advanced Circuit Interruption) and new avenues for safety equipment.

Digital transformation affects all aspects of our lives. We want to be your partner when it comes to protecting trendsetting smart energy and data solutions. Because all intelligent components have one thing in common: the smart but sensitive electronics need to be protected from lightning interference and surges. This also applies to all electrically conductive systems. Let us combine our services and expertise with your protection requirements and needs to create tangible added value for both of us. We aim to make your everyday life and your environment safer by developing new protection concepts in keeping with constantly advancing technology.

I appreciate your interest and the opportunity to work with you!

Dr Philipp Dehn, Chairman of the Board



Services

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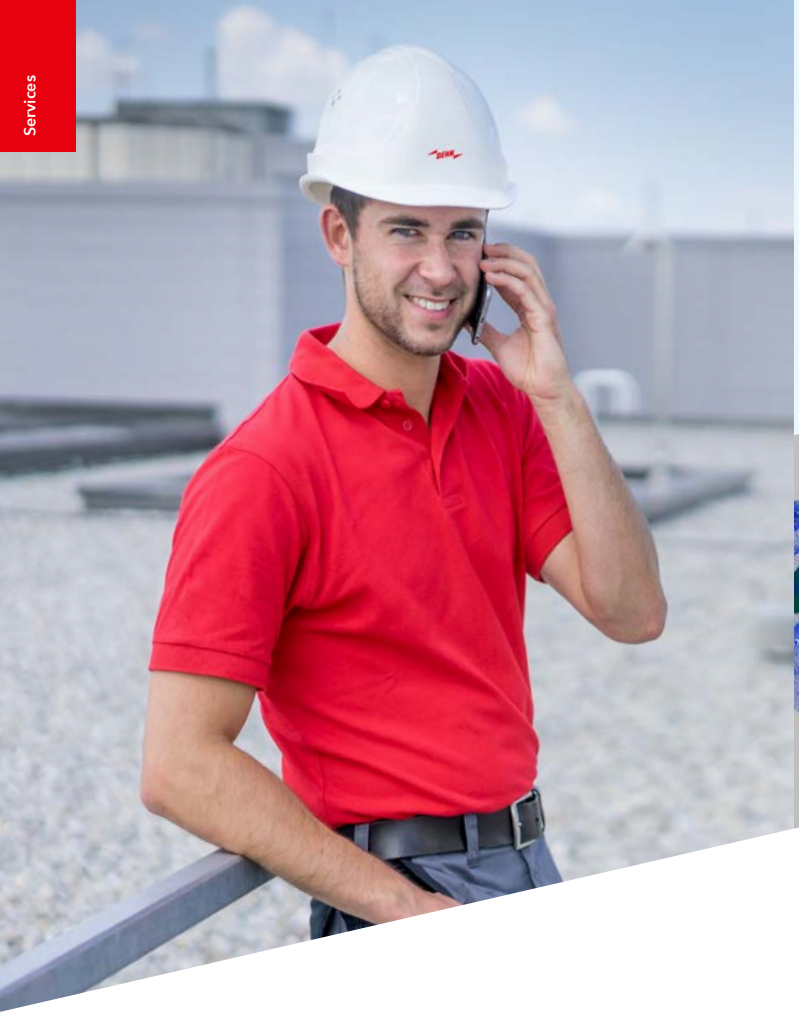

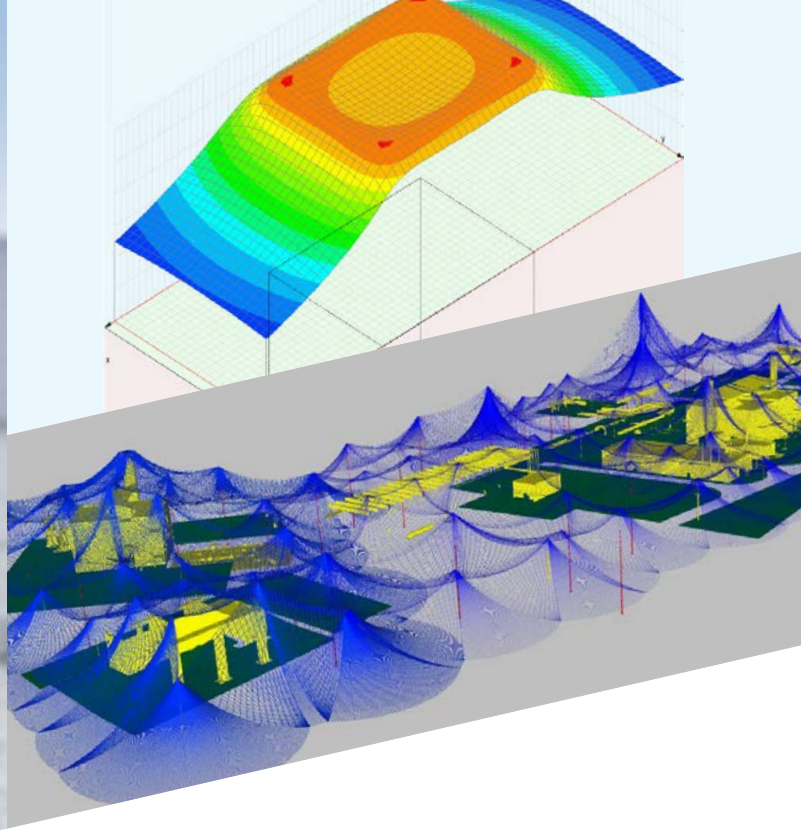

Technical Support

You plan or install lightning protection / earthing systems and have questions about the correct design?
You need some sort of surge protection and don't know exactly what to install or how to connect it?
You are occupied with the protection of people and systems and need help choosing the right voltage detector?

Our Technical Support provides expert advice and assistance. Whether you have questions about products or applications, planning or risk analyses, or standards: Our experts are happy to assist you. By phone, email or even on site upon agreement – **individual, competent, fast, reliable, free of charge**.

How to reach us:

Your query about lightning and surge protection:
+49 9181 906 1750

Your query about earthing and equipotential bonding:
+49 9181 906 1750

Your query about safety equipment:
+49 9181 906 1510

DEHNconcept

With DEHNconcept, you get the project design for the entire protection concept of your object and the planning as a complete module.

You can easily find the optimal lightning protection and earthing solution for your project. Quite simply as a complete module Including all planning documents in an open data format for your documentation. In addition, we discuss industry and country specifics with you in project meetings and on-site appointments.

Examples from the services catalogue:

- **Protection concepts and calculations for external and internal lightning protection**
  Budget planning, risk analysis, lightning protection concept, surge protection concept, separation distance calculation, checking the protected volume, 3D laser scanning, creating drawings and models
- **Protection concepts earthing of lightning protection**
  Earthing concept for lightning protection systems, earthing simulation of step voltage
- **Concepts and calculations specially for transformer stations**
  Calculation of earthing conductor cross-sections, earthing simulation of step and touch voltage in case of short-circuit current and/or lightning interference

Inspection tour

Planning a new system or changes to existing systems? Get expert knowledge and personal advice. To do so, simply get in touch with a DEHN employee. Always near to you.

The highly trained lightning protection specialists in our field sales team will be happy to assist you. Providing expert knowledge on all aspects of earthing and lightning and surge protection.

Are you an end user or potential buyer from the private sector?

Please contact a specialist dealer in your area. To be found, for example, at www.e-check.de or www.vdb.blitzschutz.com.

DEHN Test Centre

The ISO/IEC 17025 accredited DEHN Test Centre is one of the most powerful test facilities for lightning impulse currents in the world. Products, installations and systems are tested with test impulses of up to 400 kA (10/350 µs) in a facility spanning 800 m^2. Tests are conducted on the basis of the relevant test standards. Where necessary, they are accompanied by simulations.

In the DEHN Test Centre tests are carried out on

- lightning protection components,
- surge protective devices,
- and complete systems.

The tests and their results are documented in internationally recognised test reports. The accreditation symbol stands for maximum confidentiality and independence.

Are you interested in our services? Simply submit an enquiry and we will draw up a service offer tailored to your requirements.

DEHNacademy

Would you like to expand your knowledge in a group? You need expert knowledge for a specific branch?

Then our in-person seminars at the DEHNacademy are just the right thing for you.

Those who prefer to learn at their own pace and decide when and where for themselves can also acquire basic knowledge of lightning and surge protection online.

Choose from a large selection of seminars and workshops on the topics: surge protection – lightning protection – safety equipment.

With the perfect balance of theory and practice. Each seminar ends with a certificate confirming your participation.

DEHN E-learning

You would like to know more about lightning and surge protection?

Whenever and wherever is convenient for you: take advantage of our constantly growing range of digital learning resources.

Our constantly growing range of e-learning resources supports you:

- whenever
- wherever
- convenient

Take advantage of this free service, select a course and get started.

Surge Protection

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Failure of technical installations and systems in residential and functional buildings is very unpleasant and expensive. Therefore, faultless operation of devices must be ensured both during normal operation and thunderstorms. The number of annually registered lightning activities in Germany has remained at a constantly high level over many years. The damage statistics of insurance companies clearly show that there are deficits in terms of lightning and surge protection measures both in the private and commercial sector (Figure 1). With a professional approach, suitable protective measures can be implemented. The lightning protection zone concept, for example, enables planners, installers and operators of buildings and installations to consider, implement and monitor various protective measures. In this way, all relevant devices, equipment and systems can be reliably protected at an economically justifiable cost.

Sources of interference

Surges occurring during a thunderstorm are caused by direct / nearby lightning strikes or remote lightning strikes (Figure 2 and Figure 3). Direct or nearby lightning strikes are lightning strikes to a building, its surroundings or electrically conductive systems entering the building (e.g. low-voltage supply, telecommunication and data lines). The resulting impulse currents and impulse voltages as well as the associated electromagnetic field are particularly dangerous for the devices and installations to be protected with regard to the amplitude and energy content involved. In case of a direct or nearby lightning strike, surges are caused by the voltage drop at the conventional earthing impedance Rst and the resulting potential rise of the building in relation to the remote earth (Figure 3, case 2). This represents the highest load for electrical installations in buildings.

The characteristic parameters of the impulse current that flows (peak value, rate of current rise, charge, specific energy) can be described by the 10/350 µs impulse current wave form and are defined in international, European and national standards as the test current for components and devices for protection against direct lightning strikes (Figure 4).

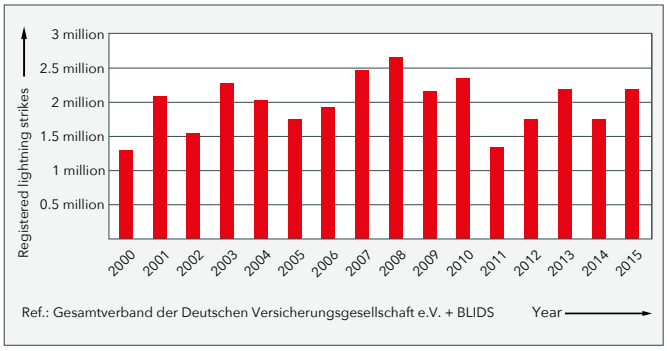


Figure 1: Lightning activity registered in Germany from 2000 to 2015.

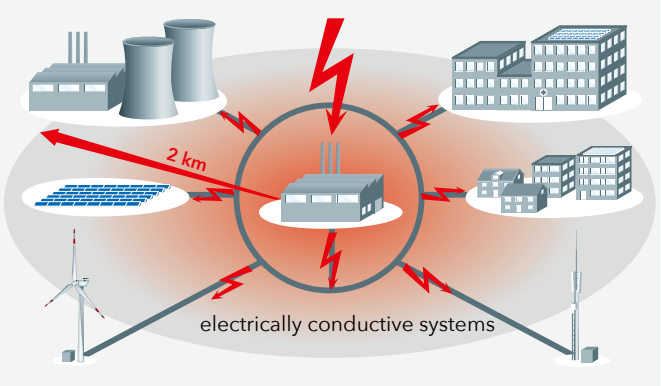


Figure 2: General risks for buildings and installations resulting from lightning strikes.

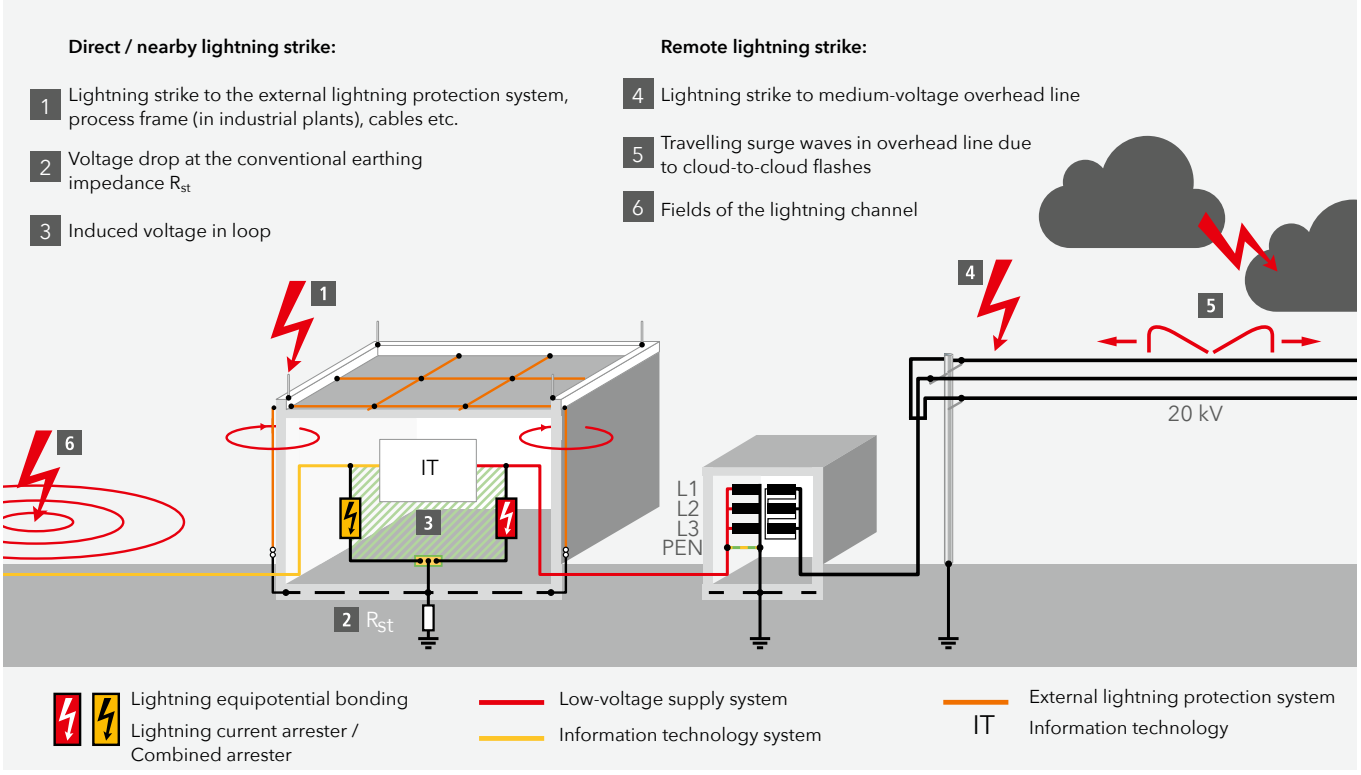


Figure 3: Causes of surges during lightning discharges.

In addition to the voltage drop at the conventional earthing impedance, surges are generated in the electrical installation of a building and the systems and devices connected to it due to the inductive effect of the electromagnetic lightning field (Figure 3, case 3). The energy of these induced surges and of the resulting impulse currents is far lower than the energy of a direct lightning impulse current and is therefore described by a 8/20 µs impulse current wave form (Figure 4). Components and devices that do not have to conduct currents resulting from direct lightning strikes are therefore tested with such 8/20 µs impulse currents.

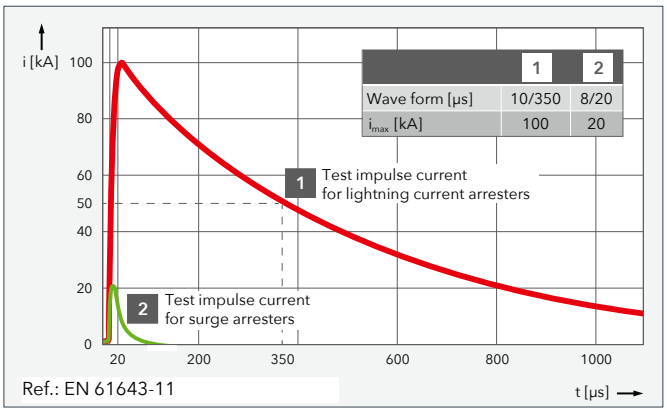


Figure 4: Test impulse currents for lightning current and surge arresters.

Protection scheme

Lightning strikes are described as remote if they occur a long distance from the object to be protected, strike medium-voltage overhead lines or their surroundings or occur as cloud-to-cloud lightning discharges (Figure 3, cases 4, 5, 6). Similar to induced surges, the effects of remote lightning strikes on the electrical installation of a building are handled by devices and components which have been dimensioned according to 8/20 µs impulse current waves. Surges caused by switching operations (SEMP) are, for example, generated by:

- Disconnection of inductive loads (e.g. transformers, reactors, motors)
- Arc ignition and interruption (e.g. arc welding equipment)
- Tripping of fuses

The effects of switching operations in the electrical installation of a building can also be simulated by impulse currents of 8/20 µs wave form under test conditions. To ensure continuous availability of complex power supply and information technology systems even in case of direct lightning interference, further surge protection measures for electrical and electronic installations and devices based on a lightning protection system for the building are required. It is important to take all causes of surges into account. To do so, the lightning protection zone concept as described in IEC 62305-4 is applied (Figure 5).

Lightning protection zone concept

The building is divided into different endangered zones. These zones help to define the necessary protection measures, in particular the lightning and surge protection devices and components. An EMC-based (EMC = electromagnetic compatibility) lightning protection zone concept includes external lightning protection (air-termination system, down-conductor system, earth-termination system), equipotential bonding, spatial shielding and surge protection for the power supply and information technology systems. Definitions apply as classified in Table 1.

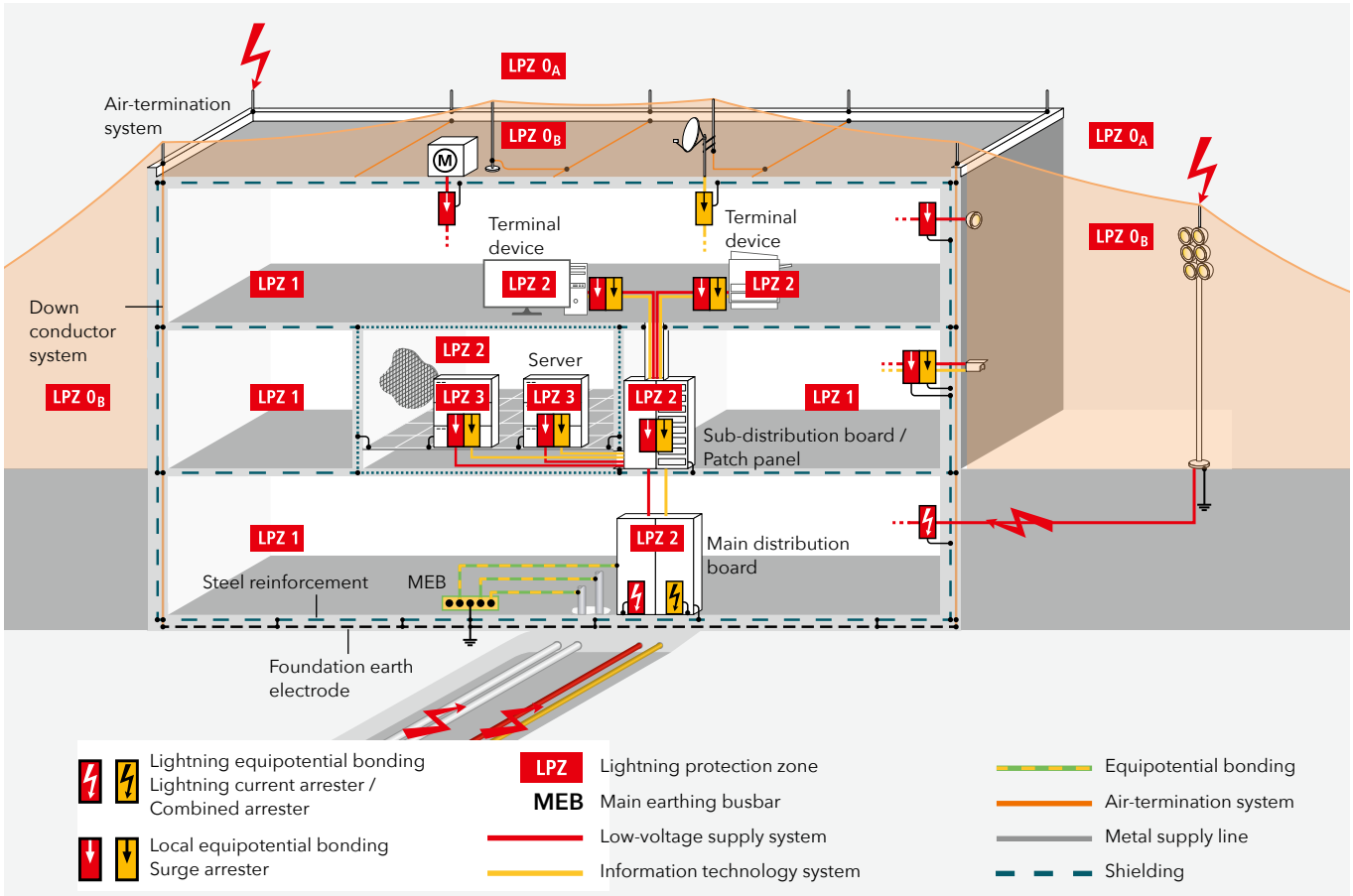


Figure 5: Overall view of a lightning protection zone concept.

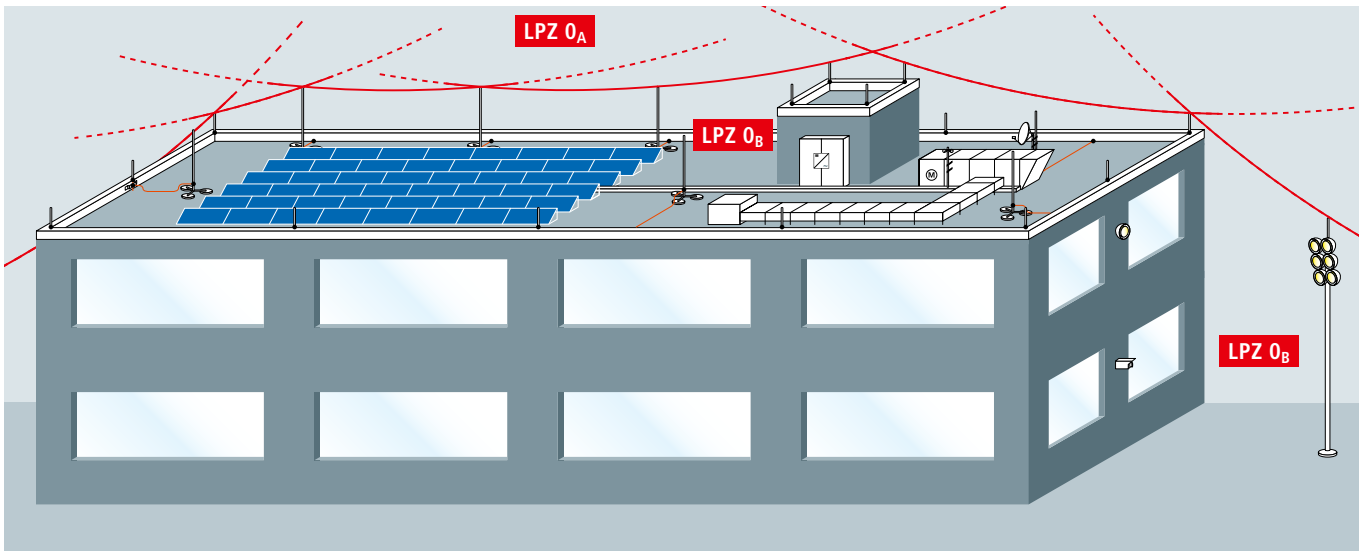


Figure 5.1: Transition from LPZ 0_A to LPZ 0_B

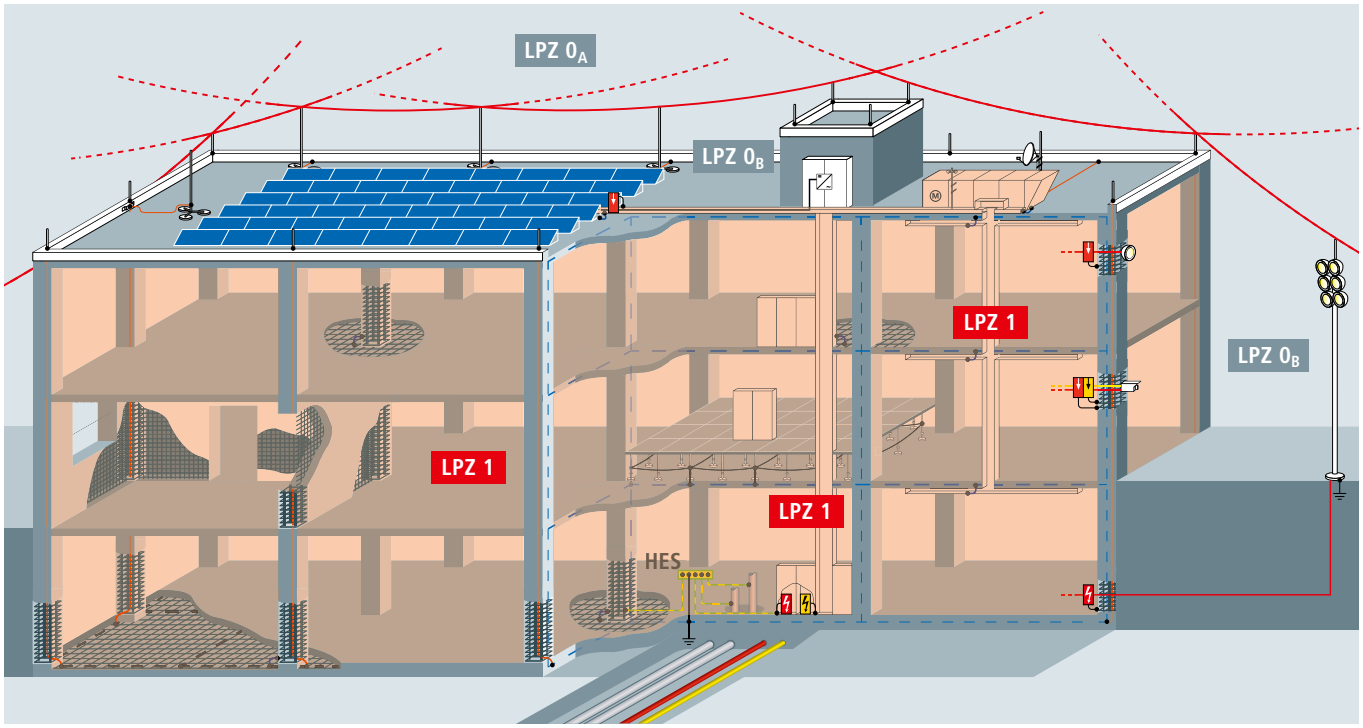


Figure 5.2: Transitions from LPZ 0_A to LPZ 1 and LPZ 0_B to LPS 1

According to the requirements and loads placed on surge protective devices, they are categorised as lightning current arresters, surge arresters and combined arresters. The highest requirements are placed on the discharge capacity of lightning current arresters and combined arresters used at the transition from lightning protection zone 0_A to 1 or 0_A to 2. These arresters must be capable of conducting partial lightning currents of 10/350 µs wave form without being destroyed in order to prevent the ingress of destructive partial lightning currents into the electrical installation of a building. At the transition point from LPZ 0B to 1 or downstream of the lightning current arrester at the transition point from LPZ 1 to 2 and higher, surge arresters are used to protect against surges. Their task is both to reduce the residual energy of the upstream protection stages even further and to limit the surges induced or generated in the installation itself.

The lightning and surge protective measures at the boundaries of the lightning protection zones described above are equally applicable to power supply and information technology systems. All measures described in the EMC-based lightning protection zone concept help to achieve continuous availability of electrical and electronic devices and installations.

For more detailed technical information, DEHN offers a "Lightning Protection Guide" which can be downloaded at www.dehn-international.com/en/downloads.

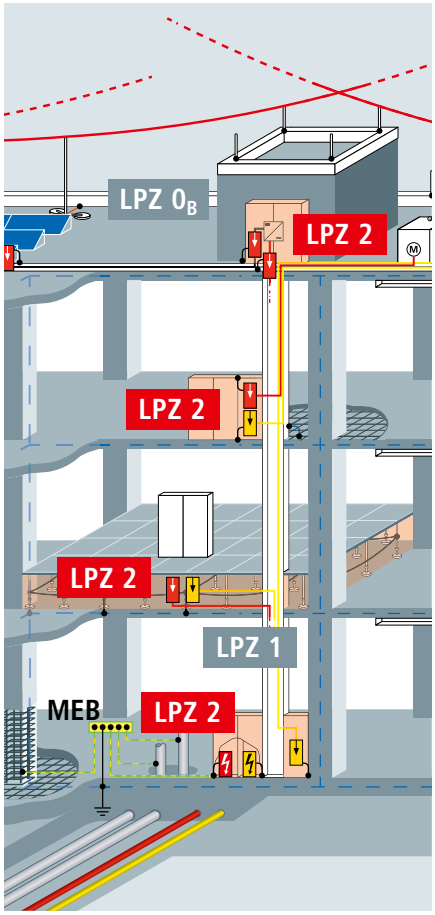


Figure 5.3: Transition from LPZ 1 to LPZ 2

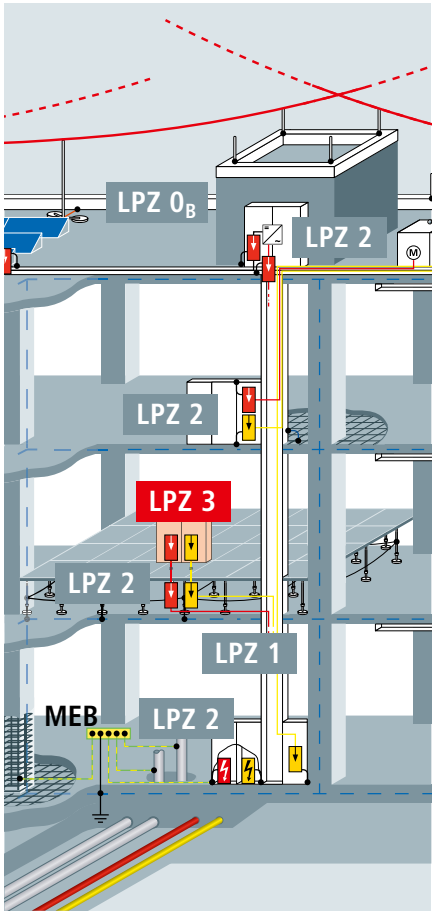
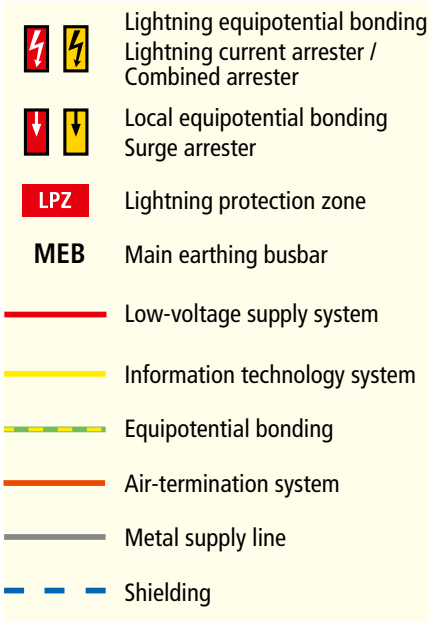


Figure 5.4: Transition from LPZ 2 to LPZ 3



IEC 62305-4

Outer zones:

LPZ 0 Zone where the threat is due to the unattenuated lightning electromagnetic field and where the internal systems may be subjected to full or partial lightning surge current.

LPZ 0 is subdivided into:

LPZ 0_A Zone where the threat is due to the direct lightning flash and the full lightning electromagnetic field. The internal systems may be subjected to full lightning surge current.

LPZ 0_B Zone protected against direct lightning flashes but where the threat is the full lightning electromagnetic field. The internal systems may be subjected to partial lightning surge currents.

Inner zones (protected against direct lightning flashes):

LPZ 1 Zone where the surge current is limited by current sharing and isolating interfaces and/or by SPDs at the boundary. Spatial shielding may attenuate the lightning electromagnetic field.

LPZ 2 ... n Zone where the surge current may be further limited by current sharing and isolating interfaces and/or by additional SPDs at the boundary. Additional spatial shielding may be used to further attenuate the lightning electromagnetic field.

Table 1: Definition of lightning protection zones.

Surge Protective Devices (SPDs)

Surge protective devices are devices consisting mainly of voltage-controlled resistors (varistors, suppressor diodes) and / or spark gaps (discharge paths). Surge protective devices are used to protect other electrical equipment and installations against impermissibly high surges and / or to establish equipotential bonding.

Surge protective devices are classified:

a) according to their **use** into:

- Surge protective devices for power supply systems and equipment (Red / Line product family)
  – according to EN 61643-11:2012 in type 1 / 2 / 3 SPDs
  – according to IEC 61643-11:2011 in class I / II / III SPDs
- Surge protective devices for IT systems and equipment (Yellow / Line product family) for protecting modern electronic systems in telecommunications and signal-processing networks with nominal voltages up to 1000 V a.c. [root-mean-square value (rms)] and 1500 V d.c. against the indirect and direct effects of lightning strikes and other transients.
  – according to IEC 61643-21:2012, EN 61643-21:2013
- Isolating spark gaps for earth-termination systems or equipotential bonding (Red / Line product family)
- Surge protective devices for use in photovoltaic installations (Red / Line product family) for nominal voltage ranges up to 1500 V
  – according to EN 50539-11:2013 as type 1 / 2 SPDs

b) according to their **impulse current discharge capacity** and protective effect into:

- Lightning current arresters / Coordinated lightning current arresters for interference resulting from direct or nearby lightning strikes for protecting installations and equipment [for use at the boundaries between lightning protection zones (LPZ) 0_A and 1).
- Surge arresters
  for remote lightning strikes, switching overvoltages as well as electrostatic discharges for protecting installations, equipment and terminal devices (for use at the boundaries downstream of LPZ 0_B).
- Combined lightning current and surge arresters
  for interference resulting from direct or nearby lightning strikes for protecting installations, equipment and terminal devices (for use at the boundaries between 0_A and 1 as well as 0_A and 2).

Technical data

The technical data of surge protective devices comprise information defining their conditions of use according to:

- use (e.g. installation, power supply conditions, temperature)
- performance in case of interference (e.g. impulse current discharge capacity, follow current extinguishing capability, voltage protection level, response time)
- performance during operation (e.g. nominal current, attenuation, insulation resistance)
- performance in case of failure (e.g. backup fuse, disconnection device, fail-safe, remote signalling option).

actiVsense
The actiVsense tecahnology is integrated in universal combined arresters for protecting information technology installations and devices. The arrester automatically detects the signal voltage applied and optimally adapts the voltage protection level to it. This makes the arrester universally applicable at different interfaces and provides the best possible protection for the devices and system circuits connected to it in case of failure.

Breaking capacity, follow current extinguishing capability I_{fi}
The breaking capacity is the uninfluenced (prospective) r.m.s. value of the mains follow current which can automatically be extinguished by the surge protective device when connecting U_C. It can be verified in an operating duty test according to IEC / EN 61643-11.

Categories according to IEC 61643-21:2012
A number of impulse voltages and impulse currents are described in IEC 61643-21:2012 for testing the current carrying capability and voltage limitation of impulse interference. Table 3 of this standard puts these into categories and provides preferred values. In Table 2 of the IEC 61643-22 standard the sources of transients are assigned to the different impulse categories according to the decoupling mechanism. Category C2 includes inductive coupling (surges), category D1 galvanic coupling (lightning currents). The relevant category is specified in the technical data.
DEHN surge protective devices surpass the values in the specified categories. Therefore, the exact value for the impulse current carrying capability is indicated by the nominal discharge current (8/20 µs) and the lightning impulse current (10/350 µs).

Combination wave U_{OC}
A combination wave is generated by a hybrid generator (1.2/50 µs, 8/20 µs) with a fictitious impedance of 2 Ω. The open-circuit voltage of this generator is referred to as U_{OC}. U_{OC} is a preferred indicator for type 3 arresters since only these arresters may be tested with a combination wave (according to IEC / EN 61643-11).

Cut-off frequency f_G
The cut-off frequency defines the frequency-dependent behaviour of an arrester. The cut-off frequency is equivalent to the frequency which induces an insertion loss (a_E) of 3 dB under certain test conditions (see EN 61643-21:2013). Unless otherwise indicated, this value refers to a 50 Ω system.

Degree of protection
The IP degree of protection corresponds to the protection categories described in IEC/EN 60529.

Direct Current Disconnection
When using surge arresters in d.c. applications, disconnection must be reliably ensured even if there are no zero crossings. The specifically developed DC Disconnection (DCD) technology acts as a wedge similar to a blocking valve and interrupts the direct current. Consequently, the devices of the DEHNguard SE DC series are capable of safely interrupting direct currents, thus preventing fire damage caused by d.c. switching arcs.

Disconnecting time t_a
The disconnecting time is the time which passes until the power supply is automatically disconnected in case of a failure of the circuit or equipment to be protected. The disconnecting time is an application-specific value resulting from the intensity of the fault current and the characteristics of the protective device.

Energy coordination of SPDs
Energy coordination is the selective and coordinated interaction of cascaded protection elements (= SPDs) of an overall lightning and surge protection concept. This means that the total load of the lightning impulse current is split between the SPDs according to their energy carrying capability. If energy coordination does not work, downstream SPDs are not sufficiently relieved by the upstream SPDs as they intervene too late, insufficiently or not at all. Consequently, downstream SPDs as well as the terminal equipment to be protected may be destroyed.
DIN CLC/TS 61643-12:2010 describes how to verify energy coordination. Spark-gap-based type 1 SPDs offer considerable advantages due to their voltage-switching characteristic (see WAVE BREAKER FUNCTION).

Follow current extinguishing capability I_{fi}
Prospective short-circuit current that an SPD is able to interrupt independently without disconnection (source: IEC 61643-11).

Frequency range
The frequency range represents the transmission range or cut-off frequency of an arrester depending on the described attenuation characteristics.

Insertion loss
With a given frequency, the insertion loss of a surge protective device is defined by the relation of the voltage value at the place of installation before and after installing the surge protective device. Unless otherwise indicated, the value refers to a 50 Ω system.

Integrated backup fuse
According to the product standard for SPDs, overcurrent protective devices/backup fuses must be used. This, however, requires additional space in the distribution board, additional cable lengths, which should be as short as possible according to IEC 60364-5-53, additional installation time (and costs) and dimensioning of the fuse. A fuse integrated in the arrester ideally suited for the impulse currents involved eliminates all these disadvantages. The space gain, lower wiring effort, integrated fuse monitoring and the increased protective effect due to shorter connecting cables are clear advantages of this concept which is integrated in the DEHNvenCI, DEHNbloc Maxi S, DEHNguard … CI and V(A) NH product families.

LifeCheck
Repeated discharge processes which exceed the specification of the device can overload arresters in information technology systems. In order to ensure high system availability, arresters should therefore be subjected to systematic tests. LifeCheck allows quick and easy testing of arresters.

Lightning impulse current I_{imp}
The lightning impulse current is a standardised impulse current curve with a 10/350 µs wave form. Its parameters (peak value, charge, specific energy) simulate the load caused by natural lightning currents. Lightning current and combined arresters must be capable of discharging such lightning impulse currents several times without being destroyed.

Mains-side overcurrent protection/arrester backup fuse
Overcurrent protective device (e.g. fuse or circuit breaker) located outside of the arrester on the infeed side to interrupt the power-frequency follow current as soon as the breaking capacity of the surge protective device is exceeded. No additional backup fuse is required since the backup fuse is already integrated in the SPD (see relevant section).

Maximum continuous operating voltage U_C
The maximum continuous operating voltage (maximum permissible operating voltage) is the r.m.s. value of the maximum voltage which may be connected to the corresponding terminals of the surge protective device during operation. This is the maximum voltage on the arrester in the defined non-conducting state, which reverts the arrester back to this state after it has tripped and discharged. The value of U_C depends on the nominal voltage of the system to be protected and the installer's specifications (IEC 60364-5-534).

Maximum continuous operating voltage U_{CPV} for a photovoltaic (PV) system
Value of the maximum d.c. voltage that may be permanently applied to the terminals of the SPD. To ensure that U_{CPV} is higher than the maximum open-circuit voltage of the PV system in case of all external influences (e.g. ambient temperature, solar radiation intensity), U_{CPV} must be higher than this maximum open-circuit voltage by a factor of 1.2 (according to CLC/TS 50539-12). This factor of 1.2 ensures that the SPDs are not incorrectly dimensioned.

Maximum discharge current I_{max}
The maximum discharge current is the maximum peak value of the 8/20 µs impulse current which the device can safely discharge.

Maximum transmission capacity
The maximum transmission capacity defines the maximum high-frequency power which can be transmitted via a coaxial surge protective device without interfering with the protection component.

Nominal discharge current I_n
The nominal discharge current is the peak value of a 8/20 µs impulse current for which the surge protective device is rated in a certain test programme and which the surge protective device can discharge several times.

Nominal load current (nominal current) I_L
The nominal load current is the maximum permissible operating current which may permanently flow through the corresponding terminals.

Nominal voltage U_N
The nominal voltage stands for the nominal voltage of the system to be protected. The value of the nominal voltage often serves as type designation for surge protective devices for information technology systems. It is indicated as an r.m.s. value for a.c. systems.

N-PE arrester
Surge protective devices exclusively designed for installation between the N and PE conductor.

Operating temperature range T_U
The operating temperature range indicates the range in which the devices can be used. For non-self-heating devices, it is equal to the ambient temperature range. The temperature rise for self-heating devices must not exceed the maximum value indicated.

Permanent short-circuit current I_k
The r.m.s. value of the short-circuit current in low-voltage or high-voltage three-phase systems which remains after all compensation processes [based on IEC 60909-0].

Protective circuit
Protective circuits are multi-stage, cascaded protective devices. The individual protection stages may consist of spark gaps, varistors, semiconductor elements and gas discharge tubes (see energy coordination).

Protective conductor current I_{PE}
The protective conductor current is the current which flows through the PE connection when the surge protective device is connected to the maximum continuous operating voltage U_C, according to the installation instructions and without load-side consumers.

Remote signalling contact
A remote signalling contact allows easy remote monitoring and indication of the operating state of the device. It features a three-pole terminal in the form of a floating changeover contact. This contact can be used as a break and/or make contact and can thus be easily integrated in the building control system, controller of the switchgear cabinet, etc.

Response time t_A
Response times mainly characterise the response performance of individual protection elements used in arresters. Depending on the rate of rise du/dt of the impulse voltage or di/dt of the impulse current, the response times may vary within certain limits.

Return loss
In high-frequency applications, the return loss refers to how many parts of the "leading" wave are reflected at the protective device (surge point). This is a direct measure of how well a protective device is attuned to the characteristic impedance of the system.

SCI technology
Direct currents (d.c.) flow on the generator side of a PV system. The surge protective devices used on the generator side can be overloaded due to different scenarios (e.g. impulse load, insulation faults) and must not endanger the PV system. However, insufficient d.c. disconnection capability in a PV system may cause fire. Conventional surge arresters only feature a disconnector in the form of a simple break contact mechanism which is typically used for a.c. devices. Due to the lacking zero crossing of the d.c. source, a d.c. arc may persist and cause fire. The SCI technology patented by DEHN with active arc extinction is an ideal solution. In case of overload, a contact is opened and a short-circuit is generated (short circuit). Thus, any switching arc which may arise is actively, quickly and safely extinguished. The PV fuse integrated in the short-circuit path immediately trips after the arc has been extinguished and ensures safe electrical isolation (interruption) (see also pages 53-55). Thus, all PV arresters from DEHN combine surge protection, fire protection and personal protection in a single device.

Series resistance
Resistance in the direction of the signal flow between the input and output of an arrester. The series resistance is normally used to coordinate the protection stages in a multi-stage SPD.

Shield attenuation
Relationship between the power fed into a coaxial cable and the power radiated from the cable through the phase conductor.

Short-circuit withstand capability
The short-circuit withstand capability is the value of the prospective power-frequency short-circuit current handled by the surge protective device when the relevant maximum backup fuse is connected upstream.

Short-circuit current rating I_{SCCR}
Maximum prospective short-circuit current for which the SPD alone or in conjunction with its disconnectors is rated (source: IEC 61643-11).

Short-circuit rating I_{SCPV} of an SPD in a photovoltaic (PV) system
Maximum uninfluenced short-circuit current which the SPD, alone or in conjunction with its disconnection devices, is able to withstand.

Temporary overvoltage (TOV)
Temporary overvoltage may be present at the surge protective device for a short period of time due to a fault in the high-voltage system. This must be clearly distinguished from a transient caused by a lightning strike or a switching operation, which last no longer than about 1 ms. The amplitude U_T

and the duration of this temporary overvoltage are specified in EN 61643-11 (200 ms, 5 s or 120 min.) and are individually tested for the relevant SPDs according to the system configuration (TN, TT, etc.). The SPD can either a) reliably fail (TOV safety) or b) be TOV-resistant (TOV withstand), meaning that it is completely operational during and following temporary overvoltages.

Thermal disconnector
Surge protective devices for use in power supply systems equipped with voltage-controlled resistors (varistors) mostly feature an integrated thermal disconnector that disconnects the surge protective device in case of overload and indicates this operating state. The disconnector responds to the "current heat" generated by an overloaded varistor and disconnects the surge protective device if a certain temperature is exceeded. The disconnector is designed to disconnect the overloaded surge protective device in time to prevent a fire. It is not intended to ensure protection against indirect contact. The function of these thermal disconnectors can be tested by means of a simulated overload / ageing of the arresters.

Total discharge current I_{total}
Current which flows through the PE, PEN or earth connection of a multipole SPD during the total discharge current test. This test is used to determine the total load if current simultaneously flows through several protective paths of a multipole SPD. This parameter is decisive for the total discharge capacity which is reliably handled by the sum of the individual paths of an SPD.

Voltage protection level U_P
The voltage protection level of a surge protective device is the maximum instantaneous value of the voltage at the terminals of a surge protective device, determined from the standardised individual tests:
- Lightning impulse sparkover voltage 1.2/50 µs (100%)
- Sparkover voltage with a rate of rise of 1 kV/µs
- Measured limit voltage at a nominal discharge current I_n

The voltage protection level characterises the capability of a surge protective device to limit surges to a residual level. The voltage protection level defines the installation location with regard to the overvoltage category according to IEC 60664-1 in power supply systems. For surge protective devices to be used in information technology systems, the voltage protection level must be adapted to the immunity level of the equipment to be protected (IEC 61000-4-5: 2015).

Wave breaker function
Due to the technical design of type 1 SPDs, energy coordination of SPDs varies considerably. Experience has shown that even small amplitudes of the 10/350 µs lightning impulse current can overload and even destroy downstream SPDs if varistor-based type 1 lightning current arresters are used. In case of spark-gap-based type 1 arresters, in contrast, virtually all the current flows through the type 1 arrester. Similar to a wave breaker the energy is reduced to an acceptable level. The advantage is that the time to half value of the 10/350 µs impulse current is reduced due to the reduction of the impulse time and the switching behaviour of type 1 SPDs. This considerably relieves downstream SPDs.
All devices of the DEHN Red/Line and Yellow/Line product families are energy-coordinated. Moreover, all type 1 arresters of the Red/Line family are based on spark gaps and thus feature this WAVE BREAKER FUNCTION.

Yellow/Line SPD class
All DEHN arresters for use in information technology systems are categorised into a Yellow/Line SPD class and are marked with the corresponding symbol in the data sheet and on the rating plate (see page 69).

Definition of Symbols

Symbol	Definition
NEW	**New products**
!	**Discontinued products**

Symbol	Definition *Red/Line*
RAC	**RAC technology** Type 1 + 2 combined arresters with Rapid Arc Control (RAC) spark gap technology stand out on account of their minimal residual energy. This means maximum safety and optimum care for downstream electronic terminal equipment. RAC spark gap technology is the next evolutionary step for the type 1 arresters within the Red/Line family and continues to be based on the wave breaker functional principle.
ACI	**ACI technology** A further development of CI technology, ACI technology consists of a switch/spark gap combination connected in series with a heavyduty varistor. This ensures the simple design and safe operation of the surge protective device. Other features are safe dimensioning, TOV withstand, a connection cross-section of only 6 mm² Cu and zero leakage current. Surge arresters with ACI technology offer maximum safety and system availability.
CI	**Integrated backup fuse** Reduced space requirements, lower installation costs, faster wiring and shorter connecting cable lengths are clear advantages of this concept used for the DEHNvenCI, DEHNbloc Maxi S, DEHNguard … CI and V(A) NH product series.
SCI	**SCI technology** The patented SCI technology with active arc extinction allows to actively, quickly and safely extinguish a possible switching arc in case of overload. The PV fuse integrated in the short-circuit path trips immediately after the arc has been extinguished, thus ensuring safe electrical isolation (interruption). Consequently, all PV arresters from DEHN combine surge protection, fire protection and personal protection in a single device.
WBF	**Wave Breaker Function** If a spark-gap-based type 1 arrester is used, the total current flows through the type 1 arrester during the discharge process. Similar to a wave breaker, the energy is mitigated to a sufficiently low level, thus considerably relieving downstream SPDs. The WAVE BREAKER function is integrated in all spark-gap-based type 1 arresters of the Red/Line series.
DCD	**Direct Current Disconnection** When using surge arresters in d.c. applications, disconnection must be reliably ensured even if there are no zero crossings. The specifically developed DC Disconnection (DCD) technology acts as a wedge similar to a blocking valve and interrupts the direct current. Consequently, the devices of the DEHNguard SE DC series are capable of safely interrupting direct currents, thus preventing fire damage caused by d.c. switching arcs.

Symbol	Definition *Yellow/Line*
3in1	**Compact 3-in-1 protection** This arrester allows 3 interfaces to be protected by means of a single device, resulting in reduced space requirements, faster wiring and lower installation costs.
IP66	**IP66** Surge arrester for Ethernet / PoE++ applications in an IP66 enclosure for safe use in harsh environments (water and dust).
	LifeCheck Monitoring of the protection components for thermal load as well as the integrated status indication for protection modules for use in information technology systems allows easy testing and maintenance.
	RFID LifeCheck RFID LifeCheck makes it possible to easily and quickly test arresters for information technology systems. It permanently monitors the condition of the arrester and detects electrical and thermal load on all protection components.
TYPE 1 TYPE 2 TYPE 3 TYPE 4	**Discharge capacity of an SPD** (according to the categories from IEC 61643-21) Impulse D1 (10/350 µs), lightning impulse current 0.5 to 2.5 kA/line ⇨ exceeds the discharge capacity of TYPE 2 – TYPE 4 Impulse C2 (8/20 µs), increased impulse load 1 to 5 kA/line ⇨ exceeds the discharge capacity of TYPE 3 – TYPE 4 Impulse C1 (8/20 µs), impulse load 0.25 to 1 kA/line ⇨ exceeds the discharge capacity of TYPE 4 Load < TYPE 3
P1 P2 P3 P4	**Protective effect of an SPD** (limitation below the test levels according to EN 61000-4-5) Required test level of the terminal device: 1 or higher Required test level of the terminal device: 2 or higher Required test level of the terminal device: 3 or higher Required test level of the terminal device: 4
⊕ ⊐	**Energy coordination** (with another Yellow/Line SPD) SPD with decoupling impedance, suitable for coordination with an SPD marked with ⊐ SPD is suitable for coordination with an SPD with decoupling impedance ⊕

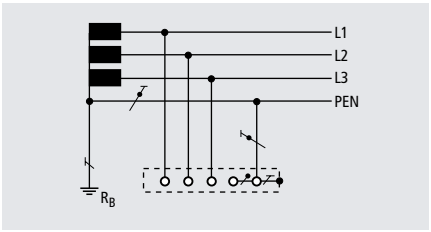
Surge Protection for Power Supply Systems

Find the right product quickly and easily:
https://www.dehn-international.com/en/selection-guides-and-configurators

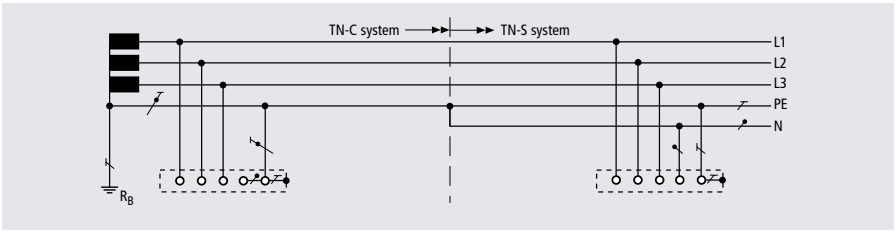
Combined Arresters – Type 1 + Type 2	Page 21
Combined Arresters – Type 1 + Type 2 for PV Systems	Page 24
Coordinated Lightning Current Arresters – Type 1	Page 25
Accessory for Arresters – Type 1	Page 28
Coordinated Lightning Current Arresters – Type 1 for d.c. Applications	Page 28
Lightning Current Arresters – Type 1	Page 29
N-PE Lightning Current Arresters	Page 30
Surge Arresters – Type 2	Page 31
Surge Arresters – Type 2 for PV Systems	Page 48
Surge Arresters – Type 3	Page 51
Measuring Devices and Accessories	Page 55

International Power Supply Systems

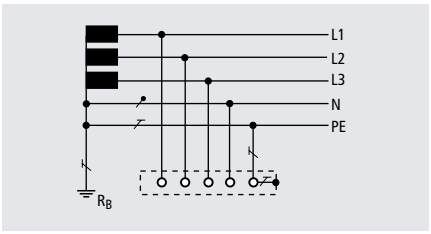
International system configurations* according to IEC 60364-1



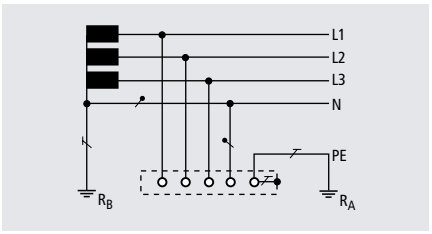
TN-C system 230 / 400 V



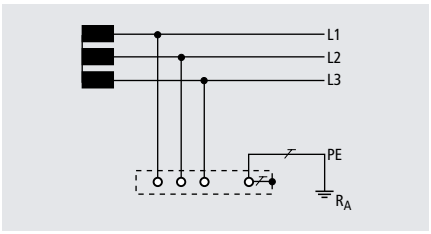
TN-C-S system 230 / 400 V



TN-S system 230 / 400 V

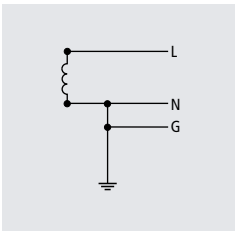


TT system 230 / 400 V



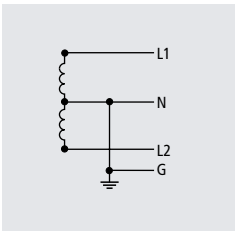
IT system 230 V

Further international system configurations*

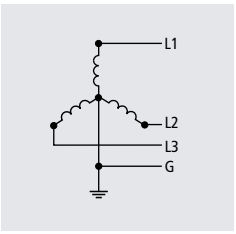


Single-phase; 3 wire

(1 Ph, 2 W + G)
110 V
120 V
220 V
240 V

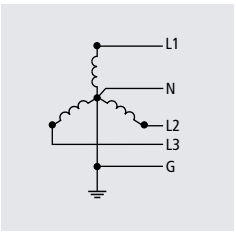


Single-phase; 4 wire
Split Phase or Edison
(1 Ph, 3 W + G)
120 V / 240 V



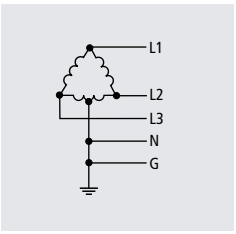
Three-phase; 4 wire

(3 Ph Y, 3 W + G)
480 V

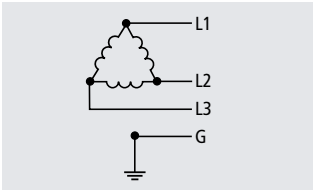


Three-phase; 5 wire

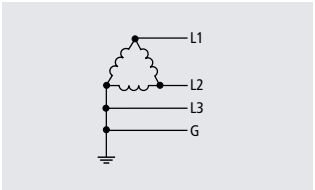
(3 Ph Y, 4 W + G)
120 V / 208 V
277 V / 480 V



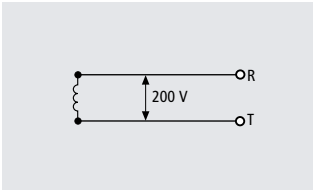
Three-phase; 5 wire
Delta "Highleg"
(3 Ph Δ, 4 W + G)
120 V / 240 V



Three-phase; 4 wire
Delta "Ungrounded"
(3 Ph Δ, 3 W + G)
240 V
480 V

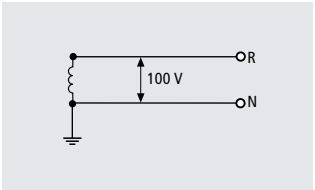


Three-phase; 4 wire
Delta "Grounded Corner"
(3 Ph Δ, 3 W + G)
240 V
480 V



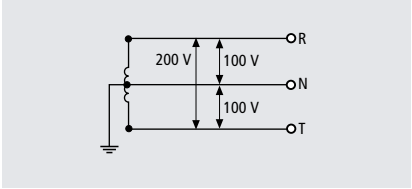
Single-phase; 2 wire

(1 Ph, 2 W)
200 V

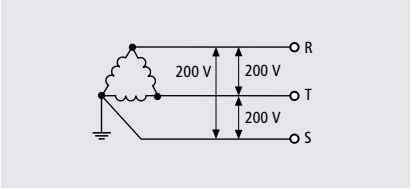


Single-phase; 2 wire

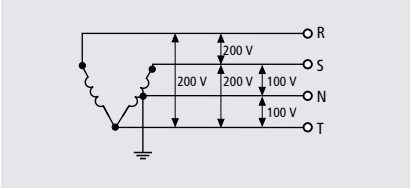
(1 Ph, 2 W)
100 V



Single-phase; 3 wire
(1 Ph, 3 W)
100 V / 200 V



Three-phase; 3 wire
(3 Ph, 3 W)
200 V



Three-phase + single-phase

100 V / 200 V; 200 V

* System according to the earth connection (according to IEC 60364-1)

DEHNventil modular

Modular multipole combined lightning current and surge arrester with a follow current extinguishing capability of 100 kA_{rms} for protecting low-voltage consumer's installations against surges and even direct lightning strikes.

DEHNventil M2 TNC FM

Modular combined arrester for TN-C systems.

Type DV M2 ...	TNC 255 FM
Part No.	954 305 NEW
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 + type 3 / class I + class II + class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L-PEN] (I_{imp})	25 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	250 A gG
Approvals	VDE, KEMA, UL
Type of remote signalling contact	yes / changeover contact
For use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms} (tested by the German VDE)	
- Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})

DEHNventil M2 TNS FM

Modular combined arrester for TN-S systems.

Type DV M2 ...	TNS 255 FM
Part No.	954 405 NEW
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 + type 3 / class I + class II + class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	100 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	25 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	250 A gG
Approvals	VDE, KEMA, UL
Type of remote signalling contact	yes / changeover contact
For use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms} (tested by the German VDE)	
- Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})

DEHNventil M2 TT FM

Modular combined arrester for TT and TN-S systems (3+1 circuit).

Type DV M2 ...	TT 255 FM
Part No.	954 315 NEW
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 + type 3 / class I + class II + class III
Max. continuous operating voltage (a.c.) [L-N] (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	100 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	25 / 100 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	250 A gG
Approvals	VDE, KEMA, UL
Type of remote signalling contact	yes / changeover contact
Extended technical data:	
Voltage protection level [L-PE] (U_P)	1.8 kV
For use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms} (tested by the German VDE)	
- Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})

DEHNventil M2 TN FM

Modular combined arrester for single-phase TN systems.

Type DV M2 ...	TN 255 FM
Part No.	954 205 NEW
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 + type 3 / class I + class II + class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	25 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	250 A gG
Approvals	VDE, KEMA, UL
Type of remote signalling contact	yes / changeover contact
For use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms} (tested by the German VDE)	
- Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})

DEHNventil M2 TT 2P FM

Modular combined arrester for single-phase TT and TN systems (1+1 circuit).

Type DV M2 ...	TT 2P 255 FM
Part No.	954 115 NEW
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 + type 3 / class I + class II + class III
Max. continuous operating voltage (a.c.) [L-N] (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	25 / 50 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	250 A gG
Approvals	VDE, KEMA, UL
Type of remote signalling contact	yes / changeover contact
Extended technical data:	
Voltage protection level [L-PE] (U_P)	1.8 kV
For use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms} (tested by the German VDE)	
- Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})

Protection Module for DEHNventil modular

DV MOD ...: Spark-gap-based protection module for all devices of the modular DEHNventil series

RAC Spark Gap Protection Module

General technical data:	
Max. continuous operating voltage (a.c.) (U_C)	255 V

Type DV MOD ...	TNC 255	TNS 255
Part No.	954 030 NEW	954 040 NEW
Lightning impulse current (10/350 µs) (I_{imp})	25 / 75 kA	25 / 75 kA

Type DV MOD ...	TT 255	TN 255
Part No.	954 031 NEW	954 020 NEW
Lightning impulse current (10/350 µs) (I_{imp})	25 / 75 kA	25 kA

Type DV MOD ...	TT 2P 255
Part No.	954 011 NEW
Lightning impulse current (10/350 µs) (I_{imp})	25 kA

DEHNvenCI

Single-pole combined lightning current and surge arrester with integrated backup fuse ensures maximum system availability. For protecting low-voltage consumer installations against surges and even direct lightning strikes.

DEHNvenCI 255 (FM)

Single-pole combined lightning current and surge arrester with an integrated backup fuse capable of carrying lightning currents for use in 230 / 400 V systems; FM version with floating remote signalling contact.

Type DVCI 1 ...	255	255 FM
Part No.	**961 200**	**961 205**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II	type 1 + type 2 / class I + class II
Maximum continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	25 kA	25 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	integrated backup fuse	integrated backup fuse
Approvals	KEMA	KEMA
Type of remote signalling contact	–	changeover contact
Extended technical data:	For use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms} (tested by the German VDE)	
- Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})	100 kA_{rms} (220 kA_{peak})

Zubehör für DEHNvenCI

MVS for two-module enclosures, single-phase, four-pole

Modular wiring clip for TT systems, insulated, single-phase, four-pole with connection clamp up to 50 mm².

Type	MVS 1 4 8 TT
Part No.	**900 849** NEW
Dimensions	166 x 38.1 x 22 mm
Connection clamp	10–50 mm (solid or stranded) / 6–35 mm² (flexible with wire end ferrule)
Max. lightning current (10/350 µs) based on DIN EN 61643-11 (I_{imp})	100 kA

Earthing Clip for two-module Enclosures, single-phase, two-pole

Earthing clip for connecting the earth terminal of e.g. two SPDs with two-module enclosure to earth, with terminal.

Type	EB 1 2 5
Part No.	**900 419**
Dimensions	34 x 77 x 28 mm
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, three-pole

Earthing clip for connecting the earth terminal of e.g. three SPDs with two-module enclosure to earth, with terminal.

Type	EB DG 1000 1 3
Part No.	**900 411**
Dimensions	34 x 112 x 28 mm
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, four-pole

Earthing clip for connecting the earth terminal of e.g. four SPDs with two-module enclosure to earth, with terminal.

Type	EB 1 4 9
Part No.	**900 417**
Dimensions	34 x 148 x 28 mm
Terminal	up to 25 mm²

DEHNshield

Application-optimised multipole combined lightning current and surge arrester which fulfils the minimum requirements on the lightning current discharge capacity according to IEC 60364-5-53 and ensures compact lightning equipotential bonding including protection of terminal equipment.

DEHNshield TNC

Application-optimised and prewired combined lightning current and surge arrester for TN-C systems with a nominal voltage of 230 / 400 V (3+0 configuration).

Type DSH ...	TNC 255
Part No.	**941 300**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3-PEN] (I_{total})	37.5 kA
Lightning impulse current (10/350 µs) [L-PEN] (I_{imp})	12.5 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE, UL

DEHNshield TNC FM

Application-optimised and prewired combined lightning current and surge arrester for TN-C systems with a nominal voltage of 230 / 400 V (3+0 configuration); with floating remote signalling contact.

Type DSH ...	TNC 255 FM
Part No.	**941 305**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3-PEN] (I_{total})	37.5 kA
Lightning impulse current (10/350 µs) [L-PEN] (I_{imp})	12.5 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact

DEHNshield TNS

Application-optimised and prewired combined lightning current and surge arrester for TN-S systems with a nominal voltage of 230 / 400 V (4+0 configuration).

Type DSH ...	TNS 255
Part No.	**941 400**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	12.5 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE, UL

DEHNshield TNS FM

Application-optimised and prewired combined lightning current and surge arrester for TN-S systems with a nominal voltage of 230 / 400 V (4+0 configuration); with floating remote signalling contact.

Type DSH ...	TNS 255 FM
Part No.	**941 405**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	12.5 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact

DEHNshield TT

Application-optimised and prewired combined lightning current and surge arrester for TT and TN-S systems with a nominal voltage of 230 / 400 V (3+1 configuration).

Type DSH ...	TT 255
Part No.	**941 310**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	12.5 / 50 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE, UL
Extended technical data:	
Voltage protection level [L-PE] (U_P)	2.0 kV

DEHNshield TT FM

Application-optimised and prewired combined lightning current and surge arrester for TT and TN-S systems with a nominal voltage of 230 / 400 V (3+1 configuration); with floating signalling contact.

Type DSH ...	TT 255 FM
Part No.	**941 315**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	12.5 / 50 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact
Extended technical data:	
Voltage protection level [L-PE] (U_P)	2.0 kV

DEHNshield TN

Application-optimised and prewired combined lightning current and surge arrester for single-phase TN systems with a nominal voltage of 230 V (2+0 configuration).

Type DSH ...	TN 255
Part No.	**941 200**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	25 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	12.5 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 /≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE, UL

DEHNshield TN FM

Application-optimised and prewired combined lightning current and surge arrester for single-phase TN systems with a nominal voltage of 230 V (2+0 configuration); with floating remote signalling contact.

Type DSH ...	TN 255 FM
Part No.	**941 205**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	25 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	12.5 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 /≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact

Combined Arresters – Type 1 + Type 2

DEHNshield TT 2P

Application-optimised and prewired combined lightning current and surge arrester for single-phase TT and TN systems with a nominal voltage of 230 V (1+1 configuration).

Type DSH ...	TT 2P 255
Part No.	**941 110**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	25 kA
Lightning impulse current (10/350 µs) [L-N]/ [N-PE] (I_{imp})	12.5 / 25 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE, UL
Extended technical data:	
Voltage protection level [L-PE] (U_P)	2.0 kV

DEHNshield TT 2P FM

Application-optimised and prewired combined lightning current and surge arrester for single-phase TT and TN systems with a nominal voltage of 230 V (1+1 configuration); with floating remote signalling contact.

Type DSH ...	TT 2P 255 FM
Part No.	**941 115**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	25 kA
Lightning impulse current (10/350 µs) [L-N]/ [N-PE] (I_{imp})	12.5 / 25 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact
Extended technical data:	
Voltage protection level [L-PE] (U_P)	2.0 kV

Comb. Arrester – Type 1 + 2 for PV Systems

DEHNcombo

Prewired two-pole combined lightning current and surge arrester with three-step d.c. switching device for use in PV systems up to 1500 V.

DEHNcombo YPV ...

Combined lightning current and surge arrester for use in photovoltaic power supply systems up to 1500 V d.c.

Type DCB YPV ...	1200	1500
Part No.	**900 070**	**900 071**
SPD according to EN 61643-31 / IEC 61643-31	type 1 + type 2 / class I + class II	type 1 + type 2 / class I + class II
Max. PV voltage [DC+ -> DC-] (U_{CPV})	≤ 1200 V	≤ 1500 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Total discharge current (10/350 µs) [DC+/DC- -> PE] (I_{total})	12.5 kA	12.5 kA
Lightning impulse current (10/350 µs) [DC+ -> PE/DC- -> PE] (I_{imp})	6.25 kA	6.25 kA
Voltage protection level [(DC+/DC-) -> PE] (U_P)	< 3.8 kV	< 4.5 kV
Approvals	KEMA, UL	KEMA, UL

DEHNcombo YPV ... FM

Combined lightning current and surge arrester for use in photovoltaic power supply systems up to 1500 V d.c.; with floating remote signalling contact.

Type DCB YPV ...	1200 FM	1500 FM
Part No.	**900 075**	**900 076**
SPD according to EN 61643-31 / IEC 61643-31	type 1 + type 2 / class I + class II	type 1 + type 2 / class I + class II
Max. PV voltage [DC+ -> DC-] (U_{CPV})	≤ 1200 V	≤ 1500 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Total discharge current (10/350 µs) [DC+/DC- -> PE] (I_{total})	12.5 kA	12.5 kA
Lightning impulse current (10/350 µs) [DC+ -> PE/DC- -> PE] (I_{imp})	6.25 kA	6.25 kA
Voltage protection level [(DC+/DC-) -> PE] (U_P)	< 3.8 kV	< 4.5 kV
Approvals	KEMA, UL	KEMA, UL
Type of remote signalling contact	changeover contact	changeover contact

DEHNsolid

Coordinated and spark-gap-based single-pole lightning current arrester for busbar installation for protecting low-voltage consumer installations against surges and even direct lightning strikes with an extremely high lightning current discharge capacity up to 200 kA.

DEHNsolid 1 255

Coordinated single-pole lightning current arrester for use in 230 / 400 V systems; for installation on busbars or mounting plates.

Type	DSO 1 255
Part No.	**900 230**
Classification according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	200 kA
Voltage protection level (U_P)	≤ 2.5 kV
Max. mains-side overcurrent protection	160 A gG

DEHNbloc modular

Coordinated and modular single-pole lightning current arrester for protecting low-voltage consumer´s installations against surges and even direct lightning strikes.

DEHNbloc M 1 ... FM

Coordinated and modular single-pole lightning current arrester with a high discharge capacity; with remote signalling contact for monitoring system (floating changeover contact).

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I

Type DB M 1 ...	150 FM	255 FM
Part No.	**961 115**	**961 125**
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	50 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	–	500 A gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	–	315 A gG
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 0.2 s)	500 A gG	–
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 5 s)	315 A gG	–
Approvals	UL, CSA	VDE, KEMA, UL

Type DB M 1 ...	320 FM
Part No.	**961 135**
Max. continuous operating voltage (a.c.) (U_C)	320 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Voltage protection level (U_P)	≤ 2.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	315 A gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	315 A gG
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 0.2 s)	–
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 5 s)	–
Approvals	UL

DEHNbloc M 1 ...

Coordinated and modular single-pole lightning current arrester with a high discharge capacity.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I

Type DB M 1 ...	150	255
Part No.	**961 110**	**961 120**
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	50 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	–	500 A gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	–	315 A gG
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 0.2 s)	500 A gG	–
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 5 s)	315 A gG	–
Approvals	UL, CSA	VDE, KEMA, UL

Type DB M 1 ...	320
Part No.	**961 130**
Max. continuous operating voltage (a.c.) (U_C)	320 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Voltage protection level (U_P)	≤ 2.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	315 A gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	315 A gG
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 0.2 s)	–
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 5 s)	–
Approvals	UL

Protection Module for DEHNbloc modular

DB M MOD ...: Spark-gap-based protection module suitable for all DEHNbloc M arresters

DB M Spark-Gap-Based Protection Module

Spark-gap-based protection module for DEHNbloc M ...

Type DB M MOD ...	150	255
Part No.	**961 001**	**961 002**
Max. continuous operating voltage (a.c.) (U_C)	150 V	255 V
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	50 kA

Type DB M MOD ...	320
Part No.	**961 003**
Max. continuous operating voltage (a.c.) (U_C)	320 V
Lightning impulse current (10/350 µs) (I_{imp})	25 kA

DEHNbloc Modular for North America

The modular DEHNbloc MU series are UL 1449 4th Ed. Type 1 Component Assembly and therefore ready for an easy installation into many electrical products. The very high discharge current capacity of 75 kA (10x350 µs) due to DEHN's patented lightning arrester gap technology enables the SPD to resist powerful lightning strikes and therefore protect your electrical system and gear. The DEHNbloc three-pole has also remote contacts and a visual non-power consuming status indication for each plug-in protection module.

DEHNbloc MU 3PY ... 3W+G

DIN rail mount, pluggable lightning current arrester consisting of a base part and plug-in protection modules for application in 3 Phase Wye electrical systems

Type DB MU 3PY ...	208 3W+G R	480 3W+G R
Part No.	**908 505**	**908 506**
SPD classification acc. to ANSI/UL 1449 4th Ed.	Type 1 Component Assembly SPD	Type 1 Component Assembly SPD
Max. continuous operating voltage [L-G] / [L-L] (MCOV)	150 V a.c. / 260 V a.c.	320 V a.c. / 555 V a.c.
Lightning impulse current (10x350 µs) (I_{imp})	35 kA	25 kA
Voltage protection rating [L-G] / [L-L] (VPR)	1500 V_{pk} / 2500 V_{pk}	1800 V_{pk} / 3000 V_{pk}
Approvals	UL	UL
Remote status contact	Floating (dry), Form C (SPDT)	Floating (dry), Form C (SPDT)

DEHNbloc Maxi

Coordinated lightning current arrester (NH00 design) for protecting low-voltage consumer's installations against surges and even direct lightning strikes.

DEHNbloc Maxi NH00 255

Coordinated single-pole lightning current arrester in NH00 design for TN-C and TN-S systems with a nominal voltage of 230 / 400 V.

Type	DBM NH00 255
Part No.	**900 255**
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Voltage protection level (U_P)	≤ 2.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	315 A gG

DEHNbloc Maxi 1 CI 440 / 760 FM

Coordinated lightning current arrester with integrated backup fuse for high voltage levels ensures maximum system availability. For protecting low-voltage consumer installations against surges and even direct lightning strikes.

DEHNbloc Maxi 1 CI 440 FM

Coordinated single-pole lightning current arrester with integrated backup fuse for 400 / 690 V TN systems and 400 V IT systems; with remote signalling contact for monitoring device (floating changeover contact).

Type DBM 1 CI ...	440 FM
Part No.	**961 146**
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Maximum continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	35 kA
Voltage protection level (U_P)	≤ 2.5 kV
Max. mains-side overcurrent protection	not required
Type of remote signalling contact	changeover contact

DEHNbloc Maxi 1 CI 760 FM

Coordinated single-pole lightning current arrester with integrated backup fuse for 690 V TN / IT systems; with remote signalling contact for monitoring device (floating changeover contact).

Type DBM 1 CI ...	760 FM
Part No.	**961 176**
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Maximum continuous operating voltage (a.c.) (U_C)	760 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	35 kA
Voltage protection level (U_P)	≤ 4 kV
Max. mains-side overcurrent protection	not required
Type of remote signalling contact	changeover contact

Accessories for DEHNbloc Maxi 1 CI 440 / 760 FM

Earthing Clip for three-module Enclosures, single-phase, three-pole

Earthing clip for connecting the earth terminal of e.g. three SPDs with three-module enclosure to earth, with terminal.

Type	EB 1 3 10
Part No.	**900 461**
Dimensions	34 x 158 x 28 mm
Terminal	up to 25 mm^2

Earthing Clip for three-module Enclosures, single-phase, four-pole

Earthing clip for connecting the earth terminal of e.g. four SPDs with three-module enclosure to earth, with terminal.

Type	EB 1 4 13
Part No.	**900 462**
Dimensions	34 x 212 x 28 mm
Terminal	up to 25 mm^2

DEHNbloc Maxi 440 / 760

Coordinated lightning current arrester for high voltage levels for protecting low-voltage consumer´s installations against surges and even direct lightning strikes.

DEHNbloc Maxi 1 440 (FM)

Coordinated single-pole lightning current arrester for use in 400 / 690 V systems; FM version with floating remote signalling contact.

Type DBM 1 ...	440	440 FM
Part No.	**961 140**	**961 145**
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	440 V	440 V
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	35 kA
Voltage protection level (U_P)	≤ 2.5 kV	≤ 2.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	500 A gG	500 A gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	250 A gG	250 A gG
Approvals	UL, CSA	UL, CSA
Type of remote signalling contact	–	changeover contact

DEHNbloc Maxi 1 760 FM

Coordinated single-pole lightning current arrester for use in 690 V systems; with remote signalling contact for monitoring device (floating changeover contact).

Type DBM 1 ...	760 FM
Part No.	**961 175**
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	760 V
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Voltage protection level (U_P)	≤ 4 kV
Max. backup fuse (L) up to I_K = 25 kA_{rms} (t_a ≤ 5 s)	250 A gG
Approvals	UL, CSA
Type of remote signalling contact	changeover contact

Accessories for DEHNbloc Maxi 440 / 760

MVS for two-module enclosures, single-phase, four-pole

Modular wiring clip for TT systems, insulated, single-phase, four-pole with connection clamp up to 50 mm².

Type	MVS 1 4 8 TT
Part No.	**900 849** NEW
Dimensions	166 x 38.1 x 22 mm
Connection clamp	10–50 mm (solid or stranded) / 6–35 mm² (flexible with wire end ferrule)
Max. lightning current (10/350 µs) based on DIN EN 61643-11 (I_{imp})	100 kA

Earthing Clip for two-module Enclosures, single-phase, three-pole

Earthing clip for connecting the earth terminal of e.g. three SPDs with two-module enclosure to earth, with terminal.

Type	EB DG 1000 1 3
Part No.	**900 411**
Dimensions	34 x 112 x 28 mm
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, four-pole

Earthing clip for connecting the earth terminal of e.g. four SPDs with two-module enclosure to earth, with terminal.

Type	EB 1 4 9
Part No.	**900 417**
Dimensions	34 x 148 x 28 mm
Terminal	up to 25 mm²

Coord. Lightning Current Arresters – Type 1

DEHNbloc Maxi S

Coordinated lightning current arrester with integrated backup fuse for busbars for protecting low-voltage consumer´s installations against surges and even direct lightning strikes.

DEHNbloc Maxi 1 255 S

Coordinated single-pole lightning current arrester with integrated backup fuse for busbar installation in 230 / 400 V systems.

Type	DBM 1 255 S
Part No.	**900 220**
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Voltage protection level (U_P)	≤ 2.5 kV (including 80 cm connecting cable)
Max. mains-side overcurrent protection	not required
Operating state indication	by optical fibre cables via DSI E 3

Accessory for Arresters – Type 1

DEHNsignal

Remote signalling device for Red/Line surge protective devices with interface "DEHNsignal DV..." with floating changeover contact and optical fibre output.

DEHNsignal E 3

Receiver module for optical transmission for selective operating state indication / centralised fault indication of three coordinated DEHNbloc Maxi S and, where appropriate, DEHNgap Maxi S lightning current arresters in five-wire systems.

Type	DSI E 3
Part No.	**910 631**
Supply voltage (a.c.) (U_N)	230 V
Power input (P)	< 550 mW
Backup fuse for supply voltage	16 A gG or C 16 A
Signal input	3x via optical fibre plug-in system (LWL ST DSI)
Type of remote signalling contact	floating changeover contact
Test standards	EN 61010-1:1993 and EN 61010-1/A2:1995

Accessories for DEHNsignal

LWL ST DSI

Plug for plastic optical fibre cables.

Type	LWL ST DSI
Part No.	**910 641**
Diameter	2.2 mm

LWL DSI 18M

18 metres of plastic optical fibre cable, preferably for use with DEHNbloc Maxi S.

Type	LWL DSI 18M
Part No.	**910 642**
Diameter	2.2 mm
Length	18 m

DEHNsecure modular

For protecting d.c. consumer installations against surges and even direct lightning strikes.

DEHNsecure M 1 ...

Coordinated and modular single-pole lightning current arrester for d.c. applications.

General technical data:	
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Max. mains-side overcurrent protection	250 A gL
Extended technical data:	when used in safety lighting systems

Type DSE M ...	1 60	1 220
Part No.	971 121	971 120
SPD classification according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (d.c.) (U_C)	60 V	220 V
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV
Approvals	UL	–
- Max. continuous operating voltage (a.c.) (U_C)	–	–

Type DSE M ...	1 242
Part No.	971 122
SPD classification according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (d.c.) (U_C)	242 V
Voltage protection level (U_P)	≤ 2.5 kV
Approvals	–
- Max. continuous operating voltage (a.c.) (U_C)	255 V

DEHNsecure M 1 ... FM

Coordinated and modular single-pole lightning current arrester for d.c. applications; with remote signalling contact for monitoring device (floating changeover contact).

General technical data:	
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Max. mains-side overcurrent protection	250 A gL
Type of remote signalling contact	changeover contact
Extended technical data:	when used in safety lighting systems

Type DSE M ...	1 60 FM	1 220 FM
Part No.	971 126	971 125
SPD classification according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (d.c.) (U_C)	60 V	220 V
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV
Approvals	UL	–
- Max. continuous operating voltage (a.c.) (U_C)	–	–

Type DSE M ...	1 242 FM
Part No.	971 127
SPD classification according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (d.c.) (U_C)	242 V
Voltage protection level (U_P)	≤ 2.5 kV
Approvals	–
- Max. continuous operating voltage (a.c.) (U_C)	255 V

DEHNsecure M 2P ... (FM)

Coordinated and modular two-pole lightning current arrester for d.c. applications up to 60 V (1+1 configuration); FM version with floating remote signalling contact.

Type DSE M ...	2P 60	2P 60 FM
Part No.	971 221	971 226
SPD classification according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (d.c.) (U_C)	60 V	60 V
Lightning impulse current (10/350 µs) (DC+/DC- -> DC-/DC+) / (DC-/DC+ -> ⏚) (I_{imp})	25 / 50 kA	25 / 50 kA
Voltage protection level (DC+/DC- -> DC-/DC+) / (DC-/DC+ -> ⏚) (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	250 A gL	250 A gL
Approvals	UL	UL
Type of remote signalling contact	–	changeover contact

Protection Module for DEHNsecure modular

DSE MOD ...: Spark-gap-based protection module for all devices of the modular DEHNsecure series.

DSE M Spark-Gap-Based Protection Module

Spark-gap-based protection module

General technical data:	
Lightning impulse current (10/350 µs) (I_{imp})	25 kA

Type DSE MOD ...	60	220
Part No.	971 001	971 002
Max. continuous operating voltage (d.c.) (U_C)	60 V	220 V

Type DSE MOD ...	242
Part No.	971 003
Max. continuous operating voltage (d.c.) (U_C)	242 V

DSE PE Spark-Gap-Based Protection Module

Spark-gap-based protection module

Type DSE MOD ...	PE 60
Part No.	971 010
Max. continuous operating voltage (d.c.) (U_C)	60 V
Lightning impulse current (10/350 µs) (I_{imp})	50 kA

DEHNbloc

Lightning current arrester for protecting low-voltage consumer's installations against surges and even direct lightning strikes.

DEHNbloc H

Modular single-pole lightning current arrester with a high discharge capacity for use in 230 / 400 V systems.

Type	DBH M 1 255
Part No.	**961 122**
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Voltage protection level (U_P)	≤ 4 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	500 A gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	315 A gG

Accessories for DEHNbloc

DB H Spark-Gap-Based Protection Module

Spark-gap-based protection module

Type	DBH MOD 255
Part No.	**961 022**
Max. continuous operating voltage (a.c.) (U_C)	255 V

DEHNbloc 1 255 H

Single-pole (3-0 configuration) lightning current arrester with a high discharge capacity for use in 230 / 400 V systems.

Type	DB 1 255 H
Part No.	**900 222**
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Voltage protection level (U_P)	≤ 4 kV
Max. backup fuse up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	500 A gG
Max. backup fuse up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	315 A gG
Approvals	KEMA

DEHNbloc 3 255 H

Three-pole (3-0 configuration) lightning current arrester with a high discharge capacity for use in 230 / 400 V systems.

Type	DB 3 255 H
Part No.	**900 120**
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3-N/PEN] (I_{total})	100 kA
Voltage protection level (U_P)	≤ 4 kV
Max. backup fuse up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	500 A gG
Max. backup fuse up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	315 A gG
Approvals	KEMA

DEHNgap

N-PE lightning current arrester for protecting low-voltage consumer's installations against surges and even direct lightning strikes, particularly for use in TT systems.

DEHNgap M 255 (FM)

Coordinated and modular single-pole N-PE lightning current arrester; FM version with floating remote signalling contact.

Type	DGP M 255	DGP M 255 FM
Part No.	961 101	961 105
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	100 kA	100 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Approvals	VDE, KEMA, UL	VDE, KEMA, UL
Type of remote signalling contact	–	changeover contact

DEHNgap Maxi 1 255 S

Coordinated single-pole N-PE lightning current arrester for busbars.

Type	DGPM 1 255 S
Part No.	900 050
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Voltage protection level (U_P)	≤ 2.5 kV (including 80 cm connecting cable)
Operating state monitoring	via DEHNsignal DSI E 3

DEHNgap Maxi 1 255 (FM)

Coordinated single-pole N-PE lightning current arrester; FM version with floating remote signalling contact.

Type	DGPM 1 255	DGPM 1 255 FM
Part No.	961 180	961 185
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	100 kA	100 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Type of remote signalling contact	–	changeover contact

DEHNgap Maxi 440 (FM)

Coordinated single-pole N-PE lightning current arrester; FM version with floating remote signalling contact.

Type	DGPM 440	DGPM 440 FM
Part No.	961 160	961 165
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)	440 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	100 kA	100 kA
Voltage protection level (U_P)	≤ 2.5 kV	≤ 2.5 kV
Approvals	UL	UL
Type of remote signalling contact	–	changeover contact

DEHNgap H M 255

Modular single-pole N-PE lightning current arrester.

Type	DGPH M 255
Part No.	961 102
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Voltage protection level (U_P)	≤ 4 kV

Protection Module for DEHNgap modular

DGP M ...: Spark-gap-based protection module for all devices of the modular DEHNgap M series

DGP M – 100 kA N-PE Spark-Gap-Based Protection Module

N-PE spark-gap-based protection module for all devices of the modular DEHNgap M family.

Type	DGP M MOD 255
Part No.	961 010
Max. continuous operating voltage (a.c.) (U_C)	255 V
Lightning impulse current (10/350 µs) (I_{imp})	100 kA

DGPH M – 100 kA N-PE Spark-Gap-Based Protection Module

N-PE spark-gap-based protection module for all devices of the modular DEHNgap H M family.

Type	DGPH MOD 255
Part No.	961 020
Max. continuous operating voltage (a.c.) (U_C)	255 V
Lightning impulse current (10/350 µs) (I_{imp})	100 kA

DEHNguard modular with Advanced Circuit Interruption (Safe Dimensioning)

Modular multipole surge arrester with new "Advanced Circuit Interruption" (ACI) technology in the protection module consisting of a switch / spark gap combination. For protecting low-voltage consumer installations against surges.

DEHNguard MP TNS ACI ... FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for TN-S systems.

Type DG ...	MP TNS ACI 275 FM
Part No.	**942 440** NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage AC [L-PE] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-PE] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	no
Temporary overvoltage (TOV) (U_T) – Characteristic	335 V / 5 sec. – withstand
Temporary overvoltage (TOV) (U_T) – Characteristic	440 V / 120 min. – withstand
Leakage current	no leakage current
Approvals	KEMA, VDE

DEHNguard MP TT ACI ... FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for TT and TN-S systems (3+1 configuration).

Type DG ...	MP TT ACI 275 FM
Part No.	**942 341** NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	40 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level [L-N] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	no
Temporary overvoltage (TOV) [L-N] (U_T) – Characteristic	335 V / 5 sec. – withstand
Temporary overvoltage (TOV) [L-N] (U_T) – Characteristic	440 V / 120 min. – withstand
Temporary overvoltage (TOV) [N-PE] (U_T) – Characteristic	1200 V / 200 ms – withstand
Leakage current	no leakage current
Approvals	KEMA, VDE

DEHNguard M TNC ACI 275 FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for TN-C systems.

Type DG ...	M TNC ACI 275 FM
Part No.	**952 330**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level (U_P)	≤ 1.5 kV
Additional external fuse	not required
Temporary overvoltage (TOV) (U_T) – Characteristic	440 V / 120 min. – withstand
Leakage current	no leakage current
Approvals	KEMA

DEHNguard M TNS ACI 275 FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for TN-S systems.

Type DG ...	M TNS ACI 275 FM
Part No.	**952 440**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage AC [L-PE] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-PE] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	not required
Temporary overvoltage (TOV) (U_T) – Characteristic	440 V / 120 min. – withstand
Leakage current	no leakage current
Approvals	KEMA

DEHNguard M TT ACI ... FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for TT and TN-S systems (3+1 configuration).

Type DG ...	M TT ACI 275 FM	M TT ACI 385 FM
Part No.	**952 341**	**952 342**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	–	40 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	–	120 kA
Voltage protection level [L-N] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	not required	not required
Temporary overvoltage (TOV) [L-N] (U_T) – Characteristic	440 V / 120 min. – withstand	440 V / 120 min. – withstand
Temporary overvoltage (TOV) [N-PE] (U_T) – Characteristic	1200 V / 200 ms – withstand	1200 V / 200 ms – withstand
Leakage current	no leakage current	no leakage current
Approvals	KEMA	KEMA

DEHNguard M TN ACI 275 FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for single-phase 230 V-TN systems.

Type DG ...	M TN ACI 275 FM
Part No.	**952 220**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage AC [L-PE] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-PE] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	not required
Temporary overvoltage (TOV) (U_T) – Characteristic	440 V / 120 min. – withstand
Leakage current	no leakage current
Approvals	KEMA

DEHNguard M TT 2P ACI ... FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for single-phase 230 V-TT and TN systems (1+1 configuration).

Type DG ...	M TT 2P ACI 275 FM	M TT 2P ACI 385 FM
Part No.	**952 121**	**952 122**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	–	40 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	–	120 kA
Voltage protection level [L-N] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	not required	not required
Temporary overvoltage (TOV) [L-N] (U_T) – Characteristic	440 V / 120 min. – withstand	440 V / 120 min. – withstand
Temporary overvoltage (TOV) [N-PE] (U_T) – Characteristic	1200 V / 200 ms – withstand	1200 V / 200 ms – withstand
Leakage current	no leakage current	no leakage current
Approvals	KEMA	KEMA

DEHNguard S ACI ... FM

Pluggable single-pole surge arrester consisting of a base part and plug-in protection module; with Advanced Circuit Interruption (ACI).

Type DG ...	S ACI 275 FM	S ACI 385 FM
Part No.	**952 100**	**952 113**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	275 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	–	40 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Additional external fuse	not required	not required
Temporary overvoltage (TOV) (U_T) – Characteristic	440 V / 120 min. – withstand	440 V / 120 min. – withstand
Leakage current	no leakage current	no leakage current
Approvals	KEMA	KEMA

Accessories for DEHNguard modular with Advanced Circuit Interruption (Safe Dimensioning)

Switch / Spark Gap Protection Module for DEHNguard ACI

Type	DG MOD ACI 275	DG MOD ACI 385
Part No.	**952 024**	**952 028**
Max. continuous operating voltage (a.c.) (U_C)	275 V	385 V

Spark-gap Based Protection Module for DEHNguard M ACI

Type	DG MOD A NPE
Part No.	**952 022**
Max. continuous operating voltage (a.c.) (U_C)	275 V

N-PE Spark-Gap-Based Protection Module for DEHNguard M ACI

Type	DG MOD H A NPE
Part No.	**952 083**
Max. continuous operating voltage (a.c.) (U_C)	275 V

DEHNguard SE CI with Integrated Backup Fuse

For industrial applications with a rated voltage of 400/690 V. Combines surge protection and backup fuse in a single component. Available in 2 versions: industry and wind power.

DEHNguard SE CI 440 FM

Pluggable single-pole surge arrester comprising a base part and a plug-in protection module; with integrated backup fuse and remote signalling contact for monitoring unit (floating changeover contact).

Type DG SE CI ...	440 FM
Part No.	**952 920**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	12.5 kA
Voltage protection level (U_P)	≤ 2 kV
Max. mains-side overcurrent protection	not required
Type of remote signalling contact	changeover contact

DEHNguard SE CI WE 440 FM

Pluggable single-pole surge arrester with a rated varistor voltage U_{mov} = 750 V a.c.; comprising a base part and a plug-in protection module; with integrated backup fuse and remote signalling contact for monitoring unit (floating changeover contact).

Type DG SE CI ...	WE 440 FM
Part No.	**952 923**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)
Rated varistor voltage (a.c.) (U_{mov})	750 V
Nominal discharge current (8/20 µs) (I_n)	12.5 kA
Voltage protection level (U_P)	≤ 3 kV
Max. mains-side overcurrent protection	not required
Type of remote signalling contact	changeover contact

Accessories for DEHNguard SE CI with Integrated Backup Fuse

Varistor-based Protection Module for DEHNguard SE CI (WE)

Type	DG MOD E CI 440	DG MOD E CI WE 440
Part No.	**952 926**	**952 927**
Max. continuous operating voltage (d.c.) (U_C)	440 V	440 V
Rated varistor voltage (a.c.) (U_{mov})	440 V	750 V

DEHNguard modular

Modular multipole surge arrester with a functional design. For protecting low-voltage consumer's installations against surges.

DEHNguard MP TNS ...

Modular surge arrester for use in TN-S systems.

Type DG ...	MP TNS 275
Part No.	942 400 NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 + type 3 / class II + class III
Max. continuous operating voltage (a.c.) (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE

DEHNguard MP TNS ... FM

Modular surge arrester for use in TN-S systems; with floating remote signalling contact.

Type DG ...	MP TNS 275 FM
Part No.	942 405 NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 + type 3 / class II + class III
Max. continuous operating voltage (a.c.) (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact

DEHNguard MP TT ...

Modular surge arrester for use in TT and TN-S systems (3+1 configuration).

Type DG ...	MP TT 275
Part No.	942 310 NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 + type 3 / class II + class III
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE

DEHNguard MP TT ... FM

Modular surge arrester for use in TT and TN-S systems (3+1 configuration); with floating remote signalling contact.

Type DG ...	MP TT 275 FM
Part No.	942 315 NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 + type 3 / class II + class III
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact

DEHNguard M TNC ...

Modular surge arrester for use in TN-C systems (3+0 configuration).

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG

Type DG ...	M TNC 150	M TNC 275
Part No.	952 313	952 300
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level (U_P)	≤ 0.7 kV	≤ 1.5 kV
Approvals	KEMA, UL	KEMA, VDE, UL

Type DG ...	M TNC 385	M TNC 440
Part No.	952 314	952 303
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)	440 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Voltage protection level (U_P)	≤ 1.75 kV	≤ 2 kV
Approvals	KEMA, UL	KEMA, UL

DEHNguard M TNC ... FM

Modular surge arrester for use in TN-C systems (3+0 configuration); with floating changeover contact.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG
Type of remote signalling contact	changeover contact

Type DG ...	M TNC 150 FM	M TNC 275 FM
Part No.	952 318	952 305
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level (U_P)	≤ 0.7 kV	≤ 1.5 kV
Approvals	KEMA, UL	KEMA, VDE, UL

Type DG ...	M TNC 385 FM	M TNC 440 FM
Part No.	952 319	952 308
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)	440 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Voltage protection level (U_P)	≤ 1.75 kV	≤ 2 kV
Approvals	KEMA, UL	KEMA, UL

DEHNguard M TNS ...

Modular surge arrester for use in TN-S systems (4+0 configuration).

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG

Type DG ...	M TNS 150	M TNS 275
Part No.	952 403	952 400
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 0.7 / ≤ 0.7 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, UL	KEMA, VDE, UL

Type DG ...	M TNS 385
Part No.	952 404
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.75 / ≤ 1.75 kV
Approvals	KEMA, UL

DEHNguard M TNS ... FM

Modular surge arrester for use in TN-S systems (4+0 configuration); with floating changeover contact.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG
Type of remote signalling contact	changeover contact

Type DG ...	M TNS 150 FM	M TNS 275 FM
Part No.	952 408	952 405
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 0.7 / ≤ 0.7 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, UL	KEMA, VDE, UL

Type DG ...	M TNS 385 FM
Part No.	952 409
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.75 / ≤ 1.75 kV
Approvals	KEMA, UL

DEHNguard M H TT ... (FM)

Modular surge arrester with a high total discharge capacity in the N-PE path for TT and TN-S systems (3+1 configuration); meets increased safety requirements by higher discharge capability; with floating remote signalling contact.

Type DG ...	M H TT 275	M H TT 275 FM
Part No.	952 381	952 385
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	20 kA	20 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	80 kA	80 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	40 kA	40 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	120 kA	120 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA	KEMA
Type of remote signalling contact	–	changeover contact

DEHNguard M TT ...

Modular surge arrester for use in TT and TN-S systems (3+1 configuration).

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG

Type DG ...	M TT 150	M TT 275
Part No.	952 323	952 310
Max. continuous operating voltage (a.c.) [L-N] (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 0.7 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	–	KEMA, VDE, UL

Type DG ...	M TT 320	M TT 385
Part No.	952 320	952 311
Max. continuous operating voltage (a.c.) [L-N] (U_C)	320 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.75 / ≤ 1.5 kV
Approvals	KEMA	KEMA, UL

DEHNguard M TT ... FM

Modular surge arrester for use in TT and TN-S systems (3+1 configuration); with floating remote signalling contact.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG
Type of remote signalling contact	changeover contact

Type DG ...	M TT 150 FM	M TT 275 FM
Part No.	952 328	952 315
Max. continuous operating voltage (a.c.) [L-N] (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 0.7 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	UL	KEMA, VDE, UL

Type DG ...	M TT 320 FM	M TT 385 FM
Part No.	952 325	952 316
Max. continuous operating voltage (a.c.) [L-N] (U_C)	320 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.75 / ≤ 1.5 kV
Approvals	KEMA	KEMA, UL

Type DG ...	M TT 385/305 FM
Part No.	952 332 NEW
Max. continuous operating voltage (a.c.) [L-N] (U_C)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.75 / ≤ 1.5 kV
Approvals	KEMA, UL

DEHNguard M TN ...

Modular surge arrester for use in single-phase TN systems (2+0 configuration).

Type DG ...	M TN 150	M TN 275
Part No.	952 201	952 200
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 0.7 / ≤ 0.7 kV	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA, UL	KEMA, VDE, UL

DEHNguard M TN ... FM

Modular surge arrester for use in single-phase TN systems (2+0 configuration); with floating remote signalling contact.

Type DG ...	M TN 150 FM	M TN 275 FM
Part No.	952 206	952 205
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 0.7 / ≤ 0.7 kV	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA, UL	KEMA, VDE, UL
Type of remote signalling contact	changeover contact	changeover contact

DEHNguard M H TT 2P ... (FM)

Modular surge arrester with a high total discharge capacity in the N-PE path for TT and TN systems (1+1 configuration); meets increased safety requirements by higher discharge capability; with floating remote signalling contact.

Type DG ...	M H TT 2P 275	M H TT 2P 275 FM
Part No.	952 181	952 185
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	20 kA	20 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	80 kA	80 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	40 kA	40 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	120 kA	120 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA	KEMA
Type of remote signalling contact	–	changeover contact

DEHNguard M TT 2P ...

Modular surge arrester for use in single-phase TT and TN systems (1+1 configuration).

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG

Type DG ...	M TT 2P 275	M TT 2P 320
Part No.	952 110	952 130
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	320 V (50 / 60 Hz)
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE, UL	KEMA

Type DG ...	M TT 2P 385
Part No.	952 111
Max. continuous operating voltage (a.c.) [L-N] (U_C)	385 V (50 / 60 Hz)
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.75 / ≤ 1.5 kV
Approvals	KEMA

DEHNguard M TT 2P ... FM

Modular surge arrester for use in single-phase TT and TN systems (1+1 configuration); with floating remote signalling contact.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG
Type of remote signalling contact	changeover contact

Type DG ...	M TT 2P 275 FM	M TT 2P 320 FM
Part No.	952 115	952 135
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	320 V (50 / 60 Hz)
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE, UL	KEMA

Type DG ...	M TT 2P 385 FM
Part No.	952 116
Max. continuous operating voltage (a.c.) [L-N] (U_C)	385 V (50 / 60 Hz)
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.75 / ≤ 1.5 kV
Approvals	KEMA

Accessories for DEHNguard modular

N-PE Spark-Gap-Based Protection Module for DEHNguard M TT ...

N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard DG M TT ... surge arresters.

Type	DG MOD NPE
Part No.	952 050
Max. continuous operating voltage (a.c.) (U_C)	255 V

DEHNguard M WE ... (FM)

Modular surge arrester (3+0 configuration) with a rated varistor voltage U_{mov} = 750 V a.c.; FM version with floating remote signalling contact.

Type DG ...	M WE 600	M WE 600 FM
Part No.	952 302	952 307
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	600 V (50 / 60 Hz)	600 V (50 / 60 Hz)
Rated varistor voltage (U_{mov})	750 V	750 V
Nominal discharge current (8/20 µs) (I_n)	15 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 3 kV	≤ 3 kV
Max. mains-side overcurrent protection	100 A gG	100 A gG
Approvals	KEMA, UL	KEMA, UL
Type of remote signalling contact	–	changeover contact

Accessories for DEHNguard modular

Varistor-Based Protection Module

Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters.

Type	DG MOD 150	DG MOD 275
Part No.	952 012	952 010
Max. continuous operating voltage (a.c.) (U_C)	150 V	275 V

Type	DG MOD 320	DG MOD 385
Part No.	952 013	952 014
Max. continuous operating voltage (a.c.) (U_C)	320 V	385 V

Type	DG MOD 440
Part No.	952 015
Max. continuous operating voltage (a.c.) (U_C)	440 V

Varistor-Based Protection Module for DEHNguard M (S) WE

Varistor-based protection module for DEHNguard M WE ... and DEHNguard S WE ... surge arresters with a rated varistor voltage U_{mov} = 750 V a.c.

Type	DG MOD 750
Part No.	952 017
Max. continuous operating voltage (a.c.) (U_C)	600 V

N-PE Spark-Gap-Based Protection Module for DEHNguard M H TT ...

N-PE spark-gap-based protection module with a high discharge capacity for two-pole and four-pole DEHNguard DG M H TT ... surge arresters.

Type	DG MOD H NPE
Part No.	952 081
Max. continuous operating a.c. voltage (U_C)	255 V

DEHNguard 5 kA

Multipole surge arrester with a space-saving design.
For protecting low voltage consumer's installations against surges.
For installation in conformity with the lightning protection zone concept at the boundaries from 0_B – 1 and higher.
Type 2 SPD according to EN 61643-11

DEHNguard TT 2P 5 275

Compact surge arrester for single-phase TT and TN systems (1+1 circuit)

Type DG TT ...	2P 5 275
Part No.	900 450
SPD according to EN 61643-11	type 2
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) [N-PE] (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	15 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	MCB C 63 A

DEHNguard TT 5 275

Compact surge arrester for TT and TN-S systems (3+1 circuit)

Type DG TT ...	5 275
Part No.	900 455
SPD according to EN 61643-11	type 2
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) [N-PE] (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	15 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	MCB C 63 A

DEHNguard TT 2P 5 275 NL

Compact surge arrester for single-phase TT and TN systems (1+1 circuit)

Type DG TT ...	2P 5 275 NL
Part No.	900 458
SPD according to EN 61643-11	type 2
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) [N-PE] (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	15 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	MCB C 63 A

DEHNguard TT 5 275 NL

Compact surge arrester for TT and TN-S systems (3+1 circuit)

Type DG TT ...	5 275 NL
Part No.	900 459
SPD according to EN 61643-11	type 2
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) [N-PE] (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	15 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	MCB C 63 A

DEHNguard S

Modular single-pole surge arrester with a functional design.
For protecting low-voltage consumer´s installations against surges.

DEHNguard S ...

Pluggable single-pole surge arrester consisting of a base part and a plug-in protection module.

General technical data:		
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	

Type DG S ...	48	75
Part No.	952 078	952 071
Max. continuous operating voltage (a.c.) (U_C)	48 V (50 / 60 Hz)	75 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	7.5 kA	10 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	40 kA
Voltage protection level (U_P)	≤ 0.33 kV	≤ 0.4 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	–	KEMA, VDE, UL, CSA

Type DG S ...	150	275
Part No.	952 072	952 070
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 0.7 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL,CSA

Type DG S ...	320	385
Part No.	952 073	952 074
Max. continuous operating voltage (a.c.) (U_C)	320 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.75 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL, CSA

Type DG S ...	440	600
Part No.	952 075	952 076
Max. continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)	600 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	30 kA
Voltage protection level (U_P)	≤ 2 kV	≤ 2.5 kV
Max. mains-side overcurrent protection	125 A gG	100 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL, CSA

DEHNguard S ... FM

Pluggable single-pole surge arrester consisting of a base part and a plug-in protection module; with floating remote signalling contact.

General technical data:		
SPD according to EN 61643-11 / IEC 61643-11		type 2 / class II
Type of remote signalling contact		changeover contact

Type DG S ...	48 FM	75 FM
Part No.	952 098	952 091
Max. continuous operating voltage (a.c.) (U_C)	48 V (50 / 60 Hz)	75 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	7.5 kA	10 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	40 kA
Voltage protection level (U_P)	≤ 0.33 kV	≤ 0.4 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	–	KEMA, VDE, UL, CSA
Stock No.	–	–

Type DG S ...	150 FM	275 FM
Part No.	952 092	952 090
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 0.7 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL, CSA
Stock No.	–	–

Type DG S ...	320 FM	385 FM
Part No.	952 093	952 094
Max. continuous operating voltage (a.c.) (U_C)	320 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.75 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL, CSA
Stock No.	–	5920-12-384-8848

Type DG S ...	440 FM	600 FM
Part No.	952 095	952 096
Max. continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)	600 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	30 kA
Voltage protection level (U_P)	≤ 2 kV	≤ 2.5 kV
Max. mains-side overcurrent protection	125 A gG	100 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL, CSA
Stock No.		

DEHNguard S WE 600 (FM)

Pluggable single-pole surge arrester with a rated varistor voltage U_{mov} = 750 V a.c., consisting of base part and a plug-in protection module; FM version with floating remote signalling contact.

Type DG S ...	WE 600	WE 600 FM
Part No.	952 077	952 097
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	600 V (50 / 60 Hz)	600 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 3 kV	≤ 3 kV
Max. mains-side overcurrent protection	100 A gG	100 A gG
Approvals	KEMA, UL, CSA	KEMA, UL, CSA
Type of remote signalling contact	–	changeover contact

Accessories for DEHNguard S

Varistor-Based Protection Module

Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters.

Type	DG MOD 48	DG MOD 75
Part No.	952 018	952 011
Max. continuous operating voltage (a.c.) (U_C)	48 V	75 V

Type	DG MOD 150	DG MOD 275
Part No.	952 012	952 010
Max. continuous operating voltage (a.c.) (U_C)	150 V	275 V

Type	DG MOD 320	DG MOD 385
Part No.	952 013	952 014
Max. continuous operating voltage (a.c.) (U_C)	320 V	385 V

Type	DG MOD 440	DG MOD 600
Part No.	952 015	952 016
Max. continuous operating voltage (a.c.) (U_C)	440 V	600 V

Varistor-Based Protection Module for DEHNguard M (S) WE

Varistor-based protection module for DEHNguard M WE ... and DEHNguard S WE ... surge arresters with a rated varistor voltage U_{mov} = 750 V a.c.

Type	DG MOD 750
Part No.	952 017
Max. continuous operating voltage (a.c.) (U_C)	600 V

DEHNguard S ... VA

Modular single-pole surge arrester with leakage-current-free series connection of a varistor and a spark gap. For protecting low-voltage consumer´s installations against surges.

DEHNguard S VA

Modular single-pole surge arrester with a varistor connected in series with a spark gap in the pluggable protection module.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	10 kA
Max. discharge current (8/20 µs) (I_{max})	20 kA
Max. mains-side overcurrent protection	100 A gG

Type DG S ...	75 VA	275 VA
Part No.	952 080	952 082
Max. continuous operating voltage (a.c.) (U_C)	75 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Voltage protection level (U_P)	≤ 1.1 kV	≤ 1.5 kV

Type DG S ...	385 VA
Part No.	952 084
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)
Voltage protection level (U_P)	≤ 1.75 kV

DEHNguard S VA FM

Modular single-pole surge arrester with a varistor connected in series with a spark gap in the pluggable protection module; with floating remote signalling contact.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	10 kA
Max. discharge current (8/20 µs) (I_{max})	20 kA
Max. mains-side overcurrent protection	100 A gG

Type DG S ...	75 VA FM	275 VA FM
Part No.	952 085	952 087
Max. continuous operating voltage (a.c.) (U_C)	75 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Voltage protection level (U_P)	≤ 1.1 kV	≤ 1.5 kV

Type DG S ...	385 VA FM
Part No.	952 089
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)
Voltage protection level (U_P)	≤ 1.75 kV

Accessories for DEHNguard S ... VA

Varistor-Based Protection Module for DEHNguard S ... VA

Protection module for DEHNguard S ... VA arresters comprising a varistor connected in series with a spark gap.

Type	DG MOD 75 VA	DG MOD 275 VA
Part No.	952 025	952 027
Max. continuous operating voltage (a.c.) (U_C)	75 V	275 V

Type	DG MOD 385 VA
Part No.	952 029
Max. continuous operating voltage (a.c.) (U_C)	385 V

DEHNguard SE H ... FM

Single-pole surge arrester with integrated "Lifetime Indication" early warning system.
For protecting low-voltage consumer's installations against surges.

DEHNguard SE H 1000 FM

Pluggable single-pole surge arrester comprising a base part and a plug-in protection module; with floating remote signalling contact.

Type DG SE H 1000 ...	FM
Part No.	952 938
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	1000 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level (U_P)	≤ 4.5 kV
Max. mains-side overcurrent protection	100 A gG
Operating state / fault indication	green / red
Type of remote signalling contact	changeover contact

DEHNguard SE H 1000 VA FM

Pluggable single-pole surge arrester comprising a base part and a plug-in protection module; with floating remote signalling contact. Series connection of a varistor and a gas discharge tube.

Type DG SE H 1000 ...	VA FM
Part No.	952 940
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	1000 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level (U_P)	≤ 5 kV
Max. mains-side overcurrent protection	100 A gG
Operating state / fault indication	green / red
Approvals	UL
Type of remote signalling contact	changeover contact
Supplementary data:	
- Sparkover voltage gas discharge tube (U_{agmin})	2200 V

Accessories for DEHNguard SE H ... FM

Varistor-Based Protection Module for DEHNguard SE H ... FM

Type	DG MOD E H 1000	DG MOD E H 1000 VA
Part No.	952 908	952 918
Max. continuous operating voltage (d.c.) (U_C)	1000 V	1000 V

Earthing Clip for 1.5-module Enclosures, single-phase, two-pole

Earthing clip for connecting the earth terminal of e.g. two SPDs with 1.5-module enclosure to earth, with terminal.

Type	EB 1 2 1.5
Part No.	900 460
Dimensions	34 x 60 x 28 mm
Terminal	up to 25 mm²

Accessories for DEHNguard SE H ... FM

Earthing Clip for 1.5-module Enclosures, single-phase, three-pole

Earthing clip for connecting the earth terminal of e.g. three SPDs with 1.5-module enclosure to earth, with terminal.

Type	EB 1 3 1.5
Part No.	900 418
Dimensions	34 x 85 x 28 mm
Terminal	up to 25 mm²

Earthing Clip for 1.5-module Enclosures, single-phase, four-pole

Earthing clip for connecting the earth terminal of e.g. four SPDs with 1.5-module enclosure to earth, with terminal.

Type	EB 1 4 1.5
Part No.	900 429
Dimensions	34 x 112 x 28 mm
Terminal	up to 25 mm²

DEHNguard Modular for North America

The pre-assembled, modular DEHNguard SU/MU devices with UL 1449 (VZCA 2 & 8) approval are the perfect choice for protecting your electrical systems and devices. The installation of the DEHNguard SU/MU does not require any additional overcurrent protection and has a short-circuit withstand capability (SCCR) of 200 kA.

DEHNguard MU 3PY ... 3W+G

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Wye electrical systems

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	MU 3PY 208 3W+G	MU 3PY 480 3W+G
Part No.	908 300	908 314
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	180 V a.c. / 360 V a.c.	385 V a.c. / 770 V a.c.
Voltage protection rating [L-G] / [L-L] (VPR)	600 V_{pk} / 1200 V_{pk}	1200 V_{pk} / 2500 V_{pk}

Type DG ...	MU 3PY 600 3W+G
Part No.	908 301
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	510 V a.c. / 1020 V a.c.
Voltage protection rating [L-G] / [L-L] (VPR)	1500 V_{pk} / 3000 V_{pk}

DEHNguard MU 3PY ... 3W+G R

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Wye electrical systems; has floating Form C (SPDT) remote status contacts

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	MU 3PY 208 3W+G R	MU 3PY 480 3W+G R
Part No.	908 305	908 319
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	180 V a.c. / 360 V a.c.	385 V a.c. / 770 V a.c.
Voltage protection rating [L-G] / [L-L] (VPR)	600 V_{pk} / 1200 V_{pk}	1200 V_{pk} / 2500 V_{pk}

Type DG ...	MU 3PY 600 3W+G R
Part No.	908 306
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	510 V a.c. / 1020 V a.c.
Voltage protection rating [L-G] / [L-L] (VPR)	1500 V_{pk} / 3000 V_{pk}

DEHNguard MU 3PD ... 3W+G

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Delta electrical systems

Type DG ...	MU 3PD 480 3W+G	MU 3PD 240 3W+G
Part No.	908 350	908 351
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	550 V a.c. / 1100 V a.c.	275 V a.c. / 550 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	1800 V_{pk} / 3000 V_{pk}	800 V_{pk} / 1500 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU 3PD ... 3W+G R

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Delta electrical systems; has floating Form C (SPDT) remote status contacts

Type DG ...	MU 3PD 480 3W+G R	MU 3PD 240 3W+G R
Part No.	**908 355**	**908 356**
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	550 V a.c. / 1100 V a.c.	275 V a.c. / 550 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	1800 V_{pk} / 3000 V_{pk}	800 V_{pk} / 1500 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)	Floating (dry), Form C (SPDT)
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU 3PY ... 4W+G

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Wye Systems

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	MU 3PY 208 4W+G	MU 3PY 480 4W+G
Part No.	**908 340**	**908 341**
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	180 V a.c. / 360 V a.c. / 360 V a.c. / 180 V a.c.	385 V a.c. / 565 V a.c. / 770 V a.c./ 180 V a.c.
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	600 V_{pk} / 1200 V_{pk} / 1200 V_{pk} / 600 V_{pk}	1200 V_{pk} / 1800 V_{pk} / 2500 V_{pk} / 600 V_{pk}

Type DG ...	MU 3PY 600 4W+G
Part No.	**908 342**
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	510 V a.c. / 690 V a.c. / 1020 V a.c. / 180 V a.c.
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	1500 V_{pk} / 2000 V_{pk} / 3000 V_{pk} / 600 V_{pk}

DEHNguard MU 3PY ... 4W+ G R

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Wye Systems; has floating Form C (SPDT) remote status contacts

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	MU 3PY 208 4W+G R	MU 3PY 480 4W+G R
Part No.	**908 345**	**908 346**
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	180 V a.c. / 360 V a.c. / 360 V a.c. / 180 V a.c.	385 V a.c. / 565 V a.c. / 770 V a.c. / 180 V a.c.
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	600 V_{pk} / 1200 V_{pk} / 1200 V_{pk} / 600 V_{pk}	1200 V_{pk} / 1800 V_{pk} / 2500 V_{pk} / 600 V_{pk}

Type DG ...	MU 3PY 600 4W+G R
Part No.	**908 347**
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	510V a.c. / 690 V a.c. / 1020 V a.c. / 180 V a.c.
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	1500 V_{pk} / 2000$_{pk}$ V / 3000$_{pk}$ V / 600 V_{pk}

DEHNguard MU 3PH ... 4W+G

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase High-leg Delta Systems

Type DG ...	MU 3PH 240 4W+G	MU 3PH 480 4W+G
Part No.	**908 343**	**908 344**
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-N] / [H-N] / [L-G] / [H-G] / [L-L] / [L-H] / [N-G]	230 V a.c. / 275 V a.c. / 410 V a.c. / 455 V a.c. / 460 V a.c. / 505 V a.c. / 180 V a.c.	385V a.c. / 510 V a.c. / 565 V a.c. / 690 V a.c. / 770 V a.c. / 895 V a.c. / 180 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-N] / [H-N] / [L-G] / [H-G] / [L-L] / [L-H] / [N-G] (VPR)	700 V_{pk} / 800 V_{pk} / 1200 V_{pk} / 1500 V_{pk} / 1500 V_{pk} / 1500 V_{pk} / 600 V_{pk}	1200 V_{pk} / 1500 V_{pk} / 1800 V_{pk} / 2000 V_{pk} / 2500 V_{pk} / 2500 V_{pk} / 600 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU 3PH ... 4W+G R

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase High-leg Delta Systems; has floating Form C (SPDT) remote status contacts

Type DG ...	MU 3PH 240 4W+G R	MU 3PH 480 4W+G R
Part No.	**908 348**	**908 349**
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-N] / [H-N] / [L-G] / [H-G] / [L-L] / [L-H] / [N-G]	230 V a.c. / 275 V a.c. / 410 V a.c. / 455 V a.c. / 460 V a.c. / 505 V a.c. / 180V a.c.	385 V a.c. / 510 V a.c. / 565 V a.c. / 690 V a.c. / 770 V a.c. / 895 V a.c. / 180 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-N] / [H-N] / [L-G] / [H-G] / [L-L] / [L-H] / [N-G] (VPR)	700 V_{pk} / 800 V_{pk} / 1200 V_{pk} / 1500 V_{pk} / 1500 V_{pk} / 1500 V_{pk} / 600 V_{pk}	1200 V_{pk} / 1500 V_{pk} / 1800 V_{pk} / 2000 V_{pk} / 2500 V_{pk} / 2500 V_{pk} / 600 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)	Floating (dry), Form C (SPDT)
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU SP ... 3W+G

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in Split Phase systems

Type DG ...	MU SP 240 3W+G	MU SP 480 3W+G
Part No.	**908 190**	**908 192**
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	230 V a.c. / 460 V a.c.	385 V a.c. / 770 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	700 V_{pk} / 1500 V_{pk}	1200 V_{pk} / 2500 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU SP ... 3W+G R

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in Split Phase systems; has floating Form C (SPDT) remote status contacts

Type DG ...	MU SP 240 3W+G R	MU SP 480 3W+G R
Part No.	**908 195**	**908 197**
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	230 V a.c. / 460 V a.c.	385 V a.c. / 770 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	700 V_{pk} / 1500 V_{pk}	1200 V_{pk} / 2500 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)	Floating (dry), Form C (SPDT)
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU SPN ... 3W+G

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in Split Phase systems

Type DG ...	MU SPN 240 3W+G
Part No.	**908 214**
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	180 V a.c. / 360 V a.c. / 360 V a.c. / 180 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	600 V_{pk} / 1200 V_{pk} / 1200 V_{pk} / 600 V_{pk}
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

DEHNguard MU SPN ... 3W+G R

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Split Phase systems; has floating Form C (SPDT) remote status contacts

Type DG ...	MU SPN 240 3W+G R
Part No.	**908 219**
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	180 V a.c. / 360 V a.c. / 360 V a.c. / 180 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	600 V_{pk} / 1200 V_{pk} / 1200 V_{pk} / 600 V_{pk}
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

DEHNguard MU CGD ... 3W+G

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in Corner Grounded Delta systems

Type DG ...	MU CGD 240 3W+G	MU CGD 480 3W+G
Part No.	**908 203**	**908 204**
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	275 V a.c. / 550 V a.c.	550 V a.c. / 1100 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	800 V_{pk} / 1500 V_{pk}	1800 V_{pk} / 3000 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU CGD ... 3W+G R

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in Corner Grounded Delta systems; has floating Form C (SPDT) remote status contacts

Type DG ...	MU CGD 240 3W+G R	MU CGD 480 3W+G R
Part No.	**908 208**	**908 209**
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	275 V a.c. / 550 V a.c.	550 V a.c. / 1100 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	800 V_{pk} / 1500 V_{pk}	1800 V / 3000 V
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)	Floating (dry), Form C (SPDT)
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard SU 1P ...

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection module for application in Single Phase electrical systems

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	SU 1P 120	SU 1P 240
Part No.	**908 070**	**908 074**
Max. continuous operating voltage AC (MCOV)	230 Vac	385 Vac
Voltage protection rating (VPR)	700 V_{pk}	1200 V_{pk}

Type DG ...	SU 1P 347
Part No.	**908 076**
Max. continuous operating voltage AC (MCOV)	510 Vac
Voltage protection rating (VPR)	1500 V_{pk}

DEHNguard SU 1P ... R

DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection module for application in Single Phase electrical systems; has floating Form C (SPDT) remote status contacts

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	SU 1P 120 R	SU 1P 240 R
Part No.	**908 090**	**908 094**
Max. continuous operating voltage AC (MCOV)	230 Vac	385 Vac
Voltage protection rating (VPR)	700 V_{pk}	1200 V_{pk}

Type DG ...	SU 1P 347 R
Part No.	**908 096**
Max. continuous operating voltage AC (MCOV)	510 Vac
Voltage protection rating (VPR)	1500 V_{pk}

Protection Module for DEHNguard M UL series

The DEHNguard SU/MU products are modular so that in the rare event that a module is damaged, it is easy to replace without rewiring the SPD. The modules and the terminal block base are keyed to prevent an errors during installation and are shock & vibration tolerant tested to the EN 60068 international standard.

Varistor-Based Protection Module

Varistor-based protection module for DEHNguard MU ... and DEHNguard SU ... surge arresters.

General technical data:	
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (I_{max})	50 kA

Type DG PLU ...	180	230
Part No.	908 011	908 012
Max. continuous operating voltage AC (MCOV)	180 Vac	230 Vac

Type DG PLU ...	275	385
Part No.	908 010	908 014
Max. continuous operating voltage AC (MCOV)	275 Vac	385 Vac

Type DG PLU ...	510	550
Part No.	908 013	908 015
Max. continuous operating voltage AC (MCOV)	510 Vac	550 Vac

SPD+POP+MCB / POP+MCB / POP

Compact surge arrester for transient and power frequency overvoltages with integrated miniature circuit breaker
For installation in conformity with the lightning protection zone concept at the boundaries from 0_B – 1 and higher
Type 2 SPD according to EN 61643-11
Comprehensive protection against transients and power frequency overvoltages (SPD+POP 2/4 255 C..)

- Fulfils the requirements of EN 50550 "Power frequency overvoltage protective device"
- Prewired complete unit, individual devices do not have to be additionally wired
- Easy installation and retrofitting thanks to low space requirements
- High reliability due to "Thermo Dynamic Control" monitoring system integrated in the SPD
- Application-optimised discharge capacity of5 kA (I_n) / 15 kA (I_{max}) (8/20 µs) per pole
- Energy coordination with other arresters of the Red/Line series
- Operating state / fault indication by green / red indicator flag in the inspection window of the SPD

Two-pole SPD+POP+MCB

General technical data:	
Number of poles	1P + N
Nominal a.c. voltage (U_N)	230 V

Type	SPD+POP 2 255 C25	SPD+POP 2 255 C32
Part No.	900 780	900 781
SPD		
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA	5 kA
MCB		
Tripping characteristic	C	C
Nominal alternating current (I_n)	25 A	32 A

Type	SPD+POP 2 255 C40
Part No.	900 782
SPD	
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA
MCB	
Tripping characteristic	C
Nominal alternating current (I_n)	40 A

Four-pole SPD+POP+MCB

General technical data:	
Number of poles	3P + N
Nominal a.c. voltage (U_N)	230 / 400 V

Type	SPD+POP 4 255 C25	SPD+POP 4 255 C32
Part No.	900 785	900 786
SPD		
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA	5 kA
MCB		
Tripping characteristic	C	C
Nominal alternating current (I_n)	25 A	32 A

Type	SPD+POP 4 255 C40	SPD+POP 4 255 C63
Part No.	900 787	900 788
SPD		
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA	5 kA
MCB		
Tripping characteristic	C	C
Nominal alternating current (I_n)	40 A	63 A

Two-pole POP+MCB

General technical data:		
Number of poles		1P + N
Nominal a.c. voltage (U_N)		230 V

Type	POP 2 255 C25	POP 2 255 C32
Part No.	900 760	900 761
MCB		
Tripping characteristic	C	C
Nominal alternating current (I_n)	25 A	32 A

Type	POP 2 255 C40
Part No.	900 762
MCB	
Tripping characteristic	C
Nominal alternating current (I_n)	40 A

Four-pole POP+MCB

General technical data:		
Number of poles		3P + N
Nominal a.c. voltage (U_N)		230 / 400 V

Type	POP 4 255 C25	POP 4 255 C32
Part No.	900 765	900 766
MCB		
Tripping characteristic	C	C
Nominal alternating current (I_n)	25 A	32 A

Type	POP 4 255 C40	POP 4 255 C63
Part No.	900 767	900 768
MCB		
Tripping characteristic	C	C
Nominal alternating current (I_n)	40 A	63 A

DEHNcord

Single-pole, two-pole or three-pole surge protective device with monitoring and disconnection device.
For protecting low-voltage consumer installations against surges.

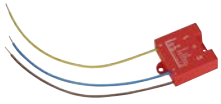
DEHNcord 3P TT 275 FM

Compact three-phase arrester for TT and TN-S systems.

Type	DCOR 3P TT 275 FM
Part No.	900 439
SPD according to EN 61643-11 / IEC 61643-11	type 2 + type 3 / class II + class III
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	350 V
Nominal discharge current (8/20 µs) [L-N] (I_n)	10 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	20 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	10 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Approvals	KEMA

DEHNcord L 2P

Two-pole surge arrester for all installation systems (1+1 configuration) and luminaires of protection class I; compact design.



Type	DCOR L 2P 275	DCOR L 2P 320
Part No.	900 430	900 432
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	320 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV	≤ 1.75 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	25 A gG	25 A gG
Approvals	KEMA	KEMA

DEHNcord L 1P

Single-pole surge arrester for luminaires of protection class II; compact design.

Type	DCOR L 1P 275	DCOR L 1P 320
Part No.	900 431	900 433
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	320 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV	≤ 1.75 kV
Max. mains-side overcurrent protection	25 A gG	25 A gG
Approvals	KEMA	KEMA

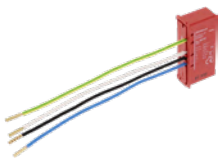
DEHNcord L 2P SN1864

Surge arrester for luminaires of protection class II; compact design. With disconnection in the event of a fault.

Type	DCOR L 2P SN1864
Part No.	999 906
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A

DEHNcord L 2P SN1860

Surge arrester for all installation systems; compact design. With disconnection of the load circuit in the event of a fault.



Type	DCOR L 2P SN1860
Part No.	999 937
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A

DEHNcord L 2P 275 SO LTG

Surge arrester for all installation systems; compact design. With disconnection of the load circuit in the event of a fault.

Type	DCOR L 2P 275 SO LTG
Part No.	**900 446**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A
Approvals	KEMA

DEHNcord L 3P 275 SO LTG

Three-pole surge arrester for all installation systems; compact design. With disconnection of the load circuit in the event of a fault and protection of the control phase.

Type	DCOR L 3P 275 SO LTG
Part No.	**900 445**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A
Approvals	KEMA

SK EK480 G2S-2d LM DCOR

The EK480 fuse box is a high-quality product from Langmatz which stands out for its excellent workmanship and tried and tested features. The EK480 series meets all mechanical and electrical requirements and standards. This ensures the effective protection of luminaires with high-quality electronics against surges resulting from switching operations or nearby lightning strikes.

Type SK EK480 ...	G2S-2d LM DCOR
Part No.	**900 443**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating a.c. voltage [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A
For masts with an inside diameter from	89 mm
Dimensions	276 x 81 x 70 mm
Clamping technology	incoming: sliding clamp technology / outgoing: spring clamp technology
Max. cross-section of connectable cable	1 - 3 cables (4 or 5 x 16 mm²)
Outgoing terminals	max. 2.5 mm²

DEHNcord L 2P 275 SO LT

Two-pole surge arrester for TNC systems; compact design. With disconnection of the load circuit in the event of a fault and protection of the control phase.

Type	DCOR L 2P 275 SO LT
Part No.	**900 435**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-PEN] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-PEN] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A
Approvals	KEMA

DEHNcord L 3P 275 SO IP

Three-pole surge arrester for all installation systems; compact design. IP 65 degree of protection. With disconnection of the load circuit in the event of a fault and protection of the control phase.

Type	DCOR L 3P 275 SO IP
Part No.	**900 447**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A

DEHNcord L 2P 275 SO IP

Two-pole arrester for all installation systems; compact design. IP 65 degree of protection. With disconnection of the load circuit in the event of a fault.

Type	DCOR L 2P 275 SO IP
Part No.	**900 448**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A

DEHNcord R 3P

Surge arrester for electric Venetian blinds; compact design.

Type	DCOR R 3P 275
Part No.	**900 449**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	2.5 kA
Max. discharge current (8/20 µs) (I_{max})	5 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Connector	Hirschmann STAK 3 / STAS 3

DEHNgap C S

N-PE surge arrester with a functional design. For protecting low-voltage consumer´s installations against surges particularly in TT systems.

DEHNgap C S (FM)

N-PE surge arrester; FM version with floating remote signalling contact.

Type DGP C ...	S	S FM
Part No.	**952 030**	**952 035**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Approvals	KEMA, VDE, UL	KEMA, VDE, UL
Type of remote signalling contact	–	changeover contact

Accessories for DEHNgap C S

N-PE Spark-Gap-Based Protection Module for DEHNgap C S

N-PE spark-gap-based protection module for single-pole N-PE surge arresters of type DEHNgap DGP C S ... .

Type	DGP C MOD
Part No.	**952 060**
Max. continuous operating voltage (a.c.) (U_C)	255 V

DEHNguard ME/SE DC ... (FM)

Modular combined arrester for protecting d.c. consumer installations.

DEHNguard ME DC ... FM

Modular combined arrester for DC applications; with floating remote signalling contact.

Type DG ...	ME DC Y 950 FM
Part No.	**972 146**
SPD analogous to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (d.c.) (U_C)	950 V
Lightning impulse current (10/350 µs) (I_{imp})	5 kA
Nominal discharge current (8/20 µs) (I_n)	12.5 kA
Voltage protection level [DC+ -> DC-] (U_P)	≤ 4 kV
Voltage protection level [(DC+/DC-) --> PE] (U_P)	≤ 3.2 kV
Max. short circuit withstand capability (I_{SCCR})	500 A / 170 ms
Approvals	UL
Type of remote signalling contact	changeover contact

DEHNguard SE DC ...

Modular single-pole surge arrester for d.c. applications.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	12.5 kA
Short-circuit withstand capability for max. mains-side overcurrent protection (d.c.) (I_{SCCR})	25 kA

Type DG ...	SE DC 60	SE DC 242
Part No.	**972 110**	**972 120**
Max. continuous operating voltage (d.c.) (U_C)	60 V	242 V
Voltage protection level (U_P)	≤ 0.5 kV	≤ 1.25 kV
Short-circuit withstand capability without backup fuse (d.c.) (I_{SCCR})	300 A	300 A
Max. mains-side overcurrent protection	35 A gG	35 A gG

Type DG ...	SE DC 550	SE DC 900
Part No.	**972 130**	**972 140**
Max. continuous operating voltage (d.c.) (U_C)	550 V	900 V
Voltage protection level (U_P)	≤ 2.0 kV	≤ 3.0 kV
Short-circuit withstand capability without backup fuse (d.c.) (I_{SCCR})	200 A	100 A
Max. mains-side overcurrent protection	35 A gG	80 A gPV

DEHNguard SE DC ... FM

Modular single-pole surge arrester for d.c. applications; with floating remote signalling contact.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	12.5 kA
Short-circuit withstand capability for max. mains-side overcurrent protection (d.c.) (I_{SCCR})	25 kA
Type of remote signalling contact	changeover contact

Type DG ...	SE DC 60 FM	SE DC 242 FM
Part No.	**972 115**	**972 125**
Max. continuous operating voltage (d.c.) (U_C)	60 V	242 V
Voltage protection level (U_P)	≤ 0.5 kV	≤ 1.25 kV
Short-circuit withstand capability without backup fuse (d.c.) (I_{SCCR})	300 A	300 A
Max. mains-side overcurrent protection	35 A gG	35 A gG

Type DG ...	SE DC 550 FM	SE DC 900 FM
Part No.	**972 135**	**972 145**
Max. continuous operating voltage (d.c.) (U_C)	550 V	900 V
Voltage protection level (U_P)	≤ 2.0 kV	≤ 3.0 kV
Short-circuit withstand capability without backup fuse (d.c.) (I_{SCCR})	200 A	100 A
Max. mains-side overcurrent protection	35 A gG	80 A gPV

Accessories for DEHNguard ME/SE DC … (FM)

Varistor-Based Protection Module for DEHNguard ME DC

Type	DG MOD DC Y 500
Part No.	972 050
Max. continuous operating voltage (d.c.) (U_C)	950 V

Spark-Gap Based Protection Module for DEHNguard ME DC

Type	DGP MOD DC Y 500
Part No.	972 051
Max. continuous operating voltage DC (U_C)	950 V

Varistor-Based Protection Module for DEHNguard SE DC

Varistor-based protection module for DEHNguard SE DC

Type	DG MOD E DC 60	DG MOD E DC 242
Part No.	972 010	972 020
Max. continuous operating voltage (d.c.) (U_C)	60 V	242 V

Type	DG MOD E DC 550	DG MOD E DC 900
Part No.	972 030	972 040
Max. continuous operating voltage (d.c.) (U_C)	550 V	900 V

Earthing Clip for 1.5-module Enclosures, single-phase, two-pole

Earthing clip for connecting the earth terminal of e.g. two SPDs with 1.5-module enclosure to earth, with terminal.

Type	EB 1 2 1.5
Part No.	900 460
Dimensions	34 x 60 x 28 mm
Terminal	up to 25 mm²

DEHNguard PCB

Single-pole base for DEHNguard protection modules for easily integrating a type 2 arrester directly on the PCBs of devices to provide surge protection.

DEHNguard PCB PV SCI …

Single-pole base for DEHNguard modules to be mounted on the PCBs of devices.

General technical data:	
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)

Type DG PCB …	PV SCI 300	PV SCI 500
Part No.	952 653	952 651
Associated protection module	DG MOD PV SCI 300 (Part No. 952 053)	DG MOD PV SCI 500 (Part No. 952 051)
Max. continuous operating voltage (d.c.) (module)	300 V	500 V

Type DG PCB …	PV SCI 600
Part No.	952 654
Associated protection module	DG MOD PV SCI 600 (Part No. 952 054)
Max. continuous operating voltage (d.c.) (module)	600 V

DEHNguard PCB PV SCI … FM

Single-pole base for DEHNguard modules to be mounted on the PCBs of devices, with remote signalling contact for the monitoring system (floating changeover contact).

General technical data:	
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact

Type DG PCB …	PV SCI 300 FM	PV SCI 500 FM
Part No.	952 753	952 751
Associated protection module	DG MOD PV SCI 300 (Part No. 952 053)	DG MOD PV SCI 500 (Part No. 952 051)
Max. continuous operating voltage (d.c.) (module)	300 V	500 V

Type DG PCB …	PV SCI 600 FM
Part No.	952 754
Associated protection module	DG MOD PV SCI 600 (Part No. 952 054)
Max. continuous operating voltage (d.c.) (module)	600 V

DEHNguard PCB PV …

Single-pole base for DEHNguard modules to be mounted on the PCBs of devices.

General technical data:	
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)

Type DG PCB …	PV 300	PV 500
Part No.	952 643	952 641
Associated protection module	DG MOD PV 300 (Part No. 952 043)	DG MOD PV 500 (Part No. 952 041)
Max. continuous operating voltage (d.c.) (module)	300 V	500 V

Type DG PCB …	PV 600
Part No.	952 644
Associated protection module	DG MOD PV 600 (Part No. 952 044)
Max. continuous operating voltage (d.c.) (module)	600 V

DEHNguard PCB PV ... FM

Single-pole base for DEHNguard modules to be mounted on the PCBs of devices, with remote signalling contact for the monitoring system (floating changeover contact).

General technical data:	
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact

Type DG PCB ...	PV 300 FM	PV 500 FM
Part No.	952 743	952 741
Associated protection module	DG MOD PV 300 (Part No. 952 043)	DG MOD PV 500 (Part No. 952 041)
Max. continuous operating voltage (d.c.) (module)	300 V	500 V

Type DG PCB ...	PV 600 FM
Part No.	952 744
Associated protection module	DG MOD PV 600 (Part No. 952 044)
Max. continuous operating voltage (d.c.) (module)	600 V

DEHNguard PCB ...

Single-pole base for DEHNguard modules to be mounted on the PCBs of devices.

Type DG PCB ...	275	385
Part No.	952 610	952 614
Associated protection module	DG MOD 275 (Part No. 952 010)	DG MOD 385 (Part No. 952 014)
Max. continuous operating voltage (a.c.) (module)	275 V	385 V
For mounting on	directly soldered into PCB	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)	IP 20 (protection module plugged in)

DEHNguard PCB ... FM

Single-pole base for DEHNguard modules to be mounted on the PCBs of devices, with remote signalling contact for the monitoring system (floating changeover contact).

Type DG PCB ...	275 FM	385 FM
Part No.	952 710	952 714
Associated protection module	DG MOD 275 (Part No. 952 010)	DG MOD 385 (Part No. 952 014)
Max. continuous operating voltage (a.c.) (module)	275 V	385 V
For mounting on	directly soldered into PCB	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact	changeover contact

DEHNguard PCB NPE (FM)

Single-pole base for DEHNguard modules to be mounted on the PCBs of devices, with remote signalling contact for the monitoring system (floating changeover contact).

Type DG PCB ...	NPE	NPE FM
Part No.	952 650	952 750
Associated protection module	DG MOD NPE (Part No. 952 050)	DG MOD NPE (Part No. 952 050)
Max. continuous operating voltage (a.c.) (module)	255 V	255 V
For mounting on	directly soldered into PCB	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)	IP 20 (protection module plugged in)
Type of remote signalling contact	–	changeover contact

DEHNguard PCB PV I ... FM

Single-pole base with increased clearance and creepage distance between the power contacts and the remote signalling contact. For installation on the PCBs of devices to accommodate DEHNguard modules, with remote signalling contact for the monitoring system (floating changeover contact).

General technical data:	
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact

Type DG PCB ...	PV I 500 FM	PV I 600 FM
Part No.	952 941	952 948
Associated protection module	DG MOD PV 500 (Part No. 952 041)	DG MOD H PV 600 (Part No. 952 048)
Max. continuous operating voltage (d.c.) (module)	500 V	600 V

Type DG PCB ...	PV I 750 FM
Part No.	952 949
Associated protection module	DG MOD H PV 750 (Part No. 952 049)
Max. continuous operating voltage (d.c.) (module)	750 V

DEHNguard PCB PVSCI I ...FM

Single-pole base with increased clearance and creepage distance between the power contacts and the remote signalling contact. For installation on the PCBs of devices to accommodate DEHNguard modules, with remote signalling contact for the monitoring system (floating changeover contact).

Type DG PCB ...	PVSCI I 500FM
Part No.	952 951
Associated protection module	DG MOD PV SCI 500 (Part No. 952 051)
Max. continuous operating voltage (d.c.) (module)	500 V
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact

DEHNguard PCB I ... FM

Single-pole base with increased clearance and creepage distance between the power contacts and the remote signalling contact. For installation on the PCBs of devices to accommodate DEHNguard modules, with remote signalling contact for the monitoring system (floating changeover contact).

Type DG PCB ...	I 275 FM
Part No.	952 910
Associated protection module	DG MOD 275 (Part No. 952 010)
Max. continuous operating voltage (a.c.) (module)	275 V
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact

Protection Module for DEHNguard M, ... S and DEHNgap C S

DG MOD…: Replacement protection modules fitting for all devices of the modular DEHNguard series.

Switch-Spark Gap Protection Module for DEHNguard M ACI

Type	DG MOD ACI 275
Part No.	952 024
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. continuous operating voltage (a.c.) (U_C)	275 V

Spark-Gap-Based Protection Module for DEHNguard M ACI

Type	DG MOD A NPE
Part No.	952 022 NEW
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V

Varistor-based Protection Module for DEHNguard SE CI ...

Type	DG MOD E CI 440	DG MOD E CI WE 440
Part No.	952 926	952 927
Nominal discharge current (8/20 µs) (I_n)	12.5 kA	12.5 kA
Max. continuous operating voltage (a.c.) (U_C)	440 V	440 V
Rated varistor voltage (U_{mov})	440 V	750 V

Varistor-based Protection Module for DEHNguard M and DEHNguard S

Type	DG MOD 48	DG MOD 75
Part No.	952 018	952 011
Nominal discharge current (8/20 µs) (I_n)	7.5 kA	10 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	40 kA
Max. continuous operating voltage (a.c.) (U_C)	48 V	75 V

Type	DG MOD 150	DG MOD 275
Part No.	952 012	952 010
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Max. continuous operating voltage (a.c.) (U_C)	150 V	275 V

Type	DG MOD 320	DG MOD 385
Part No.	952 013	952 014
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Max. continuous operating voltage (a.c.) (U_C)	320 V	385 V

Type	DG MOD 440	DG MOD 600
Part No.	952 015	952 016
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	30 kA
Max. continuous operating voltage (a.c.) (U_C)	440 V	600 V

Varistor-Based Protection Module for DEHNguard M (S) WE

Type	DG MOD 750
Part No.	952 017
Nominal discharge current (8/20 µs) (I_n)	15 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA
Max. continuous operating voltage (a.c.) (U_C)	600 V
Rated varistor voltage (U_{mov})	750 V

N-PE Spark-Gap-Based Protection Module for DEHNguard M ACI

N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard DG M TT (2P) ACI ... .

Type	DG MOD H A NPE
Part No.	952 083
Nominal discharge current (8/20 µs) (I_n)	80 kA
Max. discharge current (8/20 µs) (I_{max})	120 kA
Max. continuous operating voltage (a.c.) (U_C)	275 V

N-PE Spark-Gap-Based Protection Module for DEHNguard M H TT ...

Type	DG MOD H NPE
Part No.	952 081
Nominal discharge current (8/20 µs) (I_n)	80 kA
Max. discharge current (8/20 µs) (I_{max})	120 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V

N-PE Spark-Gap-Based Protection Module for DEHNguard M TT ...

Type	DG MOD NPE
Part No.	952 050
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V

N-PE Spark-Gap-Based Protection Module for DEHNgap C S

Type	DGP C MOD
Part No.	952 060
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V

Varistor and Spark-Gap-Based Protection Module for DEHNguard S ... VA

General technical data:	
Nominal discharge current (8/20 µs) (I_n)	10 kA
Max. discharge current (8/20 µs) (I_{max})	20 kA

Type	DG MOD 75 VA	DG MOD 275 VA
Part No.	952 025	952 027
Max. continuous operating voltage (a.c.) (U_C)	75 V	275 V
Max. continuous operating voltage (d.c.) (U_C)	100 V	350 V

Type	DG MOD 385 VA
Part No.	952 029
Max. continuous operating voltage (a.c.) (U_C)	385 V
Max. continuous operating voltage (d.c.) (U_C)	500 V

Varistor-based Protection Module for DEHNguard M YPV

Type	DG MOD H PV 600	DG MOD H PV 750
Part No.	952 048	952 049
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Max. continuous operating voltage (d.c.) (U_C)	600 V	750 V

Varistor-Based Protection Module for DEHNguard M YPV SCI and DEHNguard S PV SCI

Type	DG MOD PV SCI 500	DG MOD PV SCI 600
Part No.	952 051	952 054
Nominal discharge current (8/20 µs) (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	25 kA
Max. continuous operating voltage (d.c.) (U_C)	500 V	600 V

Varistor-Based Protection Module for DEHNguard M YPV and DEHNguard S PV

Type	DG MOD PV 500	DG MOD PV 600
Part No.	952 041	952 044
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	30 kA
Max. continuous operating voltage (d.c.) (U_C)	500 V	600 V

Varistor-Based Protection Module for DEHNguard SE H ...

Type	DG MOD E H 1000	DG MOD E H 1000 VA
Part No.	952 908	952 918
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Max. continuous operating voltage (a.c.) (U_C)	1000 V	1000 V

Varistor-based Protection Module for DEHNguard SE DC

General technical data:	
Nominal discharge current (8/20 µs) (I_n)	12.5 kA

Type	DG MOD E DC 60	DG MOD E DC 242
Part No.	972 010	972 020
Max. continuous operating voltage (d.c.) (U_C)	60 V	242 V

Type	DG MOD E DC 550	DG MOD E DC 900
Part No.	972 030	972 040
Max. continuous operating voltage (d.c.) (U_C)	550 V	900 V

DEHNguard 1000

Compact single-pole surge arrester for continuous operating voltages up to 1000 V AC. For protecting low-voltage consumer's installations against surges.

DEHNguard 1000 (FM)

Compact single-pole surge arrester; FM version with floating remote signalling contact.

Type DG ...	1000	1000 FM
Part No.	950 102	950 112
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	1000 V (50 / 60 Hz)	1000 V (50 / 60 Hz)
Max. discharge current (8/20 µs) (I_{max})	30 kA	30 kA
Voltage protection level (U_p)	≤ 4.2 kV	≤ 4.2 kV
Max. overcurrent protection	100 A aM	100 A aM
Max. overcurrent protection at U ≤ 690 V a.c.	125 A gG	125 A gG
Approvals	UL	UL
Type of remote signalling contact	–	changeover contact

Accessories for DEHNguard 1000

Earthing Clip for two-module Enclosures, single-phase, two-pole

Earthing clip for connecting the earth terminal of e.g. two SPDs with two-module enclosure to earth, with terminal.

Type	EB 1 2 5
Part No.	900 419
Dimensions	34 x 77 x 28 mm
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, three-pole

Earthing clip for connecting the earth terminal of e.g. three SPDs with two-module enclosure to earth, with terminal.

Type	EB DG 1000 1 3
Part No.	900 411
Dimensions	34 x 112 x 28 mm
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, four-pole

Earthing clip for connecting the earth terminal of e.g. four SPDs with two-module enclosure to earth, with terminal.

Type	EB 1 4 9
Part No.	900 417
Dimensions	34 x 148 x 28 mm
Terminal	up to 25 mm²

V NH / VA NH

Surge arrester with NH design and integrated backup fuse. For protecting low-voltage consumer´s installations against surges.

V NH00 (FM)

Varistor-based surge arrester with integrated backup fuse for use in NH00 fuse holders, optionally available with special indicator for remote signalling.

Type	V NH00 280	V NH00 280 FM
Part No.	**900 261**	**900 263**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	280 V (50 / 60 Hz)	280 V (50 / 60 Hz)
Max. discharge current (8/20 µs) (I_{max})	30 kA	30 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	not required	not required
Indicator for remote signalling	–	tripping distance of 7 mm

V NH1

Varistor-based surge arrester with integrated backup fuse for use in NH1 fuse holders.

Type	V NH1 280
Part No.	**900 270**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	280 V (50 / 60 Hz)
Max. discharge current (8/20 µs) (I_{max})	30 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	not required

VA NH00 (FM)

Surge arrester based on a series-connected varistor and spark gap with integrated backup fuse; for use in NH00 fuse holders, optionally available with special indicator for remote signalling.

Type	VA NH00 280	VA NH00 280 FM
Part No.	**900 262**	**900 264**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	Type 2 / Class II
Max. continuous operating voltage (a.c.) (U_C)	280 V (50 / 60 Hz)	280 V (50 / 60 Hz)
Max. discharge current (8/20 µs) (I_{max})	20 kA	20 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	not required	not required
Indicator for remote signalling	–	tripping distance of 7 mm

VA NH1

Surge arrester based on a series-connected varistor and spark gap with integrated backup fuse; for use in NH1 fuse holders.

Type	VA NH1 280
Part No.	**900 271**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	280 V (50 / 60 Hz)
Max. discharge current (8/20 µs) (I_{max})	20 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	not required

DEHNguard modular YPV ... FM

Modular multipole surge arrester with three-step d.c. switching device for PV systems up to 1500 V as pre-wired complete unit.

DEHNguard M YPV ... FM

Modular multipole surge arrester for PV systems with remote signalling contact for monitoring device (floating changeover contact).

Type DG M YPV ...	1200 FM	1500 FM
Part No.	**952 565**	**952 567**
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	1170 V	1500 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 4 kV	≤ 5 kV
Approvals	UL, KEMA	UL, KEMA
Type of remote signalling contact	changeover contact	changeover contact

Accessories for DEHNguard modular YPV ... FM

Varistor-Based Protection Module for DEHNguard M YPV

Type	DG MOD H PV 600	DG MOD H PV 750
Part No.	**952 048**	**952 049**
Max. continuous operating voltage (d.c.) (U_C)	600 V	750 V

DEHNguard modular (Y)PV SCI ...

Modular multipole surge arrester (prewired complete unit) with three-step d.c. switching device for use in PV systems up to 1200 V.

DEHNguard M YPV SCI ...

Modular multipole surge arrester with three-step d.c. switching device for use in PV systems

Type DG M ...	YPV SCI 1000	YPV SCI 1200
Part No.	**952 510**	**952 512**
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V	1200 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 4 kV	≤ 4.5 kV
Approvals	KEMA, UL, CSA	KEMA, CSA

DEHNguard M YPV SCI ... FM

Modular multipole surge arrester with three-step d.c. switching device for use in PV systems; with remote signalling contact for monitoring device (floating changeover contact).

Type DG M ...	YPV SCI 1000 FM	YPV SCI 1200 FM
Part No.	952 515	952 517
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V	1200 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 4 kV	≤ 4.5 kV
Approvals	KEMA, UL, CSA	KEMA, CSA
Type of remote signalling contact	changeover contact	changeover contact

DEHNguard M PV2 SCI ... (FM)

Modular multipole surge arrester with three-step d.c. switching device for protecting two MPP inputs; for use in PV systems up to 1000 V; FM version with floating remote signalling contact.

Type DG M ...	PV2 SCI 1000	PV2 SCI 1000 FM
Part No.	952 514	952 519
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V	1000 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 4 kV	≤ 4 kV
Approvals	UL, KEMA	UL, KEMA
Type of remote signalling contact	–	changeover contact

DEHNguard M SN1868

Modular multipole surge arrester with three-step d.c. switching device for protecting 3 MPP inputs; for PV systems with remote signalling contact for monitoring device (floating changeover contact).

Type DG M ...	PV2 SCI SN1868 FM
Part No.	999 799
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V
Short-circuit current rating (I_{SCPV})	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA
Voltage protection level (U_P)	≤ 4 kV
Approvals	UL, KEMA
Type of remote signalling contact	changeover contact

Accessories for DEHNguard modular (Y)PV SCI ...

Varistor-Based Protection Module for DEHNguard M (S) (Y)PV SCI

Protection module with integrated back-up fuse for DEHNguard M (Y)PV SCI ... arresters comprising a varistor connected in parallel with a short-circuiting device.

Type	DG MOD PV SCI 500	DG MOD PV SCI 600
Part No.	952 051	952 054
Max. continuous operating voltage (d.c.) (U_C)	500 V	600 V

Varistor-Based Protection Module for DEHNguard M (S) (Y)PV SCI

Type	DG MOD PV 500	DG MOD PV 600
Part No.	952 041	952 044
Max. continuous operating voltage (d.c.) (U_C)	500 V	600 V

DEHNguard modular E (Y)PV SCI 1500

Modular multipole surge arrester with three-step d.c. switching device for PV systems up to 1500 V.

DEHNguard ME YPV SCI 1500 (FM)

Modular multipole surge arrester with three-step d.c. switching device for PV systems.

Type DG ME YPV ...	SCI 1500	SCI1500 FM
Part No.	952 520	952 525
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	1500 V	1500 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Total discharge current (8/20 µs) (I_{total})	25 kA	25 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Voltage protection level (U_P)	≤ 6 kV	≤ 6 kV
Approvals	KEMA, UL	KEMA, UL
Type of remote signalling contact	–	changeover contact

Accessories for DEHNguard modular E (Y)PV SCI 1500

Varistor-Based Protection Module for DEHNguard ME YPV SCI and DEHNguard SE PV SCI

Varistor-based protection module for DEHNguard ME YPV SCI 1500 (FM) and DEHNguard SE PV SCI 1500 (FM)

Type	DG MOD E PV SCI 750
Part No.	952 056
Max. continuous operating voltage (d.c.) (U_C)	750 V

DEHNguard YPV SCI ... – compact

Multipole surge arrester with three-step d.c. switching device for use in PV systems up to 1000 V.

DEHNguard compact YPV SCI ...

Multipole surge arrester with three-step d.c. switching device for use in PV systems

Type DG YPV SCI ...	600	1000
Part No.	950 531	950 530
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	600 V	1000 V
Short-circuit current rating (I_{SCPV})	1000 A	1000 A
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 2.5 kV	≤ 4 kV
Approvals	KEMA, UL	KEMA, UL

DEHNguard compact YPV SCI ... FM

Multipole surge arrester with three-step d.c. switching device for use in PV systems, with remote signalling contact for monitoring device (floating changeover contact).

Type DG YPV SCI ...	600 FM	1000 FM
Part No.	950 536	950 535
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	600 V	1000 V
Short-circuit current rating (I_{SCPV})	1000 A	1000 A
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 2.5 kV	≤ 4 kV
Approvals	KEMA, UL	KEMA, UL
Type of remote signalling contact	changeover contact	changeover contact

DEHNcube PV

Multipole surge arrester with three-step d.c. switching device and IP65 degree of protection for use in PV systems up to 1000 V.

DEHNcube YPV SCI 1000 1M

Two-pole surge arrester with IP 65 degree of protection and three-step d.c. switching device for PV inverters for protecting one MPP input.

Type DCU ...	YPV SCI 1000 1M
Part No.	900 910
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V
Short-circuit current rating (I_{SCPV})	1 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA
Voltage protection level (U_P)	≤ 4 kV
Degree of protection	IP 65

DEHNcube YPV SCI 1000 2M

Four-pole surge arrester with IP 65 degree of protection and three-step d.c. switching device for PV inverters for protecting two MPP inputs.

Type DCU ...	YPV SCI 1000 2M
Part No.	900 920
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V
Short-circuit current rating (I_{SCPV})	1 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA
Voltage protection level (U_P)	≤ 4 kV
Degree of protection	IP 65

DEHNcube 2 YPV 1100 1M 2S

Generator junction box for PV systems of up to 1100 V DC for protecting one MPP input and two strings.
With surge protection and push-in terminals for the input and output.

Type DCU ...	2 YPV 1100 1M 2S
Part No.	900 913 NEW
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1100 V
Short-circuit current rating (I_{SCPV})	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 4 kV
Degree of protection	IP 65

Surge Arresters – Type 2 for PV Systems

DEHNcube 2 YPV 1100 2M 1S

Generator junction box for PV systems of up to 1100 V DC for protecting two MPP inputs and one string.
With surge protection and push-in terminals for the input and output.

Type DCU …	2 YPV 1100 2M 1S
Part No.	**900 921** NEW
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1100 V
Short-circuit current rating (I_{SCPV})	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 4 kV
Degree of protection	IP 65

DEHNcube 2 YPV 1100 2M 2S

Generator junction box for PV systems of up to 1100 V DC for protecting two MPP inputs and two strings.
With surge protection and push-in terminals for the input and output.

Type DCU …	2 YPV 1100 2M 2S
Part No.	**900 923** NEW
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1100 V
Short-circuit current rating (I_{SCPV})	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 4 kV
Degree of protection	IP 65

Connecting Cable for DEHNcube

Preassambled connecting cables for easy and quick connection of DEHNcube DCU YPV SCI 1000 … surge arresters to the equipment of the photovoltaic generator they are supposed to protect.

Y Connecting Cable for DEHNcube

Allows to collect one PV string and connect it to DEHNcube and the inverter.

Type	AL DCU Y PV L3X1000
Part No.	**900 945**
For connecting	1 string cable
Cable cross-section	6 mm²
Cable material	Copper
Degree of protection	IP 65
Length	3x 1000 mm

Surge Arresters – Type 3

DEHNrail modular

Modular two-pole surge protective device with a functional design.
For protecting the power supply circuit of industrial electronics equipment against transient surges in switchgear cabinets.

DEHNrail M 2P …

Two-pole surge arrester consisting of a base part and a plug-in protection module.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. mains-side overcurrent protection	25 A gG or B 25 A
Approvals	KEMA, VDE, UL, CSA

Type DR M 2P …	30	60
Part No.	**953 201**	**953 202**
Max. continuous operating voltage (a.c.) (U_C)	30 V (50 / 60 Hz)	60 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	30 V	60 V
Nominal discharge current (8/20 µs) (I_n)	1 kA	1 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	2 kA	2 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 180 / ≤ 630 V	≤ 350 / ≤ 730 V

Type DR M 2P …	75	150
Part No.	**953 203**	**953 204**
Max. continuous operating voltage (a.c.) (U_C)	75 V (50 / 60 Hz)	150 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	75 V	150 V
Nominal discharge current (8/20 µs) (I_n)	2 kA	2 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	4 kA	4 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 400 / ≤ 730 V	≤ 640 / ≤ 800 V

Type DR M 2P …	255
Part No.	**953 200**
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	255 V
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V

DEHNrail M 2P SN1802

Two-pole surge arrester consisting of a base part and a plug-in protection module. Can be used for systems with a load current up to 32 A.

Type DR M 2P …	255 SN1802
Part No.	**953 228**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	255 V
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	32 A gG or B 32 A

Protection module upon request

DEHNrail M 2P ... FM

Two-pole surge arrester consisting of a base part and a plug-in protection module; with floating remote signalling contact.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. mains-side overcurrent protection	25 A gG or B 25 A
Approvals	KEMA, VDE, UL, CSA
Type of remote signalling contact	changeover contact

Type DR M 2P ...	30 FM	60 FM
Part No.	953 206	953 207
Max. continuous operating voltage (a.c.) (U_C)	30 V (50 / 60 Hz)	60 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	30 V	60 V
Nominal discharge current (8/20 µs) (I_n)	1 kA	1 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	2 kA	2 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 180 / ≤ 630 V	≤ 350 / ≤ 730 V

Type DR M 2P ...	75 FM	150 FM
Part No.	953 208	953 209
Max. continuous operating voltage (a.c.) (U_C)	75 V (50 / 60 Hz)	150 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	75 V	150 V
Nominal discharge current (8/20 µs) (I_n)	2 kA	2 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	4 kA	4 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 400 / ≤ 730 V	≤ 640 / ≤ 800 V

Type DR M 2P ...	255 FM
Part No.	953 205
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	255 V
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V

DEHNrail M 2P SN1803FM

Two-pole surge arrester consisting of a base part and a plug-in protection module; with floating remote signalling contact. Can be used for systems with a load current up to 32 A.

Type DR M 2P ...	255 SN1803FM
Part No.	953 229
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	255 V
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	32 A gG or B 32 A
Type of remote signalling contact	changeover contact

Protection module upon request

DEHNrail modular, multipole

Modular four-pole surge protective device for protecting the power supply circuit of 230 / 400 V industrial electronics equipment against transient surges in switchgear cabinets.

DEHN rail M 4P ... (FM)

Four-pole surge arrester consisting of a base part and a plug-in protection module for 230 / 400 V systems; FM version with floating remote signalling contact.

Type DR M 4P ...	255	255 FM
Part No.	953 400	953 405
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 / 440 V (50 / 60 Hz)	255 / 440 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA	3 kA
Total discharge current (8/20 µs) [L1+L2+L3+N-PE] (I_{total})	8 kA	8 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1000 / ≤ 1500 V	≤ 1000 / ≤ 1500 V
Max. mains-side overcurrent protection	25 A gG or B 25 A	25 A gG or B 25 A
Approvals	KEMA, VDE	KEMA, VDE
Type of remote signalling contact	–	changeover contact

DEHNrail M 4P SN1872 FM

Four-pole surge arrester consisting of a base part and a plug-in protection module; with floating remote signalling contact. Can be used for systems with a fusing up to 32 A.

Type DR M 4P ...	255 SN1872 FM
Part No.	953 406
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 / 440 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L1+L2+L3+N-PE] (I_{total})	8 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1000 / ≤ 1500 V
Max. mains-side overcurrent protection	32 A gG oder B 32 A
Type of remote signalling contact	changeover contact

Accessories for DEHNrail modular

Protection Module for DEHNrail M 2P
Protection module with integrated Y protection circuit.

Type	DR MOD 30	DR MOD 60
Part No.	**953 011**	**953 012**
Max. continuous operating voltage (a.c.) (U_C)	30 V	60 V

Type	DR MOD 75	DR MOD 150
Part No.	**953 013**	**953 014**
Max. continuous operating voltage (a.c.) (U_C)	75 V	150 V

Type	DR MOD 75	DR MOD 150
Part No.	**953 013**	**953 014**
Max. continuous operating voltage (a.c.) (U_C)	75 V	150 V

Type	DR MOD 255
Part No.	**953 010**
Max. continuous operating voltage (a.c.) (U_C)	255 V

Mains Filter

For protecting the power supply circuit of industrial electronics equipment (e.g. programmable logic controls (PLCs)) against high-frequency interference voltages.

NF 10
Mains filter for protection against balanced and unbalanced interferences.

Type	NF 10
Part No.	**912 254**
Nominal voltage (a.c.) (U_N)	230 V
Nominal load current (a.c.) (I_L)	10 A
Attenuation for f = 1 MHz, balanced	> 64 dB
Attenuation for f = 1 MHz, unbalanced	> 69 dB

Protection Module for DEHNrail modular

DR MOD…: Replacement protection modules for all devices of the modular DEHNrail series.

Protection Module for DEHNrail M 2P
Protection module with integrated Y protection circuit.

Type DR MOD …	30	60
Part No.	**953 011**	**953 012**
Nominal discharge current (8/20 µs) (I_n)	1 kA	1 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	2 kA	2 kA
Max. continuous operating voltage (a.c.) (U_C)	30 V	60 V

Type DR MOD …	75	150
Part No.	**953 013**	**953 014**
Nominal discharge current (8/20 µs) (I_n)	2 kA	2 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	4 kA	4 kA
Max. continuous operating voltage (a.c.) (U_C)	75 V	150 V

Type DR MOD …	255
Part No.	**953 010**
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V

Protection Module for DEHNrail M 4P
Four-pole protection module with integrated protective circuit.

Type DR MOD …	4P 255	4P 255 SN1871
Part No.	**953 020**	**953 021**
Nominal discharge current (8/20 µs) (I_n)	3 kA	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	8 kA	8 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V	255 V

SPS Protector

For protecting the power supply circuit of 230 V industrial electronics equipment (e.g. programmable logic controls (PLCs)) against transient surges and high-frequency interference voltages.

SPS Protector
Surge arrester with interference suppressor filter for single-phase 230 V TT and TN systems; with floating remote signalling contact.

Type	SPS PRO
Part No.	**912 253**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal load current (a.c.) (I_L)	3 A
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 800 / ≤ 1000 V
Type of remote signalling contact	break contact

DEHNsafe

For protecting terminal equipment against transient surges. For installation into electrical installation systems, e.g. cable ducts or flush-type boxes.

DEHNsafe

Surge protective device for use in cable ducts and flush-type boxes. For single-phase 230 V TT and TN systems.

Type	DSA 230 LA
Part No.	**924 370**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	red light + acoustic signal
Operating state indication	green light

Accessories for DEHNsafe

Central Covering Plate

Single unit, alpha exclusive.

Type	ZAP STW
Part No.	**924 329**
Colour	studio white

Cover Frame

Single unit, alpha exclusive.

Type	AR1 STW
Part No.	**924 328**
Colour	studio white

NSM Protector

Earthed socket outlet with integrated surge protection for protecting electronic equipment against surges. For installation into electrical installation systems. German utility patent.

NSM PRO

Socket outlet with integrated surge protection for single-phase 230 V TT and TN systems.

Type	NSM PRO TW
Part No.	**924 335**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	red light
Operating state indication	green light
DELTA Profil line	titanium white

Accessories for NSM Protector

AR1 Cover Frame

Single unit, suitable for NSM Protector.

Type	AR1 TW
Part No.	**924 336**
Type	DELTA profil, titanium white

STC Module

For protecting electronic devices against surges. For use with standard earthed socket outlets.

STC 230

Two-pole surge arrester for single-phase 230 V TT and TN systems is snapped on earthed socket outlets.

Type	STC 230
Part No.	**924 350**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	acoustic signal on

VC 280 2

For protecting (electronic) terminal equipment against transient overvoltages. For installation into the enclosure or directly into the device to be protected. German utility patent.

VC 280 2

Mains module with integrated surge protection and floating break contact for installation into the terminal equipment to be protected.

Type	VC 280 2
Part No.	**900 471**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	280 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	remote signalling contact (break contact)

DEHNflex

For protecting terminal equipment against transient overvoltages. For installation into electrical installation systems, e.g. flush-mounted systems, cable ducts and flush-type boxes. German utility patent for DEHNflex A / ... D.

DEHNflex M

Surge arrester for single-phase 230 V TT and TN systems for use in all installation systems of terminal equipment; compact dimensions.

Type DFL ...	M 255
Part No.	**924 396**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	1.5 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	3 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	acoustic signal on
Dimensions	30 x 50 x 11 mm

DEHNflex A

Surge arrester for single-phase 230 V TT and TN systems for use in all installation systems of terminal equipment; with test function; compact dimensions.

Type DFL ...	A 255
Part No.	**924 389**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	acoustic signal on
Dimensions	36 x 46 x 19 mm

DEHNflex D

Surge arrester for single-phase 230 V TT and TN systems for use in all installation systems of terminal equipment; allows series connection; with test function; compact dimensions.

Type DFL ...	D 255
Part No.	**924 395**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	acoustic signal on
Dimensions	36 x 46 x 19 mm

DEHNprotector

Adapters for protecting the power supply circuit of electronic devices against transient overvoltages (DEHNpro 230 Protector).

DPRO 230 Protector

Adapter with integrated surge protection and child lock.

Type	DPRO 230
Part No.	**909 230**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1350 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	red light
Operating state indication	green light

SFL Protector

Multiple socket outlet (six-way) for protecting the power supply circuit of electronic devices against transient overvoltages as well as high-frequency interference voltages.

SFL PRO 6X

Surge protective multiple socket outlet with mains filter.

Type SFL PRO ...	6X
Part No.	**909 250**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level (U_P)	≤ 1.6 kV
Max. mains-side overcurrent protection	B 16 A
Number of socket outlets	6

SFL PRO 19"

Surge protective multiple socket outlet with mains filter for 482.6 mm (19 inches) data cabinets.

Type SFL PRO ...	6X 19"
Part No.	**909 251**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level (U_P)	≤ 1.6 kV
Max. mains-side overcurrent protection	B 16 A
Number of socket outlets	6

DEHNrecord SD

Multi-functional power quality measuring device according to IEC 61000-4-30 class A for analysing and evaluating power quality as per EN 50160 deep inside the low-voltage system.

DRC SD 1 1

Multifunctional measurement and analysis device for monitoring voltage quality

Type DRC SD ...	1 1
Part No.	**910 920** NEW
PQ measuring method as per EN 61000-4-30:2015	Class A
Power supply (U_B)	230 V_{AC} (50 Hz) via L1 of the measuring voltage
Nominal input voltage range	230 / 400 V_{AC}
Input voltage range	185–265 V_{AC}

DRC SD 2 1

Multifunctional measurement and analysis device for monitoring voltage quality

Type DRC SD ...	2 1
Part No.	**910 921** NEW
PQ measuring method as per EN 61000-4-30:2015	Class A
Power supply (U_B)	24 V_{DC}
Nominal input voltage range	24 V_{DC} SELV (max. 3 W)
Input voltage range	18–30 V_{DC}

DRC SD ICS 100

With the DEHNrecord SD ICS, impulse currents of up to 100 kA can be detected on insulated cables.

Type DRC SD ...	ICS 100
Part No.	**910 935** NEW
Impulse current measuring range (8/20 µs to 10/350 µs)	up to 100 kA
Amplitude resolution	100 A
Sampling rate	1 µs
Recording time	Max. 5 sec.
Amplitude trigger threshold	Parametrizable via internal Web server
Frequency bandwidth (-3 dB) (BW)	3 kHz
Positioning error (ε_L)	< +/-1%
Connecting cable length	3 m

DRC SD SCS 100

Split-core current transformer for electronic measurement of alternating current (AC) with galvanic isolation between the primary circuit (power) and secondary circuit (measurement) up to 300 V CAT III.

Type DRC SD ...	SCS 100
Part No.	**910 936** NEW
Accuracy class	1 (IEC 61869-2)
Nominal primary current (I_{Pr})	100 A
Expanded primary current (I_{ePr})	120 A
Thermal rated short-time current (I_{th})	Max. 6 kA @ 50 Hz; 60 x IPr (1 s) kA
Dynamic nominal current (I_{dyn})	Max. 3 kA @ 50 Hz; 60 x IPr (1 s) kA
Nominal frequency (f_r)	50 Hz
Frequency bandwidth (-3 dB) (BW)	min. 1.5 kHz
Max. cable diameter	16 mm
Connecting cable length	1 m

DRC SD RCS 1000

Rogowski coil current transformer for electronic measurement of alternating current (AC) with galvanic isolation between the primary circuit (power) and secondary circuit (measurement) up to 1,000 V CAT III.

Type DRC SD ...	RCS 1000 3M	RCS 1000 1M
Part No.	**910 937** NEW	**910 938** NEW
Accuracy class	1 (IEC 61869-2)	1 (IEC 61869-2)
Nominal primary current (I_{Pr})	1000 A	1000 A
Expanded primary current (I_{ePr})	2000 A	2000 A
Nominal frequency (f_r)	50 Hz	50 Hz
Frequency bandwidth (-3 dB) (BW)	3 kHz	3 kHz
Positioning error (ε_L)	< +/-1%	< +/-1%
Max. cable diameter	95 mm	95 mm
Connecting cable length	3 m	1 m

Accessories for DEHNrecord SD

MVS three-phase, six-pole

Type	MVS 3 6 6
Part No.	**900 595**
Type	Three-phase
Number of contact studs	6
Max. installation length	6 Standard DIN module(s)
Nominal cross-section	16 mm^2

MVS, four-phase, eight-pole

Type	MVS 4 8 8
Part No.	**900 850**
Type	Four-phase
Number of contact studs	8
Max. installation length	8 Standard DIN module(s)
Nominal cross-section	10 mm^2

DIN Rail Mounted Power Supply Unit

Robust power supply in the DIN-rail-mounted enclosure with single-phase, wide-range input for operation in a wide variety of supply systems. The operating state indication on the front side signals the availability of the output voltage. Supply of stationary condition-monitoring devices from the DEHNrecord product range (DRC SCM XT / DRC MCM XT / DRC IRCM / DRC SD 2 1).

Type	PSU DC24 30W
Part No.	**910 499**
Input voltage range	AC 85-264 V; DC 120-373 V
Frequency	44-66 Hz; 0 Hz
Input current (I_e)	0.7 A at AC 110 V / 0.5 A at AC 230 V
Output nominal voltage (U_a)	DC 24 V (SELV)
Output current (I_a)	1.3 A at DC 24 V, max. 0.9 A at any installation position
Recommended backup fuse	circuit breaker 10 A, 16 A, characteristic B, C
Standards / regulations	EN 60950, EN 61204-3, UL 60950, UL 508, GL

DEHNdetect

- Prevention of subsequent damage
- Reduction of maintenance / repair costs
- Reduction of downtimes

Data logger DDT DL

Type DDT …	DL
Part No.	**915 000**
Measuring range impulse current (I_{imp} 10/350µs)	500 A - 250 kA
Measuring range long stroke current (I_{cc})	60 A - 2.0 kA
Digital outputs	4 (30 V / 0.5 A DC; 30 V / 0.3 A AC)
Communication	via LTE, Ethernet, Modbus TCP
For mounting on	35 mm DIN rail according to EN 60715

Data logger DDT DL TCP

Type DDT …	DL TCP
Part No.	**915 001**
Measuring range impulse current (I_{imp} 10/350µs)	500 A - 250 kA
Measuring range long stroke current (I_{cc})	60 A - 2.0 kA
Digital outputs	4 (30 V / 0.5 A DC; 30 V / 0.3 A AC)
Communication	via Ethernet, Modbus TCP
For mounting on	35 mm DIN rail according to EN 60715

Blade detection unit DDT BDU

Type DDT …	BDU
Part No.	**915 051**
Voltage supply	battery (3.6 V AA), service life min. 5 years
Trigger level (I_{cc})	≤ 100 A
Trigger level (I_{imp} 10/350µs)	5 kA
Installation	via glueing, clamping
Communication with data logger	via ZigBee

Measuring coil DDT ICC

General technical data:	
Measuring coil	
Size	up to 20 m
Measuring range impulse current (I_{imp} 10/350µs)	500 A - 250 kA
Measuring range long stroke current (I_{cc})	60 A - 2.0 kA
For mounting on	the relevant wind turbine
Measuring integrator	
For mounting on	35 mm DIN rails acc. to EN 60715

Type DDT …	ICC IMP 5M	ICC IMP 9M
Part No.	**915 105**	**915 109**
Coil length	5 m	9 m
Connection to measuring coils	via BNC cable*)	via BNC cable*)
Connection to data logger	via SUB-D cable*)	via SUB-D cable*)

Type DDT …	ICC IMP 11M	ICC IMP 13M
Part No.	**915 111**	**915 113**
Coil length	11 m	13 m
Connection to measuring coils	via BNC cable*)	via BNC cable*)
Connection to data logger	via SUB-D cable*)	via SUB-D cable*)

Type DDT …	ICC IMP 15M	ICC IMP 17M
Part No.	**915 115**	**915 117**
Coil length	15 m	17 m
Connection to measuring coils	via BNC cable*)	via BNC cable*)
Connection to data logger	via SUB-D cable*)	via SUB-D cable*)

*) accessory, must be ordered separately.

Impulse Counter

For registering the discharge processes of protective devices in DIN-rail-mounted enclosure (3 modules).

P 4 Impulse Counter
Expected to be available for delivery in Q2/2023.

Type	IPC P4
Part No.	**910 513**
Lightning counter according to GB/T 33588.6 and EN/IEC 62561-6	type 1 + type 2
Max. impulse discharge current counted (I_{imp})	100 kA
Min. impulse discharge current counted (I_{imp})	5 kA
Max. discharge current counted (I_n)	100 kA
Min. discharge current counted (I_n)	1 kA
OLED display	electronic counter 0-999
Power supply	DC 9-36V, with 1 Lithium manganese dioxide battery inside for backup power
Resetting device	button on the device for resetting the counter to 0
Dimensions (sensor)	inner Ø: 14 mm
Accessories included in delivery	sensor, cable tie (for fixing the sensor)

*) Battery is not included in the scope of delivery. Battery type CR17335 is recommended.

SPD Test Device

For testing the sparkover voltage of surge arresters. The specimen is connected via the included test cables or special test adapters.

PM 20

Combined device for testing the sparkover voltage of surge arresters (with gas discharge tubes / varistors / Zener diodes). Storage bag and measuring accessories included.

Type	PM 20
Part No.	**910 511**
Nominal voltage (U_N)	8-12 V d.c.
Test parameter: Test voltage	max. 1200 V d.c.
Test parameter: Test current (reference voltage)	1 mA d.c., constant
Measured value indication	alphanumeric, eight-digit LCD
Accessories included in delivery	2 test leads (each 1 m long), 2 safety tapping test clips, 1 plug-in power supply unit (230 V a.c.), 1 storage bag

DEHNpanel

Remote visual indication for surge protective devices with a remote signalling contact for installation into switchgear cabinets.

DPAN L

Visual indicator for surge protective devices installed in switchgear cabinets.

Type	DPAN L
Part No.	**910 200**
Voltage supply	2x 1.5 V lithium batteries, size AA
Operating state / fault indication	green LED (flashing) / red LED (flashing)
Flashing frequency	0.1 s on / 1.3 s off
Degree of protection (front / rear side)	IP 40 / IP 20
Mounting dimensions	92 x 45 mm
Dimensions	96 x 48 x 75 mm

Wiring Accessories DK

- Allows changing of the wiring level
- For a lightning current suitable installation of arrester combinations

Feed-Through Terminal DK 25

Feed-through terminal for busbar wiring.

Type	DK 25
Part No.	**952 699**
Nominal voltage (a.c. / d.c.) (U_N)	500 V
Nominal load current (a.c.) (I_L)	100 A
Lightning impulse current (10/350 µs)	100 kA
Cross-sectional area (min.)	1.5 mm² solid / flexible
Cross-sectional area (max.)	25 mm² stranded / 16 mm² flexible

Wiring Accessories STAK

Allows EMC-optimised feed-through wiring according to DIN VDE 0100-534

STAK 25 Pin-shaped Terminal

Pin-shaped terminal for EMC-optimised through-wiring of lightning current and surge arresters according to IEC 60364-5-53.

Type STAK ...	25
Part No.	**952 589**
Nominal voltage (a.c. / d.c.) (U_N)	600 V
Max. PV voltage (U_{CPV}) when used in combination with DEHNguard M YPV ...	1200 V
Lightning impulse current (10/350 µs)	25 kA
Discharge current (8/20 µs)	50 kA
Cross-sectional area (min.)	1.5 mm² solid / flexible
Cross-sectional area (max.)	25 mm² stranded / 16 mm² flexible
Type of connection	front

STAK 3X16 Pin-shaped Terminal

Pin-shaped terminal for EMC-optimised through-wiring of lightning current and surge arresters according to IEC 60364-5-53.

Type STAK ...	3X16
Part No.	**900 588**
Nominal voltage (a.c. / d.c.) (U_N)	690 V / 1500 V
Load current at V-wiring	80 A
Lightning impulse current (10/350 µs)	25 kA
Cross-sectional area (min.)	1.5 mm² solid / flexible
Cross-sectional area (max.)	16 mm² stranded / 10 mm² flexible
Type of connection	front

STAK 2X16 Pin-shaped Terminal

Pin-shaped terminal for EMC-optimised through-wiring of lightning current and surge arresters according to IEC 60364-5-53.

Type STAK ...	2X16
Part No.	**900 589**
Lightning impulse current (10/350 µs)	25 kA
Cross-sectional area (min.)	2x 1.5 mm²
Cross-sectional area (max.)	2x max. 16 mm²
Type of connection	front (double terminal)

Insulating Enclosures

Insulating enclosure for the installation of surge protective devices.

- Degree of protection: IP 54 and IP 65
- With transparent cover
- Grey enclosure

IGA 10 V2 IP54

Lightning-current-tested insulating enclosure with a max. capacity of ten modules; with grommet flange for 11 EPDM cables (Ø5-30 mm) and three mounted M20 grommet openings with lock nut; ideally suited for series connection.

Type IGA ...	10 V2 IP54
Part No.	**902 315**
Degree of protection	IP 54
Type	lightning-current-tested
Number of cable entries	4x for cables Ø5-7mm; 3x for cables Ø7-10 mm; 2x for cables Ø10-14 mm or Ø15-30 mm each; 3x for cables Ø8-13 mm
Capacity	10 modules, DIN 43880
Dimensions (W x H x D)	200 x 300 x 132 mm
Cover	sealable

IGA 7 IP54

Lightning-current-tested insulating enclosure with a max. capacity of seven modules; with EPDM grommet flange for two cables (Ø1-25 mm) and three mounted M20 grommet openings with lock nut; ideally suited for series connection.

Type IGA ...	7 IP54
Part No.	**902 314**
Degree of protection	IP 54
Type	lightning-current-tested
Number of cable entries	2x for cables Ø1-25 mm; 3x for cables Ø8-13 mm
Capacity	7 modules, DIN 43880
Dimensions (W x H x D)	175 x 250 x 100 mm
Cover	sealable

IGA 6 IP54

Lightning-current-tested insulating enclosure for arresters with a capacity of six modules; with knockouts for cable entry and plug-in glands; ideally suited for feed-through wiring.

Type IGA ...	6 IP54
Part No.	**902 485**
Degree of protection	IP 54
Type	lightning-current-tested
Number of cable entries	2 plug-in glands for cables Ø8-23 mm (M32 knockout)
Capacity	6 modules, DIN 43880
Dimensions (W x H x D)	165 x 255 x 115 mm
Cover	sealable

IGA 12 IP54

Insulating enclosure for arresters with a capacity of 12 modules; with integrated, elastic seal membrane for cable entry; ideally suited for feed-through wiring.

Type IGA ...	12 IP54
Part No.	**902 471**
Degree of protection	IP 54
Number of cable entries	8x for cables Ø7-12 mm; 8x for cables Ø7-14 mm; 4x for cables Ø12-20 mm; 1x for cables Ø16.5-29 mm (top and bottom)
PE / N quantity x cross-section	3x 25 mm², 12x 4 mm², Cu
Capacity	12 modules, DIN 43880
Dimensions (W x H x D)	295 x 333 x 129 mm

IGA 12 IP65

Insulating enclosure for arresters with a capacity of 12 modules; with integrated, elastic seal membrane for cable entry; ideally suited for feed-through wiring.

Type IGA ...	12 IP65
Part No.	**902 316**
Degree of protection	IP 65
Type	lightning-current-tested
Number of cable entries	8x for cables Ø7-12 mm; 8x for cables Ø7-14 mm; 4x for cables Ø12-20 mm; 1x for cables Ø16.5-29 mm (top and bottom)
PE / N quantity x cross-section	3x 25 mm², 12x 4 mm², Cu
Capacity	12 modules, DIN 43880
Dimensions (W x H x D)	295 x 333 x 129 mm

IGA 24 IP54

Insulating enclosure for arresters with a capacity of 2x 12 modules; with integrated, elastic seal membrane for cable entry; ideally suited for feed-through wiring.

Type IGA ...	24 IP54
Part No.	**902 472**
Degree of protection	IP 54
Number of cable entries	8x for cables Ø7-12 mm; 8x for cables Ø7-14 mm; 4x for cables Ø12-20 mm; 1x for cables Ø16.5-29 mm (top and bottom)
PE / N quantity x cross-section	6x 25 mm², 24x 4 mm², Cu
Capacity	24 modules (2x 12 modules), DIN 43880
Dimensions (W x H x D)	295 x 458 x 129 mm

Accessories for Insulating Enclosures

Sealing Device

For sealing between the lower and upper part of IGA 12 and IGA 24 insulating enclosures (doors can be sealed without additional part).

Type	PLOV IGA 12 24
Part No.	**902 317**
Material	aluminium

Earthing clip / modular wiring system

Busbars for earth-side (single-phase) connection, connection between neutral conductor N and N' (two-phase) and phase-side connection (three-phase and four-phase).

MVS single-phase, two-pole

For connecting the earth terminal of e.g. 2 DEHNguard S surge arresters to earth.

Type	MVS 1 2
Part No.	**900 617**
Type	single-phase
Number of contact studs	2
Max. installation length	2 module(s)
Nominal cross-section	16 mm²

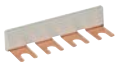
MVS single-phase, three-pole

For connecting the earth terminal of e.g. 3 DEHNguard S surge arresters to earth.

Type	MVS 1 3
Part No.	**900 615**
Type	single-phase
Number of contact studs	3
Max. installation length	3 module(s)
Nominal cross-section	16 mm²

MVS single-phase, four-pole

For connecting the earth terminal of e.g. 4 DEHNguard S surge arresters to earth.



Type	MVS 1 4
Part No.	**900 610**
Type	single-phase
Number of contact studs	4
Max. installation length	4 module(s)
Nominal cross-section	16 mm²

MVS single-phase, six-pole

For connecting the earth terminal of e.g. 3 type 1 SPDs with two-module enclosure to earth.

Type	MVS 1 6
Part No.	**900 815**
Type	single-phase
Number of contact studs	6
Max. installation length	6 module(s)
Nominal cross-section	16 mm²

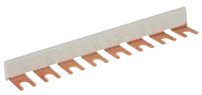
MVS single-phase, seven-pole

For connecting the earth terminal of e.g. 3 DEHNbloc Maxi and 1 DEHNgap Maxi in 3+1 configuration to earth.

Type	MVS 1 7
Part No.	**900 848**
Type	single-phase
Number of contact studs	7
Max. installation length	7 module(s)
Nominal cross-section	16 mm²

MVS single-phase, eight-pole

For connecting the earth terminal of e.g. 4 DEHNbloc Maxi lightning current arresters to earth.



Type	MVS 1 8
Part No.	**900 611**
Type	single-phase
Number of contact studs	8
Max. installation length	8 module(s)
Nominal cross-section	16 mm²

MVS three-phase, six-pole, 6 Modules

For phase-side connection of surge arresters.

Type	MVS 3 6 6
Part No.	**900 595**
Type	three-phase
Number of contact studs	6
Max. installation length	6 module(s)
Nominal cross-section	16 mm²

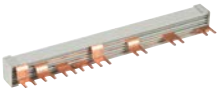
MVS three-phase, six-pole, 9 Modules

For phase-side connection of three-pole surge arresters to fuse holders (for 1.5-module enclosures).

Type	MVS 3 6 9
Part No.	**900 839**
Type	three-phase
Number of contact studs	6
Max. installation length	9 module(s)
Nominal cross-section	16 mm²

MVS four-phase, eight-pole

For phase-side connection of DIN rail mounted devices to DEHNventil M TNS and TT.



Type	MVS 4 8 8
Part No.	**900 850** NEW
Type	four-phase
Number of contact studs	8
Max. installation length	8 module(s)
Nominal cross-section	10 mm²

MVS single-phase, four-pole, 8 Modules

Modular wiring clip for TT systems, insulated, single-phase, four-pole with connection clamp up to 50 mm².

Type	MVS 1 4 8 TT
Part No.	**900 849** NEW
Type	Single-phase
Number of contact studs	4
Dimensions	166 x 38.1 x 22 mm
Max. lightning current (10/350 µs) based on DIN EN 61643-11 (I_{imp})	100 kA
Material of the electrical conductor	E-Cu-ETP
Insulation material	PC
Cross-sectional area of the feed terminal	10–50 mm (solid or stranded) / 6–35 mm² (flexible with wire end ferrule)
Max. tightening torque of the clamping screw	7 Nm
Insulated design	Yes

Earthing Clip for 1.5-module Enclosures, single-phase, two-pole

Earthing clip for connecting e.g. two SPDs with 1.5-module enclosure, with terminal.

Type	EB 1 2 1.5
Part No.	900 460
Type	single-phase
Number of contact studs	2
Dimensions	34 x 60 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, three-pole

Earthing clip for connecting e.g. three SPDs with two-module enclosure, with terminal.

Type	EB DG 1000 1 3
Part No.	900 411
Type	single-phase
Number of contact studs	3
Dimensions	34 x 112 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for 1.5-module Enclosures, single-phase, three-pole

Earthing clip for connecting e.g. three SPDs with 1.5-module enclosure, with terminal.

Type	EB 1 3 1.5
Part No.	900 418
Type	single-phase
Number of contact studs	3
Dimensions	34 x 85 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, four-pole

Earthing clip for connecting e.g. four SPDs in a two-module enclosure, with terminal.

Type	EB 1 4 9
Part No.	900 417
Type	single-phase
Number of contact studs	4
Dimensions	34 x 148 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for 1.5-module Enclosures, single-phase, four-pole

Earthing clip for connecting e.g. four SPDs with 1.5-module enclosure, with terminal.

Type	EB 1 4 1.5
Part No.	900 429
Type	single-phase
Number of contact studs	4
Dimensions	34 x 112 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for three-module Enclosures, single-phase, three-pole

Earthing clip for connecting e.g. three SPDs with three-module enclosure, with terminal.

Type	EB 1 3 10
Part No.	900 461
Type	single-phase
Number of contact studs	3
Dimensions	34 x 158 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, two-pole

Earthing clip for connecting e.g. two SPDs with two-module enclosure, with terminal.

Type	EB 1 2 5
Part No.	900 419
Type	single-phase
Number of contact studs	2
Dimensions	34 x 77 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for three-module Enclosures, single-phase, four-pole

Earthing clip for connecting e.g. four SPDs with three-module enclosure, with terminal.

Type	EB 1 4 13
Part No.	900 462
Type	single-phase
Number of contact studs	4
Dimensions	34 x 212 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Surge Protection for Information Technology Systems

Find the right product quickly and easily:
https://www.dehn-international.com/en/selection-guides-and-configurators

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Selection of arresters for information technology systems

The following must be observed when selecting arresters:

- Protective effect
  [Yellow/Line SPD class (discharge capacity and voltage protection level)]
- System parameters
  (system voltage, nominal current and transmission parameters)
- Installation environment
  (design, connection conditions and approvals)

The selection guide according to interface / signal on **dehn-international.com/en/selection-guides-and-configurators** facilitates the selection of the right arrester.

Relevant product standard for arresters:

IEC / DIN EN 61643-21
Low-voltage surge protective devices – Part 21: Surge protective devices connected to telecommunications and signalling networks – Performance requirements and testing methods.

Discharge capacity

According to IEC / EN 61643-21 arresters must be tested with at least one impulse voltage and impulse current from the table below with the specified quantity of impulses. Further tests may be performed – even with different impulse values or quantities. The max. voltage level measured during the test(s) at the output of the device is specified as voltage protection level U_P. Category C above all represents interference impulses with a steep rate of rise and low energy, while interference impulses of category D are supposed to simulate high energy loads caused by injected partial lightning currents. The relevant category is specified in the technical data of the arresters [see discharge capacity (I_n, I_{imp}) and voltage protection level (U_P)].

Category	Type of test	Impulse voltage	Impulse current	Minimum quantity of impulses	Test for
C1	fast rate of rise	0.5 kV to 2 kV, 1.2/50 µs	0.25 kA to 1 kA, 8/20 µs	300	Surge C2 arrester
C2		2 kV to 10 kV, 1.2/50 µs	1 kA to 5 kA, 8/20 µs	10	
C3		≥ 1 kV, 1 kV/µs	10 A to 100 A, 10/1000 µs	300	
D1	high energy	≥ 1 kV	0.5 kA to 2.5 kA, 10/350 µs	2	*)

Impulse voltages and currents (preferred values) for determining the voltage-limiting characteristics (excerpt from Table 3 of IEC / EN 61643-21)

*) Lightning current arrester / Combined lightning current and surge arrester

Use of arresters

The application guide CLC TS 61643-22 / IEC 61643-22 describes principles for selecting and using arresters. It defines basic requirements on the loads with which arresters are tested for using arresters at the different zone transitions of the lightning protection zone concept according to IEC / EN 62305. The protection components at the different lightning protection zones must therefore cope with with defined pulse categories.

Lightning protection zone	LPZ 0/1	LPZ 1/2	LPZ 2/3
Entrance point into the building	D1		
Sub-distribution board		C2	
Terminal device			C1

Impulse category requirements for SPDs for information technology applications according to the lightning protection zone concept

To make the selection of arresters easier for the user, the SPD class (TYPE classification) for Yellow/Line arresters is based on that of arresters (Red/Line) for power supply systems. However, so-called combined arresters can also be used universally at the different lightning protection zones. Consequently, the different impulse categories (D1, C2, C1) for the arresters are specified according to their possible point of use.

LPZ	EN / IEC 61643-21	EN / IEC 61643-11
0/1	D1 | 0.5 … 2,5 kA (10/350 µs)	Typ 1 / I
1/2	C2 | 1 … 5 kA (8/20 µs)	Typ 2 / II
2/3	C1 | 0.25 … 1 kA (8/20 µs)	Typ 3 / III

Impulse categories and arrester classification for arresters in information technology and power supply systems

Immunity of terminal equipment to be protected

During electromagnetic compatibility (EMC) tests, electrical and electronic equipment (devices) must have a certain immunity to conducted interferences (surges). The requirements on the immunity and the test set-up are described in IEC / EN 61000-4-5.

Since the devices are used in different electromagnetic environments, they must have different immunities. The immunity of a device depends on the test level. To classify the different immunities of terminal equipment, test levels are subdivided into four different levels (1 to 4). Test level 1 places the lowest requirement on the immunity of terminal equipment. The test level is specified in the arrester documentation or can be requested from the manufacturer of the arrester.

Test levels 1 – 4 according to EN 61000-4-5	Corresponds to the charging voltage of the test generator
1	0.5 kV
2	1 kV
3	2 kV
4	4 kV

Protective effect of arresters

Yellow/Line arresters for use in information technology systems are capable of limiting conducted interference to a safe level so that the immunity of the terminal equipment is not exceeded. For example, an arrester with a let-through value below the EMC test values of the terminal device must be selected for a terminal device tested with test level 2: Impulse voltage < 1 kV in combination with an impulse current of some amperes (depending on the coupling network).

Yellow/Line SPD Classes – Symbols

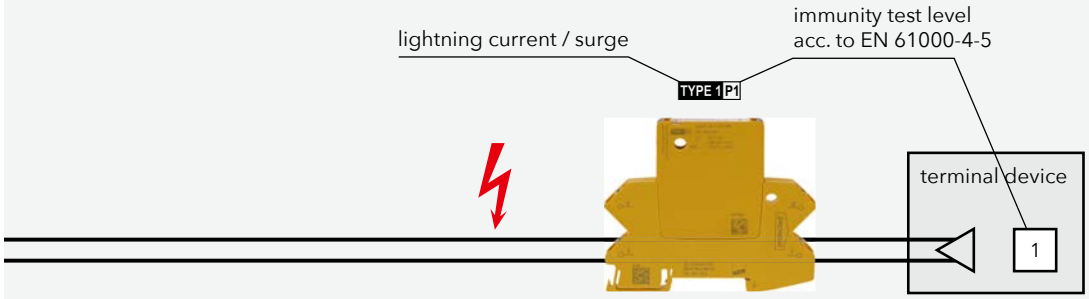
All SPDs of the Yellow/Line family for use in information technology systems are assigned to a Yellow/Line SPD class and marked with a symbol in the technical data sheet and on their rating plates.

The symbol for the Yellow/Line SPD class graphically combines three important characteristics of the SPD and can be a single symbol or a combination of individual symbols:

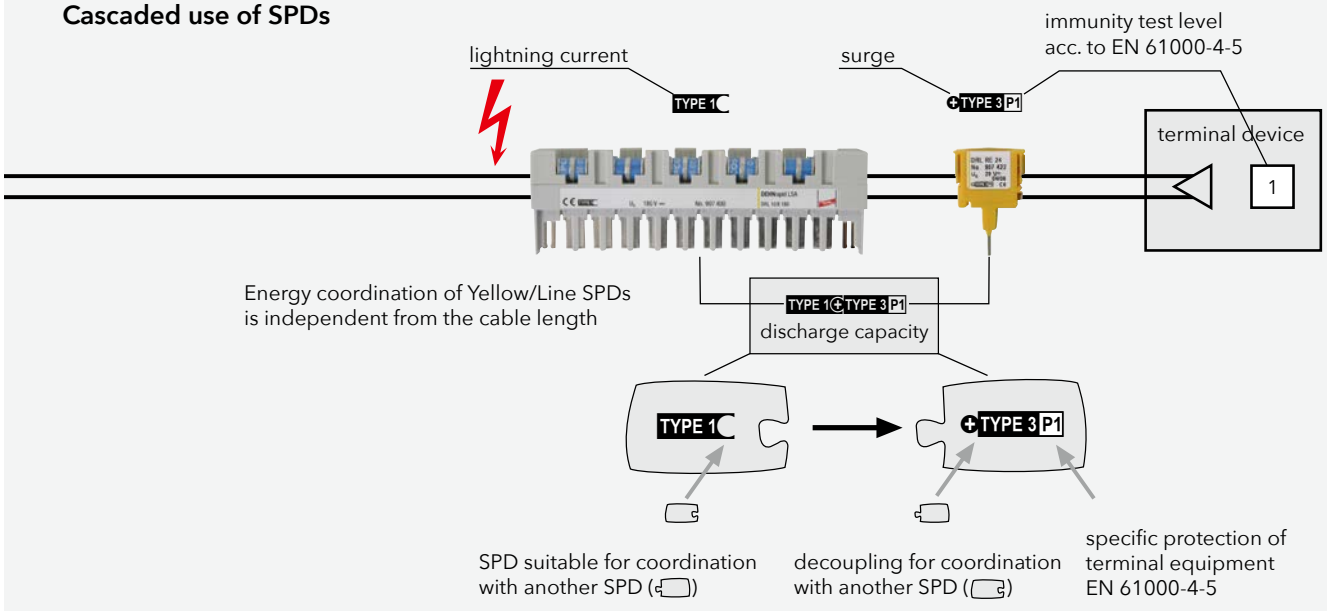
Characteristics	Single symbol	Definition
Discharge capacity of an SPD (according to the categories from IEC / EN 61643-21)	TYPE 1	Impulse D1 (10/350), lightning impulse current 0.5 to 2.5 kA/line ⇨ exceeds the discharge capacity of TYPE 2 – TYPE 4
	TYPE 2	Impulse C2 (8/20), increased impulse load 1 to 5 kA/line ⇨ exceeds the discharge capacity of TYPE 3 – TYPE 4
	TYPE 3	Impulse C1 (8/20), impulse load 0.25 to 1 kA/line ⇨ exceeds the discharge capacity of TYPE 4
	TYPE 4	Load < TYPE 3
Protective effect of an SPD (limitation below the test levels according to EN 61000-4-5)	P1	Required test level of the terminal device: 1 or higher
	P2	Required test level of the terminal device: 2 or higher
	P3	Required test level of the terminal device: 3 or higher
	P4	Required test level of the terminal device: 4 or higher
Energy coordination (with another Yellow/Line SPD)	⊕	SPD with decoupling impedance, suitable for coordination with an SPD marked with ⊐.
	⊐	SPD is suitable for coordination with an SPD with decoupling impedance ⊕.

Examples of energy-coordinated SPDs according to the Yellow/Line SPD class:

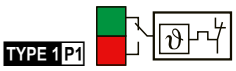
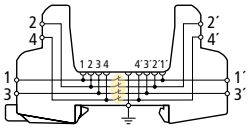
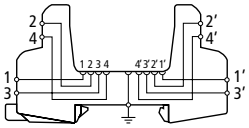
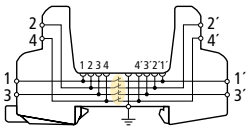
Use of a combined lightning current and surge arrester



Cascaded use of SPDs



Pluggable SPDs – DIN Rail Mounted

Type	Basic circuit diagram / Symbol	Product	Part No.	Page
BLITZDUCTORconnect – Modular				
BCO ML2 ... ▪ Combined lightning current and surge arrester with a modular design ▪ With push-in connection technology and signal disconnection ▪ With vibration-proof secR module locking mechanism ▪ Integrated LifeCheck and visual status indication			**927 2XX**	71
BCO ML2 BD EX 24 ▪ Surge arrester with a modular design for hazardous areas ▪ With push-in connection technology and signal disconnection ▪ With vibration-proof secR module locking mechanism ▪ Integrated LifeCheck and visual status indication			**927 284**	72
Base Parts BXT BAS / BSP BAS 4				
BXT BAS ▪ Universal base part for protection modules of the BLITZDUCTOR XT / XTU and BLITZDUCTOR SP series ▪ No signal disconnection if the protection module is removed ▪ Connection of up to four lines			**920 300**	75
BSP BAS 4 ▪ Universal base part for protection modules of the BLITZDUCTOR XT / XTU and BLITZDUCTOR SP series ▪ Signal disconnection if the protection module is removed ▪ Connection of up to four lines			**926 304**	75
BLITZDUCTOR XT				
BXT ML ... ▪ Combined lightning current and surge arrester modules ▪ With integrated LifeCheck ▪ Two-pole and four-pole versions			**920 XXX**	76
BXT M2 BD HC5A 24 ▪ Combined lightning current and surge arrester module for protecting 1 pair of unearthed signal circuits ▪ Optimal for protecting DC signal circuits up to a nominal current of 5 A ▪ For controlling motor-driven actuators with high starting and operating currents			**920 296**	79
BLITZDUCTOR XTU				
BXTU ML ... ▪ Universal lightning current and surge arrester modules ▪ With integrated LifeCheck ▪ With integrated actiVsense technology ▪ Two-pole and four-pole versions			**920 349** **920 249**	80 80
BLITZDUCTOR XT Ex (i)				
BXT BAS EX ▪ Universal base part for protection modules of the BLITZDUCTOR XT Ex (i) series ▪ No signal disconnection if the protection module is removed ▪ Connection of up to four lines			**920 301**	80
BXT ML ... ▪ Surge arrester modules for hazardous areas ▪ With integrated LifeCheck ▪ Two-pole and four-pole versions			**920 XXX**	80

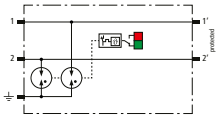
BLITZDUCTORconnect – Modular

- Combined lightning current and surge arrester with a modular design and integrated visual status indication
- Push-in connection technology and signal disconnection
- With vibration-proof secR module locking mechanism
- Intrinsically safe version for hazardous areas

Ex

BCO ML2 B 180

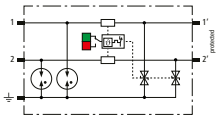
Space-saving, modular lightning current arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines for lightning equipotential bonding as well as indirect earthing of shielded cables. With signal disconnection for maintenance purposes.



Type BCO ...	ML2 B 180
Part No.	**927 210**
SPD class	TYPE 1
Nominal voltage (U_N)	180 V
Max. continuous operating voltage (d.c.) (U_C)	180 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	0 ohm(s)
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

BCO ML2 BE

Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines sharing a common reference potential as well as unbalanced interfaces. With signal disconnection for maintenance purposes.



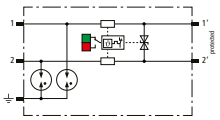
General technical data:	
SPD class	TYPE 1P1
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA

Type BCO ...	ML2 BE 12	ML2 BE 24
Part No.	**927 222**	**927 224**
Nominal voltage (U_N)	12 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	15 V	33 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	1.4 MHz	3.4 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	ML2 BE 48	ML2 BE 180
Part No.	**927 225**	**927 227** NEW
Nominal voltage (U_N)	48 V	180 V
Max. continuous operating voltage (d.c.) (U_C)	54 V	180 V
Nominal current at 70 °C (I_L)	0.75 A	0.5 A
Series resistance per line	1 ohm(s)	1.8 ohm(s)
Cut-off frequency line-line (f_G)	5 MHz	10 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL

BCO ML2 BD

Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of unearthed balanced interfaces. With signal disconnection for maintenance purposes.



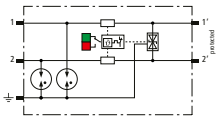
General technical data:	
SPD class	TYPE 1P2
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA

Type BCO ...	ML2 BD 12	ML2 BD 24
Part No.	**927 242**	**927 244**
Nominal voltage (U_N)	12 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	15 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	2.6 MHz	5.8 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	ML2 BD 48	ML2 BD 180
Part No.	**927 245**	**927 247** NEW
Nominal voltage (U_N)	48 V	180 V
Max. continuous operating voltage (d.c.) (U_C)	56 V	180 V
Nominal current at 70 °C (I_L)	0.75 A	0.5 A
Series resistance per line	1 ohm(s)	1.8 ohm(s)
Cut-off frequency line-line (f_G)	3.6 MHz	10 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL

BCO ML2 BE HF

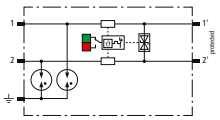
Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines of high-frequency transmissions sharing a common reference potential as well as unbalanced interfaces. With signal disconnection for maintenance purposes.



Type BCO ...	ML2 BE HF 5	ML2 BE HF 24
Part No.	**927 270**	**927 274** NEW
SPD class	TYPE 1P1	TYPE 1P1
Nominal voltage (U_N)	5 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	8.5 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Series resistance per line	1 ohm(s)	1 ohm(s)
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL

BCO ML2 BD HF

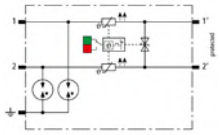
Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of unearthed high-frequency bus systems as well as balanced interfaces. With signal disconnection for maintenance purposes.



Type BCO ...	ML2 BD HF 5	ML2 BD HF 24
Part No.	**927 271**	**927 275** NEW
SPD class	TYPE 1 P2	TYPE 1 P2
Nominal voltage (U_N)	5 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	8.5 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	100 MHz	100 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL

BCO ML2 BPD 24

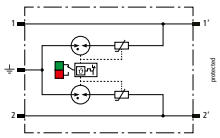
Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair in 24 V DC systems. Also suitable for use with earthed negative pole; integrated PTC resistors allow for secure resetting of the arrester after interference in the system circuit with short-circuit currents of up to 40 A. With signal disconnection for maintenance purposes.



Type BCO ...	ML2 BPD 24
Part No.	**927 214** NEW
SPD class	TYPE 1 P2
Nominal voltage (U_N)	24 V
Max. continuous operating voltage (d.c.) (U_C)	33 V
Nominal current at 70 °C (I_L)	0.1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	10 ohm(s)
Cut-off frequency line-line (f_G)	4.5 MHz
Approvals	UL

BCO ML2 MVG 230

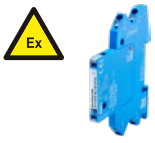
Space-saving, modular surge arrester with a width of 6 mm and push-in connection technology with status indication for protecting 2 lines of stranded unearthed signal interfaces with a nominal voltage of 230 V. With signal disconnection for maintenance purposes.
Meets, amongst other things, the requirements for signalling systems in the railway industry (e.g. DB RIL 819.0808 railway directive).

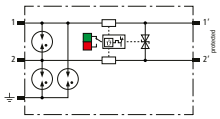


Type BCO ...	ML2 MVG 230
Part No.	**927 290** NEW
SPD class	TYPE 2 P3
Nominal voltage (U_N)	230 V
C2 Total nominal discharge current (8/20 µs) (I_n)	6 kA
Series resistance per line	0 ohm(s)
Approvals	SIL

BCO ML2 BD EX 24

Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V line-ground. With signal disconnection for maintenance purposes.

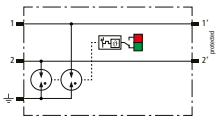




Type BCO ...	ML2 BD EX 24
Part No.	**927 284**
SPD class	TYPE 1 P2
Nominal voltage (U_N)	24 V
Max. continuous operating voltage (d.c.) (U_C)	36 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohm(s)
Cut-off frequency line-line (f_G)	3.5 MHz
Approvals	ATEX, IECEx, CCC

BCO MOD ML2 B

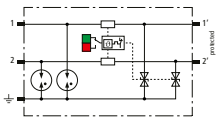
Protection module with a width of 6 mm for BLITZDUCTORconnect lightning current arrester with status inidication for protecting two single lines for lightning equipotential bonding as well as indirect earthing of shielded cables.



Type BCO ...	MOD ML2 B 180
Part No.	**927 010**
SPD class	TYPE 1
Nominal voltage (U_N)	180 V
Max. continuous operating voltage (d.c.) (U_C)	180 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	0 ohm(s)
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

BCO MOD ML2 BE

Protection module with a width of 6 mm for BLITZDUCTORconnect combined arrester with status inidication for protecting two single lines sharing a common reference potential as well as unbalanced interfaces.



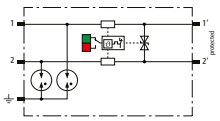
General technical data:	
SPD class	TYPE 1 P1
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA

Type BCO ...	MOD ML2 BE 12	MOD ML2 BE 24
Part No.	927 022	927 024
Nominal voltage (U_N)	12 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	15 V	33 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	1.4 MHz	3.4 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	MOD ML2 BE 48	MOD ML2 BE 180
Part No.	927 025	927 027 NEW
Nominal voltage (U_N)	48 V	180 V
Max. continuous operating voltage (d.c.) (U_C)	54 V	180 V
Nominal current at 70 °C (I_L)	0.75 A	0.5 A
Series resistance per line	1 ohm(s)	1.8 ohm(s)
Cut-off frequency line-line (f_G)	5 MHz	10 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, SIL

BCO MOD ML2 BD

Protection module with a width of 6 mm for BLITZDUCTORconnect combined arrester with status inidication for protecting one pair of unearthed balanced interfaces.



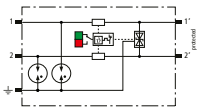
General technical data:	
SPD class	TYPE 1 P2
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA

Type BCO ...	MOD ML2 BD 12	MOD ML2 BD 24
Part No.	927 042	927 044
Nominal voltage (U_N)	12 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	15 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	2.6 MHz	5.8 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	MOD ML2 BD 48	MOD ML2 BD 180
Part No.	927 045	927 047 NEW
Nominal voltage (U_N)	48 V	180 V
Max. continuous operating voltage (d.c.) (U_C)	56 V	180 V
Nominal current at 70 °C (I_L)	0.75 A	0.5 A
Series resistance per line	1 ohm(s)	1.8 ohm(s)
Cut-off frequency line-line (f_G)	3.6 MHz	10 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, SIL

BCO MOD ML2 BE HF

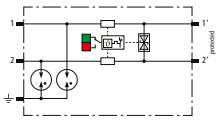
Protection module with a width of 6 mm for BLITZDUCTORconnect combined arrester with status inidication for protecting two single lines of high-frequency transmissions sharing a common reference potential as well as unbalanced interfaces.



Type BCO ...	MOD ML2 BE HF 5	MOD ML2 BE HF 24
Part No.	927 070	927 074 NEW
SPD class	TYPE 1 P1	TYPE 1 P1
Nominal voltage (U_N)	5 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	8.5 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Series resistance per line	1 ohm(s)	1 ohm(s)
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, SIL

BCO MOD ML2 BD HF

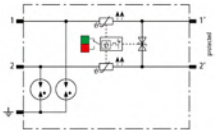
Protection module with a width of 6 mm for BLITZDUCTORconnect combined arrester with status inidication for protecting one pair of unearthed high-frequency bus systems as well as balanced interfaces.



Type BCO ...	MOD ML2 BD HF 5	MOD ML2 BD HF 24
Part No.	927 071	927 075 NEW
SPD class	TYPE 1 P2	TYPE 1 P2
Nominal voltage (U_N)	5 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	8.5 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	100 MHz	100 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, SIL

BCO MOD ML2 BPD

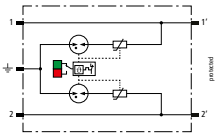
Combined arrester protection module with a width of 6 mm for BLITZDUCTORconnect with status indication for protecting one pair in 24 V DC systems. Also suitable for use with an earthed negative pole. Integrated PTC resistors allow for secure resetting of the arrester after interference in the system circuit with short-circuit currents of up to 40 A.



Type BCO ...	MOD ML2 BPD 24
Part No.	927 014 NEW
SPD class	TYPE 1 P2
Nominal voltage (U_N)	24 V
Max. continuous operating voltage (d.c.) (U_C)	33 V
Nominal current at 70 °C (I_L)	0.1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	10 ohm(s)
Cut-off frequency line-line (f_G)	4.5 MHz
Approvals	UL, SIL

BCO MOD ML2 MVG 230

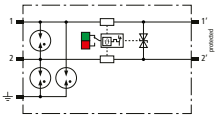
Surge arrester protection module with a width of 6 mm for BLITZDUCTORconnect with status indication for protecting 2 lines of stranded unearthed signal interfaces with a nominal voltage of 230 V. Meets, amongst other things, the requirements for signalling systems in the railway industry (e.g. DB RIL 819.0808 railway directive).



Type BCO ...	MOD ML2 MVG 230
Part No.	**927 090** NEW
SPD class	TYPE 2 P3
Nominal voltage (U_N)	230 V
C2 Total nominal discharge current (8/20 µs) (I_n)	6 kA
Series resistance per line	0 ohm(s)
Approvals	SIL

BCO MOD ML2 BD EX 24

Protection module with a width of 6 mm for BLITZDUCTORconnect combined arresters with status indication for protecting one pair of intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V line-ground.



Type BCO ...	MOD ML2 BD EX 24
Part No.	**927 084**
SPD class	TYPE 1 P2
Nominal voltage (U_N)	24 V
Max. continuous operating voltage (d.c.) (U_C)	36 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohm(s)
Cut-off frequency line-line (f_G)	3.5 MHz
Approvals	ATEX, IECEx, CCC, SIL

Accessories for BLITZDUCTORconnect – Modular

Earthing Module

Space-saving earthing module with base part in a width of 6 mm and push-in connection technology for defined equipotential bonding of all wires connected to the base part. For direct earthing of 2 cable cores that are not being used actively. With signal disconnection for maintenance purposes.

Type	BCO M2 E
Part No.	**927 318** NEW
D1 total lightning impulse current (10/350 µs) (I_{imp})	3 kA
Operating temperature range (T_U)	-40°C to +80°C
Degree of protection (plugged in)	IP 20

PARTITION EXI

Special installation conditions have to be taken into account when using the BLITZDUCTORconnect surge protective devices in intrinsically safe electric circuits. According to EN 60079-11; 2007 (VDE 0170-7), a minimum clearance must be maintained between intrinsically safe and non-intrinsically safe signal circuits (connecting parts, e.g. connection clamps) of ≥ 50 mm! When using the Ex i partition of type PARTITION EXI, this clearance is also maintained if the surge protective devices are arranged directly next to one other. Ideally suited for use in conjunction with DRC IRCM for condition monitoring of BCO modules.
(1 pack = 2 pieces)

Type	PARTITION EXI
Part No.	**910 797**
Colour	blue
For mounting on	35 mm DIN rails acc. to EN 60715

DRC IRCM

Condition monitoring unit DEHNrecord, set for DIN rail mounted devices with integrated visual transmitter/receiver and visual reverse unit for monitoring the condition of BCO/DPA arresters with LifeCheck. Visual arrester status indication via LED group display in combination with remote signalling contact (break contact).

Type	DRC IRCM
Part No.	**910 710**
Input voltage range (d.c.) (U_{IN})	6-35 V DC
Max. rated current consumption (I_{IN})	≤ 10 mA
Operating temperature range (T_U)	-30 °C ... +70 °C
Approvals	UL

Accessories for BLITZDUCTORconnect – Modular

DIN Rail Mounted Power Supply Unit

Robust power supply in the DIN-rail-mounted enclosure with single-phase, wide-range input for operation in a wide variety of supply systems. The operating state indication on the front side signals the availability of the output voltage. Supply of stationary condition-monitoring devices from the DEHNrecord product range (DRC SCM XT / DRC MCM XT / DRC IRCM / DRC SD 2 1).

Type	PSU DC24 30W
Part No.	**910 499**
Input voltage range	AC 85-264 V; DC 120-373 V
Frequency	44-66 Hz; 0 Hz
Input current (I_e)	0.7 A at AC 110 V / 0.5 A at AC 230 V
Output nominal voltage (U_a)	DC 24 V (SELV)
Output current (I_a)	1.3 A at DC 24 V, max. 0.9 A at any installation position
Recommended backup fuse	circuit breaker 10 A, 16 A, characteristic B, C
Standards / regulations	EN 60950, EN 61204-3, UL 60950, UL 508, GL

BLITZDUCTORconnect base part

Two-pole arrester base for installation on printed circuit boards by means of soldering process for BLITZDUCTORconnect modules. With integrated remote signalling contact (floating changeover contact) for the condition monitoring of the protection modules.

BCO BAS PCB FM

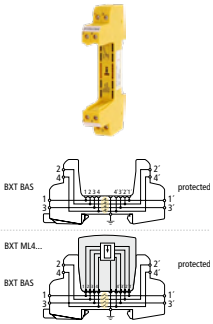
Two-pole arrester base for installation on printed circuit boards by means of soldering process for BLITZDUCTORconnect modules. With integrated remote signalling contact (floating changeover contact) for the condition monitoring of the protection modules.

Type	BCO BAS PCB FM
Part No.	**927 305** NEW
Associated protection module	BCO MOD ...
Installation on	Directly soldered onto the printed circuit board
Degree of protection	IP 20 (with plug-in protection module)
Remote signalling contacts / type of contact	Changeover contact

BLITZDUCTOR – Base Parts

- Universal base parts for protection modules of the BLITZDUCTOR XT/XTU/SP series
- Two base parts with or without signal disconnection if the protection module is removed
- Connection of up to four lines

BXT BAS

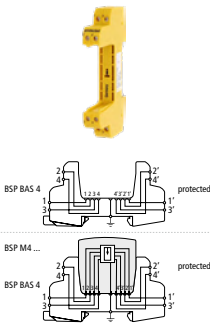


The BLITZDUCTOR XT base part is an extremely space-saving and universal four-pole **feed-through terminal** for the insertion of a protection module **without** signal disconnection if the protection module is removed. The snap-in mechanism at the supporting foot of the base part allows the protection module to be safely earthed via the DIN rail. Since no components of the protective circuit are situated in the base part, maintenance is only required for the protection modules.

Type	BXT BAS
Part No.	**920 300**
For mounting on	35 mm DIN rails acc. to EN 60715
Cross-sectional area, solid	0.08-4 mm²
Cross-sectional area, flexible	0.08-2.5 mm²
Tightening torque (terminals)	0.4 Nm
Earthing via	35 mm DIN rails acc. to EN 60715
Approvals	CSA, UL, ATEX, IECEx *)

*) only in connection with an approved protection module

BSP BAS 4



The BLITZDUCTOR SP base part is an extremely space-saving and universal four-pole **terminal** for the insertion of a protection module **with** signal disconnection if the protection module is removed. The snap-in mechanism at the supporting foot of the base part allows the protection module to be safely earthed via the DIN rail. Since no components of the protective circuit are situated in the base part, maintenance operation is only required for the protection modules.

Type	BSP BAS 4
Part No.	**926 304**
For mounting on	35 mm DIN rails acc. to EN 60715
Cross-sectional area, solid	0.08-4 mm²
Cross-sectional area, flexible	0.08-2.5 mm²
Tightening torque (terminals)	0.4 Nm
Earthing via	35 mm DIN rails acc. to EN 60715
Approvals	UL, CSA

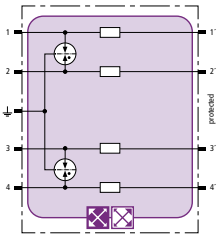
*) only in connection with an approved protection module

BLITZDUCTOR XT – Protection Modules

- Combined lightning current and surge arrester modules
- With integrated LifeCheck
- Two-pole and four-pole versions available

BXT ML4 B 180

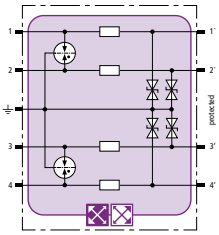
Space-savings four-pole lightning current arrester module with RFID LifeCheck feature for almost all applications. For use in connection with downstream TYPE 2 P1 surge arresters or combined lightning current and surge arresters with a lower or equal voltage level. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML4 B 180
Part No.	920 310
SPD class	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 45 °C (I_L)	1.2 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0.4 ohm(s)

BXT ML4 BE 5 – BE 180

Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting four single lines sharing a common reference potential as well as unbalanced interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



General technical data:	
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA

Type BXT ...	ML4 BE 5	ML4 BE 12
Part No.	920 320	920 322
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6 V	15 V
Nominal current at 45 °C (I_L)	1.0 A	0.75 A
Series resistance per line	1.0 ohm(s)	1.8 ohm(s)
Cut-off frequency line-PG (f_G)	1.0 MHz	2.7 MHz

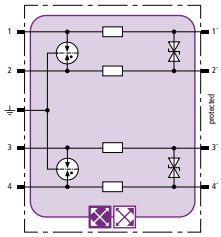
Type BXT ...	ML4 BE 24	ML4 BE 36
Part No.	920 324	920 336
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	33 V	45 V
Nominal current at 45 °C (I_L)	0.75 A	1.8 A
Series resistance per line	1.8 ohm(s)	0.43 ohm(s)
Cut-off frequency line-PG (f_G)	6.8 MHz	3.8 MHz

Type BXT ...	ML4 BE 48	ML4 BE 60
Part No.	920 325	920 326
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	54 V	70 V
Nominal current at 45 °C (I_L)	0.75 A	1.0 A
Series resistance per line	1.8 ohm(s)	1.0 ohm(s)
Cut-off frequency line-PG (f_G)	8.7 MHz	9.0 MHz

Type BXT ...	ML4 BE 180
Part No.	920 327
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 45 °C (I_L)	1.0 A
Series resistance per line	1.0 ohm(s)
Cut-off frequency line-PG (f_G)	25.0 MHz

BXT ML4 BD 5 – BD 180

Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting two pairs of unearthed balanced interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



General technical data:	
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA

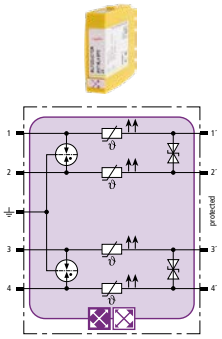
Type BXT ...	ML4 BD 5	ML4 BD 12
Part No.	920 340	920 342
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V	15 V
Nominal current at 45 °C (I_L)	1.0 A	1.0 A
Series resistance per line	1.0 ohm(s)	1.0 ohm(s)
Cut-off frequency line-line (f_G)	1.0 MHz	2.8 MHz

Type BXT ...	ML4 BD 24	ML4 BD 48
Part No.	920 344	920 345
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	33 V	54 V
Nominal current at 45 °C (I_L)	1.0 A	1.0 A
Series resistance per line	1.0 ohm(s)	1.0 ohm(s)
Cut-off frequency line-line (f_G)	7.8 MHz	8.7 MHz

Type BXT ...	ML4 BD 60	ML4 BD 180
Part No.	920 346	920 347
SPD class	TYPE 1 P1	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	70 V	180 V
Nominal current at 45 °C (I_L)	1.0 A	0.75 A
Series resistance per line	1.0 ohm(s)	1.8 ohm(s)
Cut-off frequency line-line (f_G)	11.0 MHz	25.0 MHz

BXT ML4 BPD 24

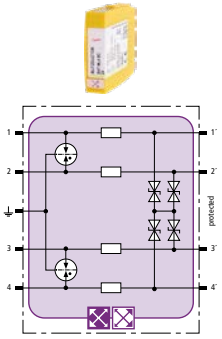
Space-saving combined arrester module with RFID LifeCheck for protecting two pairs in 24 V d.c. systems. Can also be used for systems with earthed negative poles. Integrated PTC resistors allow to reliably reset the arrester after the system circuit has been affected by short-circuit currents up to 40 A.



Type BXT …	ML4 BPD 24
Part No.	920 314
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	33 V
Nominal current at 70 °C (I_L)	0.1 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	typ. 10 ohm(s)
Cut-off frequency line-line (f_G)	4 MHz

BXT ML4 BC 5 / 24

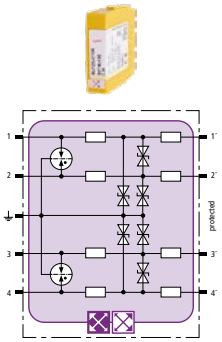
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting up to four unearthed single lines sharing a common reference potential. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT …	ML4 BC 5	ML4 BC 24
Part No.	920 350	920 354
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V	33 V
Nominal current at 45 °C (I_L)	1.0 A	0.75 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Series resistance per line	1.0 ohm(s)	1.8 ohm(s)
Cut-off frequency line-line (f_G)	1.0 MHz	5.7 MHz

BXT ML4 BE C 12 / 24

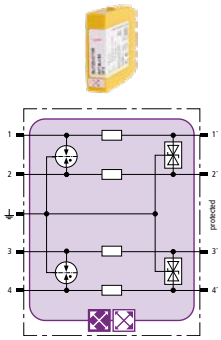
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting two pairs of balanced interfaces with diode protective circuit at the input, current loops (TTY) and optocoupler inputs. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT …	ML4 BE C 12	ML4 BE C 24
Part No.	920 362	920 364
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	15 V	33 V
Nominal current at 80 °C (I_L)	0.1 A	0.1 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Series resistance per line	13.8 ohm(s)	28.8 ohm(s)
Cut-off frequency line-PG (f_G)	0.85 MHz	1.7 MHz

BXT ML4 BE HF 5

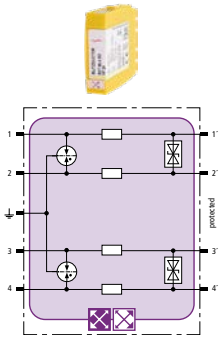
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting four single lines sharing a common reference potential as well as high-frequency transmissions without galvanic isolation. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT …	ML4 BE HF 5
Part No.	920 370
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V
Nominal current at 45 °C (I_L)	1.0 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	1.0 ohm(s)
Cut-off frequency line-PG (f_G)	100.0 MHz

BXT ML4 BD HF 5 / 24

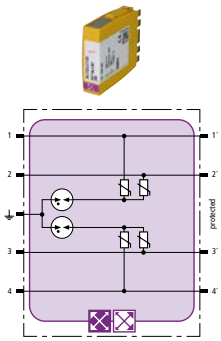
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting two pairs of unearthed high-frequency bus systems or two-wire video transmission systems. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT …	ML4 BD HF 5	ML4 BD HF 24
Part No.	920 371	920 375
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V	33 V
Nominal current at 45 °C (I_L)	1.0 A	1.0 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Series resistance per line	1.0 ohm(s)	1.0 ohm(s)
Cut-off frequency line-line (f_G)	100.0 MHz	100.0 MHz

BXT ML4 MY 110 / 250

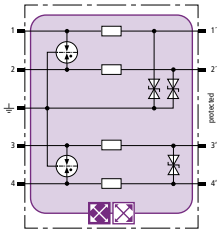
Space-saving surge arrester module with RFID LifeCheck for protecting four lines of stranded signal interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT …	ML4 MY 110	ML4 MY 250
Part No.	920 388	920 389
SPD class	TYPE 2 P2	TYPE 2 P3
Max. continuous operating voltage (d.c.) line-line (U_C)	170 V	620 V
Max. continuous operating voltage (d.c.) line-PG (U_C)	85 V	320 V
Nominal current at 80 °C (I_L)	3.0 A	3.0 A
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Cut-off frequency line-line (f_G)	4.5 MHz	20.0 MHz

BXT ML4 BE BD 24

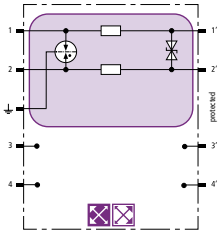
Space-saving surge arrester module with RFID LifeCheck for protecting two single lines with common reference potential as well as unbalanced interfaces and one pair of unearthed balanced interfaces. LifeCheck detects thermal or electrical overload after which the arrester has to be replaced. The status is indicated contactlessly by DEHNrecord LC / MCM.



Type BXT …	ML4 BE BD 24
Part No.	**920 334**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	33 V
Nominal current at 45 °C (I_L)	0.75 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA

BXT ML2 BD 180

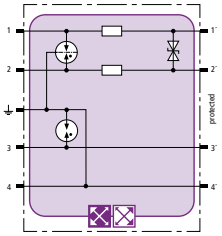
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting one pair of unearthed balanced interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT …	ML2 BD 180
Part No.	**920 247**
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 45 °C (I_L)	0.75 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	1.8 ohm(s)
Cut-off frequency line-line (f_G)	25.0 MHz

BXT ML2 BD S 5 – BD S 48

Space-saving combined arrester module with RFID LifeCheck for protecting 1 pair of unearthed symmetrical interfaces, either direct or indirect shield earthing If LifeCheck detects thermal and electrical overloads after which the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / SCM / MCM.



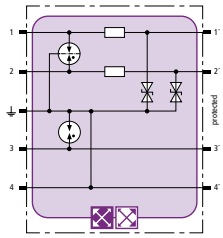
General technical data:	
SPD class	TYPE 1 P1
Nominal current at 45 °C (I_L)	1.0 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	1.0 ohm(s)

Type BXT …	ML2 BD S 5	ML2 BD S 12
Part No.	**920 240**	**920 242**
Max. continuous operating voltage (d.c.) (U_C)	6.0 V	15 V
Cut-off frequency line-line (f_G)	1.0 MHz	2.8 MHz

Type BXT …	ML2 BD S 24	ML2 BD S 48
Part No.	**920 244**	**920 245**
Max. continuous operating voltage (d.c.) (U_C)	33 V	54 V
Cut-off frequency line-line (f_G)	7.8 MHz	8.7 MHz

BXT ML2 BE S 5 – BE S 48

Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting two single lines sharing a common reference potential as well as unbalanced interfaces, with direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



General technical data:	
SPD class	TYPE 1 P1
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA

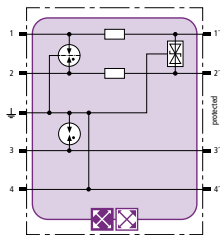
Type BXT …	ML2 BE S 5	ML2 BE S 12
Part No.	**920 220**	**920 222**
Max. continuous operating voltage (d.c.) (U_C)	6.0 V	15 V
Nominal current at 45 °C (I_L)	1.0 A	0.75 A
Series resistance per line	1.0 ohm(s)	1.8 ohm(s)
Cut-off frequency line-PG (f_G)	1.0 MHz	2.7 MHz

Type BXT …	ML2 BE S 24	ML2 BE S 36
Part No.	**920 224**	**920 226**
Max. continuous operating voltage (d.c.) (U_C)	33 V	45 V
Nominal current at 45 °C (I_L)	0.75 A	1.8 A
Series resistance per line	1.8 ohm(s)	0.43 ohm(s)
Cut-off frequency line-PG (f_G)	6.8 MHz	3.8 MHz

Type BXT …	ML2 BE S 48
Part No.	**920 225**
Max. continuous operating voltage (d.c.) (U_C)	54 V
Nominal current at 45 °C (I_L)	0.75 A
Series resistance per line	1.8 ohm(s)
Cut-off frequency line-PG (f_G)	8.7 MHz

BXT ML2 BE HFS 5

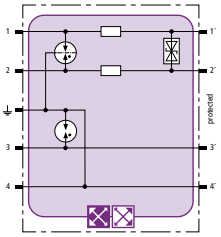
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting one pair of high-frequency transmissions without galvanic isolation, with direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT …	ML2 BE HFS 5
Part No.	**920 270**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V
Nominal current at 45 °C (I_L)	1.0 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	1.0 ohm(s)
Cut-off frequency line-PG (f_G)	100.0 MHz

BXT ML2 BD HFS 5

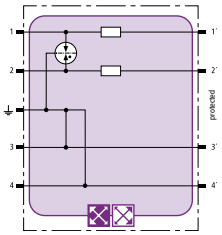
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting one pair of unearthed high-frequency bus systems or video transmission systems, with direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML2 BD HFS 5
Part No.	920 271
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V
Nominal current at 45 °C (I_L)	1.0 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	1.0 ohm(s)
Cut-off frequency line-line (f_G)	100.0 MHz

BXT ML2 B 180

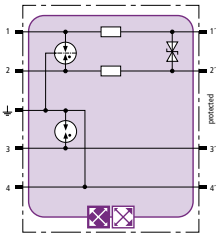
Space-saving two-pole lightning current arrester module with RFID LifeCheck and shield earthing for almost all applications. For use in conjunction with downstream TYPE 2 P1 surge arresters or combined lightning current and surge arresters with a lower or equal voltage level. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML2 B 180
Part No.	920 211
SPD class	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 45 °C (I_L)	1.2 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0.4 ohm(s)

BXT ML2 BD DL S 15

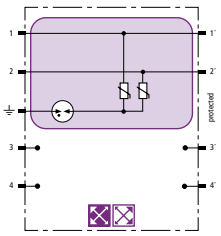
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting one pair of unearthed balanced interfaces, which specifically fulfils the requirements of Dupline buses, direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML2 BD DL S 15
Part No.	920 243
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	17 V
Nominal current at 70 °C (I_L)	0.4 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	2.2 ohm(s)
Cut-off frequency line-line (f_G)	2.7 MHz

BXT ML2 MY 250

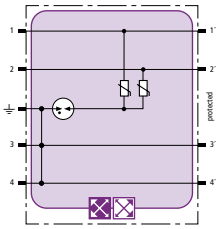
Space-saving surge arrester module with RFID LifeCheck for protecting two lines of stranded signal interfaces up to 250 V a.c. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML2 MY 250
Part No.	920 289
SPD class	TYPE 2 P3
Max. continuous operating voltage (d.c.) line-line (U_C)	620 V
Max. continuous operating voltage (d.c.) line-PG (U_C)	320 V
Nominal current at 80 °C (I_L)	3.0 A
C2 Total nominal discharge current (8/20 µs) (I_n)	5 kA
Cut-off frequency line-line (f_G)	20.0 MHz

BXT ML2 MY E 110

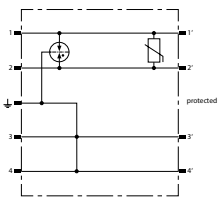
Space-saving surge arrester module with RFID LifeCheck for protecting two pairs of stranded signal interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML2 MY E 110
Part No.	920 288
SPD class	TYPE 2 P2
Max. continuous operating voltage (d.c.) line-line (U_C)	170 V
Max. continuous operating voltage (d.c.) line-PG (U_C)	85 V
Nominal current at 80 °C (I_L)	3.0 A
C2 Total nominal discharge current (8/20 µs) (I_n)	5 kA
Series resistance per line	0 ohm(s)
Cut-off frequency line-line (f_G)	4.5 MHz

BXT M2 BD HC5A 24

Space-saving combined arrester module for protecting one pair of unearthed balanced interfaces. Module is adapted to interfaces with direct currents up to 5 A, e.g. for the controller of motor-driven actuators with high starting and operating currents.



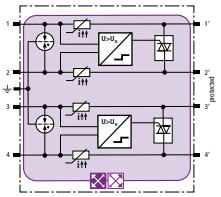
Type BXT ...	M2 BD HC5A 24
Part No.	920 296
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	36 V
Nominal current (I_L)	5 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0 ohm(s)

BLITZDUCTOR XTU – Protection modules with RFID LifeCheck

- Universal lightning current and surge arrester modules
- With integrated LifeCheck
- With integrated actiVsense technology
- Two-pole and four-pole versions available

BXTU ML4 BD 0-180

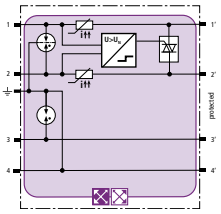
Space-saving combined lightning current and surge arrester module with actiVsense technology and RFID LifeCheck for protecting two pairs (same or different operating voltage) of balanced interfaces with galvanic isolation. Automatically detects the operating voltage of the useful signal and optimally adapts the voltage protection level to it.



Type BXTU ...	ML4 BD 0-180
Part No.	**920 349**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Permissible superimposed signal voltage (U_{signal})	≤ +/- 5 V
Cut-off frequency line-line (U_{signal}, balanced 100 ohms) (f_G)	50 MHz
Nominal current at 80 °C (equal to max. short-circuit current) (I_L)	100 mA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	≤ 10 ohms; typically 7.5 ohms
Approvals	CSA, UL, SIL

BXTU ML2 BD S 0-180

Space-saving combined lightning current and surge arrester module with actiVsense technology and RFID LifeCheck for protecting one pair, direct or indirect shield earthing. Automatically detects the operating voltage of the useful signal and optimally adapts the voltage protection level to it.



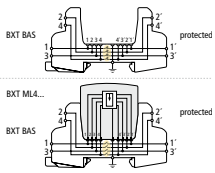
Type BXTU ...	ML2 BD S 0-180
Part No.	**920 249**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Permissible superimposed signal voltage (U_{signal})	≤ +/- 5 V
Cut-off frequency line-line (U_{signal}, balanced 100 ohms) (f_G)	50 MHz
Nominal current at 80 °C (equal to max. short-circuit current) (I_L)	100 mA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	≤ 10 ohms; typically 7.5 ohms
Approvals	CSA, UL, SIL

BLITZDUCTOR XT Ex (i) – Base Part

- Universal base part for protection modules of the BLITZDUCTOR XT Ex (i) series
- No signal disconnection if the protection module is removed
- Connection of up to four lines

BXT BAS EX

BLITZDUCTOR XT base part for use as an extremely space-saving and universal four-pole feed-through terminal for intrinsically safe circuits for the insertion of the protection module, no signal disconnection if the protection module is removed. The snap-in mechanism at the supporting foot of the base part allows the device to be safely earthed via the DIN rail. Since no components of the protective circuit are situated in the base part, only the protection modules need to be serviced.



Type	BXT BAS EX
Part No.	**920 301**
For mounting on	35 mm DINs rails acc. to EN 60715
Cross-sectional area, solid	0.08-4 mm²
Cross-sectional area, flexible	0.08-2.5 mm²
Tightening torque (terminals)	0.4 Nm
Earthing via	35 mm DIN rails acc. to EN 60715
Approvals	UL, CSA, ATEX, IECEx, Inmetro *)

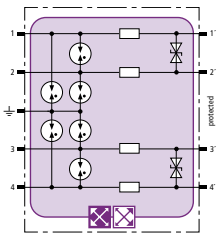
*) only in connection with an approved protection module

BLITZDUCTOR XT Ex (i) – Protection Modules

- Surge arrester for use in hazardous areas
- Versions with and without integrated LifeCheck
- Two-pole and four-pole versions available

BXT ML4 BD EX 24

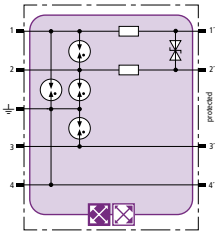
Space-saving surge arrester module with RFID LifeCheck for protecting two pairs in intrinsically safe measuring circuits and bus systems, meets FISCO requirements. ATEX. Insulation strength > 500 V line-earth. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / SCM / MCM.



Type BXT ...	ML4 BD EX 24
Part No.	**920 381**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	33 V
Max. input current acc. to EN 60079-11 (I_i)	0.5 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	4 kA
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Cut-off frequency line-line (f_G)	7.7 MHz
Approvals *)	CSA, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL, Inmetro

BXT ML2 BD S EX 24

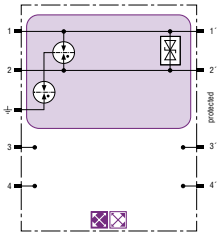
Space-saving surge arrester module with RFID LifeCheck for protecting one pair in intrinsically safe measuring circuits and bus systems, direct or indirect shield earthing. Insulation strength > 500 V line-earth.
If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / SCM / MCM.



Type BXT ...	ML2 BD S EX 24
Part No.	920 280
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	33 V
Max. input current acc. to EN 60079-11 (I_i)	0.5 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	4 kA
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency line-line (f_G)	6 MHz
Approvals *)	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL, Inmetro

BXT ML2 BD HF EX 6

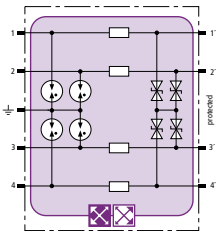
Space-saving surge arrester module with RFID LifeCheck for protecting one pair in intrinsically safe measuring circuits and RS485 bus systems. Insulation strength > 500 V line-earth.
If LifeCheck detects thermal and electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / SCM / MCM.



Type BXT ...	ML2 BD HF EX 6
Part No.	920 538
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	6 V
Max. input current acc. to EN 60079-11 (I_i)	4.8 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency line-line (f_G)	100 MHz
Approvals *)	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL, Inmetro

BXT ML4 BC EX 24

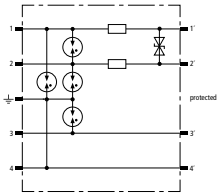
Space-saving surge arrester module with RFID LifeCheck for protecting up to four unearthed single lines sharing a common reference potential in intrinsically safe measuring circuits, meets FISCO requirements. ATEX. Insulation strength > 500 V line-earth.
If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / SCM / MCM.



Type BXT ...	ML4 BC EX 24
Part No.	920 384
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	33 V
Max. input current acc. to EN 60079-11 (I_i)	0.5 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	4 kA
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Cut-off frequency line-line (f_G)	6.4 MHz
Approvals *)	CSA, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL, Inmetro

BXT M2 BD S EX 24

Space-saving surge arrester module for protecting one pair of intrinsically safe measuring circuits and bus systems, direct or indirect shield earthing, insulation strength > 500 V line-earth.



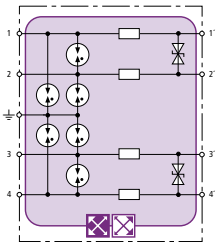
Type BXT ...	M2 BD S EX 24
Part No.	920 383
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	36 V
Max. input current acc. to EN 60079-11 (I_i)	0.5 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	4 kA
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency line-line (f_G)	7.7 MHz
Approvals *)	ATEX, IECEx, CSA & USA Hazloc, SIL

ITAK Ex (i)

Prewired surge arrester unit mounted in the connection box for protecting intrinsically safe measuring circuits.

ITAK EXI BXT

Prewired BXT ML4 BD EX 24 and BXT BAS EX surge arrester unit completely mounted in a junction box for intrinsically safe measuring circuits, meets FISCO requirements.

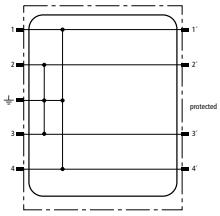


Type	ITAK EXI BXT 24
Part No.	989 408
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	33 V
Max. input current acc. EN 60079-11 (I_i)	0.5 A
Total nominal discharge current (8/20 µs) (I_n)	20 kA
Cut-off frequency line-line (f_G)	7.7 MHz
Degree of protection	IP 65
Approvals for installed BXT	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL

Accessories for XT / XTU / XT Ex (i)

Earthing Module

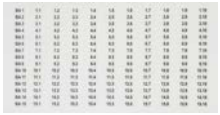
The plugged-in earthing module connects all lines connected to the BLITZDUCTOR SP / XT / XTU base part to the equipotential bonding. It directly earths unused cable cores that are already connected to the base part.



Type	BXT M4 E
Part No.	920 308
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
Plugs into	base part

Labelling System BA1-BA15

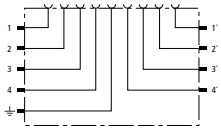
2x 165 adhesive labels for labelling DRC MCM XT monitoring devices with the bus address (BA1 to BA15) and BXT modules with consecutive numbers (1.1-1.10 to 15.1-15.10).



Type	BS BA1 BA15 BXT
Part No.	920 398
Dimensions (W x H)	13 x 7 mm

Test / Disconnection Module

The plugged-in test / disconnection module interrupts the cable run of the lines connected to the BLITZDUCTOR SP / XT / XTU base part and leads them to a test socket at the front of the module. This allows to carry out measurements in the installation without removing the lines from the base part.



Type	BXT M4 T
Part No.	920 309
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 80 °C (I_L)	1.0 A
Volume resistance	0.1 ohms
Plugs into	base part
Test sockets	gold-plated, 1 mm
Accessories	2 measuring lines (1 m), protective bag

EMC Spring Terminals

Two spring terminals for the protected and unprotected side of a BLITZDUCTOR SP / XT / XTU arrester for permanent low-impedance shield contact with a shielded signal line. Insulating cap for indirect shield earthing (BXT only), cable ties and insulating strips included. Can be used for the types BXT(U) ML2 ...S ... / BSP M2 ... (only direct shield earthing).

Type	SAK BXT LR
Part No.	920 395
D1 Lightning impulse current (10/350 µs)	5 kA
Plugs into	terminal BXT BAS / BSP BAS 4
Accessories	insulating caps, cable ties, insulating strips

Partition

Special installation instructions have to be observed when using BLITZDUCTOR XT Ex (i) surge protective devices in intrinsically safe circuits.
In accordance with EN 60079-11; 2007 (VDE 0170-7), a minimum distance (clearance) of ≥ 50 mm must be maintained between intrinsically and non-intrinsically safe circuits (connecting parts, e.g. terminals)!
When using the Ex i partition of type TW DRC MCM EX, this clearance is also maintained if the surge protective devices are arranged directly next to one other.
Ideally suited for use in conjunction with the DRC MCM XT for the condition monitoring of BXT modules. (1 pack = 2 pieces)

Type	TW DRC MCM EX
Part No.	910 697
For mounting on	35 mm DIN rails according to EN 60715

Accessories for BLITZDUCTOR SP / XT / XTU

DRC MCM XT

DIN rail mounted device with integrated RFID LifeCheck sensor for condition monitoring of max. 10 BXT / BXTU arresters with RFID LifeCheck. An RS 485 interface allows to interconnect up to 15 DRC MCM XT.

Type	DRC MCM XT
Part No.	**910 695**
Colour	grey

DRC SCM XT

DIN rail mounted device with integrated RFID LifeCheck sensor for condition monitoring of max. 10 BXT / BXTU arresters with RFID LifeCheck.

Type	DRC SCM XT
Part No.	**910 696**
Colour	grey

DRC LC M3+

Portable device with RFID LifeCheck sensor for flexible use. Fast and easy testing of arresters with RFID LifeCheck. Documentation via PC database.

Type	DRC LC M3+
Part No.	**910 653**
Dimensions of storage case	340 x 275 x 83 mm

DRC LC M1+

Portable device with RFID LifeCheck sensor for flexible use. Fast and easy testing of arresters with RFID LifeCheck.

Type	DRC LC M1+
Part No.	**910 655**
Dimensions of storage case	275 x 230 x 83 mm

RFID LifeCheck Sensor for DRC BXT

Snap-on RFID LifeCheck sensor and test module for use as spare part / extension for portable RFID LifeCheck test devices.

Type	LCS DRC BXT
Part No.	**910 652**
For testing	BLITZDUCTOR XT ML

DIN Rail Mounted Power Supply Unit

Robust power supply in the DIN-rail-mounted enclosure with single-phase, wide-range input for operation in a wide variety of supply systems. The operating state indication on the front side signals the availability of the output voltage. Supply of stationary condition-monitoring devices from the DEHNrecord product range (DRC SCM XT / DRC MCM XT / DRC IRCM / DRC SD 2 1).

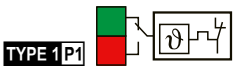
Type	PSU DC24 30W
Part No.	**910 499**
Input voltage range	AC 85-264 V; DC 120-373 V
Frequency	44-66 Hz; 0 Hz
Input current (I_e)	0.7 A at AC 110 V / 0.5 A at AC 230 V
Output nominal voltage (U_a)	DC 24 V (SELV)
Output current (I_a)	1.3 A at DC 24 V, max. 0.9 A at any installation position
Recommended backup fuse	circuit breaker 10 A, 16 A, characteristic B, C
Standards / regulations	EN 60950, EN 61204-3, UL 60950, UL 508, GL

USB Interface Converter of Type USB NANO 485

USB NANO 485 converts between USB and RS485 signals and is specifically designed for two-wire RS-485 buses. LEDs indicate the operating state (yellow), Rx (green) and Tx (red). Due to its compact dimensions, USB NANO 485 is ideally suited for use with notebooks, however, stationary use is also possible.

Type	USB NANO 485
Part No.	**910 486**
Version	with LED indication

Compact SPDs – DIN Rail Mounted

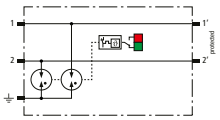
Type	Basic circuit diagram / Symbol	Product	Part No.	Page
BLITZDUCTORconnect – Compact				
BCO CL2 ... ▪ Combined lightning current and surge arrester in a compact enclosure ▪ With push-in connection technology ▪ Integrated LifeCheck and visual status indication			**927 9XX**	85
BCO CL2 BD EX 24 ▪ Surge arrester in a compact enclosure for hazardous areas ▪ With push-in connection technology ▪ Integrated LifeCheck and visual status indication			**927 984**	86
DEHNvario				
DVR 2 BY S 150 FM ▪ Combined lightning current and surge arrester in a compact enclosure ▪ For voice alarm and loudspeaker applications ▪ With remote signalling contact			**928 430**	88
DVR BNC RS485 230 ▪ 3-in-1 surge arrester in a compact enclosure ▪ Protects 230V / RS485 / coaxial signal interfaces ▪ With push-in connection technology			**928 440**	88
BLITZDUCTOR VT				
BVT ... ▪ Lightning current and surge arrester in a compact enclosure ▪ Wide range of solutions for d.c. supply systems and ▪ data interfaces ▪ With screw terminals			**918 401** **918 422** **918 408** **918 409** **918 411**	88 89 89 89 89
BVT KKS ... ▪ Combined lightning current and surge arrester in a compact enclosure ▪ Solutions for cathodic protection applications ▪ With screw terminals			**918 420** **918 421**	89 89

BLITZDUCTORconnect – Compact

- Combined lightning current and surge arrester with a compact design and integrated visual status indication
- Push-in connection technology
- Intrinsically safe version for use in hazardous areas

BCO CL2 B 180

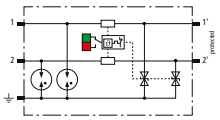
Space-saving, compact lightning current arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines for lightning equipotential bonding as well as indirect earthing of shielded cables.



Type BCO ...	CL2 B 180
Part No.	927 910
SPD class	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current (I_L)	1.2 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	0 ohms
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

BCO CL2 BE

Space-saving, compact combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines sharing a common reference potential as well as unbalanced interfaces.



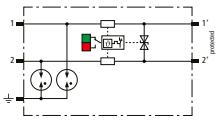
General technical data:		
SPD class		TYPE 1P1
Nominal current at 70 °C (I_L)		0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})		1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)		10 kA
Series resistance per line		1 ohms
Approvals		UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	CL2 BE 12	CL2 BE 24
Part No.	927 922	927 924
Max. continuous operating voltage (d.c.) (U_C)	15 V	33 V
Cut-off frequency line-line (f_G)	1.4 MHz	3.4 MHz

Type BCO ...	CL2 BE 48
Part No.	927 925
Max. continuous operating voltage (d.c.) (U_C)	54 V
Cut-off frequency line-line (f_G)	5 MHz

BCO CL2 BD

Space-saving, compact combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of unearthed balanced interfaces.



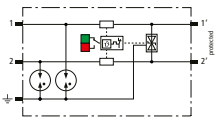
General technical data:	
SPD class	TYPE 1P2
Nominal current at 70 °C (I_L)	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohms
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	CL2 BD 12	CL2 BD 24
Part No.	927 942	927 944
Max. continuous operating voltage (d.c.) (U_C)	15 V	36 V
Cut-off frequency line-line (f_G)	2.6 MHz	5.8 MHz

Type BCO ...	CL2 BD 48
Part No.	927 945
Max. continuous operating voltage (d.c.) (U_C)	56 V
Cut-off frequency line-line (f_G)	7.2 MHz

BCO CL2 BE HF

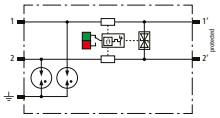
Space-saving, compact combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines of high-frequency transmissions sharing a common reference potential as well as unbalanced interfaces.



Type BCO ...	CL2 BE HF 5
Part No.	927 970
SPD class	TYPE 1P1
Max. continuous operating voltage (d.c.) (U_C)	8.5 V
Nominal current at 70 °C (I_L)	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohms
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

BCO CL2 BD HF

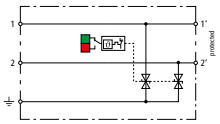
Space-saving, compact combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of unearthed high-frequency bus systems as well as balanced interfaces.



Type BCO ...	CL2 BD HF 5
Part No.	**927 971**
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	8.5 V
Nominal current at 70 °C (I_L)	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohms
Cut-off frequency line-line (f_G)	100 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

BCO CL2 E

Space-saving, compact surge arrester with a width of 6 mm and push-in connection technology with status indication. Finely limiting, single-stage surge protection with powerful diodes for protecting two single cores sharing a common reference potential as well as unbalanced interfaces.



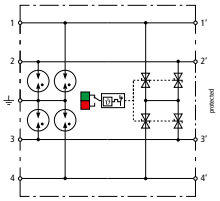
General technical data:		
SPD class		TYPE 3 P1
Nominal current at 60 °C (I_L)		10 A
Series resistance per line		0 ohms
Approvals		UL

Type BCO ...	CL2 E 12	CL2 E 24
Part No.	**927 987** NEW	**927 988** NEW
Max. continuous operating voltage (d.c.) (U_C)	15 V	33 V
C1 Total nominal discharge current (8/20 µs) (I_n)	3 kA	1.2 kA

Type BCO ...	CL2 E 48
Part No.	**927 989** NEW
Max. continuous operating voltage (d.c.) (U_C)	58 V
C1 Total nominal discharge current (8/20 µs) (I_n)	0.8 kA

BCO CL4 BC

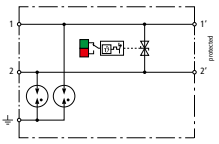
Space-saving, compact combined arrester with a width of 12 mm and push-in connection technology with status indication for protecting unearthed 4-conductor measuring circuits for IT systems and measuring and control systems.



Type BCO ...	CL4 BC 24
Part No.	**927 954** NEW
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	36 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0 ohms
Approvals	UL

BCO CL2 BD HC10A 24

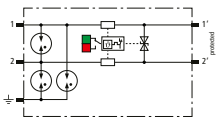
Space-saving, compact combined arrester with a width of 12 mm and push-in connection technology with status indication for protecting one pair in unearthed DC supplies for IT systems and measuring and control circuits.



Type BCO ...	CL2 BD HC10A 24
Part No.	**927 408** NEW
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	45 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0 ohms
Approvals	UL, SIL

BCO CL2 BD EX 24

Space-saving, compact surge arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V line-ground.



Type BCO ...	CL2 BD EX 24
Part No.	**927 984**
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	36 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohms
Cut-off frequency line-line (f_G)	3.5 MHz
Approvals	ATEX, IECEx, CCC, SIL

Accessories for BLITZDUCTORconnect – Compact

Earthing Module

Space-saving earthing module with base part in a width of 6 mm and push-in connection technology for defined equipotential bonding of all wires connected to the base part. For direct earthing of 2 cable cores that are not being used actively. With signal disconnection for maintenance purposes.

Type	BCO M2 E
Part No.	**927 318** NEW
D1 total lightning impulse current (10/350 µs) (I_{imp})	3 kA
Operating temperature range (T_U)	-40°C to +80°C
Degree of protection (plugged in)	IP 20

DIN Rail Mounted Power Supply Unit

Robust power supply in the DIN-rail-mounted enclosure with single-phase, wide-range input for operation in a wide variety of supply systems. The operating state indication on the front side signals the availability of the output voltage. Supply of stationary condition-monitoring devices from the DEHNrecord product range (DRC SCM XT / DRC MCM XT / DRC IRCM / DRC SD 2 1).

Type	PSU DC24 30W
Part No.	**910 499**
Input voltage range	AC 85-264 V; DC 120-373 V
Frequency	44-66 Hz; 0 Hz
Input current (I_e)	0.7 A at AC 110 V / 0.5 A at AC 230 V
Output nominal voltage (U_a)	DC 24 V (SELV)
Output current (I_a)	1.3 A at DC 24 V, max. 0.9 A at any installation position
Recommended backup fuse	circuit breaker 10 A, 16 A, characteristic B, C
Standards / regulations	EN 60950, EN 61204-3, UL 60950, UL 508, GL

PARTITION EXI

Special installation conditions have to be taken into account when using the BLITZDUCTORconnect surge protective devices in intrinsically safe electric circuits. According to EN 60079-11; 2007 (VDE 0170-7), a minimum clearance must be maintained between intrinsically safe and non-intrinsically safe signal circuits (connecting parts, e.g. connection clamps) of ≥ 50 mm! When using the Ex i partition of type PARTITION EXI, this clearance is also maintained if the surge protective devices are arranged directly next to one other. Ideally suited for use in conjunction with DRC IRCM for condition monitoring of BCO modules. (1 pack = 2 pieces)

Type	PARTITION EXI
Part No.	**910 797**
Colour	blue
For mounting on	35 mm DIN rails acc. to EN 60715

DRC IRCM

Condition monitoring unit DEHNrecord, set for DIN rail mounted devices with integrated visual transmitter/receiver and visual reverse unit for monitoring the condition of BCO/DPA arresters with LifeCheck. Visual arrester status indication via LED group display in combination with remote signalling contact (break contact).

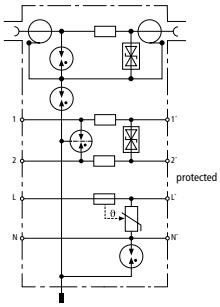
Type	DRC IRCM
Part No.	**910 710**
Input voltage range (d.c.) (U_{IN})	6-35 V DC
Max. rated current consumption (I_{IN})	≤ 10 mA
Operating temperature range (T_U)	-30 °C ... +70 °C
Approvals	UL

DEHNvario

Compact combined arrester for protecting electroacoustic systems (e.g. voice alarm systems, loudspeaker systems).

DVR BNC RS485 230

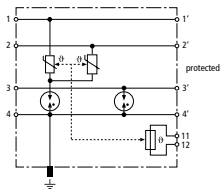
Compact 3-in-1 surge arrester for protecting analogue camera systems. Protection of the video signal (BNC connection), a data signal (RS485) and a voltage supply (230 V a.c.). Direct plug-in technology allows fast conductor connection without tools. Easy replacement of the arrester is ensured by the integrated terminal units which can be released and then removed from the enclosure. Integrated overload indication (230 V).



Type DVR ...	BNC RS485 230
Part No.	**928 440**
Video (BNC)	
SPD class	TYPE 2 P2
Max. continuous operating voltage (d.c.) (U_C)	6.4 V
Nominal current (I_L)	0.1 A
C2 Nominal discharge current (8/20 µs) shield-PG (I_n)	10 kA
Insertion loss at 300 MHz (75 ohms)	≤ 3.0 dB
Connection (input / output)	BNC socket / BNC socket
Dates (RS485)	
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	8 V
Nominal current (I_L)	0.5 A
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency line-line (f_G)	100 MHz
Voltage supply (230 V)	
SPD class	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	255 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) [N-PE] (U_C)	255 V (50 / 60 Hz)
Nominal current (I_L)	10 A
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_p)	≤ 1.5 kV

DVR 2 BY S 150 FM

Compact combined arrester for protecting electroacoustic systems (e.g. voice alarm systems, loudspeaker systems). Protection of one galvanically isolated pair; direct or indirect shield earthing. Direct plug-in technology allows fast conductor connection without tools. Easy replacement of the arrester is ensured by the integrated terminal units which can be released and then removed from the enclosure. Integrated remote signalling contact (break contact).



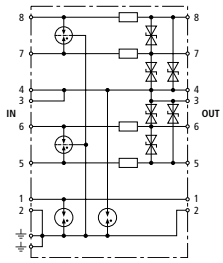
Type DVR ...	2 BY S 150 FM
Part No.	**928 430**
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	150 V
Nominal current at 70 °C (I_L)	10 A
Nominal current at 80 °C (I_L)	7 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	22.5 kA
Cut-off frequency line-line (f_G)	1.4 MHz

BLITZDUCTOR VT

Compact DIN rail mounted protection for devices with screw terminals for stranded conductors

BVT RS485

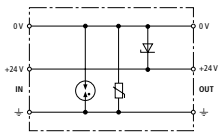
Surge arrester for a wide range of applications, e.g. for balanced four-wire RS485/422 interfaces or temperature sensors. Direct or indirect shield earthing, connection of a signal ground (SG).



Type BVT ...	RS485 5
Part No.	**918 401**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	6 V
Nominal current (I_L)	0.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.8 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1.8 ohms
Cut-off frequency line-line (f_G)	1.7 MHz
Approvals	CSA

BVT AVD

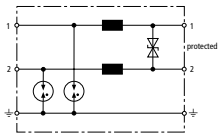
Surge arresters with improved voltage protection levels for EMC protection of electronic components with d.c. voltage supply. Ideally suited for Siemens PLCs. Since a unipolar diode is used, the polarity of the operating voltage must be observed.



Type BVT ...	AVD 24
Part No.	**918 422**
SPD class	TYPE 3 P1
Max. continuous operating voltage (d.c.) (U_C)	35 V
Nominal current at 80 °C (I_L)	10 A
C2 Total nominal discharge current (8/20 µs) (I_n)	2 kA

BVT ALD

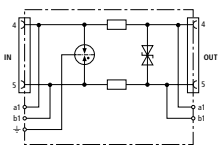
Energy-coordinated, DIN rail mounted combined lightning current and surge arrester for protecting unearthed d.c. power supply systems.



Type BVT ...	ALD 36	ALD 60
Part No.	**918 408**	**918 409**
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	45 V	65 V
Nominal current at 80 °C (I_L)	4 A	4 A
Nominal current at 45 °C (I_L)	7 A	7 A
Backup fuse if	–	$U_N \geq 45$ V and $I_L \geq 1$ A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	2.5 kA	2.5 kA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA	5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Series resistance per line	22 µH	22 µH
Approvals	UL	UL

BVT TC

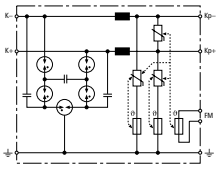
Energy-coordinated and leakage-current-free surge arrester for a/b lines, ISDN U_{k0} or ADSL with RJ45 connections and additional screw terminals. Pinning of the RJ45 sockets is compatible with RJ11/12. The parallel screw terminals are more robust than the RJ45 sockets and increase the total nominal discharge current to 10 kA.



Type BVT ...	TC 1
Part No.	**918 411**
SPD class	TYPE 2 P2
Max. continuous operating voltage (d.c.) (U_C)	170 V
Nominal current (I_L)	0.2 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	5 kA
Series resistance per line	4.7 ohms
Cut-off frequency line-line (f_G)	17 MHz

BVT KKS ALD

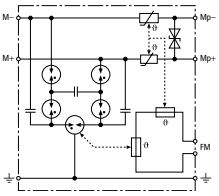
Energy coordinated combined arrester for protecting the rectifier in the protective circuit (red colour). Pluggable remote signalling contact (break contact) for overload indication (temperature monitoring of the varistors). Installation in sheet metal housing recommended. Low impulse sparkover voltage due to capacitive control.



Type BVT ...	KKS ALD 75
Part No.	**918 420**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	75 V
Nominal current (I_L)	12 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	3.5 kA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	7 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	40 kA
Series resistance per line	5 µH
Cut-off frequency line-line (f_G)	1 MHz
Type of remote signalling contact	break contact

BVT KKS APD

Energy coordinated combined arrester for protecting the voltage measuring circuit (yellow colour). Pluggable remote signalling contact (break contact) for overload indication (temperature monitoring of the discharge paths). Installation in sheet metal housing recommended. Low impulse sparkover voltage due to capacitive control.



Type BVT ...	KKS APD 36
Part No.	**918 421**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	36.8 V
Nominal current (I_L)	0.05 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	3.5 kA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	7 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	40 kA
Series resistance per line	55 ohms
Type of remote signalling contact	break contact

SPDs for LSA Technology

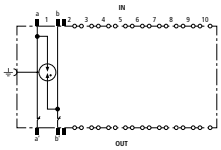
Description	Type	Product	Part No.	Page
Lightning current / surge arresters				
▪ Lightning current carrying DRL plug-in SPD block can be easily plugged into LSA disconnection blocks of 2/10 type ▪ Versions with / without fail-safe function / visual indication ▪ Modularly expandable with a DRL protective plug to a combined lightning current and surge arrester ▪ With integrated disconnection block contacts	**DRL 10 B 180** **DRL 10 B 180 FSD**		**907 400** **907 401**	91 91
▪ Protective plug for one pair inserted through the earthing frame into the DRL plug-in SPD block ▪ Energy-coordinated with DRL plug-in SPD block ▪ Low voltage protection level for application-specific protection of terminal equipment	**DRL ...**		**907 421** – **907 470**	91 – 92
▪ Earthing module inserted through the earthing frame into the LSA disconnection block ▪ Fast replacement when retrofitting a DEHNrapid LSA protection module	**EM 2 DRL**		**907 496**	93
▪ Snap-on earthing frame for earthing and mounting DRL protective plugs on a 10-pair disconnection block or the lightning current carrying DRL plug-in SPD block	**EF 10 DRL**		**907 498**	93
Surge arresters				
▪ Powerful SPD block can be easily plugged into LSA disconnection blocks of 2/10 type ▪ Versions with / without fail-safe function / visual indication	**DPL 10 G3 110** **DPL 10 G3 110 FSD**		**907 214** **907 216**	93 93
DEHN enclosure for equipotential bonding				
▪ Lightning current carrying earthing system for arresters and shield connection ▪ Pre-mounted mounting frame ▪ Lockable enclosure	**DPG LSA ... P**		**906 100** – **906 103**	94
Routing module for disconnection blocks with LSA spring-loaded terminal				
▪ DIN rail mounted routing module for disconnection blocks ▪ Equipped with LSA disconnection block and spring-loaded terminals for variable wire connection ▪ Routing of different wire diameters	**TL2 10DA CC**		**907 991**	95

DEHNrapid LSA – Lightning Current / Surge Arrester

Lightning current arrester, surge arrester or combined lightning current and surge arrester that can be plugged into LSA disconnection blocks of series 2. The integrated disconnection block contacts in the 10-pair plug-in SPD block allow for protected testing, disconnecting or patching in systems or the attachment of one-pair surge arresters.

DRL 10 B

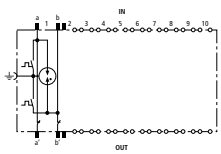
Lightning current carrying DRL plug-in SPD block (10 pairs) with three-pole gas discharge tubes for almost all applications. Expandable to a combined lightning current and surge arrester by means of a DRL protective plug. The integrated disconnection block contacts allow testing, measuring and patching with plugged-in protection.



Type DRL ...	10 B 180
Part No.	**907 400**
SPD class	TYPE 1 C
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current (I_L)	0.4 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	≤ 0.005 ohms
Plugs into	LSA disconnection block 2/10

DRL 10 B FSD

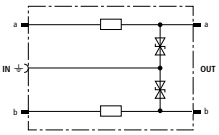
Lightning current carrying DRL plug-in SPD block (10 pairs) for almost all applications. Expandable to a combined lightning current and surge arrester by means of a DRL protective plug. The integrated disconnection block contacts allow testing, measuring and patching with plugged-in protection. The three-pole gas discharge tubes have a fail-safe function with visual fault indication.



Type DRL ...	10 B 180 FSD
Part No.	**907 401**
SPD class	TYPE 1 C
Fault indication	visual, colour change
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current (I_L)	0.4 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	≤ 0.005 ohms
Plugs into	LSA disconnection block 2/10

DRL RE

Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment with decoupling impedances. Ideally suited for signal circuits sharing a common reference potential. Earthing via EF 10 DRL. For disconnection blocks or DRL plug-in SPD blocks only.



General technical data:	
SPD class	TYPE 3 P1
D1 Total lightning impulse current (10/350 µs) in combination with DRL 10 B... (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) in combination with DRL 10 B... (I_n)	10 kA
Plugs into	LSA disconnection block 2/10 or DRL 10 B ... plug-in SPD block

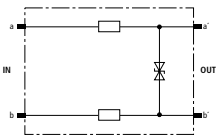
Type DRL ...	RE 12	RE 24
Part No.	**907 421**	**907 422**
Max. continuous operating voltage (d.c.) (U_C)	14 V	28 V
Nominal current (I_L)	0.4 A	0.4 A
Series resistance per line	4.7 ohms	4.7 ohms
Cut-off frequency line-PG (f_G)	2.7 MHz	4.5 MHz

Type DRL ...	RE 48	RE 60
Part No.	**907 423**	**907 424**
Max. continuous operating voltage (d.c.) (U_C)	54 V	70 V
Nominal current (I_L)	0.4 A	0.4 A
Series resistance per line	6.8 ohms	6.8 ohms
Cut-off frequency line-PG (f_G)	7.35 MHz	10.5 MHz

Type DRL ...	RE 180
Part No.	**907 425**
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current (I_L)	0.1 A
Series resistance per line	4.7 ohms
Cut-off frequency line-PG (f_G)	42 MHz

DRL RD

Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment. Low voltage protection level line-line for unearthed interfaces. To be mounted into EF 10 DRL. Installation recommended only in combination with DRL plug-in SPD block.



General technical data:	
SPD class	TYPE 3 P1
Nominal current (I_L)	0.4 A
D1 Total lightning impulse current (10/350 µs) in combination with DRL 10 B... (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) in combination with DRL 10 B... (I_n)	10 kA
Plugs into	LSA disconnection block 2/10 or DRL 10 B ... plug-in SPD block

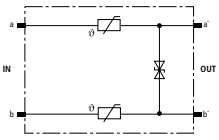
Type DRL ...	RD 12	RD 24
Part No.	**907 441**	**907 442**
Max. continuous operating voltage (d.c.) (U_C)	14 V	28 V
Series resistance per line	2.2 ohms	2.2 ohms
Cut-off frequency line-line (f_G)	2.7 MHz	5.4 MHz

Type DRL ...	RD 48	RD 60
Part No.	**907 443**	**907 444**
Max. continuous operating voltage (d.c.) (U_C)	54 V	70 V
Series resistance per line	4.7 ohms	4.7 ohms
Cut-off frequency line-line (f_G)	7.8 MHz	11 MHz

Type DRL ...	RD 110
Part No.	**907 445**
Max. continuous operating voltage (d.c.) (U_C)	180 V
Series resistance per line	4.7 ohms
Cut-off frequency line-line (f_G)	20 MHz

DRL PD

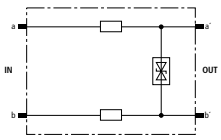
Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment. Low voltage protection level line-line and integrated overcurrent protection for ADSL, ISDN U_{k0} or a/b lines. To be mounted into EF 10 DRL. Installation recommended only in combination with DRL plug-in SPD block.



Type DRL ...	PD 180
Part No.	**907 430**
SPD class	TYPE 3 P1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current (I_L)	0.1 A
D1 Total lightning impulse current (10/350 µs) in combination with DRL 10 B... (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) in combination with DRL 10 B... (I_n)	10 kA
Series resistance per line	10 ohms +/- 15%
Cut-off frequency line-line (f_G)	61 MHz
Plugs into	LSA disconnection block 2/10 or DRL 10 B... plug-in SPD block

DRL HD

Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment for high-frequency transmissions such as G.703 or ISDN U_{2m}, S_{2m} and S_0. To be mounted into EF 10 DRL. Installation recommended only in combination with DRL plug-in SPD block.

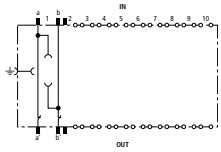


Type DRL ...	HD 24
Part No.	**907 470**
SPD class	TYPE 3 P1
Max. continuous operating voltage (d.c.) (U_C)	28 V
Nominal current (I_L)	0.4 A
D1 Total lightning impulse current (10/350 µs) in combination with DRL 10 B... (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) in combination with DRL 10 B... (I_n)	10 kA
Series resistance per line	4.7 ohms
Plugs into	LSA disconnection block 2/10 or DRL 10 B... plug-in SPD block

Accessories for DEHNrapid LSA

Plug-in SPD Block (without SPDs)

Plug-in SPD block (without SPDs) for 1 to max. 10 three-pole GDT 230 B3 ... gas discharge tubes. Also suitable for DRL protective plugs with earthing frame.



Type	BM 10 DRL
Part No.	**907 499**
Plugs into	LSA disconnection blocks
Earthing via	mounting frame

Gas Discharge Tube

High-capacity replacement gas discharge tube for DRL 10 or BM 10 DRL. Three-pole version with common arcing chamber for a constant voltage protection level line-line and line-ground.

Type	GDT 230 B3 FSD
Part No.	**907 219**
Integrated into Part No.	907 401
Visual fault indication	yes
Fail-safe spring	yes
D1 Total lightning impulse current (10/350 µs)	5 kA

Gas Discharge Tube

High-capacity replacement gas discharge tubes for DRL 10 or BM 10 DRL. Three-pole version with common arcing chamber for a constant voltage protection level line-line and line-ground.

Type	GDT 230 B3
Part No.	**907 218**
Integrated into Part No.	907 400
D1 Total lightning impulse current (10/350 µs)	5 kA

Earthing Frame

Snap-on earthing frame for earthing and installation of max. 10 DRL protection modules. Plugs into a 10-pair disconnection block or DRL plug-in SPD block.

Type	EF 10 DRL
Part No.	**907 498**
Plugs into	LSA disconnection blocks or DRL plug-in SPD block
Earthing via	mounting frame or DRL plug-in SPD block

Label Holder

Universal label holder made of stainless steel for clear identification of LSA connections. Can be snapped onto DEHNrapid LSA plug-in SPD blocks, earthing frames with protective plugs or mounting frames with LSA blocks of the 2/10 series.

Type	SR DRL
Part No.	**907 497**
Plugs into	DRL B, EF DRL, LSA blocks 2/10 (profile, with earth connecting clip)

Earthing Module

Plugged into the EF 10 DRL earthing frame, the earthing module connects a pair placed on an LSA disconnection block to the equipotential bonding. Its function is to directly earth unused cable cores that are placed on the LSA disconnection block. The earthing module must not be used in combination with the DRL 10 B... plug-in SPD block.

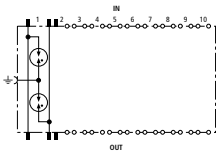
Type	EM 2 DRL
Part No.	**907 496**
D1 Total lightning impulse current (10/350 µs)	5 kA
Plugs into	TL2 10DA ...
Earthing via	EF 10 DRL
Material	zinc die-casting

DPL 10 G3

- Pluggable arresters for LSA systems of the 2/10 series.
- Proctection block version for 10 pairs with individually replaceable protection elements.

DPL 10 G3

Plug-in SPD block for ten pairs with three-pole gas discharge tubes for almost all applications. FSD arresters feature a fail-safe function and an additional visual indication when the fail-safe function has been activated. Thus, it can be immediately identified whether an arrester has to be replaced.



Type DPL 10 G3 ...	110	110 FSD
Part No.	**907 214**	**907 216**
SPD class	TYPE 2	TYPE 2
Fault indication	–	visual, colour change
Max. continuous operating voltage (d.c.) (U_c)	180 V	180 V
Nominal current (I_L)	0.4 A	0.4 A
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA

Accessories for DPL 10 G3

Gas Discharge Tube

High-capacity replacement gas discharge tubes for DPL 10 G3. Three-pole version with common arcing chamber for a constant voltage protection level line-line and line-ground.

Type	GDT 230 G3	GDT 230 G3 FSD
Part No.	**907 208**	**907 217**
Integrated into Part No.	907 214	907 216
Visual fault indication	–	yes
Fail-safe spring	–	yes

DEHN Enclosure for Equipotential Bonding

DPG are lockable metal enclosures for installing wiring and protection components. Available in four different sizes, the lightning current carrying enclosures additionally feature terminals for integrating surge arresters and shields into the equipotential bonding system.

DPG LSA

DPG LSA is a completely premounted enclosure system with LSA mounting frame and allows optimised use of arresters and shield connection systems (constant force spring).

General technical data:	
Degree of protection	IP 40

Type DPG LSA ...	30 P	60 P
Part No.	906 100	906 101
Carrying capacity of connection elements D1 Total lightning impulse current (10/350 µs) (I_{imp})	15 kA	30 kA
LSA mounting frame for	1x 3 blocks 2/10	1x 6 blocks 2/10
Wire guides	1 pc(s).	2 pc(s).
Dimensions W x H x D	240 x 260 x 130 mm	240 x 350 x 130 mm

Type DPG LSA ...	120 P	220 P
Part No.	906 102	906 103
Carrying capacity of connection elements D1 Total lightning impulse current (10/350 µs) (I_{imp})	50 kA	50 kA
LSA mounting frame for	2x 6 blocks 2/10	2x 11 blocks 2/10
Wire guides	2 pc(s).	3 pc(s).
Dimensions W x H x D	330 x 350 x 130 mm	330 x 500 x 130 mm

Accessories for DEHN Enclosure for Equipotential Bonding

Self-bonding Rubber Tape

Roll with 9 m self-bonding rubber tape to be wrapped around constant force springs for permanent corrosion protection.

Type	SKB 19 9M SW
Part No.	919 030
Colour	Black ●

Constant Force Spring

Constant force springs allow solderless shield connections for equipotential bonding or lightning equipotential bonding. They can be installed subsequently without interrupting the cable shield or requiring tools for installation. Approved for nuclear installations according to TÜV Certificate No. T12-04-ETL003 (TÜV = German Technical Inspectorate).

General technical data:	
Material	StSt

Type	SA KRF 10 V2A	SA KRF 15 V2A
Part No.	919 031	919 032
Clamping range	4-10 mm	9-15 mm

Type	SA KRF 22 V2A	SA KRF 29 V2A
Part No.	919 033	919 034
Clamping range	14-22 mm	18.5-29 mm

Type	SA KRF 37 V2A
Part No.	919 035
Clamping range	23.5-37 mm

Accessories for LSA Technology

- Proven insulation displacement method
- 45° angled blades in the disconnection block ensure a minimum change in cross-section
- Enhanced stability of the conductor
- Enhanced corrosion resistance
- Further accessories available on request

Mounting Frame

Mounting frame for 10 LSA blocks of the 2/10 series, total width: 104.5 mm

Type	MB2 10 LSA
Part No.	**907 995**
Dimensions	223 x 105 x 42 mm

Insertion Tool

Insertion tool with sensor for LSA technology for connecting the wires and simultaneously cutting them to the required length. With fold-out extraction hook and blade.

Type	AW2 LSA
Part No.	**907 994**
Colour	White O

Terminal Block

Series 2 for LSA technology for inseparably connecting 10 pairs each on the cable and routing side. Accommodates DPL 10 G3 arresters. Parallel protective circuit only.

Type	AL2 10DA LSA
Part No.	**907 997**
Test standards	DIN 47608-1, -2
Diameter of solid conductors	0.40-0.80 mm
Conductor diameter with insulation	0.70-1.50 mm

Disconnection Block

Series 2 for LSA technology for connecting 10 pairs each on the cable and routing side. Protection is provided between the disconnection contacts as soon as DRL components are plugged in. DPL 10 G3 arresters can also be plugged into the disconnection block.

Type	TL2 10DA LSA
Part No.	**907 996**
Test standards	DIN 47608-1, -2
Approvals	compliance with DTAG TS 0272/96
Diameter of solid conductors	0.40-0.80 mm
Conductor diameter with insulation	0.70-1.50 mm

Earthing Plug

Series 2 for LSA technology for connecting up to 38 earth drain wires or unused signal cores. With earth wire and M4 ring cable lug.

Type	EL2 38EA LSA
Part No.	**907 993**
Earthing via	earthing conductor with M4 ring cable lug
Diameter of solid conductors	0.40 - 0.80 mm
Conductor diameter with insulation	0.70 - 1.50 mm
Colour	red ●

Routing Module for Disconnection Blocks with LSA Spring-Loaded Terminal

DIN rail mounted routing module with LSA disconnection block of the 2/10 series as well as spring-loaded terminals for variable wire connection. DPL and DEHNrapid LSA surge arresters can be plugged into the routing module.

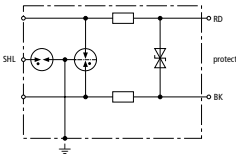
Type	TL2 10DA CC
Part No.	**907 991**
Carrying capacity of connection components D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input / output)	spring or LSA / spring or LSA
Earthing via	DIN rail / flat connector 6.3 mm
Diameter of solid conductors	0.40-0.80 mm
Conductor diameter with insulation	0.70-1.60 mm

SPDs for Field Devices

Description / Type	Basic circuit diagram	Product	Part No.	Page

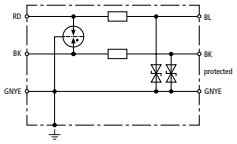
DEHNpipe MD / ME

DPI MD
- For one balanced interface
- Direct or indirect shield earthing
- Nominal voltage: 24 V
- For series connection
- With M20 x 1.5 thread (female/male)



929 941 97

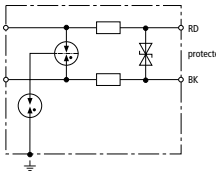
DPI ME
- For one unbalanced interface
- Nominal voltage: 24 V
- For series connection
- With 1/2-14 NPT thread (male/male)



929 921 9

DEHNpipe MD Ex (i)

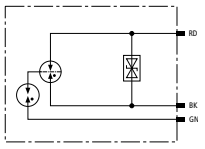
DPI MD EX
- For one balanced interface
- Nominal voltage: 24 V
- For series connection
- With M20 x 1.5 or 1/2-14 NPT thread



929 960 97
929 965 97

DEHNpipe CD Ex (i)

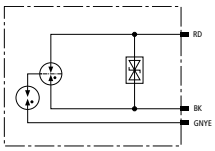
DPI CD EXI
- For one balanced interface
- Nominal voltage: 24 V
- For parallel connection
- With M20 x 1.5 or 1/2-14 NPT thread



929 961 97
929 963 97

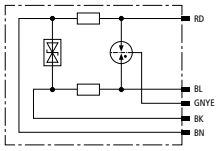
DEHNpipe CD Ex (d)

DPI CD EXD 24
- For one balanced interface
- Nominal voltage: 24 V
- For parallel connection
- With M20 x 1.5 or 1/2-14 NPT thread



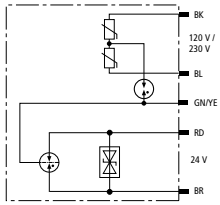
929 962 97
929 964 97

DPI CD HF EXD 5
- For one balanced interface
- Nominal voltage: 5 V
- For series connection
- With M20 x 1.5 thread



929 971 7

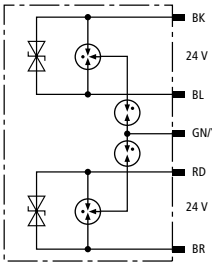
DPI CD EXD 230 24
- For one balanced interface and one 120/230 V power supply system
- Nominal voltage: 24 V and 120/230 V
- For parallel connection
- With M20 x 1.5 or 1/2-14 NPT thread



929 969 98
929 970 98

DEHNpipe CD Ex (i) + Ex (d)

DPI CD EXI+D 2x24
- For two balanced interfaces
- Nominal voltage: 24 V
- For parallel connection
- With M20 x 1.5 or1/2-14 NPT thread



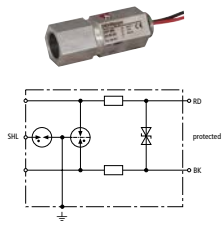
929 950 98
929 951 98

DEHNpipe

Surge arrester for outdoor use to be screwed onto two-wire field devices. Stainless steel. Installation up to a degree of protection of IP 67.

DPI MD

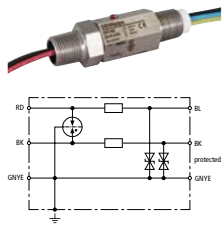
Energy-coordinated two-stage arrester, no leakage currents to earth, for 4-20 mA interfaces with M20 x 1.5 thread (female/male). Direct, indirect or no shield earthing. Cable gland available as an accessory.



Type DPI ...	MD 24 M 2S
Part No.	929 941
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	34.8 V
Nominal current (I_L)	0.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency line-line (f_G)	14 MHz
For mounting on (field / device side)	M20 x 1.5 female thread / M20 x 1.5 male thread
Approvals	SIL

DPI ME

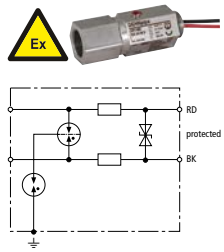
Energy-coordinated two-stage arrester with gas discharge tube and diodes to earth. For unbalanced interfaces with $^1/_2$ -14 NPT thread (male/male). The earthing conductor is led through the surge arrester.



Type DPI ...	ME 24 N A2G
Part No.	929 921
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	34.8 V
Nominal current (I_L)	0.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
For mounting on (field / device side)	$^1/_2$-14 NPT male thread / $^1/_2$-14 NPT male thread
Approvals	UL, SIL

DPI MD EX

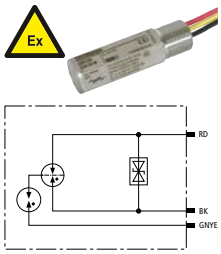
Energy-coordinated two-stage surge arrester with low-capacitance protective circuit for protecting intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V to earth. Cable glands must be ordered separately.



Type DPI ...	MD EX 24 M 2	MD EX 24 N 2
Part No.	929 960	929 965
SPD class	TYPE 2 P1	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	34.8 V	34.8 V
Nominal current (I_L)	0.5 A	0.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Cut-off frequency line-line (f_G)	7 MHz	7 MHz
For mounting on (field / device side)	M20 x 1.5 female thread / M20 x 1.5 male thread	$^1/_2$-14 NPT female thread / $^1/_2$-14 NPT male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	ATEX, IECEx, CCC, SIL

DPI CD EXI

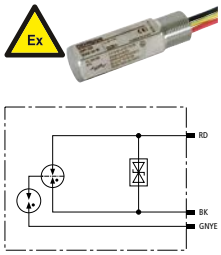
Surge arrester with a low-capacitance protective circuit for protecting intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V to earth.



Type DPI ...	CD EXI 24 M	CD EXI 24 N
Part No.	929 961	929 963
SPD class	TYPE 2 P1	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	32 V	32 V
Nominal current (I_L)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 µs) line-PG (I_{imp})	1 kA	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Cut-off frequency line-line (f_G)	67 MHz	67 MHz
For mounting on (field / device side)	M20 x 1.5 male thread	$^1/_2$-14 NPT male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

DPI CD EXD

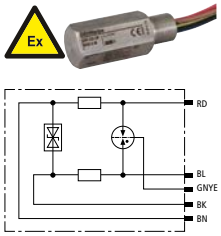
Flameproof surge arrester with a low-capacitance protective circuit for protecting measuring circuits and bus systems in potentially explosive atmospheres. Insulation strength > 500 V to earth. Certified to CSA and USA Hazloc standards.



Type DPI ...	CD EXD 24 M	CD EXD 24 N
Part No.	929 962	929 964
SPD class	TYPE 2 P1	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	32 V	32 V
Nominal current (I_L)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 µs) line-PG (I_{imp})	1 kA	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Cut-off frequency line-line (f_G)	67 MHz	67 MHz
For mounting on (field / device side)	M20 x 1.5 male thread	$^1/_2$-14 NPT male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

DPI CD HF EXD

Flameproof surge arrester with an energy-coordinated low-capacitance protective circuit for protecting measuring circuits and bus systems in potentially explosive atmospheres.

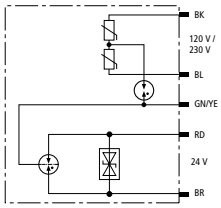


Type DPI ...	CD HF EXD 5 M
Part No.	929 971
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	6 V
Nominal current at 80 °C (I_L)	0.1 A
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Cut-off frequency line-line (f_G)	100 MHz
For mounting on (field / device side)	M20 x 1.5 male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

DPI CD EXD 230 24

Flameproof surge arrester for the data and power side for protecting one 120 / 230 V power supply system and one 24 V data interface of field devices in potentially explosive areas (zones 1 and 2). Additional safety due to fault-proof Y circuit for 120 / 230 V power supply systems.

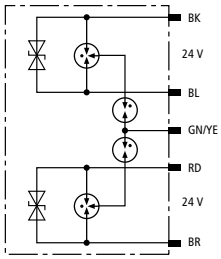
II 2 G Ex d IIC T5/T6 version universally applicable in hazardous zones 1 and 2. Certified to CSA and USA Hazloc standards.



Type DPI ...	CD EXD 230 24 M	CD EXD 230 24 N
Part No.	**929 969**	**929 970**
SPD class	TYPE 2 P2	TYPE 2 P2
Max. continuous operating voltage (d.c.) (U_C)	32 V	32 V
Nominal current at 80 °C (I_L)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 µs) line-PG (I_{imp})	1 kA	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
For mounting on (field / device side)	M20 x 1.5 male thread	$^1/_2$-14 npt male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

DPI CD EXI+D 2X24

Flameproof surge arrester for protecting two 24 V interfaces in potentially explosive atmospheres.



Type DPI ...	CD EXI+D 2X24 M	CD EXI+D 2X24 N
Part No.	**929 950**	**929 951**
SPD class	TYPE 2 P1	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	36 V	36 V
Nominal current (I_L)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 µs) line-PG (I_{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
For mounting on (field / device side)	M20 x 1.5 male thread	$^1/_2$-14 NPT male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

Accessories for DEHNpipe

EMC Cable Gland

Brass gland with shield connection

Type	KV S M20 MS 9.5
Part No.	**929 982**
Sealing range (Rd)	6.5-9.5 mm
Shield diameter	3.2-6.5 mm
For mounting on	M20 x 1.5
Degree of protection	IP 68

Cable Gland

Brass gland without shield connection

Type	KV M20 MS 10.5
Part No.	**929 984**
Sealing range (Rd)	7.0-10.5 mm
For mounting on	M20 x 1.5
Degree of protection	IP 68

Brass Earthing Ring

Earthing ring made of nickel-plated brass, for externally earthing DPI devices.

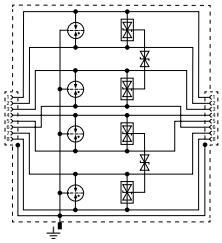
Type	ER DPI M20
Part No.	**929 996**
For mounting on	DPI M20 x 1.5

DEHNpatch – Arrester for Data Networks and Ethernet Applications

DEHNpatch devices fulfil various requirements and can be used universally for Ethernet, Industrial Ethernet, Power over Ethernet (IEEE 802.3 compliant up to PoE++ / 4PPoE) as well as general applications in structured cabling of up to 10 Gbit.

DPA CLE IP66

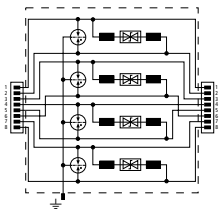
Universal surge arrester for GBit Ethernet applications, Power over Ethernet (IEEE 802.3 compliant up to PoE++ / 4PPoE) and similar applications in structured cabling systems up to class E in indoor and outdoor areas in an IP66 rated enclosure impervious to dust and water. Protection of all pairs with gas discharge tubes and one adapted filter matrix for each pair. Fully shielded surge protective solution with RJ 45 sockets. Universal mounting bracket for pole and wall mounting.
External accessories: Tensioning straps for pole mounting



Type DPA ...	CLE IP66
Part No.	**929 221**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	60 V
Nominal current (I_L)	1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.8 kA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	4 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	250 MHz
Degree of protection (with installed cables)	IP 66
Connection (input / output)	RJ45 socket / RJ45 socket
Approvals	UL, CSA

DPA M CAT6

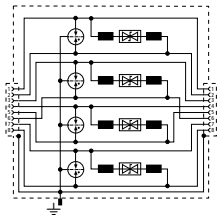
Universal arrester for Industrial Ethernet, Power over Ethernet (IEEE 802.3 compliant up to PoE++ / 4PPoE) and similar applications in structured cabling systems according to Cat. 6 and class E_A up to 500 MHz. Fully shielded type with patch cable for DIN rail mounting (up to 10 Gbit Ethernet).



Type DPA ...	M CAT6 RJ45S 48
Part No.	**929 100**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	48 V
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	57 V
Nominal current (I_L)	1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	250 MHz
Connection (input / output)	RJ45 connecting line / RJ45 connecting line

DEHNpatch class EA NEW

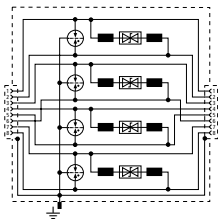
Universal, space-saving combined arrester of 19 mm in width and RJ45 connection system with status indication for simple maintenance. Protection of applications in structured cabling according to class E_A to 500 MHz; e.g. industrial Ethernet, data distributors, digital camera systems, Power over Ethernet (IEEE 802.3 compliant to 4PPoE) and Ethernet-based interfaces in general. Protection of all pairs through powerful gas discharge tubes and protective diodes between signal cores and pairs. Fully shielded adapter design with RJ45 sockets for DIN rail mounting. With additional screw connection on the enclosure for an optional earth connection.



Type DPA ...	CL8 EA 4PPOE
Part No.	**929 161** NEW
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_c)	3.3 V
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	58 V
Nominal current (I_L)	1.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	500 MHz
Connection (input / output)	RJ45 socket / RJ45 socket
Approvals	GHMT

DEHNpatch Class E

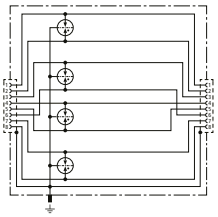
Universal arrester for Industrial Ethernet, Power over Ethernet (IEEE 802.3 compliant up to PoE++ / 4PPoE) and similar applications in structured cabling systems according to class E up to 250 MHz. Protection of all pairs by means of powerful gas discharge tubes and one adapted filter matrix per pair. Fully shielded type with sockets for DIN rail mounting (up to 1 Gbit Ethernet).



Type DPA ...	M CLE RJ45B 48
Part No.	**929 121**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	48 V
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	57 V
Nominal current (I_L)	1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	250 MHz
Connection (input / output)	RJ45 socket / RJ45 socket
Approvals	CSA, UL

DEHNpatch Class D NEW

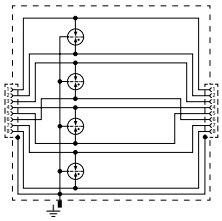
Universal, space-saving lightning current arrester of 19 mm in width and RJ45 connection system for lightning equipotential bonding. Protection of applications in structured cabling according to class S to 100 MHz; e.g. industrial Ethernet, data distributors, digital camera systems, Power over Ethernet (IEEE 802.3 compliant to 4PPoE) and Ethernet-based interfaces in general. Protection of all pairs through powerful gas discharge tubes. Fully shielded adapter design with RJ45 sockets for DIN rail mounting. With additional screw connection on the enclosure for an optional earth connection.



Type DPA ...	C8 D 4PPOE
Part No.	**929 166** NEW
SPD class	TYPE 1
Max. continuous operating voltage (d.c.) (U_c)	3.3 V
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	58 V
Nominal current (I_L)	1.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	100 MHz
Connection (input / output)	RJ45 socket / RJ45 socket

DEHNpatch Class D

Universal arrester for Industrial Ethernet, Power over Ethernet (IEEE 802.3 compliant up to PoE++ / 4PPoE) and similar applications in structured cabling systems according to class D up to 100 MHz. Protection of all pairs by powerful gas discharge tubes. DIN rail mounted adapter type with sockets.



Type DPA ...	M CLD RJ45B 48
Part No.	**929 126**
SPD class	TYPE 2 P2
Max. continuous operating voltage (d.c.) (U_c)	48 V
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	57 V
Nominal current (I_L)	1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	100 MHz
Connection (input / output)	RJ45 socket / RJ45 socket
Approvals	UL

Suitable test devices can be found on page 111

Accessories for DEHNpatch – Arrester for Data Networks and Ethernet Applications

DPA MOD IRCM

Installation accessories for using the DEHNpatch CL8 EA 4PPOE arrester with the DRC IRCM remote signalling unit for the monitoring and remote signalling of the arrester state.

Type	DPA MOD IRCM
Part No.	**929 309** NEW
Suitable for	DPA CL8 EA 4PPOE

Lightning Protection Pipe Clamp With Tines

Fixing on elements of any cross-section with clamping screw (M8).

Type	BRS 27.168 Z AK1X10 2X6.8 V2A
Part No.	**540 200**
Clamping range Ø pipe	27-168 mm (3/4-6'')
Material (conductor holder)	StSt
Connection Rd	1-2 x 6-8 mm / 1 x 10 mm
Connection (solid / stranded)	4-50 mm²

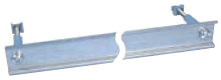
Tensioning Strap for Pole Mounting

Fixing on elements of any cross-section with clamping screw (M8).

Type	LH 6.8 SB50.150 SPSM8 V2A
Part No.	**200 039**
Clamping range Ø pipe	50-150 mm
Material (conductor holder)	StSt

Mounting Set for DEHNpatch

The set comprises a DIN rail for up to 24 DEHNpatch devices and different distance bolts with sliding nuts for installation into data distributors. To save space, the DIN rail can be mounted at the distributor panel or even upstream of the mounting sections in a 19" grid dimension.



Type	MS DPA
Part No.	**929 199**
Mounting in	19" cabinets

482.6 mm (19 inch) Universal DIN Rail Carrier

For 19" technology (3 rack units) or wall mounting.
DIN rail can be mounted vertically or horizontally.

Type	MF DR 3RU 19"
Part No.	**929 335**
Dimensions	3 vertical modules
Enclosure material	aluminium/zinc sheet / StSt

Mounting Set DEHNpatch and DEHNgate

DIN rail mounting set for DEHNpatch and DEHNgate. For individual installation of the arresters.

Type	MS EB DPA DGA
Part No.	**929 200**
Material (earthing clip)	St/gal Zn
Material (flat receptable)	CuZn / Sn
Connection cross-section	0.5-1.5 mm²

SPDs for Building Systems

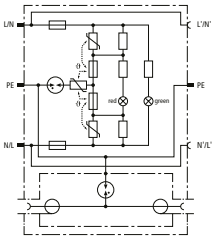
Description	Type	Product	Part No.	Page
DEHNprotector				
▪ Combined adapter for protecting the power and data side of a terminal device ▪ Different versions for protecting different interfaces ▪ With visual operating state / fault indication	**DPRO 230 TV** **DPRO 230 NT** **DPRO 230 LAN100**		**909 300** **909 310** **909 321**	102 102 102
BUStector				
▪ Surge arrester for protecting KNX / EIB systems ▪ Optimally adapted to KNX / EIB systems ▪ EIBA-approved	**BT 24**		**925 001**	102
DEHNbox				
▪ Compact surge arrester in a surface-mounted plastic enclosure ▪ Powerful protection for telecommunication interfaces at the boundaries from LPZ 0_A to 2 ▪ Suitable for wall mounting IP20	**DBX TC B 180**		**922 220**	103
DEHNbox actiVsense				
▪ Wall-mounted universal lightning current and surge arrester ▪ Integrated actiVsense technology ▪ Easy installation and retrofitting	**DBX U4 KT BD S 0-180**		**922 400**	103

DEHNprotector – Combined Adapter

Combined surge protective adapter for plugging into earthed socket outlets, with visual operating state and fault indication.

DPRO 230 TV

Combined surge protection for the power and antenna side of TV, radio or satellite receivers. With visual operating state and fault indication and integrated child safety mechanism

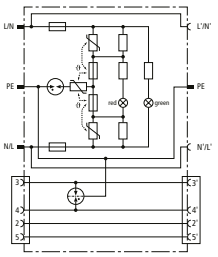


Type DPRO 230 ...	TV
Part No.	**909 300**
Protection of the data side	
SPD class	TYPE 2
Max. continuous operating voltage (d.c.) (U_C)	60 V
C2 Nominal discharge current (8/20 µs) line-shield (PE) (I_n)	5 kA
Insertion loss 0-2400 MHz	≤ 1.5 dB
Connection (input / output)	F socket / F socket

Type DPRO 230 ...	TV
Part No.	**909 300**
Protection of the power side	
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] (U_p)	≤ 1.35 kV
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A

DPRO 230 NT

Combined surge protection for the power and data side of a digital network termination (NT) (IP telephony), especially telecommunication interfaces up to VVDSL and G.fast (up 1 Gbit/s). With visual operating state and fault indication and an integrated child lock on the power side.

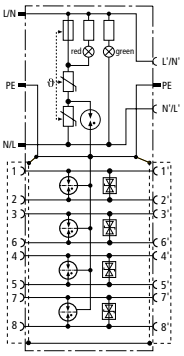


Type DPRO 230 ...	NT
Part No.	**909 310**
Protection of the data side	
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Lightning impulse current (10/350 µs) per line D1 (I_{imp})	1 kA
C2 Nominal discharge current (8/20 µs) per line (I_n)	2.5 kA
Cut-off frequency (f_G)	220 MHz
Connection (input / output)	RJ12 socket / RJ12 socket

Type DPRO 230 ...	NT
Part No.	**909 310**
Protection of the power side	
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] (U_p)	≤ 1.35 kV
Max. mains-side overcurrent protection	B 16 A

DPRO 230 LAN100

Combined surge protection for the power side and data input for protecting LAN components. Protection of all pairs for Ethernet pin assignment.
It meets the requirements for channel class D in accordance with EN 50173 and is thus suitable for 1000 Base-T (Gigabit Ethernet). With visual operating state and fault indication and integrated child safety mechanism.



Type DPRO 230 ...	LAN100
Part No.	**909 321**
Protection of the data side	
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	3.3 V
Lightning impulse current (10/350 µs) per line D1 (I_{imp})	0.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	180 MHz
Connection (input / output)	shielded RJ45 socket / shielded RJ45 socket

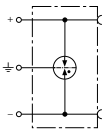
Type DPRO 230 ...	LAN100
Part No.	**909 321**
Protection of the power side	
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] (U_p)	≤ 1.25 kV
Max. mains-side overcurrent protection	B 16 A

BUStector

Surge arrester for KNX / EIB buses with connecting leads

BT

Surge arrester with KNX bus terminal design, adapted to the immunity of KNX / EIB systems. EIBA-certified.



Type	BT 24
Part No.	**925 001**
SPD class	TYPE 2
Max. continuous operating voltage (d.c.) (U_C)	45 V
Nominal current (I_L)	6 A
D1 Lightning impulse current (10/350 µs) per line	1 kA
C2 Nominal discharge current per line (I_n)	5 kA
Cut-off frequency line-line (f_G)	70 MHz
Approvals	EIBA-Zertifizierung Nr. Z 32/1399/95

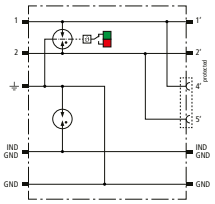
SPDs for Building Systems

DEHNbox

Compact combined arrester with status display and quick connection technology in a surface-mounted plastic enclosure for protecting telecommunication (VDSL, VVDSL, SVVDSL and G.Fast) and information technology interfaces.

DBX TC B 180

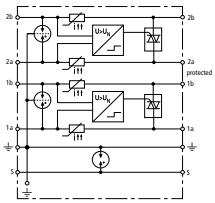
Space-saving, compact surge arrester in a surface-mounted plastic enclosure with push-in connection technology and status indication for protecting one pair of unearthed balanced interfaces, particularly telecommunication interfaces up to VVDSL and G.fast (up to 1 Gbit/s). Direct / indirect shield earthing possible. Connection of a pair or a patch cable with RJ45 plug at the output.
Tests by Deutsche Telekom Technik GmbH confirm compatibility with vectoring VDSL (VVDSL), super vectoring VDSL (SVVDSL) and G.Fast.



Type DBX ...	TC B 180
Part No.	**922 220**
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 40°C (I_L)	1 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	7.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0 ohms

DBX U4 KT BD S 0-180

Compact combined lightning current and surge arrester in a surface-mounted plastic enclosure with actiVsense technology for protecting two pairs with the same or a different signal voltage of galvanically isolated balanced interfaces. Direct or indirect shield earthing.



Type DBX ...	U4 KT BD S 0-180
Part No.	**922 400**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Permissible superimposed signal voltage (U_{signal})	≤ +/- 5 V
Cut-off frequency line-line (U_{signal}, balanced 100 ohms) (f_G)	50 MHz
Nominal current I_L (equals max. short-circuit current)	100 mA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	≤ 9 ohms; typically 7.9 ohms
Dimensions (L x W x H)	93 x 93 x 55 mm

Accessories for DEHNbox

TAE-F connecting cable

TAE-F connecting cable with TAE-F plug on RJ11 plug

Type	ASL DBX TAE F
Part No.	**922 020**
Conductor length	3 m
Type of connection	TAE-F / RJ11

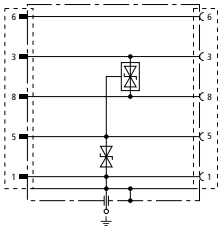
SPDs for SUB-D Connection

FS / USD

Surge arrester, SUB-D socket/pin.
Alternative pinning available on request for the USD series.

FS 9E PB

Surge arrester for Profibus-DP. 9-pin SUB-D version, pin 6 unprotected for the programming interface.



Type	FS 9E PB 6
Part No.	**924 017**
SPD class	TYPE 4 P1
Max. continuous operating voltage (d.c.) (U_c)	7 V
C1 Nominal discharge current (8/20 µs) line-line (I_n)	0.2 kA
C1 Nominal discharge current (8/20 µs) line-SG (I_n)	0.2 kA
C1 Nominal discharge current (8/20 µs) SG-PG (I_n)	0.4 kA
Cut-off frequency (f_G)	90 MHz
Connection (input / output)	SUB-D 9 plug / SUB-D 9 socket

SPDs for Coaxial Connection

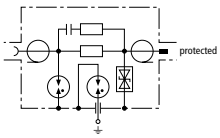
Description	Type	Product	Part No.	Page
UGKF BNC				
▪ Easily adaptable ▪ With indirect shield earthing to avoid ground loops ▪ Protection of video cameras	**UGKF BNC**		**929 010**	105
DEHNgate BNC VC				
▪ Easily adaptable ▪ For DIN rail or wall mounting ▪ With direct or indirect shield earthing	**DGA BNC VCD** **DGA BNC VCID**		**909 710** **909 711**	105 105
DEHNgate FF / GF / GFF TV				
▪ Combinable system of lightning current and surge arresters ▪ With F connection for 75-ohm satellite and broadband cable systems ▪ Integrated measuring output	**DGA FF TV** **DGA GF TV** **DGA GFF TV**		**909 703** **909 704** **909 705**	105 105 105
DEHNgate 5X FF TV				
▪ Compact surge arrester for satellite systems ▪ Optimal five-channel protection for 75-ohm antenna splitters and multi-switches ▪ Fulfils the shielding requirements of class A acc. to EN 50083-2	**DGA FF5 TV**		**909 706**	105
DEHNgate G				
▪ Compact dimensions ▪ Wide transmission range ▪ With SMA, BNC or N connection	**DGA G SMA** **DGA G BNC** **DGA G N**		**929 039** **929 042** **929 044**	106 106 106
DEHNgate AG				
▪ Exchangeable gas discharge tube ▪ Long endurance	**DGA AG BNC** **DGA AG N**		**929 043** **929 045**	106 106
DEHNgate LG / L4				
▪ Wide transmission range for multi-frequency applications ▪ Integrated quarterwave technology ▪ With 7/16 or N connection	**DGA LG 7 16 MFA** **DGA L4 7 16 S** **DGA L4 7 16 MFA**		**929 146** **929 047** **929 148**	106 106 106

UGKF

Surge arrester designed as cable adapter for coaxial systems such as video and camera systems

UGKF BNC

Two-stage surge arrester with indirect shield earthing for protecting video cameras and Arcnet with BNC connection to avoid ground loops.



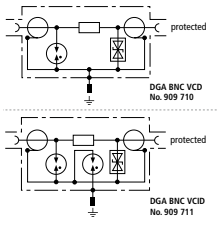
Type	UGKF BNC
Part No.	**929 010**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	8 V
Nominal current (I_L)	0.1 A
C2 Nominal discharge current (8/20 µs) line-shield (I_n)	2.5 kA
Insertion loss at 300 MHz (50 ohms)	≤ 3 dB
Return loss at 40 MHz (50 ohms)	≥ 20 dB
Insertion loss at 265 MHz (75 ohms)	≤ 3 dB
Return loss at 40 MHz (75 ohms)	≥ 20 dB
Approvals	CSA, UL

DEHNgate – SPDs for Coaxial Connection

Lightning current / surge arrester with a cable adapter design for coaxial systems such as CCTV, cell sites and antenna systems

DGA BNC VC

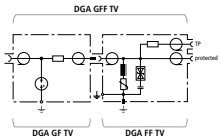
The space-saving surge arrester with BNC socket can be mounted on DIN rails for protecting video and camera systems. Available with direct (VCD) or indirect shield connection (VCID) depending on the type to avoid ground loops.



Type DGA ...	BNC VCD	BNC VCID
Part No.	**909 710**	**909 711**
SPD class	TYPE 2 P1	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	6.4 V	6.4 V
Nominal current (I_L)	0.1 A	0.1 A
D1 Lightning impulse current (10/350 µs) (I_{imp})	1 kA	1 kA
C2 Nominal discharge current (8/20 µs) line-shield (I_n)	5 kA	5 kA
Frequency range	0-300 MHz	0-300 MHz
Connection (input / output)	BNC socket / BNC socket	BNC socket / BNC socket
Approvals	CSA, UL	CSA, UL

DGA TV

DGA ... TV arresters with F connection for remote supply protect 75-ohm satellite and broadband cable systems and fulfil the high shielding requirements of class A according to EN 50083-2. They allow space-saving installation in all common TV and satellite applications and are available as lightning current arresters, surge arresters and combined lightning current and surge arresters with integrated measuring output for checking the system.



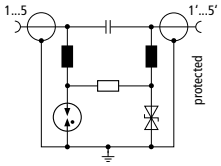
General technical data:	
Nominal current (I_L)	2 A

Type DGA ...	FF TV	GF TV
Part No.	**909 703**	**909 704**
SPD class	TYPE 3 P1	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	24 V	60 V
D1 Lightning impulse current (10/350 µs) (I_{imp})	0.2 kA	2.5 kA
C2 Nominal discharge current (8/20 µs) (I_n)	1.5 kA	10 kA
Frequency range	d.c. / 5-3000 MHz	0-2400 MHz
Connection (input / output)	F socket / F socket	F socket / F plug

Type DGA ...	GFF TV
Part No.	**909 705**
SPD class	TYPE 1 TYPE 3 P1
Max. continuous operating voltage (d.c.) (U_C)	24 V
D1 Lightning impulse current (10/350 µs) (I_{imp})	2.5 kA
C2 Nominal discharge current (8/20 µs) (I_n)	10 kA
Frequency range	d.c. / 5-2400 MHz
Connection (input / output)	F socket / F socket

DGA FF5 TV

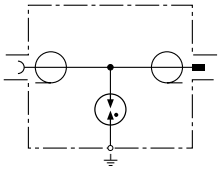
Five-channel surge arrester for 75-ohm antenna systems. Special design for SAT antenna splitters and multi-switches. The arrester fulfils the shielding requirements of class A acc. to EN 50083-2. Fixing material and EB conductor included in delivery.



Type DGA ...	FF5 TV
Part No.	**909 706**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	20 V
Nominal current (I_L)	0.4 A
D1 Lightning impulse current (10/350 µs) (I_{imp})	0.5 kA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	2.5 kA
C2 Nominal discharge current (8/20 µs) (I_n)	2.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Frequency range	47-2200 MHz
Connection (input / output)	F socket / F socket

DGA G

Surge arrester for remote supply with integrated gas discharge tube. Ideally suited for wireless applications for the coaxial interfaces of devices and antennas. Available with SMA, BNC or N connection for bushing installation.



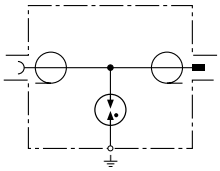
General technical data:	
SPD class	TYPE 2
Max. continuous operating voltage (d.c.) (U_C)	135 V
D1 Lightning impulse current (10/350 µs) (I_{imp})	1 kA
C2 Nominal discharge current (8/20 µs) (I_n)	5 kA

Type DGA ...	G SMA	G BNC
Part No.	**929 039**	**929 042**
Nominal current (I_L)	2 A	3.5 A
Max. transmission capacity	60 W	25 W
Frequency range	0-5.8 GHz	0-4 GHz
Connection	SMA socket / SMA plug	BNC socket / BNC plug

Type DGA ...	G N
Part No.	**929 044**
Nominal current (I_L)	6 A
Max. transmission capacity	60 W
Frequency range	0-5.8 GHz
Connection	N socket / N plug

DGA AG

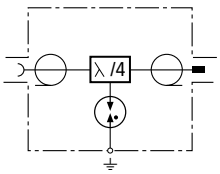
Arrester suitable for remote supply with exchangeable gas discharge tube. Long endurance due to minimum contact erosion resulting from the large-area contact surface of the gas discharge tube.



Type DGA ...	AG BNC	AG N
Part No.	**929 043**	**929 045**
SPD class	TYPE 1	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	180 V	180 V
Nominal current (I_L)	3.5 A	6 A
Max. transmission capacity	150 W	150 W
D1 Lightning impulse current (10/350 µs) (I_{imp})	5 kA	5 kA
C2 Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Frequency range	0-1 GHz	0-2.5 GHz
Connection	BNC socket / BNC plug	N socket / N plug

DGA LG

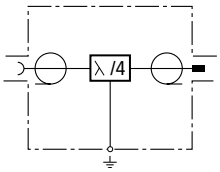
Quarter-wave arrester with spark gap for remote supply protects multi-frequency applications (multi-carrier systems) due to minimum passive intermodulation. Broadband device for all 4+3G and LTE services.



Type DGA ...	LG 7 16 MFA
Part No.	**929 146**
SPD class	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	65 V
Nominal current (I_L)	13 A
Max. transmission capacity	1500 W
D1 Lightning impulse current (10/350 µs) (I_{imp})	5 kA
C2 Nominal discharge current (8/20 µs) (I_n)	20 kA
Frequency range	690 MHz-2.7 GHz
Connection	7/16 socket / 7/16 plug

DGA L4

Combined lightning current and surge arrester with maintenance-free quarter-wave technology for multi-frequency applications (multi-carrier systems). The arrester is also capable of discharging high partial lightning currents. No remote supply as the arrester represents an electrical short-circuit for low-frequency signals. Broadband device for all 4+3G services.



Type DGA ...	L4 7 16 S	L4 7 16 MFA
Part No.	**929 047**	**929 148**
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	0 V	0 V
Nominal current (I_L)	0 A	0 A
Max. transmission capacity	3000 W	1500 W
D1 Lightning impulse current (10/350 µs) (I_{imp})	25 kA	40 kA
C2 Nominal discharge current (8/20 µs) (I_n)	50 kA	80 kA
Frequency range	380-512 MHz	690 MHz-2.7 GHz
Connection	7/16 socket / 7/16 plug	7/16 socket / 7/16 plug

Accessories for DEHNgate – SPDs for Coaxial Connection

Mounting Set DEHNpatch and DEHNgate

DIN rail mounting set for DEHNpatch and DEHNgate. For individual installation of the arresters.

Type	MS EB DPA DGA
Part No.	**929 200**
Material (earthing clip)	St/gal Zn
Material (flat receptable)	CuZn / Sn
Connection cross-section	0.5-1.5 mm²

Gas Discharge Tube for DEHNgate

Lightning current carrying replacement gas discharge tube for DEHNgate arresters. High quality with extremely low capacitance.

General technical data:	
Lightning impulse current carrying capability (10/350 µs)	5 kA

Type	GDT DGA 90	GDT DGA 230
Part No.	**929 497**	**929 498**

Type	GDT DGA 470
Part No.	**929 499**

Cable Lug with Earthing Conductor

Cable lug with highly flexible black copper earthing conductor for earthing DEHNgate arresters (Part Nos. 929 043, 929 044 or 929 045).

Type	EL 16 B17
Part No.	**929 096**
Colour	Black ●
Length	1000 mm

Earthing Block 4xF

Four-pole earthing block with F sockets for equipotential bonding of satellite cable shields or DGA GF TV lightning current arresters.

Type	EB 4 F
Part No.	**929 095**
D1 Lightning impulse current (10/350 µs)	10 kA

Fixing bracket for DEHNgate

Suitable for the installation of a DEHNgate, part no. 929 045, 929 146, 929 047, 929 148. Drill hole Ø11 mm.

Type	BW90 B11 B5.1 6.5 11 V2A
Part No.	**106 310**
Material	StSt

Fixing bracket for DEHNgate

Suitable for installing a DEHNgate arrester (Part Nos. 929 043 - 929 045), anti-rotation borehole (Ø16 mm).

Type	BW90 B16 B5.1 6.5 11 V2A
Part No.	**106 314**
Material	StSt

Fixing bracket for HF Arresters

With three boreholes for three different sizes of DEHNgate,
e.g. 1x 929 042 + 1x 929 057 + 1x (929 043, 929 044, 929 045 or 929 059).

Type	BW90 B17 21 16 V2A
Part No.	**106 329**
Material	StSt

Equipotential Bonding Busbar for industrial Use

Suitable for 3x DEHNgate (Part Nos. 929 045, 929 047, 929 146, 929 148).

Type	PAS I 6AP M10 V2A
Part No.	**472 209**
Material	StSt

Earthing Conductor, open / closed Cable Lugs

Cable lug 1x open (M8/M10) and 1x closed (M8), can be combined with Part Nos. 106 310, 106 314, 106 329 and 472 209.

Type	EL16 L1.05M 1KSO 8.10 1KSG 8
Part No.	**416 411**
Colour	Black ●
Length	1050 mm
Stock No.	6150-12-308-6934

Shield Connection Systems and Enclosures

Description	Type	Product	Part No.	Page
Shield connection on anchor bars				
▪ Shield terminals for earthing cable shields on anchor bars ▪ Different versions for different cable diameters ▪ Lightning current carrying system	**SAK ... AS V4A**		**308 403** - **308 408**	109
▪ Mounting rail for earthing and fixing shield terminals ▪ Can be cut to length according to requirements	**AS SAK 1000 V2A**		**308 421**	109
Shield connection on DIN rails				
▪ Shield terminals for earthing cable shields on DIN rails ▪ Different versions for different cable diameters ▪ Lightning current carrying system	**SAK 6.5 SN MS** **SAK 11 SN MS**		**919 010** **919 011**	109 109
▪ DIN rail mounted rail support ▪ Low-impedance connection of the shield terminals to the DIN rail via the busbar	**SH1 18X3 ST**		**919 012**	109
▪ Busbar for shield terminals ▪ Can be mounted onto busbar supports ▪ Can be cut to length according to requirements	**SN 18X3 CU 1000**		**919 016**	109
Shield connection for cables				
▪ Constant force spring for solderless shield connection for equipotential bonding ▪ Different versions for different cable diameters ▪ Lightning current carrying system	**SA KRF ... V2A**		**919 031** - **919 038**	110
Enclosure				
▪ Aluminium enclosure for DIN rail mounted devices ▪ IP 65 degree of protection ▪ Version for arresters for use in intrinsically safe measuring circuits Ex (i)	**ALGA 5** **ALGA 5X**	 	**906 055** **906 058**	110 110

Shield Connection on Anchor Bars

Shield connection system for anchor bars which is capable of carrying lightning currents. A slipping spring element compensates the yield of the cable materials used.

Shield Terminals

Shield terminals for earthing cable shields on anchor bars. Suitable for lightning equipotential bonding. Can be subsequently installed without interrupting the cable shield or requiring tools for installation.

General technical data:	
Lightning impulse current carrying capability (10/350 µs)	10 kA
Material	StSt
For mounting on	anchor bars

Type	SAK 10 AS V4A	SAK 14 AS V4A
Part No.	308 403	308 404
Clamping range (Rd)	5-10 mm	8-14 mm
Dimensions (W x L x H)	16 x 40 x 48 mm	19.5 x 40 x 50 mm

Type	SAK 18 AS V4A	SAK 21 AS V4A
Part No.	308 405	308 406
Clamping range (Rd)	13-18 mm	17-21 mm
Dimensions (W x L x H)	24 x 40 x 56 mm	29 x 40 x 59 mm

Type	SAK 26 AS V4A	SAK 33 AS V4A
Part No.	308 407	308 408
Clamping range (Rd)	19-26 mm	25-33 mm
Dimensions (W x L x H)	36.5 x 40 x 74 mm	45 x 40 x 82 mm

Anchor Bar

Mounting rail for earthing and fixing shield terminals.

Type	AS SAK 1000 V2A
Part No.	308 421
Material	StSt
Dimensions (W x L x H)	29 x 1000 x 15 mm

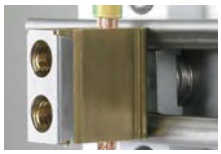
Insulated Busbar Support

Insulated busbar support for fixing AS SAK 1000 V2A anchor bars, with M4 threaded bushing.

Type	ST AS SAK K
Part No.	308 425
Material	plastic

Terminal

For connecting equipotential bonding conductors to AS SAK 1000 V2A anchor bars.



Type	AK 16 AS SAK MS
Part No.	308 411
Cross-sectional area, solid	16 mm²
For mounting on	anchor bars

Shield Connection on DIN Rails

DIN rail mounted shield connection system which is capable of carrying lightning currents, particularly suited for smaller cables. Slipping spring element compensates the yield of the cable materials.

Shield Terminals

Shield terminals for earthing cable shields on busbars (18x3). Suitable for lightning equipotential bonding. Can be subsequently installed without interrupting the cable shield or requiring tools for installation.

Type	SAK 6.5 SN MS	SAK 11 SN MS
Part No.	919 010	919 011
Lightning impulse current carrying capability (10/350 µs)	5 kA	5 kA
Clamping range (Rd)	1.5-6.5 mm	5-11 mm
Material	nickel-plated brass	nickel-plated brass
For mounting on	SN 18x3 CU 1000	SN 18x3 CU 1000
Dimensions (W x L x H)	10 x 25 x 40 mm	17 x 25 x 47 mm

Busbar

Mounting rail for shield terminals. Can be mounted onto busbar supports.

Type	SN 18X3 CU 1000
Part No.	919 016
Material	tin-plated copper
For mounting on	busbar supports
Dimensions (W x L x H)	18 x 1000 x 3 mm

Rail Support with One-Sided Contact

Rail support suitable for DIN rail mounting. Low-impedance connection of the shield terminals to the DIN rail via the busbar.

Type	SH1 18X3 ST
Part No.	919 012
Version	one-sided contact
Material	tin-plated steel
For mounting on	35 mm DIN rails acc. to EN 60715

Insulated Rail Support

Insulated rail support for DIN rail mounting or screw connection.

Type	SH 18X3 K
Part No.	**919 014**
Material	plastic
Colour	black ●
For mounting on	DIN rails or mounting plates

Terminal

Particularly suited for indirect shield earthing.

Type	AK 35 SN 18X3 GG
Part No.	**919 015**
Cross-sectional area	35 mm²
For mounting on	busbars

Shield Connection for Cables

Extremely space-saving shield connection system in the form of a constant force spring. A spring element compensates the yield of the cable materials used.

Constant Force Spring

Constant force springs allow solderless shield connections for equipotential bonding or lightning equipotential bonding. They can be installed subsequently without interrupting the cable shield or requiring tools for installation.

General technical data:	
Lightning impulse current carrying capability (10/350 µs)	10 kA
Colour	bare surface
For mounting on	cable shields

Type	SA KRF 10 V2A	SA KRF 15 V2A
Part No.	**919 031**	**919 032**
Clamping range (Rd)	4-10 mm	9-15 mm

Type	SA KRF 22 V2A	SA KRF 29 V2A
Part No.	**919 033**	**919 034**
Clamping range (Rd)	14-22 mm	18.5-29 mm

Type	SA KRF 37 V2A	SA KRF 50 V2A
Part No.	**919 035**	**919 036**
Clamping range (Rd)	23.5-37 mm	31-50 mm

Type	SA KRF 70 V2A	SA KRF 94 V2A
Part No.	**919 037**	**919 038**
Clamping range (Rd)	44-70 mm	58-94 mm

Self-bonding Rubber Tape

Roll with 9 m self-bonding rubber tape to be wrapped around constant force springs for permanent corrosion protection.

Type	SKB 19 9M SW
Part No.	**919 030**
Colour	black ●
Tape dimensions (W x L)	19 mm x 9 m

Enclosure and Protective Conductor Terminal

- High-quality accessories
- Suitable for DIN rail mounted arresters

Aluminium Enclosure

For the installation of DIN rail mounted devices. With two M20 brass glands.

Type	ALGA 5
Part No.	**906 055**
Degree of protection	IP 65
For mounting on	walls
Dimensions (W x H x D)	100 x 200 x 81 mm
Enclosure material	Al

Aluminium Enclosure for Ex(i) Surge Arresters

With four plastic glands M20 x 1.5, sealable, pressure compensating grommets.

Type	ALGA 5 X
Part No.	**906 058**
Degree of protection	IP 65
For mounting on	walls
Dimensions (W x H x D)	160 x 100 x 85 mm
Enclosure material	Al

Protective Conductor Terminal

For earthing DIN rails

Type	SLK 16
Part No.	**910 099**
Cross-sectional area, flexible	6-16 mm²
Cross-sectional area, solid	6-25 mm²
For mounting on	DIN rails acc. to EN 60715
Enclosure material	polyamide 6.6

Measuring and Test Devices

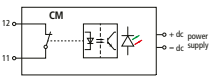
Description	Type	Product	Part No.	Page
Condition Monitoring System LifeCheck for BLITZDUCTORconnect				
▪ Condition monitoring of BLITZDUCTORconnect arresters with integrated LifeCheck ▪ Fast and easy installation and initial operation (no addressing of arresters) ▪ Remote signalling via floating remote signalling contact (nc)	**DRC IRCM**		**910 710**	112
Condition Monitoring System with RFID LifeCheck				
▪ Condition monitoring of BLITZDUCTOR XT arresters with RFID LifeCheck ▪ Monitoring of up to 10 BXT via a DRC MCM XT and networking of up to 15 DRC MCM XT ▪ Remote signalling via remote signalling contact (no/nc) or optional RS485 interface	**DRC MCM XT**		**910 695**	112
▪ Condition monitoring of BLITZDUCTOR XT arresters with RFID LifeCheck ▪ Monitoring of up to 10 BXT ▪ Remote signalling via remote signalling contact (nc)	**DRC SCM XT**		**910 696**	112
DEHNrecord Alert				
▪ Communication of the arrester status via Modbus TCP / RTU ▪ Monitoring of up to 4 arresters (e.g. Red/Line) via remote signalling contact and up to 150 BLITZDUCTOR XT arresters ▪ Integration of the remote signalling contacts of further functional modules in the monitoring system	**DRC AL MODBUS**		**910 694**	113
▪ Condition monitoring of BLITZDUCTOR XT arresters with RFID LifeCheck ▪ Monitoring of up to 10 BXT via a DRC MCM AL XT and networking of up to 15 DRC MCM AL XT ▪ Communication of the arrester status to a higher-level control system via DRC AL MODBUS	**DRC MCM AL XT**		**910 698**	113
RFID LifeCheck SPD Test Devices				
▪ Portable arrester test device for preventive maintenance of BLITZDUCTOR XT modules ▪ Possibility of addressing and reseting BLITZDUCTOR XT modules for monitoring via DRC MCM/SCM XT ▪ Interface and software for database-based testing and documentation	**DRC LC M3+**		**910 653**	113
▪ Portable arrester test device for preventive maintenance of BLITZDUCTOR XT modules ▪ Fast and easy testing of arresters with RFID LifeCheck ▪ Simple and intuitive operations	**DRC LC M1+**		**910 655**	113
SPD Test Device				
▪ Combined device for testing the sparkover voltage of surge arresters ▪ Preventive testing of Red/Line and Yellow/Line arresters ▪ Suitable for routine testing of surge protective devices	**PM 20**		**910 511**	114

LifeCheck condition monitoring system

- Condition monitoring of BLITZDUCTORconnect and DEHNpatch arresters with integrated LifeCheck
- Quick and simple installation and initial operation (without addressing arresters)
- Remote signalling via floating remote signalling contact (break contact)

DRC IRCM

Condition monitoring unit DEHNrecord, set for DIN rail mounted devices with integrated visual transmitter/receiver and visual reverse BLITZDUCTORconnect arresters and DEHNpatch with LifeCheck. Visual arrester status indication via LED group display in combination with remote signalling contact (break contact).



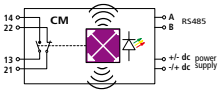
Type	DRC IRCM
Part No.	**910 710**
Input voltage range (d.c.) (U_{IN})	6-35 V d.c.
Max. rated current consumption (I_{IN})	≤ 10 mA
Operating temperature range (T_U)	-30 °C ... +70 °C
Approvals	CSA, UL

Condition Monitoring System with RFID LifeCheck Sensor

Maximum protection and availability of installations due to permanent condition monitoring of LifeCheck-equipped arresters.

DRC MCM XT

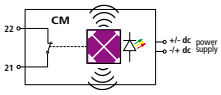
DIN rail mounted device with integrated RFID LifeCheck sensor for condition monitoring of max. 10 BLITZDUCTOR XT / XTU arresters with RFID LifeCheck technology. Visual operating state indication via three-coloured LED in conjunction with remote signalling contact (break or make contact). Up to 15 DRC MCM XT can be monitored via the integrated RS485 interface in a system with up to 150 BLITZDUCTOR XT/ XTU arresters. The free "Status Display and Service Console" software can be optionally used via an RS485 interface converter. The software allows PC-based remote indication of the condition of all monitored arresters.
Download: www.dehn-international.com (Service section)



Type DRC ...	MCM XT
Part No.	**910 695**
Input voltage range (d.c.) (U_{IN})	18-48 V
Max. rated current consumption (I_{IN})	100 mA
RFID transmission frequency	125 kHz
Type of remote signalling contact	make (no) and break contact (nc)
Delivery includes	base part, monitoring module, quick guide and labelling system

DRC SCM XT

DIN rail mounted device with integrated RFID LifeCheck sensor for condition monitoring of up to ten BLITZDUCTOR XT / XTU arresters with RFID LifeCheck technology. Visual operating state indication via three-colour LED combined with remote signalling function (break contact).



Type DRC ...	SCM XT
Part No.	**910 696**
Input voltage range (d.c.) (U_{IN})	18-48 V
Max. rated current consumption (I_{IN})	100 mA
RFID transmission frequency	125 kHz
Type of remote signalling contact	break contact (nc)
Delivery includes	base part, monitoring module, quick guide and labelling system

Accessories for Condition Monitoring System with RFID LifeCheck Sensor

DIN Rail Mounted Power Supply Unit

Robust power supply in the DIN-rail-mounted enclosure with single-phase, wide-range input for operation in a wide variety of supply systems. The operating state indication on the front side signals the availability of the output voltage. Supply of stationary condition-monitoring devices from the DEHNrecord product range (DRC SCM XT / DRC MCM XT / DRC IRCM / DRC SD 2 1).

Type	PSU DC24 30W
Part No.	**910 499**
Input voltage range	AC 85-264 V; DC 120-373 V
Frequency	44-66 Hz; 0 Hz
Input current (I_e)	0.7 A at AC 110 V / 0.5 A at AC 230 V
Output nominal voltage (U_a)	DC 24 V (SELV)
Output current (I_a)	1.3 A at DC 24 V, max. 0.9 A at any installation position
Recommended backup fuse	circuit breaker 10 A, 16 A, characteristic B, C
Standards / regulations	EN 60950, EN 61204-3, UL 60950, UL 508, GL

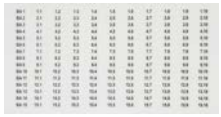
USB Interface Converter of Type USB NANO 485

USB NANO 485 converts between USB and RS485 signals and is specifically designed for two-wire RS-485 buses. LEDs indicate the operating state (yellow), Rx (green) and Tx (red). Due to its compact dimensions, USB NANO 485 is ideally suited for use with notebooks, however, stationary use is also possible.

Type	USB NANO 485
Part No.	**910 486**
Version	with LED indication

Labelling System BA1-BA15

2x 165 adhesive labels for labelling DRC MCM XT monitoring devices with the bus address.



Type	BS BA1 BA15 BXT
Part No.	**920 398**
Colour	transparent

Partition

Allows devices of the BXT family for non-intrinsically safe circuits to be positioned directly next to intrinsically safe circuits (clearance ≥ 50 mm).
For DRC MCM XT and DRC SCM XT; (1 pack = 2 pieces).

Type	TW DRC MCM EX
Part No.	**910 697**
Colour	blue
For mounting on	35 mm DIN rails acc. to EN 60715

DEHNrecord Alert

DEHNrecord Alert sends status reports on surge protective devices (SPDs) via Modbus TCP/RTU to an evaluation system. It enables transmission to devices like notebooks, tablets, smartphones and PCs or to the system control room.

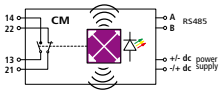
DRC AL MODBUS

Compact DIN rail mounted device for the transmission of SPD status information, e.g. functional status, part number of SPD and part numbers of the replacement modules via Modbus RTU/TCP.

Type DRC ...	AL MODBUS
Part No.	**910 694**
Input voltage range (d.c.) (U_{IN})	11-28 V
Max. power	600 mW
Inputs	4 universally applicable remote signalling contacts and up to 150 BLITZDUCTOR XT via DRC MCM AL XT (910 698)
Communication	Modbus RTU/TCP

DRC MCM AL XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BLITZDUCTOR XT / XTU arresters. Transmission of the status of the bus address and BXT part numbers to the DEHNrecord Alert communication unit.



Type DRC ...	MCM AL XT
Part No.	**910 698**
Input voltage range (d.c.) (U_{IN})	18-48 V
Max. rated current consumption (I_{IN})	100 mA
RFID transmission frequency	125 kHz
Physical interface	RS 485
Delivery includes	base part, monitoring module, quick guide and labelling system

RFID LifeCheck SPD Test Devices

SPD test devices for preventive maintenance of arresters with integrated LifeCheck.

DRC LC M3+

Portable device with RFID LifeCheck sensor for flexible use. For the quick inspection of arresters with RFID LifeCheck. Equipped with visual and acoustic indication. Also equipped with USB port and PC database software for the PC-supported management of specimens and the documentation of test results. The DRC LC M3+ is equipped with a snap-on RFID LifeCheck sensor. The hand-held equipment also supports the parameterisation of the arresters for condition monitoring.

Type DRC LC ...	M3+
Part No.	**910 653**
Voltage supply (included in delivery)	lithium-ion battery
RFID transmission frequency	125 kHz
Measured value indication	beep and LCD
Delivery includes	hand-held device, BXT LifeCheck sensor, battery charger, USB cable, test module for reference, software CD, storage case
Dimensions of the storage case	340 x 275 x 83 mm

DRC LC M1+

Portable device with LifeCheck sensor for flexible use. For quickly and easily checking arresters with RFIDLifeCheck. Operation and charge indication and the result indication of the LifeCheck test are provided through LEDs. The DRC LC M1+ is equipped with an RFIDsnap-on LifeCheck sensor.

Type DRC LC ...	M1+
Part No.	**910 655**
Voltage supply (included in delivery)	lithium-polymer battery
RFID transmission frequency	125 kHz
Measured value indication	LED
Delivery includes	hand-held device, BXT LifeCheck sensor, power supply unit with country-specific adapters, USB cable, test module for reference, storage case
Dimensions of the storage case	275 x 230 x 83 mm

Accessories for RFID LifeCheck SPD Test Devices

RFID LifeCheck Sensor for DRC BXT

Snap-on RFID LifeCheck sensor and test module for use as spare part / extension for portable RFID LifeCheck test devices.

Type	LCS DRC BXT
Part No.	**910 652**
For testing	BLITZDUCTOR XT ML

SPD Test Device

For testing the sparkover voltage of surge arresters. The specimen is connected via the included test cables or special test adapters.

PM 20

Combined device for testing the sparkover voltage of surge arresters (with gas discharge tubes / varistors / Zener diodes). Storage bag and measuring accessories included.

Type	PM 20
Part No.	**910 511**
Nominal voltage (d.c.) (U_N)	8-12 V d.c.
Test parameter: Test voltage	max. 1200 V d.c.
Measured value indication	alphanumeric, eight-digit LCD
Accessories included in delivery	2 test leads (each 1 m long), 2 safety tapping test clips, 1 plug-in power supply unit (230 V a.c.), 1 storage bag
Dimensions of the storage bag	300 x 110 x 110 mm

Accessories for SPD Test Device

PA BXT Test Adapter

To be connected to PM 10 / PM 20. For inserting and testing protection modules.

Type	PA BXT
Part No.	**910 508**
For protection modules	BLITZDUCTOR XT / SP / CT

Lightning Equipotential Bonding

Isolating Spark Gaps and Components

You will find products for equipotential bonding under: **Lightning Protection / Earthing, page 315-335**

Isolating Spark Gaps	Page 116
Decoupling devices	Page 118
Voltage Limiting Devices	Page 119

Isolating Spark Gaps

For lightning equipotential bonding according to IEC 62305 as well as for use in IT installations according to IEC 60364-5-54.

TFS / KFSU

Isolating spark gaps with plastic sheath and two stainless steel connections (Rd 10 mm).

Typee	TFS	KFSU
Part No.		**923 021**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA	–
Class (lightning current carrying capability)	H	–
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 4 kV	≤ 4 kV
Degree of protection protection	IP 65	IP 65

EXFS Coaxial Connection Box

Connection box for coaxial connection of the integrated Ex isolating spark gap for bridging insulating joints and flanges in cathodically protected pipe sections of pipelines.

Coaxial Connection Box with EXFS 100

Coaxial connection of isolating spark gaps with a low sparkover voltage for lightning equipotential bonding according to IEC 62305.

Type	NAK SN4631
Part No.	**999 990**
Isolating spark gap acc. to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Nominal discharge current (8/20 µs) (I_n)	100 kA
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 1.25 kV
Degree of protection protection	IP 67 (UV-resistant)

EXFS L / EXFS KU

For bridging insulating flanges and insulating glands in cathodically protected pipe sections (e.g., pipelines or LPG plants) in hazardous areas in case of surges and lightning currents.

EXFS L

Ex isolating spark gap for aboveground installation.

General technical data:	
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Class (lightning current carrying capability)	N
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 2.5 kV
Degree of protection	IP 54
ATEX approvals	DEKRA 11ATEX0146 X
Ex marking according to EN 60079-0 and EN 60079-15: gas	II 3 G Ex nC IIC T4 Gc
IECEx approvals	IECEx DEK 11.0063X
Ex marking according to EN 60079-0	Ex nC IIC T4 Gc

Type EXFS ...	L100	L200
Part No.	**923 060**	**923 061**
Cable length	100 mm	200 mm

Typee EXFS ...	L300
Part No.	**923 062**
Cable length	300 mm

EXFS KU

Ex isolating spark gap with connecting cables for aboveground and underground installation; with waterproof sheath; can be shortened to keep cables as short as possible.

Type EXFS ...	KU
Part No.	**923 019**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Class (lightning current carrying capability)	N
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 2.5 kV
Degree of protection	IP 67
ATEX approvals	DEKRA 11ATEX0146 X
Ex marking according to EN 60079-0 and EN 60079-15: gas	II 3 G Ex nC IIC T4 Gc
IECEx approvals	IECEx DEK 11.0063X
Ex marking according to EN 60079-0	Ex nC IIC T4 Gc
Cable length	2x approx. 1500 mm

EXFS 100 / EXFS 100 KU

For bridging insulating flanges and insulating glands in cathodically protected pipe sections (e.g. pipelines or LPG plants) in hazardous areas in case of surges and lightning currents.

- Class (lighning current carrying capability) H (100 kA)
- Particularly low sparkover voltage
- ATEX and IECEx approvals for zone 1 and zone 21

EXFS 100

Isolating spark gap for use in hazardous areas with plastic sheath and M10 threaded screws.

Type EXFS ...	100
Part No.	**923 100**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Class (lightning current carrying capability)	H
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 1.25 kV
Degree of protection	IP 67
Approvals	UL, Inmetro
ATEX approvals	DEKRA 11ATEX0178 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	II 2 G Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	II 2 D Ex tb IIIC T80 °C Db IP 66/67
IECEx approvals	IECEx KEM 09.0051X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67
Inmetro approvals	TÜV 17.0698 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67

EXFS 100 KU

Ex isolating spark gap with connecting cable for aboveground and underground installation; with waterproof sheath; can be shortened to keep cables as short as possible.

Type EXFS ...	100 KU
Part No.	**923 101**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Class (lightning current carrying capability)	H
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 1.25 kV
Degree of protection	IP 67
Approvals	Inmetro
ATEX approvals	DEKRA 11ATEX0178 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	II 2 G Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	II 2 D Ex tb IIIC T80 °C Db IP 66/67
IECEx approvals	IECEx KEM 09.0051X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80°C Db IP 66/67
Inmetro approvals	TÜV 17.0698 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67
Cable length	2x approx. 2000 mm

Accessories for EXFS 100 / EXFS 100 KU

Angled connection brackets – IF 1 –

Angled connection bracket for EXFS ...; diameter corresponds to the bolt diameter of the flange joint; material: St/tZn.

Type	AB EXFS IF1 W 11	AB EXFS IF1 W 14
Part No.	**923 311**	**923 314**
Borehole diameter d1	11 mm	14 mm

Type	AB EXFS IF1 W 18	AB EXFS IF1 W 22
Part No.	**923 318**	**923 322**
Borehole diameter d1	18 mm	22 mm

Type	AB EXFS IF1 W 26	AB EXFS IF1 W 30
Part No.	**923 326**	**923 330**
Borehole diameter d1	26 mm	30 mm

Type	AB EXFS IF1 W 33	AB EXFS IF1 W 36
Part No.	**923 333**	**923 336**
Borehole diameter d1	33 mm	36 mm

Type	AB EXFS IF1 W 39	AB EXFS IF1 W 42
Part No.	**923 339**	**923 342**
Borehole diameter d1	39 mm	42 mm

Type	AB EXFS IF1 W 48	AB EXFS IF1 W 56
Part No.	**923 348**	**923 356**
Borehole diameter d1	48 mm	56 mm

Type		AB EXFS IF1 W 62
Part No.		**923 362**
Borehole diameter d1		62 mm

Flat connection brackets – IF 3 –

Flat connection bracket for EXFS ...; diameter corresponds to the bolt diameter of the flange joint; material: St/tZn.

Type	AB EXFS IF3 G 11	AB EXFS IF3 G 14
Part No.	**923 211**	**923 214**
Borehole diameter d1	11 mm	14 mm

Type	AB EXFS IF3 G 18	AB EXFS IF3 G 22
Part No.	**923 218**	**923 222**
Borehole diameter d1	18 mm	22 mm

Type	AB EXFS IF3 G 26	AB EXFS IF3 G 30
Part No.	**923 226**	**923 230**
Borehole diameter d1	26 mm	30 mm

Type	AB EXFS IF3 G 33	AB EXFS IF3 G 36
Part No.	**923 233**	**923 236**
Borehole diameter d1	33 mm	36 mm

Type	AB EXFS IF3 G 39	AB EXFS IF3 G 42
Part No.	**923 239**	**923 242**
Borehole diameter d1	39 mm	42 mm

EXFS 100: Connecting Cable, Cu, 25 mm²

Connecting cable for EXFS 100; two cable lugs (Ø10.5 mm) made of Cu/gal Sn, screw, nut and spring washer.

Type	AL EXFS L100 KS	AL EXFS L200 KS
Part No.	**923 025**	**923 035**
Cable length	100 mm	200 mm

Type		AL EXFS L300 KS
Part No.		**923 045**
Cable length		300 mm

Voltage-controlled smart decoupling device VCSD

Voltage-controlled decoupler for protecting widely distributed and highly networked systems (e.g. pipelines). With adjustable response threshold and integrated control and analysis interface.

VCSD 40 IP65

Voltage-controlled smart decoupling device with adjustable response threshold for flexible use in a wide range of systems.

Type	VCSD 40 IP65
Part No.	**923 401**
Transient discharge current (10/350 µs)	100 kA
Transient discharge current (8/20 µs)	100 kA
Temporary discharge current (16.7 Hz, 50 Hz, 60 Hz)	1.1 kA_{rms} (up to 200 ms) *1)
Temporary discharge current (16.7 Hz, 50 Hz, 60 Hz)	500 A_{rms} (up to 1 s)
Long-duration discharge current (16.7 Hz, 50 Hz, 60 Hz)	45 A_{rms} (permanently) *2)
Long-duration limiting voltage (a.c.$_{rms}$) (> 200 ms)	max. 50 V (adjustable from 3 to 50 V)
Degree of protection	IP 65
Dimensions	400 x 300 x 150 mm

*1) Derating depends on the "biasing current" (long-duration discharge current) and on the ambient temperature
*2) Derating depends on the ambient temperature; see operating and installation instructions

Accessories for Voltage-controlled smart decoupling device VCSD

DGP M – 100 kA N-PE Spark-Gap-Based Protection Module

N-PE spark-gap-based protection module for all devices of the modular DEHNgap M family.

Type	DGP M MOD 255
Part No.	**961 010**
Max. continuous operating voltage (a.c.) (U_C)	255 V

Decoupling device DASD

Powerful, capacitive decoupling device for protecting widely distributed and highly networked systems (e.g. pipelines). With integrated test socket and fail-safe functioning. Can also be used for outdoor installation.

DASD 45 LP 100 T

Type	DASD 45 LP 100 T
Part No.	**923 402**
Transient discharge current (10/350 µs)	75 kA
Transient discharge current (8/20 µs)	100 kA
Temporary discharge current (16.7 Hz, 50 Hz, 60 Hz)	5.0 kA_{rms} (up to 40 ms)
Temporary discharge current (16.7 Hz, 50 Hz, 60 Hz)	3.7 kA_{rms} (up to 200 ms)
Temporary discharge current (16.7 Hz, 50 Hz, 60 Hz)	2.0 kA_{rms} (up to 600 ms)
Long-duration discharge current (16.7 Hz, 50 Hz, 60 Hz)	45 A_{rms}
Transient limiting voltage (up to 1 ms)	≤ 1.35 kV
Long-duration limiting voltage (> 600 ms)	≤ 3 V

Accessories for Decoupling device DASD

Retaining Device for Decoupler

Retaining device for decoupler DASD 45 LP 100 T.

Type	HA SB DASD 45 D110
Part No.	**923 403** NEW
Material mounting support	Al
Dimensions mounting support (l x w x h)	353 x 35 x 30 mm
Fixing	[13x] 15 x 6 mm
Material of tensioning strap	StSt

Voltage Limiting Devices

Spark-gap-based voltage limiting device for use in electric railways.

SDS 1

Voltage limiting device for a power-frequency sparkover voltage ≤ 940 V.

Type SDS ...	1
Part No.	**923 110**
VLD Typee (EN 50122-1)	VLD-F
Power frequency sparkover voltage (U_{aw})	≤ 940 V
d.c. sparkover voltage (U_{ag})	700 V -14% ... +28%
Impulse sparkover voltage	≤ 1400 V (1 kV/µs)
Self-extinguishing capability	300 A / 65 V
Lightning current discharge capacity (10/350 µs) 0.1x / 0.5x / 1x	5 kA
Lightning current withstand capability (10/350 µs)	100 kA
Safe short-circuit due to welding of the electrodes in case of alternating currents	≥ 2.5 kA / 1000 V / 30 ms, ≥ 1.5 kA / 1000 V / 100 ms
Safe short-circuit due to welding of the electrodes in case of direct currents	≥ 750 A / 250 ms
Short-circuit withstand capability	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms
Long-term current	1 kA_{rms} for t ≤ 120 s
Leakage current (I_{lc})	< 1 µA for 100 V d.c.
Operating temperature range (T_U)	-40 °C ... +80 °C
To be mounted with mast adapter MA SDS M12 or SIEMENS No. 8WL6503-xx	
Approvals	EBA
DB drawing No.	4 Ebs 15.13.20 Sheet 2

SDS 2

Voltage limiting device for a d.c. sparkover voltage of 350 V.

Type SDS ...	2
Part No.	**923 117**
VLD Typee (EN 50122-1)	VLD-F
d.c. sparkover voltage (U_{ag})	350 V +/- 20 %
Impulse sparkover voltage	≤ 900 V (1 kV/µs)
Lightning current discharge capacity (10/350 µs) 0.1x / 0.5x / 1x	2 kA
Lightning current withstand capability (10/350 µs)	25 kA
Safe short-circuit due to welding of the electrodes in case of direct currents	≥ 600 A / 250 ms
Short-circuit withstand capability	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms
Long-term current	1 kA_{rms} for t ≤ 120 s
Leakage current (I_{lc})	< 1 µA for 100 V d.c.
Operating temperature range (T_U)	-40 °C ... +80 °C
To be mounted with mast adapter MA SDS M12 or SIEMENS No. 8WL6503-xx	

Accessories for Voltage Limiting Devices

Mast adapter for SDS voltage-limiting devices

For installation on the mast profile of overhead contact line masts with Ø8-12 mm.

Type	MA SDS M12
Part No.	**723 199**
Lightning current carrying capability (10/350 µs)	25 kA
Short-circuit withstand capability	21 kA_{rms} / 30 ms
Long-term current	1 kA_{rms} at t ≤ 120 s
Leakage current (I_{lc})	< 1 µA at 100 V d.c.
Dimensions of the threaded pin	M12
Material	Brass
Degree of protection of the inner enclosure	IP 67

SDS 3

Voltage limiting device for a d.c. sparkover voltage of 550 V.

Type SDS ...	3
Part No.	**923 116**
VLD Typee (EN 50122-1)	VLD-F
d.c. sparkover voltage (U_{ag})	550 V +/- 20 %
Impulse sparkover voltage	≤ 1000 V (1 kV/µs)
Lightning current discharge capacity (10/350 µs) 0.1x / 0.5x / 1x	2.5 kA
Lightning current withstand capability (10/350 µs)	25 kA
Short-circuit withstand capability	25 kA_{rms} / 100 ms
Operating temperature range (T_U)	-40 °C ... +80 °C
To be mounted with mast adapter MA SDS M12 or SIEMENS Nr. 8WL6503-xx	

SDS 4

Voltage limiting device for a d.c. sparkover voltage of 230 V.

Type SDS ...	4
Part No.	**923 118**
VLD Typee (EN 50122-1)	VLD-F
d.c. sparkover voltage (U_{ag})	230 V +/- 20%
Impulse sparkover voltage	≤ 650 V (1 kV/µs)
Lightning current discharge capacity (10/350 µs) 0.1x / 0.5x / 1x	2.5 kA
Lightning current withstand capability (10/350 µs)	25 kA
Impulse current discharge capacity (8/20 µs) 0.1x / 0.5x / 1x	20 kA
Safe short-circuit due to welding of the electrodes in case of direct currents	≥ 600 A / 250 ms
Short-circuit withstand capability	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms
Long-term current	1 kA_{rms} for t ≤ 120 s
Leakage current (I_{lc})	< 1 µA for 100 V d.c.
Operating temperature range (T_U)	-40 °C ... +80 °C
To be mounted with mast adapter MA SDS M12 or SIEMENS No. 8WL6503-xx	

SDS 5

Voltage limiting device for a d.c. sparkover voltage of 120 V.

Type SDS ...	5
Part No.	**923 119**
VLD Typee (EN 50122-1)	VLD-F
d.c. sparkover voltage (U_{ag})	120 V +/- 20 %
Impulse sparkover voltage	≤ 600 V (1 kV/µs)
Lightning current discharge capacity (10/350 µs) 0.1x / 0.5x / 1x	2 kA
Lightning current withstand capability (10/350 µs)	25 kA
Impulse current discharge capacity (8/20 µs) 0.1x / 0.5x / 1x	20 kA
Safe short-circuit due to welding of the electrodes in case of direct currents	≥ 600 A / 250 ms
Short-circuit withstand capability	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms
Long-term current	1 kA_{rms} for t ≤ 120 s
Leakage current (I_{lc})	< 1 µA for 100 V d.c.
Operating temperature range (T_U)	-40 °C ... +80 °C
To be mounted with mast adapter MA SDS M12 or SIEMENS No. 8WL6503-xx	

Lightning Protection / Earthing

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Requirements for External Lightning Protection Components

Components used for installing the external lightning protection system shall meet the mechanical and electrical requirements, as specified in the EN 62561-x standard series. Lightning protection components are categorised according to their function, for example connection components (EN 62561-1), conductors and earth electrodes (EN 62561-2).

Testing of conventional lightning protection components
Metal lightning protection components (clamps, conductors, air-termination rods, earth electrodes) exposed to the elements have to be subjected to artificial ageing/conditioning prior to testing to verify their suitability for the intended application. In accordance with EN 60068-2-52 and EN ISO 6988 metal components are subjected to artificial ageing and tested in two steps.

Natural weathering of lightning protection components and exposure to corrosion

Step 1: Salt mist treatment
This test applies to components or devices for installation in saline atmospheres. The specimens are tested with severity level 2 in a salt mist chamber (Figure 1) for three days. Test level 2 consists of three spraying phases of 2 h each, using a 5% sodium chloride solution (NaCl) at temperatures between 15 °C and 35 °C followed by storage at a relative humidity of 93 $^{+2}_{-3}$ % and a temperature of 40 ±2 °C 20 to 22 hours in accordance with EN 60068-2-52.

Step 2: Humid sulphurous atmosphere treatment
This test is to evaluate the resistance of materials or objects to condensed humidity containing sulphur dioxide in accordance with EN ISO 6988.
The test is carried out in a test chamber (Figure 2) in seven test cycles of 24 h each in a sulphur dioxide concentration of 667 x 10^{-6} (±24 x 10^{-6}) of the volume. Each cycle has a heating period of 8 h at a temperature of 40 ±3 °C in a humid, saturated atmosphere followed by a rest period of 16 h. After that, the humid sulphurous atmosphere is replaced. Both components for outdoor use and components buried in the ground are subjected to ageing / conditioning. For components buried in the ground additional requirements and measures have to be considered. No aluminium clamps or conductors may be buried in the ground. If stainless steel is to be buried in the ground, only high-alloy stainless steel may be used, e.g. StSt (V4A). In accordance with the German DIN VDE 0151 standard, StSt (V2A) is not allowed. Components for indoor use such as equipotential bonding bars do not have to be subjected to ageing / conditioning. The same applies to components which are embedded in concrete. These components are therefore often made of non-galvanised (black) steel.

Air-termination systems / air-termination rods
Air-termination rods are typically used as air-termination systems. They are available in many different designs, ranging from 1 m for installation with concrete base on flat roofs, to telescopic lightning protection masts with a length of 25 m for biogas plants.
EN 62561-2 specifies the minimum cross sections and the permissible materials with the corresponding electrical and mechanical properties for air-termination rods.

Figure 1: Test in a salt mist chamber.

Figure 2: Test in a Kesternich chamber.

In case of air-termination rods with larger heights, the bending resistance of the air-termination rod and the stability of complete systems (air-termination rod in a tripod) have to be verified by means of a static calculation. Selection of the required cross sections and materials is based on this calculation. The wind speeds of the relevant wind load zone also have to be taken into account for this calculation.

Testing of connection components

Connection components, often simply called clamps, are used as lightning protection components to connect conductors (down conductor,air-termination conductor, earth entry) to each other or to an installation. Depending on the type of clamp and clamp material, a lot of different clamp combinations are possible. The conductor routing and the possible material combinations are decisive in this respect. The kind of conductor routing describes how a clamp connects the conductors in cross or parallel arrangement.
In case of a lightning current load, clamps are subjected to electrodynamic and thermal forces which highly depend on the kind of conductor routing and the clamp connection. Table 1 shows materials which may be combined without causing contact corrosion.
The combination of different materials with one another and their different mechanical strengths and thermal properties have different effects on the connection components when lightning current flows through them. This is particularly evident for stainless steel (StSt) connection components where high temperatures occur due to the low conductivity as soon as lightning currents flow through them. Therefore, a lightning current test in compliance with EN 62561-1 has to be carried out for all clamps. In order to test the worst case, not only the different conductor combinations but also the material combinations specified by the manufacturer have to be tested.

Tests based on the example of an MV clamp

At first, the number of test combinations has to be determined. The MV clamp used is made of stainless steel (StSt) and hence can be combined with steel, aluminium, StSt and copper conductors as stated in Table 1. Moreover, it can be connected in cross and parallel arrangement which also has to be tested. This means that there are eight possible test combinations for the MV clamp used (Figures 3 and 4).

In accordance with EN 62561 each of these test combinations has to be tested on three suitable specimens / test set-ups. This means that 24 specimens of this single MV clamp have to be tested to cover the complete range. Every single specimen is mounted with the adequate tightening torque in compliance with normative requirements and is subjected to artificial ageing by means of salt mist and humid sulphurous atmosphere treatment as described above. For the subsequent electrical test the specimens have to be fixed on an insulating plate (Figure 5).

Three lightning current impulses of 10/350 µs wave form with 50 kA (normal duty) and 100 kA (heavy duty) are applied to every specimen. After being loaded with lightning current, the specimens must not show signs of damage.

In addition to the electrical tests where the specimen is subjected to electrodynamic forces in case of a lightning current load, a static-mechanical load was integrated in the EN 62561-1 standard. This static-mechanical test is particularly required for parallel connectors, longitudinal connectors, etc. and is carried out with different conductor materials and clamping ranges. The connection components are prepared with a defined tightening torque and then loaded with a mechanical tensile force of 900 N (±20 N) for one minute. During this test period, the conductors must not move more than one millimetre and the connection components must not show signs of damage. This additional static-mechanical test is another test criterion for connection components and also has to be documented in the manufacturer's test report in addition to the electrical values.

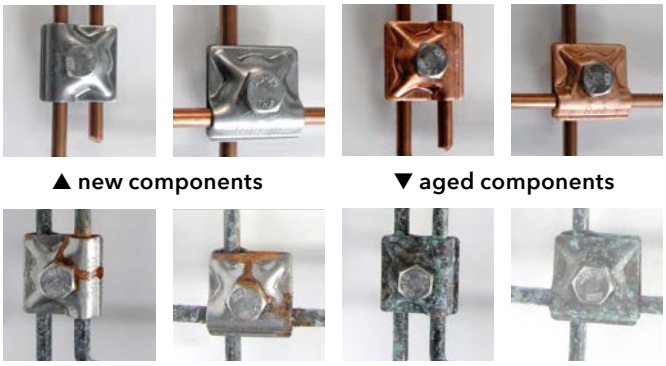

Figure 3: New and aged components.

Figure 4: Test combinations for MV clamps (parallel and cross arrangement).

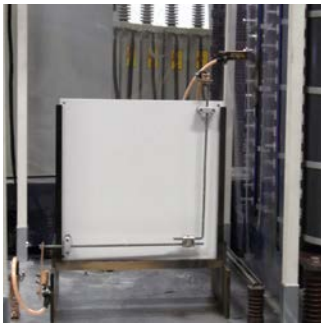

Figure 5: Specimen fixed on insulating plate (MV clamp) for a test in the impulse current laboratory.

	Steel	Aluminium	Copper	StSt	Titanium	Tin
Steel (St/tZn)	**yes**	**yes**	no	**yes**	**yes**	**yes**
Aluminium	**yes**	**yes**	no	**yes**	**yes**	**yes**
Copper	no	no	**yes**	**yes**	nein	**yes**
StSt	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**
Titanium	**yes**	**yes**	nein	**yes**	**yes**	**yes**
Tin	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**

Table 1: Possible material combinations for air-termination systems and down conductors and for connection with structural parts.

The contact resistance (measured above the clamp) for a stainless steel clamp must not exceed 3 mΩ or 1 mΩ in case of other materials. The required loosening torque has to be ensured. A manufacturer's test report is prepared for every test combination. A detailed test report is available from the manufacturer upon request or a less detailed report can be downloaded from the internet (www.dehn-international.com => Product data).

Consequently, installers of lightning protection systems have to select the connection components for the duty (H or N) to be expected on site. A clamp for duty H (100 kA), for example, has to be used for an air-termination rod (full lightning current) and a clamp for duty N (50 kA) has to be used in a mesh or at an earth entry (lightning current already distributed).

Conductors

EN 62561-2 also places special demands on conductors such as air-termination and down conductors or earth electrodes e.g. ring earth electrodes, for example:

- Mechanical properties (minimum tensile strength, minimum elongation),
- Electrical properties (max. resistivity) and
- Corrosion resistance properties (artificial ageing as described above).

The mechanical properties have to be tested and observed. The quality of coating (smooth, continuous) as well as the minimum thickness and adhesion to the base material are important and have to be tested particularly if coated materials such as galvanised steel (St/tZn) are used. This is described in the standard in the form of a bending test. For this purpose, a specimen is bent through a radius equal to 5 times its diameter to an angle of 90°. In doing so, the specimen may not show sharp edges, breakage or exfoliation. Moreover, the conductor materials shall be easy to process when installing lightning protection systems. Wires or strips (coils) are supposed to be easily straightened by means of a wire straightener (guide pulleys) or torsion. Furthermore, it should be easy to install / bend the materials at structures or in the soil. These standard requirements are relevant product features which have to be documented in the corresponding product data sheets of the manufacturers.

Earth electrodes / earth rods

The separable DEHN earth rods are made of special steel and are completely hot-dip galvanised or consist of high-alloy stainless steel (StSt (V4A); material No. 1.4571). A coupling joint which allows connection of the rods without enlarging the diameter is a special feature of theses earth rods. Every rod provides a bore and a pin end. Erderstäbe miteinander verbunden werden. EN 62561-2 specifies the requirements for earth electrodes such as material, geometry, minimum dimensions as well as mechanical and electrical properties. The coupling joints linking the individual rods are weak points. For this reason, EN 62561-2 requires that additional mechanical and electrical tests be performed to test the quality of these coupling joints. For this test, the rod is put into a guide with a steel plate as impact area. The specimen consists of two joined rods with a length of 500 mm each. The top end of the specimen is impacted by means of a vibration hammer with an adequate hammer insert for a duration of two minutes. The blow rate of the hammer must be 2000 ± 1000 min^{-1} and the single stroke impact energy must be 50±10 [Nm]. If the couplings have passed this test without visible defects, they are subjected to artificial ageing by means of salt mist and humid sulphurous atmosphere treatment. Then the couplings are loaded with three lightning current impulses of 10/350 µs wave form of 50 kA and 100 kA each. The contact resistance (measured above the coupling) of steel earth rods must not exceed 1 mΩ (stainless steel 3 mΩ). To test whether the coupling joint is still firmly connected after being subjected to this lightning current load, the coupling force is tested by means of a tensile testing machine.

Testing of insulated conductors and spacers

In accordance with the new component standard IEC TS 62561-8 Edition 1.0 2018-01, in future also insulated conductors including system components as well as insulated spacers (GRP) must be tested mechanically as well as electrically. The tests differ according to the type of product.

Insulated conductors – HVI Conductors

A high-voltage-resistant insulated conductor (HVI Conductor) as well as the corresponding mounting material must, in compliance with IEC TS 62561-8 Edition 1.0 2018-01, be able to insulate and safely discharge lightning currents. Mechanical loads and environmental influences are also considered. Therefore both, UV light tests and corrosion tests are also required in the component standard.

Test scope for insulated conductors

- High voltage test for proving the electric strength of the insulated conductor (proof of dielectric strength); and as a system test
- Test for lightning current carrying capability of the insulated conductor according to the specifications of IEC 62561-1 with a test impulse in accordance with the manufacturer's classification of IEC TS 62561-8 Edition 1.0 2018-01

Test scope for conductor holders

- Axial tensile force (mounted conductor, holder distance 250 mm, axial tensile load 50 N)
- Bending test (mounted conductor, holder distance 250 mm, vertical tensile load 200 N, time depends on type of holder)

Insulated spacers – DEHNiso spacersr

When testing insulated spacers, one differentiates between the way they are mounted: self-supporting components (spacer in a concrete base) and horizontally mounted holders (air-termination rod with spacer). Before mechanical and electrical testing, the specimens must pass a UV light and a corrosion test.

Requirements for External Lightning Protection Components

Scope of mechanical test

- Bending test (length to specimen 500 mm, min. load 10 N, min. 60 min)
- Impact test centred (length of specimen 500 mm, force 2 J)
- Tensile force (length of specimen 500 mm, tensile force 200 N)

Scope of electrical test

For the electrical testing, high voltage is applied on the set-up. Insulated spacers must have a dielectric strength in accordance with standard requirements of IEC TS 62561-8 Edition 1.0 2018-01.

Test according to IEC TS 62561-8 Edition 1.0 2018-01 at DEHN

DEHN products for isolated lightning protection are designed for the requirements according to IEC TS 62561-8 Edition 1.0 2018-01.

General note!

Using components and devices which have been tested in compliance with the latest standards is a basic prerequisite for a functional lightning protection system. Installers of lightning protection systems must select components according to the requirements at the installation site and install them in accordance with the manufacturers' specifications. In state-of-the-art lightning protection technology, it is important to consider and comply with electrical criteria in addition to mechanical requirements.

Conversion Table

Description	Part No.	Length	Weight	Weight	Length
Round Wire **St/tZn**, 8 mm	**800 008**	1 m	394 g	1 kg	2.54 m
Round Wire **St/tZn**, 10 mm	**800 010 / 800 310**	1 m	617 g	1 kg	1.62 m
Round Wire **St/tZn**, with PVC sheath, 8 mm	**800 108**	1 m	440 g	1 kg	2.30 m
Round Wire **St/tZn**, with PVC sheath, 10 mm	**800 110**	1 m	680 g	1 kg	1.48 m
Round Wire **Al**, semi-rigid/soft, 8 mm	**840 008 / 840 018 840 108 / 840 028**	1 m	135 g	1 kg	7.40 m
Round Wire **StSt (V2A)** / **(V4A)**, 8 mm	**860 008 / 860 908**	1 m	395 g	1 kg	2.54 m
Round Wire **StSt (V2A)** / **(V4A)**, 10 mm	**860 010 / 860 020 860 910 / 860 920**	1 m	617 g	1 kg	1.62 m
Round Wire **Cu**, semi-rigid/soft, 8 mm	**830 008 / 830 108 830 038**	1 m	448 g	1 kg	2.22 m
Strip **St/tZn**, 20 x 2,5 mm, Z500	**810 225**	1 m	400 g	1 kg	2.50 m
Strip **St/tZn**, 30 x 3,5 mm, Z500	**810 335 / 852 335**	1 m	840 g	1 kg	1.19 m
Strip **St/tZn**, 30 x 4 mm, Z500	**810 304**	1 m	960 g	1 kg	1.04 m
Strip **St/tZn**, 40 x 4 mm, Z500	**810 404**	1 m	1.28 kg	1 kg	0.78 m
Strip **St/tZn**, 40 x 5 mm, Z500	**810 405**	1 m	1.60 kg	1 kg	0.64 m
Strip **StSt (V2A)** / **(V4A)**, 30 x 3,5 mm	**860 335 / 860 325 860 900 / 860 925 861 325 / 861 335**	1 m	827 g	1 kg	1.21 m
Strip **StSt (V4A)** 40 x 4 mm	**860 404**	1 m	1.26 kg	1 kg	0.80 m
Strip **StSt (V4A)** 40 x 5 mm	**860 405**	1 m	1.57 kg	1 kg	0.64 m
Strip **Cu**, 20 x 2,5 mm	**831 225**	1 m	450 g	1 kg	2.22 m

Abbreviations / Symbols / Recommended values

Conductor types:

Abbreviation	Conductor types
Fl	Flat conductor (strip)
Rd	Round conductor (round wire)

Materials:

Abbreviation	Description
Al	Aluminium
AlMgSi	Aluminium magnesium silicon wrought alloy
Cu	Copper, electrical copper
Cu/bronze	Copper / Bronze
Cu/gal Sn	Copper, tin-coated
EVA Ethylen	Ethylene vinyl acetate copolymer
GRP	Glass-fibre reinforced plastic
GCI	Grey cast iron
K	Plastic material / Polyethylene / Polyamide / Polystyrene
Ms	Brass
Ms/gal Cu	Brass, copper-coated
Ms/gal Sn	Brass, tin-coated
StSt	Stainless steel Material No.: 1.4301 (material No.: ASTM/AISI 304) Material No.: 1.4303 (material No.: ASTM/AISI 305) Material No.: 1.4307 (material No.: ASTM/AISI 304L)
StSt (V4A)	Stainless steel Material No.: 1.4401 (material No.: ASTM/AISI 316) Material No.: 1.4404 (material No.: ASTM/AISI 316L) Material No.: 1.4571 (material No.: ASTM/AISI 316Ti)
StSt / gal Cu	Stainless steel, copper-coated
PA	Polyamide
PC	Polycarbonate
PE	Polyethylene
PP	Polypropylene
PS	Polystyrene
PVC	Polyvinyl chloride
ABS	Acrylonitrile butadiene styrene
RG	Red brass
Sn	Tin
St/bare	Steel (black)
St/gal Zn	Steel, galvanised
St/tZn	Steel, hot dip galvanised
St / Cu	Steel, copper-coated
MCI	Malleable cast iron
MCI/tZn	Malleable cast iron, hot dip galvanised
UP	Polyester (unsaturated)
XLPE	Cross-linked polyethylene
ZDC	Zinc die casting

Symbols:

Screws	
	Half-round wood screw
	Countersunk head wood screw
	Wood screw with threaded head
	Cheese head screw
	Truss head screw
	Knurled screw
	Flat head screw
	Rounded head screw

Screw heads	
	Slot
	Hexagon
	Hexagon with slot
	Cross recessed
	Star drive
	Combined slot

Symbols	
	Test according to EN 62561-1 Please find more information on our website.
	New products
	Discontinued products
	Wind load calculation according to Eurocode 1 (DIN EN 1991-1-4 + DIN EN 1991-1-4/NA)

Recommended values:

Screw	Tightening torque
M5 / M6	≥ 4 Nm
M8	≥ 10 Nm
M10	≥ 20 Nm
M12	≥ 25 Nm
M16	≥ 25 Nm

Air-termination System / Down Conductor / Isolated Lightning Protection

Find the right product quickly and easily:
https://www.dehn-international.com/en/selection-guides-and-configurators

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Round Wires

According to EN 62561-2, for use in lightning protection and earth-termination systems.

DEHNalu wire

Type RD ...	8 ALMGSI HH R148M	8 ALMGSI HH R21M
Part No.	**840 008**	**840 108**
Diameter Ø conductor	8 mm	8 mm
Cross-section	50 mm²	50 mm²
Material	AlMgSi	AlMgSi
Characteristics	semi-rigid	semi-rigid
Standard	EN 62561-2	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	–	–
Coil weight	approx. 20 kg	approx. 3 kg
PU	148 m	21 m

Type RD ...	8 ALMGSI WEI R148M	8 ALMGSI WEI R21M
Part No.	**840 018**	**840 028**
Diameter Ø conductor	8 mm	8 mm
Cross-section	50 mm²	50 mm²
Material	AlMgSi	AlMgSi
Characteristics	soft, twistable	soft, twistable
Standard	based on EN 62561-2	based on EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	–	–
Coil weight	approx. 20 kg	approx. 3 kg
PU	148 m	21 m

Type RD ...	10 Al WEI R100M
Part No.	**840 010**
Diameter Ø conductor	10 mm
Cross-section	78 mm²
Material	Al
Characteristics	soft, twistable
Standard	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	10 kA
Coil weight	approx. 21 kg
PU	100 m

Note: Al and AlMgSi may not be installed directly (without a gap) on, in, or under plaster, mortar or concrete, and also not in soil.

DEHNalu wire with plastic sheath

Wire with plastic sheath (halogen-free, frost-resistant and UV-stabilised) as additional mechanical / corrosion protection, e.g. when installed behind facades. Not suitable for underground installation.

Type RD ...	8 ALMGSI WE KM R100M	8 AL WE KM R100M
Part No.	**840 118**	**840 128**
Diameter Ø conductor	8 mm	8 mm
Cross-section	50 mm²	50 mm²
Material	AlMgSi	Al
Characteristics	soft	soft
Standard	based on EN 62561-2	EN 62561-2
Outside diameter Ø	11 mm	11 mm
Material of sheath	plastic	plastic
Sheath thickness	1.5 mm	1.5 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	–	6.4 kA
Coil weight	approx. 20 kg	approx. 20 kg
PU	100 m	100 m

DEHNcupal wire

Composite material with low weight in comparison to copper. For use above ground as an air-termination and down conductor, or for equipotential bonding.

Type RD ...	8 AL CU WEI R110M
Part No.	**833 008**
Diameter Ø conductor	8 mm
Cross-section	50 mm²
Material	Al / Cu
Characteristics	soft, twistable
Standard	based on EN 62561-2
Cu sheath	min. 0.26 mm
Coil weight	approx. 20 kg
PU	110 m

Note: DEHNcupal wire can be twisted or straightened using a wire straightening device.

Copper wire

General technical data:	
Diameter Ø conductor	8 mm
Cross-section	50 mm²
Material	Cu
Standard	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.7 kA

Type RD ...	8 CU F20 WEI R100M	8 CU F20 WEI R20M
Part No.	**830 008**	**830 108**
Characteristics	soft F20	soft F20
Coil weight	approx. 45 kg	approx. 9 kg
PU	100 m	20 m

Type RD ...	8 CU F25 HH R100M
Part No.	**830 038**
Characteristics	semi-rigid F25
Coil weight	approx. 45 kg
PU	100 m

Steel wire

With zinc coating ≥ 50 µm on average (approx. 350 g/m²).

General technical data:	
Material	St/tZn
Standard	based on EN 62561-2

Type RD ...	8 STTZN R127M	10 STTZN R81M
Part No.	**800 008**	**800 010**
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.5 kA	5.5 kA
Coil weight	approx. 50 kg	approx. 50 kg
PU	127 m	81 m

Type RD ...	10 STTZN R30M
Part No.	**800 310**
Diameter Ø conductor	10 mm
Cross-section	78 mm²
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	5.5 kA
Coil weight	approx. 18.5 kg
PU	30 m

Stainless steel wire

Stainless steel wires (Rd 10 mm) for use in soil have to be made of StSt (V4A) with a molybdenum content > 2 %, e.g. 1.4571 or 1.4404, in accordance with EN 62561-2, IEC/EN 62305-3, DIN 18014 and DIN VDE 0151.

General technical data:	
Standard	based on EN 62561-2

Type RD ...	8 V2A R125M	10 V2A R20M
Part No.	860 908	860 920
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Material	StSt	StSt
Material No.	1.4301 / 1.4303	1.4301 / 1.4303
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	1.9 kA	2.9 kA
Coil weight	approx. 50 kg	approx. 12 kg
PU	125 m	20 m

Type RD ...	10 V2A R50M	10 V2A R80M
Part No.	860 950	860 910
Diameter Ø conductor	10 mm	10 mm
Cross-section	78 mm²	78 mm²
Material	StSt	StSt
Material No.	1.4301 / 1.4303	1.4301 / 1.4303
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	2.9 kA	2.9 kA
Coil weight	approx. 31 kg	approx. 50 kg
PU	50 m	80 m

Type RD ...	8 V4A R125M	10 V4A R80M
Part No.	860 008	860 010
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	1.9 kA	2.9 kA
Coil weight	approx. 50 kg	approx. 50 kg
PU	125 m	80 m

Type RD ...	10 V4A R20M	10 V4A R50M
Part No.	860 020	860 050
Diameter Ø conductor	10 mm	10 mm
Cross-section	78 mm²	78 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	2.9 kA	2.9 kA
Coil weight	approx. 12 kg	approx. 31 kg
PU	20 m	50 m

Steel wire, straightened, cut into bars

With zinc coating ≥ 50 µm on average (about 350 g/m²). Suitable for installation in reinforcements (e.g. concrete supports or concrete foundations).

General technical data:	
Diameter Ø conductor	10 mm
Cross-section	78 mm²
Material	St/tZn
Standard	based on EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	5.5 kA

Type RD ...	10 STTZN L1000	10 STTZN L2000
Part No.	800 906	800 908
Length	1 m	2 m
PU	10 pc(s)	10 pc(s)

Type RD ...	10 STTZN L3000	10 STTZN L6000
Part No.	800 910	800 911
Length	3 m	6 m
PU	10 pc(s)	1 pc(s)

Steel wire with plastic sheath

With plastic sheath as additional mechanical / corrosion protection, e.g. when connected to the lightning protection system. Suitable for installation in soil, on, in and under plaster, mortar or concrete.

Type RD ...	8 KM STTZN R75M	10 KM STTZN R50M
Part No.	800 108	800 110
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Material	St/tZn	St/tZn
Standard	based on EN 62561-2	based on EN 62561-2
Outside diameter Ø	11 mm	13 mm
Material of sheath	plastic	plastic
Sheath thickness	1.5 mm	1.5 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.5 kA	5.5 kA
Coil weight	approx. 33 kg	approx. 34 kg
PU	75 m	50 m

Conductor materials can only be supplied in the original coil weights.
Further conductor materials as specified in the standard series EN 62561-2 are available on request.

Marker for Connection Lugs

Attached to round wires or strips to make them conspicuous (as required by DIN 18014) during the construction work.

Type	SK RD10 FL30X3.5 GRGE PVC
Part No.	478 099
Material	PVC
Diameter Ø	70 mm
Fits on Fl	30 x 3.5 mm
Fits on Rd	10 mm
Colour	green ● / yellow ●
PU	20 pc(s)

Dripping Water Protective Collars

Prevents rain water from running down the round wire and soiling of the facade.

Type MS 37 4.7 B7.5 K ...	GR	BR
Part No.	**276 056**	**276 057**
Material	plastic	plastic
Conductor Rd	8 mm	8 mm
Colour	grey	brown
Diameter Ø	37 mm	37 mm
PU	100 pc(s)	1 pc(s)

Strips

According to EN 62561-2, for use in earth-termination and lightning protection systems as well as for ring equipotential bonding.

Stainless steel strip

General technical data:	
Standard	EN 62561-2

Type BA ...	30X3.5 V2A R25M	30X3.5 V2A R60M
Part No.	**860 925**	**860 900**
Width	30 mm	30 mm
Thickness	3.5 mm	3.5 mm
Cross-section	105 mm²	105 mm²
Material	StSt	StSt
Material No.	1.4301 / 1.4303	1.4301 / 1.4303
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.9 kA	3.9 kA
Coil weight	approx. 21 kg	approx. 49 kg
PU	25 m	60 m

Type BA ...	30X3.5 V4A R25M	30X3.5 V4A R60M
Part No.	**860 325**	**860 335**
Width	30 mm	30 mm
Thickness	3.5 mm	3.5 mm
Cross-section	105 mm²	105 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.9 kA	3.9 kA
Coil weight	approx. 21 kg	approx. 49 kg
PU	25 m	60 m

Type BA ...	40X4 V4A R40M	40X5 V4A R30M
Part No.	**860 404**	**860 405**
Width	40 mm	40 mm
Thickness	4 mm	5 mm
Cross-section	160 mm²	200 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6 kA	7.4 kA
Coil weight	approx. 50 kg	approx. 50 kg
PU	40 m	30 m

Steel strip

Zinc coating ≥ 70 µm on average (approx. 500 g/m²).

General technical data:	
Material	St/tZn

Type BA ...	20X2.5 STTZN R100M	30X3.5 STTZN R50M
Part No.	**810 225**	**810 335**
Width	20 mm	30 mm
Thickness	2.5 mm	3.5 mm
Cross-section	50 mm²	105 mm²
Standard	based on EN 62561-2	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.5 kA	7.4 kA
Coil weight	approx. 40 kg	approx. 42 kg
PU	100 m	50 m

Type BA ...	30X3.5 STTZN R25M	30X3.5 STTZN EASY R25M
Part No.	**852 335**	**854 335**
Width	30 mm	30 mm
Thickness	3.5 mm	3.5 mm
Cross-section	105 mm²	105 mm²
Standard	EN 62561-2	based on DIN EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	7.4 kA	7.4 kA
Coil weight	approx. 21 kg	approx. 21 kg
PU	25 m	25 m

Type BA ...	30X3.5 STTZN EASY R50M	30X4 STTZN R52M
Part No.	**814 335**	**810 304**
Width	30 mm	30 mm
Thickness	3.5 mm	4 mm
Cross-section	105 mm²	120 mm²
Standard	based on DIN EN 62561-2	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	7.4 kA	8.4 kA
Coil weight	approx. 42 kg	approx. 50 kg
PU	50 m	52 m

Type BA ...	40X4 STTZN R40M	40X5 STTZN R30M
Part No.	**810 404**	**810 405**
Width	40 mm	40 mm
Thickness	4 mm	5 mm
Cross-section	160 mm²	200 mm²
Standard	EN 62561-2	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	11.2 kA	14 kA
Coil weight	approx. 50 kg	approx. 50 kg
PU	40 m	30 m

Type BA ...	50X4 STTZN R30M
Part No.	**810 504**
Width	50 mm
Thickness	4 mm
Cross-section	200 mm²
Standard	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	14 kA
Coil weight	approx. 50 kg
PU	30 m

Copper strip

Type BA ...	20X2.5 CU R100M
Part No.	**831 225**
Width	20 mm
Thickness	2.5 mm
Cross-section	50 mm²
Material	Cu
Standard	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.7 kA
Coil weight	approx. 45 kg
PU	100 m

Strips in different dimensions and materials are available upon request.

Cables

For use in lightning protection and earth-termination systems.

Aluminium cable

e.g. for isolated air-termination systems (DEHNiso Combi).

Type SEIL ...	9 50Q AL R100M
Part No.	**840 050**
Cross-section	50 mm²
Cable structure qty x Ø wire	19 x 1.8 mm
Material	Al
Standard	EN 62561-2
Outside diameter Ø	9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6.4 kA
Coil weight	approx. 13.5 kg
PU	100 m

Note: Al must not be installed directly (without distance) on, in or under plaster, mortar or concrete, and not in soil.

Steel cable

Type SEIL ...	10 STGALZN R100M
Part No.	**801 050**
Cross-section	42 mm²
Cable structure qty x Ø wire	[6x] 19 x 0.65 mm
Material	St/gal Zn
Outside diameter Ø	10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	3 kA
Coil weight	approx. 33 kg
PU	100 m

Stainless steel cable

e.g. for equipotential bonding.

Type SEIL ...	8 V4A R100M	10 V4A R100M
Part No.	**850 008**	**850 010**
Cross-section	27 mm²	42 mm²
Cable structure qty x Ø wire	[7x] 19 x ca. 0.59 mm	[7x] 19 x ca. 0.68 mm
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Outside diameter Ø	8 mm	10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1 kA	1.5 kA
Coil weight	approx. 23.5 kg	approx. 39.5 kg
PU	100 m	100 m

Copper cable

General technical data:	
Material	Cu
Standard	EN 62561-2

Type SEIL ...	9 50Q CU R50M	9 50Q CU R100M
Part No.	**832 739**	**832 740**
Cross-section	50 mm²	50 mm²
Cable structure qty x Ø wire	19 x 1.8 mm	19 x 1.8 mm
Outside diameter Ø	9 mm	9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.7 kA	9.7 kA
Coil weight	approx. 22 kg	approx. 44 kg
PU	50 m	100 m

Type SEIL ...	10.5 70Q CU R50M	12.5 95Q CU R50M
Part No.	**832 192**	**832 095**
Cross-section	70 mm²	95 mm²
Cable structure qty x Ø wire	19 x 2.1 mm	19 x 2.5 mm
Outside diameter Ø	10.5 mm	12.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	13.6 kA	18.5 kA
Coil weight	approx. 30 kg	approx. 42 kg
PU	50 m	50 m

Type SEIL ...	14.5 120Q CU R50M
Part No.	**832 120**
Cross-section	120 mm²
Cable structure qty x Ø wire	19 x 2.8 mm
Outside diameter Ø	14.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	23.4 kA
Coil weight	approx. 53 kg
PU	50 m

Round Wires, Strips, Cables

Tinned copper cable

General technical data:	
Material	Cu/gal Sn

Type SEIL ...	7.5 CUGALSN 35Q R100M	9 50Q CUGALSN R100M
Part No.	**832 838**	**832 839**
Cross-section	35 mm²	50 mm²
Cable structure qty x Ø wire	7 x 2.5 mm	19 x 1.8 mm
Standard	–	EN 62561-2
Outside diameter Ø	7.5 mm	9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 150 °C)	5 kA	7.2 kA
Coil weight	approx. 33 kg	approx. 44 kg
PU	100 m	100 m

Type SEIL ...	10.5 70Q CUGALSN R50M	10.5 70Q CUGALSN R100M
Part No.	**832 202**	**832 292**
Cross-section	70 mm²	70 mm²
Cable structure qty x Ø wire	19 x 2.1 mm	19 x 2.1 mm
Standard	EN 62561-2	EN 62561-2
Outside diameter Ø	10.5 mm	10.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 150 °C)	10.1 kA	10.1 kA
Coil weight	approx. 30 kg	approx. 60 kg
PU	50 m	100 m

Type SEIL ...	12.5 95Q CUGALSN R50M	14.5 120Q CUGALSN R50M
Part No.	**832 295**	**832 320**
Cross-section	95 mm²	120 mm²
Cable structure qty x Ø wire	19 x 2.5 mm	19 x 2.8 mm
Standard	EN 62561-2	EN 62561-2
Outside diameter Ø	12.5 mm	14.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 150 °C)	13.8 kA	17.4 kA
Coil weight	approx. 42 kg	approx. 53 kg
PU	50 m	50 m

Cables in different dimensions and materials are available upon request.

Different wire straightening devices on page 338

Flat Roof – Roof Conductor Holders

Roof Conductor Holders for Flat Roofs

Roof conductor holders for attaching round conductors and strips (with adapter) to flat roofs.

- Conductor holder with weather-resistant plastic support plate, UV-stabilised and halogen-free
- Frost-resistant concrete block in accordance with EN 1338 for paving stones, frost resistance tested according to EN 1340 (frost/dew test)
- Concrete block and base part are recycled separately

Type FB2, with two conductor supports

Type DLH ...	FB2 8 LO 141X86X70	FB2 8 FE 141X86X70
Part No.	**253 050**	**253 060**
Conductor routing	loose	fixed
Material of conductor holder	plastic	plastic
Colour of conductor holder	black ●	black ●
Conductor support Rd	8 mm	8 mm
Weight	1 kg	1 kg
Block	concrete (C35/45)	concrete (C35/45)
Dimensions	141 x 86 x 70 mm	141 x 86 x 70 mm
PU	10 pc(s)	10 pc(s)

Type KF2, with two conductor supports

Clamped into roof sheeting strips (up to 5 mm thick) which are welded with or adhere to the roof sheeting.

Type DLH ...	KF2 8 LO 141X86X70
Part No.	**253 051**
Conductor routing	loose
Material of conductor holder	plastic
Colour of conductor holder	black ●
Conductor support Rd	8 mm
Dimensions	141 x 86 x 70 mm
PU	100 pc(s)

Type FB, with one conductor support

Type DLH ...	FB 8 LO 100X100X70
Part No.	**253 015**
Conductor routing	loose
Material of conductor holder	plastic
Colour of conductor holder	black ●
Conductor support Rd	8 mm
Weight	1 kg
Block	concrete (C35/45)
Dimensions	100 x 100 x 70 mm
PU	10 pc(s)

Type KF, with one conductor support

Clamped into roof sheeting strips (up to 2.5 mm thick) which are welded with or adhere to the roof sheeting.

Type DLH ...	KF 8 LO DBS 110X100X70 SW
Part No.	**253 030**
Conductor routing	loose
Material of conductor holder	plastic
Colour of conductor holder	black ●
Conductor support Rd	8 mm
Dimensions	110 x 100 x 75 mm
PU	100 pc(s)

Separate plastic upper part for type KF (Part No. 253 016) is available upon request.

Accessories for Roof Conductor Holders for Flat Roofs

Adapter for round conductors for type FB and KF

Snapped onto roof conductor holders for conductors Rd 10 mm, loose conductor routing.
Adapter for conductors Rd 6 mm (Part No. 253 022) is available upon request.

Type	RLA 10 FB KF K SW
Part No.	**253 023**
Conductor support Rd	10 mm
Material	plastic
Colour	black ●
PU	50 pc(s)

Adapter for flat conductors for type FB and KF

Snapped onto roof conductor holders (Part No. 253 015) for flat conductors 30 mm, loose conductor leading.

Type	FLA30 FB KF K SW
Part No.	**253 021**
Conductor support Fl	30 mm
Material	plastic
Colour	black ●
PU	50 pc(s)

Cap for type FB and KF

Snapped onto roof conductor holders (Part No. 253 015) to better secure air-termination conductors installed on slanted roofs.

Type	KLA 8 FB KF K SW
Part No.	**253 025**
Conductor support Rd	8 mm
Material	plastic
Colour	black ●
PU	50 pc(s)

Roof Conductor Holders for Flat Roofs with Fixing Holes

For installing air-termination systems on flat roofs and walls.

Type St/tZn, large

With conductor holder DEHN-QUICK, fixed conductor routing, height up to the centre of the conductor of 60 mm.

Type	DLH DQ 6.10 GP100X100 STTZN
Part No.	**202 060**
Material of roof conductor holder	St/tZn
Dimensions	100 x 100 mm
Fixing	[4x] Ø4 / [4x] Ø10 mm
Material of conductor holder	St/tZn
Conductor support Rd	6-10 mm
PU	1 pc(s)

Type St/tZn, small

With conductor holder DEHN-QUICK, fixed conductor routing, height up to the centre of the conductor of 60 mm.

Type	DLH DQ 6.10 GP50X60 STTZN
Part No.	**202 030**
Material of roof conductor holder	St/tZn
Dimensions	50 x 60 mm
Fixing	[4x] Ø5.2 mm
Material of conductor holder	St/tZn
Conductor support Rd	6-10 mm
PU	50 pc(s)

Round fixing plate, St/tZn, large

Plate with threaded bolt M8, e.g. for DEHNsnap or DEHNhold for use on, e.g. roofing felt, concrete, steel and brickwork.

Type	BP D100 GBM8 4XB10 4XB4 STTZN
Part No.	**297 015**
Material of roof conductor holder	St/tZn
Dimensions	approx. Ø100 mm
Fixing	[4x] Ø4 / [4x] Ø10 mm
PU	25 pc(s)

Round fixing plate, plastic, small

Plate with threaded bolt M8, e.g. for DEHNsnap or DEHNhold for use on, e.g. roofing felt, concrete, steel and brickwork.

Type	BP D40 GBM8 4XB4 K GR
Part No.	**297 025**
Material of roof conductor holder	plastic
Colour	grey ●
Dimensions	Ø40 mm
Fixing	[4x] Ø4 mm
PU	100 pc(s)

Roof Bushings

For leading down conductors through roofs and for sealing roofs.

For flat roofs

The max. processing temperature of +110 °C has to be observed during installation.
In case of connection heights exceeding 100 mm, the roof bushing and conductor have to be wrapped in a self-adhesive universal sealing tape (aluminium fixing tape).

Type DDF ...	8 10 16 FL20.30 D250 K
Part No.	**552 030**
Material	plastic
Colour	Black ●
Bushing Rd	8 / 10 / 16 mm
Bushing Fl	20 x 2.5 / 30 x 3.5 mm
Diameter Ø	250 mm
PU	25 pc(s)

For tile and corrugated sheet roofs

Type DDF ...	8.10 D34 B16 K
Part No.	**552 010**
Hole	Ø16 mm
Material	plastic
Colour	Black ●
Bushing Rd	8-10 mm
Diameter Ø	34 mm
PU	25 pc(s)

Expansion Pieces

For temperature-related length compensation of long conductors (provided that the conductor routing in the holders is loose).

Round design

For connection e.g. with MV clamp (Part No. 390 051).

Type DS ...	8 L395 AL
Part No.	**374 011**
Material	Al
Dimensions	Ø8 mm
Length	approx. 395 mm
Standard	EN 62561-2
PU	25 pc(s)

Flat design

For connection e.g. with KS connector (Part No. 301 000).
Note: At cross points two expansion pieces can be connected with one M10 x 20 mm screw and nut.

Type DS ...	30X2 L170 3XB11 AL
Part No.	**374 020**
Material	Al
Dimensions	30 x 2 mm
Length	170 mm
Fixing	[2x] Ø11 mm
Central hole	Ø11 mm
Standard	based on DIN EN 62561-2
PU	50 pc(s)

Bridging Brackets

For connection (riveting or screwing) of metal cladding.

Application note:
According to DIN EN 62305-3 Suppl. 1, four rivets Ø5 mm shall be used to connect material of ≥ 0.5 mm thickness, or two StSt self-tapping screws Ø6.3 mm (one on each side) for material of ≥ 2 mm thickness.

Short design with middle hole

Type UEBL ...	L170 B11 B5.2 6.5 AL	L170 B11 B5.2 6.5 CU
Part No.	**377 006**	**377 027**
Material	Al	Cu
Dimensions	30 x 2 mm	28 x 2 mm
Length	170 mm	170 mm
Fixing	[8x] Ø5.2 / [4x] Ø6.5 mm	[8x] Ø5.2 / [4x] Ø6.5 mm
Middle hole	Ø11 mm	Ø11 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

*) For exact assignment, see test certificate.

Short design without middle hole

Type UEBL ...	L170 B5.2 6.5 AL
Part No.	**377 016**
Material	Al
Dimensions	30 x 2 mm
Length	170 mm
Fixing	[8x] Ø5.2 / [4x] Ø6.5 mm
Standard	EN 62561-1
PU	50 pc(s)

*) For exact assignment, see test certificate.

Long design with middle hole

Type UEBL ...	L220 B11 B5.2 6.5 AL
Part No.	**377 026**
Material	Al
Dimensions	30 x 2 mm
Length	220 mm
Fixing	[8x] Ø5.2 / [4x] Ø6.5 mm
Middle hole	Ø11 mm
Standard	EN 62561-1
PU	50 pc(s)

*) For exact assignment, see test certificate.

Bridging brackets with middle hole may be combined with KS connectors (e. g. Part No. 301 019).

Bridging Braids

Suitable for connecting metal claddings (riveting or screwing) as an expansion compensation piece for round wires; or as compensation for certain temperature-related changes in length for round wires; Connection e.g. with KS connector part no. 301 019

Application note:
According to DIN EN 62305-3 Suppl. 1, four rivets Ø5 mm shall be used to connect material of ≥ 0.5 mm thickness, or two StSt tapping screws Ø6.3 mm (one on each side) for material of ≥ 2 mm thickness.

Short design

Type UEBB ...	L180 B10.5 B5.2 AL	L180 B10.5 B5.2 CU
Part No.	**377 015**	**377 007**
Material	Al	Cu
Length (l_G)	180 mm	180 mm
Cross-section	50 mm²	50 mm²
Fixing	[8x] Ø5.2 / [2x] Ø10.5 mm	[8x] Ø5.2 / [2x] Ø10.5 mm
Fixing possibility	blind rivets / screws	blind rivets / screws
Standard	EN 62561-1	EN 62561-1
PU	10 pc(s)	10 pc(s)

*) For exact assignment, see test certificate.

Short design, fixed with drilling screws

Type UEBB ...	L180 B10.5 B6.5 AL
Part No.	**377 045**
Material	Al
Length (l_G)	180 mm
Cross-section	50 mm²
Fixing	[4x] Ø6.5 / [2x] Ø10.5 mm
Fixing possibility	drilling screws / screws
Standard	EN 62561-1
PU	100 pc(s)

*) For exact assignment, see test certificate.

Long design, with middle hole
Note: At cross points, two bridging braids can be connected with a M10 x 20 mm screw and nut.

Type UEBB ...	L300 3XB10.5 B5,2 AL	L300 3XB10.5 B5.2 CU
Part No.	**377 115**	**377 107**
Material	Al	Cu
Length (l_G)	300 mm	300 mm
Cross-section	50 mm²	50 mm²
Fixing	[8x] Ø5.2 / [3x] Ø10.5 mm	[8x] Ø5.2 / [3x] Ø10.5 mm
Central hole Ø	10.5 mm	10.5 mm
Fixing possibility	blind rivets / screws	blind rivets / screws
Standard	EN 62561-1	EN 62561-1
PU	10 pc(s)	10 pc(s)

*) For exact assignment, see test certificate.

Bridging Cables

Suitable for connecting / bridging metal claddings, or as compensation for certain temperature-related changes in length for round wires; connection e.g. with KS connector part no. 301 019.
For connecting/bridging fixed earthing terminals. Suitable for protective and functional equipotential bonding.

Configurable lengths
For use indoors (H07V-K)
Specify cable length when ordering (50 mm steps)

General technical data:	
Material of cable lug	Cu/gal (Ni)Sn
Material of cable	Cu
Cable	H07V-K
Fixing	[2x] Ø10.5 mm
Standard	EN 62561-1

Type UEBS ...	16 L... B10.5 CU SW ID	16 L... B10.5 CU GNGE ID
Part No.	**377 216**	**377 217**
Length (l1)	200 - 1500 mm *)	200 - 1500 mm *)
Cross-section	16 mm²	16 mm²
Insulation	PVC black	PVC green / yellow
PU	1 pc(s)	1 pc(s)

Type UEBS ...	25 L... B10.5 CU SW ID	25 L... B10.5 CU GNGE ID
Part No.	**377 225**	**377 226**
Length (l1)	200 - 1500 mm *)	200 - 1500 mm *)
Cross-section	25 mm²	25 mm²
Insulation	PVC black	PVC green / yellow
PU	1 pc(s)	1 pc(s)

Type UEBS ...	35 L... B10.5 CU SW ID	35 L... B10.5 CU GNGE ID
Part No.	**377 235**	**377 236**
Length (l1)	200 - 1500 mm *)	200 - 1500 mm *)
Cross-section	35 mm²	35 mm²
Insulation	PVC black	PVC green / yellow
PU	1 pc(s)	1 pc(s)

Type UEBS ...	50 L... B10.5 CU SW ID	50 L... B10.5 CU GNGE ID
Part No.	**377 250**	**377 251**
Length (l1)	350 - 1500 mm *)	350 - 1500 mm *)
Cross-section	50 mm²	50 mm²
Insulation	PVC black	PVC green / yellow
PU	1 pc(s)	1 pc(s)

Type UEBS ...	70 L... B10.5 CU SW ID	70 L... B10.5 CU GNGE ID
Part No.	**377 270**	**377 271**
Length (l1)	350 - 1500 mm *)	350 - 1500 mm *)
Cross-section	70 mm²	70 mm²
Insulation	PVC black	PVC green / yellow
PU	1 pc(s)	1 pc(s)

*) Specify cable length when ordering (50 mm steps)

Standard lengths

Suitable for use outdoors

General technical data:	
Material of cable lug	Al
Material of cable	Cu
Cross-section	16 mm²
Fixing	[4x] Ø6.5 / [2x] Ø10.5 mm
Insulation	rubber EM5 black
Standard	EN 62561-1

Type UEBS ...	16 L200 B10.5 B6.5 AL CU	16 L300 B10.5 B6.5 AL CU
Part No.	377 210	377 310
Length (l1)	200 mm	300 mm
PU	10 pc(s)	100 pc(s)

Type UEBS ...	16 L400 B10.5 B6.5 AL CU	16 L500 B10.5 B6.5 AL CU
Part No.	377 410	377 510
Length (l1)	400 mm	500 mm
PU	10 pc(s)	10 pc(s)

*) For exact assignment, see test certificate.

Drilling Screw

Self-tapping with hexagon head and collar, for connecting bridging brackets, braids or cables, e.g. to the metal capping of the roof parapet (for materials of ≥ 2 mm thickness).

Type	BSC 6.3X19 SW10 V2A
Part No.	528 619
Material	StSt
Dimensions	6.3 x 19 mm
Head	width across flats 10
Standard	DIN 7504
PU	1 pc(s)

Bridging Cable with Seam Clamps

For connecting or bridging metal cladding (e.g. parts of the capping of the roof parapet) without drilling

- With one clamping plate each, e.g. for connection to the air-termination system and erection of air-termination tips (Rd 8-10 mm)
- For the seams of the capping of the roof parapet with an angle of 0-45° and a max. length up to 18 mm
- **Your benefit: The design avoids soiling by drilling chips!**

Type	UEBS 16 L400 CU FK0.7 10 V2A
Part No.	365 419
Clamping range of seam	0.7-10 mm
Material of seam clamps	StSt
Length	200 mm
Material of cable	Cu
Cross-section	16 mm²
Standard	EN 62561-1
PU	5 pc(s)

*) For exact assignment, see test certificate.

Blind Rivet

With StSt pin for connecting bridging brackets, braids or cables, according to DIN EN 62305-3 Suppl. 1.

Type	BN 5X10 AL V2A
Part No.	528 610
Material	Al / StSt
Head	Ø5 mm
Length	10 mm
Standard	similar to EN15979 (DIN 7337)
PU	500 pc(s)

Connection Kit for Safety Rope System

System for connecting the safety rope systems on roofs with the air-termination system; with premounted connection lug for the safety rope and clamping frame.

Rope diameter 6 mm

Type ASSA ...	D6 L1000 6.10 CU V2A
Part No.	365 509
Clamping range of connection lug	Ø6 mm
Rope structure	7 x 7 / 7 x 19 mm
Material of connection lug	StSt
Clamping piece support Rd	6-10 mm
Length	1000 mm
Material of rope	Cu
Cross-section	16 mm²
Temperature range	-40 °C ... +80 °C
Insulation	rubber EM5 black
PU	1 pc(s)

Rope diameter 8 mm

Type ASSA ...	D8 L1000 6.10 CU V2A
Part No.	365 519
Clamping range of connection lug	Ø8 mm
Rope structure	7 x 7 / 7 x 19 mm
Material of connection lug	StSt
Clamping piece support Rd	6-10 mm
Length	1000 mm
Material of rope	Cu
Cross-section	16 mm²
Temperature range	-40 °C ... +80 °C
Insulation	rubber EM5 black
Standard	EN 62561-1
PU	1 pc(s)

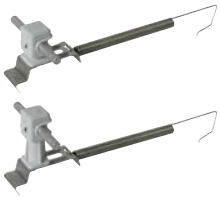
*) For exact assignment, see test certificate.

Roof Conductor Holders with Tension Spring for Ridge and Hip Tiles

For fixing air-termination conductors on the ridge, e.g. of tile roofs.

SPANNsnap light

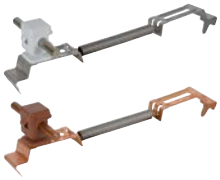
Fixed with a StSt tension spring, with conductor holder DEHN-snap, loose conductor routing, laterally adjustable.



Type DLH ...	SSL 8 H16 FG180.280 GR V2A	SSL 8 H36 FG180.280 GR V2A
Part No.	**204 469**	**204 449**
Material of roof conductor holder	StSt	StSt
Clamping range of ridge tile width	180-280 mm	180-280 mm
Height of conductor holder (h1)	16 mm	36 mm
Material of conductor holder	plastic	plastic
Colour of conductor holder	grey	grey
Conductor support Rd	8 mm	8 mm
PU	25 pc(s)	25 pc(s)

SPANNsnap

Fixed with a StSt tension spring, with conductor holder DEHN-snap, loose conductor routing, laterally adjustable.



General technical data:		
Clamping range of ridge tile width		180-280 mm
Material of conductor holder		plastic
Conductor support Rd		8 mm

Type DLH ...	SS 8 H16 FG180.280 GR V2A	SS 8 H16 FG180.280 BR CU
Part No.	**204 269**	**204 267**
Material of roof conductor holder	StSt	Cu
Height of conductor holder (h1)	16 mm	16 mm
Colour of conductor holder	grey	brown
PU	25 pc(s)	25 pc(s)

Type DLH ...	SS 8 H36 FG180.280 GR V2A	SS 8 H36 FG180.280 BR CU
Part No.	**204 249**	**204 247**
Material of roof conductor holder	StSt	Cu
Height of conductor holder (h1)	36 mm	36 mm
Colour of conductor holder	grey	brown
PU	25 pc(s)	25 pc(s)

SPANNgrip light

Fixed with a StSt tension spring, with conductor holder DEHN-grip, loose conductor routing, laterally adjustable.

Type DLH ...	SGL 8 H20 FG180.280 V2A	SGL 8 H32 FG180.280 V2A
Part No.	**206 439**	**206 449**
Material of roof conductor holder	StSt	StSt
Clamping range of ridge tile width	180-280 mm	180-280 mm
Height of conductor holder (h1)	20 mm	32 mm
Material of conductor holder	StSt	StSt
Conductor support Rd	8 mm	8 mm
Standard	EN 62561-4	EN 62561-4
PU	25 pc(s)	25 pc(s)

SPANNgrip

Fixed with a StSt tension spring, with conductor holder DEHN-grip, loose conductor routing, laterally adjustable.

General technical data:	
Clamping range of ridge tile width	180-280 mm
Conductor support Rd	8 mm
Standard	EN 62561-4

Type DLH ...	SG 8 H20 FG180.280 V2A	SG 8 H20 FG180.280 CU
Part No.	**206 239**	**206 237**
Material of roof conductor holder	StSt	Cu
Height of conductor holder (h1)	20 mm	20 mm
Material of conductor holder	StSt	Cu
PU	25 pc(s)	25 pc(s)

Type DLH ...	SG 8 H32 FG180.280 V2A	SG 8 H32 FG180.280 CU
Part No.	**206 249**	**206 247**
Material of roof conductor holder	StSt	Cu
Height of conductor holder (h1)	32 mm	32 mm
Material of conductor holder	StSt	Cu
PU	25 pc(s)	25 pc(s)

Roof Conductor Holders Adjustable for Ridge and Hip Tiles

For fixing air-termination conductors on the ridge, e.g. of tile roofs.

Steplessly adjustable with conductor holder DEHNsnap

Loose conductor routing, laterally adjustable (top centre to the bottom).

General technical data:	
Clamping range	180-280 mm
Material of conductor holder	plastic
Conductor support Rd	8 mm
Length of clamping claw	23 mm

Type DLH ...	DS 8 H16 FG180.280 GR V2A	DS 8 H16 FG180.280 BR V2A
Part No.	204 109	204 911
Material of roof conductor holder	StSt	StSt
Height of conductor holder (h1)	16 mm	16 mm
Colour of conductor holder	grey	brown
PU	25 pc(s)	25 pc(s)

Type DLH ...	DS 8 H16 FG180.280BR GALCU	DS 8 H36 FG180.280 GR V2A
Part No.	204 107	204 129
Material of roof conductor holder	Cu	StSt
Height of conductor holder (h1)	16 mm	36 mm
Colour of conductor holder	brown	grey
PU	25 pc(s)	25 pc(s)

Type DLH ...	DS 8 H36 FG180.280 BR V2A	DS 8 H36 FG180.280BR GALCU
Part No.	204 913	204 127
Material of roof conductor holder	StSt	Cu
Height of conductor holder (h1)	36 mm	36 mm
Colour of conductor holder	brown	brown
PU	25 pc(s)	25 pc(s)

Steplessly adjustable with conductor holder DEHNgrip

Loose conductor routing, laterally adjustable (top centre to the bottom).

General technical data:	
Clamping range	180-280 mm
Conductor support Rd	8 mm
Standard	EN 62561-4

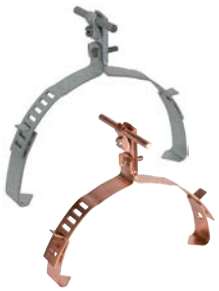
Type DLH ...	DG 8 H20 FG180.280 V2A	DG 8 H20 FG180.280 KK V2A
Part No.	206 109	206 809
Material of roof conductor holder	StSt	StSt
Height of conductor holder (h1)	20 mm	20 mm
Material of conductor holder	StSt	StSt
Length of clamping claw	23 mm	15 mm
PU	25 pc(s)	25 pc(s)

Type DLH ...	DG 8 H20 FG180.280 KK GALCU	DG 8 H32 FG180.280 KK GALCU
Part No.	206 807	206 817
Material of roof conductor holder	Cu	Cu
Height of conductor holder (h1)	20 mm	32 mm
Material of conductor holder	Cu	Cu
Length of clamping claw	15 mm	15 mm
PU	25 pc(s)	25 pc(s)

Type DLH ...	DG 8 H32 FG180.280 KK V2A
Part No.	206 819
Material of roof conductor holder	StSt
Height of conductor holder (h1)	32 mm
Material of conductor holder	StSt
Length of clamping claw	15 mm
PU	25 pc(s)

Adjustable in steps with conductor holder DEHNquick

Fixed conductor routing.



General technical data:	
Conductor support Rd	6-10 mm
Length of clamping claw	24 mm

Type DLH ...	DQ 6.10 FG120.240 STTZN	DQ 6.10 FG200.280 STTZN
Part No.	202 020	202 021
Material of roof conductor holder	St/tZn	St/tZn
Clamping range	120-240 mm	200-280 mm
Material of conductor holder	St/tZn	St/tZn
PU	25 pc(s)	1 pc(s)

Type DLH ...	DQ 6.10 FG120.240 V2A	DQ 6.10 FG120.240 CU
Part No.	202 900	202 027
Material of roof conductor holder	StSt	Cu
Clamping range	120-240 mm	120-240 mm
Material of conductor holder	StSt	Cu
PU	1 pc(s)	1 pc(s)

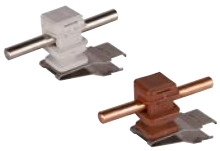
Type DLH ...	DQ 6.10 FG200.280 CU
Part No.	202 227
Material of roof conductor holder	Cu
Clamping range	200-280 mm
Material of conductor holder	Cu
PU	25 pc(s)

Roof Conductor Holders for Ridge and Hip Tiles

For fixing air-termination conductors on the ridge.

FIRSTsnap

Attached to the ridge tile clip of dry ridges, with conductor holder DEHNsnap, loose conductor routing.



Type	LH FS 8 H16 GR V2A	LH FS 8 H16 K BR V2A
Part No.	**204 029**	**204 039**
Material of roof conductor holder	StSt	StSt
Height of conductor holder	16 mm	16 mm
Material of conductor holder	plastic	plastic
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
PU	50 pc(s)	50 pc(s)

Two screw clamp with spacer and elastic sealing

For tiled, slated and corrugated sheet roofs, with weather-resistant spacer and elastic sealing, fixed conductor routing.

Type	DLH ZS 7.10 FL20 KT12 STTZN
Part No.	**216 000**
Material of roof conductor holder	plastic
Hole	Ø12 mm
Material of conductor holder	St/tZn
Conductor support Rd	7-10 mm
Conductor support Fl	20 mm
PU	25 pc(s)

Roof Conductor Holders with Angled, Flexible Brace for Roof Surfaces

For hanging into roof tiles, with a flexible brace made of thin StSt (0.3 mm) which moulds itself to the grooves of the tile.

FLEXIsnap

Fixed to grooved tiles using the flexible brace, loose conductor routing.

General technical data:	
Material of roof conductor holder	StSt
Length of brace	170 mm
Material of conductor holder	plastic
Conductor support Rd	8 mm

Type DLH ...	FS 8 H16 L170 GR V2A	FS 8 H16 L170 BR V2A
Part No.	**204 935**	**204 936**
Height of conductor holder (h1)	16 mm	16 mm
Colour of conductor holder	grey	brown
PU	1 pc(s)	50 pc(s)

Type DLH ...	FS 8 H36 L170 GR V2A	FS 8 H36 L170 BR V2A
Part No.	**204 937**	**204 938**
Height of conductor holder (h1)	36 mm	36 mm
Colour of conductor holder	grey	brown
PU	50 pc(s)	50 pc(s)

FLEXIgrip

Fixed to grooved tiles using the flexible brace, loose conductor routing.

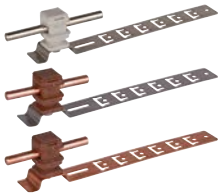
Type DLH ...	FG 8 H32 L170 V2A	FG 8 H32 L170 V2A GALCU
Part No.	**204 949**	**204 957**
Material of roof conductor holder	StSt	StSt
Length of brace	170 mm	170 mm
Height of conductor holder (h1)	32 mm	32 mm
Material of conductor holder	StSt	Cu
Conductor support Rd	8 mm	8 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Roof Conductor Holders with Embossed Brace for Roof Surfaces

For fixing air-termination and down conductors.

UNIsnap height 16 mm

With prepunched points for bending it and hooking it into roof tiles or battens, with conductor holder DEHNsnap, loose conductor routing.



General technical data:	
Height of conductor holder	16 mm
Material of conductor holder	plastic
Conductor support Rd	8 mm

Type	DLH US 8 H16 L205 GR V2A	DLH US 8 H16 L205 BR V2A
Part No.	**204 149**	**204 921**
Material of roof conductor holder	StSt	StSt
Length of brace (l1)	205 mm	205 mm
Colour of conductor holder	grey	brown
PU	50 pc(s)	1 pc(s)

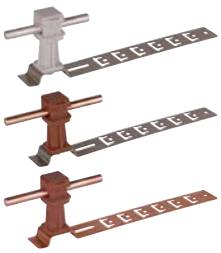
Type	DLH US 8 H16 L205 BR GALCU	DLH US 8 H16 L335 GR V2A
Part No.	**204 147**	**204 159**
Material of roof conductor holder	Cu	StSt
Length of brace (l1)	205 mm	335 mm
Colour of conductor holder	brown	grey
PU	50 pc(s)	50 pc(s)

Type	DLH US 8 H16 L335 BR GALCU	DLH US 8 H16 L475 GR V2A
Part No.	**204 157**	**204 169**
Material of roof conductor holder	Cu	StSt
Length of brace (l1)	335 mm	475 mm
Colour of conductor holder	brown	grey
PU	50 pc(s)	1 pc(s)

Gable Roof – Roof Conductor Holders

UNIsnap height 36 mm

With prepunched points, for bending it and hooking it into roof tiles or battens, with conductor holder DEHNsnap, loose conductor routing.



General technical data:	
Height of conductor holder	36 mm
Material of conductor holder	plastic
Conductor support Rd	8 mm

Type	DLH US 8 H36 L205 GR V2A	DLH US 8 H36 L205 BR V2A
Part No.	204 179	204 924
Material of roof conductor holder	StSt	StSt
Length of brace (l1)	205 mm	205 mm
Colour of conductor holder	grey	brown
PU	50 pc(s)	50 pc(s)

Type	DLH US 8 H36 L205 BR GALCU	DLH US 8 H36 L335 GR V2A
Part No.	204 177	204 189
Material of roof conductor holder	Cu	StSt
Length of brace (l1)	205 mm	335 mm
Colour of conductor holder	brown	grey
PU	50 pc(s)	50 pc(s)

Type	DLH US 8 H36 L335 BR V2A	DLH US 8 H36 L335 BR GALCU
Part No.	204 925	204 187
Material of roof conductor holder	StSt	Cu
Length of brace (l1)	335 mm	335 mm
Colour of conductor holder	brown	brown
PU	50 pc(s)	50 pc(s)

Type	DLH US 8 H36 L475 GR V2A	DLH US 8 H36 L475 BR GALCU
Part No.	204 199	204 197
Material of roof conductor holder	StSt	Cu
Length of brace (l1)	475 mm	475 mm
Colour of conductor holder	grey	brown
PU	50 pc(s)	1 pc(s)

UNIsnap with clamping part

With prepunched points for bending it and hooking it into roof tiles or battens,with additional clamping part e.g. for slated roofs, with conductor holder DEHNsnap, loose conductor routing.

Type	LH US 8 H16 L205 KT GR V2A
Part No.	204 089
Material of roof conductor holder	StSt
Length of brace (l1)	205 mm
Height of conductor holder	16 mm
Material of conductor holder	plastic
Colour of conductor holder	grey
Conductor support Rd	8 mm
PU	1 pc(s)

DEHNsnap with Al base brace

Moulds itself to the grooves of the tile, with conductor holder DEHNsnap, loose conductor routing.

Type	DLH DS 8 H36 L205 GR AL	DLH DS 8 H36 L205 BR AL
Part No.	204 170	204 171
Material of roof conductor holder	Al	Al
Length of brace (l1)	205 mm	205 mm
Height of conductor holder	36 mm	36 mm
Material of conductor holder	plastic	plastic
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
PU	50 pc(s)	50 pc(s)

UNIgrip height 20 mm

With prepunched points for bending it and hooking it on roof tiles or battens, with conductor holder DEHNgrip, loose conductor routing.

General technical data:	
Height of conductor holder	20 mm
Conductor support Rd	8 mm
Standard	EN 62561-4

Type	DLH UG 8 H20 L205 V2A	DLH UG 8 H20 L205 CU
Part No.	206 209	206 207
Material of roof conductor holder	StSt	Cu
Length of brace (l1)	205 mm	205 mm
Material of conductor holder	StSt	Cu
PU	50 pc(s)	50 pc(s)

Type	DLH UG 8 H20 L335 V2A	DLH UG 8 H20 L335 CU
Part No.	206 219	206 217
Material of roof conductor holder	StSt	Cu
Length of brace (l1)	335 mm	335 mm
Material of conductor holder	StSt	Cu
PU	50 pc(s)	50 pc(s)

Type	DLH UG 8 H20 L475 V2A	DLH UG 8 H20 L475 CU
Part No.	206 229	206 227
Material of roof conductor holder	StSt	Cu
Length of brace (l1)	475 mm	475 mm
Material of conductor holder	StSt	Cu
PU	50 pc(s)	50 pc(s)

UNIgrip height 32 mm

With prepunched points for bending it and hooking it on roof tiles or battens, with conductor holder DEHNgrip, loose conductor routing.

General technical data:	
Material of roof conductor holder	StSt
Height of conductor holder	32 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4

Type	DLH UG 8 H32 L205 V2A	DLH UG 8 H32 L335 V2A
Part No.	206 309	206 319
Length of brace (l1)	205 mm	335 mm
PU	50 pc(s)	50 pc(s)

Type	DLH UG 8 H32 L475 V2A
Part No.	206 329
Length of brace (l1)	475 mm
PU	50 pc(s)

UNIgrip with clamping part, height 20 mm

With prepunched points for bending it and hooking it into roof tiles or battens, with additional clamping part, e.g. for slated roofs, with conductor holder DEHNgrip, loose conductor routing.

Type	DLH UG 8 H20 L205 KT V2A
Part No.	206 289
Material of roof conductor holder	StSt
Length of brace (l1)	205 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

DEHNgrip with Al brace

Moulds itself to the grooves of the tile, with conductor holder DEHNgrip, loose conductor routing.

Type	DLH DG 8 H20 L205 V2A AL	DLH DG 8 H32 L205 V2A AL
Part No.	206 170	206 171
Material of roof conductor holder	Al	Al
Length of brace (l1)	205 mm	205 mm
Height of conductor holder	20 mm	32 mm
Material of conductor holder	StSt	StSt
Conductor support Rd	8 mm	8 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Roof Conductor Holders with Brace for Roof Surfaces

Inserted on tiled, slated and roofing felt roofs.

Straight

Straight, with conductor holder DEHNquick, for conductors Rd 6-10 mm, fixed conductor routing.

General technical data:	
Height of brace	55 mm
Conductor support Rd	6-10 mm

Type DLH DQ 6.10 H55 L260 ...	STTZN	V2A
Part No.	202 040	202 902
Material of roof conductor holder	St/tZn	StSt
Length of brace	260 / 2 mm	260 / 1 mm
Material of conductor holder	St/tZn	StSt
PU	50 pc(s)	50 pc(s)

Type DLH DQ 6.10 H55 L260 ...	CU
Part No.	202 037
Material of roof conductor holder	Cu
Length of brace	260 / 2 mm
Material of conductor holder	Cu
PU	50 pc(s)

Cranked

With conductor holder DEHNquick, fixed conductor routing.

General technical data:	
Height of brace	55 mm
Conductor support Rd	6-10 mm

Type DLH DQ 6.10 H55 L260 ...	GS STTZN	GS V2A
Part No.	202 010	202 901
Material of roof conductor holder	St/tZn	StSt
Length of brace	260 / 2 mm	260 / 1 mm
Material of conductor holder	St/tZn	StSt
PU	50 pc(s)	50 pc(s)

Type DLH DQ 6.10 H55 L260 ...	GS CU
Part No.	202 017
Material of roof conductor holder	Cu
Length of brace	260 / 2 mm
Material of conductor holder	Cu
PU	1 pc(s)

Roof Conductor Holders with Angled Brace for Roof Surfaces

Hung into the roof tiles.

With conductor holder DEHNsnap

Loose conductor routing.

Type DLH ...	DS 8 H16 L169 WS V2A
Part No.	**204 359**
Material of roof conductor holder	StSt
Length of brace (l1)	169 mm
Height of conductor holder	16 mm
Material of conductor holder	plastic
Colour of conductor holder	grey
Conductor support Rd	8 mm
PU	1 pc(s)

With conductor holder DEHNgrip

Loose conductor routing.

Type DLH ...	DG 8 H20 L169 WS V2A
Part No.	**206 359**
Material of roof conductor holder	StSt
Length of brace (l1)	169 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

With conductor holder DEHNquick

Hung into roof tiles or battens, fixed conductor routing (lengthwise or crosswise).

Type DLH ...	DQ 6.10 H55 L115 WS STTZN	DQ 6.10 H55 L410 WS STTZN
Part No.	**202 050**	**202 080**
Material of roof conductor holder	St/tZn	St/tZn
Length of brace (l1)	115 mm	410 mm
Material of conductor holder	St/tZn	St/tZn
Conductor support Rd	6-10 mm	6-10 mm
PU	25 pc(s)	50 pc(s)

Roof Conductor Holders with Clamping Device for Roof Surfaces

For fixing air-termination and down conductors.

PLATTENsnap

Fixed on overlapping constructions, with conductor holder DEHNsnap, loose conductor routing.

Type	LH PS 8 H16 KB4.6 GR V2A	LH PS 8 H16 KB4.6 BR V2A
Part No.	**204 069**	**204 079**
Material of roof conductor holder	StSt	StSt
Clamping range	4-6 mm	4-6 mm
Height of conductor holder	16 mm	16 mm
Material of conductor holder	plastic	plastic
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
PU	50 pc(s)	50 pc(s)

ZIEGELsnap

Fixed between flat tiles (plain tiles) and slabs, with conductor holder DEHNsnap, loose conductor routing.

Type	LH ZS 8 H16 KB4.16 GR V2A	LH ZS 8 H16 KB4.16 BR V2A
Part No.	**204 049**	**204 059**
Material of roof conductor holder	StSt	StSt
Clamping range	4-16 mm	4-16 mm
Height of conductor holder	16 mm	16 mm
Material of conductor holder	plastic	plastic
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
PU	50 pc(s)	50 pc(s)

ZIEGELgrip

Fixed between flat tiles (plain tiles) and slabs, with conductor holder DEHNgrip, loose conductor routing.

Type	LH ZG 8 H20 KB4.16 V2A
Part No.	**206 049**
Material of roof conductor holder	StSt
Clamping range	4-16 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

DEHNgrip for bitumen shingles

As well as for roof and wall slabs, loose conductor routing.

Type	DLH DG H20 UK8 V2A	DLH DG 8 H20 KB8.18 V2A
Part No.	**206 389**	**206 399**
Material of roof conductor holder	StSt	StSt
Clamping range	2-8 mm	8-18 mm
Height of conductor holder	20 mm	20 mm
Material of conductor holder	StSt	StSt
Conductor support Rd	8 mm	8 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

DEHNgrip for metal roof shingles

For fixing air-termination and down conductors on e.g. PREFA roof systems (PREFA small format) as well as bitumen shingles and shingles made of natural materials

Type	DLH DG 8 H20 KB2.8 KU V2A
Part No.	**206 379**
Material of roof conductor holder	StSt
Clamping range	2-8 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

Roof Conductor Holders with Preformed Brace for Roof Surfaces

Hung onto the groove of roof tiles.

Hung onto the lower groove, with conductor holder DEHNgrip

Loose conductor routing.

Type DLH ...	DG 8 H20 L103 EH V2A
Part No.	**206 349**
Material of roof conductor holder	StSt
Length of brace	103 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

Hung onto the lower groove, with conductor holder DEHNsnap

Hung onto the lower groove of pantiles, with conductor holder DEHNsnap, loose conductor routing, brace length 90 mm.

Type DLH ...	DS 8 H36 L90 EH GR V2A	DS 8 H36 L90 EH BR V2A
Part No.	**204 229**	**204 239**
Material of roof conductor holder	StSt	StSt
Length of brace	90 mm	90 mm
Height of conductor holder	36 mm	36 mm
Material of conductor holder	plastic	plastic
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
PU	50 pc(s)	50 pc(s)

Hung onto the upper groove, with conductor holder DEHNgrip

Hung onto the groove of pantiles, with conductor holder DEHNgrip, loose conductor routing, brace length 87 mm.

Type DLH ...	DG 8 H20 L87 EH V2A
Part No.	**206 369**
Material of roof conductor holder	StSt
Length of brace	87 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

Components for Buildings with Thatched Roof

Lightning protection system components for buildings with thatched roofs.
Air-termination conductors on thatched roofs have to be installed at a distance to the roof, e.g. on isolating supports. Certain distances also have to be kept to the eaves.
The span width for ridge conductors is approx. 15 m and for down conductors approx. 10 m without additional supports. Span stakes have to be fastened to the roof construction (rafters and crossbars) using anchor bolts and flat washers.

Today an isolated (HVI) lightning protection system is often used as an external lightning protection system for buildings with thatched roofs.

Wooden stake

With rain shelter, suitable for clamping cap (Part No. 146 309).

Type	HP 90X90 2400 EHI
Part No.	**145 241**
Material	oak (impregnated)
Dimensions (l x w x h)	90 x 90 x 2400 mm
PU	1 pc(s)

Clamping cap

Fixed to wooden stakes (Part No. 145 241).
With air-termination tip (length 300 mm, Ø10 mm, StSt).

Type	SPK 100X100 FSP10 300 7.10 V2A
Part No.	**146 309**
Material	StSt
Support Rd	7-10 mm
PU	1 pc(s)

Roof conductor support

With conductor holder.

Type	DLS 6.10 134X300X598 EHI
Part No.	**240 000**
Material	oak (impregnated)
Dimensions (l x w x h)	134 x 300 x 598 mm
Support Rd	6-10 mm
PU	1 pc(s)

Eaves supports St/tZn / StSt

For spanning conductors/cables over it.
Distance between the wall and conductors is adjustable.

General technical data:	
Support Rd	7-10 mm

Type	TS 7.10 V1.0 1.15M STTZN	TS 7.10 V1.25 1.40M STTZN
Part No.	**239 000**	**239 001**
Material	St/tZn	St/tZn
Adjustable range (l1)	1.05-1.20 m	1.40-1.55 m
PU	1 pc(s)	1 pc(s)

Type	TS 7.10 V1.25 1.55M V2A	TS 7.10 V1.45 1.75M V2A
Part No.	**239 009**	**239 019**
Material	StSt	StSt
Adjustable range (l1)	1.25-1.55 m	1.45-1.75 m
PU	1 pc(s)	1 pc(s)

Anchoring block

To fix the conductors / cables on the wall.

Type	ASK 8 150 40 2XB10.5 V2A
Part No.	**241 009**
Material	StSt
Dimensions (l x w x d)	150 x 40 x 6 mm
Support Rd	8 mm
PU	20 pc(s)

Roof Conductor Holders for Metal Roofs

For fixing additional air-termination systems on metal roofs. When using two roof conductor holders (clamps / clamping pieces) which have been tested for the respective roof profile, a lightning current carrying capability of 100 kA (10/350 µs) is provided.

For roofs with round standing seam, with clamping piece

Type	DLH KB 6.10 RSF20.25 V2A	DLH KB 6.10 RSF20.25 AL
Part No.	**223 010**	**223 040**
Material of roof conductor holder	StSt	Al
Clamping range	Ø20-25 mm	Ø20-25 mm
Material of conductor holder	StSt	Al
Conductor support Rd	6-10 mm	6-10 mm
Conductor routing	fixed	fixed
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

For roofs with round standing seam, with DEHNgrip

Type	DLH DG 8 RSF20.25 V2A	DLH DG 8 RSF20.25 AL
Part No.	**223 011**	**223 041**
Material of roof conductor holder	StSt	Al
Clamping range	Ø20-25 mm	Ø20-25 mm
Height of conductor holder	20 mm	20 mm
Material of conductor holder	StSt	StSt
Conductor support Rd	8 mm	8 mm
Conductor routing	loose	loose
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

For roofs with clamping seam, with clamping piece (e.g. RIB ROOF Speed 500 by Zambelli)

Type	DLH KB 6.10 KF18.22 AL
Part No.	**223 070**
Material of roof conductor holder	Al
Clamping range	approx. 18 / 22 mm
Material of conductor holder	Al
Conductor support Rd	6-10 mm
Conductor routing	fixed
Standard	EN 62561-1
PU	50 pc(s)

For roofs with clamping seam, with DEHNgrip (e.g. RIB-ROOF Speed 500 by Zambelli)

Type	DLH DG 8 KF18.22 AL
Part No.	**223 071**
Material of roof conductor holder	Al
Clamping range	approx. 18 / 22 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Conductor routing	loose
Standard	EN 62561-1
PU	50 pc(s)

For roofs with standing seam, with clamping piece

Type	FK KB 6.10 KBF0.7 8 W V2A
Part No.	**365 059**
Material of roof conductor holder	StSt
Clamping range	0.7-8 mm
Material of conductor holder	StSt
Conductor support Rd	6-10 mm
Conductor routing	fixed
Standard	EN 62561-1
PU	50 pc(s)

For roofs with standing seam, with DEHNgrip

Type	DLH DG 8 SF0.7 8 V2A
Part No.	**223 031**
Material of roof conductor holder	StSt
Clamping range	0.7-8 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Conductor routing	loose
Standard	EN 62561-4
PU	50 pc(s)

For trapezoidal roofs, with clamping piece

Hung into the fixing screws of the roof.

Type	DLH KB 6.10 TD B8.5 V2A
Part No.	**223 020**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Conductor support Rd	6-10 mm
Conductor routing	fixed
PU	50 pc(s)

For trapezoidal roofs, with DEHNgrip

Hung into the fixing screws of the roof.

Type	DLH DG 8 TD B8.5 V2A
Part No.	**223 021**
Material of roof conductor holder	StSt
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Conductor routing	loose
Standard	EN 62561-4
PU	50 pc(s)

Roof Conductor Holders with Adhesive Pad

For installing air-termination systems, e.g. on trapezoidal roofs. The conductor holder can be used on smooth (unstructured) surfaces such as metal roofs / metal surfaces. The conductor holders are stuck to the roof (remove protective backing).

DEHNsnap conductor holder with base plate

Type DLH ...	DS 8 H36 KP67 K GR
Part No.	**297 110**
Base plate material	plastic
Base plate colour	grey
Material of conductor holder	plastic
Colour of conductor holder	grey
Conductor support Rd	8 mm
Type of conductor holder	DEHNsnap
Height of conductor holder	36 mm
Conductor routing	loose
Dimensions	Ø 67 mm
PU	50 pc(s)

DEHNgrip conductor holder with base plate

Type DLH ...	DG 8 H32 KP67 V2A K GR
Part No.	**297 120**
Base plate material	plastic
Base plate colour	grey
Material of conductor holder	StSt
Conductor support Rd	8 mm
Type of conductor holder	DEHNgrip
Height of conductor holder	32 mm
Conductor routing	loose
Dimensions	Ø 67 mm
Standard	EN 62561-4
PU	50 pc(s)

Accessories for Roof Conductor Holders with Adhesive Pad

Special cleaner

For cleaning the gluing spots for roof conductor holders with an adhesive pad with a clean cloth. Up to 1,000 gluing spots can be cleaned with one litre. The specified handling and process methods must be observed when using the special cleaner.

Classification according to (EC) regulation no. 1272/2008 [CLP]

- Flam. Liq. 2 / H225; flammable liquids, liquid and vapour highly flammable
- Eye Irrit. 2 / H319; severe eye damage/ irritation; causes severe eye irritation
- STOT SE 3 / H336; specific organ toxicity (single exposure); can cause drowsiness and dizziness

Hazardous materials regulations only allow delivery within Germany. Alternatively, use ISOPROPYL ALCOHOL 99.1 to 99.9% (CAS no. 67-63-0).

Type	SR IPA 1L
Part No.	**297 199**
Application	For Roof Conductor Holders with Adhesive Pad
PU	1 liter

Roof Conductor Holders for Corrugated Sheet Roofs

For installing ridge conductors and conductors on the roof surface.
Corrugations 177 mm (profile 5) and 130 mm (profile 8).

For corrugated sheet roofs (profile 5), with DEHNquick

For installation on the roof surface.

Type DLH ...	DQ 6.10 WPRO5 STTZN
Part No.	**202 005**
Material of roof conductor holder	St/tZn
Material of conductor holder	St/tZn
Conductor support Rd	6-10 mm
Conductor routing	fixed
PU	50 pc(s)

For corrugated sheet roofs (profile 5), with DEHNgrip

For installation on the roof surface.

Type DLH ...	DQ 8 WPRO5 V2A STTZN
Part No.	**206 105**
Material of roof conductor holder	St/tZn
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Conductor routing	loose
Standard	EN 62561-4
PU	50 pc(s)

For corrugated sheet roofs (profile 5 and profile 8), with DEHNquick

For installing ridge conductors and conductors on the roof surface, angled design.

Type DLH ...	DQ 6.10 WPRO5 8 STTZN
Part No.	**202 015**
Material of roof conductor holder	St/tZn
Material of conductor holder	St/tZn
Conductor support Rd	6-10 mm
Conductor routing	fixed
PU	50 pc(s)

For corrugated sheet roofs (profile 5 and profile 8), with DEHNquick

For installing ridge conductors and conductors on the roof surface, angled design.

Type DLH ...	DQ 6.10 WPRO5 8 V2A
Part No.	**202 906**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Conductor support Rd	6-10 mm
Conductor routing	fixed
PU	50 pc(s)

For corrugated sheet roofs (profile 5 and profile 8), with DEHNgrip

For installing ridge conductors and conductors on the roof surface, straight design.

Type DLH ...	DG 8 H20 WPRO5 8 V2A
Part No.	**206 339**
Material of roof conductor holder	StSt
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Conductor routing	loose
Standard	EN 62561-4
PU	50 pc(s)

For corrugated sheet roofs (profile 5 and profile 8), with DEHNsnap

For installing ridge conductors and conductors on the roof surface, straight design.

Type DLH ...	DS 8 H16 WPRO5 8 GR V2A	DS 8 H16 WPRO5 8 BR V2A
Part No.	**204 906**	**204 916**
Material of roof conductor holder	StSt	StSt
Height of conductor holder	16 mm	16 mm
Material of conductor holder	plastic	plastic
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
Conductor routing	loose	loose
PU	50 pc(s)	50 pc(s)

Conductor Holders DEHNgrip

Screwless StSt holder system with loose conductor routing.

Height 20 mm

General technical data:		
Conductor support Rd		8 mm
Standard		EN 62561-4

Type LH DG 8 ...	H20 IGM6 V2A	H20 B7.8 V2A
Part No.	**207 019**	**207 009**
Thread of conductor holder	M6	–
Hole of conductor holder	–	Ø7.8 mm
Material of conductor holder	StSt	StSt
PU	50 pc(s)	50 pc(s)

Type LH DG 8 ...	H20 IGM6 CU	H20 B7.8 CU
Part No.	**207 017**	**207 007**
Thread of conductor holder	M6	–
Hole of conductor holder	–	Ø7.8 mm
Material of conductor holder	Cu	Cu
PU	50 pc(s)	50 pc(s)

Height 32 mm

General technical data:		
Conductor support Rd		8 mm
Standard		EN 62561-4

Type LH DG 8 ...	H32 IGM6 V2A	H32 B7.8 V2A
Part No.	**207 039**	**207 029**
Thread of conductor holder	M6	–
Hole of conductor holder	–	Ø7.8 mm
Material of conductor holder	StSt	StSt
PU	50 pc(s)	50 pc(s)

Type LH DG 8 ...	H32 IGM6 CU	H32 B7.8 CU
Part No.	**207 037**	**207 027**
Thread of conductor holder	M6	–
Hole of conductor holder	–	Ø7.8 mm
Material of conductor holder	Cu	Cu
PU	50 pc(s)	50 pc(s)

Height 20 mm, pre-assembled with screw, plastic base and plug

Type LH DG 8 ...	H20 HS5X50 KD8 V2A GR	H20 HS5X50 KD8 CU BR
Part No.	**207 109**	**207 107**
Hole of conductor holder	Ø7.8 mm	Ø7.8 mm
Material of conductor holder	StSt	Cu
Conductor support Rd	8 mm	8 mm
Screw	5 x 50 mm	5 x 50 mm
Plastic plug	Ø8 x 40 mm	Ø8 x 40 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Conductor Holders DEHNsnap

Plastic holder system with loose conductor routing.

Height 16 mm with female thread

General technical data:	
Material of conductor holder	plastic
Conductor support Rd	8 mm

Type LH DS 8 ...	H16 IGM6 GR	H16 IGM6 BR
Part No.	**204 001**	**204 007**
Thread of conductor holder	M6	M6
Colour of conductor holder	grey	brown
PU	100 pc(s)	50 pc(s)

Type LH DS 8 ...	H16 IGM8 GR	H16 IGM8 BR
Part No.	**204 002**	**204 017**
Thread of conductor holder	M8	M8
Colour of conductor holder	grey	brown
PU	50 pc(s)	100 pc(s)

Height 36 mm with female thread

General technical data:	
Material of conductor holder	plastic
Conductor support Rd	8 mm

Type LH DS 8 ...	H36 IGM6 GR	H36 IGM6 BR
Part No.	**204 003**	**204 027**
Thread of conductor holder	M6	M6
Colour of conductor holder	grey	brown
PU	100 pc(s)	100 pc(s)

Type LH DS 8 ...	H36 IGM8 GR	H36 IGM8 BR
Part No.	**204 004**	**204 037**
Thread of conductor holder	M8	M8
Colour of conductor holder	grey	brown
PU	50 pc(s)	50 pc(s)

Height 16 mm with screw

Type LH DS 8 ...	H16 HS5X50 GR
Part No.	**204 006**
Thread of conductor holder	M8
Material of conductor holder	plastic
Colour of conductor holder	grey
Conductor support Rd	8 mm
Screw	5 x 50 mm
PU	50 pc(s)

Height 16 mm, pre-assembled with screw, cover plate and dowel

Type LH DS 8 ...	H16 HS5X50 KD8 GR
Part No.	**204 120**
Thread of conductor holder	M8
Material of conductor holder	plastic
Colour of conductor holder	grey
Conductor support Rd	8 mm
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
PU	50 pc(s)

Conductor Holders DEHNfix

Two-in-one system (fixes the holder and the conductor) with conductor holder DEHNquick, fixed conductor routing, UV-stabilised.

Height 30 mm

General technical data:	
Material of base part	plastic
Conductor support Rd	6-10 mm
Nail plug	Ø8 x 80 mm
Drilling depth	45 mm

Type LH DFI DQ 6.10 ...	STTZN H30 GR	V2A H30 GR
Part No.	**250 000**	**250 001**
Material of clamp	St/tZn	StSt
Colour of conductor holder	grey	grey
PU	50 pc(s)	50 pc(s)

Type LH DFI DQ 6.10 ...	CU H30 BR
Part No.	**250 007**
Material of clamp	Cu
Colour of conductor holder	brown
PU	50 pc(s)

Note: Only suitable for solid stone or concrete.

Conductor Holders DEHNhold

Conductor holder with a slotted saddle clamp for fixing round conductors, fixed conductor routing.
For use with different materials, e.g. Al, StSt, St/tZn and Cu.

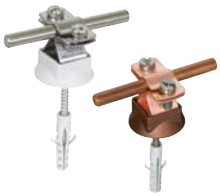
With female thread

Type LH ZS ...	8.10 FL20 M8 V2A	8.10 FL20 M8 CU
Part No.	**274 110**	**274 117**
Material of conductor holder	StSt	StSt / gal Cu
Conductor support Rd	8-10 mm	8-10 mm
Conductor support Fl	20 mm	20 mm
Height of conductor holder	20 mm	20 mm
Thread of conductor holder	M8	M8
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

With female thread, pre-assembled with plastic base

Type LH ZS ...	8.10 FL20 M8 KS CU
Part No.	**274 150**
Material of conductor holder	StSt
Conductor support Rd	8-10 mm
Conductor support Fl	20 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw, plastic base and plug



Type LH ZS ...	8.10 FL20 KS KD8X40 V2A	8.10 FL20 KS KD8X40 CU
Part No.	**274 160**	**274 167**
Material of conductor holder	StSt	StSt / gal Cu
Conductor support Rd	8-10 mm	8-10 mm
Conductor support Fl	20 mm	20 mm
Height of conductor holder	20 mm	20 mm
Thread of conductor holder	M8	M8
Plastic base	grey ●	brown ●
Screw	5 x 50 mm	5 x 50 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

With female thread, e.g. for round wire with plastic sheath

Type LH ZS ...	13 M8 V2A
Part No.	**274 113**
Material of conductor holder	StSt
Conductor support Rd	13 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
PU	50 pc(s)

Conductor Holder with Saddle Clamp – Flat Design

Two-screw clamp with two M6 screws, for round and flat conductors.
With plastic cover disc (grey).

Pre-assembled with wood screw, plastic cover disc (grey) and plug

Type	LH ZS 7.10 FL30 AS KD8X40 V2A
Part No.	**286 819**
Conductor support Rd	7-10 mm
Conductor support Fl	30 mm
Height of conductor holder	10 mm
Material of conductor holder	StSt
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Conductor Holders with Saddle Clamp and Flange

Complete unit with flange for installing conductors, fixed conductor routing.

With M8 female thread

Type LH ZS ...	7.10 IGM8 STTZN ZG
Part No.	**275 110**
Conductor support Rd	7-10 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	St/tZn
Material of base part	ZDC
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw and plug

Type LH ZS ...	7.10 KD8X40 STTZN ZG
Part No.	**275 160**
Conductor support Rd	7-10 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	St/tZn
Material of base part	ZDC
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

With female thread, e.g. for round wire with plastic sheath

Type LH ZS ...	13 IGM8 STTZN ZG
Part No.	**275 113**
Conductor support Rd	11-13 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	St/tZn
Material of base part	ZDC
PU	50 pc(s)

Cover Discs and Plastic Bases

Intermediate element for screw-on / snap-on conductor and rod holders.

Plastic base

Snapped onto the conductor holders DEHNgrip and DEHNhold.

Type	KS 35 14 B8.5 UVS GR	KS 35 14 B8.5 UVS BR
Part No.	**276 016**	**276 017**
Height	10 mm	10 mm
Diameter Ø	35 mm	35 mm
Material	plastic	plastic
Colour	grey	brown
Type	UV-stabilised	UV-stabilised
PU	100 pc(s)	100 pc(s)

Cover disc, plastic

Type	AS 37 5 B7.5 UVS K GR	AS 37 5 B7.5 UVS K BR
Part No.	**276 006**	**276 007**
Height	5 mm	5 mm
Diameter Ø	37 mm	37 mm
Material	plastic	plastic
Colour	grey	brown
Type	UV-stabilised	UV-stabilised
PU	100 pc(s)	100 pc(s)

Cover disc, StSt

Type	AS 37 5 B8.5 V2A
Part No.	**276 009**
Height	5 mm
Diameter Ø	37 mm
Material	StSt
PU	100 pc(s)

Conductor Holders with Saddle Clamp and Pin

Two-screw clamp with M6 screws, for round and flat conductors.

With square pin

General technical data:		
Conductor support Rd		7-10 mm
Conductor support Fl		20 mm
Material of saddle clamp		St/tZn
Material of base part		St/tZn

Type LH ZS 7.10 FL20 ...	VKS70 STTZN	VKS100 STTZN
Part No.	**260 708**	**260 108**
Fixing (l1)	square pin 70 mm	square pin 100 mm
PU	50 pc(s)	50 pc(s)

Type LH ZS 7.10 FL20 ...	VKS150 STTZN
Part No.	**260 158**
Fixing (l1)	square pin 150 mm
PU	1 pc(s)

Conductor Holders for External Thermal Insulation Composite Systems

Two-screw clamp with M6 screws, fixed conductor routing.

General technical data:	
Conductor support Rd	7-10 mm
Material of base part	ZDC
Material of clamp	St/tZn
Height of conductor holder	20 mm
Standard	EN 62561-4

Type LH ZS 7.10 AB ...	D10X140 STTZN ZG	D10X180 STTZN ZG
Part No.	**273 740**	**273 741**
Clamping length	70 mm	100 mm
Total length	140 mm	180 mm
Screw, plug	(TX40) 7 x 140 mm	(TX40) 7 x 180 mm
PU	50 pc(s)	50 pc(s)

Type LH ZS 7.10 AB ...	D10X240 STTZN ZG
Part No.	**273 742**
Clamping length	160 mm
Total length	230 mm
Screw, plug	(TX40) 7 x 240 mm
PU	50 pc(s)

Conductor Holder with Claw

Conductor holder for wall mounting with M6 clamping screw.
Fixed conductor routing.

Type	LH KR 6.10 H22 B6.5 V2A
Part No.	**273 019**
Hole Ø	6.5 mm
Material of conductor holder	StSt
Conductor support Rd	6-10 mm
Height of conductor holder	22 mm
Standard	EN 62561-4
PU	50 pc(s)

Flush-mounted Conductor Holders / Saddle Clamps

Suitable for flush mounting.

DEHNQUICK with nail plug

General technical data:	
Conductor support Rd	6-10 mm

Type	LH DQ 6.10 ND6X60 V2A	LH DQ 6.10 ND8X80 STTZN
Part No.	**390 120**	**390 121**
Material of conductor holder	StSt	St/tZn
Nail plug	Ø6 x 60 mm	Ø8 x 80 mm
PU	50 pc(s)	50 pc(s)

Type	LH DQ 6.10 ND8X80 V2A
Part No.	**390 122**
Material of conductor holder	StSt
Nail plug	Ø8 x 80 mm
PU	50 pc(s)

DEHNQUICK

Single-screw clamp with flexible clamping range and fixed conductor routing.

General technical data:	
Conductor support Rd	6-10 mm

Type	UEL DQ 6.10 B8.5 STTZN	UEL DQ 6.10 B8.5 V2A
Part No.	**202 000**	**202 001**
Material of conductor holder	St/tZn	StSt
Hole Ø	8.5 mm	8.5 mm
PU	50 pc(s)	50 pc(s)

Type	UEL DQ 6.10 B6.5 V2A
Part No.	**202 169**
Material of conductor holder	StSt
Hole Ø	6.5 mm
PU	100 pc(s)

Clamping piece

Single-screw clamp with flexible clamping range and fixed conductor routing.

Type	KB 6.10 B9 STTZN	KB 6.10 B9 V2A
Part No.	**390 110**	**390 119**
Material of conductor holder	St/tZn	StSt
Conductor support Rd	6-10 mm	6-10 mm
Hole Ø	9 mm	9 mm
PU	100 pc(s)	100 pc(s)

Conductor Holders for Downpipes

For installing down conductors on downpipes with fixed conductor routing.
All types are also suitable for plastic downpipes.

Type PPS

With worm gear.

General technical data:	
Conductor support Rd	8 mm

Type LH ...	8 SB80.100 SCG V2A	8 SB80.100 SCG GALCU
Part No.	**200 079**	**200 077**
Clamping range Ø pipe	80-100 mm	80-100 mm
Material of conductor holder	StSt	StSt / gal Cu
PU	50 pc(s)	50 pc(s)

Type LH ...	8 SB100.120 SCG V2A	8 SB100.120 SCG GALCU
Part No.	**200 089**	**200 087**
Clamping range Ø pipe	100-120 mm	100-120 mm
Material of conductor holder	StSt	StSt / gal Cu
PU	50 pc(s)	50 pc(s)

Type PS

Screwless, pre-punched for tongs.

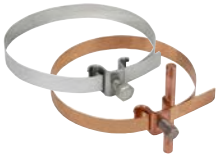
General technical data:	
Conductor support Rd	8 mm

Type LH ...	8 SB80.120 SCL V2A	8 SB80.120 SCL CU
Part No.	**200 069**	**200 067**
Clamping range Ø pipe	80-120 mm, in steps of 5 mm	80-120 mm, in steps of 5 mm
Material of conductor holder	StSt	Cu
PU	25 pc(s)	25 pc(s)

Type LH ...	8 SB100 SCL V2A	8 SB100 SCL CU
Part No.	**200 059**	**200 057**
Clamping range Ø pipe	100 mm	100 mm
Material of conductor holder	StSt	Cu
PU	25 pc(s)	25 pc(s)

Type PV

Adjustable, with clamping screw M8.



General technical data:	
Conductor support Rd	6-8 mm

Type LH ...	6.8 SB50.120 SPSM8 V2A	6.8 SB50.150 SPSM8 V2A
Part No.	200 029	200 039
Clamping range Ø pipe	50-120 mm	50-150 mm
Material of conductor holder	StSt	StSt
PU	10 pc(s)	10 pc(s)

Type LH ...	6.8 SB50.120 SPSM8 CU
Part No.	200 027
Clamping range Ø pipe	50 -120 mm
Material of conductor holder	Cu/bronze
PU	10 pc(s)

Downpipe Clamps

Pipe clamps for connecting downpipes to the lightning equipotential bonding according to IEC/EN 62305-3. Connection possibilities for Rd, e.g. with KS connector (Part No. 301 000) or with clamping piece (Part No. 390 150) (depending on material).

Bimetallic type

For connecting St conductors with Cu downpipes, with St/tZn clamping piece and intermediate plate (Cupal).

Type	ZMRRS 100 KB 6.10 CU STTZN
Part No.	420 207
Material	Cu / St/tZn
Clamping range pipe Ø (d1)	100 mm
Clamping range Rd	6-10 mm
Standard	EN 62561-1
PU	1 pc(s)

For fixed pipe diameters

General technical data:	
Hole Ø	11 mm
Standard	EN 62561-1

Type	RRS 100 B11 STTZN	RRS 120 B11 STTZN
Part No.	420 100	420 120
Material	St/tZn	St/tZn
Clamping range pipe Ø (d1)	100 mm	120 mm
PU	50 pc(s)	1 pc(s)

Type	RRS 100 B11 CU	RRS 120 B11 CU
Part No.	420 107	420 127
Material	Cu	Cu
Clamping range pipe Ø (d1)	100 mm	120 mm
PU	1 pc(s)	1 pc(s)

Type RV, adjustable

With additional anti-rotation protection of the fixing screw and markings, predetermined bending points as well as pre-punched cutting aids.

General technical data:	
Hole Ø	10.5 mm
Standard	EN 62561-1

Type	RRS V 60.100 B10.5 STTZN	RRS V 60.100 B10.5 AL
Part No.	423 010	423 011
Material	St/tZn	Al
Clamping range pipe Ø (d1)	60-100 mm	60-100 mm
Length (l1)	337 mm	337 mm
PU	50 pc(s)	50 pc(s)

Type	RRS V 60.100 B10.5 CU	RRS V 60.100 B10.5 V2A
Part No.	423 017	423 019
Material	Cu	StSt
Clamping range pipe Ø (d1)	60-100 mm	60-100 mm
Length (l1)	337 mm	337 mm
PU	1 pc(s)	50 pc(s)

Type	RRS V 60.150 B10.5 STTZN	RRS V 60.150 B10.5 AL
Part No.	423 020	423 021
Material	St/tZn	Al
Clamping range pipe Ø (d1)	60-150 mm	60-150 mm
Length (l1)	494 mm	494 mm
PU	50 pc(s)	50 pc(s)

Type	RRS V 60.150 B10.5 CU	RRS V 60.150 B10.5 V2A
Part No.	423 027	423 029
Material	Cu	StSt
Clamping range pipe Ø (d1)	60-150 mm	60-150 mm
Length (l1)	494 mm	494 mm
PU	50 pc(s)	50 pc(s)

Mit Zweischrauben-Überleger

Allgemeine Technische Daten:	
Klemmbereich Rd	7-10 mm

Type	RRS 100 DUL7.10 STTZN	RRS 120 DUL7.10 STTZN
Part No.	421 100	421 120
Werkstoff	St/tZn	St/tZn
Klemmbereich Rohr Ø (d1)	100 mm	120 mm
VPE	50 Stk.	50 Stk.

Type	RRS 100 DUL7.10 CU	RRS 120 DUL7.10 CU
Part No.	421 107	421 127
Werkstoff	Cu	Cu
Klemmbereich Rohr Ø (d1)	100 mm	120 mm
VPE	50 Stk.	50 Stk.

Type	RRS 100 DUL7.10 V2A	RRS 120 DUL7.10 V2A
Part No.	429 100	429 120
Werkstoff	StSt	StSt
Klemmbereich Rohr Ø (d1)	100 mm	120 mm
VPE	50 Stk.	50 Stk.

Clamping Piece Variants

For example as a connection with end piece for constructions or downpipe clamps. Clamping piece with square hole 11 mm and truss head screw.

General technical data:	
Clamping range Rd	6-10 mm
Screw	M10 x 35 mm
Standard	EN 62561-1

Type KB 6.10 FRM10X35 ...	STTZN	CU
Part No.	390 150	390 157
Material of clamp	St/tZn	Cu
Material of screw / nut	St/tZn	StSt
PU	100 pc(s)	1 pc(s)

Type KB 6.10 FRM10X35 ...	V2A
Part No.	390 159
Material of clamp	StSt
Material of screw / nut	StSt
PU	100 pc(s)

KS Connectors

Clamping screw connector (KlemmSchrauben-Verbinder) for lightning current carrying connection of round conductors, e.g. to flat profiles, downpipe clamps or other parts of the lightning protection system.

One-piece, St/tZn

With screw and nut M10.

Type	KSV 7.10 STTZN	KSV 7.10 FER STTZN
Part No.	301 000	301 010
Material of clamping screw	St/tZn	St/tZn
Material of clamp	ZDC	ZDC
Clamping range Rd	7-10 mm	7-10 mm
Type	–	+ spring washer
Standard	EN 62561-1	EN 62561-1
PU	100 pc(s)	100 pc(s)

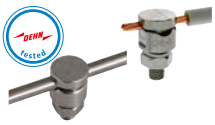
One-piece, Cu

With screw and nut M10.

Type	KSV 6.10 CU	KSV 6.10 FER CU
Part No.	301 007	301 017
Material of clamping screw	Cu	Cu
Material of clamp	Gunmetal	Gunmetal
Clamping range Rd	6-10 mm	6-10 mm
Connection (single-wire / multi-wire)	25-70 mm²	25-70 mm²
Type	–	+ spring washer
Standard	EN 62561-1	EN 62561-1
PU	100 pc(s)	100 pc(s)

One-piece, StSt

With screw and nut M10.



General technical data:	
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type	KSV 6.10 V2A	KSV 6.10 V4A
Part No.	301 009	301 089
Material of clamping screw	StSt	StSt (V4A)
Material of clamp	StSt	StSt (V4A)
Connection (single-wire / multi-wire)	25-70 mm²	25-70 mm²
Type	–	–
PU	100 pc(s)	100 pc(s)

Type	KSV 6.10 FER V2A	KSV 6.10 FER V4A
Part No.	301 019	301 099
Material of clamping screw	StSt	StSt (V4A)
Material of clamp	StSt	StSt (V4A)
Connection (single-wire / multi-wire)	25-70 mm²	25-70 mm²
Type	+ spring washer	+ spring washer
PU	100 pc(s)	100 pc(s)

Type	UKSV 6.10 AQ16 50 V4A
Part No.	540 122
Material of clamping screw	StSt (V4A)
Material of clamp	StSt (V4A)
Connection (single-wire / multi-wire)	16-50 mm²
Type	+ spring washer
PU	25 pc(s)

One-piece, long, StSt

With screw and nut M10, length 60 mm.

Type	KSVL 6.10 FER V2A
Part No.	301 020 NEW
Material of clamping screw	StSt
Material of clamp	StSt
Clamping range Rd	6-10 mm
Connection (single-wire / multi-wire)	25-70 mm²
Type	+ spring washer
Standard	EN 62561-1
PU	50 pc(s)

Heavy design

With screw and nut M12.

Type	KSV 8.12.5 STTZN	KSV 8.12.5 CU
Part No.	300 002	300 017
Material of clamping screw	St/tZn	Cu
Material of clamp	MCI	Gunmetal
Clamping range Rd	8-12.5 mm	8-12.5 mm
Connection (single-wire / multi-wire)	50-95 mm²	50-95 mm²
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	1 pc(s)

Down Conductor – Conductor Holders

Two-piece, gap 30 mm
With screw and nut M10.

Type	KSV 2X7.10 STTZN
Part No.	**302 010**
Material of clamping screw	St/tZn
Material of clamp	ZDC
Clamping range Rd	7-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Two-piece, gap 40 mm
With screw and nut M10.

Type	AP 2X6.10 V2A
Part No.	**301 229**
Material of clamping screw	StSt
Material of clamp	StSt
Clamping range Rd	6-10 mm
Type	+ spring washer
Standard	EN 62561-1
PU	1 pc(s)

Plastic Conductor Holders for Downpipes

For insulated fixing of earth entries to metal downpipes. Holder with clamping part for fixing the tensioning strap (dimensions 14 x 0.3 mm).

For round conductors
Fixed conductor routing, made of weather-resistant plastic, UV-stabilised and halogen-free.

Type	LH ZS 6.11 SBB PA V2A
Part No.	**275 711**
Material of conductor holder	PA
Material of clamping part	StSt
Conductor support Rd	6-11 mm
PU	50 pc(s)

For flat strips or round conductors
Fixed conductor routing, made of weather-resistant plastic, UV-stabilised and halogen-free.

Type	LH ZS 6.11 FL30 SBB PA V2A
Part No.	**275 730**
Material of conductor holder	PA
Material of clamping part	StSt
Conductor support Rd	6-11 mm
Conductor support Fl	30 mm
PU	50 pc(s)

For earth entry rods
Fixed conductor routing, made of weather-resistant plastic, UV-stabilised and halogen free.

Type	LH ZS 16 SBB PA V2A
Part No.	**275 716**
Material of conductor holder	PA
Material of clamping part	StSt
Conductor support Rd	16 mm
PU	50 pc(s)

Separate grip head
For combination with endless tensioning strap (Part No. 540 931 or Part No. 540 905).

Type	SPK 14X0.3 V2A
Part No.	**540 930**
Material of grip head / strap	StSt
Screw	(SW13) M8 x 16 mm
PU	25 pc(s)

Endless tensioning strap
Cut to length with sheet metal shears.

Type	SPB 14X0.3 L50M V2A	SPB 14X0.3 L100M V2A
Part No.	**540 931**	**540 905**
Material of grip head / strap	StSt	StSt
Dimensions of strap (w x d)	14 x 0.3 mm	14 x 0.3 mm
Packing	plastic	cardboard
Length	50 m	100 m
PU	1 pc(s)	1 pc(s)

Staples

Staples for fixing conductors on objects like wooden masts.

Type	KRA 6.10 STTZN
Part No.	**538 010**
Material of conductor holder	St/tZn
Conductor support Rd	6-10 mm
Conductor routing	fixed / loose
PU	500 pc(s)

Flat Strip Holders DEHNhold

For fixing flat conductors via a slotted clamp, fixed conductor routing. For use with different materials, e.g. Al, StSt, St/tZn and Cu.

With female thread

Type FBH ZS 30 ...	M8 V2A
Part No.	**274 030**
Material of conductor holder	StSt
Conductor support Fl	30 x 3.5 mm
Conductor support Rd	6-10 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Standard	EN 62561-4
PU	50 pc(s)

Pre-assembled with screw, plastic base and plug

Type FBH ZS 30 ...	KS KD8X40 V2A
Part No.	**274 230**
Material of conductor holder	StSt
Conductor support Fl	30 x 3.5 mm
Conductor support Rd	6-10 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Flat Strip Holders with Clamping Plate – Flat Design

Two-screw clamp with M6 screws.

With slot (6.5 x 16 mm)

Type FBH ZS ...	30 B6.5X16 STTZN	40 B6.5X16 STTZN
Part No.	**284 030**	**284 040**
Height of conductor holder	10 mm	10 mm
Conductor support Fl	30 x 3.5 mm	40 x 4-5 mm
Material of conductor holder	St/tZn	St/tZn
Material of base part	St/tZn	St/tZn
Width of component (l1)	58 mm	70 mm
Standard	EN 62561-4	EN 62561-4
PU	100 pc(s)	100 pc(s)

With slot (6.5 x 16 mm) and pre-assembled wood screw

Type FBH ZS ...	30 B6.5X16 HS5X50 STTZN	30 B6.5X16 HS5X50 V2A
Part No.	**286 030**	**286 139**
Height of conductor holder	10 mm	8.5 mm
Conductor support Fl	30 x 3.5 mm	30 x 3.5 mm
Material of conductor holder	St/tZn	StSt
Material of base part	St/tZn	StSt
Screw	5 x 50 mm	5 x 50 mm
Width of component (l1)	58 mm	58 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Flat Strip Holders with Clamping Plate and Flange

Complete unit with flange for installing flat strips.

With female thread

Type FBH ZS 30 IGM8 ...	STTZN ZG
Part No.	**275 030**
Conductor support Fl	30 x 3.5 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamping plate	St/tZn
Material of base part	ZDC
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw and plug

Type FBH ZS 30 IGM8 ...	KD8X40STTZN ZG
Part No.	**275 230**
Conductor support Fl	30 x 3.5 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamping plate	St/tZn
Material of base part	ZDC
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Flat Strip / Round Conductor Holders with Thrust Piece

For wall mounting.
Thrust piece with M8 screw for installing flat strips up to 11 mm and round conductors 6-10 mm.

Distance from wall 11 mm

General technical data:	
Fixing	Ø13 and 7 x 20 mm
Slot width	12 mm
Material of screw	StSt
Standard	EN 62561-4

Type FRH 11 6.10 ...	WA11 B7 STTZN	WA11 B7 CU
Part No.	**277 230**	**277 237**
Material of conductor holder	St/tZn	Cu
PU	25 pc(s)	25 pc(s)

Type FRH 11 6.10 ...	WA11 B7 V2A
Part No.	**277 239**
Material of conductor holder	StSt
PU	25 pc(s)

Distance from wall 15 mm

Type FRH 11 6.10 ...	WA15 B7 STTZN
Part No.	**277 240**
Material of conductor holder	St/tZn
Fixing	7 x 15 mm
Slot width	12 mm
Material of screw	StSt
Standard	EN 62561-4
PU	25 pc(s)

Staples for Flat Strips

For fixing strips on objects like wooden masts.

Type	KRA FL30 STTZN
Part No.	**538 030**
Material of conductor holder	St/tZn
Conductor support Fl	30 mm
Conductor routing	fixed / loose
PU	300 pc(s)

Anchors for Rigid Foam Boards

For fixing conductor, flat strip and rod holders in external thermal insulation composite systems.
With star drive (TX40).
Mounting with wood screws Ø4.5 mm.

This anchor may only be used for fixing conductor holders if there is no additional traction on the down conductor.

Short design

Type HSPD HS4.5 ...	L50 PA
Part No.	**200 600**
Material	PA
Thickness of insulating material	60 mm
Anchoring depth / length	50 mm
PU	50 pc(s)

Long design

Type HSPD HS4.5 ...	L85 PA
Part No.	**200 601**
Material	PA
Thickness of insulating material	100 mm
Anchoring depth / length	85 mm
PU	50 pc(s)

Wood Screws with Threaded Head

Hanger bolt for fixing conductor, flat strip and rod holders with female thread.

Type HSC ...	8X32 AGM8X13 STGALZN	8X42 AGM8X13 STGALZN
Part No.	**528 850**	**528 870**
Material	St/gal Zn	St/gal Zn
Thread	M8	M8
Total length (l1)	53 mm	73 mm
Thread length (l2)	32 mm	42 mm
PU	1 pc(s)	1 pc(s)

Earth Entry Rod Set

Complete with disconnecting sleeve and connection clamps (KS screws).

Type St/tZn

With disconnecting sleeve (Part No. 450 000) and KS screws (Part No. 300 000).

Type EESS 16 1500 TM 2KS7.10 ...	STTZN
Part No.	**480 150**
Material	St/tZn
Standard	EN 62561-(1+2)
Length	1500 mm
Connection KS screw Rd	7-10 mm
Connection sleeve Rd / Rd	7-10 / 16 mm
PU	1 pc(s)

Type Cu

With disconnecting sleeve (Part No. 450 007) and KS screws (Part No. 300 007).

Type EESS 16 1500 TM 2KS7.10 ...	CU
Part No.	**480 157**
Material	Cu
Standard	EN 62561-(1+2)
Length	1500 mm
Connection KS screw Rd	6-10 mm
Connection sleeve Rd / Rd	7-10 / 16 mm
PU	1 pc(s)

Earth Entry Rods

For connecting down conductors to the earth-termination system.

Chamfered

General technical data:	
Standard	EN 62561-2
Diameter Ø	16 mm

Type	FS 16 1500 STTZN	FS 16 2000 STTZN
Part No.	**483 150**	**483 200**
Material	St/tZn	St/tZn
Material No.	–	–
ASTM / AISI:	–	–
Length (l1)	1500 mm	2000 mm
PU	10 pc(s)	1 pc(s)

Type	EES 16 1000 V4A	EES 16 1500 V4A
Part No.	**104 903**	**104 905**
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Length (l1)	1000 mm	1500 mm
PU	1 pc(s)	10 pc(s)

Type	EES 16 2000 V4A
Part No.	**104 906**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Length (l1)	2000 mm
PU	1 pc(s)

With forged flat lug

Hole Ø11 mm, hole distance 22 mm.

Type	EES 16 1500 2XB11 STTZN
Part No.	**101 150**
Material	St/tZn
Standard	EN 62561-2
Diameter Ø	16 mm
Length (l1)	1500 mm
Hole distance	22 mm
PU	1 pc(s)

Tapered

Notched conductor Ø10 mm, partly insulated (length approx. 700 mm).

General technical data:		
Material		St/tZn
Standard		EN 62561-2
Diameter Ø		16 / 10 mm

Type	EES 16.10 1500 STTZN	EES 16.10 1750 STTZN
Part No.	**480 018**	**480 019**
Total length (l1)	1500 mm	1750 mm
Partial length Ø16 mm (l2)	1000 mm	750 mm
Partial length Ø10 mm (l3)	500 mm	1000 mm
PU	10 pc(s)	10 pc(s)

Type	EES 16.10 2000 STTZN	EES 16.10 2500 STTZN
Part No.	**480 020**	**480 021**
Total length (l1)	2000 mm	2500 mm
Partial length Ø16 mm (l2)	1000 mm	1500 mm
Partial length Ø10 mm (l3)	1000 mm	1000 mm
PU	10 pc(s)	1 pc(s)

Straightened / Angled Connection Lugs

For connecting down conductors to the earth-termination system; made of corrosion-resistant stainless steel.

Round wires

General technical data:	
Material	StSt (V4A)
Material No.	1.4571 / 1.4404
ASTM / AISI:	316Ti / 316L
Dimensions	Ø10 mm
Cross-section	78 mm²
Standard	EN 62561-2

Type AF ...	10 V4A 1000	10 V4A 1500
Part No.	**860 110**	**860 115**
Length (l1)	1000 mm	1500 mm
PU	5 pc(s)	5 pc(s)

Type AF ...	10 V4A 2000	10 V4A 3000
Part No.	**860 129**	**860 130**
Length (l1)	2000 mm	3000 mm
PU	5 pc(s)	5 pc(s)

Flat strips

General technical data:	
Material	StSt (V4A)
Material No.	1.4571 / 1.4404
ASTM / AISI:	316Ti / 316L
Dimensions	30 x 3.5 mm
Cross-section	105 mm²
Standard	EN 62561-2

Type AF ...	30X3.5 V4A 1000	30X3.5 V4A 1500
Part No.	860 210	860 215
Length (l1)	1000 mm	1500 mm
PU	5 pc(s)	5 pc(s)

Type AF ...	30X3.5 V4A 3000
Part No.	860 230
Length (l1)	3000 mm
PU	5 pc(s)

Flat strips with holes

Holes at intervals of 500 mm.

Type AF ...	30X3.5 V2A B6.5X12 3000	30X3.5 V4A B6.5X12 3000
Part No.	860 425	860 430
Material	StSt	StSt (V4A)
Material No.	1.4301	1.4571 / 1.4404
ASTM / AISI:	–	316Ti / 316L
Length (l1)	3000 mm	3000 mm
Dimensions	30 x 3.5 mm	30 x 3.5 mm
Fixing	[6x] 6.5 x 12 mm	[6x] 6.5 x 12 mm
Hole distance	500 mm	500 mm
Cross-section	105 mm²	105 mm²
Standard	EN 62561-2	EN 62561-2
PU	5 pc(s)	5 pc(s)

Flat strips, angled

For wall mounting (without a gap) with holes for countersunk head screws.

Type AF ...	30X3.5 V4A ZW 1500	30X3.5 V4A ZW 3000
Part No.	860 315	860 330
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
ASTM / AISI:	316Ti / 316L	316Ti / 316L
Length (l1)	1500 mm	3000 mm
Dimensions	30 x 3.5 mm	30 x 3.5 mm
Connection	disconnecting clamp or KS connector	disconnecting clamp or KS connector
Fixing	[3x] Ø6.5 mm	[6x] Ø6.5 mm
Hole distance	500 mm	500 mm
Cross-section	105 mm²	105 mm²
Standard	EN 62561-2	EN 62561-2
PU	5 pc(s)	5 pc(s)

Other dimensions are available upon request.

Marker for Connection Lugs

Attached to round wires or strips to make them conspicuous (as required by DIN 18014) during the construction work.

Type	SK RD10 FL30X3.5 GRGE PVC
Part No.	478 099
Material	PVC
Diameter Ø	70 mm
Fits on Fl	30 x 3.5 mm
Fits on Rd	10 mm
Colour	green ● / yellow ●
PU	20 pc(s)

Conductor Holders DEHNhold

Conductor holder with a slotted saddle clamp for fixing round conductors, fixed conductor routing.
For use with different materials, e.g. Al, StSt, St/tZn and Cu.

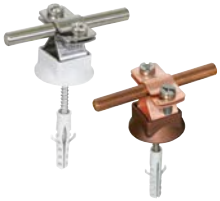
With female thread

Type LH ZS ...	8.10 FL20 M8 V2A	8.10 FL20 M8 CU
Part No.	274 110	274 117
Material of conductor holder	StSt	StSt / gal Cu
Conductor support Rd	8-10 mm	8-10 mm
Conductor support Fl	20 mm	20 mm
Height of conductor holder	20 mm	20 mm
Thread of conductor holder	M8	M8
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

With female thread, pre-assembled with plastic base

Type LH ZS ...	8.10 FL20 M8 KS CU
Part No.	274 150
Material of conductor holder	StSt
Conductor support Rd	8-10 mm
Conductor support Fl	20 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw, plastic base and plug



Type LH ZS ...	8.10 FL20 KS KD8X40 V2A	8.10 FL20 KS KD8X40 CU
Part No.	**274 160**	**274 167**
Material of conductor holder	StSt	StSt / gal Cu
Conductor support Rd	8-10 mm	8-10 mm
Conductor support Fl	20 mm	20 mm
Height of conductor holder	20 mm	20 mm
Thread of conductor holder	M8	M8
Plastic base	grey	brown
Screw	5 x 50 mm	5 x 50 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

With female thread, e.g. for round wire with plastic sheath

Type LH ZS ...	13 M8 V2A
Part No.	**274 113**
Material of conductor holder	StSt
Conductor support Rd	13 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
PU	50 pc(s)

Conductor Holder with Saddle Clamp – Flat Design

Two-screw clamp with two M6 screws, for round and flat conductors.
With plastic cover disc (grey).

Pre-assembled with wood screw, plastic cover disc (grey) and plug

Type	LH ZS 7.10 FL30 AS KD8X40 V2A
Part No.	**286 819**
Conductor support Rd	7-10 mm
Conductor support Fl	30 mm
Height of conductor holder	10 mm
Material of conductor holder	StSt
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Conductor Holders with Saddle Clamp and Flange

Complete unit with flange for installing conductors, fixed conductor routing.

With M8 female thread

Type LH ZS ...	7.10 IGM8 STTZN ZG
Part No.	**275 110**
Conductor support Rd	7-10 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	St/tZn
Material of base part	ZDC
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw and plug

Type LH ZS ...	7.10 KD8X40 STTZN ZG
Part No.	**275 160**
Conductor support Rd	7-10 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	St/tZn
Material of base part	ZDC
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

With female thread, e.g. for round wire with plastic sheath

Type LH ZS ...	13 IGM8 STTZN ZG
Part No.	**275 113**
Conductor support Rd	11-13 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	St/tZn
Material of base part	ZDC
PU	50 pc(s)

Conductor Holders for External Thermal Insulation Composite Systems

Two-screw clamp with M6 screws, fixed conductor routing.

General technical data:	
Conductor support Rd	7-10 mm
Material of base part	ZDC
Material of clamp	St/tZn
Height of conductor holder	20 mm
Standard	EN 62561-4

Type LH ZS 7.10 AB ...	D10X140 STTZN ZG	D10X180 STTZN ZG
Part No.	**273 740**	**273 741**
Clamping length	70 mm	100 mm
Total length	140 mm	180 mm
Screw, plug	(TX40) 7 x 140 mm	(TX40) 7 x 180 mm
PU	50 pc(s)	50 pc(s)

Type LH ZS 7.10 AB ...	D10X240 STTZN ZG
Part No.	**273 742**
Clamping length	160 mm
Total length	230 mm
Screw, plug	(TX40) 7 x 240 mm
PU	50 pc(s)

Rod Holders DEHNhold

For fixing air-termination and earth entry rods, with slotted saddle clamp, fixed conductor routing.
For use with different materials, e.g. Al, StSt, St/tZn and Cu.

With female thread

Type	LH ZS 16 M8 V2A
Part No.	**274 116**
Material of conductor holder	StSt
Conductor support Rd	16 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
PU	50 pc(s)

Pre-assembled with screw, plastic base and plug

With female thread.

Type	SH ZS 16 KS KD8X40 V2A
Part No.	**274 260**
Material of conductor holder	StSt
Conductor support Rd	16 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Screw	5 x 50 mm
Plastic dowel	Ø8 x 40 mm
PU	50 pc(s)

Rod Holders with Saddle Clamp and Flange

Complete unit with flange for installing air-termination and earth entry rods, fixed conductor routing.

With female thread

Type SH ZS 16 ...	M8 V2A
Part No.	**275 116**
Conductor support Rd	16 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of saddle clamp	St/tZn
Material of base part	ZDC
PU	50 pc(s)

Pre-assembled with screw and plug

Type SH ZS 16 ...	KD8X40 STTZN ZG
Part No.	**275 260**
Conductor support Rd	16 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of saddle clamp	St/tZn
Material of base part	ZDC
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
PU	50 pc(s)

Rod Holders with Clamp and Pin

Two-screw clamp with M6 screws for air-termination and earth entry rods, fixed conductor routing.

With square pin

Type	SH ZS 16 VKS100 STTZN
Part No.	**260 106**
Material of saddle clamp	St/tZn
Material of base part	St/tZn
Conductor support Rd	16 mm
Fixing (l1)	square pin 100 mm
PU	50 pc(s)

Rod Holders for External Thermal Insulation Composite Systems

Two-screw clamp with M6 screws, with flange (ZDC) and plastic plug Ø10 mm.

Type	SH ZS 16 AB D10X180 STTZN ZG
Part No.	**273 731**
Thickness of insulating material	approx. 110 mm
Drilling depth	approx. 190 mm
Material of saddle clamp	St/tZn
Material of base part	ZDC
Height of conductor holder	20 mm
Conductor support Rd	16 mm
Screw / plug	(TX40) 7 x 180 mm
PU	1 pc(s)

Rod Holders DEHNfix

Two-in-one holder system (fixes the holder and the conductor), fixed conductor routing.
Only suitable for solid stone or concrete.

Type	SH DFI 16 STTZN H42 GR
Part No.	**252 000**
Material of saddle clamp	St/tZn
Material of base part	plastic
Colour of conductor holder	grey
Installation height of base part	42 mm
Conductor support Rd	16 mm
Nail plug	100 / 60 mm
Hole Ø for nail plug	10 mm
Drilling depth	60 mm
PU	50 pc(s)

Rod Holder with Claw

For wall mounting with M6 fixing screw, fixed conductor routing.

Type	SH KR 13.16 H28 B6.5 V2A
Part No.	**275 019**
Hole Ø	6.5 mm
Material of conductor holder	StSt
Height of conductor holder	28 mm
Conductor support Rd	13-16 mm
PU	50 pc(s)

Flat Strip Holders DEHNhold

For fixing flat conductors via a slotted clamp, fixed conductor routing.
For use with different materials, e.g. Al, StSt, St/tZn and Cu.

With female thread

Type FBH ZS 30 ...	M8 V2A
Part No.	**274 030**
Material of conductor holder	StSt
Conductor support Fl	30 x 3.5 mm
Conductor support Rd	6-10 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Standard	EN 62561-4
PU	50 pc(s)

Pre-assembled with screw, plastic base and plug

Type FBH ZS 30 ...	KS KD8X40 V2A
Part No.	**274 230**
Material of conductor holder	StSt
Conductor support Fl	30 x 3.5 mm
Conductor support Rd	6-10 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Flat Strip Holders with Clamping Plate – Flat Design

Two-screw clamp with M6 screws.

With slot (6.5 x 16 mm)

Type FBH ZS ...	30 B6.5X16 STTZN	40 B6.5X16 STTZN
Part No.	**284 030**	**284 040**
Height of conductor holder	10 mm	10 mm
Conductor support Fl	30 x 3.5 mm	40 x 4-5 mm
Material of conductor holder	St/tZn	St/tZn
Material of base part	St/tZn	St/tZn
Width of component (l1)	58 mm	70 mm
Standard	EN 62561-4	EN 62561-4
PU	100 pc(s)	100 pc(s)

With slot (6.5 x 16 mm) and pre-assembled wood screw

Type FBH ZS ...	30 B6.5X16 HS5X50 STTZN	30 B6.5X16 HS5X50 V2A
Part No.	**286 030**	**286 139**
Height of conductor holder	10 mm	8.5 mm
Conductor support Fl	30 x 3.5 mm	30 x 3.5 mm
Material of conductor holder	St/tZn	StSt
Material of base part	St/tZn	StSt
Screw	5 x 50 mm	5 x 50 mm
Width of component (l1)	58 mm	58 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Flat Strip Holders with Clamping Plate and Flange

Complete unit with flange for installing flat strips.

With female thread

Type FBH ZS 30 IGM8 ...	STTZN ZG
Part No.	**275 030**
Conductor support Fl	30 x 3.5 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamping plate	St/tZn
Material of base part	ZDC
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw and plug

Type FBH ZS 30 IGM8 ...	KD8X40STTZN ZG
Part No.	**275 230**
Conductor support Fl	30 x 3.5 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamping plate	St/tZn
Material of base part	ZDC
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Flat Strip / Round Conductor Holders with Thrust Piece

For wall mounting.
Thrust piece with M8 screw for installing flat strips up to 11 mm and round conductors 6-10 mm.

Distance from wall 11 mm

General technical data:	
Fixing	Ø13 and 7 x 20 mm
Slot width	12 mm
Material of screw	StSt
Standard	EN 62561-4

Type FRH 11 6.10 ...	WA11 B7 STTZN	WA11 B7 CU
Part No.	**277 230**	**277 237**
Material of conductor holder	St/tZn	Cu
PU	25 pc(s)	25 pc(s)

Type FRH 11 6.10 ...	WA11 B7 V2A
Part No.	**277 239**
Material of conductor holder	StSt
PU	25 pc(s)

Distance from wall 15 mm

Type FRH 11 6.10 ...	WA15 B7 STTZN
Part No.	**277 240**
Material of conductor holder	St/tZn
Fixing	7 x 15 mm
Slot width	12 mm
Material of screw	StSt
Standard	EN 62561-4
PU	25 pc(s)

Staples

Staples for fixing conductors on objects like wooden masts.

Type	KRA 6.10 STTZN
Part No.	**538 010**
Material of conductor holder	St/tZn
Conductor support Rd	6-10 mm
Conductor routing	fixed / loose
PU	500 pc(s)

Anchors for Rigid Foam Boards

For fixing conductor, flat strip and rod holders in external thermal insulation composite systems.
With star drive (TX40).
Mounting with wood screws Ø4.5 mm.

This anchor may only be used for fixing conductor holders if there is no additional traction on the down conductor.

Short design

Type HSPD HS4.5 ...	L50 PA
Part No.	**200 600**
Material	PA
Thickness of insulating material	60 mm
Anchoring depth / length	50 mm
PU	50 pc(s)

Long design

Type HSPD HS4.5 ...	L85 PA
Part No.	**200 601**
Material	PA
Thickness of insulating material	100 mm
Anchoring depth / length	85 mm
PU	50 pc(s)

Wood Screws with Threaded Head

Hanger bolt for fixing conductor, flat strip and rod holders with female thread.

Type HSC ...	8X32 AGM8X13 STGALZN	8X42 AGM8X13 STGALZN
Part No.	**528 850**	**528 870**
Material	St/gal Zn	St/gal Zn
Thread	M8	M8
Total length (l1)	53 mm	73 mm
Thread length (l2)	32 mm	42 mm
PU	1 pc(s)	1 pc(s)

FIX Test Joint

With insulating piece and disconnetion lug.

Type	FTS 8.10 FL30.40 IS STTZN
Part No.	**453 100**
Material	St/tZn
Clamping range Rd / Fl	8-10 / 30-40 mm
Insulating piece	plastic grey
Standard	EN 62561-1
PU	10 pc(s)

Version for conductor Rd / Rd 8-10 mm part no. 453 102 available upon request.
*) For exact assignment, see test certificate.

Inspection Doors

For flush-mounted test joints.

Type StSt with square spanner

For screw mounting
(holes Ø8-10 mm)
with detachable door.

Type RTUP ...	290X230 VKS V2A
Part No.	**476 020**
Material	StSt
Mounting dimensions	200 x 140 mm
Dimensions	290 x 230 mm
PU	1 pc(s)

Type St/tZn with square spanner

For walling in / plastering, with claws (length 60 mm, distance 100 mm).

Type RTUP ...	230X180 VKS STTZN
Part No.	**476 001**
Material	St/tZn
Mounting dimensions	205 x 155 mm
Dimensions	230 x 180 mm
PU	10 pc(s)

Type St/tZn with snap lock

Light design for walling in / plastering, with claws (length 60 mm, distance 100 mm).

Type RTUP ...	230X180 SV STTZN
Part No.	**476 100**
Material	St/tZn
Mounting dimensions	205 x 155 mm
Dimensions	230 x 180 mm
PU	10 pc(s)

UF Test Joint Boxes

For underground installation, for disconnecting the down conductor from the earth-termination system for measuring purposes.

Type GCI – with integrated, easily accessible test joint

Detachable with a key, including terminal for the down conductor and the earthing conductor, open (without bottom).

Type UFTSK ...	7.10 FL40 300X220X120 GG
Part No.	**549 001**
Material	GCI
Colour	black (varnished) ●
Dimensions	300 x 220 x 120 mm
Clamping range Rd / Fl	7-10 / 30-40 mm
Max. permissible load	40 kN
PU	1 pc(s)

Type GCI – without test joint

Open (without bottom).

Type UFTSK ...	300X220X120 GG
Part No.	**549 000**
Material	GCI
Colour	black (varnished) ●
Dimensions	300 x 220 x 120 mm
Max. permissible load	40 kN
PU	1 pc(s)

Type plastic – with integrated, easily accessible test joint

Detachable with a key, including terminal for the down conductor and the earthing conductor, open (without bottom).

Type UFTSK ...	7.10 FL40 197X197X204 K
Part No.	**549 050**
Material	plastic
Colour	grey ●
Dimensions	197 x 197 x 204 mm
Clamping range Rd / Fl	7-10 / 30-40 mm
Max. permissible load	15 kN
PU	1 pc(s)

Type plastic – without test joint

Open (without bottom).

Type UFTSK ...	197X197X204 K
Part No.	**549 051**
Material	plastic
Colour	grey ●
Dimensions	197 x 197 x 204 mm
Max. permissible load	15 kN
PU	1 pc(s)

Type StSt – with integrated, easily accessible test joint

Detachable with a key, including terminal for the down conductor and the earthing conductor, open (without bottom).

Type UFTSK ...	7.10 FL40 200X200X105 V2A
Part No.	**549 090**
Material	StSt
Dimensions	200 x 200 x 105 mm
Clamping range Rd / Fl	7-10 / 30-40 mm
Max. permissible load	40 kN
PU	1 pc(s)

Type StSt – without test joint

Open (without bottom).

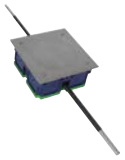
Type UFTSK ...	200X200X105 V2A
Part No.	**549 091**
Material	StSt
Dimensions	200 x 200 x 105 mm
Max. permissible load	40 kN
PU	1 pc(s)

Test Joint Boxes

For concrete construction with integrated test joint and special construction markings.

With rigid connection lugs

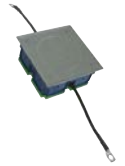
Rd 8 and Rd 10 mm, approx. 200 mm long (insulated).



Type TSK 140X140 V2A ...	AF8 10 L200 STTZN
Part No.	**476 010**
Material of box	plastic
Dimensions of box	140 x 140 x 68 mm
Material of cover	StSt
Dimensions of cover	160 x 160 mm
Standard	EN 62561-1
PU	1 pc(s)

With flexible connection cables

Made from CU (16 mm²) and cable lug made out of Cu/gal Sn (hole 10.5 mm).



Type TSK 140X140 V2A ...	AL16CU
Part No.	**476 016**
Material of box	plastic
Dimensions of box	140 x 140 x 68 mm
Material of cover	StSt
Dimensions of cover	160 x 160 mm
Standard	EN 62561
PU	1 pc(s)

Test Joint Box for External Thermal Insulation Composite Systems

The telescopic test joint box is particularly designed for external thermal insulation composite systems (full thermal insulation). It is continuously adjustable from 90-140 mm. Thanks to the additional spacer, the test joint box can be used for insulation material thicknesses up to 320 mm.

Test joint box with spacer

For insualtion material thicknesses between 140 mm and 320 mm.

Type	TSKS WDVS 185X140X88 AH50.200 K V2A
Part No.	**476 055**
Material of box	PC / ABS
Dimensions of box	185 x 145 mm
Material of cover	StSt
Material of spacer	PP
Dimensions of spacer	120 x 120 x 200 mm
Installation depth	90-320 mm
PU	1 pc(s)

Test joint box

For insulation material thicknesses between 90 mm and 140 mm.

Type	TSK WDVS 180X140X88 K V2A
Part No.	**476 050**
Material of box	PC / ABS
Dimensions of box	185 x 145 mm
Material of cover	StSt
Installation depth	90-140 mm
PU	1 pc(s)

Separate spacer

With styrofoam core (no heat bridge) for combination with the test joint box. Can be shortened by 50 - 200 mm at 10 mm intervals

Type	AH TSK WDVS 50.200 K
Part No.	**476 053**
Material of spacer	PP
Dimensions of spacer	120 x 120 x 200 mm
PU	1 pc(s)

Variable Number Plates

Test joints, down conductors and connection lugs can be marked using the variable number plate. On site, the individual pre-embossed numbers can be quickly inserted into the plate without additional tools. This ensures uniform marking.

Assortment case for number plate, variable

Sortimo assortment case with number marking set.

Content:
100x each of number inset "0", "1", "2", "3", "4", "5", "6", "7", "8", "9"
100x number inset without embossment
100x variable number plate with slot
300x combination head screw StSt M6 x 16 mm
50x carrier plate StSt for VDB test badge
50x saddle clamp Al Rd 7-10 mm
50x saddle clamp Al Rd 16 mm

Type	NS SOB 0.9
Part No.	**490 999**
Material	Plastic
Dimensions	450 x 360 x 120 mm
PU	1 pc(s)

Variable number plate for round / flat conductors

Consisting of a number plate with slots (Part No. 490 100), a saddle clamp (Part No. 480 291) and two combination head screws (Part No. 490 020).

Type	NST 7.10 FL30 ON AL
Part No.	**490 110**
Material of plate	Al
Material of saddle clamp	Al
Clamping range Rd / Fl	7-10 / 30 mm
Material of screw	StSt
Screw	M6 x 16 mm
PU	50 pc(s)

Variable number plate for earth entry rods

Consisting of a number plate with slots (Part No. 490 100), a saddle clamp (Part No. 490 022) and two combination head screws (Part No. 490 020).

Type	NST 16 ON AL
Part No.	**490 116**
Material of plate	Al
Material of saddle clamp	Al
Clamping range Rd	16 mm
Material of screw	StSt
Screw	M6 x 16 mm
PU	50 pc(s)

Number plate with slots

Number plate to hold (un) embossed number insets (e.g. Part No. 490 001).

Type	NST ON AL
Part No.	**490 100**
Material	Al
PU	100 pc(s)

"Customised versions with company name and address are available on request."

Embossed number inset

Embossed number inset for slotting into the number plate (Part No. 490 100, 490 110, 490 116) without tools.

General technical data:	
Material	StSt

Type	NSE 0 V2A	NSE 1 V2A
Part No.	490 000	490 001
Number	0	1
PU	100 pc(s)	100 pc(s)

Type	NSE 2 V2A	NSE 3 V2A
Part No.	490 002	490 003
Number	2	3
PU	100 pc(s)	100 pc(s)

Type	NSE 4 V2A	NSE 5 V2A
Part No.	490 004	490 005
Number	4	5
PU	100 pc(s)	100 pc(s)

Type	NSE 6 V2A	NSE 7 V2A
Part No.	490 006	490 007
Number	6	7
PU	100 pc(s)	100 pc(s)

Type	NSE 8 V2A	NSE 9 V2A
Part No.	490 008	490 009
Number	8	9
PU	100 pc(s)	100 pc(s)

Plain number inset

Plain number inset for slotting into the number plate (Part No. 490 100, 490 110, 490 116) without tools.

Type	NSE BLANK AL
Part No.	490 900
Material	StSt
PU	100 pc(s)

Carrier plate for VDB test badge

For fixing the test badge on the down conductor or earth entry rod.

Type	TS 16 FL30 PP V2A
Part No.	490 021
Material	StSt
Dimensions	84 x 58 x 1 mm
PU	50 pc(s)

Combination head screw

Type	KSS M6X16 V2A
Part No.	490 020
Material	StSt
Screw	M6 x 16 mm
PU	100 pc(s)

Saddle clamp for number plate

Type	ZSUEL 7.10 2XM6 LA38 AL	ZSUEL 16 2XM6 LA38 V2A
Part No.	480 291	490 022
Material	Al	Al
Clamping range Rd / Fl	7-10 / 30 mm	–
Clamping range Rd	–	16 mm
PU	100 pc(s)	100 pc(s)

Accessories for Variable Number Plates

Assortment case, empty

Assortment case with inset boxes in different sizes for sorting the content, and with fast click system for safe transportation.

Type	NS SOB L
Part No.	490 099
Material	Plastic
Dimensions (l x w x h)	450 x 360 x 120 mm
PU	1 pc(s)

All number plates are available with different numbes or lettering on request!

Carrier Plate for VDB Test Badge

For attaching the test badge to the down conductor or earth entry.

For round / flat conductors

Type	TS 7.10 FL30 PP V2A
Part No.	480 113
Material	StSt
Clamping range Rd / Fl	7-10 / 30 mm
Dimensions	84 x 58 x 1 mm
PU	50 pc(s)

Two-Screw Clamp

With M6 thread, for combination with the "Attention! Equipotential bonding" sign (Part No. 480 599) or e.g. with number plates.

Type	ZSUEL 7.10 2XM6 LA38 AL
Part No.	480 291
Material	Al
Clamping range Rd / Fl	7-10 / 30 mm
PU	100 pc(s)

Number plates that can be marked

Numbers from 1 to 999 and also certain combinations, such as A01, b02, C03, d04, etc., can be created with the 7-segment number plate and the accompanying paint marker. The special black paint marker has been tried and tested over a long period of time in use with the number plate, is highly opaque, dries quickly, is weatherproof and extremely light-resistant, as well as abrasion-resistant. Other paints or pens cannot be recommended.
The number plate without pre-embossing can be used for on-site marking with punched numbers 10 mm in size.

Number plate with 7-segment embossing for round / flat conductors

For on-site marking with a paint marker.

Type NS ...	7.10 FL30 7SEG AL
Part No.	**484 000** NEW
Material	Al
Clamping range Rd / Fl	7-10 / 30 mm
PU	50 pc(s)

Number plate with 7-segment embossing for earth entry rods

For on-site marking with a paint marker

Type NS ...	16 7SEG AL
Part No.	**484 001** NEW
Material	Al
Clamping range Rd	16 mm
PU	50 pc(s)

Without number for round / flat conductors

For on-site labelling with punched numbers 0-9, size 10 mm.

Type NS ...	7.10 FL30 OZ AL
Part No.	**480 003**
Material	Al
Clamping range Rd / Fl	7-10 / 30 mm
PU	50 pc(s)

Without number for earth entry rods

For on-site labelling with punched numbers 0-9, size 10 mm.

Type NS ...	16 OZ AL
Part No.	**480 004**
Material	Al
Clamping range Rd	16 mm
PU	50 pc(s)

Accessories for Number plates that can be marked

Edding Paint Marker

Pen for labelling the number plates with 7-segment embossment.

Type	EDD 780 SW
Part No.	**484 010** NEW
Colour	Black
PU	1 pc(s)

All number plates are available with different numbes or lettering on request!

MV Clamps

Multipurpose connecting clamp (MehrzweckVerbindungs-Klemme) for universal use as a cross clamp, T clamp and parallel clamp; two-piece.

With hexagon screw

Thread in the base part.

General technical data:		
Standard		EN 62561-1

Type	MVK 8.10 SKM10X30 STTZN	MVK 8.10 SKM10X30 AL
Part No.	**390 050**	**390 051**
Material of clamp	St/tZn	Al
Clamping range Rd	8-10 mm	8-10 mm
Screw	M10 x 30 mm	M10 x 30 mm
Material of screw / nut	St/tZn	StSt
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	5.5 kA	–
PU	50 pc(s)	50 pc(s)

Type	MVK 8.10 SKM10X30 V2A	MVK 8 SKM10X30 CU
Part No.	**390 059**	**390 057**
Material of clamp	StSt	Cu
Clamping range Rd	8-10 mm	8 mm
Screw	M10 x 30 mm	M10 x 30 mm
Material of screw / nut	StSt	StSt
PU	50 pc(s)	50 pc(s)

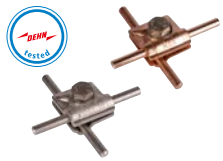
Type	MVK 10 SKM10X35 STTZN	MVK 10 SKM10X35 V2A
Part No.	**391 050**	**391 059**
Material of clamp	St/tZn	StSt
Clamping range Rd	10 mm	10 mm
Screw	M10 x 35 mm	M10 x 35 mm
Material of screw / nut	St/tZn	StSt
PU	50 pc(s)	50 pc(s)

Type	MVK 8.10 SKM10X35 V4A	MVK 10 SKM10X35 V4A
Part No.	**390 079**	**391 058** NEW
Material of clamp	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Clamping range Rd	8-10 mm	10 mm
Screw	M10 x 35 mm	M10 x 35 mm
Material of screw / nut	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	4.7 kA	–
PU	50 pc(s)	50 pc(s)

Note: Part No. 390 079 made of StSt (V4A) can also be used underground.
*) For exact assignment see test certificate.

With hexagon screw and spring washer

Thread in the base part.



General technical data:	
Standard	EN 62561-1

Type	MVK 8.10 SKM10X30 FSC STTZN	MVK 8.10 SKM10X30 FSC AL
Part No.	**390 550**	**390 551**
Material of clamp	St/tZn	Al
Clamping range Rd	8-10 mm	8-10 mm
Screw	M10 x 30 mm	M10 x 30 mm
Material of screw / nut	St/tZn	StSt
PU	50 pc(s)	50 pc(s)

Type	MVK 8.10 SKM10X30 FSC V2A	MVK 8 SKM10X30 FSC CU
Part No.	**390 559**	**390 557**
Material of clamp	StSt	Cu
Clamping range Rd	8-10 mm	8 mm
Screw	M10 x 30 mm	M10 x 30 mm
Material of screw / nut	StSt	StSt
PU	50 pc(s)	50 pc(s)

Type	MVK 10 SKM10X35 FSC STTZN	MVK 10 SKM10X35 FSC V2A
Part No.	**391 550**	**391 559**
Material of clamp	St/tZn	StSt
Clamping range Rd	10 mm	10 mm
Screw	M10 x 35 mm	M10 x 35 mm
Material of screw / nut	St/tZn	StSt
PU	50 pc(s)	50 pc(s)

With hexagon screw and spring washer for air-termination rods

Thread in the base part

Type	MVK 8.10 16 SKM10X40 FSC STTZN	MVK 8.10 16 SKM10X40 FSC V2A
Part No.	**392 050**	**392 059**
Material of clamp	St/tZn	StSt
Clamping range Rd	8-10 / 16 mm	8-10 / 16 mm
Screw	M10 x 40 mm	M10 x 40 mm
Material of screw / nut	St/tZn	StSt
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With truss head screw for air-termination rods

and anti-rotation protection (square hole in the upper part).

Type	MVK 8.10 16 FRM10X40 STTZN	MVK 8.10 16 FRM10X40 V2A
Part No.	**392 060**	**392 069**
Material of clamp	St/tZn	StSt
Clamping range Rd	8-10 / 16 mm	8-10 / 16 mm
Screw	M10 x 40 mm	M10 x 40 mm
Material of screw / nut	St/tZn	StSt
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With truss head screw

and anti-rotation protection (square hole in the upper part).

General technical data:	
Standard	EN 62561-1

Type	MVK 8.10 FRM10X35 STTZN	MVK 8.10 FRM10X35 AL
Part No.	**390 060**	**390 061**
Material of clamp	St/tZn	Al
Clamping range Rd	8-10 mm	8-10 mm
Screw	M10 x 35 mm	M10 x 35 mm
Material of screw / nut	St/tZn	St/tZn
PU	50 pc(s)	50 pc(s)

Type	MVK 8 FRM10X35 CU	MVK 10 FRM10X35 STTZN
Part No.	**390 067**	**391 060**
Material of clamp	Cu	St/tZn
Clamping range Rd	8 mm	10 mm
Screw	M10 x 35 mm	M10 x 35 mm
Material of screw / nut	StSt	St/tZn
PU	50 pc(s)	50 pc(s)

Type	MVK 10 FRM10X35 V2A	MVK 8.10 FRM10X35V2A STTZN
Part No.	**391 069**	**390 063**
Material of clamp	StSt	St/tZn
Clamping range Rd	10 mm	8-10 mm
Screw	M10 x 35 mm	M10 x 35 mm
Material of screw / nut	StSt	StSt
PU	50 pc(s)	50 pc(s)

Type	MVK 10 FRM10X45 V4A	MVK 10 FRM10X35 V4A
Part No.	**391 068** NEW	**391 066** NEW
Material of clamp	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Clamping range Rd	10 mm	10 mm
Screw	M10 x 45 mm	M10 x 35 mm
Material of screw / nut	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
PU	50 pc(s)	50 pc(s)

Bimetallic MV clamp

For connecting conductors made of different materials, with intermediate plate (Cupal) and thread in the base part.

Type	ZMMVK 8 8.10 SKM10X30 CU AL
Part No.	**390 657**
Material of clamp	Cu / Al
Clamping range Rd Cu	8 mm
Clamping range Rd Al	8-10 mm
Screw	M10 x 30 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	50 pc(s)

MV clamps, with locking lug

Multi-purposeconnecting clamp with locking lug for universal use as a cross clamp, T clamp and parallel clamp; two-part.

With hexagon screw

Type MVK AR 8.10 ...	SKM10X40 V4A
Part No.	**391 079**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd	8-10 mm
Screw	M10 x 40 mm
Material of screw / nut	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.9 *) kA
PU	50 pc(s)

*) For exact assignment, see test certificate.

With truss head screw

Type MVK AR 8.10 ...	FRM10X40 V4A
Part No.	**391 070**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd	8-10 mm
Screw	M10 x 40 mm
Material of screw / nut	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.9 *) kA
PU	50 pc(s)

*) For exact assignment, see test certificate.

MMV Clamps

Mini multipurpose connecting clamp (Mini-MehrzweckVerbindungs-Klemme) for universal use as a cross clamp, T clamp and parallel clamp, with anti-rotation protection.

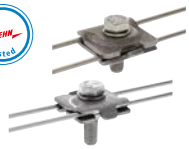
With truss head screw

General technical data:	
Clamping range Rd	6-8 mm
Standard	EN 62561-1

Type	MMVK 6.8 FRM10X35 STTZN	MMVK 6.8 FRM10X35 CU
Part No.	**390 250**	**390 257**
Material of clamp	St/tZn	Cu
PU	50 pc(s)	50 pc(s)

Type	MMVK 6.8 FRM10X35 V2A
Part No.	**390 259**
Material of clamp	StSt
PU	50 pc(s)

With hexagon screw



Type	MMVK 3.5 8.10 SKM8X30 STBLANK	MMVK 3.5 8.10 SKM8X30 V4A
Part No.	**390 565**	**540 271**
Material of clamp	St/bare	StSt (V4A)
Material No.	–	1.4571 / 1.4404 / 1.4401
Clamping range Rd / Rd	8-10 / 3-5 mm	8-10 / 3-5 mm
Clamping range Rd / Rd	3-5 / 3-5 mm	3-5 / 3-5 mm
Standard	EN 62561-1	based on EN 62561-1
PU	50 pc(s)	50 pc(s)

Bimetallic MMV clamp

For connecting conductors made of different materials, with intermediate plate (Cupal).

Type	ZMMVK 6.8 FRM10X35 CU STTZN
Part No.	**390 267**
Material of clamp	Cu / St/tZn
Clamping range Rd Cu	6-8 mm
Clamping range Rd St/tZn	6-8 mm
Standard	EN 62561-1
PU	50 pc(s)

MAXI MV Clamps

MAXI multipurpose connecting clamp (MAXI-Mehrzweck-Verbindungs-Klemme) for universal use as cross clamp, T clamp and parallel clamp, for connecting earth rods or reinforcements; three-part, with thread in the base part.

With hexagon screw

Type MAMVK 8.16 15.25 ...	STTZN	STBL
Part No.	**308 041**	**308 040**
Material of clamp	St/tZn	St/bare
Clamping range Rd	8-16 / 15-25 mm	8-16 / 15-25 mm
Material thickness	3.0 / 2.0 mm	3.0 / 2.0 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.2 kA	10.2 kA
Approvals	–	UL 467
Stock No.	5999-12-362-1557	–
PU	20 pc(s)	20 pc(s)

Clamping Piece Variants

For example as a connection with end piece for constructions or downpipe clamps. Clamping piece with square hole 11 mm and truss head screw.

General technical data:	
Clamping range Rd	6-10 mm
Screw	M10 x 35 mm
Standard	EN 62561-1

Type KB 6.10 FRM10X35 ...	STTZN	CU	V2A
Part No.	**390 150**	**390 157**	**390 159**
Material of clamp	St/tZn	Cu	StSt
Material of screw / nut	St/tZn	StSt	StSt
PU	100 pc(s)	1 pc(s)	100 pc(s)

KS Connectors

Clamping screw connector (KlemmSchrauben-Verbinder) for lightning current carrying connection of round conductors, e.g. to flat profiles, downpipe clamps or other parts of the lightning protection system.

One-piece, St/tZn

With screw and nut M10.

Type	KSV 7.10 STTZN	KSV 7.10 FER STTZN
Part No.	**301 000**	**301 010**
Material of clamping screw	St/tZn	St/tZn
Material of clamp	ZDC	ZDC
Clamping range Rd	7-10 mm	7-10 mm
Type	–	+ spring washer
Standard	EN 62561-1	EN 62561-1
PU	100 pc(s)	100 pc(s)

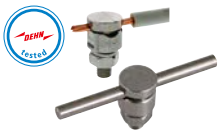
One-piece, Cu

With screw and nut M10.

Type	KSV 6.10 CU	KSV 6.10 FER CU
Part No.	**301 007**	**301 017**
Material of clamping screw	Cu	Cu
Material of clamp	Gunmetal	Gunmetal
Clamping range Rd	6-10 mm	6-10 mm
Connection (single-wire / multi-wire)	25-70 mm²	25-70 mm²
Type	–	+ spring washer
Standard	EN 62561-1	EN 62561-1
PU	100 pc(s)	100 pc(s)

One-piece, StSt

With screw and nut M10.



General technical data:		
Clamping range Rd		6-10 mm
Standard		EN 62561-1

Type	KSV 6.10 V2A	KSV 6.10 V4A
Part No.	**301 009**	**301 089**
Material of clamping screw	StSt	StSt (V4A)
Material of clamp	StSt	StSt (V4A)
Connection (single-wire / multi-wire)	25-70 mm²	25-70 mm²
Type	–	–
PU	100 pc(s)	100 pc(s)

Type	KSV 6.10 FER V2A	KSV 6.10 FER V4A
Part No.	**301 019**	**301 099**
Material of clamping screw	StSt	StSt (V4A)
Material of clamp	StSt	StSt (V4A)
Connection (single-wire / multi-wire)	25-70 mm²	25-70 mm²
Type	+ spring washer	+ spring washer
PU	100 pc(s)	100 pc(s)

Type	UKSV 6.10 AQ16 50 V4A
Part No.	**540 122**
Material of clamping screw	StSt (V4A)
Material of clamp	StSt (V4A)
Connection (single-wire / multi-wire)	16-50 mm²
Type	+ spring washer
PU	25 pc(s)

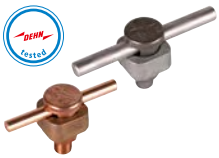
One-piece, long, StSt

With screw and nut M10, length 60 mm.

Type	KSVL 6.10 FER V2A
Part No.	**301 020** NEW
Material of clamping screw	StSt
Material of clamp	StSt
Clamping range Rd	6-10 mm
Connection (single-wire / multi-wire)	25-70 mm²
Type	+ spring washer
Standard	EN 62561-1
PU	50 pc(s)

Heavy design

With screw and nut M12.



Type	KSV 8.12.5 STTZN	KSV 8.12.5 CU
Part No.	**300 002**	**300 017**
Material of clamping screw	St/tZn	Cu
Material of clamp	MCI	Gunmetal
Clamping range Rd	8-12.5 mm	8-12.5 mm
Connection (single-wire / multi-wire)	50-95 mm²	50-95 mm²
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	1 pc(s)

Two-piece, gap 30 mm

With screw and nut M10.

Type	KSV 2X7.10 STTZN
Part No.	**302 010**
Material of clamping screw	St/tZn
Material of clamp	ZDC
Clamping range Rd	7-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Two-piece, gap 40 mm

With screw and nut M10.

Type	AP 2X6.10 V2A
Part No.	**301 229**
Material of clamping screw	StSt
Material of clamp	StSt
Clamping range Rd	6-10 mm
Type	+ spring washer
Standard	EN 62561-1
PU	1 pc(s)

Connectors

For connecting round conductors in T and longitudinal arrangements.

EST connector
One-screw T connector.

Type	ESTV 8 RG
Part No.	**310 008**
Material of clamp	ZDC
Clamping range Rd	8 mm
Standard	EN 62561-1
PU	50 pc(s)

ES connectors
One-screw connectors for longitudinal arrangements.

Type	ESV 8 ZG	ESV 8 RG
Part No.	**309 008**	**309 087**
Material of clamp	ZDC	Gunmetal
Clamping range Rd	8 mm	8 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

ES Disconnecting Clamp

Single-screw disconnecting clamp (Ein-Schrauben-Trenn-klemme) for connecting down conductors with earth entries.

Type	ESTK 8.10 ZG
Part No.	**463 010**
Material	ZDC
Clamping range Rd / Rd	8 / 10 mm
Standard	EN 62561-1
PU	50 pc(s)

Universal Connector

For connecting round conductors in cross, T, and parallel arrangements and for twin conductor connection.

Type	UV 8.10 KTP V2A
Part No.	**315 119**
Material of clamp	StSt
Clamping range Rd	8-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Parallel Connectors

For connecting two conductors in parallel arrangement.

For equal diameters with one screw

Type PV ...	7.10 FRM10X35 STTZN	7.10 FRM10X35 V4A
Part No.	**306 020**	**306 029**
Material of clamp	St/tZn	StSt (V4A)
Material No.	–	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	–	316Ti / 316L / 316
Clamping range Rd / Rd	7-10 mm	7-10 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	4.0 kA	2.9 kA
PU	50 pc(s)	50 pc(s)

For equal diameters with two screws

Type PV ...	7.10 SKM8X20 STTZN	7.10 SKM8X20 CU
Part No.	**307 000**	**307 007**
Material of clamp	St/tZn	Cu
Clamping range Rd / Rd	7-10 mm	7-10 mm
Standard	EN 62561-1	EN 62561-1
Stock No.	5999-12-158-2303	–
PU	50 pc(s)	50 pc(s)

For different diameters with one screw

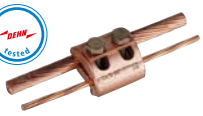
Type PV ...	6.22 FRM10X40 STBLANK	6.22 FRM10X40 STTZN
Part No.	**306 121**	**306 122**
Material of clamp	St/bare	St/tZn
Clamping range Rd / Rd	6-22 / 6-22 mm	6-22 / 6-22 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.1 kA	6.1 kA
PU	50 pc(s)	50 pc(s)

For different diameters 4-10 mm with two scews

Type PV ...	4.10 SKM8X30 STTZN	4.10 SKM8X30 CU
Part No.	**305 000**	**305 007**
Material of clamp	St/tZn	Cu
Clamping range Rd / Rd	4-10 mm	4-10 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	–	13.6 kA
PU	50 pc(s)	50 pc(s)

For equal and different cable diameters, small

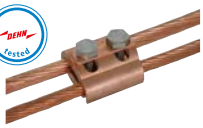
With thread in the base part and lock nut M8.
Specified short-circuit current applies to 70 mm² Cu cable.



Type PV ...	5.12.5 SKM8X45 CU
Part No.	**306 100**
Material of clamp	Cu
Clamping range Rd / Rd	5-12.5 mm
Clamping range (stranded / cable)	16-95 mm²
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	13.6 kA
PU	25 pc(s)

For equal and different cable diameters, large

With thread in the base part and lock nut M10.
Specified short-circuit current applies to 70 mm² Cu cable.



Type PV ...	5.16 SKM10X50 CU
Part No.	**306 101**
Material of clamp	Cu
Clamping range Rd / Rd	5-16 mm
Clamping range (stranded / cable)	16-150 mm²
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	13.6 kA
PU	25 pc(s)

Connecting Sleeves

For longitudinal connection of two round conductors with four screws.

ZDC 8

Type VM ...	8 SKM6X10 ZG
Part No.	**385 203**
Material of clamp	ZDC
Clamping range Rd	8 mm
Screw	M6 x 10 mm
Standard	EN 62561-1
PU	50 pc(s)

ZDC 7-10

Type VM ...	7.10 SKM6X12 ZG
Part No.	**385 202**
Material of clamp	ZDC
Clamping range Rd	7-10 mm
Screw	M6 x 12 mm
Standard	EN 62561-1
PU	50 pc(s)

Al 8

Type VM ...	8 SKM6X8 AL
Part No.	**385 213**
Material of clamp	Al
Clamping range Rd	8 mm
Screw	M6 x 8 mm
Standard	EN 62561-1
PU	50 pc(s)

Cu 8

Type VM ...	8 SKM6X8 CU
Part No.	**385 207**
Material of clamp	Cu
Clamping range Rd	8 mm
Screw	M6 x 8 mm
Standard	EN 62561-1
PU	50 pc(s)

Cross Units for Aboveground Connections

For cross and T connection of conductors.

Without intermediate plate

Type KS ...	8.10 8.10 FL30 OV STTZN	8.10 8.10 FL30 OV CU
Part No.	**314 300**	**314 307**
Material of clamp	St/tZn	Cu
Clamping range Rd / Rd	8-10 / 8-10 mm	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Dimensions	50 x 50 x 2.5 mm	50 x 50 x 2.5 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With intermediate plate

Type KS ...	8.10 8.10 FL30 OV ZP STTZN
Part No.	**314 310**
Material of clamp	St/tZn
Clamping range Rd / Rd	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm
Dimensions	50 x 50 x 2.5 mm
Standard	EN 62561-1
PU	50 pc(s)

With intermediate plate, e.g. for air-termination rods

Type KS ...	16 8.10 FL30 OV ZP STTZN	16 8.10 FL30 OV ZP CU
Part No.	**316 163**	**316 167**
Material of clamp	St/tZn	Cu
Clamping range Rd / Rd	16 / 8-10 mm	16 / 8-10 mm
Clamping range Rd / Fl	16 / 30 mm	16 / 30 mm
Dimensions	50 x 50 x 2.5 mm	50 x 50 x 2.5 mm
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	25 pc(s)

Cross Units for Aboveground and Underground Connections

For cross and T connection.

With intermediate plate, for round and flat conductors

General technical data:	
Clamping range Rd / Rd	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm
Dimensions	60 x 60 x 3 mm
Standard	EN 62561-1

Type KS ...	8.10 8.10 FL30 ZP STTZN	8.10 8.10 FL30 ZP CU
Part No.	319 201	319 207
Material of clamp	St/tZn	Cu
Clamping range (stranded / cable)	–	50-70 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	14 kA	29 kA
PU	25 pc(s)	25 pc(s)

Type KS ...	8.10 8.10 FL30 ZP V4A
Part No.	319 209
Material of clamp	StSt (V4A)
Clamping range (stranded / cable)	50-70 mm²
ASTM / AISI:	316Ti / 316L / 316
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	7 kA
PU	25 pc(s)

With intermediate plate, for round and flat conductors up to 40 mm

Type KS ...	8.10 FL40 STTZN	8.10 FL40 CU
Part No.	321 045	321 047
Material of clamp	St/tZn	Cu
Clamping range Rd / Fl	8-10 / 30-40 mm	8-10 / 30-40 mm
Clamping range Fl / Fl	30-40 / 30-40 mm	30-40 / 30-40 mm
Clamping range (stranded / cable)	–	50-70 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	70 x 70 x 3 mm	70 x 70 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	12.6 kA	35.1 kA
PU	25 pc(s)	25 pc(s)

With intermediate plate, for two round and flat conductors up to 40 mm

Type KS ...	7.10 7.10 FL40 ZP V4A
Part No.	319 229
Material of clamp	StSt (V4A)
Clamping range Rd / Rd	7-10 / 7-10 mm
Clamping range Rd / Fl	7-10 / 30-40 mm
Clamping range Fl / Fl	30-40 / 30-40 mm
Clamping range (stranded / cable)	35-70 mm²
ASTM / AISI:	316Ti / 316L / 316
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	5.0 kA
PU	25 pc(s)

With intermediate plate, for earth entries / air-termination rods

Type KS ...	8.10 16 FL30 ZP STTZN	8.10 16 FL30 ZP V4A
Part No.	319 202	319 219
Material of clamp	St/tZn	StSt (V4A)
Clamping range Rd / Rd	16 / 8-10 mm	16 / 8-10 mm
Clamping range Rd / Fl	16 / 30 mm	16 / 30 mm
Clamping range (stranded / cable)	–	50-70 / 120 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	60 x 60 x 3 mm	60 x 60 x 3 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Without intermediate plate, for round and flat conductors

General technical data:	
Clamping range Rd / Fl	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm
Dimensions	60 x 60 x 3 mm
Standard	EN 62561-1

Type KS ...	8.10 FL30 STTZN	8.10 FL30 CU
Part No.	318 201	318 207
Material of clamp	St/tZn	Cu
Clamping range (stranded / cable)	–	50-70 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	14 kA	29 kA
PU	25 pc(s)	1 pc(s)

Type KS ...	8.10 FL30 V4A
Part No.	318 209
Material of clamp	StSt (V4A)
Clamping range (stranded / cable)	50-70 mm²
ASTM / AISI:	316Ti / 316L / 316
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	7.4 kA
PU	25 pc(s)

Without intermediate plate, for two round and flat conductors

Type KS ...	8.10 8.10 FL30 STTZN	8.10 8.10 FL30 V4A
Part No.	318 251	318 219
Material of clamp	St/tZn	StSt (V4A)
Clamping range Rd / Rd	8-10 / 8-10 mm	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Clamping range (stranded / cable)	–	50-70 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	60 x 60 x 3 mm	60 x 60 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	14 kA	7.4 kA
PU	25 pc(s)	25 pc(s)

Without intermediate plate, for two flat conductors

Type KS ...	FL30 STTZN	FL30 V4A
Part No.	**318 033**	**318 233**
Material of clamp	St/tZn	StSt (V4A)
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	60 x 60 x 3 mm	60 x 60 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	8.4 kA	7.0 kA
PU	25 pc(s)	25 pc(s)

Without intermediate plate, for two flat conductors up to 40 mm

Type KS ...	FL40 STTZN
Part No.	**320 044**
Material of clamp	St/tZn
Clamping range Fl / Fl	30-40 / 30-40 mm
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	12.6 kA
PU	25 pc(s)

Without intermediate plate, for earth entries / air-termination rods

Type KS ...	8.10 16 FL30 STTZN
Part No.	**318 252**
Material of clamp	St/tZn
Clamping range Rd / Rd	8-10 / 16 mm
Clamping range Rd / Fl	16 / 30 mm
Dimensions	60 x 60 x 3 mm
Standard	EN 62561-1
PU	25 pc(s)

Cross Units with Truss Head Screws for Aboveground and Underground Connections

For conductors in cross and T arrangement. Version with anti-rotation protection for mounting with a tool.

With intermediate plate for round and flat conductors

Type KS 8.10 ...	8.10 FL30 ZP FRSM8 STTZN	8.10 FL30 ZP FRSM8 V4A
Part No.	**318 203**	**318 229**
Material of clamp	St/tZn	StSt (V4A)
ASTM / AISI:	–	316Ti / 316L / 316
Clamping range Rd / Rd	8-10 / 8-10 mm	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Clamping range (stranded / cable)	–	50-70 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	60 x 60 x 3 mm	60 x 60 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14 kA	7 kA
PU	1 pc(s)	25 pc(s)

Without intermediate plate for round and flat conductors

Type KS 8.10 ...	FL30 FRSM8 STTZN	FL30 FRSM8 V4A
Part No.	**318 205**	**318 239**
Material of clamp	St/tZn	StSt (V4A)
ASTM / AISI:	–	316Ti / 316L / 316
Clamping range Rd / Fl	8-10 / 30 mm	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Clamping range (stranded / cable)	–	50-70 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	60 x 60 x 3 mm	60 x 60 x 3 mm
Standard	EN 6561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14 kA	7.4 kA
PU	25 pc(s)	25 pc(s)

SV Clamps for Underground Connections

SV clamps (Schräg-Verbinder-Klemmen) for cross and T connections.

Type	SVK 6.28 FL30 STBL
Part No.	**308 062**
Material of clamp	St/bare
Clamping range Rd / Fl	6-28 / 30 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.3 kA
PU	50 pc(s)

SV Clamps for Aboveground and Underground Connections

Diagonal connecting clamps (Schräg-Verbinder-Klemmen) for cross and T connections, screws with anti-rotation protection.

For flat and round conductors

General technical data:	
Clamping range Rd / Rd	7-10 / 7-10 mm
Screw	M10 x 30 mm
Standard	EN 62561-1

Type SVK ...	7.10 7.10 FL30 STTZN	7.10 7.10 FL30 V4A
Part No.	308 220	308 229
Material of clamp	St/tZn	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30 mm	7-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 4 mm	94 x 3 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.3 kA	3.2 kA
PU	25 pc(s)	25 pc(s)

Type SVK ...	7.10 7.10 FL40 STTZN	7.10 7.10 FL40 V4A
Part No.	308 320	308 329
Material of clamp	St/tZn	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30-40 mm	7-10 / 30-40 mm
Clamping range Fl / Fl	30-40 / 30-40 mm	30-40 / 30-40 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	108 x 4 mm	108 x 3 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14.0 kA	14.0 kA
PU	25 pc(s)	25 pc(s)

For one flat and round conductor or two flat conductors

Type SVK ...	7.10 FL30 V4A
Part No.	308 249
Material of clamp	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm
Screw	M10 x 30 mm
ASTM / AISI:	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 3 mm
Standard	EN 62561-1
PU	25 pc(s)

For flat conductors

Type SVK ...	FL30 STTZN	FL30 V4A
Part No.	308 230	308 239
Material of clamp	St/tZn	StSt (V4A)
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Screw	M10 x 30 mm	M10 x 30 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 4 mm	94 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	8.2 kA	3.9 kA
PU	25 pc(s)	25 pc(s)

For flat conductors, round conductors and earth entry rods

Type SVK ...	7.10 16 FL40 STTZN
Part No.	308 330
Material of clamp	St/tZn
Clamping range Rd / Rd	7-10 / 16 mm
Clamping range Rd / Fl	16 / 30-40 mm
Screw	M10 x 30 mm
Dimensions (l1 x d1)	108 x 4 mm
Standard	EN 62561-1
PU	25 pc(s)

SVP Clamps for Aboveground and Underground Connections

Diagonal and parallel connecting clamps (Schräg-Verbinder-Parallel-Klemmen) for cross and parallel connections, with slotted upper part (no need to detach the screws).

Without intermediate plate

Type SVPK 8.10 8.10 FL30 ...	STTZN
Part No.	308 060
Material of clamp	St/tZn
Clamping range Rd / Rd	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm
Standard	EN 62561-1
PU	50 pc(s)

With intermediate plate (slotted)

Type SVPK 8.10 8.10 FL30 ...	ZP STTZN
Part No.	308 070
Material of clamp	St/tZn
Clamping range Rd / Rd	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm
Standard	EN 62561-1
PU	1 pc(s)

Connection Clamps

For connection to steel constructions and steel sheets.

Lengthwise or crosswise connection

Type AK ...	7.10 FRM10X45 KBF0.4 12 TGTZN	7.10 FRM10X45 KBF0.4 12 RG
Part No.	371 009	371 007
Clamping range	0.4-12 mm	0.4-12 mm
Material of clamp	MCI/tZn	Gunmetal
Clamping range Rd	7-10 mm	7-10 mm
Standard	EN 62561-1	EN 62561-1
PU	20 pc(s)	1 pc(s)

Lengthwise connection

Type AK ...	4.10 FRM10X45 KBF0.4 12 TGTZN
Part No.	371 008
Clamping range	0.4-12 mm
Material of clamp	MCI/tZn
Clamping range Rd	4-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Lengthwise or crosswise connection with KS screw

Type AK ...	7.10 KSV KBF1 12 TGTZN
Part No.	370 014
Clamping range	1-12 mm
Material of clamp	MCI/tZn
Clamping range Rd	7-10 mm
Standard	EN 62561-1
PU	25 pc(s)

Longitudinal or cross connection with KS screw, large

Type AK ...	7.10 KSV KBF8 18 TGTZN
Part No.	370 018
Clamping range	8-18 mm
Material of clamp	MCI/tZn
Clamping range Rd	7-10 mm
Standard	EN 62561-1
PU	25 pc(s)

Connection Clamps for Steel Girders

Heavy design, for connection to steel constructions.

Vertical design, with clamping piece

Lengthwise or crosswise connection with clamping piece.

General technical data:	
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type AK ...	6.10 KB S KBF3 18 STTZN	6.10 KB S KBF3 18 V2A
Part No.	372 110	372 119
Clamping range	3-18 mm	3-18 mm
Material of clamp	St/tZn	StSt
PU	25 pc(s)	25 pc(s)

Type AK ...	6.10 KB S KBF18 35 STTZN	6.10 KB S KBF18 35 V2A
Part No.	372 140	372 149
Clamping range	18-35 mm	18-35 mm
Material of clamp	St/tZn	StSt
PU	25 pc(s)	25 pc(s)

Horizontal design, with clamping piece

Lengthwise or crosswise connection with clamping piece.

General technical data:	
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type AK ...	6.10 KB W KBF3 18 STTZN	6.10 KB W KBF3 18 V2A
Part No.	372 210	372 219
Clamping range	3-18 mm	3-18 mm
Material of clamp	St/tZn	StSt
PU	25 pc(s)	25 pc(s)

Type AK ...	6.10 KB W KBF18 35 STTZN	6.10 KB W KBF18 35 V2A
Part No.	372 240	372 249
Clamping range	18-35 mm	18-35 mm
Material of clamp	St/tZn	StSt
PU	25 pc(s)	1 pc(s)

Vertical design, with KS connector

Lengthwise or crosswise connection with KS connector.

General technical data:	
Standard	EN 62561-1

Type AK ...	7.10 KSV S KBF3 18 STTZN	6.10 KSV S KBF3 18 V2A
Part No.	372 120	372 129
Clamping range	3-18 mm	3-18 mm
Material of clamp	St/tZn	StSt
Clamping range Rd	7-10 mm	6-10 mm
PU	25 pc(s)	25 pc(s)

Type AK ...	7.10 KSV S KBF18 35 STTZN	6.10 KSV S KBF18 35 V2A
Part No.	372 150	372 159
Clamping range	18-35 mm	18-35 mm
Material of clamp	St/tZn	StSt
Clamping range Rd	7-10 mm	6-10 mm
PU	25 pc(s)	25 pc(s)

Horizontal design, with KS connector

Lengthwise or crosswise connection with KS connector.

General technical data:	
Standard	EN 62561-1

Type AK ...	7.10 KSV W KBF3 18 STTZN	6.10 KSV W KBF3 18 V2A
Part No.	372 220	372 229
Clamping range	3-18 mm	3-18 mm
Material of clamp	St/tZn	StSt
Clamping range Rd	7-10 mm	6-10 mm
PU	25 pc(s)	25 pc(s)

Type AK ...	7.10 KSV W KBF18 35 STTZN	6.10 KSV W KBF18 35 V2A
Part No.	372 250	372 259
Clamping range	18-35 mm	18-35 mm
Material of clamp	St/tZn	StSt
Clamping range Rd	7-10 mm	6-10 mm
PU	25 pc(s)	25 pc(s)

Connection Clamps with Thrust Piece

For connection to steel constructions and steel sheets with a single-screw technique.

Small design
Lengthwise or crosswise connection.

Type AK 6.10 DS ...	KBF5 18 STTZN	KBF5 18 V2A
Part No.	**372 018**	**372 019**
Clamping range	5-18 mm	5-18 mm
Material of clamp	St/tZn	StSt
Clamping range Rd	6-10 mm	6-10 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

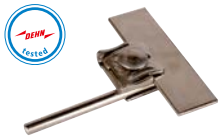
Large design
Lengthwise or crosswise connection.

Type AK 6.10 DS ...	KBF18 35 STTZN
Part No.	**372 035**
Clamping range	18-35 mm
Material of clamp	St/tZn
Clamping range Rd	6-10 mm
Standard	EN 62561-1
PU	25 pc(s)

Seam Clamps

For connecting conductors with seams of the same or of different materials.

With clamping piece
Longitudinal or cross conductor routing.

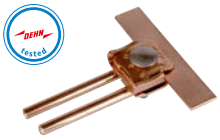


General technical data:	
Clamping range of seam	0.7-8 mm
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type	FK KB 6.10 KBF0.7 8 STTZN	FK KB 6.10 KBF0.7 8 AL
Part No.	**365 030**	**365 031**
Material of clamp	St/tZn	Al
PU	50 pc(s)	50 pc(s)

Type	FK KB 6.10 KBF0.7 8 CU	FK KB 6.10 KBF0.7 8 V2A
Part No.	**365 037**	**365 039**
Material of clamp	Cu	StSt
PU	50 pc(s)	50 pc(s)

With double clamp
Longitudinal or cross conductor routing.



General technical data:	
Clamping range of seam	0.7-8 mm
Clamping range Rd	8-10 mm

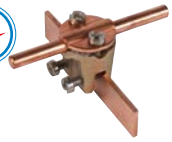
Type	FK DUL 8.10 KBF0.7 8 STTZN	FK DUL 8.10 KBF0.7 8 CU
Part No.	**365 010**	**365 017**
Material of clamp	St/tZn	Cu
Standard	EN 62561-1	EN62561-1
PU	50 pc(s)	50 pc(s)

Type	FK DUL 6.10 KBF0.7 8 V2A
Part No.	**365 019**
Material of clamp	StSt
Standard	EN 62561-1
PU	50 pc(s)

With two-screw clamp
Longitudinal or cross conductor routing.

Type	FK ZS 7.10 KF0.7 8 STTZN	FK ZS 7.10 KF0.7 8 CU
Part No.	**251 002**	**251 027**
Clamping range of seam	0.7-5 mm	0.7-5 mm
Material of clamp	St/tZn	Cu
Clamping range Rd	7-10 mm	7-10 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With two-screw clamp, e.g. for standing seams
Longitudinal or cross conductor routing.



Type	FK ZS 7.10 KBF0.7 6 ZG	FK ZS 7.10 KBF0.7 6 RG
Part No.	**365 000**	**365 007**
Clamping range of seam	0.7-6 mm	0.7-6 mm
Material of clamp	ZDC	Gunmetal
Clamping range Rd	7-10 mm	7-10 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With clamping piece, for hooking under seams
Which are close to a roof or wall surface.
Longitudinal or cross conductor routing.

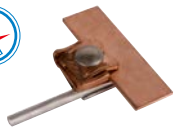
Type	FK KB 6.10 KBF0.7 10 STTZN	FK KB 6.10 KBF0.7 10 CU
Part No.	**365 020**	**365 027**
Clamping range of seam	0.7-10 mm	0.7-10 mm
Material of clamp	St/tZn	Cu
Clamping range Rd	6-10 mm	6-10 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With two-screw clamp, for hooking under seams

Which are close to a roof or wall surface.
Longitudinal or cross conductor routing.

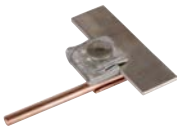
Type	FK ZS 7.10 KBF0.7 10 STTZN	FK ZS 7.10 KBF0.7 10 CU
Part No.	**365 040**	**365 047**
Clamping range of seam	0.7-10 mm	0.7-10 mm
Material of clamp	St/tZn	Cu
Clamping range Rd	7-10 mm	7-10 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Bimetallic, for Cu seams, with intermediate plate (Cupal)



Type	ZMFK KB 6.10 KBF0.7 8 STTZN CU
Part No.	**365 117**
Clamping range of seam	0.7-8 mm
Material of clamp	St/tZn / Cu
Clamping range Rd	6-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Bimetallic, for St/tZn seams, with intermediate plate (Cupal)



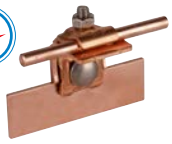
Type	ZMFK KB 6.10 KBF0.7 8 CU STTZN
Part No.	**365 127**
Clamping range of seam	0.7-8 mm
Material of clamp	Cu / St/tZn
Clamping range Rd	6-10 mm
PU	1 pc(s)

Saddle Clamps with Enlarged Contact Surface

For connecting conductors with seams; enlarged contact surface.

Angled design

Longitudinal or cross conductor routing.



General technical data:	
Clamping range of seam	0.7-8 mm
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type FK ...	KB 6.10 KBF0.7 8 W STTZN	KB 6.10 KBF0.7 8 W AL
Part No.	**365 050**	**365 051**
Material of clamp	St/tZn	Al
PU	50 pc(s)	50 pc(s)

Type FK ...	KB 6.10 KBF0.7 8 W CU	KB 6.10 KBF0.7 8 W V2A
Part No.	**365 057**	**365 059**
Material of clamp	Cu	StSt
PU	50 pc(s)	50 pc(s)

Straight design

Longitudinal or cross conductor routing.

General technical data:	
Clamping range of seam	0.7-10 mm
Clamping range Rd	8-10 mm
Standard	EN 62561-1

Type FK ...	MV 8.10 KBF0.7 10 STTZN	MV 8.10 KBF0.7 10 AL
Part No.	**365 220**	**365 221**
Material of clamp	St/tZn	Al
PU	50 pc(s)	50 pc(s)

Type FK ...	MV 8.10 KBF0.7 10 CU	MV 8.10 KBF0.7 10 V2A
Part No.	**365 227**	**365 229**
Material of clamp	Cu	StSt
PU	50 pc(s)	50 pc(s)

Gutter Clamps with Single-screw Technique

For connecting conductors with gutters.

With clamping piece

Type DRK ...	KB 8.10 W16.22 EST STTZN	KB 8.10 W16.22 EST AL
Part No.	**339 100**	**339 101**
Clamping range bead	16-22 mm	16-22 mm
Material of clamp	St/tZn	Al
Clamping range Rd	8-10 mm	8-10 mm
Width	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	1 pc(s)

With double clamping piece

Type DRK ...	DUL 8.10 W16.22 EST STTZN	DUL 8.10 W16.22 EST AL
Part No.	**339 110**	**339 111**
Clamping range bead	16-22 mm	16-22 mm
Material of clamp	St/tZn	Al
Clamping range Rd	8-10 mm	8-10 mm
Width	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Gutter Clamps

For connecting conductors to gutters.

With clamping piece

Longitudinal or cross conductor routing.

General technical data:	
Clamping range bead	16-22 mm
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type	DRK KB 6.10 W16.22 STTZN	DRK KB 6.10 W16.22 AL
Part No.	**339 060**	**339 061**
Material of gutter clamp	St/tZn	Al
Material of conductor clamp	St/tZn	Al
Width / material thickness	40 mm	40 / 3 mm
Material of screw	St/tZn	StSt
PU	25 pc(s)	25 pc(s)

Type	DRK KB 6.10 W16.22 CU	DRK KB 6.10 W16.22 V2A
Part No.	**339 067**	**339 069**
Material of gutter clamp	Cu	StSt
Material of conductor clamp	Cu	StSt
Width / material thickness	40 / 2 mm	40 / 2 mm
Material of screw	StSt	StSt
PU	25 pc(s)	25 pc(s)

With double clamp

Longitudinal or cross conductor routing.

General technical data:	
Clamping range bead	16-22 mm
Clamping range Rd	8-10 mm
Standard	EN 62561-1

Type	DRK DUL 8.10 W16.22 STTZN	DRK DUL 8.10 W16.22 AL
Part No.	**339 050**	**339 051**
Material of gutter clamp	St/tZn	Al
Material of conductor clamp	St/tZn	StSt
Width / material thickness	40 / 2 mm	40 / 3 mm
Material of screw	St/tZn	StSt
PU	25 pc(s)	25 pc(s)

Type	DRK DUL 8.10 W16.22 CU	DRK DUL 8.10 W16.22 V2A
Part No.	**339 057**	**339 059**
Material of gutter clamp	Cu	StSt
Material of conductor clamp	Cu	StSt
Width / material thickness	40 / 2 mm	40 / 2 mm
Material of screw	StSt	StSt
PU	25 pc(s)	25 pc(s)

Bimetallic, for gutters (Cu), with clamping piece (St/tZn) and intermediate plate (Cupal)

Type	ZMDRK KB 6.10 W16.22 CU STTZN
Part No.	**339 167**
Clamping range bead	16-22 mm
Material of gutter clamp	Cu / St/tZn
Clamping range Rd	6-10 mm
Material of screw	StSt
Standard	EN 62561-1
PU	1 pc(s)

Bimetallic, for gutters (Cu), with double clamp (St/tZn) and intermediate plate (Cupal)

Type	ZMDRK DUL 8.10 W16.22 CU STTZN
Part No.	**339 157**
Clamping range bead	16-22 mm
Material of gutter clamp	Cu / St/tZn
Clamping range Rd	8-10 mm
Material of screw	StSt
Standard	EN 62561-1
PU	25 pc(s)

With two-screw clamp, width 40 mm

Longitudinal conductor routing.

General technical data:	
Clamping range bead	13-25 mm
Clamping range Rd	7-10 mm
Material of screw	StSt
Standard	EN 62561-1

Type	DRK ZS 7.10 W13.25 STTZN	DRK ZS 7.10 W13.25 AL
Part No.	**338 000**	**338 001**
Material of gutter clamp	St/tZn	Al
Material of conductor clamp	St/tZn	Al
Width / material thickness	40 / 3 mm	40 / 3 mm
PU	25 pc(s)	25 pc(s)

Type	DRK ZS 7.10 W13.25 CU	DRK ZS 7.10 W13.25 V2A
Part No.	**338 007**	**338 009**
Material of gutter clamp	Cu	StSt
Material of conductor clamp	Cu	StSt
Width / material thickness	40 / 3 mm	40 / 2,5 mm
PU	25 pc(s)	25 pc(s)

With two-screw clamp, width 60 mm

Longitudinal conductor routing.

Type	DRK ZS 7.10 W13.25 B60 STTZN
Part No.	**339 010**
Clamping range bead	13-25 mm
Material of gutter clamp	St/tZn
Clamping range Rd	7-10 mm
Material of conductor clamp	St/tZn
Width / material thickness	60 / 2.5 mm
Material of screw	StSt
Standard	EN 62561-1
PU	25 pc(s)

Snow Guard Clamps

For connecting conductors to snow guards, longitudinal connection with two-screw clamp.

Type SGK ZS 7.10 KB3.13 ...	STTZN	CU
Part No.	**343 000**	**343 007**
Clamping range	3-13 mm	3-13 mm
Material of clamp	St/tZn	Cu
Width	90 mm	90 mm
Clamping range Rd	7-10 mm	7-10 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	1 pc(s)

Connection Brackets

For connecting metal cladding using blind rivets or screws.

With square hole

Dimensions 11 x 11 mm (e.g. for M10 KS connector), longitudinal or cross connection.

General technical data:		
Fixing		[4x] Ø5.2 / [2x] Ø6.5 mm
Standard		EN 62561-1

Type AL ZF ...	B11.11 B5.2 6.5 L81 AL	B11.11 B5.2 6.5 L81 CU
Part No.	**377 005**	**377 017**
Material of bracket	Al	Cu
PU	50 pc(s)	50 pc(s)

Type AL ZF ...	B11.11 B5.2 6.5 L81 V2A
Part No.	**377 009**
Material of bracket	StSt
PU	50 pc(s)

With clamping piece

Longitudinal or cross connection.

Type AL ZF ...	KB 6.10STTZN B5.2 6.5 L81 AL
Part No.	**377 100**
Material of bracket	Al
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Material of clamping piece	St/tZn
Clamping range Rd	6-10 mm
Standard	EN 62561-1
PU	50 pc(s)

With double clamp

Longitudinal or cross connection.

Type AL ZF ...	DUL 6.10 B5.2 6.5 L81 AL
Part No.	**377 200**
Material of bracket	Al
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Material of double clamp	Al
Clamping range Rd	8-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Clamping Shoes

For connecting conductors to structural parts.

With hole

Type KS ...	8 B11 STTZN	10 B11 STTZN
Part No.	**345 008**	**345 010**
Clamping range Rd	8 mm	10 mm
Material	St/tZn	St/tZn
Fixing hole Ø	11 mm	11 mm
PU	100 pc(s)	100 pc(s)

With screws

Type KS ...	7.10 B10.5 AL
Part No.	**347 205**
Clamping range Rd	7-10 mm
Material	Al
Fixing hole Ø	10.5 mm
Standard	EN 62561-1
PU	100 pc(s)

Clamping Piece

For connecting flat material to structural parts or, for example, connection clamps for steel girders (without a hole in the flat strip).

Type	KS B11.11 FL30X4 V2A
Part No.	**380 129**
Clamping range Fl	up to 30 x 4 mm
Material	StSt
Fixing	square hole 11 x 11 mm
Standard	EN 62561-1
PU	50 pc(s)

FS Clamps (Air-termination Rod Clamps)

For connecting air-termination rods/tips to one or two conductors. Connection of two conductors improves the lightning current distribution and thus reduces the separation distance.

For air-termination tip 10 mm

With truss head screw, plate, nut and double conductor clamp.

Type FSK ...	3X8.10 FRM10X50 AL
Part No.	**380 110**
Material of clamp	Al
Clamping range of air-termination tip	8-10 mm
Clamping range Rd	2x 8-10 mm
Material of plate	StSt
Standard	EN 62561-1
PU	50 pc(s)

For air-termination rod 16 mm

With truss head screw, plate, nut and double conductor holder.

Type FSK ...	2X8.10 16 FRM10X50 AL
Part No.	**380 116**
Material of clamp	Al
Clamping range of air-termination rod	16 mm
Clamping range Rd	2x 8-10 mm
Material of plate	StSt
Standard	EN 62561-1
PU	50 pc(s)

Rod Clamps

For connecting air-termination rods to conductors, for longitudinal connection of all conductor materials.
Cross connection (cross arrangement) only St/tZn and StSt.

Type FSK 8.10 16 SKM10X25 ...	STTZN	V2A
Part No.	**380 020**	**380 029**
Material of clamp	St/tZn	StSt
Clamping range Rd / Rd	8-10 / 16 mm	8-10 / 16 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Connecting Sleeve for Air-Termination Rods

With embossings (stop) for connecting longer air-termination rods (transport length).
When using the connecting sleeve, the air-termination rod must be additionally fixed above the sleeve.

Type	VM 16 SKM8X12 AL
Part No.	**385 216**
Material	Al
Clamping range Rd / Rd	16 / 16 mm
Screw	M8 x 12 mm
Material of screw	StSt
Outside diameter Ø	28 mm
Standard	EN 62561-1
PU	10 pc(s)

MV Clamps for Air-Termination Rods

Multi-purpose connecting clamp for universal use as a cross clamp, T clamp and parallel clamp; two-piece.

With hexagon screw, spring washer and thread in the base part

Type MVK 8.10 16 ...	SKM10X40 FSC STTZN	SKM10X40 FSC V2A
Part No.	**392 050**	**392 059**
Material of clamp	St/tZn	StSt
Clamping range Rd	8-10 / 16 mm	8-10 / 16 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With truss head screw and anti-rotation protection

Type MVK 8.10 16 ...	FRM10X40 STTZN	FRM10X40 V2A
Part No.	**392 060**	**392 069**
Material of clamp	St/tZn	StSt
Clamping range Rd	8-10 / 16 mm	8-10 / 16 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Cupal Sleeves

For corrosion-resistant connection of steel or aluminium with copper.

Pushed onto cut conductors

Note: Rd 8 mm = 50 mm²

General technical data:		
Material thickness		1.0 mm

Type CUPAH ...	GL Q25 L29 AL CU	GL Q35 L32 AL CU
Part No.	**562 250**	**562 035**
Material outside	Al	Al
Material inside	Cu	Cu
Cross-section	25 mm²	35 mm²
Length	29 mm	32 mm
Inside diameter Ø	6.3 mm	7.5 mm
Outside diameter Ø	8.3 mm	9.5 mm
PU	100 pc(s)	100 pc(s)

Type CUPAH ...	GL Q50 L40 AL CU	GL Q35 L32 CU AL
Part No.	**562 050**	**562 135**
Material outside	Al	Cu
Material inside	Cu	Al
Cross-section	50 mm²	35 mm²
Length	40 mm	32 mm
Inside diameter Ø	8.2 mm	7.5 mm
Outside diameter Ø	10.0 mm	9.5 mm
PU	100 pc(s)	100 pc(s)

Type CUPAH ...	GL Q50 L40 CU AL
Part No.	**562 150**
Material outside	Cu
Material inside	Al
Cross-section	50 mm²
Length	40 mm
Inside diameter Ø	8.2 mm
Outside diameter Ø	10.0 mm
PU	100 pc(s)

Attached to uncut conductors

Note: Rd 8 mm = 50 mm²

Type CUPAH ...	UGL Q50 L60 AL CU	UGL Q50 L60 CU AL
Part No.	**562 001**	**562 101**
Material outside	Al	Cu
Material inside	Cu	Al
Cross-section	50 mm²	50 mm²
Length	60 mm	60 mm
Inside diameter Ø	8.5 mm	8.5 mm
Outside diameter Ø	9.5 mm	9.5 mm
Material thickness	0.5 mm	0.5 mm
PU	100 pc(s)	100 pc(s)

Cupal Sheets

Metal strips for corrosion-resistant connection of steel or aluminium with copper.

Type CUPAB ...	500X40X0.5 AL CU	500X60X0.5 AL CU
Part No.	**562 440**	**562 460**
Material	Al / Cu	Al / Cu
Dimensions	500 x 40 x 0.5 mm	500 x 60 x 0.5 mm
PU	1 pc(s)	1 pc(s)

UNI Disconnecting Clamps

For connecting down conductors with earth entries or for connecting conductors made of different materials.

With intermediate plate for two round conductors

Type	UTK 8.10 8.10 ZP V2A	UTK 8.10 8.10 ZP CU
Part No.	**459 129**	**459 127**
Material	StSt	Cu
Clamping range Rd / Rd	8-10 / 8-10 mm	8-10 / 8-10 mm
Distance between screws	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	1 pc(s)

Bimetallic, for two round conductors (Cu and St/tZn or StSt (V4A))

Type	ZMTK 8.10 8.10 CU STTZN
Part No.	**460 517**
Material	Cu / St/tZn
Clamping range Rd / Rd	8-10 / 8-10 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

With intermediate plate for a round and a flat conductor

Type	UTK 8.10 FL30 ZP V2A
Part No.	**459 139**
Material	StSt
Clamping range Rd / Fl	8-10 / 30 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

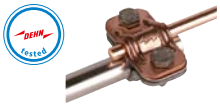
Bimetallic, for a round Cu conductor and a flat St/tZn or StSt (V4A) conductor

Type	ZMTK 8.10 FL30 CU STTZN
Part No.	**460 557**
Material	Cu / St/tZn
Clamping range Rd / Fl	8-10 / 30 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

With intermediate plate for earth entry rods

Type	UTK 8.10 16 ZP V2A
Part No.	**459 119**
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

Bimetallic, for a round Cu conductor and a St/tZn or StSt (V4A) earth entry rod



Type	ZMTK 8.10 16 CU STTZN
Part No.	**460 507**
Material	Cu / St/tZn
Clamping range Rd / Rd	8-10 / 16 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	1 pc(s)

With intermediate plate for two round conductors, narrow design

Type	UTK 7.10 7.10 S ZP STTZN
Part No.	**459 003**
Material	St/tZn
Clamping range Rd / Rd	7-10 / 7-10 mm
Distance between screws	30 mm
Standard	EN 62561-1
PU	50 pc(s)

With intermediate plate for earth entry rods, narrow design

Type	UTK 7.10 16 S ZP STTZN
Part No.	**459 000**
Material	St/tZn
Clamping range Rd / Rd	7-10 / 16 mm
Distance between screws	30 mm
Standard	EN 62561-1
PU	50 pc(s)

With intermediate plate for an earth entry rod and a flat conductor

Type	UTK 16 FL30 ZP V2A
Part No.	459 159
Material	StSt
Clamping range Rd / Fl	16 / 30 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

Without intermediate plate for two round conductors

Type	UTK 8.10 8.10 V2A	UTK 8.10 8.10 STTZN
Part No.	459 029	459 020
Material	StSt	St/tZn
Clamping range Rd / Rd	8-10 / 8-10 mm	8-10 / 8-10 mm
Distance between screws	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Without intermediate plate for a round and a flat conductor

Type	UTK 8.10 FL30 V2A	UTK 8.10 FL30 STTZN
Part No.	459 039	459 030
Material	StSt	St/tZn
Clamping range Rd / Fl	8-10 / 30 mm	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	–
Distance between screws	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Without intermediate plate for earth entry rods

Type	UTK 8.10 16 V2A	UTK 8.10 16 STTZN
Part No.	459 019	459 010
Material	StSt	St/tZn
Clamping range Rd / Rd	8-10 / 16 mm	8-10 / 16 mm
Distance between screws	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	1 pc(s)

Disconnecting Clamp – Austrian Standard

With connecting screw, for round conductors.

Type	OENTK 7.10 7.10 ZG
Part No.	460 213
Material	ZDC
Clamping range Rd / Rd	7-10 / 7-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Connecting / Disconnecting Clamps

Two-piece or three-piece connection system with thread in the base part.

Two-piece, for a round and a flat conductor

Type VTK ...	7.10 FL30.40 STTZN	7.10 FL30.40 CU
Part No.	454 100	454 107
Material	St/tZn	Cu
Clamping range Rd / Fl	7-10 / 30-40 mm	7-10 / 30-40 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Three-piece, (with intermediate plate) for a round and a flat conductor

Type VTK ...	5.10 FL30.40 ZP STTZN
Part No.	454 000
Material	St/tZn
Clamping range Rd / Fl	5-10 / 30-40 mm
Standard	EN 62561-1
PU	25 pc(s)

Two-piece, for two flat conductors

Type VTK ...	FL30 TGTZN
Part No.	455 000
Material	MCI/tZn
Clamping range Fl / Fl	30 / 30 mm
Standard	EN 62561-1
PU	1 pc(s)

Disconnecting Sleeves

For connecting down conductors with earth entry rods.

Open design for earth entry rods

Type TM ...	7.10 16 ZG	7.10 16 RG
Part No.	450 000	450 007
Material	ZDC	Gunmetal
Clamping range Rd / Rd	7-10 / 16 mm	7-10 / 16 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	1 pc(s)

Open design for earth entry rods

Type TM ...	7.10 16 AL
Part No.	450 001
Material	Al
Clamping range Rd / Rd	8-10 / 16 mm
Standard	EN 62561-1
PU	50 pc(s)

Closed design for earth entry rods

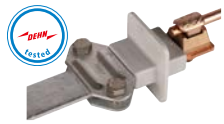
Type TM ...	G 7.10 16 ZG
Part No.	**450 011**
Material	ZDC
Clamping range Rd / Rd	7-10 / 16 mm
Standard	EN 62561-1
PU	50 pc(s)

Open design for wires

Type TM ...	8.10 8 AL
Part No.	**450 101**
Material	Al
Clamping range Rd / Rd	8-10 / 8 mm
Standard	EN 62561-1
PU	50 pc(s)

Bimetallic Disconnecting Clamp with Shield

Bimetallic version for connecting conductors made of different materials.



Type	ZMTK 6.10 FL30.40 CU STTZN
Part No.	**460 147**
Material	Cu / St/tZn
Clamping range Rd / Fl	6-10 / 30-40 mm
Shield	plastic grey
Standard	EN 62561-1
PU	1 pc(s)

Connecting components 200 kA (10/350 µs)

For use in class of LPS I and II (LPL I, II).
Clamps are tested with a 200 kA (10/350 µs) lightning impulse current, based on EN 62561-1.

UNI disconnecting clamp for two round conductors

Type	UTK 200 2X10 FL30 ZP V2A
Part No.	**459 200**
Material	StSt
Clamping range Rd / Rd	10 / 10 mm
Clamping range Rd / Fl	10 / 30 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

UNI disconnecting clamp for earth entry rods

Type	UTK 200 8.10 16 ZP V2A
Part No.	**459 219**
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

Clamping piece

Type	KS 200 B11.11 FL30X4 V2A
Part No.	**380 209**
Material	StSt
Clamping range Fl	30 x 4 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

KS connector

Type	KSV 200 10 FER V2A
Part No.	**301 209**
Material	StSt
Clamping range Rd	10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp for round conductors

Type	MVK 200 8.10 SKM10X30 V2A
Part No.	**390 209**
Material	StSt
Clamping range Rd / Rd	8-10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp for air-termination rods

Type	MVK 200 8.10 16 SKM10X40 FSC V2A
Part No.	**392 209**
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

*) For exact classification, see test certificate.

Air-Termination Rods / Tips

For protecting roof-mounted structures, chimneys, etc., also for erection with concrete base.
Additional fasteners, e.g. DEHNiso spacers, are necessary depending on the gust wind speed.

Note: Permissible roof loads have to be considered and checked with the constructor where required.

Diameter 10 mm, chamfered

Especially for concrete base (8.5 kg) with fixing wedge (Part No. 102 075) or for fixing using conductor holders.

General technical data:	
Total length (l1)	1000 mm
Diameter Ø	10 mm
Standard	EN 62561-2

Type	FS 10 1000 AL	FS 10 1000 V2A
Part No.	101 000	101 009
Material	AlMgSi	StSt
PU	20 pc(s)	20 pc(s)

Type	FS 10 1000 CU
Part No.	101 007
Material	Cu
PU	20 pc(s)

Diameter 16 mm, chamfered

General technical data:	
Diameter Ø	16 mm
Standard	EN 62561-2

Type	FS 16 1500 AL	FS 16 2000 AL
Part No.	104 150	104 200
Total length (l1)	1500 mm	2000 mm
Material	AlMgSi	AlMgSi
PU	10 pc(s)	10 pc(s)

Type	FS 16 2500 AL	FS 16 3000 AL
Part No.	104 250	104 300
Total length (l1)	2500 mm	3000 mm
Material	AlMgSi	AlMgSi
PU	10 pc(s)	10 pc(s)

Type	FS 16 1000 STTZN	FS 16 1250 STTZN
Part No.	483 100	483 125
Total length (l1)	1000 mm	1250 mm
Material	St/tZn	St/tZn
PU	10 pc(s)	10 pc(s)

Type	FS 16 1500 STTZN	FS 16 2000 STTZN
Part No.	483 150	483 200
Total length (l1)	1500 mm	2000 mm
Material	St/tZn	St/tZn
PU	10 pc(s)	1 pc(s)

With tapering, chamfered

Length of tapering 1000 mm.

General technical data:	
Material	AlMgSi
Diameter Ø	16 / 10 mm
Type	chamfered
Standard	EN 62561-2

Type	FS 16 10 1500 AL	FS 16 10 2000 AL
Part No.	103 210	103 220
Total length (l1)	1500 mm	2000 mm
PU	10 pc(s)	10 pc(s)

Type	FS 16 10 2500 AL	FS 16 10 3000 AL
Part No.	103 230	103 240
Total length (l1)	2500 mm	3000 mm
PU	10 pc(s)	10 pc(s)

Type	FS 16 10 3500 AL	FS 16 10 4000 AL
Part No.	103 250	103 260
Total length (l1)	3500 mm	4000 mm
PU	10 pc(s)	10 pc(s)

Type	FS 16 10 5000 AL
Part No.	103 280
Total length (l1)	5000 mm
PU	10 pc(s)

With tapering, M16 thread

Length of tapering 1000 mm.

General technical data:	
Material	AlMgSi
Diameter Ø	16 / 10 mm
Type	M16
Standard	EN 62561-2

Type	FS M16 10 1500 AL	FS M16 10 2000 AL
Part No.	103 211	103 221
Total length (l1)	1500 mm	2000 mm
PU	10 pc(s)	10 pc(s)

Type	FS M16 10 2500 AL	FS M16 10 3000 AL
Part No.	103 231	103 241
Total length (l1)	2500 mm	3000 mm
PU	10 pc(s)	10 pc(s)

Type	FS M16 10 3500 AL	FS M16 10 4000 AL
Part No.	103 251	103 261
Total length (l1)	3500 mm	4000 mm
PU	10 pc(s)	10 pc(s)

With forged lug

And clamping screw for connecting Rd 7-10 mm.

Type	FSS 16 1000 KS STTZN	FSS 16 1500 KS STTZN
Part No.	100 100	100 150
Total length (l1)	1000 mm	1500 mm
Material	St/tZn	St/tZn
Diameter Ø	16 mm	16 mm
Terminal clamping range	7-10 mm	7-10 mm
Standard	EN 62561-(1+2)	EN 62561-(1+2)
PU	10 pc(s)	10 pc(s)

Tubular air-termination rods with tapering 16 / 10 mm

Light design; length of tapering 1000 mm.

General technical data:		
Diameter Ø		16 / 10 mm
Standard		EN 62561-2

Type	RFS 16 10 1500 AL	RFS 16 10 2000 AL
Part No.	103 410	103 420
Total length (l1)	1500 mm	2000 mm
Material	AlMgSi	AlMgSi
PU	10 pc(s)	10 pc(s)

Type	RFS 16 10 2500 AL	RFS 16 10 3000 AL
Part No.	103 430	103 440
Total length (l1)	2500 mm	3000 mm
Material	AlMgSi	AlMgSi
PU	10 pc(s)	10 pc(s)

Type	RFS 16 10 3500 AL	RFS 16 10 4000 AL
Part No.	103 450	103 460
Total length (l1)	3500 mm	4000 mm
Material	AlMgSi	AlMgSi
PU	10 pc(s)	10 pc(s)

Type	RFS 16 10 5000 AL	RFS 16 10 1500 CU
Part No.	103 480	103 417
Total length (l1)	5000 mm	1500 mm
Material	AlMgSi	Cu
PU	10 pc(s)	10 pc(s)

Type	RFS 16 10 1500 V2A	RFS 16 10 2000 V2A
Part No.	103 419	103 429
Total length (l1)	1500 mm	2000 mm
Material	StSt	StSt
PU	10 pc(s)	10 pc(s)

Type	RFS 16 10 2500 V2A	RFS 16 10 3000 V2A
Part No.	103 439	103 449
Total length (l1)	2500 mm	3000 mm
Material	StSt	StSt
PU	10 pc(s)	10 pc(s)

Diameter 16 mm, cut to length on site

Type	FS 16 6000 AL
Part No.	104 600
Total length (l1)	6000 mm
Material	AlMgSi
Diameter Ø	16 mm
Standard	EN 62561-2
PU	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Rod Holders DEHNhold

For fixing air-termination and earth entry rods, with slotted saddle clamp, fixed conductor routing.
For use with different materials, e.g. Al, StSt, St/tZn and Cu.

With female thread

Type	LH ZS 16 M8 V2A
Part No.	274 116
Material of conductor holder	StSt
Conductor support Rd	16 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
PU	50 pc(s)

Pre-assembled with screw, plastic base and plug

With female thread.

Type	SH ZS 16 KS KD8X40 V2A
Part No.	274 260
Material of conductor holder	StSt
Conductor support Rd	16 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Screw	5 x 50 mm
Plastic dowel	Ø8 x 40 mm
PU	50 pc(s)

Self-supporting Air-Termination Rods 2.5 to 3.5 m

Concrete Bases	Support Plates
8.5 kg, Part No. 102 075	Part No. 102 060
17 kg, Part No. 102 010	Part No. 102 050

With tripod for protecting roof-mounted structures, adjustable to a roof inclination up to max. 10°.

The concrete base (Part No. 102 075 or 102 010) and the base plate (Part No. 102 060 or 102 050) have to be ordered separately.

Note: Permissible roof loads have to be considered and checked with the constructor where required.

General technical data:	
Radius	320 mm
Space required for tripod with 3 bases, 8.5 kg each (l x w)	730 x 800 mm
Space required for tripod with 3 bases, 17 kg each (l x w)	850 x 930 mm
Material of air-termination rod	Al
Material of tripod	St/tZn
Standard	EN 62561-(1+2)

Type FS 22 16 10 ...	2500 AL DBS R320 STTZN	3000 AL DBS R320 STTZN
Part No.	**105 525**	**105 530**
Height	2500 mm	3000 mm
Max. gust wind speed for 3 bases, 8.5 kg each	137 km/h	112 km/h
Max. gust wind speed for 3 bases, 17 kg each	185 km/h	168 km/h
PU	1 pc(s)	1 pc(s)

Type FS 22 16 10 ...	3500 AL DBS R320 STTZN
Part No.	**105 535**
Height	3500 mm
Max. gust wind speed for 3 bases, 8.5 kg each	95 km/h
Max. gust wind speed for 3 bases, 17 kg each	135 km/h
PU	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Self-supporting Air-Termination Rods 4 to 9 m

With hinged tripod for protecting larger roof-mounted structures, adjustable to the roof inclination up to max. 10°.
The stackable concrete base (Part No. 102 010) and the base plate (Part No. 102 050) have to be ordered separately.

Note: Permissible roof loads have to be considered and checked with the constructor where required.

Height up to 5.5 m

General technical data:	
Radius	560 mm
Space required for tripod	1210 x 1340 mm
Material of tripod	St/tZn
Material of air-termination rod	Al
Standard	EN 62561-(1+2)

Type FS D40 ...	16 10 4000 AL DBS KB STTZN	22 16 10 4500 AL DBS KB STTZN
Part No.	**105 400**	**105 450**
Height	4000 mm	4500 mm
Max. gust wind speed for 3 bases, 17 kg each	132 km/h	117 km/h
Max. gust wind speed for 6 bases, 17 kg each	184 km/h	163 km/h
Max. gust wind speed for 9 bases, 17 kg each	185 km/h	186 km/h
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 5000 AL DBS KB STTZN	22 16 10 5500 AL DBS KB STTZN
Part No.	**105 500**	**105 550**
Height	5000 mm	5500 mm
Max. gust wind speed for 3 bases, 17 kg each	99 km/h	93 km/h
Max. gust wind speed for 6 bases, 17 kg each	132 km/h	121 km/h
Max. gust wind speed for 9 bases, 17 kg each	163 km/h	147 km/h
PU	1 pc(s)	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Height up to 9 m with adjustable StSt braces Ø10 mm

General technical data:	
Radius	1435 mm
Space required for tripod	2530 x 2850 mm
Material of tripod	St/tZn
Material of air-termination rod	Al
Standard	EN 62561-(1+2)

Type FS D40 ...	16 10 6000 AL DBS KB STTZN	22 16 10 6500 AL DBS KB STTZN
Part No.	**105 600**	**105 650**
Height	6000 mm	6500 mm
Max. gust wind speed for 3 bases, 17 kg each	110 km/h	105 km/h
Max. gust wind speed for 6 bases, 17 kg each	137 km/h	132 km/h
Max. gust wind speed for 9 bases, 17 kg each	170 km/h	159 km/h
Max. gust wind speed for 12 bases, 17 kg each	187 km/h	187 km/h
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 7000 AL DBS KB STTZN	22 16 10 7500 AL DBS KB STTZN
Part No.	**105 700**	**105 750**
Height	7000 mm	7500 mm
Max. gust wind speed for 3 bases, 17 kg each	96 km/h	93 km/h
Max. gust wind speed for 6 bases, 17 kg each	120 km/h	112 km/h
Max. gust wind speed for 9 bases, 17 kg each	137 km/h	135 km/h
Max. gust wind speed for 12 bases, 17 kg each	163 km/h	149 km/h
PU	1 pc(s)	1 pc(s)

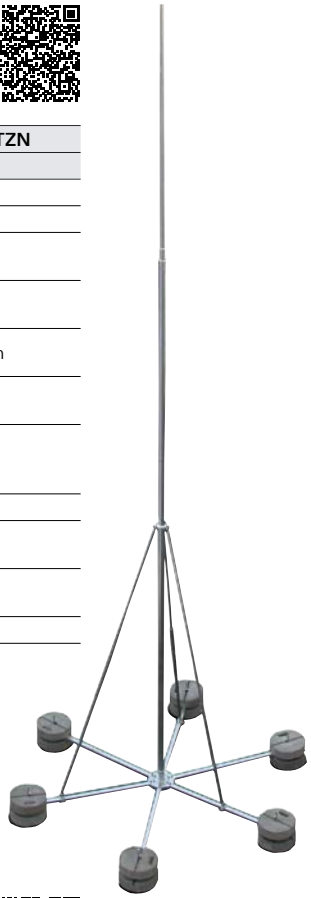
Type FS D40 ...	16 10 8000 AL DBS KB STTZN	22 16 10 8500 AL DBS KB STTZN	22 16 10 9000 AL DBS KB STTZN
Part No.	**105 800**	**105 850**	**105 900**
Height	8000 mm	8500 mm	9000 mm
Max. gust wind speed for 3 bases, 17 kg each	–	–	–
Max. gust wind speed for 6 bases, 17 kg each	105 km/h	101 km/h	101 km/h
Max. gust wind speed for 9 bases, 17 kg each	124 km/h	117 km/h	117 km/h
Max. gust wind speed for 9 bases, 17 kg each	137 km/h	132 km/h	132 km/h
VPE	1 Stk.	1 Stk.	1 Stk.

Self-supporting Air-Termination Rods 10 and 11 m

With hinged six-legged stand for protecting larger roof-mounted structures or for erection on compacted ground without foundation works, adjustable to a roof inclination up to max. 10°
The stackable concrete base (Part No. 102 010) and the base plate (Part No. 102 050) have to be ordered separately.

Note: Permissible roof loads have to be considered and checked with the constructor where required.

Free height 10 m



Type FS D60 10 ...	10M AL SBS STTZN
Part No.	**105 910**
Height	10000 mm
Radius	1200 mm
Max. gust wind speed for 12 bases, 17 kg each	121 km/h
Max. gust wind speed for 18 bases, 17 kg each	140 km/h
Space required for six-legged stand	2900 x 2560 mm
Material of six-legged stand	St/tZn
Material of air-termination mast/ air-termination rod	Al
Standard	EN 62561-(1+2)
Surface load with 12 bases, 17 kg each	268 kg
Surface load with 18 bases, 17 kg each	370 kg
PU	1 pc(s)

Free height 11 m

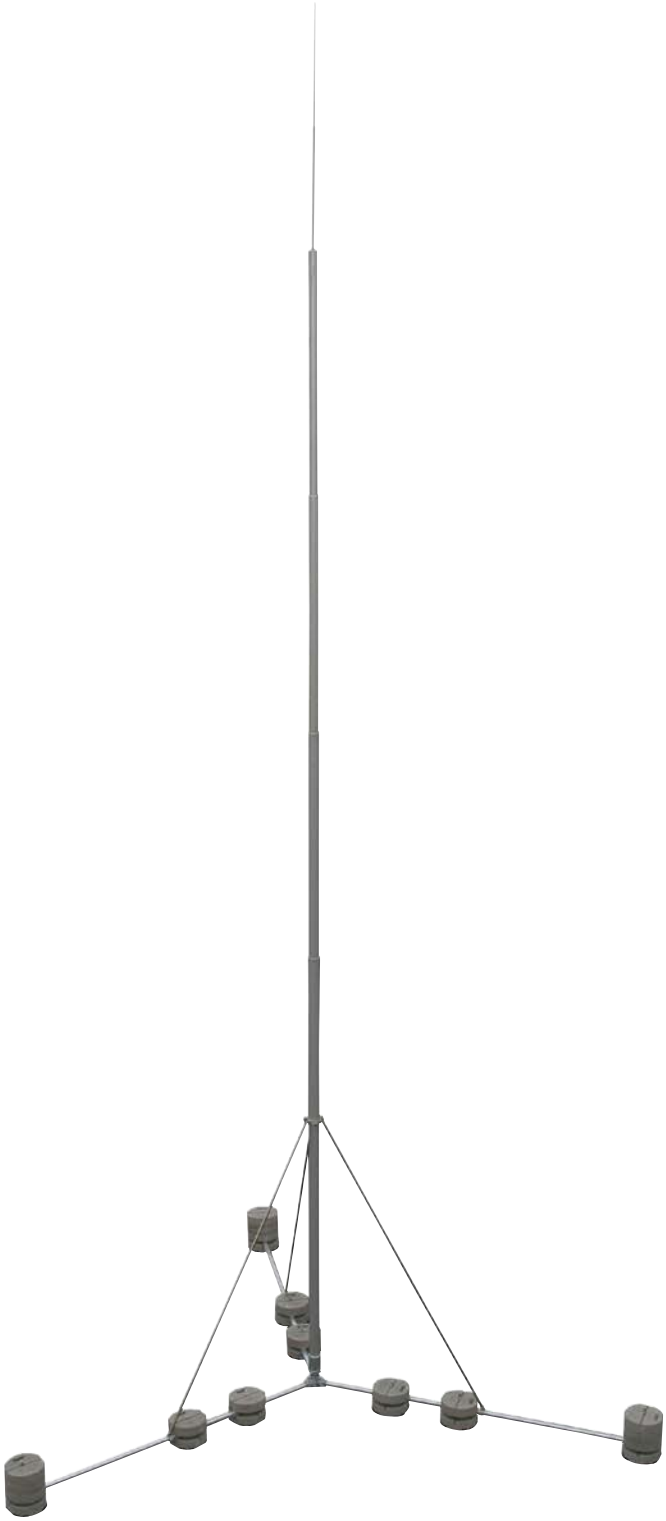
Type FS D60 10 ...	11M AL SBS STTZN
Part No.	**105 911**
Height	11000 mm
Radius	1200 mm
Max. gust wind speed for 12 bases, 17 kg each	112 km/h
Max. gust wind speed for 18 bases, 17 kg each	135 km/h
Space required for six-legged stand	2900 x 2560 mm
Material of six-legged stand	St/tZn
Material of air-termination mast/ air-termination rod	Al
Standard	EN 62561-(1+2)
Surface load with 12 bases, 17 kg each	269 kg
Surface load with 18 bases, 17 kg each	371 kg
PU	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Self-supporting Air-Termination Rods 12 to 14 m

With hinged tripod for protecting larger roof-mounted structures or for erection on compacted ground without foundation works.
Adjustable to a roof inclination of max. 5°.
The stackable concrete block (Part No. 102 010) and the base plate (Part No. 102 050) have to be ordered separately.

Note: Permissible roof loads have to be considered and checked with the constructor where required.



Free height 12 m

Type FS D100 10 ...	12M AL DBS STTZN
Part No.	**105 922**
Height	12000 mm
Radius	3000 mm
Max. gust wind speed for 18 bases, 17 kg each	129 km/h
Max. gust wind speed for 21 bases, 17 kg each	149 km/h
Max. gust wind speed for 24 bases, 17 kg each	170 km/h
Space required for tripod	4920 x 5640 mm
Material of tripod	St/tZn
Material of air-termination mast /air-termination rod	Al
Standard	EN 62561-(1+2)
Surface load with 18 bases, 17 kg each	approx. 420 kg
Surface load with 21 bases, 17 kg each	approx. 475 kg
Surface load with 24 bases, 17 kg each	approx. 525 kg
PU	1 pc(s)

Free height 13 m

Type FS D100 10 ...	13M AL DBS STTZN
Part No.	**105 923**
Height	13000 mm
Radius	3000 mm
Max. gust wind speed for 18 bases, 17 kg each	124 km/h
Max. gust wind speed for 21 bases, 17 kg each	137 km/h
Max. gust wind speed for 24 bases, 17 kg each	149 km/h
Space required for tripod	4920 x 5640 mm
Material of tripod	St/tZn
Material of air-termination mast /air-termination rod	Al
Standard	EN 62561-(1+2)
Surface load with 18 bases, 17 kg each	approx. 421 kg
Surface load with 21 bases, 17 kg each	approx. 476 kg
Surface load with 24 bases, 17 kg each	approx. 526 kg
PU	1 pc(s)

Free height 14 m

Type FS D100 10 ...	14M AL DBS STTZN
Part No.	**105 924**
Height	14000 mm
Radius	3000 mm
Max. gust wind speed for 18 bases, 17 kg each	117 km/h
Max. gust wind speed for 21 bases, 17 kg each	132 km/h
Max. gust wind speed for 24 bases, 17 kg each	145 km/h
Space required for tripod	4920 x 5640 mm
Material of tripod	St/tZn
Material of air-termination mast /air-termination rod	Al
Standard	EN 62561-(1+2)
Surface load with 18 bases, 17 kg each	approx. 430 kg
Surface load with 21 bases, 17 kg each	approx. 481 kg
Surface load with 24 bases, 17 kg each	approx. 532 kg
PU	1 pc(s)

Telescopic air-termination rods

Can be used in three and four-legged stands and for fixing on to, for example, walls or other structures.
The respective wind loads and the quantity of concrete bases can be found in the installation instructions.
The maximum free length refers to the distance between the rod tip and the upper holder (fixing point).
For reasons of stability, the centre holder (3 fixing points) should be mounted directly below the upper holder if possible. The distance must not be more than 15 cm. The lower holder (fixing point) has to be installed within a range of ≤ 15 cm at the end of the air-termination rod.

Height 4.2-5.2 m

Type FS T ...	D40 4200 5200 AL
Part No.	**105 185** NEW
Total length	5200 mm
Air-termination tip (Ø length)	10-1000 mm
Termination mast (Ø length)	40/30/20-4200 mm
Transport length	1650 mm
Mast segments	4
Foot Ø	40 mm
Max. free length with air-termination rod	4200 mm
Clamping length	500 mm and 1000 mm
Number of fixings	2
Material of air-termination rod	Al
Standard	DIN EN 62561-(1+2)
PU	1 pc(s)

Height: 5.5-6.5 m

Type FS T ...	D50 5500 6500 AL
Part No.	**105 186** NEW
Total length	6500 mm
Air-termination tip (Ø length)	10-1000 mm
Termination mast (Ø length)	50/40/30/20-5500 mm
Transport length	1650 mm
Mast segments	5
Foot Ø	50 mm
Max. free length with air-termination rod	5200 mm
Clamping length	1000 mm and 1300 mm
Number of fixings	2-3
Material of air-termination rod	Al
Standard	DIN EN 62561-(1+2)
PU	1 pc(s)

Height: 7-8 m

Type FS T ...	D60 7000 8000 AL
Part No.	**105 188** NEW
Total length	8000 mm
Air-termination tip (Ø length)	10-1000 mm
Termination mast (Ø length)	50/60/50/40/30/20-7000 mm
Transport length	1850 mm
Mast segments	6
Foot Ø	60 mm
Max. free length with air-termination rod	6300 mm
Clamping length	1700 mm
Number of fixings	3
Material of air-termination rod	Al
Standard	DIN EN 62561-(1+2)
PU	1 pc(s)

Accessories for Telescopic air-termination rods

Connection bracket

Connection bracket as per DIN EN 62561-1, to connect round conductors to air-termination rods using KS connectors.

Type	AS D40 KSV 6.10 V2A
Part No.	**105 374** NEW
Material	StSt
Clamping range Rd	6-10 mm
Type for air-termination rods	Ø40 mm
Standard	DIN EN 62561-1
PU	1 pc(s)

Connection bracket

Connection bracket as per DIN EN 62561-1, to connect round conductors to air-termination rods using KS connectors.

Type	AS D50 KSV 6.10 V2A
Part No.	**105 375** NEW
Material	StSt
Clamping range Rd	6-10 mm
Type for air-termination rods	Ø50 mm
Standard	DIN EN 62561-1
PU	1 pc(s)

Telescopic, self-supporting air-termination rods up to 8 m

Self-supporting air-termination rod with hinged three or four-legged stand for protecting larger roof-mounted structures, adjustable to the roof slope up to max. 10°.
The stackable concrete base (weight 17 kg / part no. 102 010) and the plastic base plate (part no. 102 050) have to be ordered separately.

Note: Permissible roof loads have to be considered and checked with the constructor where required.

With HDG steel stand

General technical data:	
Air-termination tip (Ø length)	10-1000 mm
Stand material	HDG steel (St/tZn)
Air-termination mast material	Al
Standard	DIN EN 62561-(1+2)

Type FS T ...	D40 4.2 5.2M AL DBS RA560 STTZN	D50 5.5 6.5M AL DBS RA1435 STTZN
Part No.	**105 711** NEW	**105 713** NEW
Height	5200 mm	6500 mm
Termination mast (Ø length)	40/30/20-4200 mm	50/40/30/20-5500 mm
Radius	560 mm	1435 mm
Space required for stand	1210 x 1340 mm	2850 x 2530 mm
PU	1 pc(s)	1 pc(s)

Type FS T ...	D50 7 8M AL DBS RA1435 STTZN
Part No.	**105 716** NEW
Height	8000 mm
Termination mast (Ø length)	50/60/50/40/30/20-7000 mm
Radius	1435 mm
Space required for stand	2850 x 2530 mm
PU	1 pc(s)

With stainless steel stand

General technical data:	
Air-termination tip (Ø length)	10-1000 mm
Stand material	StSt
Air-termination mast material	Al
Standard	DIN EN 62561-(1+2)

Type FS T ...	D40 4.2 5.2M AL DBS RA680 V2A	D50 5.5 6.5M AL VBS RA680 V2A
Part No.	**105 710** NEW	**105 712** NEW
Height	5200 mm	6500 mm
Termination mast (Ø length)	40/30/20-4200 mm	50/40/30/20-5500 mm
Radius	680 mm	680 mm
Space required for stand	1400 x 1600 mm	1400 x 1400 mm
PU	1 pc(s)	1 pc(s)

Type FS T ...	D50 7 8M AL VBS RA680 V2A	D50 7 8M AL VBS RA1330 V2A
Part No.	**105 714** NEW	**105 715** NEW
Height	8000 mm	8000 mm
Termination mast (Ø length)	50/60/50/40/30/20-7000 mm	50/60/50/40/30/20-7000 mm
Radius	680 mm	1330 mm
Space required for stand	1400 x 1400 mm	2300 x 2300 mm
PU	1 pc(s)	1 pc(s)

Accessories for Telescopic, self-supporting air-termination rods up to 8 m

Connection bracket

Connection bracket as per DIN EN 62561-1, to connect round conductors to air-termination rods using KS connectors.

Type	AS D40 KSV 6.10 V2A
Part No.	**105 374** NEW
Material	StSt
Clamping range Rd	6-10 mm
Type for air-termination rods	Ø40 mm
Standard	DIN EN 62561-1
PU	1 pc(s)

Connection bracket

Connection bracket as per DIN EN 62561-1, to connect round conductors to air-termination rods using KS connectors.

Type	AS D50 KSV 6.10 V2A
Part No.	**105 375** NEW
Material	StSt
Clamping range Rd	6-10 mm
Type for air-termination rods	Ø50 mm
Standard	DIN EN 62561-1
PU	1 pc(s)

Air-Termination Rods D40

For fixing on to, for example, walls or other structures.

The maximum free length refers to the distance between the rod tip and the upper holder (fixing point). For reasons of stability, the centre holder (3 fixing points) should be mounted directly below the upper holder if possible. The distance must not be more than 15 cm. The lower holder (fixing point) has to be installed within a range of ≤ 15 cm at the end of the air-termination rod.

Al

General technical data:	
Material of air-termination rod	Al
Standard	EN 62561-(1+2)

Type FS D40 ...	16 10 4000 KSV AL	22 16 10 4500 KSV AL
Part No.	105 170	105 175
Total length (l1)	4000 mm	4500 mm
Max. free length with air-termination rod (l2)	3500 mm	4000 mm
Clamping length (l3)	500 mm	500 mm
Number of fixings	2	2
Max. gust wind speed	(Wall mounting with a free length of 3,500 mm) 185 km/h	(Wall mounting with a free length of 4,000 mm) 186 km/h
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 5000 KSV AL	22 16 10 5500 KSV AL
Part No.	105 171	105 176
Total length (l1)	5000 mm	5500 mm
Max. free length with air-termination rod (l2)	4000 mm	4500 mm
Clamping length (l3)	1000 mm	1000 mm
Number of fixings	2	2
Max. gust wind speed	(Wall mounting with a free length of 4,000 mm) 185 km/h	(Wall mounting with a free length of 4,500 mm) 186 km/h
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 6000 KSV AL	22 16 10 6500 KSV AL
Part No.	105 172	105 177
Total length (l1)	6000 mm	6500 mm
Max. free length with air-termination rod (l2)	4500 mm	5000 mm
Clamping length (l3)	1500 mm	1500 mm
Number of fixings	3	3
Max. gust wind speed	(Wall mounting with a free length of 4,500 mm) 186 km/h	(Wall mounting with a free length of 5,000 mm) 183 km/h
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 7000 KSV AL	22 16 10 7500 KSV AL
Part No.	105 173	105 178
Total length (l1)	7000 mm	7500 mm
Max. free length with air-termination rod (l2)	5500 mm	5500 mm
Clamping length (l3)	1500 mm	2000 mm
Number of fixings	3	3
Max. gust wind speed	(Wall mounting with a free length of 5,500 mm) 146 km/h	(Wall mounting with a free length of 5,500 mm) 149 km/h
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 8000 KSV AL	22 16 10 8500 KSV AL
Part No.	105 174	105 179
Total length (l1)	8000 mm	8500 mm
Max. free length with air-termination rod (l2)	5500 mm	5500 mm
Clamping length (l3)	2500 mm	3000 mm
Number of fixings	3	3
Max. gust wind speed	(Wall mounting with a free length of 5,500 mm) 142 km/h	(Wall mounting with a free length of 5,500 mm) 152 km/h
PU	1 pc(s)	1 pc(s)

StSt

General technical data:	
Material of air-termination rod	StSt
Standard	EN 62561-(1+2)

Type FS D40 ...	16 10 4000 KSV V2A	22 16 10 4500 KSV V2A
Part No.	105 190	105 195
Total length (l1)	4000 mm	4500 mm
Max. free length with air-termination rod (l2)	3500 mm	4000 mm
Clamping length (l3)	500 mm	500 mm
Number of fixings	2	2
Max. gust wind speed	(Wall mounting with a free length of 3,500 mm) 191 km/h	(Wall mounting with a free length of 4,000 mm) 192 km/h
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 5000 KSV V2A	22 16 10 5500 KSV V2A
Part No.	105 191	105 196
Total length (l1)	5000 mm	5500 mm
Max. free length with air-termination rod (l2)	4000 mm	4500 mm
Clamping length (l3)	1000 mm	1000 mm
Number of fixings	2	2
Max. gust wind speed	(Wall mounting with a free length of 4,000 mm) 191 km/h	(Wall mounting with a free length of 4,500 mm) 192 km/h
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 6000 KSV V2A	22 16 10 6500 KSV V2A
Part No.	105 192	105 197
Total length (l1)	6000 mm	6500 mm
Max. free length with air-termination rod (l2)	4500 mm	5000 mm
Clamping length (l3)	1500 mm	1500 mm
Number of fixings	3	3
Max. gust wind speed	(Wall mounting with a free length of 4,500 mm) 192 km/h	(Wall mounting with a free length of 5,000 mm) 190 km/h
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 7000 KSV V2A	22 16 10 7500 KSV V2A
Part No.	105 193	105 198
Total length (l1)	7000 mm	7500 mm
Max. free length with air-termination rod (l2)	5500 mm	5500 mm
Clamping length (l3)	1500 mm	2000 mm
Number of fixings	3	3
Max. gust wind speed	(Wall mounting with a free length of 5,500 mm) 149 km/h	(Wall mounting with a free length of 5,500 mm) 159 km/h
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 8000 KSV V2A	22 16 10 8500 KSV V2A
Part No.	105 194	105 199
Total length (l1)	8000 mm	8500 mm
Max. free length with air-termination rod (l2)	5500 mm	5500 mm
Clamping length (l3)	2500 mm	3000 mm
Number of fixings	3	3
Max. gust wind speed	(Wall mounting with a free length of 5,500 mm) 149 km/h	(Wall mounting with a free length of 5,500 mm) 155 km/h
PU	1 pc(s)	1 pc(s)

Shorter transport lengths (separable pipe) are available upon request.
Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Stands for air-termination rods D40 and GRP / Al supporting tubes

For erection with concrete bases (weight 17 kg). Adjustable to the roof slope up to max. 10° using a variable fixing on the base holder. The D40 air-termination rods / supporting tubes must be ordered separately. The stackable concrete bases, the plastic base plates, the base holder set for holding additional concrete bases and the adapter set for D40 air-termination rods are each available separately in the accessories.

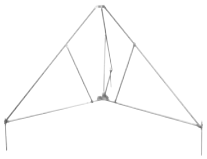
Tripod, small

For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductors installed in / on the supporting tube.

Type	DBS KB D50 RA680 V2A
Part No.	**107 390** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	1175 x 1020 mm
Weight	7.22 kg
PU	1 pc(s)

Tripod, large

For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.



Type	DBS KB D50 RA1330 V2A
Part No.	**107 391** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	2300 x 1995 mm
Weight	15.6 kg
PU	1 pc(s)

Four-legged stand, small

For air-termination rods D40, D50 and D60, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.

Type	VBS KB D50 RA680 V2A
Part No.	**107 490** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	960 x 960 mm
PU	1 pc(s)

Four-legged stand, large

For air-termination rods D40, D50 and D60, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.

Type	VBS KB D50 RA1330 V2A
Part No.	**107 491** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	1880 x 1880 mm
PU	1 pc(s)

Hinged design, St/tZn

For air-termination rods Ø40 mm or supporting tubes Ø50 mm, length 3200 mm (e.g. Part No. 105 440 or 105 300) without additional fixing to structural elements. Connection with double clamp for 2x Rd 8-10 mm [lightning current carrying capability 100 kA (10/350 µs)].

Type	DBS KB D40.50 RA560 STTZN
Part No.	**105 200**
Material of tripod	St/tZn
Support	Ø40 / 50 mm
Radius	560 mm
Space required for tripod	1200 x 1330 mm
Weight	9.6 kg
Standard	EN 62561-1
PU	1 pc(s)

*) Only with adapter set part no. 107 399.

Accessories for Stands for air-termination rods 4 D40 and GRP/Al supporting tubes

Set of base support rods for tripods

Type	SOH 3 200 V2A
Part No.	**107 396** NEW
For tripod	Part No. 107 390 / 107 391
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Set of base support rods for four-legged stands

Type	SOH 4 200 V2A
Part No.	**107 496** NEW
For four-legged stand	Part No. 107 490 / 107 491
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Adapter set

Adapter set for reducing the diameter from 50 mm to 40 mm for tripods and four-legged stands.

Type	RED D40 V2A DBS VBS
Part No.	**107 399** NEW
Material	StSt
PU	1 pc(s)

Concrete bases

For air-termination rods, for protecting small roof-mounted structures on flat roofs and for installing spacers from the DEHNiso spacer product line, e.g. for isolated ring conductors or for self-supporting air-termination rods in the tripod (only with a weight of 17 kg).

Note: Please contact us to find out whether the material of the roof conductor holder or base plate is compatible with the roof elements.

Weight 17 kg, with fixing wedge

Stackable, for air-termination rods Ø16 mm, chamfered, tapered, or for DEHNiso spacers Ø16 mm.

Type BES ...	17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	wedge Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
Material of wedge	StSt
PU	54 pc(s)

Weight 17 kg, concrete base with fixing wedge and adapted base plate

Stackable

Type BES ...	17KG KT16 ULP D337 SET
Part No.	**102 340**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
Material of wedge	StSt
PU	54 pc(s)

Weight 17 kg, with threaded adapter

For air-termination rods with M16 thread.

Type BES ...	17KG M16 D337
Part No.	**102 002**
Weight	17 kg
Support	M16 thread
Diameter Ø	337 mm
Material	concrete (C45/55)
Material of adapter	plastic
PU	54 pc(s)

Weight 17 kg

Concrete base without wedge for the erection of tripods and four-legged stands with M16 base support rods (e.g. part no. 107 390 + 107 396 ...).

Type BES ...	17KG KT16 D337
Part No.	**102 012**
Weight	17 kg
Support	Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
PU	54 pc(s)

Weight 8.5 kg, with fixing wedge

For air-termination tips Ø10 mm, length 1000 mm, or DEHNiso spacers Ø16 mm, length up to 675 mm (distance 0.8 m), or conductor holders (Part No. 253 279).

Type BES ...	8.5KG KT10 16 D240 SET
Part No.	**102 075**
Weight	8.5 kg
Support	wedge Ø10 / 16 mm
Diameter Ø	240 mm
Material	concrete (C45/55)
Material of wedge	StSt
PU	120 pc(s)

Weight 8.5 kg, with threaded adapter

For air-termination rods with thread and additional fixing, e.g. with DEHNiso spacers.

Type BES ...	8.5KG M16 D240
Part No.	**102 003**
Weight	8.5 kg
Support	M16 thread
Diameter Ø	240 mm
Material	concrete (C45/55)
Material of adapter	plastic
PU	120 pc(s)

Plastic base plates

To protect the roof sheeting under the concrete base.

Large

For concrete bases (Part Nos. 102 010, 102 002), weight 17 kg.

Type ULP KS ...	D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Small

For concrete bases (Part No. 102 075, 102 003), weight 8.5 kg.

Type ULP KS ...	D280 SW
Part No.	**102 060**
Outside diameter Ø	280 mm
Inside diameter Ø	270 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Mounting Bracket for Air-Termination Systems on Metal Roofs

Mounting bracket (StSt) for installing HVI air-termination systems or air-termination rods on metal roofs:
Mounting bracket suitable for vertical mounting of air-termination systems on metal roofs with a max. roof slope of up to 53°.
For fixing D40 air-termination rods in place and mounting DEHNcon-H systems (e.g. part no. 819 243 or 819 247) with the conductor inside the supporting tube.

Note: Mounting conditions on site must be clarified with the builder. You can find more information on max. gust wind speeds at www.dehn-international.com

Type	MDH D48 VB550.900 V2A
Part No.	**105 241**
Material	StSt
Adjustment range	550-900 mm
Roof inclination	5-53°
Standard	EN 62561-1
PU	1 pc(s)

Accessories for Mounting Bracket for Air-Termination Systems on Metal Roofs

Holder for metal roofs with round standing seam

Screw with self-locking nut.

Type	HA M8 RSF20.25 V2A
Part No.	**123 040**
Material of holder	StSt
Clamping range	Ø20-25 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)

Screw with self-locking nut.

Type	HA M8 KF18.22 V2A
Part No.	**123 041**
Material of holder	StSt
Clamping range	approx. 18 / 22 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs with standing seam

Screw with self-locking nut.

Type	HA M8 SF0.7 8 V2A
Part No.	**123 042**
Material of holder	StSt
Clamping range	0.7-8 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs for riveting or screwing

Screw lock using self-locking nut with serrated bearing.
Note: The leak-tightness of the roof must be ensured during installation; e.g. by using waterproof cup rivets. You might need to consult with the trade people responsible.

Type	HA M8 AL ZF B5.2 6.5 V2A
Part No.	**123 043**
Material of holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

C-mounting rail for mounting bracket for installation on metal roofs

C mounting rails with holes for fixing the mounting bracket on roofs with large batten distances (> 600 mm).

General technical data:	
Material of the rail	StSt (V4A)

Type MSC MDH V4A ...	L1000 MZ V2A	L1500 MZ V2A
Part No.	**123 050**	**123 051**
Dimensions of the rail (l x w x h)	[2x] 1000 x 41 x 41 mm	[2x] 1500 x 41 x 41 mm
PU	1 pc(s)	1 pc(s)

Type	L2000 MZ V2A
Part No.	**123 052**
Dimensions of the rail (l x w x h)	[2x] 2000 x 41 x 41 mm
PU	1 pc(s)

Hanger bolt for wooden substructures

Hanger bolt for fixing the mounting bracket on roofs with wooden substructures. To prevent the ingress of moisture, the hanger bolts feature a hexagon socket 5 mm and an EPDM seal membrane.

Type	STS HUK 8.4X130 PLDI AGM10X50 V2A
Part No.	**528 820**
Material	StSt
Thread length wood	70 mm
Metric thread length	M10 x 50 mm
Total length	185 mm
PU	1 pc(s)

Hanger bolt for metal substructures

Hanger bolt for fixing the mounting bracket on roofs with metal substructures. To prevent the ingress of moisture, the hanger bolts feature a hexagon socket 5 mm and an EPDM seal membrane.

Type	STS SUK 8X125 PLDI AGM10X50 V2A
Part No.	**528 821**
Material	StSt
Thread length steel	65 mm
Metric thread length	M10 x 50 mm
Total length	180 mm
PU	1 pc(s)

Supports for Air-Termination Rods D40 and DEHNcon-H

Wall mounting bracket for horizontal mounting, flat

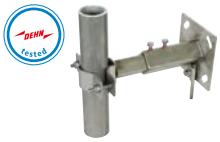
Type	WB D40 WA V2A
Part No.	**105 140**
Material	StSt
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
Distance from wall	80 mm
Clamping range for air-termination rod	40 mm
PU	1 pc(s)

Wall mounting bracket for vertical mounting

Type	WB D40.50 SE WA46 V2A	WB D40.50 SE WA110 V2A
Part No.	**105 342**	**105 348**
Material	StSt	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Distance from wall	46 mm	110 mm
Clamping range for air-termination rod	40-50 mm	40-50 mm
PU	1 pc(s)	1 pc(s)

Wall mounting bracket, adjustable from 150-200 mm

For attaching supporting tubes or air-termination rods D40 / D50, with double clamp for connecting 2x Rd 8-10 mm.



Type	WB D40.50 V150.200 V2A
Part No.	**105 344**
Material	StSt
Fixing	[4x] 12 x 26 mm
Distance from wall	150-200 mm
Clamping range Rd	8-10 mm
Clamping range for air-termination rod	40-50 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket, adjustable from 230-1300 mm

General technical data:	
Fixing	[4x] 12 x 26 mm
Clamping range for air-termination rod	40-50 mm

Type	WB D40.50 V230.400 STTZN V2A	WB D40.50 V400.700 STTZN V2A
Part No.	**105 347**	**105 343**
Material	St/tZn / StSt	St/tZn / StSt
Distance from wall	230-400 mm	400-700 mm
PU	1 pc(s)	1 pc(s)

Type	WB D40.50 V700.1300 STTZN V2A
Part No.	**105 349**
Material	St/tZn / StSt
Distance from wall	700-1300 mm
PU	1 pc(s)

Railing clamp

Type	BS D40.50 D48.60 V2A
Part No.	**105 354**
Material	StSt
Clamping range Ø of pipe	48-60 mm (1½ -2")
Clamping range for air-termination rod	40-50 mm
PU	5 pc(s)

Railing clamp with spacer

With spacer for adjusting e.g. antenna supports.

Type	BSC D40 DS95 D45.65 V2A
Part No.	**105 162**
Material	StSt
Clamping range Ø of pipe	45-65 mm (1½-2")
Clamping range for air-termination rod	40-50 mm
Length of spacer	95 mm
Standard	EN 62561-1
PU	1 pc(s)

Fixing clamp with tensioning strap

Two fixing clamps ensure mechanical stability and a lightning current carrying capability of 100 kA (10/350 µs).

Type	BSC D40.50 SB50.300 V2A
Part No.	**105 160**
Material	StSt
Clamping range Ø of pipe	50-300 mm
Clamping range for air-termination rod	40-50 mm
Dimensions of strap (w x d)	25 x 0.3 mm
Standard	EN 62561-1
PU	1 pc(s)

Fixing clamp with tensioning strap and spacer

With additional long spacer for adjusting sector antenna supports on the mast.

Type	BS D40.50 DS95 SB50.300 V2A
Part No.	**105 163**
Material	StSt
Clamping range Ø of pipe	50-300 mm
Clamping range for air-termination rod	40-50 mm
Dimensions of strap (w x d)	25 x 3.0 mm
Length of spacer	95 mm
PU	1 pc(s)

Telescopic Lightning Protection Mast with Screw Foundation

Air-termination mast for protecting special facilities such as biogas plants and free field PV systems against direct lightning strikes.
The masts are erected in a screw foundation.
No digging or foundation work necessary.
The screw foundation is screwed into the natural ground and fixed in place by three earth rods Ø20 mm, length 1500 mm (Part No. 620 151). These must be ordered separately.
The air-termination masts are designed according to Eurocode.
These calculations are based on a natural ground pressure of 0.02 kN/cm² (e.g. loamy, sandy, gravelly soil of medium density).

General technical data:	
Standard	EN 62561-(1+2)

Type TBM ...	6M SCFU STTZN AL	7M SCFU STTZN AL
Part No.	103 121	103 122
Material	St/tZn / Al / StSt	St/tZn / Al
Height above ground level (l1)	6000 mm	7000 mm
Max. gust wind speed	229 km/h	185 km/h
PU	1 pc(s)	1 pc(s)

Type TBM ...	8M SCFU STTZN AL	9M SCFU STTZN AL
Part No.	103 123	103 124
Material	St/tZn / Al / StSt	St/tZn / Al
Height above ground level (l1)	8000 mm	9000 mm
Max. gust wind speed	177 km/h	159 km/h
PU	1 pc(s)	1 pc(s)

Type TBM ...	10M SCFU STTZN AL	11M SCFU STTZN AL
Part No.	103 125	103 126
Material	St/tZn / Al / StSt	St/tZn / Al
Height above ground level (l1)	10000 mm	11000 mm
Max. gust wind speed	116 km/h	112 km/h
PU	1 pc(s)	1 pc(s)

Telescopic Lightning Protection Mast for Bucket or Concrete Foundations

Air-termination mast for protecting special facilities such as biogas plants, free field PV systems, Ex systems and ammunition dumps against direct lightning strikes.
The masts are erected in a bucket foundation (pre-fabricated) or an on-site concrete foundation with foundation basket (to be ordered separately).
For detailed imformation on the plug-in system, foundation and installation, please see installation instructions No. 1729.

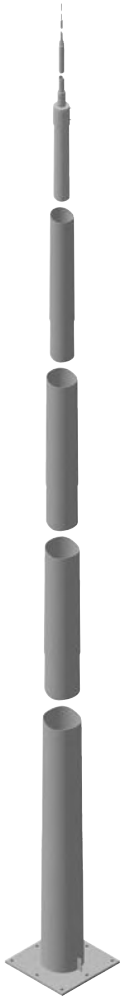
Advantages of the air-termination mast system:

- Excavation work can be completed in advance
- Erection in (prefabricated) bucket foundation on site with comparatively little effort, or
- Erection in on-site concrete foundations with foundation basket (concrete curing time to be observed for scheduling and erection)
- With flange plate for fast mounting
- Easily adjustable with M24 threaded bolts
- Detailed mounting instructions
- Verifiable statics (upon request)

Components:

- Air-termination rod, St/tZn, Ø42 / 25 / 15 mm, length 2400 or 5400 mm, with M20 thread and lock nut
- Conic mast segments
- Flange plate with connection lug for earth connection hole Ø12 mm (for round conductor Ø10 mm, e.g. with KS connector (Part No. 301 019))

Max. transport length 6 m



General technical data:	
Material	St/tZn
Standard	EN 62561-(1+2)

Type TBM ...	13.35M FP400 STTZN	16.35M FP400 STTZN
Part No.	103 013	103 016
Height above ground level (l1)	13380 mm	16380 mm
Mast segments	2	2
Max. gust wind speed with Concrete foundation	194 km/h	135 km/h
Max. gust wind speed with bucket foundation	143 km/h	135 km/h
Dimensions of flange plate	400 x 400 mm	400 x 400 mm
Flange plate	4x Ø27 mm for 4x M24 (300 x 300 mm)	4x Ø27mm for 4x M24 (300 x 300 mm)
Dim. of on-site concrete foundation (l x w x h)	1400 x 1400 x 900 mm	1400 x 1400 x 900 mm
Weight	approx. 228 kg	approx. 230 kg
PU	1 pc(s)	1 pc(s)

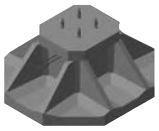
Type TBM ...	19.35M FP565 STTZN	22.35M FP565 STTZN	24.85M FP565 STTZN
Part No.	103 019	103 022	103 025
Height above ground level (l1)	19380 mm	22380 mm	24880 mm
Mast segments	3	4	5
Max. gust wind speed with Concrete foundation	131 km/h	129 km/h	127 km/h
Max. gust wind speed with bucket foundation	107 km/h	129 km/h	127 km/h
Dimensions of flange plate	400 x 400 mm	565 x 565 mm	565 x 565 mm
Flange plate	4x Ø27 mm for 4x M24 (300 x 300 mm)	8x Ø27 mm for 8x M24 (490 x 490 mm)	8x Ø27 mm for 8x M24 (490 x 490 mm)
Dim. of on-site concrete foundation (l x w x h)	1600 x 1600 x 900 mm	1800 x 1800 x 900 mm	2000 x 2000 x 900 mm
Weight	approx. 310 kg	approx. 450 kg	approx. 550 kg
PU	1 pc(s)	1 pc(s)	1 pc(s)

Bucket Foundations for Telescopic Lightning Protection Masts

Prefabricated element for easy erection of telescopic lightning protection masts.
No concreting on site.
For detailed information on the telescopic system, foundation and erection, please see he installation instructions.

Type KöFU I

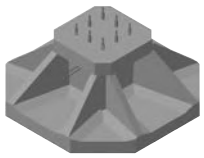
For masts with a height above ground level from 13.35 to 19.35 m.
(Part No. 103 013 / 103 016 / 103 019)
Flange plate 400 x 400 mm.



Type KÖFU ...	I TBM FP400
Part No.	**103 030**
Material	concrete (C50/60)
Dimensions	1800 x 2000 x 850 mm
Weight	approx. 2.5 t
PU	1 pc(s)

Type KöFU II

For masts with a height above ground level from 22.35 to 24.85 m.
(Part No. 103 022 or 103 025)
Flange plate 565 x 565 mm.



Type KÖFU ...	II TBM FP565
Part No.	**103 031**
Material	concrete (C50/60)
Dimensions	2400 x 2400 x 1010 mm
Weight	approx. 4.9 t
PU	1 pc(s)

Foundation Basket for On-site Concrete Foundations

With threaded bolts for setting in concrete, suitable for the flange plate of telescopic lightning protection masts.
For detailed information on the telescopic system, foundation and erection, see the installation instructions.

Small design

For masts with a height above ground level from 13.35 m to 19.35 m (Part No. 103 013 / 103 016 / 103 019).
Flange plate 400 x 400 mm.

Type AKO TBM ...	FP400
Part No.	**103 040**
Material	steel
Dimensions	472 x 324 x 870 mm
Type of threaded bolt	4x M24 (300 x 300 mm)
PU	1 pc(s)

Large design

For masts with a height above ground level from 22.35 m to 24.85 m (Part No. 103 022 or 103 025).
Flange plate 565 x 565 mm.

Type AKO TBM ...	FP565
Part No.	**103 041**
Material	steel
Dimensions	662 x 662 x 870 mm
Type of threaded bolt	8x M24 (490 x 490 mm)
PU	1 pc(s)

Air-Termination Rods for Metal Roofs

For protecting roof-mounted structures, domelights, etc.
The air-termination rod is fixed at the end of the braces (holes Ø11 mm) by means of four roof conductor holders.
The roof conductor holders must be chosen according to the roof profile (e.g round standing seam No. 223 010 or standing seam Part No. 365 059).

Height 2000 mm

With M16 threaded bolts.

Type FS ...	16 10 2000 MD AL V2A
Part No.	**123 021**
Total length (Ø16 / 10 mm)	2000 mm
Max. gust wind speed	184 km/h
Profile distance	230-520 mm
Fixing	[4x] Ø11 mm
Material of braces	StSt
Material of air-termination rod	Al
Standard	EN 62561-(1+2)
PU	1 pc(s)

Height up to 3500 mm

Adjustable to a roof inclination up to max. 10°.

General technical data:	
Profile distance	230-520 mm
Fixing	[4x] Ø11 mm
Material of braces	StSt
Standard	EN 62561-(1+2)

Type FS ...	22 16 10 2500 SK AL V2A	22 16 10 3000 SK AL V2A
Part No.	**123 425**	**123 430**
Total length (Ø22 / 16 / 10 mm)	2500 mm	3000 mm
Max. gust wind speed	185 km/h	149 km/h
Material of air-termination rod	Al	Al
PU	1 pc(s)	1 pc(s)

Type FS ...	22 16 10 3500 SK AL V2A
Part No.	**123 435**
Total length (Ø22 / 16 / 10 mm)	3500 mm
Max. gust wind speed	114 km/h
Material of air-termination rod	Al / StSt
PU	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Accessories for Air-Termination Rods for Metal Roofs

Holder for metal roofs with round standing seam

Screw with self-locking nut.

Type	HA M8 RSF20.25 V2A
Part No.	**123 040**
Material of holder	StSt
Clamping range	Ø20-25 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)

Screw with self-locking nut.

Type	HA M8 KF18.22 V2A
Part No.	**123 041**
Material of holder	StSt
Clamping range	approx. 18 / 22 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs with standing seam

Screw with self-locking nut.

Type	HA M8 SF0.7 8 V2A
Part No.	**123 042**
Material of holder	StSt
Clamping range	0.7-8 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs for riveting or screwing

Screw lock using self-locking nut with serrated bearing.
Note: The leak-tightness of the roof must be ensured during installation; e.g. by using waterproof cup rivets. You might need to consult with the trade people responsible.

Type	HA M8 AL ZF B5.2 6.5 V2A
Part No.	**123 043**
Material of holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Air-Termination Rod for Trapezoidal Roofs

For protecting roof-mounted structures, domelights etc.
The air-termination rod is placed in the gap between the trapezoidal seams profile.
The variable base frame can be adjusted to all trapeziodal profiles.
The special holder for the air-termination rod can compensate roof inclinations up to 10°.

Type	FS 16 10 2000 TD AL V2A K
Part No.	**123 032**
Total length (Ø16 / 10 mm)	2000 mm
Max. gust wind speed	137 km/h
Profile distance	600-770 mm
Material of air-termination rod	Al
Material of bases	plastic
Standard	EN 62561-2
PU	1 pc(s)

Type with a length of 1500 mm (with Part No. 103 210) is available upon request.

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Air-Termination Rod for Ridge and Hip Tiles

For protecting solar thermal modules, photovoltaic generators or other roof-mounted structures on steep roofs.
The clamping bracket must be adjusted to the diameter of the ridge tiles before it is used to secure the air-termination rod.

Type	FS 10 1000 FG AL V2A
Part No.	**123 109**
Material of air-termination rod	Al
Length	1000 mm
Clamping range	120-240 mm
Standard	EN 62561-2
PU	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Holders for Air-Termination Systems on Ridge and Hip Tiles

For air-termination rods or spacer bars with conductor holder, for protecting solar thermal modules, photovoltaic generators or other roof-mounted structures on steep roofs.
The holder is mounted using a tensioning strap. One clip is permanently fixed to one end of the tensioning strap. The holder can be adjusted to various types of ridge tiles using the adjustable clip at the other end.

Air-termination tips / rods or spacer bars have to be ordered separately.

Single design

For air-termination tips (length 1000 mm) or spacer bars (GRP, Ø10 mm).

Type HA ...	10 1F FG120.300 V2A
Part No.	123 110
Clamping range Rd	10 mm
Tensioning range	120-300 mm
Material of fixing bush	StSt
PU	1 pc(s)

Double design

For air-termination rods Ø16 / 10 mm, max. length of 1.5 m, incl. clamping piece for connecting round conductors Rd 6-10 mm.

Type HA ...	16 2F FG120.300 V2A
Part No.	123 116
Clamping range Rd	16 mm
Tensioning range	120-300 mm
Mounting distance (l1)	approx. 280 / 350 / 420 mm
Material of fixing bush	StSt
PU	1 pc(s)

Accessories for Holders for Air-Termination Systems on Ridge and Hip Tiles

Air-termination tips

For protecting roof-mounted structures, chimneys.

Type	FS 10 1000 AL	FS 10 1000 V2A
Part No.	101 000	101 009
Total length	1000 mm	1000 mm
Material	Al	StSt
Standard	EN 62561-2	EN 62561-2
Diameter Ø	10 mm	10 mm
PU	20 pc(s)	20 pc(s)

Tubular air-termination rods

For protecting roof-mounted structures.

Type	RFS 16 10 1500 AL
Part No.	103 410
Total length (l1)	1500 mm
Material	AlMgSi
Diameter Ø	16 / 10 mm
Max. gust wind speed	175 km/h
PU	10 pc(s)

Spacer bar with conductor holder

For insertion into the holder for air-termination systems on ridge and hip tiles. For raised conductor routing, loose conductor routing.

Type	DILH 8 DS10 L280 K GR GFK	DILH 8 DS10 L420 K GR GFK
Part No.	253 315	253 325
Conductor support Rd	8 mm	8 mm
Material of conductor holder	plastic	plastic
Length (l1)	280 mm	420 mm
Insulating clearance	220 mm	360 mm
Permanent temperature range	-30 °C ... +80 °C	-30 °C ... +80 °C
Standard	Based on DIN IEC/ TS 62561-8 (VDE V 0185-561-8)	Based on DIN IEC/ TS 62561-8 (VDE V 0185-561-8)
PU	24 pc(s)	24 pc(s)

Rod Holder for Gable Roofs

Base for fixing air-termination rods on steep roofs, with anti-rotation protection (toothed lock washer) and lock nut as well as boreholes for screwing the brace onto the roof battens.
At the chimney, the air-termination rod requires additional fixing e.g. by means of DEHNiso spacer.

Type	SH BB16 L475 WS V2A STTZN
Part No.	223 005
Material of brace	St/tZn
Material of bolt	StSt
Length of brace	475 mm
Conductor support Rd	16 mm
PU	1 pc(s)

Pipe Clamp for Air-Termination Rods

For fixing as well as lightning current carrying contact of the air-termination rod, e.g. on metal substructures of photovoltaic (PV) installations (square hollow profile); typically installed on steel frame or reinforced concrete structures. When mounted on pipes, the pressure plate (flat plate 2x angled) has to be removed. Two pipe clamps have to be installed on each air-termination rod.
The maximum free length of the respective air-termination rod according to the wind load must be considered for installation.

Type	BRS 50.300 BB16 8 V2A
Part No.	540 105
Material of head / strap	StSt
Clamping range of square hollow profile	40 x 60 to 70 x 70 mm
Clamping range of pipe	50-300 mm
Connection Rd	16 mm
Dimensions of tensioning strap	1100 x 25 x 0.3 mm
Standard	EN 62561-1
PU	1 pc(s)

Angled Air-Termination Tips

For protecting, e.g. free field photovoltaic systems or carports with a PV system against direct lightning strikes.
A distance of 15-20 cm between the seam clamps and the free length of 80-85 cm should be ensured.
The air-termination tip is adjustable to the inclination angle of the PV system. The standard type is 55° angled which corresponds to a PV system inclination of 35°.

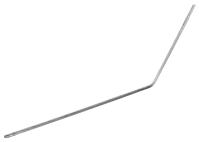
Air-termination tip with two seam clamps (Part No. 365 031)

Clamping range of the seam clamps 0.7-8 mm.

Type	FSPS 10 1000 W55 FK AL
Part No.	**101 110**
Total length	1000 mm
Material	Al
Diameter Ø	10 mm
Max. gust wind speed	224 km/h
PU	1 pc(s)

Separate air-termination tip

Can be combined, e.g. with connection clamps for steel girders.



Type	FSP 10 1000 W55 AL
Part No.	**101 010**
Total length	1000 mm
Material	Al
Diameter Ø	10 mm
Max. gust wind speed	224 km/h
PU	10 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Air-Termination Rod Adapter

For vertical positioning of air-termination rods in case of roof inclinations up to 10°.
For concrete bases with fixing wedge (Part No. 102 010 or 102 340).

Type	FSA KT16 B16 95 STTZN V2A
Part No.	**106 008**
Material of support	St/tZn
Clamping range	16 mm
Material of bolt	StSt
PU	1 pc(s)

Air-Termination Tips

End cap for air-termination conductors.

For steel or aluminium conductors

Type FS ...	7.10 ZG
Part No.	**110 000**
Material	ZDC
Conductor Rd	7-10 mm
Length	29 mm
Outside diameter Ø	15 mm
PU	50 pc(s)

For copper conductors

Type FS ...	8 MSGALCU
Part No.	**110 017**
Material	Brass/gal Cu
Conductor Rd	8 mm
Length	29 mm
Outside diameter Ø	14 mm
PU	10 pc(s)

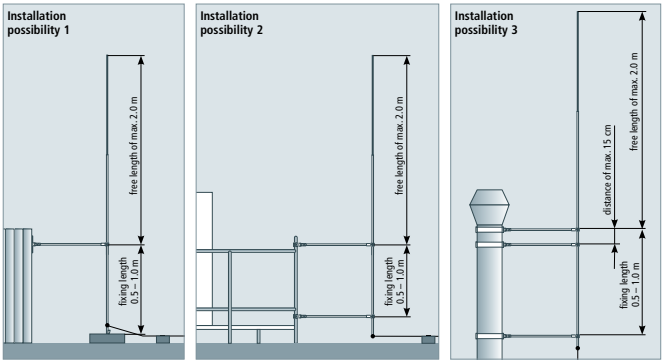
Air-Termination Stud

For installing meshed air-termination systems, for accessible flat roofs, e.g. parking decks.
The air-termination stud and the conductors may either be installed in concrete or in the joints between the decks.

Type	FP D80 ET70 8.10 V2A
Part No.	**108 009**
Material of clamp	StSt
Material of stud	StSt
Connection Rd	8-10 mm
Installation depth	min. 70 mm
Levelling range	18 mm
PU	1 pc(s)

DEHNiso Spacers

Variable holder range for conductors and air-termination rods for maintaining the separation distance according to DIN EN 62305-3 (VDE 0185-305-3).
Spacer bar made of glass-fibre reinforced plastic (GRP), Ø16 mm, UV-stabilised, light grey colour.
The DEHNiso spacers meet the requirements of DIN/IEC TS 62561-8.



With rod holder and fixing plate

Fixed conductor routing.

General technical data:	
Conductor support Rd	16 mm
Material of conductor holder	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Permanent temperature range	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type DIDH ...	16 530 BP V2A GFK	16 690 BP V2A GFK
Part No.	106 115	106 120
Length (l1)	530 mm	690 mm
Insulating clearance (l2)	445 mm	605 mm
PU	1 pc(s)	1 pc(s)

Type DIDH ...	16 1030 BP V2A GFK
Part No.	106 123
Length (l1)	1030 mm
Insulating clearance (l2)	945 mm
PU	1 pc(s)

With conductor holder and fixing plate

Fixed conductor routing.

General technical data:	
Conductor support Rd	7-10 mm
Material of conductor holder	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Permanent temperature range	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type DIDH ...	7.10 530 BP V2A GFK	7.10 690 BP V2A GFK
Part No.	106 090	106 100
Length (l1)	530 mm	690 mm
Insulating clearance (l2)	445 mm	605 mm
Max. gust wind speed (holder distance 1000 mm, Al Ø8 mm)	240 km/h	198 km/h
PU	1 pc(s)	1 pc(s)

Type DIDH ...	7.10 1030 BP V2A GFK
Part No.	106 105
Length (l1)	1030 mm
Insulating clearance (l2)	945 mm
Max. gust wind speed (holder distance 1000 mm, Al Ø8 mm)	140 km/h
PU	1 pc(s)

With rod holder and pipe clamp

General technical data:	
Conductor support Rd	16 mm
Material of conductor holder	StSt
Clamping range of pipe	40-60 mm (1 1/4-2")
Permanent temperature range	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type DIDH ...	16 530 RS40.60 V2A	16 690 RS40.60 V2A
Part No.	106 225	106 226
Length (l1)	530 mm	690 mm
Insulating clearance (l2)	445 mm	605 mm
PU	1 pc(s)	1 pc(s)

Type DIDH ...	16 1030 RS40.60 V2A
Part No.	106 228
Length (l1)	1030 mm
Insulating clearance (l2)	945 mm
PU	1 pc(s)

With rod holder and pipe clamp

General technical data:	
Conductor support Rd	16 mm
Material of conductor holder	StSt
Clamping range of pipe	50-300 mm
Permanent temperature range	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type DIDH ...	16 530 SB50.300 V2A	16 690 SB50.300 V2A
Part No.	106 245	106 246
Length (l1)	530 mm	690 mm
Insulating clearance (l2)	445 mm	605 mm
PU	1 pc(s)	1 pc(s)

Type DIDH ...	16 1030 SB50.300 V2A
Part No.	106 248
Length (l1)	1030 mm
Insulating clearance (l2)	945 mm
PU	1 pc(s)

With DEHNgrip conductor holder

For installation, e.g. in a concrete base (Part No. 102 075). Loose conductor routing.

Type DIDH ...	8 675 KT V2A GFK
Part No.	**106 160**
Conductor support Rd	8 mm
Material of conductor holder	StSt
Length (l1)	675 mm
Insulating clearance (l2)	590 mm
Permanent temperature range	-50 °C ... +100 °C
Max. gust wind speed (base 8.5 kg, holder distance 1000 mm, Al Ø8 mm)	104 km/h
Max. gust wind speed (base 17 kg, holder distance 1000 mm, Al Ø8 mm)	176 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

With MMV clamp

For crossing points, when installed in a concrete base (Part No. 102 075), fixed conductor routing.

Type DIDH ...	6.10 675 MMV KT V2A GFK
Part No.	**106 150**
Conductor support Rd	6-10 mm
Material of conductor holder	StSt
Length (l1)	675 mm
Insulating clearance (l2)	590 mm
Permanent temperature range	-50 °C ... +100 °C
Max. gust wind speed (base 8.5 kg, holder distance 1000 mm, Al Ø8 mm)	104 km/h
Max. gust wind speed (base 17 kg, holder distance 1000 mm, Al Ø8 mm)	176 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Verisons with other spacer bar lengths are available upon request.

Accessories for DEHNiso Spacers

Spacer bar

Cut to length (variable length).

Type	DIST 16 3000 GFK
Part No.	**106 125**
Material	GRP
Permanent temperature range	-50 °C ... +100 °C
Colour of spacer bar	light grey (RAL 7035)
Diameter Ø	16 mm
Total length	3000 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Fixing bush

Variable fixing of conductor and rod holders on a spacer bar (Ø16 mm), with M8 female thread.

Type	BB16 IGM8 ZG
Part No.	**106 126**
Material	ZDC
Female thread	M8
Diameter Ø	23 mm
PU	20 pc(s)

Fixing plate

Base plate for fixing the spacer or spacer bar (Ø16 mm), e.g. on structural parts.

Type	BP BB16 V2A ZG
Part No.	**106 127**
Material of fixing plate	StSt
Material of fixing bush	ZDC
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Dimensions	170 x 40 x 3 mm
PU	20 pc(s)

Conductor holder with fixing bush

For fixing conductors on the GRP bar.

Type	LH 7.10 BB16 V2A ZG
Part No.	**106 128**
Material of conductor holder	StSt
Conductor support Rd	7-10 mm
Conductor routing	fixed
PU	20 pc(s)

Rod holder with fixing bush

For fixing air-termination rods on the GRP bar.

Type	SH 16 BB16 V2A ZG
Part No.	**106 129**
Material of conductor holder	StSt
Conductor support Rd	16 mm
Conductor routing	fixed
PU	20 pc(s)

Spacers with conductor holder

For fixing conductors at different supports, fixed conductor routing.

General technical data:	
Conductor support Rd	7-10 mm
Material of conductor holder	StSt
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type	DIDH 7.10 515 V2A GFK16	DIDH 7.10 675 V2A GFK16
Part No.	**106 165**	**106 170**
Length (l1)	515 mm	675 mm
Insulating clearance (l2)	435 mm	595 mm
Max. gust wind speed (holder distance 1000 mm, Al Ø8 mm)	240 km/h	201 km/h
Max. gust wind speed (base 8.5 kg, holder distance 1000 mm, Al Ø8 mm)	125 km/h	104 km/h
Max. gust wind speed (base 17 kg, holder distance 1000 mm, Al Ø8 mm)	219 km/h	176 km/h
PU	1 pc(s)	1 pc(s)

Type	DIDH 7.10 1015 V2A GFK16
Part No.	**106 175**
Length (l1)	1015 mm
Insulating clearance (l2)	935 mm
Max. gust wind speed (holder distance 1000 mm, Al Ø8 mm)	140 km/h
Max. gust wind speed (base 8.5 kg, holder distance 1000 mm, Al Ø8 mm)	–
Max. gust wind speed (base 17 kg, holder distance 1000 mm, Al Ø8 mm)	125 km/h
PU	1 pc(s)

Accessories for DEHNiso Spacers

Spacers with rod holder
For fixing air-termination rods at different supports, fixed conductor routing.

General technical data:	
Conductor support Rd	16 mm
Material of conductor holder	StSt
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type	DIDH 16 515 V2A GFK16	DIDH 16 675 V2A GFK16
Part No.	**106 178**	**106 180**
Length (l1)	515 mm	675 mm
Insulating clearance (l2)	435 mm	595 mm
PU	1 pc(s)	1 pc(s)

Type	DIDH 16 1015 V2A GFK16
Part No.	**106 185**
Length (l1)	1015 mm
Insulating clearance (l2)	935 mm
PU	1 pc(s)

Fixing bolt
With M10 thread, nut, toothed lock washer and screw for accommodating the spacer bar.

Type	BB16 GSM10 AL	BB16 GSM10 V2A
Part No.	**106 301**	**106 309**
Material of bolt	Al	StSt
Clamping range Rd	16 mm	16 mm
PU	20 pc(s)	20 pc(s)

Fixing bracket
With fixing bolt (Al) for spacer bar (Ø16 mm).

Type	BW90 BB16 B5.1 6.5 11 V2A
Part No.	**106 311**
Material	StSt
Angle	90°
Fixing	[4x] Ø5.1 / [2x] Ø6.5 / [2x] 11 x 20 mm
PU	20 pc(s)

Fixing bracket
For DEHNiso spacer, with hole Ø11 mm.

Type	BW90 B11 B5.1 6.5 11 V2A
Part No.	**106 310**
Material	StSt
Angle	90°
Fixing	[4x] Ø5.1 / [2x] Ø6.5 / [2x] 11 x 20 mm
Dimensions	110 x 60 x 30 mm
PU	20 pc(s)

Fixing bracket
For DEHNiso spacer, with hole Ø11 mm.

Type	BW45 B11 B5.1 6.5 11 V2A
Part No.	**106 315**
Material	StSt
Angle	45°
Fixing	[4x] Ø5.1 / [2x] Ø6.5 / [2x] 11 x 20 mm
Dimensions	104 x 54 x 30 mm
PU	20 pc(s)

Corner bracket
With fixing bolt (Al) for spacer bar (Ø16 mm).

Type	EBW90 BB16 B5.1 6.5 11 V2A
Part No.	**106 316**
Material	StSt
Angle	90°
Fixing	[8x] Ø5.1 / [4x] Ø6.5 / [4x] 11x20 mm
Dimensions	132 x 155 x 30 mm
PU	1 pc(s)

Pipe clamp
With fixing bush for spacer bars (Ø16 mm) for pipes up to Ø60 mm.

Type	RS D40.60 BB16 V2A ZG
Part No.	**106 352**
Material of clamp	StSt
Clamping range for pipe Ø	40-60 mm (1 ¼-2'')
Material of bush	ZG
PU	10 pc(s)

Pipe clamp
With fixing bush for spacer bars (Ø16 mm) for pipes up to Ø90 mm.

Type	RS D70.90 BB16 V2A ZG
Part No.	**106 353**
Material of clamp	StSt
Clamping range for pipe Ø	70-90 mm (2 ¼-3'')
Material of bush	ZG
PU	1 pc(s)

Railing clamp
For square hollow profiles with bush for spacer bars (Ø16 mm).

Type	BS 4K 20.50 BB16 ZG V2A
Part No.	**106 312**
Material	ZG / StSt
Clamping range for square profile	20 x 20 to 50 x 50 mm
PU	5 pc(s)

Accessories for DEHNiso Spacers

Clip for fixing spacers to pipes

Fixing by means of tensioning straps up to 30 mm (e.g. tensioning strap 25 x 0.3 mm with grip head Part No. 106 323), with fixing bolt for spacer bar (Ø16 mm).

Type	BB SPB30 BB16 V2A AL
Part No.	**106 321**
Material of clip	StSt
Material of bolt	Al
Width of slot (l x w)	32 x 6 mm
Fixing	[2x] Ø11 mm
PU	10 pc(s)

Attachment with fixing bush

For fixing spacers (Ø16 mm) to pipes, e.g. using a pipe clamp (Part No. 106 323).

Type	AS SPB25 BB16 V2A
Part No.	**106 322**
Material	StSt
Width of slot (l x w)	26 x 6 mm
Clamping range Rd	16 mm
PU	10 pc(s)

Pipe clamp

For fixing (clamping) conductor holders (e.g. Part No. 275 319).

Type	BRS SPB25 50.300 V2A
Part No.	**106 323**
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Material of screw	StSt
PU	10 pc(s)

Clip

Fixed on pipes using a tensioning strap (Part No. 540 901, dimensions 25 x 0.3 mm) in combination with a with grip head (Part No. 106 324), with square hole, suitable for M8 screws.

Type	BUE SPB25 V2A
Part No.	**106 320**
Material	StSt
Clamping range of tube Ø	approx. 50-300 mm
PU	20 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.

Type	SPK 25X0.3 V2A
Part No.	**106 324**
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap

Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Adapter for angled support

For air-termination rods (Ø16 mm) with 2 fixing bolts for spacer bars (Ø16 mm).

Type	AD WAS 16 BB16 V2A
Part No.	**106 325**
Material	StSt
Clamping range Rd	16 / 16 mm
PU	10 pc(s)

Adapter for angled support

For supporting tubes DEHNiso Combi (Ø50 mm) with 2 fixing bolts for spacer bars (Ø16 mm).

Type	AD WAS 50 BB16 V2A
Part No.	**106 326**
Material	StSt
Clamping range Rd	50 / 16 mm
PU	1 pc(s)

Fixing adapters

For seam and connection clamps.

General technical data:	
Material of bar	StSt
Bar Ø	8 mm
Material of bush	ZG

Type	BA RD8 BB16 V2A ZG	BA90 RD8 BB16 V2A ZG
Part No.	**106 340**	**106 341**
Angle	0°	90°
PU	20 pc(s)	20 pc(s)

Type	BA130 RD8 BB16 V2A ZG
Part No.	**106 342**
Angle	130°
PU	20 pc(s)

MV clamp

Especially for fixing air-termination rods to spacer bars without fixing bush.

Type	MVK 16 16 FRM10X50 V2A
Part No.	**393 069**
Material	StSt
Conductor support Rd	16 / 16 mm
Conductor routing	fixed
PU	50 pc(s)

Accessories for DEHNiso Spacers

Connection clamp with fixing bolt

For fixing spacers (Ø16 mm), e.g. to steel girders.

Type	AK 3.18 BB16 V2A AL
Part No.	**106 319**
Clamping range	3-18 mm
Clamping range Rd	16 mm
Material of fixing bolt	Al
Connection with	fixing bolt
PU	1 pc(s)

Air-Termination Rods GRP/Al

For erecting isolated air-termination systems, e.g. on flat roofs, installed in a concrete base with fixing wedge.

The material factor k_m = 0.7 is used to determine the separation distance (length of spacer bar).
Diameter 16 mm, UV-stabilised, light grey colour, permanent temperature range -50 to +100 °C.

The GRP/Al air-termination rods meet the requirements of DIN/IEC TS 62561-8.

Crimped

Type	FS 16 10 1660 GFK AL	FS 16 10 2000 GFK AL
Part No.	**106 207**	**106 210**
Total length (l1)	1660 mm	2000 mm
Insulating clearance (l2)	635 mm	975 mm
Material of air-termination tip / bush	Al	Al
Max. gust wind speed (1x base 17 kg, holder distance 1000 mm, Al Ø8 mm)	114 km/h	93 km/h
Max. gust wind speed (2x base 17 kg, holder distance 1000 mm, Al Ø8 mm)	129 km/h	105 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)	10 pc(s)

Variable with M10 thread

e.g. for air-termination tip (Part No. 101 001), air-termination tip with MV clamp (Part No. 105 071) (for crossing points) or MV clamp for spanning cables (Part No. 105 079).

Type	DIST 16 M10 675 GFK	DIST 16 M10 1015 GFK
Part No.	**106 217**	**106 220**
Total length (l1)	675 mm	1015 mm
Insulating clearance (l2)	635 mm	975 mm
Material of air-termination tip / bush	Al	Al
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)	10 pc(s)

Accessories for Air-Termination Rods GRP/Al

Air-termination tip with lock nut

Screw-in design

Type	FS 10 1000 M10 V2A
Part No.	**101 001**
Material	StSt
Diameter Ø	10 mm
Length	1000 mm
Thread	M10
Standard	EN 62561-2
PU	1 pc(s)

Air-termination tip with MV clamp

For screwing into the head of the supporting tube and fixing air-termination conductors (wires or cables).
With M10 thread.

Type	FSP 10 1000 MVK 8.10 V2A
Part No.	**105 071**
Material of air-termination tip	StSt
Air-termination tip (l x Ø)	1000 x 10 mm
Clamping range Rd	8-10 mm
Thread	M10
Standard	EN 62561-(1+2)
PU	1 pc(s)

MV clamp for spanning cables

For screwing into the head of the supporting tube, with M10 screw, for spanning cables

Type	MVK 8.10 M10 V2A
Part No.	**105 079**
Material	StSt
Clamping range Rd	8-10 mm
Standard	EN 62561-1
PU	1 pc(s)

DEHNiso Roof Conductor Holders

Variable range of holders for keeping the separation distance when installing conductors on flat roofs.
Spacer bar made of glass-fibre reinforced plastic (GRP) Ø10 mm, UV-stabilised, light grey colour
Spacer with concrete block and base plate, for conductors Rd 8 mm.
The DEHNiso roof conductor holders are tested in line with DIN/IEC TS 62561-8.

Spacer with concrete block and base plate, loose conductor routing.

Note: Please contact us to find out whether the material of the roof conductor holder or base plate is compatible with the roof elements.

Type DIDLH 8 ...	H295 D300 BS	H435 D300 BS
Part No.	**253 115**	**253 125**
Material of roof conductor holder	plastic / GRP	plastic / GRP
Length (l1)	295 mm	435 mm
Insulating clearance	220 mm	360 mm
Total weight	approx. 4.8 kg	approx. 4.8 kg
Permanent temperature range	-30 °C ... +80 °C	-30 °C ... +80 °C
Max. gust wind speed (base 4.6 kg, holder distance 1000 mm, Al Ø8 mm)	163 km/h	125 km/h
Standard	Based on DIN IEC/ TS 62561-8 (VDE V 0185-561-8)	Based on DIN IEC/ TS 62561-8 (VDE V 0185-561-8)
PU	24 pc(s)	24 pc(s)

Accessories for DEHNiso Roof Conductor Holders

Spacer bar with conductor holder

For insertion into the base plate (lock bush), stabilised with concrete block. For raised conductor routing, loose conductor routing.

Type	DILH 8 DS10 L280 K GR GFK	DILH 8 DS10 L420 K GR GFK
Part No.	**253 315**	**253 325**
Material of conductor holder	plastic	plastic
Length (l1)	280 mm	420 mm
Insulating clearance	220 mm	360 mm
Permanent temperature range	-30 °C ... +80 °C	-30 °C ... +80 °C
Standard	Based on DIN IEC/ TS 62561-8 (VDE V 0185-561-8)	Based on DIN IEC/ TS 62561-8 (VDE V 0185-561-8)
PU	24 pc(s)	24 pc(s)

Conductor holder with lock bush

For fixing the conductor to the GRP bar.

Type	DILH 8 SB10 K GR
Part No.	**253 302**
Material	plastic
Colour	grey
Conductor support Rd	8 mm
Permanent temperature range	-30 °C ... +80 °C
PU	24 pc(s)

Spacer bar for DEHNiso roof conductor holders

Cut to length (variable length).

Type	DIST 10 3000 GFK
Part No.	**253 310**
Material	GRP
Colour	light grey (RAL 7035)
Diameter Ø	10 mm
Length	3000 mm
Permanent temperature range	-30 °C ... +80 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Concrete block

For stabilising the base plate.

Type	BES 4.6KG SB10 180X180X70
Part No.	**253 301**
Material	concrete (C35/45)
Weight	4.6 kg
Dimensions	180 x 180 x 70 mm
PU	24 pc(s)

Base plate

Base plate to hold the spacer bar (Part Nos. 253 315, 253 325) and conductor holder (Part No. 253 289) and to protect the roof sheeting under the concrete block (Part No. 253 301).

Type	GP B10 H60 D300 KS GR
Part No.	**253 300**
Diameter Ø	300 mm
Diameter Ø of lock bush	10 mm
Height	60 mm
Material	plastic
Colour	grey
PU	24 pc(s)

DEHNiso Combi Sets

Components for isolated air-termination systems.
For protecting large roof-mounted structures, e.g. air-conditioning systems, heat exchangers, etc.
For keeping the separation distance to electrically conductive parts according to IEC/EN 62305-3.
The separation distance (insulating clearance) is determined with material factor k_m = 0.7.

One-piece, total height 4200 mm

Consisting of:
1x air-termination tip StSt,
L = 1000 mm (Part No. 105 071)
1x supporting tube GRP/Al, L = 3200 mm
(Part No. 105 300)
2x wall mounting bracket StSt
(Part No. 105 340)
1x spacer GRP/Al, L = 1030 mm
(Part No. 106 331)

Type DICS WB ...	D50.10 4.2M GFK AL V2A
Part No.	**105 440**
Total length	4200 mm
Number of fixing brackets	2
Length of supporting tube	3200 mm
Max. free length with air-termination tip	3500 mm
Max. gust wind speed	(Wall mounting max. free length 3,500 mm, Ø8 mm) 232 km/h
Material of supporting tube	GRP / Al
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

One-piece, total height 5700 mm

Consisting of:
1x air-termination tip StSt,
L = 1000 mm (Part No. 105 071)
1x supporting tube GRP/Al,
L = 4700 mm (Part No. 105 301)
3x wall mounting bracket StSt
(Part No. 105 340)
2x spacer GRP/Al, L = 1030 mm
(Part No. 106 331)

Type DICS WB ...	D50 10 5700 GFK AL V2A
Part No.	**105 455**
Total length	5700 mm
Number of fixing brackets	3
Length of supporting tube	4700 mm
Max. free length with air-termination tip	4000 mm
Max. gust wind speed	(Wall mounting max. free length 4,000 mm, Ø8 mm) 206 km/h
Material of supporting tube	GRP / Al
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Two-piece, total height 7200 mm

(transport length 3200 mm)
Consisting of:
1x air-termination tip StSt,
L = 1000 mm (Part No. 105 071)
1x supporting tube GRP/Al, L = 6200 mm
(Part No. 105 302)
3x wall mounting bracket StSt
(Part No. 105 340)
3x spacer GRP/Al, L = 1030 mm
(Part No. 106 331)

Type DICS WB ...	D50 10 7200 GFK AL V2A
Part No.	**105 470**
Total length	7200 mm
Number of fixing brackets	3
Length of supporting tube	6200 mm
Max. free length with air-termination tip	4000 mm
Max. gust wind speed	(Wall mounting max. free length 4,000 mm, Ø8 mm) 206 km/h
Material of supporting tube	GRP / Al
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for DEHNiso Combi Sets

Supporting tubes GRP / Al

For isolated air-termination systems, with female thread, for air-termination tips or MV clamps for spanning cables.
One-piece.

Type	SR D50 M10 3200 GFK AL	SR D50 M10 4700 GFK AL
Part No.	**105 300**	**105 301**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube (l1)	3200 mm	4700 mm
Outside diamter Ø	50 mm	50 mm
Length of insulating clearance	1535 mm	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Supporting tube GRP / Al

For isolated air-termination systems, with female thread, for air-termination tips or MV clamps for spanning cables.
Also suitable for fixing the HVI Conductor.
Two-piece.

Type	SR D50 M10 6200 TB GFK AL
Part No.	**105 302**
Material of supporting tube	GRP / Al
Length of supporting tube	6200 mm
Outside diameter Ø	50 mm
Length of insulating clearance	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for DEHNiso Combi Sets

Supporting tube GRP / Al

One-piece, combined with air-termination rod Ø16 / 10 mm, length 2500 mm, Al.

Type	SR D50 3200 FS16.10 2500 GFK AL
Part No.	**105 306**
Material of supporting tube	GRP / Al
Total length	5700 mm
Length of supporting tube	3200 mm
Outside diamter Ø	50 mm
Length of insulating clearance	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Air-termination tip with MV clamp

For screwing into the head of the supporting tube and fixing air-termination conductors (wires or cables).
With M10 thread.

Type	FSP 10 1000 MVK 8.10 V2A
Part No.	**105 071**
Material of air-termination tip	StSt
Air-termination tip (l x Ø)	1000 x 10 mm
Clamping range Rd	8-10 mm
Thread	M10
Standard	EN 62561-(1+2)
PU	1 pc(s)

MV clamp for spanning cables

For screwing into the head of the supporting tube, with M10 screw, for spanning cables

Type	MVK 8.10 M10 V2A
Part No.	**105 079**
Material	StSt
Clamping range Rd	8-10 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket for horizontal mounting, flat

For fixing supporting tubes onto the structure to be protected or the wall.

Type	WB D50 WA V2A
Part No.	**105 340**
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	320 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

Wall mounting bracket for horizontal mounting, corner

For fixing supporting tubes onto the structure to be protected or the wall.

Type	EB D50 WA V2A
Part No.	**105 341**
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	152 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

Wall mounting bracket for vertical mounting

For attaching supporting tubes or air-termination rods D40 / D50 to roof-mounted structures or walls.

Type	WB D40.50 SE WA46 V2A	WB D40.50 SE WA110 V2A
Part No.	**105 342**	**105 348**
Material of bracket	StSt	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
Distance from wall	46 mm	110 mm
PU	1 pc(s)	1 pc(s)

Wall mounting bracket, adjustable from 150-200 mm

For attaching supporting tubes or air-termination rods D40 / D50, with double clamp for connecting 2x Rd 8-10 mm.

Type	WB D40.50 V150.200 V2A
Part No.	**105 344**
Material of bracket	StSt
Clamping range for supporting tube	40-50 mm
Distance from wall	150-200 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket, adjustable from 230-1300 mm

For fixing supporting tubes or air-termination rods D40 / D50.

General technical data:	
Material of bracket	St/tZn / StSt
Clamping range for supporting tube	40-50 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm

Type	WB D40.50 V230.400 STTZN V2A	WB D40.50 V400.700 STTZN V2A
Part No.	**105 347**	**105 343**
Distance from wall	230-400 mm	400-700 mm
PU	1 pc(s)	1 pc(s)

Type	WB D40.50 V700.1300 STTZN V2A
Part No.	**105 349**
Distance from wall	700-1300 mm
PU	1 pc(s)

Accessories for DEHNiso Combi Sets

Fixing clamp with tensioning strap
For fixing supporting tubes to structural elements, e.g. antenna masts.

Type	BS D50 SB50.300 V2A
Part No.	105 360
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
PU	1 pc(s)

Fixing clamp with tensioning strap
With additional spacer for adjusting the sector antenna supports to the mast.

Type	BS D50 DS30 SB50.300 V2A
Part No.	105 361
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	30 mm
PU	1 pc(s)

Fixing clamp with tensioning strap
With additional long spacer for adjusting sector antenna supports to the mast.

Type	BS D50 DS90 SB50.300 V2A
Part No.	105 362
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	95 mm
PU	1 pc(s)

Railing clamp
For pipes.

Type	BS D40.50 D48.60 V2A
Part No.	105 354
Material	StSt
Clamping range for pipe Ø	48-60 mm (1 1/2-2'')
Clamping range for supporting tube	40-50 mm
PU	5 pc(s)

Railing clamp
With spacer for adjusting, e.g. antenna supports.

Type	BSC D40 DS95 D45.65 V2A
Part No.	105 162
Material	StSt
Clamping range for pipe Ø	45-65 mm (1 1/2-2'')
Clamping range for supporting tube	40-50 mm
Length of spacer	95 mm
Standard	EN 62561-1
PU	1 pc(s)

Railing clamp
For pipes.

Type	BS D40.50 D70.90 V2A
Part No.	105 355
Material	StSt
Clamping range for pipe Ø	70-90 mm (2 1/4-3'')
Clamping range for supporting tube	40-50 mm
PU	1 pc(s)

Railing clamp
For square hollow profiles.

Type	BS D40.50 4K20.50 V2A	BS D40.50 4K60.120 V2A
Part No.	105 356	105 376
Material	StSt	StSt
Clamping range for square profile	20 x 20 to 50 x 50 mm	60 x 120 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
PU	5 pc(s)	1 pc(s)

Pipe clamp
With fixing bush for spacer bars (Ø16 mm) for pipes up to Ø60 mm.

Type	RS D40.60 BB16 V2A ZG
Part No.	106 352
Material of clamp	StSt
Clamping range for pipe Ø	40-60 mm (1 1/4-2'')
Material of bush	ZDC
PU	10 pc(s)

Pipe clamp
With fixing bush for spacer bars (Ø16 mm) for pipes up to Ø90 mm.

Type	RS D70.90 BB16 V2A ZG
Part No.	106 353
Material of clamp	StSt
Clamping range for pipe Ø	70-90 mm (2 1/4-3'')
Material of bush	ZDC
PU	1 pc(s)

Railing clamp

For square hollow profiles with bush for spacer bars (Ø16 mm).

Type	BS 4K 20.50 BB16 ZG V2A
Part No.	**106 312**
Material	ZDC / StSt
Clamping range for square profile	20 x 20 to 50 x 50 mm
PU	5 pc(s)

Spacers for supporting tubes

For fixing conductors to the supporting tube and keeping the separation distance according to IEC/EN 62305-3.

Type	DIDH 7.10 690 D50 V2A	DIDH 7.10 1030 D50 V2A
Part No.	**106 328**	**106 331**
Material of spacer	GRP	GRP
Material of fixing element	StSt	StSt
Total length (l1)	690 mm	1030 mm
Insulating clearance (l2)	605 mm	945 mm
Permanent temperature range	-50 °C ... +100 °C	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Tripod for DEHNiso Combi

For installing self-supporting supporting tubes D50 mm or air-termination rods D40 mm with a length of 3200 mm (e.g. Part No. 105 300 or 105 440), without additional fixing to structural parts.
Adjustable to the roof inclination up to max. 10°.
Connection with double clamp for 2x Rd 8-10 mm [lightning current carrying capability 100 kA (10/350 µs)].
The stackable concrete base (Part No. 102 010) and the base plate (Part No. 102 050) have to be ordered separately.

Folding for transport.

Type	DBS KB D40.50 RA560 STTZN
Part No.	**105 200**
Material of tripod	St/tZn
Support	40 / 50 mm
Number of concrete bases	6 / 9 blocks, 17 kg each
Radius	560 mm
Space required for tripod	1200 x 1330 mm
Standard	EN 62561-1
PU	1 pc(s)

Tripod D50

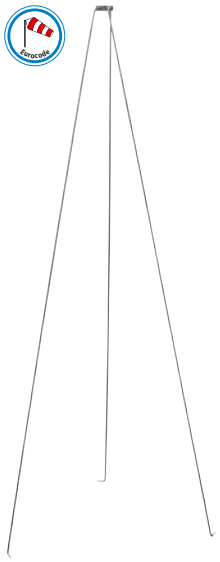
For installing self-supporting supporting tubes, D50 mm, length 4.7-6.2 m (e.g. Part No. 105 455 or 105 470), without additional fixing to structural parts.
Adjustable to a roof inclination up to max. 10°.
Connection with double clamp for 2x Rd 8-10 mm [lightning current carrying capability 100 kA (10/350 µs)].
The stackable concrete bases (Part No. 102 010) and the base plate (Part No. 102 050) have to be ordered separately.

Folding for transport.

Type	DBS KB D40.50 RA1435 STTZN
Part No.	**105 201**
Material of tripod	St/tZn
Support	40 / 50 mm
Number of concrete bases	3-12 blocks, 17 kg each
Radius	1435 mm
Required space for tripod	2530 x 2850 mm
Standard	EN 62561-1
PU	1 pc(s)

Bracing

Brace, 3x with clamp for pipe, Ø50 mm for fixing to the tripod (part no. 105 201).
Brace suitable for supporting tubes with a length of 4700 mm (e.g. part nos 105 332, 105 316, 105 333, 105 317, 105 322, 105 323, 105 565, 105 575).



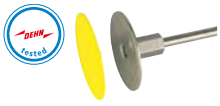
Type	ABST 3F D50 2900 V2A
Part No.	**105 601**
Material	StSt
Brace length	2910 mm
Ø clamp	50 mm
PU	1 pc(s)

Fixed Earthing Terminals

For installation in concrete as a corrosion-free connection to the earth-termination system for protective equipotential bonding and / or functional equipotential bonding of the down conductor, e.g. to the reinforcement of buildings.
Please observe the following minimum screw lengths for the M10 and M12 double threads:
35 mm of M10 (thread length 40 mm)
15 mm of M12 (thread length 20 mm)

Type M

With connecting shaft (l = 180 mm, Ø10 mm).



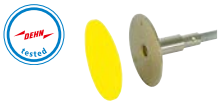
Type	EFPM M10 12 V4A L230 STTZN	EFPM M10 12 V4A L230 V2A
Part No.	**478 011**	**478 019**
Connection thread	M10 / M12	M10 / M12
Material of plate	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Material of shaft	St/tZn	StSt
Connection plate Ø	80 mm	80 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.5 kA	3.9 kA
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Type M without connecting shaft

Type	EFPM M10 12 V4A
Part No.	**478 012**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Connection plate Ø	80 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.3 kA (with copper cable lug)
Standard	EN 62561-1
PU	20 pc(s)

Type M, press-fitted

Connecting shaft (l = 180 mm, Ø10 mm).

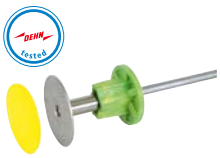


Type	EFPM M10 12 V4A L245 VP STTZN	EFPM M10 12 V4A L245 VP V2A
Part No.	**478 041**	**478 049**
Connection thread	M10 / M12	M10 / M12
Material of plate	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Material of shaft	St/tZn	StSt
Connection plate Ø	80 mm	80 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.7 kA	3.3 kA
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Part No. 478 049 with UL approval.

Type M, press-fitted, with additional water barrier

Protection against water ingress along the shaft into the wall (tested according to EN 62561-5 with 5 bar compressed air and 1 bar pressure water). Suitable for waterproof concrete.



Type	EFPM M10 12 V4A WS L245 VP STTZN
Part No.	**478 051**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of shaft	St/tZn
Connection plate Ø	80 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.7 kA
Material of water barrier	PVC
Standard	EN 62561-1
PU	10 pc(s)

Type M with MV clamp

For round conductors 8-10 mm, space-saving installation in the formwork.

Type	EFPM M10 12 V4A MVK8.10 STTZN
Part No.	**478 112**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of MV clamp	St/tZn
Connection plate Ø	80 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.3 kA
Standard	EN 62561-1
PU	25 pc(s)

Type K

With plastic ring and connecting shaft (l = 180 mm, Ø10 mm).

Type	EFPK M10 12 V4A L230 STTZN
Part No.	**478 200**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of shaft	St/tZn
Connection plate Ø	46 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.5 kA
Standard	EN 62561-1
PU	25 pc(s)

Accessories for Fixed Earthing Terminals

Foam pad

Foam pad is attached to the yellow protective cover of the fixed earthing terminal (see installation instructions DS1476). One side adhesive, with pull-off tab.

Using the foam pad enables a position compensation of approx. 20 mm at the formwork and makes it easier to find and expose the fixed earthing terminal after concreting.

Type	SSP D90 H20
Part No.	**478 098**
Diameter Ø	90 mm
Height	20 mm
PU	10 pc(s)

Fixed Earthing Terminal M16

With M16 connection thread for higher current loads (50 Hz), e.g. for connecting the ring equipotential bonding system with the earth-termination systems of power installations with nominal AC voltages over 1 kV (transformer earthing).

Type	EFP M16 V4A SL400
Part No.	**478 027**
Connection thread	M16
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of cable	Cu/gal Sn
Cross-section of connecting cable	70 mm²
Length of connecting cable	400 mm
Diameter Ø connecting cable	10.5 mm
Connection plate Ø	80 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	11 kA
PU	10 pc(s)

Sealing Collar for Connection Lug

Sealing collar for bushings in case of watertight foundation slabs / walls (e.g. white tank).
Water-pressure-tight for pushing on round / flat conductors with StSt tensioning straps.

Pressurised water test up to 1 bar represents an installation depth of 10 m in stagnant water, additionally tested with 5 bar compressed air according to EN 62561-5.

For round conductors

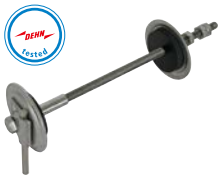
Type DM AF ...	RD10 D105MM TPE
Part No.	**478 598**
Material	thermoplast elastomer
Diameter Ø	105 mm
Bushing Rd	10 mm
Standard	EN 62561-5
PU	10 pc(s)

For flat conductors

Type DM AF ...	FL30X3.5 D120MM TPE
Part No.	**478 599**
Material	thermoplast elastomer
Diameter Ø	119 mm
Bushing Fl	30 x 3.5 mm
Standard	EN 62561-5
PU	10 pc(s)

Wall Bushings

With MV clamp made of StSt (V4A) for round conductors 8–10 mm.
Water-pressure-tight wall bushing for leading earthing conductors / equipotential bonding conductors through brickwork or walls; with M10 threaded rod made of StSt.
For subsequent installation through borehole (Ø14 mm) or through spacer in the formwork.
Test for water pressure-tightness up to 1 bar features an installation depth of 10 m in stagnant water.



General technical data:	
Sealings	Neoprene
Sealing disc Ø	80 mm
Material of disc	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.7 kA
Standard	EN 62561-1

Type EWD MVK8.10 M10 ...	L100 300 V4A	L300 500 V4A
Part No.	**478 410**	**478 430**
Length of bushing (l2)	100-300 mm	300-500 mm
Length of threaded rod (l1)	308 mm	508 mm
PU	5 pc(s)	5 pc(s)

Type EWD MVK8.10 M10 ...	L500 700 V4A
Part No.	**478 450**
Length of bushing (l2)	500-700 mm
Length of threaded rod (l1)	708 mm
PU	1 pc(s)

Water-Pressure-Tight Wall Bushings for White Tank

For installation in the formwork. Is suitable for water-pressure-tight wall bushings; e.g. for connecting the ring earth electrode with the equipotential bonding bar or the equipotential bonding conductor in the foundation.

General technical data:	
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of axis	St/tZn
Connection thread	M10 / 12
Connection plate Ø	80 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	4.1 kA
Standard	EN 62561-(1+5)

Type WD M10 12 V4A DWD ...	L200 300 STTZN	L300 400 STTZN
Part No.	**478 530**	**478 540**
Wall thickness (l1)	200-300 mm	300-400 mm
PU	10 pc(s)	4 pc(s)

Type WD M10 12 V4A DWD ...	L400 500 STTZN
Part No.	**478 550**
Wall thickness (l1)	400-500 mm
PU	4 pc(s)

Connecting Clamps for Fixed Earthing Terminals and Reinforcement

For connecting the reinforcement with clamping piece.
For round conductors or fixed earthing terminals with simultaneous fixing in the formwork.

Arrangement:
(II) = parallel
(+) = cross

For small diameters

Type	VK 6.22 FL40 KB6.10 BSB STBL
Part No.	**308 035**
Material	St/bare
Clamping range Rd / Rd	(+/II) 6-22 / 6-10 mm
Clamping range Rd / Fl	(+) 6-22 / 40 mm
Screw	M10 x 60 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1.0 kA
PU	25 pc(s)

U-clamp for large diameters

Type	BVK 16.48 FL40 KB6.10 BSB STBL
Part No.	**308 046**
Material	St/bare
Clamping range Rd / Rd	(+/II) 16-48 / 6-10 mm
Clamping range Rd / Fl	(II) 16-48 / 30-40 mm
Screw	U-bolt M10 x 48 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.9 kA
PU	25 pc(s)

Threaded Adapter

For connection to fixed earthing terminals with M10 thread, lock nut and spring washer, for use in case of perimeter insulation or thermal insulation composite systems.

Type	GAD EFP M10 10 L130 V4A
Part No.	**478 699**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Female thread	M10 x 25 mm
Male thread	M10 x 80 mm
Total length	130 mm
Standard	EN 62561-1
PU	10 pc(s)

End Pieces

Screwed to the fixed earthing terminal to connect, e.g. an equipotential bonding bar or structural parts such as steel girders, etc.

Basic design

Universal use for M10 and M12 connections, e.g. at the fixed earthing terminal.

For connection of Rd, e.g. with KS connector (Part No. 301 019), or Fl with M10 or M12 screws and nuts.

Type ES ZF ...	2XB18 V2A
Part No.	**390 499**
Material	StSt
Hole Ø	10.5 / 12.5 mm
PU	50 pc(s)

Design with square holes

Dimensions 11x11 mm, for connecting Rd, e.g. with KS connector (Part No. 301 019), or Fl with M10 screws and nuts.

Type ES ZF ...	2X11.11 1XB13 V2A
Part No.	**390 479**
Material	StSt
Distance of holes	30 mm
Hole Ø	13 mm
PU	50 pc(s)

Design with holes and KS connector

With holes Ø11 mm.

Type ES ZF ...	2XB11 KSV 7.10 STTZN
Part No.	**363 010**
Material	St/tZn
Distance of holes	22 mm
Hole Ø	11 mm
Clamping range Rd	7-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Design with holes

With holes Ø11 mm.

Type ES ZF ...	3XB11 STTZN
Part No.	**363 000**
Material	St/tZn
Distance of holes	22 mm
Hole Ø	11 mm
PU	50 pc(s)

Connection Clamps with Threaded Bolt

For connecting round and flat conductors to fixed earthing terminals with M10 / M12 thread (e.g. Part Nos. 478 011, 478 200) and M16 thread (Part No. 478 027).
Clamps with M10 thread are also suitable for installation on the rear side of the fixed earthing terminal (without connecting shaft), e.g. to connect a flat strip.

Heavy design M10

Type AK ...	7.10 FL40 GBM10X45 STTZN
Part No.	**478 141**
Material of clamp	St/tZn
Clamping range Rd / Fl	7-10 / 30-40 mm
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
PU	10 pc(s)

Heavy design M12

Type AK ...	7.10 FL40 GBM12X55 V4A
Part No.	**478 149**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Fl	7-10 / 30-40 mm
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.3 kA
PU	10 pc(s)

Heavy design M16

Type AK ...	7.10 FL40 GBM16X65 V4A
Part No.	**478 150**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Fl	7-10 / 30-40 mm
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	5.9 kA
PU	10 pc(s)

Light design M10

Type AK ...	ZS 8.10 FL30 GBM10X60 V4A
Part No.	**478 129**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Fl	8-10 / 30 mm
Dimensions	58 x 30 x 2.5 mm
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	2.7 kA
PU	10 pc(s)

DEHNclip Rebar Clamp

Nominal diameter d_s	Outer diameter d_A

The outer diameter including corrugation is approx. $d_A = 1.15 \times d_s$											
Nominal diameter d_s (mm)	6	8	10	12	14	16	20	25	28	32	40
Average outer diameter incl. corrugation d_A (mm)	7.1	9.4	11.8	14.2	16.5	18.9	23.6	29.5	33.1	37.8	47.2
Nominal cross section (mm^2)	28.3	50.3	78.5	113.1	154	201	314	491	616	804	1257

In accordance with DIN 18014 "Foundation earth electrode – Planning, execution and documentation" from March 2014, foundation earth electrodes must be connected to the reinforcement of the foundation slab every 2 metres. To do so, there are various possibilities. Clamping turned out to be the most cost-effective solution since this connection can be made easily and quickly on site.

Moreover, according to the latest lightning protection standards, reinforcing steel, for example, must be used as a natural component of the down-conductor system. Below is an overview of the nominal and outer diameters as well as the cross-sections of reinforcing steels DIN EN 10080:2005.

For connecting reinforcing steel mesh or reinforcements with round and flat conductors.
Arrangement: (II) = parallel (+) = cross

Quick and safe:
The DEHNclip rebar clip for quick connection of the earth electrode to the reinforcement without tools. DEHNclip is tested for a lightning current carrying capability of 50 kA (10/350 µs) in accordance with DIN EN 62561-1.

For connecting round conductors with the reinforcement

General technical data:		
Material		St/bare
Standard		EN 62561-1

Type DC BK ...	6 RD10 STBLANK	8 RD10 STBLANK
Part No.	**308 130**	**308 131**
Clamping range Rd* / Rd	6-7 / 10 mm	8-9 / 10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.5 kA	2.7 kA
PU	50 pc(s)	50 pc(s)

Type DC BK ...	10 RD10 STBLANK	12 RD10 STBLANK
Part No.	**308 132**	**308 133**
Clamping range Rd* / Rd	10 / 10 mm	12 / 10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.4 kA	2.7 kA
PU	50 pc(s)	50 pc(s)

*) Nominal diameter d_s of the reinforcement

For connecting flat conductors with the reinforcement

General technical data:	
Material	St/bare
Standard	EN 62561-1

Type DC BK ...	6 FL30 STBLANK	8 FL30 STBLANK
Part No.	**308 140**	**308 141**
Clamping range Rd* / Fl	6-7 / 30 mm	8-9 / 30 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.0 kA	2.3 kA
PU	50 pc(s)	50 pc(s)

Type DC BK ...	10 FL30 STBLANK	12 FL30 STBLANK
Part No.	**308 142**	**308 143**
Clamping range Rd* / Fl	10 / 30 mm	12 / 30 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.3 kA	2.3 kA
PU	50 pc(s)	50 pc(s)

*) Nominal diameter d_s of the reinforcement

For connecting reinforcing steel

General technical data:	
Material	St/bare
Standard	EN 62561-1

Type DC BK ...	6 RD6 STBLANK	8 RD8 STBLANK
Part No.	**308 134**	**308 135**
Clamping range Rd* / Rd*	6-7 / 6-7 mm	8-9 / 8-9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.2 kA	2.4 kA
PU	50 pc(s)	50 pc(s)

Type DC BK ...	8 RD12 STBLANK	12 RD12 STBLANK
Part No.	**308 137**	**308 136**
Clamping range Rd* / Rd*	8-9 / 12 mm	12 / 12 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.4 kA	2.6 kA
PU	50 pc(s)	50 pc(s)

*) Nominal diameter d_s of the reinforcement

Connecting Clamps for Reinforcements

To connect the reinforcing steel mesh or reinforcement to round and flat conductors.
Arrangement: (II) = parallel (+) = cross

For T, cross and parallel connections

Type	VK A UNI ST
Part No.	**308 025**
Material	St/tZn
Clamping range Rd / Rd	(+) 6-10 / 6-10 mm
Clamping range Rd / Fl	(+) 6-10 / 30 mm
Clamping range Fl / Fl	(II) 30 / 30 mm
Screw	M10 x 25 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9 kA
PU	50 pc(s)

For T, cross and parallel connections

Type	VK 6.10 FL30 FL30 BSB STTZN
Part No.	**308 026**
Material	St/tZn
Clamping range Rd / Fl	(+) 6-10 / 30 mm
Clamping range Fl / Fl	(+ / II) 30 / 30 mm
Screw	M10 x 25 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	13 kA
PU	25 pc(s)

For T and cross connections Note: recommended tightening torque ≥ 10 Nm

Type	VK A R22 F40 STBL
Part No.	**308 030**
Material	St/bare
Clamping range Rd / Fl	(+) 6-22 / 30-40 mm
Screw	M10 x 40 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1.0 kA
PU	50 pc(s)

For T, cross and parallel connections with clamping piece

For flexible connection of round conductors or for fixed earthing terminals while fixing in the formwork.

Type	VK 6.22 FL40 KB6.10 BSB STBL
Part No.	**308 035**
Material	St/bare
Clamping range Rd / Rd	(+/II) 6-22 / 6-10 mm
Clamping range Rd / Fl	(+) 6-22 / 40 mm
Screw	M10 x 60 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1.0 kA
PU	25 pc(s)

U-bolt clamp for large diameters

Type	BVK 16.48 6.10 FL40 BSB STBL
Part No.	**308 045**
Material	St/bare
Clamping range Rd / Rd	(II) 16-48 / 6-10 mm
Clamping range Rd / Fl	(II) 16-48 / 30-40 mm
Screw	U-bolt M10 x 48 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	16 kA
PU	25 pc(s)

U-bolt clamp for large diameters with two additional clamping pieces

For cross connections of round conductors (6-10 mm) or for fixing and simultaneous connection of fixed earthing terminals.

Type	BVK 16.48 FL40 KB6.10 BSB STBL
Part No.	**308 046**
Material	St/bare
Clamping range Rd / Rd	(+/II) 16-48 / 6-10 mm
Clamping range Rd / Fl	(II) 16-48 / 30-40 mm
Screw	U-bolt M10 x 48 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.9 kA
PU	25 pc(s)

MAXI MV clamps

For T, cross and parallel connections.

Type	MAMVK 8.16 15.25 STTZN	MAMVK 8.16 15.25 STBL
Part No.	**308 041**	**308 040**
Material	St/tZn	St/bare
Clamping range Rd / Rd	(+/II) 8-16 / 15-25 mm	(+/II) 8-16 / 15-25 mm
Screw	M12 x 65 mm	M12 x 65 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6.2 kA	10.2 kA
Approvals	–	UL 467
Stock No.	5999-12-362-1557	–
PU	20 pc(s)	20 pc(s)

MV clamps with hexagon screw

Threaded base part.

Type	MVK 8.10 SKM10X30 STTZN	MVK 10 SKM10X35 STTZN
Part No.	**390 050**	**391 050**
Material	St/tZn	St/tZn
Clamping range Rd	8-10 mm	10 mm
Screw	M10 x 30 mm	M10 x 35 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	5.5 kA	–
PU	50 pc(s)	50 pc(s)

MV clamps with hexagon screw and spring washer

Threaded base part.

Type	MVK 8.10 SKM10X30 FSC STTZN
Part No.	**390 550**
Material	St/tZn
Clamping range Rd	8-10 mm
Screw	M10 x 30 mm
Standard	EN 62561-1
PU	50 pc(s)

Parallel connectors with truss head screw

Type	PV 6.22 FRM10X40 STBLANK	PV 6.22 FRM10X40 STTZN
Part No.	**306 121**	**306 122**
Material	St/bare	St/tZn
Clamping range Rd / Rd	6-22 / 6-22 mm	6-22 / 6-22 mm
Screw	M10 x 40 mm	M10 x 40 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6.1 kA	6.1 kA
PU	50 pc(s)	50 pc(s)

Connecting Clamps for Foundation Earth Electrodes

For connecting round and flat conductors in the concrete foundation.
For T, cross and parallel connections, without having to insert the conductor.

Arrangement: (II) = parallel (+) = cross

Type VK EH R10 F30 ...	ST	V2A
Part No.	**308 120**	**308 129**
Material	St/tZn	StSt
Clamping range Rd / Fl	(II) 10 / 30 mm	(II) 10 / 30 mm
Clamping range Fl / Fl	(+/II) 30 / 30 mm	(+/II) 30 / 30 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Connecting Clamps for Foundation Earth Electrodes and Reinforcements

For connecting round and flat conductors in the concrete foundation or reinforcing steel meshes and reinforcements with round and flat conductors.

Arrangement: (II) = parallel (+) = cross

Connecting clamp with thrust bracket

For T, cross and parallel connections.

Type VK ...	DB 6.20 8.10 FL30 BSB STBL
Part No.	**308 031**
Material	St/bare
Clamping range Rd / Rd	(+/II) 6-20 / 8-10 mm
Clamping range Rd / Fl	(+/II) 6-20 / 30 x 3-4 mm
Clamping range Fl / Fl	(+/II) 30 x 3-4 / 30 x 3-4 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	8.4 kA
Standard	EN 62561-1
PU	25 pc(s)

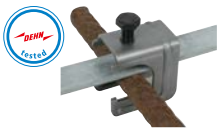
Connecting clamp MAXI with thrust bracket

For T, cross and parallel connections.

Type VK ...	DB 20.32 8.10 FL40 BSB STBL
Part No.	**308 036**
Material	St/bare
Clamping range Rd / Rd	(+/II) 20-32 / 8-10 mm
Clamping range Rd / Fl	(+/II) 20-32 / 40 x 4-5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14.0 kA
Standard	EN 62561-1
PU	25 pc(s)

Connecting clamp without thrust bracket

For cross connections.



Type VK ...	6.20 FL30 BSB STBL
Part No.	**308 032**
Material	St/bare
Clamping range Rd / Fl	(+) 6-20 / 30 x 3-4 mm
Clamping range Fl / Fl	(+/II) 30 x 3-4 / 30 x 3-4 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.0 kA
Standard	EN 62561-1
PU	25 pc(s)

Connecting clamp MAXI without thrust bracket

For cross connections.

Type VK ...	20.32 FL40 BSB STBL
Part No.	**308 037**
Material	St/bare
Clamping range Rd / Fl	(+) 20-32 / 30 x 3-40 x 5 mm
Standard	EN 62561-1
PU	25 pc(s)

HVI
Lightning Protection

HVI light Conductor	Page 222
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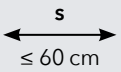
DEHNcon-H	Page 237
HVI Conductor	Page 245
HVI power Conductor	Page 262
Protection against Step and Touch Voltage	Page 277

HVI light plus Conductor

NEW

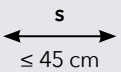
Separation distance
s ≤ 60 cm „air"
s ≤ 120 cm „solid material"



Outer diameter / colour	21 mm / grey
Equivalent separation distance (air)	≤ 60 cm
Equivalent separation distance (solid material)	≤ 120 cm
Operating temperature	-30 °C ... +70 °C
Tested with I_{imp} (10/350 µs) based on EN 62561-1	H1 / 150 kA
For use in class of LPS in case of a single down conductor without current distribution (k_c = 1)	II, III, IV
Installation in Ex zone 1 and 21	allowed
Maximum permissible conductor length LPL II (at k_c = 1)	10 m
Maximum permissible conductor length LPL III / IV (at k_c = 1)	15 m

HVI light Conductor DEHNcon-H

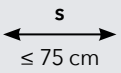
Separation distance
s ≤ 45 cm „air"
s ≤ 90 cm „solid material"



Outer diameter / colour	20 mm / dark grey
Equivalent separation distance (air)	≤ 45 cm
Equivalent separation distance (solid material)	≤ 90 cm
Operating temperature	-30 °C ... +70 °C
Tested with I_{imp} (10/350 µs) based on EN 62561-1	150 kA
For use in class of LPS in case of a single down conductor without current distribution (k_c = 1)	II, III, IV
Installation in Ex zone 1 and 21	not allowed
Maximum permissible conductor length LPL II (at k_c = 1)	7.5 m
Maximum permissible conductor length LPL III / IV (at k_c = 1)	11.25 m

HVI Conductor
HVI long Conductor
DEHNcon-H

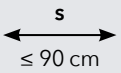
Separation distance
s ≤ 75 cm „air"
s ≤ 150 cm „Feststoff"



Outer diameter / colour	20 mm / black or 23 mm / grey
Equivalent separation distance (air)	≤ 75 cm
Equivalent separation distance (solid material)	≤ 150 cm
Operating temperature	-30 °C ... +70 °C
Tested with I_{imp} (10/350 µs) based on EN 62561-1	150 kA
For use in class of LPS in case of a single down conductor without current distribution (k_c = 1)	II, III, IV
Installation in Ex zone 1 and 21	allowed
Maximum permissible conductor length LPL II (at k_c = 1)	12.5 m
Maximum permissible conductor length LPL III / IV (at k_c = 1)	18.75 m

HVI power Conductor
HVI power long Conductor

Separation distance
s ≤ 90 cm „air"
s ≤ 180 cm „Feststoff"



Outer diameter / colour	27 mm / black
Equivalent separation distance (air)	≤ 90 cm
Equivalent separation distance (solid material)	≤ 180 cm
Operating temperature	-30 °C ... +70 °C
Tested with I_{imp} (10/350 µs) based on EN 62561-1	200 kA
For use in class of LPS in case of a single down conductor without current distribution (k_c = 1)	I, II, III, IV
Installation in Ex zone 1 and 21	allowed
Maximum permissible conductor length LPL I (at k_c = 1)	11.25 m
Maximum permissible conductor length LPL II (at k_c = 1)	15.0 m
Maximum permissible conductor length LPL III / IV (at k_c = 1)	22.5 m

HVI light Conductor

System for maintaining the separation distance, e.g. on flat roofs. The high-voltage-resistant, insulated HVI light Conductor prevents uncontrolled flashover to metal or electric components underneath the roofing.

For use up to an equivalent separation distance s ≤ 45 cm (in air) or s ≤ 90 cm (solid material).

HVI light Conductor (on a reel)

The HVI light Conductor is delivered in a length of 100 m on a disposable plywood reel (diameter approx. 800 mm, width approx. 485 mm), incl an Allen key.

Type HVI LI 45 20 ...	L100M GR
Part No.	**819 125**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	dark grey
Cross section of core	19 mm²
Diameter Ø conductor	20 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	100 m

HVI light Conductor (500 m on a reel)

HVI light Conductor is deliverd in a length of 500 m on a disposable plywood reel (diameter approx. 1 m, width approx. 670 mm, cylinder bore diameter approx. 80 mm), incl an Allen key. Total weight approx. 290 kg.

Type HVI LI 45 20 ...	L500M GR
Part No.	**819 124**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	dark grey
Cross section of core	19 mm²
Diameter Ø conductor	20 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	500 m

HVI light Conductor (cut to length)

The cut-to-length HVI light Conductor is supplied in a cardboard box (max. 70 m). Please state conductor length when ordering (0.5 m steps).

Type HVI LI 45 20 ...	L .. GR
Part No.	**819 129**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	dark grey
Cross section of core	19 mm²
Diameter Ø conductor	20 mm
Minimum order length (l1)	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection Elements for HVI light Conductors

Connection element for HVI light Conductor

Connection element for connecting the HVI light Conductor to other parts of the external lightning protection system or earth-termination system. Heat-shrinkable sleeve included.

Type	AE BO10 KF HVI LI V2A
Part No.	**819 299**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Design	with spring washer
Screw	threaded bolt M6 x 8 mm
PU	1 pc(s)

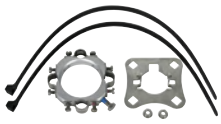
EB connection element for HVI light Conductor

For discharging the electrical field in the sealing end range of the HVI light Conductor. Specially slotted design for electrically contacting the semi-conductive sheath.

Type	PAE 17 20 AB11 V2A
Part No.	**410 219**
Material	StSt
Clamping range Ø	17 mm
Connection hole Ø	11 mm
Screw	M10 x 20 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Fixing kit for HVI light Conductor

Fixing kit for mounting the HVI light Conductor on the supporting tube Ø50 mm (e.g. HVI long supporting tube), consisting of a connection plate (for four conductors, incl. two self-locking nuts) and a fixing ring with four slotted conductor holders (Ø17 mm) for the adjustment range (incl. two cable ties).



Type	BFS SR D50 4AE HVI LI AL V2A
Part No.	**819 289**
Material	StSt / Al
Connection plate support	square hole 13 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Fixing bolt

Fixing bolt for spanning cables to an air-termination rod (Ø22 / Ø16 mm) or to a connection plate (e.g. Part No. 819 289 or 819 288).

Type	BB 1XB11GSM8 1XB23GSM12 AL
Part No.	**105 229**
Material	Al
Connection	1x W 11 mm, 1x W 23 mm
Screw	M8 x 10 M12 x 20 mm
Wire end ferrule	50 mm²
Material of wire end ferrule	Cu/Sn
PU	10 pc(s)

Accessories for Connection Elements for HVI light Conductors

Wire end ferrule

Wire end ferrule for securely fixing the aluminium cable with a cross-section of 50 mm² (Part No. 840 050). 1 pack = 10 pieces.

Type	AEH 50 L22 CUGALSN
Part No.	**444 050**
Material	Cu/Sn
Cross section	50 mm²
PU	1 PAK

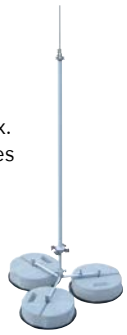
Cable tie

Cable tie for installation of the HVI Conductor.

Type	KB UVB 546X13 SW
Part No.	**819 999**
Length	546 mm
Material	Polyamide 6.6
Design	UV-resistant
PU	50 pc(s)

Air-termination Masts for HVI light Conductors on Flat Roofs

Includes connection plate plate for four HVI light Conductors and fixing kit for mounting the conductors on the air-termination mast. Adjustable to roof inclination up to max. 10°. Concrete bases (weight 17 kg) and base plates have to be ordered separately.



Air-termination mast 30 for HVI light Conductor SET I (total height 2300 mm)

Type FM ...	D30 L2300 DBS R320 GFK AL STTZN
Part No.	**819 282**
Material of tripod	St/tZn
Radius of tripod	320 mm
Material of supporting tube	GRP / Al
Length of supporting tube	1300 mm
Insulating clearance	1095 mm
Length of air-termination tip	1000 mm
Material of air-termination tip	StSt
Max. gust wind speed for 3 bases, 17 kg each, 2x HVI light outside	149 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Air-termination mast 30 for HVI light Conductor SET II (total height 2800 mm)

Type FM ...	D30 L2800 DBS R320 GFK AL STTZN
Part No.	**819 287**
Material of tripod	St/tZn
Radius of tripod	320 mm
Material of supporting tube	GRP / Al
Length of supporting tube	1300 mm
Insulating clearance	1095 mm
Length of air-termination tip	1500 mm
Material of air-termination tip	Al
Max. gust wind speed for 3 bases, 17 kg each, 2x HVI light outside	132 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

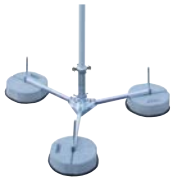
Air-termination mast 50 for HVI light Conductor SET I (total height 2900 mm)

Type FM ...	D50 10 2900 GFK AL DBS KB STTZN
Part No.	**819 380**
Material of tripod	St/tZn
Radius of tripod	560 mm
Material of supporting tube	GRP / Al
Length of supporting tube	1900 mm
Insulating clearance	1535 mm
Length of air-termination tip	1000 mm
Material of air-termination tip	StSt
Max. gust wind speed for 3 bases, 17 kg each, 2x HVI light outside	121 km/h
Max. gust wind speed for 6 bases, 17 kg each, 2x HVI light outside	166 km/h
Max. gust wind speed for 9 bases, 17 kg each, 2x HVI light outside	203 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Air-termination mast 50 for HVI light Conductor SET II (total height 3900 mm)

Type FM ...	D50 16 10 3900 GFK AL DBS KB STTZN
Part No.	**819 385**
Material of tripod	St/tZn
Radius of tripod	560 mm
Material of supporting tube	GRP / Al
Length of supporting tube	1900 mm
Insulating clearance	1535 mm
Length of air-termination rod	2000 mm
Material of air-termination rod	Al
Max. gust wind speed for 3 bases, 17 kg each, 2x HVI light outside	110 km/h
Max. gust wind speed for 6 bases, 17 kg each, 2x HVI light outside	147 km/h
Max. gust wind speed for 9 bases, 17 kg each, 2x HVI light outside	179 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Air-termination mast 50 for HVI light Conductor SET III (total height 4900 mm)



Type FM ...	D50 22 16 10 4900 GFK AL DBS KB STTZN
Part No.	**819 390**
Material of tripod	St/tZn
Radius of tripod	560 mm
Material of supporting tube	GRP / Al
Length of supporting tube	1900 mm
Insulating clearance	1535 mm
Length of air-termination rod	3000 mm
Material of air-termination rod	Al
Max. gust wind speed for 3 bases, 17 kg each, 2x HVI light outside	97 km/h
Max. gust wind speed for 6 bases, 17 kg each, 2x HVI light outside	124 km/h
Max. gust wind speed for 9 bases, 17 kg each, 2x HVI light outside	147 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor Holder and Accessories for Installation on Flat Roofs / Metal Roofs

Roof conductor holders for flat roofs

For fixing round conductors and strips on flat roofs with one conductor support type FB.

Type	DLH FB 8 LO 100X100X70
Part No.	**253 015**
Conductor routing	loose
Material of conductor holder	plastic
Conductor support Rd	8 mm
Block	concrete (C35/45)
Weight	1 kg
PU	10 pc(s)

Adapter for installing the HVI light Conductor / HVI Conductor / HVI light plus Conductor on flat roofs

To be snapped on roof conductor holder type FB (Part No. 253 015).

Type	RLA 20 FB K SW
Part No.	**253 026**
Material	plastic
Colour	black ●
Conductor support Rd	20-21 mm
PU	50 pc(s)

Roof conductor holder

For flat roofs, weight approx. 4.7 kg. Conductor holder, concrete block and base plate for installing the HVI light Conductor, HVI Conductor on flat roofs.

Type	DLH ZS 20 23 V2A 4.7KG BES180 GP300 K
Part No.	**253 229**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Total weight	approx. 4.7 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder

Conductor holder with slotted saddle clamp for HVI light Conductor, HVI Conductor for fixing in the base plate (Part No. 253 300) with concrete block (Part No. 253 301).

Type	LH ZS 20 23 DS10 L75 V2A
Part No.	**253 289**
Material	StSt
Conductor support Rd	20 / 23 mm
Height of conductor holder	87 mm
Bolt	Ø10 mm (push-fit)
PU	1 pc(s)

Concrete block

For stabilising the base plate.

Type	BES 4.6KG SB10 180X180X70
Part No.	**253 301**
Material	concrete (C35/45)
Weight	4.6 kg
Dimensions	180 x 180 x 70 mm
PU	24 pc(s)

Base plate

Base plate to hold the spacer bar (Part No. 253 315, 253 325) and conductor holder (Part No. 253 289) and to protect the roof sheeting under the concrete block (Part No. 253 301).

Type	GP B10 H60 D300 KS GR
Part No.	**253 300**
Diameter Ø	300 mm
Diameter Ø of lock bush	10 mm
Height	60 mm
Material	plastic
Colour	grey ●
PU	24 pc(s)

Roof conductor holder

For flat roofs, weight approx. 8.6 kg. Conductor holder, concrete block and base plate, for installing the HVI light Conductor, HVI Conductor on flat roofs.

Type	DLH ZS 20 23 V2A 8.5KG KT D240 ULP
Part No.	**253 239**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Total weight	approx. 8.6 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder

Conductor holder with slotted saddle clamp for HVI light Conductor, HVI Conductor for fixing in the concrete base (Part No. 102 075) with fixing wedge.

Type	LH ZS 20 23 KT D16 L85 V2A
Part No.	**253 279**
Material	StSt
Conductor support Rd	20 / 23 mm
Height of conductor holder	125 mm
Bolt	Ø16 mm (wedge-fit)
PU	1 pc(s)

Concrete base

With fixing wedge, for air-termination tips Ø10, length 1000 mm or DEHNiso spacers Ø16 mm, length up to 675 mm (distance 0.8 m) or conductor holder (Part No. 253 279).

Type	BES 8.5KG KT10 16 D240 SET
Part No.	**102 075**
Total weight	8.5 kg
Diameter Ø	240 mm
Material	concrete (C45/55)
Material of wedge / adapter	StSt
PU	120 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases
(Part No. 102 075, 102 003).

Type	ULP KS D280 SW
Part No.	**102 060**
Outside diameter Ø	280 mm
Inside diameter Ø	270 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Spacers for HVI light Conductor

Spacer for implementing the adjustment range (length 1200 mm) without additional connection to the equipotential bonding.
The spacer is installed, e.g. in a concrete block with fixing wedge (17 kg)
(Part No. 102 340).

Type	DH ZS 20 D16 500 GFK PA	DH ZS 20 D16 1000 GFK PA
Part No.	**106 852**	**106 812**
Material of spacer	GRP	GRP
Material of conductor holder / adapter	PA	PA
Length (l1)	500 mm	1000 mm
Conductor support Rd	20 mm	20 mm
Thread	M8	M8
Max. gust wind speed (1x block 17 kg, holder distance 1000 mm)	151 km/h	98 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Spacer with EB element for HVI light Conductor (length of variable adjustment range 350-900 mm)

Spacer for implementing the variable adjustment range of the HVI light Conductor.
With MV clamp for connection to the equipotential bonding (Rd 16 mm / Rd 8-10 mm).
Concrete base (Part No. 102 010, weight 17 kg) and base plate (Part No. 102 050) must be ordered separately.

Type	DIDH PAE 17 D16 750 AL V2A
Part No.	**105 460**
Material of spacer	Al
Lenght of spacer	750 mm
Conductor support Rd	17 mm
Material of conductor holder	StSt
Clamping range Rd MV clamp	8-10 / 16 mm
Material of clamp	Al
Length of variable adjustment range	350-900 mm
Max. gust wind speed (1 base, 17 kg each; l = 900 mm)	111 km/h
Max. gust wind speed (2 bases, 17 kg each; l = 900 mm)	159 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Concrete base

With fixing wedge and adapted base plate, stackable.

Type	BES 17KG KT16 ULP D337 SET
Part No.	**102 340**
Total weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
Material of wedge	StSt
PU	54 pc(s)

Concrete base

With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder
(Part No. 253 279).

Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
Material of wedge / adapter	StSt
PU	54 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases
(Part Nos. 102 010, 102 002).

Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Roof conductor holders for roofs with round standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with round standing seams.

Type	DLH RSF ZS 20 23 V2A
Part No.	**202 850**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	Ø20-25 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with clamping seams.

Type	DLH KF ZS 20 23 V2A
Part No.	**202 851**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	approx. 18 / 22 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with standing seams.

Type	DLH SF ZS 20 23 V2A
Part No.	**202 852**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	0.7-8 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder with connection lug

Roof conductor holder with slotted saddle clamp for HVI light Conductors, HVI Conductors and Z-shaped connection lug for riveting or screwing to metal roofs.

Type	DLH AL ZS 20 23 V2A
Part No.	**202 853**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Wall-mounted Conductor Holders

Conductor holder

With thread.
Wall-mounted conductor holder with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 GM8 V2A	LH ZS 20 23 GM6 V2A
Part No.	**275 250**	**275 251**
Material of conductor holder	StSt	StSt
Conductor support Rd	20 / 23 mm	20 / 23 mm
Thread	M8	M6
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)	25 pc(s)

Conductor holder

With slotted hole.
Wall-mounted conductor holder with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 B5.5X10 V2A
Part No.	**275 252**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Fixing hole	5.5 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder

With plastic base.
Wall-mounted conductor holder with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 KS H10 V2A
Part No.	**275 259**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Thread	M8
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder for the HVI Conductor / HVI light plus Conductor

For mounting on walls and for mounting in the sealing end range.

Type	LH ZS 20 H19 IGM8 GR PA
Part No.	**275 220**
Material of conductor holder	PA
Conductor support Rd	20-21 mm
Female thread	M8
Fixing hole	6.5 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Stripping tool for HVI light Conductors / HVI Conductors

Tool for stripping the semi-conductive sheath and the PE insulation of the HVI light Conductor, HVI Conductor (outer diameter 20 mm).

- Tool consists of a handle and various exchangeable cutting heads
- Stripping len gth of HVI light Conductor, HVI Conductor is adjustable in steps of 0.2 mm (lock points) using the knob in the handle. The dial on the handle shows the length set.

Handling
Position the cutting head at the cut-off end of the conductor and turn clockwise with light pressure to cut/strip it. The cutting head can be exchanged without tools via the bayonet coupling.

HVI strip 20

For HVI light and HVI Conductors (handle + cutting head).

Type HVI ...	STRIP 20
Part No.	**597 220**
Diameter Ø conductor	20 mm
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

HVI head 20

For HVI light and HVI Conductors (cutting head).

Type HVI ...	HEAD 20
Part No.	**597 120**
Diameter Ø conductor	20 mm
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

Accessories for Stripping tool for HVI light Conductors / HVI Conductors

HVI head holder

Adapter with bayonet coupling for attaching the HVI head cutting head (pre-set stripping length 35 mm).
Adapter can be used in a standard three-jaw chuck (Ø10 mm), e.g. with cordless screwdrivers.

Type	HVI HH
Part No.	**597 139**
Material	plastic / brass
PU	1 pc(s)

Spare blades for HVI head 20

1 pack = 4 pieces

Type	EK HVI HEAD 20
Part No.	**597 101**
Material	StSt
PU	1 PAK

Stripping Tool for HVI light Conductors / HVI Conductors

Tool for stripping the additional grey sheath of the HVI light Conductor and HVI Conductor. DEHNhelix consists of a handle and an exchangeable bracket (depending on the conductor diameter).

DEHNhelix

Type	AW DEHNHELIX
Part No.	**597 230**
Diameter Ø conductor	23 mm
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

Accessories for Stripping Tool for HVI light Conductors / HVI Conductors

Spare blade for stripping tool

Type	EK AW DEHNHELIX
Part No.	**597 130**
Material	StSt
PU	1 pc(s)

Cable shears for HVI Conductors

Cable shears for easily cutting the HVI light Conductor, HVI Conductor (outer diameter 20 / 23 mm), HVI power Conductor (outer diameter 27 mm) and CUI Conductor to length.
The special design of the cable shears also allows precise cutting of stranded conductors, making it easier to attach connection elements.

HVI cutter

Type	HVI CUTTER 32
Part No.	**597 032**
Diameter Ø conductor	up to 32 mm
Material of blades	tool steel (CR-Moly (SCM440))
Material of handles	carbon steel (SS400)
Length	600 mm
PU	1 pc(s)

Supporting tube with HVI light plus Conductor

Discreet supporting tube with pre-assembled, internal HVI light plus Conductor with low wind exposed surface.
Wide choice of lengths, from 6 m to 70 m.

HVI light plus Conductor inside the supporting tube with air-termination tip

Supporting tube with internal sealing end / EB spring element and air-termination tip, StSt, Ø10 mm, length 500 / 1,000 mm.

General technical data:	
Material of supporting tube	GRP / Al
Outside diameter Ø	40 mm
Diameter Ø conductor	21 mm
Material of conductor	Cu
Minimum order length	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type HVI LI PL L6M ...	SR1600 FSP500 GFK AL V2A	SR1600 FSP1000 GFK AL V2A
Part No.	**819 672**	**819 673** NEW
Length of air-termination tip	500 mm	1000 mm
Length of supporting tube	1600 mm	1600 mm
Transport length	1600 mm	1600 mm
Colour of conductor	grey	Grey
PU	1 pc(s)	1 pc(s)

Type HVI LI PL L6M ...	SR2400 FSP500 GFK AL V2A	SR2400 FSP1000 GFK AL V2A
Part No.	**819 674** NEW	**819 675** NEW
Length of air-termination tip	500 mm	1000 mm
Length of supporting tube	2400 mm	2400 mm
Transport length	2400 mm	2400 mm
Colour of conductor	Grey	Grey
PU	1 pc(s)	1 pc(s)

Specifications regarding max. gust wind speeds of the air-termination systems can be found in the wind load matrix.

Air-termination mast for HVI light plus Conductor on flat roofs

Complete kit, consisting of air-termination tip/rod, supporting tube, fixing kit and stand for installation on flat roofs (installation outside the tube).

Air-termination mast with small tripod and air-termination tip

Type FM D40 ...	L2200 GFK AL V2A DBS R320 STTZN	L2700 GFK AL V2A DBS R320 STTZN
Part No.	**819 685**	**819 690** NEW
Height	2200 mm	2700 mm
Material of tripod	St/tZn	HDG steel (St/tZn)
Radius of tripod	320 mm	320 mm
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	1600 mm	1600 mm
Insulating clearance	1230 mm	1230 mm
Length of air-termination tip	500 mm	1000 mm
Material of air-termination tip	StSt	StSt
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Air-termination mast with large tripod and air-termination tip

Type FM D40 ...	L2700 GFK AL V2A DBS R560 STTZN
Part No.	**819 682**
Height	2700 mm
Material of tripod	St/tZn
Radius of tripod	560 mm
Material of supporting tube	GRP / Al
Length of supporting tube	1600 mm
Insulating clearance	1230 mm
Length of air-termination tip	1000 mm
Material of air-termination tip	StSt
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Air-termination mast with large tripod and air-termination rod

Type FM D40 ...	L3700 GFK AL DBS R560 STTZN	L4700 GFK AL DBS R560 STTZN
Part No.	**819 687** NEW	**819 680** NEW
Height	3700 mm	4700 mm
Material of tripod	HDG steel (St/tZn)	HDG steel (St/tZn)
Radius of tripod	560 mm	560 mm
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	1600 mm	1600 mm
Insulating clearance	1230 mm	1230 mm
Length of air-termination rod	2000 mm	3000 mm
Material of air-termination rod	AlMgSi	AlMgSi
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Specifications regarding max. gust wind speeds of the air-termination systems can be found in the wind load matrix.

Air-termination mast with HVI light plus Conductor

The air-termination mast for extreme heights, including discreet supporting tube and pre-assembled HVI light plus Conductor installed inside the tube.

Type	FM 60 L9M IP HVI LI PL GFK AL STTZN
Part No.	**819 735**
Total length of air-termination mast	8800 mm
Length of air-termination rod	1500 mm
Length of supporting tube	1600 mm
Length of mast pipe	6000 mm
Diameter Ø conductor	21 mm
Colour of conductor	Grey
Material of conductor	Cu
Minimum order length	10 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Specifications regarding max. gust wind speeds of the air-termination systems can be found in the wind load matrix.

Air-termination mast with HVI light plus Conductor for metal and roof rafter brackets

Discreet supporting tube for installation on a metal roof/ roof rafter bracket with pre-assembled, internal HVI light plus Conductor.

Type	HVI LI PL L6M SR2680 FSP1000 GFK AL V2A
Part No.	**819 688**
Material of supporting tube	GRP / Al
Length of supporting tube	2680 mm
Transport length	2680 mm
Length of air-termination tip	1000 mm
Diameter Ø conductor	21 mm
Colour of conductor	grey
Material of conductor	Cu
Equivalent separation distance s (air)	≤ 60 cm
Minimum order length	6 m
Conductor length of HVI conductor	..... m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Specifications regarding max. gust wind speeds of the air-termination systems can be found in the wind load matrix.

HVI light plus Conductor

HVI light plus Conductor is supplied in reels, either cut to length or pre-assembled.

HVI light plus Conductor (pre-assembled, installation inside the supporting tube)
With one head piece for inside installation and one connection element (enclosed loose).
Minimum order length 6 m, conductor length has to be stated when ordering (in 0.5 m steps).

Type HVI LI PL ...	RIV 60 21 L6M GR
Part No.	**819 636**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	Grey
Diameter Ø conductor	21 mm
Minimum order length	6 m
Max. order length	70 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI light plus Conductor (Pre-assembled, installation outside the supporting tube)

With one head piece for outside installation and one connection element (enclosed loose).
Minimum order length 6 m, conductor length has to be stated when ordering (in 0.5 m steps).

Type HVI LI PL ...	RAV 60 21 L6M GR
Part No.	**819 638**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	grey
Diameter Ø conductor	21 mm
Minimum order length	6 m
Max. order length	70 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI light plus Conductor (Supplied in reels)

The HVI light plus Conductor for on-site assembly comes on a disposable plywood reel. Hexagon socket wrench included in delivery. Length 100 / 500 m.

Type HVI LI PL ...	60 21 L100M GR	60 21 L500M GR
Part No.	**819 600**	**819 605** NEW
Material of conductor	Cu	Cu
Material of insulation	PE	PE
Material of sheath	PE	PE
Colour of conductor	grey	Grey
Diameter Ø conductor	21 mm	21 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	100 m	500 m

HVI light plus Conductor (Cut to length)

HVI light plus Conductor Cut to length for on-site assembly. The conductor is delivered as a coil.
Please specify conductor length when ordering (0.5 m steps).

Type HVI LI PL ...	60 21 L .. GR
Part No.	**819 609**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	grey
Diameter Ø conductor	21 mm
Minimum order length	6 m
Max. order length	70 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection elements for HVI light plus Conductor

Installation-optimised connection elements for installation inside and outside the tube and installation in the discharge area.

Connection element for HVI light plus Conductor

A connection element for sealing the HVI light plus Conductor, for implementing the sealing end of the conductor on the supporting tube (head piece) or for connecting to other parts of the external lightning protection system or earth-termination system (including a heat-shrinkable sleeve).
This connection element can be used for installation outside the tube for HVI light plus supporting tubes.

Type	AE BO10 KF HVI 60 V2A
Part No.	**819 640**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	21 mm
Lightning current carrying capability (10/350 µs)	150 kA
PU	10 pc(s)

Connection kit for HVI light plus Conductor for installation inside the tube

Two connection elements for sealing the HVI light plus Conductor at both ends. A connection element for implementing the sealing end of the conductor in the supporting tube (head piece) and a connection element for connecting to other parts of the external lightning protection system or earth-termination system (including two heat-shrinkable sleeves).
These connection elements can be used with HVI light plus supporting tubes.

Type	HVI LI PL ASS RIV KF V2A
Part No.	**819 645**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	21 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

EB element

For discharging the electric field of the HVI light plus Conductor in the sealing end range or in other cases.

Type	PAE 18 EX AB11 V2A
Part No.	**410 222**
Material	StSt
Clamping range Ø	18 mm
Connection hole Ø	10.5 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Air-termination mast fixing kit, Ø40

Fixing kit for attaching the HVI light plus Conductor to the HVI light plus supporting tubes, Ø40 mm, consisting of connection plate and fixing ring with stainless steel clamp for the sealing end (including four plastic holder halves and two cable ties).

Type	BFS SR D40 4AE HVI LI PL AL V2A KST
Part No.	**819 642**
Material	StSt / Al / Plastic
Connection plate support	square hole 13 mm
Conductor holder	4x
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Air-termination mast fixing kit, Ø50

Fixing kit for attaching the HVI light plus Conductor to the HVI supporting tubes, Ø50 mm, consisting of connection plate and fixing ring with stainless steel clamp for the sealing end (including four plastic holder halves and two cable ties).

Type	BFS SR D50 4AE HVI LI PL AL V2A KST
Part No.	**819 283** NEW
Material	StSt / Al / Plastic
Connection plate support	Square hole, 13 mm
Conductor holder	4x
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection plate

Connection plate (for four conductors) for installing the HVI light plus Conductor on the supporting tube Ø40 mm (e.g. Part No. 105 672, 105 673, 105 677, 105 678).

Type	AP SR D40 4AE HVI LI PL V2A
Part No.	**819 298** NEW
Material	StSt
Connection plate support	Square hole, 13 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for Connection elements for HVI light plus Conductor

Fixing kit for Ø40/50 supporting tubes

Fixing kit for installing the HVI light plus Conductor or HVI long Conductor on supporting tubes, consisting of two half shells and one cable tie for fixing up to four HVI Conductors in the GRP area of the supporting tube.

Type	BFS SR D50 4AE HVI KST	BFS SR D40 4AE HVI LI PL KST
Part No.	**819 297** NEW	**819 296** NEW
Material	Plastic	Plastic
Diameter Ø	50 mm	40 mm
Conductor holder	4x	4x
PU	1 pc(s)	1 pc(s)

Supporting tubes for HVI light plus Conductor

Discreet supporting tube with/without side outlet and for metal roof/roof rafter bracket.

Without side outlet

Supporting tube with internal sealing end / EB spring element **without** side outlet. Air-termination tip, StSt, Ø10 mm, length 500/1000 mm.

General technical data:	
Outside diameter Ø	40 mm
Length of insulating clearance	1230 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D40 ...	1600 FSP500 HVI LI PL GFK AL V2A	1600 FSP1000 HVI LI PL GFK AL V2A
Part No.	**105 672**	**105 673** NEW
Length of air-termination tip	500 mm	1000 mm
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	1600 mm	1600 mm
Transport length	1600 mm	1600 mm
PU	1 pc(s)	1 pc(s)

Type SR D40 ...	2400 FSP500 HVI LI PL GFK AL V2A	2400 FSP1000 HVI LI PL GFK AL V2A
Part No.	**105 674** NEW	**105 675** NEW
Length of air-termination tip	500 mm	1000 mm
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	2400 mm	2400 mm
Transport length	2400 mm	2400 mm
PU	1 pc(s)	1 pc(s)

With side outlet

Supporting tube with internal sealing end / EB spring element **with** side outlet | air-termination tip, StSt, Ø10 mm, length: 500 / 1,000 mm.

Type SR D40 ...	2400 FSP500 SA HVI LI PL GFK AL	2400 FSP1000 SA HVI LI PL GFK AL
Part No.	**105 677** NEW	**105 678** NEW
Length of air-termination tip	500 mm	1000 mm
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	2400 mm	2400 mm
Transport length	2400 mm	2400 mm
Outside diameter Ø	40 mm	40 mm
Length of insulating clearance	1230 mm	1230 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

For metal roof/roof rafter bracket

Supporting tube with internal sealing end / EB spring element for sub-roof installation. Air-termination tip, StSt, Ø10 mm, length 1000 mm.

Type SR D40 ...	2680 FSP1000 DSH GFK AL V2A
Part No.	**105 688** NEW
Length of air-termination tip	1000 mm
Material of supporting tube	GRP / Al
Length of supporting tube	2680 mm
Transport length	2680 mm
Outside diameter Ø	40 mm
Length of insulating clearance	1230 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Specifications regarding max. gust wind speeds of the air-termination systems can be found in the wind load matrix.

Conductor holder for HVI light plus Conductor in hazardous areas

Special conductor holders for the HVI light plus Conductor for use in Ex zones 1 and 21.

HVI light plus Ex W55 holder

For fixing to metal structural components (e.g. façades) in Ex zones 1 and 21.

Type	LH ZS 18 EX W55 BP V2A
Part No.	**275 460**
Material	StSt
Conductor support Rd	18 mm
Distance from wall	55 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI light plus Ex W160 holder

For fixing to metal structural components (e.g. façades) in Ex zones 1 and 21.

Type	LH ZS 18 EX W160 BP V2A
Part No.	**275 461** NEW
Material	StSt
Conductor support Rd	18 mm
Distance from wall	160 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI light plus Ex busbar 500

For installing the HVI Conductor with conductor holders HVI light plus Ex W55 on a non-conductive structure, e.g. stone, wood.

Type	VS EX 500 V2A
Part No.	**275 498**
Material of brace	StSt
Fixing	[4x] Ø5.5 / [2x] 7 x 10 mm
Dimension (l x w x d)	450 x 30 x 3 mm
PU	10 pc(s)

HVI light plus Ex P55 holder

For fixing to pipes (e.g. with pipe clamp [part no. 106 323]) in Ex zones 1 and 21.

Type	LH ZS 18 EX P55 SBB V2A
Part No.	**275 464**
Material	StSt
Conductor support Rd	18 mm
Distance from wall	55 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI light plus Ex P160 holder

For fixing to pipes (e.g. with pipe clamp [part no. 106 323]) in Ex zones 1 and 21.

Type	LH ZS 18 EX P160 SBB V2A
Part No.	**275 462** NEW
Material	StSt
Conductor support Rd	18 mm
Distance from wall	160 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Accessories for HVI light plus Conductor

A wide range of items for fixing the HVI light plus Conductor along the discharge and conductor route, as well as various accessory items.

Roof conductor holders for flat roofs

For fixing round conductors and strips on flat roofs with one conductor support type FB.

Type	DLH FB 8 LO 100X100X70
Part No.	**253 015**
Conductor routing	loose
Material of conductor holder	plastic
Conductor support Rd	8 mm
Block	concrete (C35/45)
Weight	1 kg
PU	10 pc(s)

Adapter for installing the HVI light Conductor / HVI Conductor / HVI light plus Conductor on flat roofs

To be snapped on roof conductor holder type FB (Part No. 253 015).

Type	RLA 20 FB K SW
Part No.	**253 026**
Material	plastic
Colour	black ●
Conductor support Rd	20-21 mm
PU	50 pc(s)

Roof conductor holder

For flat roofs, weight approx. 4.7 kg. Conductor holder, concrete block and base plate, for installing the HVI light Conductor, HVI Conductor on flat roofs.

Type	DLH ZS 20 23 V2A 4.7KG BES180 GP300 K
Part No.	**253 229**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Total weight	approx. 4.7 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Roof conductor holder

For flat roofs, weight approx. 8.6 kg. Conductor holder, concrete block and base plate, for installing the HVI light Conductor, HVI Conductor on flat roofs.

Type	DLH ZS 20 23 V2A 8.5KG KT D240 ULP
Part No.	**253 239**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Total weight	approx. 8.6 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder

Conductor holder with slotted saddle clamp for HVI light Conductor, HVI Conductor for fixing in the base plate (Part No. 253 300) with concrete block (Part No. 253 301).

Type	LH ZS 20 23 DS10 L75 V2A
Part No.	**253 289**
Material	StSt
Conductor support Rd	20 / 23 mm
Height of conductor holder	87 mm
Bolt	Ø10 mm (push-fit)
PU	1 pc(s)

Concrete block

For stabilising the base plate.

Type	BES 4.6KG SB10 180X180X70
Part No.	**253 301**
Material	concrete (C35/45)
Weight	4.6 kg
Dimensions	180 x 180 x 70 mm
PU	24 pc(s)

Base plate

Base plate to hold the spacer bar (Part Nos. 253 315, 253 325) and conductor holder (Part No. 253 289) and to protect the roof sheeting under the concrete block (Part No. 253 301).

Type	GP B10 H60 D300 KS GR
Part No.	**253 300**
Diameter Ø	300 mm
Diameter Ø of lock bush	10 mm
Height	60 mm
Material	plastic
Colour	grey ●
PU	24 pc(s)

Conductor holder

Conductor holder with slotted saddle clamp for HVI light Conductor, HVI Conductor for fixing in the concrete base (Part No. 102 075) with fixing wedge.

Type	LH ZS 20 23 KT D16 L85 V2A
Part No.	**253 279**
Material	StSt
Conductor support Rd	20 / 23 mm
Height of conductor holder	125 mm
Bolt	Ø16 mm (wedge-fit)
PU	1 pc(s)

Spacer with EB element for HVI light plus Conductor

Spacer for establishing the variable adjustment range of the HVI light plus Conductor.
With MV clamp for the connection to the equipotential bonding (Rd 16 mm / Rd 8–10 mm).
The concrete base (part no. 102 010, weight 17 kg) and the plastic base plate (part no. 102 050) have to be ordered separately.

Type	DH PAE 18 D16 1000 AL V2A
Part No.	**105 466** NEW
Material of spacer	Al
Length of spacer	1000 mm
Conductor support Rd	18 mm
Material of conductor holder	StSt
Clamping range Rd MV clamp	8-10 / 16 mm
Clamp material	Al
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Concrete base

With fixing wedge, for air-termination tips Ø10, length 1000 mm or DEHNiso spacers Ø16 mm, length up to 675 mm (distance 0.8 m) or conductor holder (Part No. 253 279).

Type	BES 8.5KG KT10 16 D240 SET
Part No.	**102 075**
Total weight	8.5 kg
Diameter Ø	240 mm
Material	concrete (C45/55)
Material of wedge / adapter	StSt
PU	120 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases
(Part No. 102 075, 102 003).

Type	ULP KS D280 SW
Part No.	**102 060**
Outside diameter Ø	280 mm
Inside diameter Ø	270 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Spacer for the HVI Conductor / HVI light plus Conductor

Spacer for additional mechanical fixing in the variable sealing end area.
The spacer is installed with **two** concrete bases (part no. 102 010; weight: 17 kg). The **concrete base** and the **plastic base plate** (part no. 102 050) must be **ordered separately**.

Type	DH ZS 20 D16 1270 GFK PA
Part No.	**106 815**
Material of spacer	GRP
Material of conductor holder / adapter	PA
Number of concrete bases	2 (17 kg each)
Length	1270 mm
Insulating clearance	1245 mm
Conductor support Rd	20-21 mm
Thread	M8
PU	1 pc(s)

Concrete base

With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder
(Part No. 253 279).

Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
Material of wedge / adapter	StSt
PU	54 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases
(Part Nos. 102 010, 102 002).

Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Roof conductor holder

With pre-punched points for bending and hooking into the roof tile and screwing onto the battens, for installing the HVI Conductor on gable roofs.

Type	DLH ZS 20 23 H55 L205 V2A
Part No.	**202 829**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Length of brace	205 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Roof conductor holders for roofs with round standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with round standing seams.

Type	DLH RSF ZS 20 23 V2A
Part No.	**202 850**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	Ø20-25 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with clamping seams.

Type	DLH KF ZS 20 23 V2A
Part No.	**202 851**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	approx. 18 / 22 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with standing seams.

Type	DLH SF ZS 20 23 V2A
Part No.	**202 852**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	0.7-8 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder with connection lug

Roof conductor holder with slotted saddle clamp for HVI light Conductors, HVI Conductors and Z-shaped connection lug for riveting or screwing to metal roofs.

Type	DLH AL ZS 20 23 V2A
Part No.	**202 853**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder with tensioning strap

With metal conductor holder.

Type	LH ZS 20 23 SB50.300 V2A
Part No.	**275 320**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Tensioning range Ø pipe	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder for fixing with a tensioning strap

For fixing the HVI Conductor to pipes, e.g. with pipe clamp (Part No. 106 323).

Type	LH ZS 20 23 SBH 25X0.3 V2A
Part No.	**275 319**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Pipe clamp

For fixing (clamping) conductor holders (e.g. Part No. 275 319).

Type	BRS SPB25 50.300 V2A
Part No.	**106 323**
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Material of screw	StSt
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.

Type	SPK 25X0.3 V2A
Part No.	**106 324**
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap

Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Conductor holder

With thread.
For wall mounting with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 GM8 V2A	LH ZS 20 23 GM6 V2A
Part No.	**275 250**	**275 251**
Material of conductor holder	StSt	StSt
Conductor support Rd	20 / 23 mm	20 / 23 mm
Thread	M8	M6
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)	25 pc(s)

Conductor holder

With plastic base.
For wall mounting with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 KS H10 V2A
Part No.	275 259
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Thread	M8
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder

With slotted hole.
Wall-mounted conductor holder with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 B5.5X10 V2A
Part No.	275 252
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Fixing hole	5.5 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder for the HVI Conductor / HVI light plus Conductor

For mounting on walls and for mounting in the sealing end range.

Type	LH ZS 20 H19 IGM8 GR PA
Part No.	275 220
Material of conductor holder	PA
Conductor support Rd	20-21 mm
Female thread	M8
Fixing hole	6.5 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder for the HVI Conductor / HVI light plus Conductor

For wall mounting with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 H10 B6.5X16 V2A
Part No.	275 229
Material of conductor holder	StSt
Conductor support Rd	20-21 mm
Fixing hole	6.5 x 16 mm
Screw	M6 x 14 mm
PU	50 pc(s)

Conductor holder with tensioning strap

With conductor holder made of PA.

Type	LH ZS 20 SB50.300 PA V2A
Part No.	275 330
Material of conductor holder	PA
Conductor support Rd	20-21 mm
Tensioning range Ø pipe	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Fixing kit for Ø40/50 supporting tubes

Fixing kit for installing the HVI light plus Conductor or HVI long Conductor on supporting tubes, consisting of two half shells and one cable tie for fixing up to four HVI Conductors in the GRP area of the supporting tube.

Type	BFS SR D40 4AE HVI LI PL KST	BFS SR D50 4AE HVI KST
Part No.	819 296 NEW	819 297 NEW
Material	Plastic	Plastic
Diameter Ø	40 mm	50 mm
Conductor holder	4x	4x
PU	1 pc(s)	1 pc(s)

Cable tie

Cable tie for installation of the HVI Conductor.

Type	KB UVB 460X7.6 SW
Part No.	819 998 NEW
Length	460 mm
Material	Polyamide 6.6
Design	UV-resistant
PU	100 pc(s)

Sign

Front in German
ACHTUNG! Getrennter Blitzschutz mit HVI Leitung

Back in English
ATTENTION! Separated Lightning Protection with HVI conductor system

Type	HWS 300X210 AGBS HVI DE EN K
Part No.	480 598
Material	plastic
Dimensions (l x w x d)	300 x 210 x 1 mm
Fixing	[4x] Ø6.5 mm
Hole distance	270 / 180 mm
PU	1 pc(s)

Sign

Front in German
ACHTUNG!
Potentialausgleich

Back in English
ATTENTION!
Equipotential Bonding

Hole distance suitable for two-screw clamp (Part No. 480 291).

Type	HWS 70X30 APA DE EN K
Part No.	480 599
Material	plastic
Dimensions (l x w x d)	70 x 30 x 1 mm
Fixing	[2x] Ø6.5 mm
Hole distance	38 mm
PU	10 pc(s)

DEHNcon-H

Isolated air-termination system for transmitters/receivers (parabolic, terrestrial antennas) or whole buildings or parts of a building.
Optically optimised design since the HVI light Conductor is installed inside the supporting tube, reduced dimensions of the supporting tubes (Al tube 40 x 5 mm / GRP tube 30 x 3 mm) and low weight of the whole structure, also suitable for retrofitting on existing antenna poles.
Special internal sealing end with a flexible StSt strip is led out at the bottom end of the supporting tube for connection to the equipotential bonding system.

HVI light Conductor inside the supporting tube with air-termination tip

With internal sealing end and air-termination tip StSt Ø10 mm.

General technical data:	
Material of supporting tube	GRP / Al
Material of conductor	Cu
Equivalent separation distance s (air)	≤ 45 cm
Minimum order length	6 m
Min. clamping length	600 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type HVI LI 20 L6M ...	SR1990 FSP500 GFK AL V2A	SR1990 FSP1000 GFK AL V2A
Part No.	**819 255**	**819 256**
Length of supporting tube	1990 mm	1990 mm
Length of air-termination tip	500 mm	1000 mm
Max. gust wind speed	(Max. free length 1,890 mm, 1x HVI light inside) 240 km/h	(Max. free length 2,390 mm, 1x HVI light inside) 200 km/h
Max. free length	1890 mm	2390 mm
PU	1 pc(s)	1 pc(s)

Type HVI LI 20 L6M ...	SR2640 FSP500 GFK AL V2A	SR2640 FSP1000 GFK AL V2A
Part No.	**819 257**	**819 258**
Length of supporting tube	2640 mm	2640 mm
Length of air-termination tip	500 mm	1000 mm
Max. gust wind speed	(Max. free length 2,540 mm, 1x HVI light inside) 240 km/h	(Max. free length 3,040 mm, 1x HVI light inside) 201 km/h
Max. free length	2540 mm	3040 mm
PU	1 pc(s)	1 pc(s)

HVI light Conductor

System for maintaining the separation distance, e.g. on flat roofs.
The high-voltage-resistant, insulated HVI light Conductor prevents uncontrolled
flashover to metal or electric components underneath the roofing.

For use up to an equivalent separation distance s ≤ 45 cm (in air) or s ≤ 90 cm (solid material).

HVI light Conductor (on a reel)

The HVI light Conductor is delivered in a length of 100 m on a disposable plywood reel (diameter approx. 800 mm, width approx. 485 mm), incl an Allen key.

Type HVI LI 45 20 ...	L100M GR
Part No.	**819 125**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	dark grey
Cross section of core	19 mm²
Diameter Ø conductor	20 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	100 m

HVI light Conductor (500 m on a reel)

HVI light Conductor is deliverd in a length of 500 m on a disposable plywood reel (diameter approx. 1 m, width approx. 670 mm, cylinder bore diameter approx. 80 mm), incl an Allen key. Total weight approx. 290 kg.

Type HVI LI 45 20 ...	L500M GR
Part No.	**819 124**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	dark grey
Cross section of core	19 mm²
Diameter Ø conductor	20 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	500 m

HVI light Conductor (cut to length)

The cut-to-length HVI light Conductor is supplied in a cardboard box (max. 70 m). Please state conductor length when ordering (0.5 m steps).

Type HVI LI 45 20 ...	L .. GR
Part No.	**819 129**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	dark grey
Cross section of core	19 mm²
Diameter Ø conductor	20 mm
Minimum order length (l1)	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

DEHNcon-H Supporting Tubes for HVI light Conductor

Supporting tubes for the HVI light Conductor for on-site assembly, air-termination tip, StSt, Ø10 mm.

With air-termination tip

General technical data:	
Material of supporting tube	GRP / Al
Outside diameter Ø GRP	30 mm
Outside diameter Ø Al (clamping range)	40 mm
Min. clamping length	600 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D30 ...	1990 FSP10 500 GFK AL V2A	1990 FSP10 1000 GFK AL V2A
Part No.	**105 272**	**105 273**
Length of supporting tube	1990 mm	1990 mm
Length of air-termination tip	500 mm	1000 mm
Max. gust wind speed	(Max. free length 1,890 mm, 1x HVI light inside) 240 km/h	(Max. free length 2,390 mm, 1x HVI light inside) 200 km/h
Max. free length	1890 mm	2390 mm
PU	1 pc(s)	1 pc(s)

Type SR D30 ...	2840 FSP10 500 GFK AL V2A	2640 FSP10 1000 GFK AL V2A
Part No.	**105 274**	**105 280**
Length of supporting tube	2640 mm	2640 mm
Length of air-termination tip	500 mm	1000 mm
Max. gust wind speed	(Max. free length 2,540 mm, 1x HVI light inside) 240 km/h	(Max. free length 3,040 mm, 1x HVI light inside) 201 km/h
Max. free length	2540 mm	3040 mm
PU	1 pc(s)	1 pc(s)

Connection Elements for DEHNcon-H, HVI light Conductor

Connection kit for supporting tube (Part Nos. 105 272 and 105 273)

Connection kit for sealing the HVI light Conductor at both ends, for implementing the adjustment range of the conductor in the supporting tube (head piece) and connection element for other parts of the external lightning protection system or earth-termination system (incl. EB connection cable, constant force spring and three heat-shrinkable sleeves).

Type HVI LI ASS RIV KF ...	GFB1000 V2A
Part No.	**819 271**
Material of connection elements	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	20 mm
EB connection cable	Strip 1000 x 6 x 1 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection kit for supporting tube (Part Nos. 105 274 and 105 280)

Connection kit for sealing the HVI light Conductor at both ends, for implementing the adjustment range of the conductor in the supporting tube (head piece) and connection element for other parts of the external lightning protection system or earth-termination system (incl. EB connection cable, constant force spring and three heat-shrinkable sleeves).

Type HVI LI ASS RIV KF ...	GFB2200 V2A
Part No.	**819 272**
Material of connection elements	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	20 mm
EB connection cable	Strip 2200 x 6 x 1 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for DEHNcon-H

Fixing clamp for DEHNcon-H

Clamp for fixing the supporting tube, e.g. on the antenna pole. With spacer, length 30 mm for adjusting antenna supports.

Type	BSC D40 D45.65 V2A
Part No.	**105 161**
Material	StSt
Clamping range of pipe Ø	45-65 mm (1 1/2-2'')
Clamping range of supporting tube	40-50 mm
Length of spacer	30 mm
PU	1 pc(s)

Wall mounting bracket for vertical mounting

For attaching supporting tubes or air-termination rods D40 / D50 to roof-mounted structures or walls.

Type	WB D40.50 SE WA46 V2A	WB D40.50 SE WA110 V2A
Part No.	**105 342**	**105 348**
Material of bracket	StSt	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
Distance from wall	46 mm	110 mm
PU	1 pc(s)	1 pc(s)

Wall mounting bracket for horizontal mounting, flat

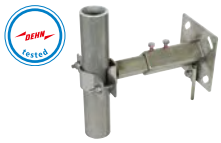
For attaching DEHNcon-H supporting tubes to the structure to be protected or the wall.

Type	WB D40 WA V2A
Part No.	**105 140**
Material	StSt
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
Distance from wall	80 mm
Clamping range of air-termination rod	40 mm
PU	1 pc(s)

Railing clamp
For pipes.

Type	BS D40.50 D48.60 V2A
Part No.	**105 354**
Material	StSt
Clamping range for pipe Ø	48-60 mm (1 1/2-2'')
Clamping range for supporting tube	40-50 mm
PU	5 pc(s)

Wall mounting bracket, adjustable from 150-200 mm
For attaching supporting tubes or air-termination rods D40 / D50, with double clamp for connecting 2x Rd 8-10 mm.



Type	WB D40.50 V150.200 V2A
Part No.	**105 344**
Material of bracket	StSt
Clamping range for supporting tube	40-50 mm
Distance from wall	150-200 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket, adjustable from 230-1300 mm
For fixing supporting tubes or air-termination rods D40 / D50.

General technical data:	
Material of bracket	St/tZn / StSt
Clamping range for supporting tube	40-50 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm

Type	WB D40.50 V230.400 STTZN V2A	WB D40.50 V400.700 STTZN V2A
Part No.	**105 347**	**105 343**
Distance from wall	230-400 mm	400-700 mm
PU	1 pc(s)	1 pc(s)

Type	WB D40.50 V700.1300 STTZN V2A
Part No.	**105 349**
Distance from wall	700-1300 mm
PU	1 pc(s)

Support for air-termination rod D40 and DEHNcon-H
Fixing clamp with tensioning strap.

Type	BSC D40.50 SB50.300 V2A
Part No.	**105 160**
Material	StSt
Clamping range Ø pipe	50-300 mm
Clamping range of air-termination rod	40-50 mm
Dimensions of strip (w x d)	25 x 0.3 mm
Standard	EN 62561-1
PU	1 pc(s)

Railing clamp
With spacer for adjusting, e.g. antenna supports.

Type	BSC D40 DS95 D45.65 V2A
Part No.	**105 162**
Material	StSt
Clamping range for pipe Ø	45-65 mm (1 1/2-2'')
Clamping range for supporting tube	40-50 mm
Length of spacer	95 mm
Standard	EN 62561-1
PU	1 pc(s)

Air-termination Mast for Sub-roof Installation of the HVI light Conductor

For installation on the mounting bracket on the rafter holder.
Optically optimised routing of the HVI light Conductor inside the supporting tube. The HVI light Conductor is led through the supporting tube of the rafter holder and installed in the area of the counter-battens / roof battens.
Advantages:

- Sub-roof installation – invisible
- Installation on the mounting bracket with only one visible tube
- No mechanical load, e.g. snow

DEHNcon-H / HVI light Conductor inside the supporting tube with air-termination tip
With internal sealing end and air-termination tip Ø10 mm.

Type	HVI LI 20 L6M SR2875 FSP1000 DSH GFK AL
Part No.	**819 243**
Material of supporting tube	GRP / Al
Length of supporting tube	2875 mm
Length of air-termination tip	1000 mm
Outside diameter Ø GRP	30 mm
Diameter Ø of conductor	20 mm
Colour of conductor	grey
Material of conductor	Cu
Equivalent separation distance s (in air)	≤ 45 cm
Minimum order length	6 m
Max. gust wind speed	149 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

DEHNcon-H Supporting Tube for HVI light Conductor, Sub-roof Installation

Supporting tube for HVI light Conductor for on-site assembly, air-termination tip, StSt, Ø10 mm.

With air-termination tip

Type	SR D30 2875 FSP10 1000 DSH GFK AL V2A
Part No.	**105 288**
Material of supporting tube	GRP / Al
Length of supporting tube	2875 mm
Length of air-termination tip	1000 mm
Outside diameter Ø GRP	30 mm
Max. gust wind speed	149 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI light Conductor

System for keeping the separation distance e.g. on flat roofs. The high-voltage-resistant insulatation of the HVI light Conductor avoids uncontrolled flashover e.g. through the roof covering to metal or electric parts underneath it.

Can be used up to an equivalent separation distance s ≤ 45 cm (in air) or s ≤ 90 cm (solid material).

HVI light Conductor (cut to length)
The HVI light Conductor cut to length is supplied in a cardboard box (max. 70 m).
Conductor length has to be stated when ordering (in steps of 0.5 m).

Type	HVI LI 45 20 L .. GR
Part No.	**819 129**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	dark grey ●
Colour RAL	similar to 7000
Cross-section of core	19 mm²
Equivalent separation distance s (in air)	≤ 45 cm
Diameter Ø conductor	20 mm
Characteristics of sheath	UV-stabilised and weather resistant
Minimum order length (l1)	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection Element for DEHNcon-H, HVI light Conductor

Connection kit for sealing the HVI light Conductor at both ends for implementing the adjustment range of the conductor in the supporting tube (head piece) and connection element for connection to other parts of the external lightning protection or earth-termination system (incl. EB connection cable, constant force spring and three heat-shrinkable sleeves).

Connection kit for HVI light Conductor Ø20 mm for installation inside the supporting tube

Type	HVI LI ASS RIV KF GFB2200 V2A
Part No.	**819 272**
Material of connection elements	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	20 mm
EB connection cable	strip 2200 x 18 x 0.4 mm
PU	1 pc(s)

Air-termination Mast for Sub-roof Installation of the HVI Conductor

For top mount on roof rafter brackets
Optically optimised routing of the HVI Conductor inside the supporting tube. The HVI Conductor is led through the mast support of the roof rafter bracket and installed in the region of the counter/roof battens.
Advantages:

- Sub-roof installation – optically indiscernible
- Top mount with only one visible tube
- No mechanical load, e.g. snow

DEHNcon-H / HVI Conductor inside the supporting tube with air-termination rod

Type	HVI 20 M L6M SR1955 FS2500 DSH GFK AL
Part No.	**819 247**
Material of supporting tube	GRP / Al
Length of supporting tube	1955 mm
Length of air-termination rod	2500 mm
Outside diameter Ø GRP	50 mm
Diameter Ø conductor	20 mm
Colour of conductor	black ●
Material of conductor	Cu
Minimum order length	6 m
Max. gust wind speed	140 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

DEHNcon-H Supporting Tube for HVI Conductor, Sub-roof Installation

Supporting tube for HVI Conductor for on-site assembly, air-termination rod, Al, Ø22 / 16 / 10 mm.

With air-termination rod

Type	SR D50 1950 FS22 16 10 2500 DSH GFK AL
Part No.	**105 281**
Material of supporting tube	GRP / Al
Length of supporting tube	1955 mm
Length of air-termination rod	2500 mm
Outside diameter Ø GRP	50 mm
Max. gust wind speed	140 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI Conductor / HVI long Conductor

High-voltage-resistant, insulated down conductor for keeping the separation distance to electrically conductive parts according to IEC/EN 62305-3.

Can be used up to an equivalent separation distance s ≤ 75 cm (in air) or s ≤ 150 cm (solid material).

HVI long Conductor (cut to length)

The cut-to-length HVI Conductor is delivered in a cardboard box (max. 70 m). Conductor length has to be stated when ordering (0.5 m steps).

Type	HVI LO 75 20 L... SW M
Part No.	**819 131**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	black ●
Diameter Ø conductor	20 mm
Minimum order length	6 m
Max. order length	70 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection Element for DEHNcon-H, HVI Conductor

Connection elements for sealing the HVI long Conductor on both ends, for implementing the sealing end of the conductor inside of the supporting tube (head piece) and connection element for connection to other parts of the external lightning protection system or earth-termination system (incl. two heat-shrinkable sleeves).

Connection kit for HVI Conductor Ø20 mm for installation inside the supporting tube

Type	HVI LO ASS RIV KF 20 V2A
Part No.	**819 145**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	23 mm
Screw	threaded bolt M6 x 8 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Mounting Bracket for Installation on Rafters

For side fixing of the

- DEHNcon-H supporting tube (Ø40 mm)
- HVI Conductor inside the supporting tube (Ø50 mm)
- as well as to attach and fix the supporting tubes and for the sub-roof installation of the HVI Conductor or HVI light Conductor.

Note: Mounting conditions on site must be clarified with the building constructor. More information on max. gust wind speeds can be found at www.dehn-international.com

Type	DASH D48 AS600.750 STTZN
Part No.	**105 240**
Material	St/tZn
Adjustment range	600-750 mm
Roof inclination	20-50°
Diameter Ø of supporting tube	48 mm
Fixing screw	✪ 8 x 120 mm
PU	1 pc(s)

Accessories for Mounting Bracket for Installation on Rafters

Roof bushing kit
For bushing and sealing of poles and pipes on steep roofs

- Universal use on different roof tiles due to malleable aluminium roof tile

Roof bushing kit comprises aluminium roof tile, rubber grommet and sealing tape.

Type	DADS D10 16 48 AL SCH	DADS D10 16 48 AL ROT
Part No.	**105 245**	**105 246**
Material of roof tile	aluminium, with UV-stabilised plastic coating	aluminium, with UV-stabilised plastic coating
Dimensions of roof tile	450 x 500 mm	450 x 500 mm
Diameter Ø of mast hole	10 / 16 / 48 mm	10 / 16 / 48 mm
Roof inclination	24-53°	24-53°
Material of rubber grommet	UV-stabilised rubber mixture	UV-stabilised rubber mixture
Material of sealing tape	rubber-based plastic sealant	rubber-based plastic sealant
Type of sealing tape	strongly adhesive, self-welding	strongly adhesive, self-welding
Dimensions of sealing tape	600 x 80 mm	600 x 80 mm
Processing temperature	+5 °C ... +40 °C	+5 °C ... +40 °C
Permanent temperature range of sealing tape	-40 °C ... +80 °C	-40 °C ... +80 °C
Colour	black ●	red ●
PU	1 pc(s)	1 pc(s)

Mounting Bracket for Air-Termination Systems on Metal Roofs

Mounting bracket (StSt) for installing HVI air-termination systems or air-termination rods on metal roofs:

Mounting bracket suitable for vertical mounting of air-termination systems on metal roofs with a max. roof slope of up to 53°.

For fixing D40 air-termination rods in place and mounting DEHNcon-H systems (e.g. part no. 819 243 or 819 247) with the conductor inside the supporting tube.

Note: Mounting conditions on site must be clarified with the builder. You can find more information on max. gust wind speeds at www.dehn-international.com

Type	MDH D48 VB550.900 V2A
Part No.	**105 241**
Material	StSt
Adjustment range	550-900 mm
Roof inclination	5-53°
Standard	EN 62561-1
PU	1 pc(s)

Accessories for Mounting Bracket for Air-Termination Systems on Metal Roofs

Holder for metal roofs with round standing seam

Screw with self-locking nut.

Type	HA M8 RSF20.25 V2A
Part No.	**123 040**
Material of holder	StSt
Clamping range	Ø20-25 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)

Screw with self-locking nut.

Type	HA M8 KF18.22 V2A
Part No.	**123 041**
Material of holder	StSt
Clamping range	approx. 18 / 22 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs with standing seam

Screw with self-locking nut.

Type	HA M8 SF0.7 8 V2A
Part No.	**123 042**
Material of holder	StSt
Clamping range	0.7-8 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs for riveting or screwing

Screw lock using self-locking nut with serrated bearing.
Note: The leak-tightness of the roof must be ensured during installation; e.g. by using waterproof cup rivets. You might need to consult with the trade people responsible.

Type	HA M8 AL ZF B5.2 6.5 V2A
Part No.	**123 043**
Material of holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

C-mounting rail for mounting bracket for installation on metal roofs

C mounting rails with holes for fixing the mounting bracket on roofs with large batten distances (> 600 mm).

General technical data:		
Material of the rail		StSt (V4A)

Type	MSC MDH V4A L1000 MZ V2A	MSC MDH V4A L1500 MZ V2A
Part No.	**123 050**	**123 051**
Dimensions of the rail (l x w x h)	[2x] 1000 x 41 x 41 mm	[2x] 1500 x 41 x 41 mm
PU	1 pc(s)	1 pc(s)

Type	MSC MDH V4A L2000 MZ V2A
Part No.	**123 052**
Dimensions of the rail (l x w x h)	[2x] 2000 x 41 x 41 mm
PU	1 pc(s)

Hanger bolt for wooden substructures

Hanger bolt for fixing the mounting bracket on roofs with wooden substructures. To prevent the ingress of moisture, the hanger bolts feature a hexagon socket 5 mm and an EPDM seal membrane.

Type	STS HUK 8.4X130 PLDI AGM10X50 V2A
Part No.	**528 820**
Material	StSt
Thread length wood	70 mm
Metric thread length	M10 x 50 mm
Total length	185 mm
PU	1 pc(s)

Hanger bolt for metal substructures

Hanger bolt for fixing the mounting bracket on roofs with metal substructures. To prevent the ingress of moisture, the hanger bolts feature a hexagon socket 5 mm and an EPDM seal membrane.

Type	STS SUK 8X125 PLDI AGM10X50 V2A
Part No.	**528 821**
Material	StSt
Thread length steel	65 mm
Metric thread length	M10 x 50 mm
Total length	180 mm
PU	1 pc(s)

Conductor Holder for Installation on Gable Roofs and Metal Roofs

Roof conductor holder

With pre-punched points for bending and hooking into the roof tile and screwing onto the battens, for installing the HVI light Conductor on gable roofs.

Type	DLH ZS 20 23 H55 L205 V2A
Part No.	**202 829**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Length of brace	205 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Roof conductor holders for roofs with round standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with round standing seams.

Type	DLH RSF ZS 20 23 V2A
Part No.	**202 850**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	Ø20-25 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with clamping seams.

Type	DLH KF ZS 20 23 V2A
Part No.	**202 851**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	approx. 18 / 22 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with standing seams.

Type	DLH SF ZS 20 23 V2A
Part No.	**202 852**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	0.7-8 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder with connection lug

Roof conductor holder with slotted saddle clamp for HVI light Conductors, HVI Conductors and Z-shaped connection lug for riveting or screwing to metal roofs.

Type	DLH AL ZS 20 23 V2A
Part No.	**202 853**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Wall-mounted Conductor Holders

Conductor holder

With thread. Wall-mounted conductor holder with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 GM8 V2A	LH ZS 20 23 GM6 V2A
Part No.	**275 250**	**275 251**
Material of conductor holder	StSt	StSt
Conductor support Rd	20 / 23 mm	20 / 23 mm
Thread	M8	M6
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)	25 pc(s)

Conductor holder

With slotted hole. Wall-mounted conductor holder with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 B5.5X10 V2A
Part No.	**275 252**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Fixing hole	5.5 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder

With plastic base. Wall-mounted conductor holder with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 KS H10 V2A
Part No.	**275 259**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Thread	M8
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder for the HVI Conductor / HVI light plus Conductor

For mounting on walls and for mounting in the sealing end range.

Type	LH ZS 20 H19 IGM8 GR PA
Part No.	**275 220**
Material of conductor holder	PA
Conductor support Rd	20-21 mm
Female thread	M8
Fixing hole	6.5 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Stripping tool for HVI light Conductors / HVI Conductors

Tool for stripping the semi-conductive sheath and the PE insulation of the HVI light Conductor, HVI Conductor (outer diameter 20 mm).

- Tool consists of a handle and various exchangeable cutting heads
- Stripping length of HVI light Conductor, HVI Conductor is adjustable in steps of 0.2 mm (lock points) using the knob in the handle. The dial on the handle shows the length set.

Handling
Position the cutting head at the cut-off end of the conductor and turn clockwise with light pressure to cut/strip it. The cutting head can be exchanged without tools via the bayonet coupling.

HVI strip 20

For HVI light and HVI Conductors (handle + cutting head).

Type HVI ...	STRIP 20
Part No.	**597 220**
Diameter Ø conductor	20 mm
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

HVI head 20

For HVI light and HVI Conductors (cutting head).

Type HVI ...	HEAD 20
Part No.	**597 120**
Diameter Ø conductor	20 mm
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

Accessories for Stripping tool for HVI light Conductors / HVI Conductors

HVI head holder

Adapter with bayonet coupling for attaching the HVI head cutting head (pre-set stripping length 35 mm).
Adapter can be used in a standard three-jaw chuck (Ø10 mm), e.g. with cordless screwdrivers.

Type	HVI HH
Part No.	**597 139**
Material	plastic / brass
PU	1 pc(s)

Spare blades for HVI head 20

1 pack = 4 pieces

Type	EK HVI HEAD 20
Part No.	**597 101**
Material	StSt
PU	1 PAK

Stripping Tool for HVI light Conductors / HVI Conductors

Tool for stripping the additional grey sheath of the HVI light Conductor and HVI Conductor. DEHNhelix consists of a handle and an exchangeable bracket (depending on the conductor diameter).

DEHNhelix

Type	AW DEHNHELIX
Part No.	**597 230**
Diameter Ø conductor	23 mm
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

Accessories for Stripping Tool for HVI light Conductors / HVI Conductors

Spare blade for stripping tool

Type	EK AW DEHNHELIX
Part No.	**597 130**
Material	StSt
PU	1 pc(s)

Cable shears for HVI Conductors

Cable shears for easily cutting the HVI light Conductor, HVI Conductor (outer diameter 20 / 23 mm), HVI power Conductor (outer diameter 27 mm) and CUI Conductor to length.
The special design of the cable shears also allows precise cutting of stranded conductors, making it easier to attach connection elements.

HVI cutter

Type	HVI CUTTER 32
Part No.	**597 032**
Diameter Ø conductor	up to 32 mm
Material of blades	tool steel (CR-Moly (SCM440))
Material of handles	carbon steel (SS400)
Length	600 mm
PU	1 pc(s)

Supporting Tube with HVI Conductor

Optically optimised installation of the HVI Conductor inside the supporting tube creates less wind exposed surface.
For use up to an equivalent separation distances ≤ 75 cm (in air) or s ≤ 150 cm (solid material).
Conductor length to be indicated when ordering (steps of 0.5 m).

HVI Conductor in supporting tube with air-termination tip

With internal sealing end and air-termination tip, StSt, Ø10 mm, length 1000 mm.

Type HVI ...	20 M L6M SR3200 IP FSP1000 GFK AL	23 L6M SR3200 IP FSP1000 GFK AL
Part No.	**819 326**	**819 336**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3200 mm	3200 mm
Transport length	3200 mm	3200 mm
Outside diameter Ø	50 mm	50 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Material of conductor	Cu	Cu
Minimum order length	6 m	6 m
Max. free length with air-termination tip (wall mounting)	3500 mm	3500 mm
Max. gust wind speed	(Max. free length 3,500 mm, 1x HVI inside) 237 km/h	(Max. free length 3,500 mm, 1x HVI grey inside) 237 km/h
Max. gust wind speed	(Max. free length 3,500 mm, 1x HVI outside) 227 km/h	(Max. free length 3,500 mm, 1x HVI grey outside) 225 km/h
Max. gust wind speed	(Max. free length 3,500 mm, 4x HVI outside) 200 km/h	(Max. free length 3,500 mm, 4x HVI grey outside) 194 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

HVI Conductor in supporting tube (side outlet) with air-termination tip and small tripod

With internal sealing end and air-termination tip, StSt, Ø10 mm, length 1,000 mm.
With tripod (part no. 107 390).

Type HVI ...	20M L6M SR3200 SA FSP1000 AL DBS V2A	23 L6M SR3200 SA FSP1000 AL DBS V2A
Part No.	**819 371**	**819 381**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3200 mm	3200 mm
Transport length	3200 mm	3200 mm
Outside diameter Ø	50 mm	50 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Material of conductor	Cu	Cu
Radius of tripod	680 mm	680 mm
Space required for tripod	1175 x 1020 mm	1175 x 1020 mm
Minimum order length	6 m	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

HVI Conductor in supporting tube with air-termination rod

With internal sealing end and air-termination rod, Al, Ø22 /16 / 10 mm, length 2500 mm.

General technical data:	
Material of supporting tube	GRP / Al
Outside diameter Ø	50 mm
Material of conductor	Cu
Minimum order length	6 m
Max. free length with air-termination rod (wall mounting)	5000 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type HVI ...	20 M L6M SR3200 IP RFS2500 GFK AL	23 L6M SR3200 IP RFS2500 GFK AL
Part No.	**819 328**	**819 338**
Length of supporting tube	3200 mm	3200 mm
Transport length	3200 mm	3200 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Max. gust wind speed	(Max. free length 5,000 mm, 1x HVI inside) 189 km/h	(Max. free length 5,000 mm, 1x HVI grey inside) 189 km/h
Max. gust wind speed	(Max. free length 5,000 mm, 1x HVI outside) 176 km/h	(Max. free length 5,000 mm, 1x HVI grey outside) 173 km/h
Max. gust wind speed	(Max. free length 5,000 mm, 4x HVI outside) 156 km/h	(Max. free length 5,000 mm, 4x HVI grey outside) 151 km/h
PU	1 pc(s)	1 pc(s)

Type HVI ...	20 M L6M SR4700 IP RFS2500 GFK AL	23 L6M SR4700 IP RFS2500 GFK AL
Part No.	**819 426**	**819 438**
Length of supporting tube	4700 mm	4700 mm
Transport length	4700 mm	4700 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Max. gust wind speed	(Max. free length 5,500 mm, 1x HVI inside) 184 km/h	(Max. free length 5,500 mm, 1x HVI grey inside) 184 km/h
Max. gust wind speed	(Max. free length 5,000 mm, 1x HVI outside) 151 km/h	(Max. free length 5,500 mm, 1x HVI grey outside) 149 km/h
Max. gust wind speed	(Max. free length 5,000 mm, 4x HVI outside) 139 km/h	(Max. free length 5,500 mm, 4x HVI grey outside) 137 km/h
PU	1 pc(s)	1 pc(s)

HVI Conductor in supporting tube (side outlet) with air-termination rod and small tripod

With internal sealing end and air-termination rod, Al, Ø22 /16 / 10 mm, length 2,500 mm.
With tripod (part no. 107 390).

Type HVI ...	20M L6M SR3200 SA RFS2500 AL DBS V2A	23 L6M SR3200 SA RFS2500 AL DBS V2A
Part No.	**819 373**	**819 383**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3200 mm	3200 mm
Transport length	3200 mm	3200 mm
Outside diameter Ø	50 mm	50 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Material of conductor	Cu	Cu
Radius of tripod	680 mm	680 mm
Space required for tripod	1175 x 1020 mm	1175 x 1020 mm
Minimum order length	6 m	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

HVI Conductor

HVI Conductor in supporting tube (side outlet) with air-termination rod and large tripod
With internal sealing end and air-termination rod, Al, Ø22 /16 / 10 mm, length 2,500 mm.
With tripod (part no. 107 391).

Type HVI ...	20M L6M SR4700 SA RFS2500 AL DBS V2A	23 L6M SR4700 SA RFS2500 AL DBS V2A
Part No.	**819 473**	**819 483**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	4700 mm	4700 mm
Transport length	4700 mm	4700 mm
Outside diameter Ø	50 mm	50 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Material of conductor	Cu	Cu
Radius of tripod	1330 mm	1330 mm
Space required for tripod	2300 x 1995 mm	2300 x 1995 mm
Minimum order length	6 m	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

The conductor cannot be returned as it is made to order.

Air-Termination Mast with HVI Conductor

For a maximum free length of the whole air-termination system of 8.5 m.
To be fixed with three variable supports (Part No. 105 345).
Transport length 6000 mm.

With 1x HVI Conductor installed inside the supporting tube. Conductor length has to be stated when ordering (0.5 m steps).

Maximum total length of the HVI Conductor of 12.5 m in case of class of LPS II.
Maximum total length of the HVI Conductor of 18.5 m in case of class of LPS III.

Type	FM 60 L11M IP HVI M L10M GFK AL STTZN
Part No.	**819 730**
Total length of air-termination mast	10800 mm
Length of air-termination rod	3000 mm
Length of supporting tube	2100 mm
Length of mast pipe	6000 mm
Colour of conductor	black ●
Minimum order length	10 m
Max. gust wind speed	(Max. free length 8,500 mm, 1x HVI inside) 156 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for Air-Termination Mast with HVI Conductor

Variable support for air-termination masts
Three supports should be mounted for each air-termination mast.
Clamping range of air-termination mast Ø60 mm.

Type	WB D60 V250.350 STTZN
Part No.	**105 345**
Material of support	St/tZn
Adjustment range	250-350 mm
Fixing holes Ø	[4x] 12 x 25 mm
PU	1 pc(s)

HVI Conductor / HVI long Conductor

High-voltage-resistant, insulated down conductor for keeping the separation distance to electrically conductive parts according to IEC 62305-3.

For use up to an equivalent separation distance s ≤ 75 cm (in air) or s ≤ 150 cm (solid material).

HVI Conductor (pre-assembled, installation inside the supporting tube)
With one head piece and one connection element (enclosed loose).
Minimum order length 6 m, conductor length has to be stated when ordering (in steps of 0.5 m).

Type HVI ...	RIV 75 20 L6M SW M	RIV 75 23 L6M GR M
Part No.	**819 220**	**819 223**
Material of conductor	Cu	Cu
Material of insulation	PE	PE
Material of sheath	PE	PE
Colour of conductor	black ●	grey ●
Diameter Ø conductor	20 mm	23 mm
Minimum order length	6 m	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

HVI Conductor (pre-assembled, installation outside the supporting tube)
With one head piece and one connection element (enclosed loose).
Minimum order length 6 m, conductor length has to be stated when ordering (in steps of 0.5 m).

Type HVI ...	RAV 75 20 L6M SW M	RAV 75 23 L6M GR M
Part No.	**819 226**	**819 227**
Material of conductor	Cu	Cu
Material of insulation	PE	PE
Material of sheath	PE	PE
Colour of conductor	black ●	grey ●
Diameter Ø conductor	20 mm	23 mm
Minimum order length	6 m	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

HVI long Conductor (on cable reel)

The HVI long Conductor comes on a disposable plywood reel. Allen key included in delivery.

General technical data:	
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type HVI ...	LO 75 20 L100M SW M	LO 75 20 L500M SW M
Part No.	**819 135**	**819 138** NEW
Colour of conductor	black ●	black ●
Diameter Ø conductor	20 mm	20 mm
PU	100 m	500 m

Type HVI ...	LO 75 23 L100M GR M	LO 75 23 L400M GR M
Part No.	**819 136**	**819 110** NEW
Colour of conductor	grey ●	grey ●
Diameter Ø conductor	23 mm	23 mm
PU	100 m	400 m

HVI long Conductor (cut to length)

Cut-to-length HVI long Conductor for on-site assembly. Conductor is delivered as a coil. Conductor length has to be stated when ordering (0.5 m steps).

Type HVI ...	LO 75 20 L... SW M	LO 75 23 L... GR M
Part No.	**819 131**	**819 132**
Material of conductor	Cu	Cu
Material of insulation	PE	PE
Material of sheath	PE	PE
Colour of conductor	black ●	grey ●
Diameter Ø conductor	20 mm	23 mm
Minimum order length	6 m	6 m
Max. order length	70 m	60 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Connection Elements for HVI long Conductor

Connection kit for HVI long Conductor Ø20 mm, installation inside the supporting tube

Connection elements for sealing the HVI long Conductor at both ends, for implementing the sealing end of the conductor in the supporting tube (head piece) and connection element for connection to other parts of the external lightning protection system or earth-termination system (incl. two heat-shrinkable sleeves).

These connection elements may be used with HVI long supporting tubes.

Type	HVI LO ASS RIV KF 20 V2A
Part No.	**819 145**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection kit for HVI long Conductor Ø20 mm, installation outside the supporting tube

Connection elements for sealing the HVI long Conductor at both ends, for establishing the sealing end of the conductor outside the supporting tube (head piece for connection plate) and connection element for connecting to other parts of the external lightning protection system or earthing system (incl. two heat-shrinkable sleeves).

These connection elements may only be used for HVI long supporting tubes in combination with the fixing kit (Part No. 819 294).

Type	HVI LO ASS RAV KF 20 V2A
Part No.	**819 146**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection element (head piece) for HVI long Conductor Ø20 mm, installation outside the supporting tube

Connection element for sealing the HVI long Conductor, for establishing the sealing end of the conductor on the outside of the supporting tube (head piece for connection plate), incl. one heat-shrinkable sleeve.

Type	AEA KO KF HVI 20 SW V2A
Part No.	**819 197**
Material	StSt
Connection	M12 thread
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection element for HVI long Conductor Ø20 mm

Connection element for sealing the HVI long Conductor for establishing the sealing end of the conductor for other parts of the external lightning protection or earth-termination system (incl. one heat-shrinkable sleeve).

Type	AE BO10 KF HVI 20 SW V2A
Part No.	**819 199**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection kit for HVI long Conductor Ø23 mm, installation inside the supporting tube

Connection elements for sealing the HVI long Conductor at both ends, for implementing the sealing end of the conductor inside the supporting tube (head piece) and connection element for connection to other parts of the external lightning protection or earth-termination system (incl. four heat-shrinkable sleeves).

These connection elements may be used with HVI long supporting tubes.

Type	HVI LO ASS RIV KF 23 V2A
Part No.	**819 147**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection kit for HVI long Conductor Ø23 mm, installation outside the supporting tube

Connection elements for sealing the HVI long Conductor at both ends, for establishing the sealing end of the conductor outside the supporting tube (head piece for connection plate) and connection element for connecting to other parts of the external lightning protection system or earthing system (incl. four heat-shrinkable sleeves).
These connection elements may only be used with the fixing kit (Part No. 819 294) and with HVI supporting tubes.

Type	HVI LO ASS RAV KF 23 V2A
Part No.	**819 148**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection element (head piece) for HVI long Conductor Ø23 mm, installation outside the supporting tube

Connection element for sealing the HVI long Conductor, for establishing the sealing end of the conductor on the outside of the supporting tube (head piece for connection plate, incl. two heat-shrinkable sleeves).

Type	AEA KO KF HVI 23 GR V2A
Part No.	**819 196**
Material	StSt
Connection	M12 thread
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection element for HVI long Conductor Ø23 mm

Connection element for sealing the HVI long Conductor for establishing the sealing end of the conductor for other parts of the external lightning protection or earth-termination system (incl. two heat-shrinkable sleeves).

Type	AE BO10 KF HVI 23 GR V2A
Part No.	**819 198**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Fixing kit for HVI long Conductor black / grey

Fixing kit for installation of the HVI long Conductor on HVI long supporting tubes, consisting of a connection plate (4x, including two self-locking nut with serrated bearings) and a fixing ring with four slotted conductor holders (Ø20 mm) for the sealing end (including two cable ties).

Type	BFS D61 4X20
Part No.	**819 294**
Material	StSt / Al
Connection plate support	square hole 13 mm
Conductor holder	4 x 20 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

EB connection element for HVI long Conductor

For discharging the electric field of the HVI long Conductor in the sealing end range.
Special slotted design to electrically contact the semi-conductive sheath.

Type	PAE 20 23 AB11 V2A
Part No.	**410 229**
Material	StSt
Clamping range Ø	20 mm
Connection hole Ø	11 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for Connection Elements for HVI long Conductor

Connection Plate

Connection plate (4x, including two self-locking nuts with serrated bearings) for installing the HVI long Conductor on the supporting tube Ø50 mm (e.g. part no. 105 330, 105 331, 105 332, 105 333).

Type	AP SR D50 4AE HVI V2A
Part No.	**819 288**
Material	StSt
Support	square hole 13 mm
PU	1 pc(s)

Fixing bolt

Fixing bolt for spanning a 50 mm² aluminium cable (Part No. 840 050) to an air-termination rod (Ø22 / Ø16 mm) or a connection plate (e.g. Part No. 819 289 or 819 288).

Type	BB 1XB11GSM8 1XB23GSM12 AL
Part No.	**105 229**
Hole	1x B 11 mm, 1x B 23 mm
Material of bolt	Al
Wire end ferrule	50 mm²
Material of wire end ferrule	Cu/Sn
Standard	EN 62561-1
PU	10 pc(s)

Wire end ferrule

Wire end ferrule for securely fixing the aluminium cable with a cross-section of 50 mm² (Part No. 840 050).
1 pack = 10 pieces.

Type	AEH 50 L22 CUGALSN
Part No.	**444 050**
Material	Cu/Sn
Cross section	50 mm²
PU	1 PAK

Supporting tube collar for noise reduction

Supporting tube collar for routing and centring the internally installed HVI long Conductor, Ø20 mm and Ø23 mm in the supporting tube for noise reduction.
Consisting of:
7x plastic shield
7x black, heat-shrinkable sleeve

Type	SCHIRM HVI SCH RED
Part No.	**819 235** NEW
Can be used for	HVI long black and HVI long grey
conductor diameter Ø	20 / 23 mm
Material	Plastic
PU	1 pc(s)

Cable tie

Cable tie for installation of the HVI Conductor.

Type	KB UVB 546X13 SW
Part No.	**819 999**
Length	546 mm
Material	Polyamide 6.6
Design	UV-resistant
PU	50 pc(s)

Supporting Tubes for HVI long Conductor

With air-termination tip

Supporting tube with internal sealing end and EB spring element.
Air-termination tip, StSt, Ø10 mm, length 1000 mm.

General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1535 mm
Max. free length with air-termination tip (wall mounting)	3500 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3200 FSP1000 IP HVI GFK AL	4700 FSP1000 IP HVI GFK AL
Part No.	**105 330**	**105 332**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
Max. gust wind speed	(Max. free length 3,500 mm, 1x HVI inside) 237 km/h	(Max. free length 4,000 mm, 1x HVI inside) 237 km/h
Max. gust wind speed	(Max. free length 3,500 mm, 1x HVI outside) 222 km/h	(Max. free length 4,000 mm, 1x HVI outside) 184 km/h
Max. gust wind speed	(Max. free length 3,500 mm, 4x HVI outside) 194 km/h	(Max. free length 4,000 mm, 4x HVI outside) 149 km/h
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3200 FSP1000 IP HVI GFK V2A	4700 FSP1000 IP HVI GFK V2A
Part No.	**105 314**	**105 316**
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
Max. gust wind speed	(Max. free length 3,500 mm, 1x HVI inside) 231 km/h	(Max. free length 4,000 mm, 1x HVI inside) 231 km/h
Max. gust wind speed	(Max. free length 3,500 mm, 1x HVI outside) 226 km/h	(Max. free length 4,000 mm, 1x HVI outside) 186 km/h
Max. gust wind speed	(Max. free length 3,500 mm, 4x HVI outside) 197 km/h	(Max. free length 4,000 mm, 4x HVI outside) 151 km/h
PU	1 pc(s)	1 pc(s)

With air-termination rod

Supporting tube with internal sealing end and EB spring element.
Air-termination rod, Ø22/16/10 mm, length 2500 mm.

General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1535 mm
Max. free length with air-termination rod (wall mounting)	5000 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3200 FS22 2500 IP HVI GFK AL	4700 FS22 2500 IP HVI GFK AL
Part No.	**105 331**	**105 333**
Material of air-termination rod	Al	Al
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
Max. gust wind speed	(Max. free length 5,000 mm, 1x HVI inside) 189 km/h	(Max. free length 5,500 mm, 1x HVI inside) 184 km/h
Max. gust wind speed	(Max. free length 5,000 mm, 1x HVI outside) 173 km/h	(Max. free length 5,500 mm, 1x HVI outside) 149 km/h
Max. gust wind speed	(Max. free length 5,000 mm, 4x HVI outside) 151 km/h	(Max. free length 5,500 mm, 4x HVI outside) 137 km/h
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3200 FS22 2500 IP HVI GFK V2A	4700 FS22 2500 IP HVI GFK V2A
Part No.	**105 315**	**105 317**
Material of air-termination rod	StSt	StSt
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
Max. gust wind speed	(Max. free length 5,000 mm, 1x HVI inside) 186 km/h	(Max. free length 5,500 mm, 1x HVI inside) 185 km/h
Max. gust wind speed	(Max. free length 5,000 mm, 1x HVI outside) 169 km/h	(Max. free length 5,500 mm, 1x HVI outside) 149 km/h
Max. gust wind speed	(Max. free length 5,000 mm, 4x HVI outside) 149 km/h	(Max. free length 5,500 mm, 4x HVI outside) 137 km/h
PU	1 pc(s)	1 pc(s)

With air-termination tip and side outlet

Supporting tube with internal sealing end and EB spring element.
Air-termination tip, StSt, Ø10 mm, length 1000 mm.

General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3200 FS1000 IP SA HVI GFK AL	4700 FS1000 IP SA HVI GFK AL
Part No.	**105 325**	**105 327**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3200 FS1000 IP SA HVI GFK V2A	4700 FS1000 IP SA HVI GFK V2A
Part No.	**105 336**	**105 338**
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
PU	1 pc(s)	1 pc(s)

With air-termination rod and side outlet

Supporting tube with internal sealing end and EB spring element.
Air-termination rod, Ø22/16/10 mm, length 2500 mm.

General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3200 FS2500 IP SA HVI GFK AL	4700 FS2500 IP SA HVI GFK AL
Part No.	**105 326**	**105 328**
Material of air-termination rod	Al	Al
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3200 FS2500 IP SA HVI GFK V2A	4700 FS2500 IP SA HVI GFK V2A
Part No.	**105 337**	**105 339**
Material of air-termination rod	StSt	StSt
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
PU	1 pc(s)	1 pc(s)

Accessories for Supporting Tubes for HVI long Conductor

Sideways air-termination tips Al for supporting tubes

Fixing kit for mounting sideways/horizontal air-termination tips on HVI long supporting tubes and HVI power supporting tubes. Consisting of four air-termination tips and one fixing ring.

Note: The additional wind load on the air-termination system with the horizontally mounted air-termination tips must be observed!

Type	BFRS D80 B35 4FSP 10 530 AL	BFRS D80 B35 4FSP 10 1030 AL
Part No.	**819 183**	**819 185**
Length of air-termination tip	530 mm	1030 mm
Material of air-termination tip	Al	Al
Material of fixing ring	Al	Al
PU	1 pc(s)	1 pc(s)

Sideways air-termination tips StSt for supporting tubes

Fixing kit for mounting sideways/horizontal air-termination tips on HVI long supporting tubes and HVI power supporting tubes. Consisting of four air-termination tips and one fixing ring.

Note: The additional wind load on the air-termination system with the horizontally mounted air-termination tips must be observed!

Type	BFRS D80 B35 4FSP 10 530 V2A	BFRS D80 B35 4FSP 10 1030 V2A
Part No.	**819 184**	**819 186**
Length of air-termination tip	530 mm	1030 mm
Material of air-termination tip	StSt	StSt
Material of fixing ring	StSt	StSt
PU	1 pc(s)	1 pc(s)

Supporting tube collar for noise reduction

Supporting tube collar for routing and centring the internally installed HVI long Conductor, Ø20 mm and Ø23 mm in the supporting tube for noise reduction.
Consisting of:
7x plastic shield
7x black, heat-shrinkable sleeve

Type	SCHIRM HVI SCH RED
Part No.	**819 235** NEW
Can be used for	HVI long black and HVI long grey
conductor diameter Ø	20 / 23 mm
Material	Plastic
PU	1 pc(s)

Tripod f. Supporting Tubes without Side Outlet

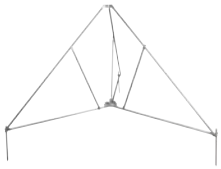
Stands for holding HVI supporting tubes for internally/externally routed HVI Conductors in/on the supporting tube, with double clamp for connection of 2x Rd 8–10 mm. Adjustable to the roof slope up to max. 10° using a variable fixing on the base holder.

The stackable concrete bases, the plastic base plates and the base holder set for holding additional concrete bases are each available separately in the accessories.

Tripod small

Type	DBS KB D50 RA680 V2A
Part No.	**107 390** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	1175 x 1020 mm
PU	1 pc(s)

Tripod large



Type	DBS KB D50 RA1330 V2A
Part No.	**107 391** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	2300 x 1995 mm
PU	1 pc(s)

Four-legged stand, small

Type	VBS KB D50 RA680 V2A
Part No.	**107 490** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	960 x 960 mm
PU	1 pc(s)

Four-legged stand, large

Type	VBS KB D50 RA1330 V2A
Part No.	**107 491** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	1880 x 1880 mm
PU	1 pc(s)

*) Only with adapter set part no. 107 399.

Tripod, small, HDG steel

Suitable for the inner routing of the HVI Conductor.

Type	DBS KB D50 RA620 STTZN
Part No.	**105 351**
Material of tripod	St/tZn
Support	50 mm
Radius	620 mm
Number of concrete bases	3-12 blocks, 17 kg each
Space required for tripod	1300 x 1450 mm
PU	1 pc(s)

Tripod, large, HDG steel

Suitable for the outer routing of the HVI Conductor.

Type	DBS KB D40.50 RA1435 STTZN
Part No.	**105 201**
Material of tripod	St/tZn
Support	40 / 50 mm
Radius	1435 mm
Number of concrete bases	3-12 blocks 17 kg each
Space required for tripod	2520 x 2860 mm
PU	1 pc(s)

Accessories for Tripod for Supporting Tubes without Side Outlet

Set of base support rods for tripods

Set of base support rods for tripods

Type	SOH 3 200 V2A
Part No.	**107 396** NEW
For tripod	Part No. 107 390 / 107 391
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Set of base support rods for four-legged stands

Set of base support rods for four-legged stands

Type	SOH 4 200 V2A
Part No.	**107 496** NEW
For four-legged stand	Part No. 107 490 / 107 491
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

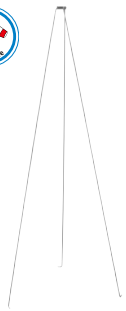
Adapter set

Adapter set for reducing the diameter from 50 mm to 40 mm for tripods and four-legged stands.

Type	RED D40 V2A DBS VBS
Part No.	**107 399** NEW
Material	StSt
PU	1 pc(s)

Bracing

Brace, 3x with clamp for pipe, Ø50 mm for fixing to the tripod (part no. 105 201). Brace suitable for supporting tubes with a length of 4700 mm (e.g. part nos 105 332, 105 316, 105 333, 105 317, 105 322, 105 323, 105 565, 105 575).



Type	ABST 3F D50 2900 V2A
Part No.	**105 601**
Material	StSt
Brace length	2910 mm
Ø clamp	50 mm
PU	1 pc(s)

Concrete base

With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder (Part No. 253 279).

Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
Material of wedge / adapter	StSt
PU	54 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases (Part Nos. 102 010, 102 002).

Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Tripods for Supporting Tubes with Side Outlet

Stands for holding HVI supporting tubes for internally/externally routed HVI Conductors in/on the supporting tube, with double clamp for connection of 2x Rd 8–10 mm. Adjustable to the roof slope up to max. 10° using a variable fixing on the base holder.

The stackable concrete bases, the plastic base plates and the base holder set for holding additional concrete bases are each available separately in the accessories.

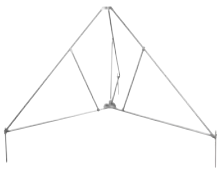
Tripod, small

For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.

Type	DBS KB D50 RA680 V2A
Part No.	107 390 NEW
Stand material	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for stand	1175 x 1020 mm
PU	1 pc(s)

Tripod, large

For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.



Type	DBS KB D50 RA1330 V2A
Part No.	107 391 NEW
Stand material	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for stand	2300 x 1995 mm
PU	1 pc(s)

Four-legged stand, small

For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.

Type	VBS KB D50 RA680 V2A
Part No.	107 490 NEW
Stand material	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for stand	960 x 960 mm
PU	1 pc(s)

Four-legged stand, large

For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.

Type	VBS KB D50 RA1330 V2A
Part No.	107 491 NEW
Stand material	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for stand	1880 x 1880 mm
PU	1 pc(s)

*) Only with adapter set part no. 107 399.

Accessories for Tripods for Supporting Tubes with Side Outlet

Set of base support rods for tripods

Set of base support rods for tripods

Type	SOH 3 200 V2A
Part No.	107 396 NEW
For tripod	Part No. 107 390 / 107 391
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Set of base support rods for four-legged stands

Set of base support rods for four-legged stands

Type	SOH 4 200 V2A
Part No.	107 496 NEW
For four-legged stand	Part No. 107 490 / 107 491
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Adapter set

Adapter set for reducing the diameter from 50 mm to 40 mm for tripods and four-legged stands.

Type	RED D40 V2A DBS VBS
Part No.	107 399 NEW
Material	StSt
PU	1 pc(s)

Concrete base

Concrete base without wedge for the erection of tripods and four-legged stands.

Type	BES 17KG KT16 D337
Part No.	102 012
Weight	17 kg
Support	Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
PU	54 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases (Part Nos. 102 010, 102 002).

Type	ULP KS D370 SW
Part No.	102 050
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Fixing Elements for Supporting Tubes

Fixing clamp with tensioning strap
For fixing supporting tubes to structural elements, e.g. antenna masts.

Type	BS D50 SB50.300 V2A
Part No.	**105 360**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
PU	1 pc(s)

Fixing clamp with tensioning strap
With additional spacer for adjusting the sector antenna supports to the mast.

Type	BS D50 DS30 SB50.300 V2A
Part No.	**105 361**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	30 mm
PU	1 pc(s)

Fixing clamp with tensioning strap
With additional long spacer for adjusting sector antenna supports to the mast.

Type	BS D50 DS90 SB50.300 V2A
Part No.	**105 362**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	95 mm
PU	1 pc(s)

Wall mounting bracket for horizontal mounting, flat
For fixing supporting tubes onto the structure to be protected or the wall.

Type	WB D50 WA V2A
Part No.	**105 340**
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	320 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

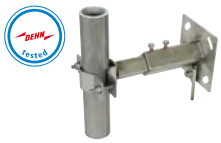
Wall mounting bracket for horizontal mounting, corner
For fixing supporting tubes onto the structure to be protected or the wall.

Type	EB D50 WA V2A
Part No.	**105 341**
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	152 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

Wall mounting bracket for vertical mounting
For attaching supporting tubes or air-termination rods D40 / D50 to roof-mounted structures or walls.

Type	WB D40.50 SE WA46 V2A	WB D40.50 SE WA110 V2A
Part No.	**105 342**	**105 348**
Material of bracket	StSt	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
Distance from wall	46 mm	110 mm
PU	1 pc(s)	1 pc(s)

Wall mounting bracket, adjustable from 150-200 mm
For attaching supporting tubes or air-termination rods D40 / D50, with double clamp for connecting 2x Rd 8-10 mm.



Type	WB D40.50 V150.200 V2A
Part No.	**105 344**
Material of bracket	StSt
Clamping range for supporting tube	40-50 mm
Distance from wall	150-200 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket, adjustable from 230-1300 mm
For fixing supporting tubes or air-termination rods D40 / D50.

General technical data:	
Material of bracket	St/tZn / StSt
Clamping range for supporting tube	40-50 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm

Type	WB D40.50 V230.400 STTZN V2A	WB D40.50 V400.700 STTZN V2A
Part No.	**105 347**	**105 343**
Distance from wall	230-400 mm	400-700 mm
PU	1 pc(s)	1 pc(s)

Type	WB D40.50 V700.1300 STTZN V2A
Part No.	**105 349**
Distance from wall	700-1300 mm
PU	1 pc(s)

Railing clamp
For pipes.

Type	BS D40.50 D48.60 V2A
Part No.	**105 354**
Material	StSt
Clamping range for pipe Ø	48-60 mm (1 1/2-2'')
Clamping range for supporting tube	40-50 mm
PU	5 pc(s)

Railing clamp
For pipes.

Type	BS D40.50 D70.90 V2A
Part No.	**105 355**
Material	StSt
Clamping range for pipe Ø	70-90 mm (2 1/4-3'')
Clamping range for supporting tube	40-50 mm
PU	1 pc(s)

Railing clamp

For square hollow profiles.

Type	BS D40.50 4K20.50 V2A	BS D40.50 4K60.120 V2A
Part No.	**105 356**	**105 376**
Material	StSt	StSt
Clamping range for square profile	20 x 20 to 50 x 50 mm	60 x 120 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
PU	5 pc(s)	1 pc(s)

Spacers for Omnidirectional Antennas

Spacer for DEHNiso Combi supporting tubes with HVI Conductor installed inside and/or outside the supporting tube, mounted on the antenna mast.

General technical data:	
Material of support / square profile	St/tZn
Clamping range of supporting tube	50 mm
Length of spacer	1000 mm

Type AH D50 1000 ...	D55.100 STTZN	D100.150 STTZN
Part No.	**105 363**	**105 364**
Clamping range (Ø mast)	55-100 mm	100-150 mm
Dimensions (w1 x h1 x d1)	140 x 120 x 55 mm	190 x 140 x 60 mm
PU	1 pc(s)	1 pc(s)

Type AH D50 1000 ...	D150.190 STTZN
Part No.	**105 365**
Clamping range (Ø mast)	150-190 mm
Dimensions (w1 x h1 x d1)	230 x 180 x 70 mm
PU	1 pc(s)

Spacers for omnidirectional antennas with special lengths or any other diameters are available upon request!

Accessories for HVI Conductor and HVI long Conductor

Roof conductor holders for flat roofs

For fixing round conductors and strips on flat roofs with one conductor support type FB.

Type	DLH FB 8 LO 100X100X70
Part No.	**253 015**
Conductor routing	loose
Material of conductor holder	plastic
Conductor support Rd	8 mm
Block	concrete (C35/45)
Weight	1 kg
PU	10 pc(s)

Adapter for installing the HVI light Conductor / HVI Conductor / HVI light plus Conductor on flat roofs

To be snapped on roof conductor holder type FB (Part No. 253 015).

Type	RLA 20 FB K SW
Part No.	**253 026**
Material	plastic
Colour	black ●
Conductor support Rd	20-21 mm
PU	50 pc(s)

Adapter for installing the HVI Conductor on flat roofs

To be snapped onto roof conductor holder type FB (Part No. 253 015).

Type	RLA 23 FB K SW
Part No.	**253 027**
Material	plastic
Colour	black ●
Conductor support Rd	23 mm
PU	50 pc(s)

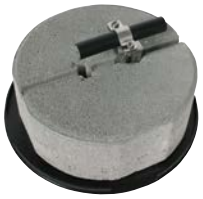
Roof conductor holder

For flat roofs, weight approx. 4.7 kg. Conductor holder, concrete block and base plate, for installing the HVI light Conductor, HVI Conductor on flat roofs.

Type	DLH ZS 20 23 V2A 4.7KG BES180 GP300 K
Part No.	**253 229**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Total weight	approx. 4.7 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Roof conductor holder

For flat roofs, weight approx. 8.6 kg. Conductor holder, concrete block and base plate, for installing the HVI light Conductor, HVI Conductor on flat roofs.



Type	DLH ZS 20 23 V2A 8.5KG KT D240 ULP
Part No.	**253 239**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Total weight	approx. 8.6 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder

Conductor holder with slotted saddle clamp for HVI light Conductor, HVI Conductor for fixing in the base plate (Part No. 253 300) with concrete block (Part No. 253 301).

Type	LH ZS 20 23 DS10 L75 V2A
Part No.	**253 289**
Material	StSt
Conductor support Rd	20 / 23 mm
Height of conductor holder	87 mm
Bolt	Ø10 mm (push-fit)
PU	1 pc(s)

Concrete block

For stabilising the base plate.

Type	BES 4.6KG SB10 180X180X70
Part No.	**253 301**
Material	concrete (C35/45)
Weight	4.6 kg
Dimensions	180 x 180 x 70 mm
PU	24 pc(s)

Base plate

Base plate to hold the spacer bar (Part No. 253 315, 253 325) and conductor holder (Part No. 253 289) and to protect the roof sheeting under the concrete block (Part No. 253 301).

Type	GP B10 H60 D300 KS GR
Part No.	**253 300**
Diameter Ø	300 mm
Diameter Ø of lock bush	10 mm
Height	60 mm
Material	plastic
Colour	grey ●
PU	24 pc(s)

Conductor holder

Conductor holder with slotted saddle clamp for HVI light Conductor, HVI Conductor for fixing in the concrete base (Part No. 102 075) with fixing wedge.

Type	LH ZS 20 23 KT D16 L85 V2A
Part No.	**253 279**
Material	StSt
Conductor support Rd	20 / 23 mm
Height of conductor holder	125 mm
Bolt	Ø16 mm (wedge-fit)
PU	1 pc(s)

Concrete base

With fixing wedge, for air-termination tips Ø10, length 1000 mm or DEHNiso spacers Ø16 mm, length up to 675 mm (distance 0.8 m) or conductor holder (Part No. 253 279).

Type	BES 8.5KG KT10 16 D240 SET
Part No.	**102 075**
Total weight	8.5 kg
Diameter Ø	240 mm
Material	concrete (C45/55)
Material of wedge / adapter	StSt
PU	120 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases (Part No. 102 075, 102 003).

Type	ULP KS D280 SW
Part No.	**102 060**
Outside diameter Ø	280 mm
Inside diameter Ø	270 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

EB clamp

For connecting the special sheath of the HVI Conductor to the equipotential bonding.

Type	PAK 20 AQ4 95 STTZN
Part No.	**405 020**
Material of cage clamp	St/tZn
Clamping range Ø	20 mm
Terminal cross-section	4-95 mm²
PU	1 pc(s)

Spacer with EB element for HVI Conductor (length of variable sealing end 350-900 mm)

Spacer for establishing the variable sealing end of the HVI Conductor.
With MV clamp for connection to the equipotential bonding (Rd 16 mm / Rd 8-10 mm).
Concrete base (Part No. 102 010, weight 17 kg) and base plate (Part No. 102 050) must be ordered separately.

Type	DIDH PAE 20 D16 1270 AL V2A
Part No.	**105 461**
Material of spacer	Al
Lenght of spacer	1270 mm
Conductor support Rd	20 mm
Material of conductor holder	StSt
Length of variable sealing end	350-900 mm
Max. gust wind speed (1 base 17 kg each; l = 900 mm)	105 km/h
Max. gust wind speed (2 bases 17 kg each; l = 900 mm)	150 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Variable tripod with EB element for HVI Conductor (length of variable sealing end 900-1500 mm)

Tripod (hinged) with variable spacer for establishing the sealing end of the HVI Conductor.
With UNI earthing clamp for connecting 1x Rd 8-10 mm and 1x conductor 4-50 mm².
Adjustable to the roof inclination up to max. 10°.
The **three concrete bases** (Part No. 102 075, weight 8.5 kg) and the **base plate** (Part No. 102 060) must be **ordered separately**.

Type	V DBS RA320 PAE 20 V 600 1180 V2A
Part No.	**105 469**
Material of tripod	StSt
Radius	320 mm
Number of concrete bases	3 (8.5 kg each)
Conductor support Rd	20 mm
Adjustment range of spacer	600-1180 mm
Length of variable sealing end	900-1500 mm
Max. gust wind speed (3 bases 8.5 kg each; l = 900 mm)	180 km/h
Max. gust wind speed (3 bases 8.5 kg each; l = 1500 mm)	110 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Spacer for the HVI Conductor / HVI light plus Conductor

Spacer for additional mechanical fixing in the variable sealing end area.
The spacer is installed with **two** concrete bases (part no. 102 010; weight: 17 kg).
The **concrete base** and the **plastic base plate** (part no. 102 050) must be **ordered separately**.

Type	DH ZS 20 D16 1270 GFK PA
Part No.	**106 815**
Material of spacer	GRP
Material of conductor holder / adapter	PA
Number of concrete bases	2 (17 kg each)
Length	1270 mm
Insulating clearance	1245 mm
Conductor support Rd	20-21 mm
Thread	M8
PU	1 pc(s)

Concrete base

With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder (Part No. 253 279).

Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
Material of wedge / adapter	StSt
PU	54 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases (Part Nos. 102 010, 102 002).

Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Roof conductor holder

With pre-punched points for bending and hooking into the roof tile and screwing onto the battens, for installing the HVI Conductor on gable roofs.

Type	DLH ZS 20 23 H55 L205 V2A
Part No.	**202 829**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Length of brace	205 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for Accessories for HVI Conductor and VI long Conductor

Roof conductor holders for roofs with round standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with round standing seams.

Type	DLH RSF ZS 20 23 V2A
Part No.	**202 850**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	Ø20-25 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with clamping seams.

Type	DLH KF ZS 20 23 V2A
Part No.	**202 851**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	approx. 18 / 22 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI light Conductor, HVI Conductor onto metal roofs with standing seams.

Type	DLH SF ZS 20 23 V2A
Part No.	**202 852**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	0.7-8 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder with connection lug

Roof conductor holder with slotted saddle clamp for HVI light Conductors, HVI Conductors and Z-shaped connection lug for riveting or screwing to metal roofs.

Type	DLH AL ZS 20 23 V2A
Part No.	**202 853**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Conductor support Rd	20 / 23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder with tensioning strap

With conductor holder made of PA.

Type	LH ZS 20 SB50.300 PA V2A	LH ZS 23 SB50.300 PA V2A
Part No.	**275 330**	**275 333**
Material of conductor holder	PA	PA
Conductor support Rd	20-21 mm	23 mm
Tensioning range Ø pipe	50-300 mm	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Conductor holder with tensioning strap

With metal conductor holder.

Type	LH ZS 20 23 SB50.300 V2A
Part No.	**275 320**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Tensioning range Ø pipe	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder for fixing with a tensioning strap

For fixing the HVI Conductor to pipes, e.g. with pipe clamp (Part No. 106 323).

Type	LH ZS 20 23 SBH 25X0.3 V2A
Part No.	**275 319**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Pipe clamp

For fixing (clamping) conductor holders (e.g. Part No. 275 319).

Type	BRS SPB25 50.300 V2A
Part No.	**106 323**
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Material of screw	StSt
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.

Type	SPK 25X0.3 V2A
Part No.	**106 324**
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap

Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Conductor holder

With thread.
For wall mounting with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 GM8 V2A	LH ZS 20 23 GM6 V2A
Part No.	**275 250**	**275 251**
Material of conductor holder	StSt	StSt
Conductor support Rd	20 / 23 mm	20 / 23 mm
Thread	M8	M6
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)	25 pc(s)

Conductor holder

With plastic base.
For wall mounting with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 KS H10 V2A
Part No.	**275 259**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Thread	M8
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder

With slotted hole.
Wall-mounted conductor holder with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 23 B5.5X10 V2A
Part No.	**275 252**
Material of conductor holder	StSt
Conductor support Rd	20 / 23 mm
Fixing hole	5.5 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder for the HVI Conductor / HVI light plus Conductor

For wall mounting and for mounting in the sealing end range.

Type	LH ZS 20 H19 IGM8 GR PA	LH ZS 23 H19 IGM8 GR PA
Part No.	**275 220**	**275 225**
Material of conductor holder	PA	PA
Conductor support Rd	20-21 mm	23 mm
Female thread	M8	M8
Fixing hole	6.5 mm	6.5 mm
Screw	M6 x 16 mm	M6 x 16 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)	1 pc(s)

Conductor holder for the HVI Conductor / HVI light plus Conductor

For wall mounting with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 20 H10 B6.5X16 V2A
Part No.	**275 229**
Material of conductor holder	StSt
Conductor support Rd	20-21 mm
Fixing hole	6.5 x 16 mm
Screw	M6 x 14 mm
PU	50 pc(s)

Conductor holder for HVI Conductor

For wall mounting with two-screw clamp (not for use in the sealing end range).

Type	LH ZS 23 H10 B6.5X16 V2A
Part No.	**275 239**
Material of conductor holder	StSt
Conductor support Rd	23 mm
Fixing hole	6.5 x 16 mm
Screw	M6 x 14 mm
Standard	EN 62561-4
PU	1 pc(s)

Sign

Front in German
ACHTUNG! Getrennter Blitzschutz mit HVI Leitung

Back in English
ATTENTION! Separated Lightning Protection with HVI conductor system

Type	HWS 300X210 AGBS HVI DE EN K
Part No.	**480 598**
Material	plastic
Dimensions (l x w x d)	300 x 210 x 1 mm
Fixing	[4x] Ø6.5 mm
Hole distance	270 / 180 mm
PU	1 pc(s)

Sign

Front in German
ACHTUNG!
Potentialausgleich

Back in English
ATTENTION!
Equipotential Bonding

Hole distance suitable for two-screw clamp (Part No. 480 291).

Type	HWS 70X30 APA DE EN K
Part No.	**480 599**
Material	plastic
Dimensions (l x w x d)	70 x 30 x 1 mm
Fixing	[2x] Ø6.5 mm
Hole distance	38 mm
PU	10 pc(s)

Conductor Holders for HVI Conductor in Ex Areas

The HVI Conductor is suitable for use in explosion hazardous areas of Ex zone 1 (gases, vapours, mists) as well as Ex zone 21 (dusts). The special installation conditions safely prevent electric sparks to neighbouring metal parts when lightning current flows through the HVI Conductor.

The HVI Conductor has to be installed in explosion hazardous areas in accordance with the installation instructions.

HVI Ex W70 holder

For fixing to metal structural parts (façades) in Ex zones 1 and 21.

Type	LH ZS 20 EX W70 BP V2A
Part No.	**275 440**
Material	StSt
Conductor support Rd	20 mm
Distance from wall	70 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI Ex W200 holder

For fixing to metal structural parts (façades) in Ex zones 1 and 21.

Type	LH ZS 20 EX W200 BP V2A
Part No.	**275 441**
Material	StSt
Conductor support Rd	20 mm
Distance from wall	200 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI Ex busbar 500

For installing the HVI Conductor with conductor holders HVI Ex W70 holder (Part No. 275 440) on a non-conductive structure, e.g. stone, wood.

Type	VS EX 500 V2A
Part No.	**275 498**
Material of brace	StSt
Fixing	[4x] Ø5.5 / [2x] 7 x 10 mm
Dimension (l x w x d)	450 x 30 x 3 mm
PU	10 pc(s)

HVI Ex P70 holder

For fixing to pipes, e.g. with pipe clamp (Part No. 106 323) in Ex zones 1 and 21.

Type	LH ZS 20 EX P70 SBB V2A
Part No.	**275 444**
Material	StSt
Conductor support Rd	20 mm
Distance from wall	70 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI Ex P200 holder

For fixing to pipes, e.g. with pipe clamp (Part No. 106 323) in Ex zones 1 and 21.

Type	LH ZS 20 EX P200 SBB V2A
Part No.	**275 442**
Material	StSt
Conductor support Rd	20 mm
Distance from wall	200 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Accessories for Conductor Holders for HVI Conductor in Ex Areas

Pipe clamp

For fixing (clamping) the HVI Ex P200 holder (Part No. 275 442) to pipes.

Type	BRS SPB25 50.300 V2A
Part No.	**106 323**
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.

Type	SPK 25X0.3 V2A
Part No.	**106 324**
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap

Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

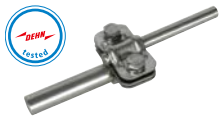
Connecting components 200 kA (10/350 µs)

For use in class of LPS I and II (LPL I, II).
Clamps are tested with a 200 kA (10/350 µs) lightning impulse current, based on EN 62561-1.

UNI disconnecting clamp for two round conductors

Type	UTK 200 2X10 FL30 ZP V2A
Part No.	**459 200**
Material	StSt
Clamping range Rd / Rd	10 / 10 mm
Clamping range Rd / Fl	10 / 30 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

UNI disconnecting clamp for earth entry rods



Type	UTK 200 8.10 16 ZP V2A
Part No.	**459 219**
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

Clamping piece

Type	KS 200 B11.11 FL30X4 V2A
Part No.	**380 209**
Material	StSt
Clamping range Fl	30 x 4 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

KS connector

Type	KSV 200 10 FER V2A
Part No.	**301 209**
Material	StSt
Clamping range Rd	10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp for round conductors

Type	MVK 200 8.10 SKM10X30 V2A
Part No.	**390 209**
Material	StSt
Clamping range Rd / Rd	8-10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp for air-termination rods

Type	MVK 200 8.10 16 SKM10X40 FSC V2A
Part No.	**392 209**
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

*) For exact assignment see test certificate.

Stripping tool for HVI light Conductors / HVI Conductors

Tool for stripping the semi-conductive sheath and the PE insulation of the HVI light Conductor, HVI Conductor (outer diameter 20 mm).

- Tool consists of a handle and various exchangeable cutting heads
- Stripping length of HVI light Conductor, HVI Conductor is adjustable in steps of 0.2 mm (lock points) using the knob in the handle. The dial on the handle shows the length set.

Handling
Position the cutting head at the cut-off end of the conductor and turn clockwise with light pressure to cut/strip it. The cutting head can be exchanged without tools via the bayonet coupling.

HVI strip 20

For HVI light and HVI Conductors (handle + cutting head).

Type HVI ...	STRIP 20
Part No.	**597 220**
Diameter Ø conductor	20 mm
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

HVI head 20

For HVI light and HVI Conductors (cutting head).

Type HVI ...	HEAD 20
Part No.	**597 120**
Diameter Ø conductor	20 mm
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

Accessories for Stripping tool for HVI light Conductors / HVI Conductors

HVI head holder

Adapter with bayonet coupling for attaching the HVI head cutting head (pre-set stripping length 35 mm).
Adapter can be used in a standard three-jaw chuck (Ø10 mm), e.g. with cordless screwdrivers.

Type	HVI HH
Part No.	**597 139**
Material	plastic / brass
PU	1 pc(s)

Spare blades for HVI head 20

1 pack = 4 pieces

Type	EK HVI HEAD 20
Part No.	**597 101**
Material	StSt
PU	1 PAK

HVI Conductor

Stripping Tool for HVI light Conductors / HVI Conductors

Tool for stripping the additional grey sheath of the HVI light Conductor and HVI Conductor. DEHNhelix consists of a handle and an exchangeable bracket (depending on the conductor diameter).

DEHNhelix

Type	AW DEHNHELIX
Part No.	**597 230**
Diameter Ø conductor	23 mm
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

Accessories for Stripping Tool for HVI light Conductors / HVI Conductors

Spare blade for stripping tool

Type	EK AW DEHNHELIX
Part No.	**597 130**
Material	StSt
PU	1 pc(s)

Cable shears for HVI Conductors

Cable shears for easily cutting the HVI light Conductor, HVI Conductor (outer diameter 20 / 23 mm), HVI power Conductor (outer diameter 27 mm) and CUI Conductor to length.
The special design of the cable shears also allows precise cutting of stranded conductors, making it easier to attach connection elements.

HVI cutter

Type	HVI CUTTER 32
Part No.	**597 032**
Diameter Ø conductor	up to 32 mm
Material of blades	tool steel (CR-Moly (SCM440))
Material of handles	carbon steel (SS400)
Length	600 mm
PU	1 pc(s)

HVI power Conductor

Supporting Tube with HVI power Conductor

Optically optimised installation of the HVI power Conductor inside the supporting tube creates reduced area exposed to wind.

Can be used up to an equivalent separation distance s ≤ 90 cm (in air) or s ≤ 180 cm (solid material).

The conductor length has to be stated when ordering (in steps of 0.5 m).

HVI power Conductor inside the supporting tube with air-termination tip

Supporting tube with internal sealing end and EB spring element.
Air-termination tip, StSt, Ø10 mm, length 1000 mm.

Type HVI P 27 L6M ...	SR3500 FSP1000 GFK V2A
Part No.	**819 430**
Material of supporting tube	GRP / StSt
Length of supporting tube	3500 mm
Transport length	3500 mm
Diameter Ø conductor	27 mm
Colour of conductor	black ●
Material of conductor	Cu
Minimum order length	6 m
Maximum order length	35 m
Suitable for installation outside the supporting tube	no
Max. free length with air-termination tip (wall mounting)	3500 mm
Max. gust wind speed (wall mounting, 1x HVI power inside)	234 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI power Conductor inside the supporting tube with air-termination rod

Supporting tube with internal sealing end and EB spring element.
Air-termination rod, StSt, Ø22 / 16 / 10 mm, length 2500 mm.

Type HVI P 27 L6M ...	SR3500 FS2500 GFK V2A	SR5000 FS2500 GFK V2A
Part No.	**819 431**	**819 433**
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Diameter Ø conductor	27 mm	27 mm
Colour of conductor	black ●	black ●
Material of conductor	Cu	Cu
Minimum order length	6 m	6 m
Maximum order length	35 m	35 m
Suitable for installation outside the supporting tube	no	no
Max. free length with air-termination rod (wall mounting)	5000 mm	5000 mm
Max. gust wind speed (wall mounting, 1x HVI power inside)	163 km/h	159 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

The conductor cannot be returned as it is made to order.

Air-termination Mast with HVI power Conductor

For a maximum free length of the whole air-termination system of 8.5 m.
To be fixed with three variable supports (Part No. 105 345).
Transport length 6000 mm.

With 1x HVI power Conductor inside the supporting tube.
Conductor length has be stated when ordering (steps of 0.5 m).

Maximum total length of the HVI power Conductor 11.0 m in case of class of LPS I.
Maximum total length of the HVI power Conductor 15.0 m in case of class of LPS II.
Maximum total length of the HVI power Conductor 22.5 m in case of class of LPS III.

Type	FM 60 L11M IP HVIP L10M GFK AL STTZN
Part No.	**819 760**
Total length of air-termination mast	11000 mm
Length of air-termination rod	3000 mm
Length of supporting tube	2300 mm
Length of mast pipe	6000 mm
Diameter Ø conductor	27 mm
Colour of conductor	black ●
Material of conductor	Cu
Minimum order length	10 m
Maximum order length	35 m
Suitable for installation outside tube	no
Max. gust wind speed	138 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for Air-termination Mast with HVI power Conductor

Variable support for air-termination masts
Three supports should be mounted for each air-termination mast.
Clamping range of air-termination mast Ø60 mm.

Type	WB D60 V250.350 STTZN
Part No.	**105 345**
Material of support	St/tZn
Adjustment range	250-350 mm
Fixing holes Ø	[4x] 12 x 25 mm
PU	1 pc(s)

HVI power Conductor

High-voltage-resistant, insulated down conductor for maintaining the separation distance from conductive parts according to IEC/EN 62305-3.
For use up to an equivalent separation distance s ≤ 90 cm (in air) or s ≤ 180 cm (solid material).

HVI power Conductor (pre-assembled, installation inside the tube)
With one head piece and one connection element (enclosed loose). Minimum order length 6 m, conductor length has to be stated when ordering (in steps of 0.5 m).

Type HVI P ...	RIV 90 27 L6M SW
Part No.	**819 160**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	black ●
Diameter Ø conductor	27 mm
Minimum order length	6 m
Maximum order length	35 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI power Conductor (pre-assembled, installation outside the tube) for HVI power supporting tube GRP / Al
HVI power Conductor pre-assembled for installation outside the tube with one head piece and one connection element (enclosed loose).
Connection kit for installing the HVI power Conductor on HVI power supporting tubes GRP / Al consists of threaded pins, a connection part, heat-shrinkable sleeve and fixing ring with slotted conductor holder (Ø27 mm) for the sealing end (including cable ties).
Minimum order length 6 m, conductor length has to be stated when ordering (in steps of 0.5 m).

Type HVI P ...	RAV 90 27 L6M SW
Part No.	**819 165**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	black ●
Diameter Ø conductor	27 mm
Minimum order length	6 m
Maximum order length	35 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI power Conductor

HVI power long Conductor (on a reel)

The HVI power long Conductor for on-site assembly is delivered in a length of 100 m on a disposable plywood reel (diameter approx. 900 mm, width approx. 485 mm), incl. an Allen key.

Type HVI P ...	LO 90 27 L100M SW
Part No.	**819 137**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	black ●
Diameter Ø conductor	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	100 m

HVI power long Conductor (cut to length)

Cut-to-length HVI power long Conductor for on-site assembly. The conductor is delivered as a coil (Part No. 819 163) or on a reel (Part No. 819 161). Conductor length to be indicated when ordering (in steps of 0.5 m).

Type HVI P ...	LO 90 27 L6...35M SW	LO 90 27 L36...80M SW
Part No.	**819 163**	**819 161**
Material of conductor	Cu	Cu
Material of insulation	PE	PE
Material of sheath	PE	PE
Colour of conductor	black ●	black ●
Diameter Ø conductor	27 mm	27 mm
Minimum order length	6 m	36 m
Maximum order length	35 m	80 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Connection Elements for HVI power Conductor / HVI power long Conductor

Connection kit for HVI power long Conductor Ø27 mm for installation inside the tube

Connection elements for sealing the HVI power long Conductor at both ends, for implementing the sealing end of the conductor in the supporting tube (head piece) and connection element for connection with other parts of the external lightning protection system or earth-termination system (including two heat-shrinkable sleeves).

Type	HVI P LO ASS KF 27 V2A
Part No.	**819 142**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Outside diameter Ø	30 mm
Screw	threaded bolt M6 x 8 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection kit for HVI power long Conductor Ø27 mm for installation outside the tube

Connection kit for HVI power Conductor for installation on HVI power supporting tubes GRP / Al consisting of connection elements, threaded pins, connection part, heat-shrinkable sleeves, cable ties and fixing ring with a slotted conductor holder (Ø27 mm).

Type	HVI P LO ASS RAV KF 27 V2A
Part No.	**819 149**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Outside diameter Ø	30 mm
Screw	threaded bolt M6 x 8 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

EB connection element for HVI power Conductor / HVI power long Conductor

For discharging the electric field of the HVI power Conductor (pre-assembled / on a reel) in the sealing end range. Special slotted design to electrically contact the semi-conductive sheath.

Type	PAE 27 AB11 V2A
Part No.	**410 239**
Material	StSt
Clamping range Ø	27 mm
Connection hole Ø	11 mm
Screw	● M10 x 20 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for Connection Elements for HVI power Conductor / HVI power long Conductor

Fixing bolt

Fixing bolt for spanning a 50 mm² aluminium cable (Part No. 840 050) to an air-termination rod (Ø22 / Ø16 mm) or a connection plate (e.g. Part No. 819 289 or 819 288).

Type	BB 1XB11GSM8 1XB23GSM12 AL
Part No.	**105 229**
Hole	1x B 11 mm, 1x B 23 mm
Material of bolt	Al
Wire end ferrule	50 mm²
Material of wire end ferrule	Cu/Sn
Standard	EN 62561-1
PU	10 pc(s)

Wire end ferrule

Wire end ferrule for securely fixing the aluminium cable with a cross-section of 50 mm² (Part No. 840 050).
1 pack = 10 pieces.

Type	AEH 50 L22 CUGALSN
Part No.	**444 050**
Material	Cu/Sn
Cross section	50 mm²
PU	1 PAK

Cable tie

Cable tie for installation of the HVI Conductor.

Type	KB UVB 546X13 SW
Part No.	**819 999**
Length	546 mm
Material	Polyamide 6.6
Design	UV-resistant
PU	50 pc(s)

Supporting Tubes for HVI power Conductor / HVI power long Conductor

With air-termination tip

Supporting tube with internal sealing end and EB spring element.
Air-termination tip, Al/StSt, Ø10 mm, length 1000 mm.

General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1800 mm
Max. free length with air-termination tip (wall mounting)	4000 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3500 FSP1000 IA HVIP GFK AL	5000 FSP1000 IA HVIP GFK AL
Part No.	**105 563**	**105 565**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	yes	yes
Max. gust wind speed (wall mounting, 1x HVI power inside)	201 km/h	201 km/h
Max. gust wind speed (wall mounting, 1x HVI power inside + 1x HVI power outside)	190 km/h	180 km/h
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3500 FSP1000 IP HVIP GFK V2A	5000 FSP1000 IP HVIP GFK V2A
Part No.	**105 320**	**105 322**
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	no	no
Max. gust wind speed (wall mounting, 1x HVI power inside)	234 km/h	232 km/h
Max. gust wind speed (wall mounting, 1x HVI power inside + 1x HVI power outside)	–	–
PU	1 pc(s)	1 pc(s)

With air-termination rod

Supporting tube with internal sealing end and EB spring element.
Air-termination rod, Al/StSt, Ø22 / 16 / 10 mm, length 2500 mm.

General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1800 mm
Max. free length with air-termination rod (wall mounting)	5500 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3500 FS2500 IA HVIP GFK AL	5000 FS2500 IA HVIP GFK AL
Part No.	**105 573**	**105 575**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	yes	yes
Max. gust wind speed (wall mounting, 1x HVI power inside)	168 km/h	163 km/h
Max. gust wind speed (wall mounting, 1x HVI power inside + 1x HVI power outside)	144 km/h	140 km/h
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3500 FS22 10 2500 IP HVIP GFK V2A	5000 FS22 10 2500 IP HVIP GFK V2A
Part No.	**105 321**	**105 323**
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	no	no
Max. gust wind speed (wall mounting, 1x HVI power inside)	163 km/h	159 km/h
Max. gust wind speed (wall mounting, 1x HVI power inside + 1x HVI power outside)	–	–
PU	1 pc(s)	1 pc(s)

With air-termination tip and side outlet

Supporting tube with internal sealing end and EB spring element.
Air-termination tip, Al/StSt, Ø10 mm, length 1000 mm.

General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1800 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3500 FSP1000 IA SA HVIP GFK AL	5000 FSP1000 IA SA HVIP GFK AL
Part No.	**105 513**	**105 515**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	yes	yes
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3500 FS1000 IP SA HVIP GFK V2A	5000 FS1000 IP SA HVIP GFK V2A
Part No.	**105 392**	**105 394**
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	no	no
PU	1 pc(s)	1 pc(s)

With air-termination rod and side outlet

Supporting tube with internal sealing end and EB spring element.
Air-termination rod, Al/StSt, Ø22 / 16 / 10 mm, length 2500 mm.

General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1800 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3500 FS2500 IA SA HVIP GFK AL	5000 FS2500 IA SA HVIP GFK AL
Part No.	**105 543**	**105 545**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	yes	yes
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	5000 FS2500 IP SA HVIP GFK V2A
Part No.	**105 395**
Material of supporting tube	GRP / StSt
Length of supporting tube	5000 mm
Transport length	5000 mm
Suitable for installation outside the tube	no
PU	1 pc(s)

Accessories for Supporting Tubes for HVI power Conductor / HVI power long Conductor

Sideways air-termination tips Al for supporting tubes

Fixing kit for mounting sideways/horizontal air-termination tips on HVI long supporting tubes and HVI power supporting tubes. Consisting of four air-termination tips and one fixing ring.

Note: The additional wind load on the air-termination system with the horizontally mounted air-termination tips must be observed!

Type	BFRS D80 B35 4FSP 10 530 AL	BFRS D80 B35 4FSP 10 1030 AL
Part No.	**819 183**	**819 185**
Length of air-termination tip	530 mm	1030 mm
Material of air-termination tip	Al	Al
Material of fixing ring	Al	Al
PU	1 pc(s)	1 pc(s)

Sideways air-termination tips StSt for supporting tubes

Fixing kit for mounting sideways/horizontal air-termination tips on HVI long supporting tubes and HVI power supporting tubes. Consisting of four air-termination tips and one fixing ring.

Note: The additional wind load on the air-termination system with the horizontally mounted air-termination tips must be observed!

Type	BFRS D80 B35 4FSP 10 530 V2A	BFRS D80 B35 4FSP 10 1030 V2A
Part No.	**819 184**	**819 186**
Length of air-termination tip	530 mm	1030 mm
Material of air-termination tip	StSt	StSt
Material of fixing ring	StSt	StSt
PU	1 pc(s)	1 pc(s)

Tripod for Supporting Tubes without Side Outlet

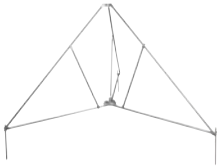
Stands for holding HVI supporting tubes for internally/externally routed HVI Conductors in/on the supporting tube, with double clamp for connection of 2x Rd 8–10 mm. Adjustable to the roof slope up to max. 10° using a variable fixing on the base holder.

The stackable concrete bases, the plastic base plates and the base holder set for holding additional concrete bases are each available separately in the accessories.

Tripod small

Type	DBS KB D50 RA680 V2A
Part No.	**107 390** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	1175 x 1020 mm
PU	1 pc(s)

Tripod large



Type	DBS KB D50 RA1330 V2A
Part No.	**107 391** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	2300 x 1995 mm
PU	1 pc(s)

Four-legged stand, small

Type	VBS KB D50 RA680 V2A
Part No.	**107 490** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	960 x 960 mm
PU	1 pc(s)

Four-legged stand, large

Type	VBS KB D50 RA1330 V2A
Part No.	**107 491** NEW
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	1880 x 1880 mm
PU	1 pc(s)

*) Only with adapter set part no. 107 399.

Tripod, small, HDG steel

Suitable for the inner routing of the HVI Conductor.

Type	DBS KB D50 RA620 STTZN
Part No.	**105 351**
Material of tripod	St/tZn
Support	50 mm
Radius	620 mm
Number of concrete bases	3-12 blocks, 17 kg each
Space required for tripod	1300 x 1450 mm
PU	1 pc(s)

Tripod, large, HDG steel

Suitable for the outer routing of the HVI Conductor.

Type	DBS KB D40.50 RA1435 STTZN
Part No.	**105 201**
Material of tripod	St/tZn
Support	40 / 50 mm
Radius	1435 mm
Number of concrete bases	3-12 blocks 17 kg each
Space required for tripod	2520 x 2860 mm
PU	1 pc(s)

Accessories for Tripod for Supporting Tubes without Side Outlet

Set of base support rods for tripods

Set of base support rods for tripods

Type	SOH 3 200 V2A
Part No.	**107 396** NEW
For tripod	Part No. 107 390 / 107 391
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Set of base support rods for four-legged stands

Set of base support rods for four-legged stands

Type	SOH 4 200 V2A
Part No.	**107 496** NEW
For four-legged stand	Part No. 107 490 / 107 491
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Adapter set

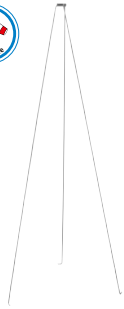
Adapter set for reducing the diameter from 50 mm to 40 mm for tripods and four-legged stands.

Type	RED D40 V2A DBS VBS
Part No.	**107 399** NEW
Material	StSt
PU	1 pc(s)

Accessories for Tripod for Supporting Tubes without Side Outlet

Bracing

Brace, 3x with clamp for pipe, Ø50 mm for fixing to the tripod (part no. 105 201). Brace suitable for supporting tubes with a length of 4700 mm (e.g. part nos 105 332, 105 316, 105 333, 105 317, 105 322, 105 323, 105 565, 105 575).



Type	ABST 3F D50 2900 V2A
Part No.	**105 601**
Material	StSt
Brace length	2910 mm
Ø clamp	50 mm
PU	1 pc(s)

Concrete base

With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder (Part No. 253 279).

Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
Material of wedge / adapter	StSt
PU	54 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases (Part Nos. 102 010, 102 002).

Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Tripods for Supporting Tubes with Side Outlet

Stands for holding HVI supporting tubes for internally/externally routed HVI Conductors in/on the supporting tube, with double clamp for connection of 2x Rd 8–10 mm. Adjustable to the roof slope up to max. 10° using a variable fixing on the base holder.

The stackable concrete bases, the plastic base plates and the base holder set for holding additional concrete bases are each available separately in the accessories.

Tripod, small

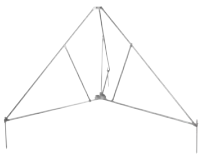
For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.

Type	DBS KB D50 RA680 V2A
Part No.	**107 390** NEW
Stand material	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for stand	1175 x 1020 mm
PU	1 pc(s)

*) Only with adapter set part no. 107 399.

Tripod, large

For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.



Type	DBS KB D50 RA1330 V2A
Part No.	**107 391** NEW
Stand material	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for stand	2300 x 1995 mm
PU	1 pc(s)

Four-legged stand, small

For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.

Type	VBS KB D50 RA680 V2A
Part No.	**107 490** NEW
Stand material	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for stand	960 x 960 mm
PU	1 pc(s)

Four-legged stand, large

For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.

Type	VBS KB D50 RA1330 V2A
Part No.	**107 491** NEW
Stand material	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for stand	1880 x 1880 mm
PU	1 pc(s)

*) Only with adapter set part no. 107 399.

Accessories for Tripods for Supporting Tubes with Side Outlet

Set of base support rods for tripods

Set of base support rods for tripods

Type	SOH 3 200 V2A
Part No.	**107 396** NEW
For tripod	Part No. 107 390 / 107 391
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Set of base support rods for four-legged stands

Set of base support rods for four-legged stands

Type	SOH 4 200 V2A
Part No.	**107 496** NEW
For four-legged stand	Part No. 107 490 / 107 491
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Adapter set

Adapter set for reducing the diameter from 50 mm to 40 mm for tripods and four-legged stands.

Type	RED D40 V2A DBS VBS
Part No.	**107 399** NEW
Material	StSt
PU	1 pc(s)

Concrete base

Concrete base without wedge for the erection of tripods and four-legged stands.

Type	BES 17KG KT16 D337
Part No.	**102 012**
Weight	17 kg
Support	Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
PU	54 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases
(Part Nos. 102 010, 102 002).

Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Fixing Elements for Supporting Tubes

Fixing clamp with tensioning strap

For fixing supporting tubes to structural elements, e.g. antenna masts.

Type	BS D50 SB50.300 V2A
Part No.	**105 360**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
PU	1 pc(s)

Fixing clamp with tensioning strap

With additional spacer for adjusting the sector antenna supports to the mast.

Type	BS D50 DS30 SB50.300 V2A
Part No.	**105 361**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	30 mm
PU	1 pc(s)

Fixing clamp with tensioning strap

With additional long spacer for adjusting sector antenna supports to the mast.

Type	BS D50 DS90 SB50.300 V2A
Part No.	**105 362**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	95 mm
PU	1 pc(s)

Wall mounting bracket for horizontal mounting, flat

For fixing supporting tubes onto the structure to be protected or the wall.

Type	WB D50 WA V2A
Part No.	**105 340**
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	320 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

Wall mounting bracket for horizontal mounting, corner

For fixing supporting tubes onto the structure to be protected or the wall.

Type	EB D50 WA V2A
Part No.	**105 341**
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	152 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

Accessories for Fixing Elements for Supporting Tubes

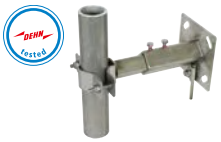
Wall mounting bracket for vertical mounting

For attaching supporting tubes or air-termination rods D40 / D50 to roof-mounted structures or walls.

Type	WB D40.50 SE WA46 V2A	WB D40.50 SE WA110 V2A
Part No.	**105 342**	**105 348**
Material of bracket	StSt	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
Distance from wall	46 mm	110 mm
PU	1 pc(s)	1 pc(s)

Wall mounting bracket, adjustable from 150-200 mm

For attaching supporting tubes or air-termination rods D40 / D50, with double clamp for connecting 2x Rd 8-10 mm.



Type	WB D40.50 V150.200 V2A
Part No.	**105 344**
Material of bracket	StSt
Clamping range for supporting tube	40-50 mm
Distance from wall	150-200 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket, adjustable from 230-1300 mm

For fixing supporting tubes or air-termination rods D40 / D50.

General technical data:	
Material of bracket	St/tZn / StSt
Clamping range for supporting tube	40-50 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm

Type	WB D40.50 V230.400 STTZN V2A	WB D40.50 V400.700 STTZN V2A
Part No.	**105 347**	**105 343**
Distance from wall	230-400 mm	400-700 mm
PU	1 pc(s)	1 pc(s)

Type	WB D40.50 V700.1300 STTZN V2A
Part No.	**105 349**
Distance from wall	700-1300 mm
PU	1 pc(s)

Railing clamp

For pipes.

Type	BS D40.50 D48.60 V2A
Part No.	**105 354**
Material	StSt
Clamping range for pipe Ø	48-60 mm (1 1/2-2")
Clamping range for supporting tube	40-50 mm
PU	5 pc(s)

Railing clamp

For pipes.

Type	BS D40.50 D70.90 V2A
Part No.	**105 355**
Material	StSt
Clamping range for pipe Ø	70-90 mm (2 1/4-3")
Clamping range for supporting tube	40-50 mm
PU	1 pc(s)

Railing clamp

For square hollow profiles.

Type	BS D40.50 4K20.50 V2A	BS D40.50 4K60.120 V2A
Part No.	**105 356**	**105 376**
Material	StSt	StSt
Clamping range for square profile	20 x 20 to 50 x 50 mm	60 x 120 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
PU	5 pc(s)	1 pc(s)

Spacers for Omnidirectional Antennas

Spacer for DEHNiso Combi supporting tubes with HVI Conductor installed inside and/or outside the supporting tube, mounted on the antenna mast.

General technical data:	
Material of support / square profile	St/tZn
Clamping range of supporting tube	50 mm
Length of spacer	1000 mm

Type AH D50 1000 ...	D55.100 STTZN	D100.150 STTZN
Part No.	**105 363**	**105 364**
Clamping range (Ø mast)	55-100 mm	100-150 mm
Dimensions (w1 x h1 x d1)	140 x 120 x 55 mm	190 x 140 x 60 mm
PU	1 pc(s)	1 pc(s)

Type AH D50 1000 ...	D150.190 STTZN
Part No.	**105 365**
Clamping range (Ø mast)	150-190 mm
Dimensions (w1 x h1 x d1)	230 x 180 x 70 mm
PU	1 pc(s)

Spacers for omnidirectional antennas with special lengths or any other diameters are available upon request!

Accessories for HVI power Conductor / HVI power long Conductor

Roof conductor holder

For flat roofs, weight approx. 4.7 kg. Conductor holder, concrete block and base plate for installing the HVI power Conductor on flat roofs.

Type	DLH ZS 27 V2A BES180 GP300 K
Part No.	**253 333**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Total weight	approx. 4.7 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	24 pc(s)

Roof conductor holder

For flat roofs, weight approx. 8.6 kg. Conductor holder, concrete block and base plate for installing the HVI power Conductor on flat roofs.

Type	DLH ZS 27 V2A 8.5KG KT D240 ULP
Part No.	**253 334**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Total weight	approx. 8.6 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder

With slotted saddle clamp for HVI power Conductor to be fixed in the concrete block (Part No. 253 301) and base plate (Part No. 253 300).

Type	LH ZS 27 DS10 L75 V2A
Part No.	**253 330**
Material	StSt
Conductor support Rd	27 mm
Height of conductor holder	approx. 87 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Concrete block

For stabilising the base plate.

Type	BES 4.6KG SB10 180X180X70
Part No.	**253 301**
Material	concrete (C35/45)
Weight	4.6 kg
Dimensions	180 x 180 x 70 mm
PU	24 pc(s)

Base plate

Base plate to hold the spacer bar (Part Nos. 253 315, 253 325) and conductor holder (Part No. 253 289) and to protect the roof sheeting under the concrete block (Part No. 253 301).

Type	GP B10 H60 D300 KS GR
Part No.	**253 300**
Diameter Ø	300 mm
Diameter Ø of lock bush	10 mm
Height	60 mm
Material	plastic
Colour	grey
PU	24 pc(s)

Conductor holder

With slotted saddle clamp for HVI power Conductor for mounting in the concrete block with wedge (Part No. 102 075).

Type	LH ZS 27 KT D16 L85 V2A
Part No.	**253 331**
Material	StSt
Conductor support Rd	27 mm
Height of conductor holder	approx. 125 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Concrete base

With fixing wedge, for air-termination tips Ø10, length 1000 mm or DEHNiso spacers Ø16 mm, length up to 675 mm (distance 0.8 m) or conductor holder (Part No. 253 279).

Type	BES 8.5KG KT10 16 D240 SET
Part No.	**102 075**
Total weight	8.5 kg
Diameter Ø	240 mm
Material	concrete (C45/55)
Material of wedge / adapter	StSt
PU	120 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases (Part No. 102 075, 102 003).

Type	ULP KS D280 SW
Part No.	**102 060**
Outside diameter Ø	280 mm
Inside diameter Ø	270 mm
Material	EVA
Colour	black
PU	1 pc(s)

Spacer with EB element for HVI power Conductor (length of variable sealing end 350-900 mm)

Spacer for establishing the variable sealing end of the HVI power Conductor.
With MV clamp for connection to the equipotential bonding (Rd 16 mm / Rd 8-10 mm).
Concrete base (Part No. 102 010, weight 17 kg) and base plate (Part No. 102 050) must be ordered separately.

Type	DIDH PAE 27 D16 1270 AL V2A
Part No.	**105 462**
Material of spacer	Al
Lenght of spacer	1270
Conductor support Rd	27 mm
Material of conductor holder	StSt
Clamping range Rd MV clamp	8-10 / 16 mm
Material of clamp	Al
Length of variable sealing end	350-900 mm
Max. gust wind speed (1 base, 17 kg each; l = 900 mm)	100 km/h
Max. gust wind speed (2 bases, 17 kg each; l = 900 mm)	141 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Variable tripod with EB element for HVI power Conductor (length of variable sealing end 900 - 1500 mm)

Tripod (hinged) with variable spacer (small) for establishing the variable sealing end of the HVI power Conductor.
With UNI earthing clamp for connecting 1x Rd 8-10 mm and 1x conductor 4-50 mm².
Adjustable to the roof inclination up to max. 10°.
The **three concrete bases** (Part No. 102 075, weight 8.5 kg) and **base plates** (Part No. 102 060) must be **ordered separately**.

Type	V DBS RA320 PAE 27 V 600 1180 V2A
Part No.	**105 468**
Material of tripod	StSt
Radius	320 mm
Number of concrete bases	3 (8.5 kg each)
Conductor support Rd	27 mm
Adjustment range of spacer	600-1180 mm
Length of variable sealing end	900-1500 mm
Max. gust wind speed (3 bases, 8.5 kg each; l = 900 mm)	170 km/h
Max. gust wind speed (3 bases, 8.5 kg each; l = 1500 mm)	104 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Variable tripod with EB element for HVI power Conductor (length of variable sealing end 1500 - 1800 mm)

Tripod (hinged) with variable spacer (large) for establishing the sealing end of the HVI power Conductor.
With UNI earthing clamp for connecting 1x Rd 8-10 mm and 1x conductor 4-50 mm².
Adjustable to the roof inclination up to max. 10°.
The **three concrete bases** (Part No. 102 075, weight 8.5 kg) and the **base plates** (Part No. 102 060) must be **ordered separately**.

Type	V DBS RA320 PAE 27 V 750 1510 V2A
Part No.	**105 467**
Material of tripod	StSt
Radius	320 mm
Number of concrete bases	3 (8.5 kg each)
Conductor support Rd	27 mm
Adjustment range of spacer	750-1510 mm
Length of variable sealing end	1500-1800 mm
Max. gust wind speed (3 bases, each 8.5 kg; l = 1500 mm)	104 km/h
Max. gust wind speed (3 bases, each 8.5 kg; l = 1800 mm)	93 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Spacer for HVI power Conductor

Spacer for additional mechanical fixing in the variable sealing end range.
The spacer is erected with **two concrete bases** (Part No. 102 010, weight 17 kg). The **concrete bases** and **base plate** (Part No.Nr. 102 050) must be ordered separately.

Type	DH ZS 27 D16 1500 GFK PA
Part No.	**106 814**
Material of spacer	GRP
Material of conductor holder / adapter	PA
Number of concrete bases	2 (17 kg each)
Length	1500 mm
Insulating clearance	1475 mm
Conductor support Rd	27 mm
Thread	M8
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Concrete base

With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder (Part No. 253 279).

Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	concrete (C45/55)
Material of wedge / adapter	StSt
PU	54 pc(s)

Accessories for Accessories for HVI power Conductor / HVI power long Conductor

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases
(Part No. 102 010, 102 002).

Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	EVA
Colour	black ●
PU	1 pc(s)

Conductor holder

With thread.
For wall mounting with two-screw conductor clamp (not for use in the sealing end range).

Type	LH ZS 27 GM8 V2A	LH ZS 27 GM6 V2A
Part No.	**275 240**	**275 241**
Material of conductor holder	StSt	StSt
Conductor support Rd	27 mm	27 mm
Thread	M8	M6
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)	25 pc(s)

Conductor holder

With plastic base
Conductor holder for wall mounting with two-screw clamp (not within the sealing end range).

Type	LH ZS 27 KS H10 V2A
Part No.	**275 249**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Thread	M8
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder

With slot hole.
For wall mounting, with two-screw conductor clamp (not for use in the sealing end range).

Type	LH ZS 27 B5.5X10 V2A
Part No.	**275 242**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Fixing hole	5.5 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder with tensioning strap

For fixing the HVI power Conductor, e.g. to pipes.

Type	LH ZS 27 SB50.300 V2A
Part No.	**275 339**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Tensioning range Ø pipe	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder for fixing with a tensioning strap

For fixing the HVI power Conductor at pipes e.g. with pipe clamp
(Part No. 106 323).

Type	LH ZS 27 30 SBH 25X0.3 V2A
Part No.	**275 359**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Pipe clamp

For fixing (clamping) conductor holders (e.g. Part No. 275 319).

Type	BRS SPB25 50.300 V2A
Part No.	**106 323**
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Material of screw	StSt
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.

Type	SPK 25X0.3 V2A
Part No.	**106 324**
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	▼● M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap

Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Roof conductor holder

With pre-punched points for bending and hooking into the roof tile and for screwing onto battens to install the HVI power Conductor on gable roofs.

Type	DLH ZS 27 30 H55 L205 V2A
Part No.	**202 857**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Conductor support Rd	27 mm
Length of brace	205 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Roof conductor holder for roofs with round standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI power Conductor onto metal roofs with round standing seam.

Type	DLH RSF ZS 27 V2A
Part No.	**202 860**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	Ø20-25 mm
Conductor support Rd	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)

Roof conductor holder with slotted saddle clamp for fixing the HVI power Conductor onto metal roofs with clamping seam.

Type	DLH KF ZS 27 V2A
Part No.	**202 861**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	approx. 18 / 22 mm
Conductor support Rd	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI power Conductor onto metal roofs with standing seam.

Type	DLH SF ZS 27 V2A
Part No.	**202 862**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	0.7-8 mm
Conductor support Rd	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder with connection lug

Roof conductor holder with slotted saddle clamp for HVI power Conductor and Z-shaped connection lug for riveting or screwing to metal roofs.

Type	DLH AL ZS 27 V2A
Part No.	**202 863**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Conductor support Rd	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor Holders for HVI power Conductor in Ex Areas

The HVI power Conductor is suitable for installation in explosion hazardous areas Ex zone 1 (gases, vapours, mists) as well as Ex zone 21 (dust). The special installation conditions safely prevent electric sparks to neighbouring metal parts when lightning current flows through the HVI power Conductor.
The HVI power Conductor has to be installed in accordance with the installation instructions.

HVI power Ex W85 holder

For fixing on metal structural parts (facades) in Ex zones 1 and 21.

Type	LH ZS 27 EX W85 BP V2A
Part No.	**275 450**
Material	StSt
Conductor support Rd	27 mm
Distance from wall	85 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI power Ex W240 holder

For fixing on metal structural parts (facades) in Ex zones 1 and 21.

Type	LH ZS 27 EX W240 BP V2A
Part No.	**275 451**
Material	StSt
Conductor support Rd	27 mm
Distance from wall	240 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI power Ex busbar 500

For installing the HVI power Conductor with conductor holders HVI Ex W85 holder (Part No. 275 450) on a non-conductive structure, e.g. stone, wood.

Type	VS EX 500 V2A
Part No.	**275 498**
Fixing	[4x] Ø5.5 / [2x] 7 x 10 mm
PU	10 pc(s)

HVI power Ex P85 holder

For fixing to pipes, e.g. with pipe clamp (Part No. 106 323) in Ex zones 1 und 21.

Type	LH ZS 27 EX P85 SBB V2A
Part No.	**275 454**
Material	StSt
Conductor support Rd	27 mm
Distance from wall	95 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI power Ex P240 holder

For fixing to pipes, e.g. with pipe clamp (Part No. 106 323) in Ex zones 1 and 21.

Type	LH ZS 27 EX P240 SBB V2A
Part No.	**275 455**
Material	StSt
Conductor support Rd	27 mm
Distance from wall	250 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Accessories for Conductor Holders for HVI power Conductor in Ex Areas

Pipe clamp

For fixing (clamping) conductor holders (e.g. Part No. 275 319).

Type	BRS SPB25 50.300 V2A
Part No.	**106 323**
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Material of screw	StSt
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.

Type	SPK 25X0.3 V2A
Part No.	**106 324**
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap

Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Connecting components 200 kA (10/350 µs)

For use in class of LPS I and II (LPL I, II).
Clamps are tested with a 200 kA (10/350 µs) lightning impulse current, based on EN 62561-1.

UNI disconnecting clamp for two round conductors

Type	UTK 200 2X10 FL30 ZP V2A
Part No.	**459 200**
Material	StSt
Clamping range Rd / Rd	10 / 10 mm
Clamping range Rd / Fl	10 / 30 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

UNI disconnecting clamp for earth entry rods

Type	UTK 200 8.10 16 ZP V2A
Part No.	**459 219**
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

Clamping piece

Type	KS 200 B11.11 FL30X4 V2A
Part No.	**380 209**
Material	StSt
Clamping range Fl	30 x 4 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

KS connector

Type	KSV 200 10 FER V2A
Part No.	**301 209**
Material	StSt
Clamping range Rd	10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp for round conductors

Type	MVK 200 8.10 SKM10X30 V2A
Part No.	**390 209**
Material	StSt
Clamping range Rd / Rd	8-10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

*) For exact classification, see test certificate.

MV clamp for air-termination rods

Type	MVK 200 8.10 16 SKM10X40 FSC V2A
Part No.	**392 209**
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

*) For exact classification, see test certificate.

Stripping Tool for HVI power Conductors

Tool for stripping the semi-conductive sheath and the PE insulation of the HVI power Conductor (outer diameter 27 mm)

- Tool consists of a of handle and various exchangeable cutting heads
- Stripping length of the HVI power Conductor is adjustable in steps of 0.2 mm (lock points) using the knob. The dial on the handle shows the length set.

Handling
Position the cutting head at the end of the conductor and turn clockwise with light pressure to cut / strip it.
The cutting head can be exchanged without tools via the bayonet coupling.

HVI strip 27

For HVI power Conductors.

Type HVI ...	STRIP 27
Part No.	**597 227**
Diameter Ø conductor	27 mm
Material of moulded part	plastic / Al
Material of blade	StSt
PU	1 pc(s)

HVI head 27

For HVI power Conductors.

Type HVI ...	HEAD 27
Part No.	**597 127**
Diameter Ø conductor	27 mm
Material of moulded part	Al
Material of blade	StSt
PU	1 pc(s)

Accessories for Stripping Tool for HVI power Conductors

HVI head holder

Adapter with bayonet coupling for attaching the HVI head cutting head (pre-set stripping length 35 mm).
Adapter can be used in a standard three-jaw chuck (Ø10 mm), e.g. with cordless screwdrivers.

Type	HVI HH
Part No.	**597 139**
Material	plastic / brass
PU	1 pc(s)

Spare blades for HVI head 27

1 pack = 4 pieces

Type	EK HVI HEAD 27
Part No.	**597 102**
Material	StSt
PU	1 PAK

Lateral replacement blades for HVI head 27

Type	EK SEIT HVI HEAD 27
Part No.	**597 103** NEW
Material	StSt
PU	1 pc(s)

Cable shears for HVI Conductors

Cable shears for easily cutting the HVI light Conductor, HVI Conductor (outer diameter 20 / 23 mm), HVI power Conductor (outer diameter 27 mm) and CUI Conductor to length.
The special design of the cable shears also allows precise cutting of stranded conductors, making it easier to attach connection elements.

HVI cutter

Type	HVI CUTTER 32
Part No.	**597 032**
Diameter Ø conductor	up to 32 mm
Material of blades	tool steel (CR-Moly (SCM440))
Material of handles	carbon steel (SS400)
Length	600 mm
PU	1 pc(s)

Protection against Step and Touch Voltage

IEC/EN 62305-3 points out that in special cases the risk of step and touch voltage outside a building may be extremely high near the down conductors, although there is a lightning protection system in accordance with the current state of standardisation. Special cases are, for example, if bare/uninsulated down conductors and lightning protection earth electrodes are installed near the entrance or sheltering areas of buildings with high visitor frequency, such as theatres, cinemas, shopping centres, etc. Buildings or structures with public access (e.g. shelters) which are particularly exposed (lightning endangered) may also require protection measures against step and touch voltage.

Protection against touch voltage

Touch voltage means a life-threatening voltage that affects a person who touches the down conductor while standing on the ground within a distance of about 1 m from the down conductor. The current flows through the hand into the body and down to the feet (see Figures 1/2).
The hazardous area for people outside of the building is defined as an area of 3 m around the down conductor and from ground level up to a height of approx. 3 m.
Effective protection measures against injuries due to touch voltage are defined according to the standard:

- Installation of an insulated (coated) down conductor providing a surge withstand capability of 100 kV at 1.2/50 µs, e.g. at least 3 mm thick cross-linked polyethylene;
- physical restrictions and/or warning signs to minimise the possibility of down conductors being touched.

The CUI conductor (CU copper Insulated) has an inner cooper conductor with a diameter of 8 mm and a high-voltage-resistant insulation.

Requirements:

- Surge withstand capability of 100 kV (1.2/50 µs)
- Prevention of creepage sparkover even during rain.

The surge withstand capability of 100 kV (1.2/50 µs) is achieved by a special cross-linked polyethylene insulation (XLPE). Unless additional measures are taken, high impulse voltages cause sparkover on insulating surfaces. This effect is known as creeping discharge. If the creeping discharge inception voltage is exceeded, a surface discharge will be initiated, which can easily spark over a distance of several metres to earthed parts. In order to avoid the occurrence of creeping discharges even during rain, the CUI conductor additionally has a shield which keeps the conductor dry.
Figure 4 shows this shield on the conductor and the drops after the rain test.

Figure 4: Rain test

Application in the entrance area

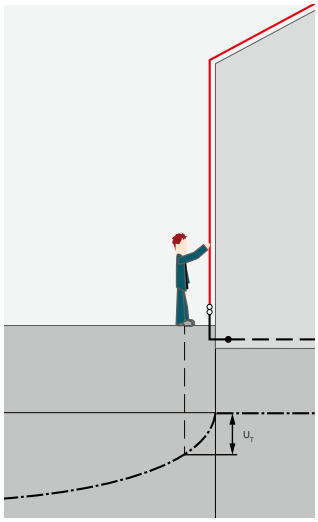


Figure 1: Schematic diagram – tough voltage U_t

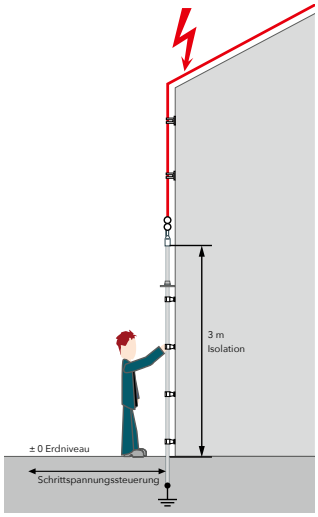
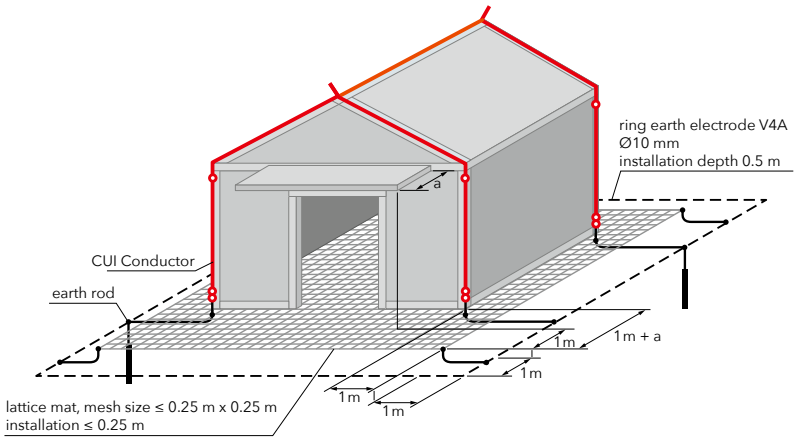


Figure 2: Protective measures

Protection against step voltage

IEC/EN 62305-3 not only mentions the risk of touch voltage, but also the risk of step voltage. The risk for living beings can be reduced by protective measures. In addition to increasing the earth resistivity of the upper ground layer (ground insulation, e.g. asphalt), potential control can also be achieved by installing a close metal grid (mesh mat) in the foundation/ground in areas where people stand (max. mesh size 0.25 m x 0.25 m). In addition, a ring earth electrode should be laid 1.0 m away from the mats at a depth of 0.5 m. Lattice mats should be installed at least 1.0 m beyond the area to be protected (e.g. building boundary). If the enclosed area of the ring earth electrode is ≤ 78.5 m², at least two earth rods, should be installed. If the area is >78.5 m² one earth rod each per down conductor is required (9 m proved to be advantageous).
An earth resistance of less than 10 Ω is recommended. The described protection measure is based on a maximum earth resisitivty of 2000 Ωm.



CUI Conductor

Touch voltage on down conductors can be prevented by using the CUI Conductor.

The dangerous area of touch and step voltages for living beings is defined as an area of approx. 3 m around the down conductor, from ground level up to a height of approx. 3 m.

The CUI Conductor has a copper core and a high-voltage-resistant insulation.

These conductors must:

- have a impulse withstand voltage of 100 kV (1.2/50 µs)
- prevent creeping sparkover even during rain

Type CUI L 20 GR ...	3.5M	5M
Part No.	**830 208**	**830 218**
Material of conductor	Cu	Cu
Material of insulation	XLPE	XLPE
Diameter Ø conductor	20 mm	20 mm
Standard	EN 62561-2	EN 62561-2
Colour of conductor	light grey	light grey
Cross-section of core	50 mm²	50 mm²
Total length	3500 mm	5000 mm
PU	1 pc(s)	1 pc(s)

Conductor Holders for CUI Conductor

For installing the CUI conductor on walls or façades.

Height 19 mm

Type LH ...	ZS 20 H19 IGM8 GR PA
Part No.	**275 220**
Material of conductor holder	PA
Conductor support Rd	20-21 mm
Fixing	Ø6.5 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Height 10 mm

Type LH ...	ZS 20 H10 B6.5X16 V2A
Part No.	**275 229**
Material of conductor holder	StSt
Conductor support Rd	20-21 mm
Fixing	6.5 x 16 mm
Standard	EN 62561-4
PU	50 pc(s)

Two-screw clamp for mounting directly on the wall

Due to the special kind of installation (without a gap), the conductor cannot be misused as a climbing aid and is therefore especially suitable for schools or kindergarten facilities.

Type LH ...	ZSUEL 20 2XB6.5 V2A
Part No.	**275 129**
Material of conductor holder	StSt
Conductor support Rd	20 mm
Fixing	[2x] 6.5 x 8 mm
PU	10 pc(s)

Stripping Tool for CUI Conductors

Tool for stripping the XLPE insulated CUI Conductor (outer diameter 20 mm).

- Tool consists of a handle and an exchangeable cutting heads
- Stripping length of the CUI Conductor is adjustable in steps of 0.2 mm (lock points) using the knob in the handle. The dial on the handle shows the length set.

Handling

Position the cutting head at the cut-off end of the conductor and turn clockwise applying light pressure to cut/strip it.

CUI-strip 20

Type CUI ...	STRIP 20
Part No.	**597 320**
Diameter Ø conductor	20 mm
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

CUI-head 20

Toolless exchange of the cutting head via a bayonet coupling.

Type CUI ...	HEAD 20
Part No.	**597 020**
Diameter Ø conductor	20 mm
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

Sign

Sign warning of the hazard of direct lightning strikes, e.g. on park decks (without air-termination systems) or other areas.

Lightning voltage
Front in German
"ACHTUNG! Blitzspannung
Bei Gewitter Bereich räumen / nicht betreten"

Reverse side in English
"ATTENTION! Lightning voltage
Clear / do not enter this area during thunderstorms"

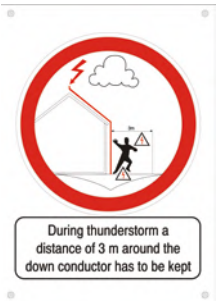
Type	HWS 297X210 ABS DE EN AL
Part No.	**480 698**
Material	Al
Dimensions (l x w x d)	297 x 210 x 0.7 mm
Fixing	[4x] Ø6.5 mm
PU	1 pc(s)

Sign

In case of step and touch voltage hazard for living beings.
In accordance with the requirements of IEC/EN 62305-3.

Step and touch voltage
Front in German:
Bei Gewitter ist der Aufenthalt im Umkreis von 3 m um die Ableitung verboten!

Reverse side in English:
During thunderstorm a distance of 3 m around the down conductor has to be kept!



Type	HWS 297X210 AGU3MV DE EN AL
Part No.	**480 699**
Material	Al
Dimensions (l x w x d)	297 x 210 x 0.7 mm
Fixing	[4x] Ø6.5 mm
PU	1 pc(s)

Potential Control

Mesh mats for potential control in shelters and entrance areas.

Mesh mat for protection against step voltage
As per VDE/ABB leaflet
"Blitzschutz von Schutzhütten"
("Lightning Protection of Shelters")

If the mesh mats are laid so they overlap, around 6x connecting clamps (with anti-corrosion tape part. no. 556 125) are required per mesh mat.
Please refer to the related installation instructions for more precise data.

Type	GMA 250 2000X1000X4 V4A
Part No.	**618 214**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Dimensions (l x w x d)	2000 x 1000 x 4 mm
Mesh size	250 mm
PU	1 pc(s)

Connecting clamp for mesh mats
Clamp for interconnecting mesh mats or for connecting mesh mats with earth-termination systems.

Type	MMVK 3.5 8.10 SKM8X30 V4A
Part No.	**540 271**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Rd	8-10 / 3-5 mm
Clamping range Rd / Rd	3-5 / 3-5 mm
Lightning impulse current carrying capability (10/350 µs)	25 kA
Standard	based on WDIN EN 62561-1
PU	50 pc(s)

Accessories for Potential Control

Stainless steel wire

Stainless steel wire (Rd 10 mm) for use in soil has to be made of StSt (V4A) with a molybdenum content of > 2 %, e.g. 1.457, according to EN 62561-2, IEC/EN 62305-3, DIN 18014 and DIN VDE 0151.

General technical data:	
Diameter Ø conductor	10 mm
Cross-section	78 mm²
Material	StSt (V4A)
Material No.	1.4571 / 1.4404
Standard	EN 62561-2
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.9 kA

Type	RD 10 V4A R80M	RD 10 V4A R20M
Part No.	860 010	860 020
Conductor length	80 m	20 m
Coil weight	approx. 50 kg	approx. 12 kg
PU	80 m	20 m

Type	RD 10 V4A R50M
Part No.	860 050
Conductor length	50 m
Coil weight	approx. 31 kg
PU	50 m

Connection lug, straightened

For connecting the down conductors to the earth-termination system; made of corrosion-resistant stainless steel StSt.

General technical data:	
Material	StSt (V4A)
Material No.	1.4571 / 1.4404
Dimensions	Ø10 mm
Cross-section	78 mm²
Standard	EN 62561-2

Type	AF 10 V4A 1000	AF 10 V4A 1500
Part No.	860 110	860 115
Length	1000 mm	1500 mm
PU	5 pc(s)	5 pc(s)

Type	AF 10 V4A 3000
Part No.	860 130
Length	3000 mm
PU	5 pc(s)

MV clamp

Multipurpose connecting clamp (**M**ehrzweck **V**erbindungs-Klemme) for universal use as a cross, T and parallel clamp; two-piece.

Type	MVK 8.10 SKM10X35 V4A
Part No.	390 079
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404
Clamping range Rd	8-10 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	4.7 kA
PU	50 pc(s)

SV clamp

Diagonal connecting clamp (**S**chräg-**V**erbinder-Klemme) for cross and T connections, screws with anti-rotation protection.

Type	SVK 7.10 7.10 FL40 V4A
Part No.	308 329
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
Clamping range Rd / Rd	7-10 / 7-10 mm
Clamping range Rd / Fl	7-10 / 30-40 mm
Clamping range Fl / Fl	30-40 /30-40 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14.0 kA
PU	25 pc(s)

UNI disconnecting clamp

For connecting the down conductors with the earth entry rods.

Type	UTK 8.10 8.10 ZP V2A
Part No.	459 129
Material	StSt
Clamping range Rd / Rd	8-10 / 8-10 mm
Distance of screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

Conductor holder DEHNhold

Conductor holder for fixing round conductors with slotted saddle clamp, fixed conductor routing.

Type	LH ZS 8.10 FL20 KS KD8X40 V2A
Part No.	274 160
Material of conductor holder	StSt
Conductor support Rd	8-10 mm
Conductor support Fl	20 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Screw	5 x 50 mm
Standard	EN 62561-4
PU	50 pc(s)

Anti-corrosion tapes

For wrapping aboveground and underground connections.
For use in soil.
Reels, length 10 m, UV-stabilised.

Type	KSB 50 L10M	KSB 100 L10M
Part No.	556 125	556 130
Material	petrolatum	petrolatum
Width of tape	50 mm	100 mm
PU	24 pc(s)	12 pc(s)

Earthing / Equipotential Bonding

Round Wires, Strips, Cables	Page 282
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Earthing system for railways	Page 310
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Round Wires

According to EN 62561-2, for use in lightning protection and earth-termination systems.

DEHNalu wire

Type RD ...	8 ALMGSI HH R148M	8 ALMGSI HH R21M
Part No.	840 008	840 108
Diameter Ø conductor	8 mm	8 mm
Cross-section	50 mm²	50 mm²
Material	AlMgSi	AlMgSi
Characteristics	semi-rigid	semi-rigid
Standard	EN 62561-2	EN 62561-2
Coil weight	approx. 20 kg	approx. 3 kg
PU	148 m	21 m

Type RD ...	8 ALMGSI WEI R148M	8 ALMGSI WEI R21M
Part No.	840 018	840 028
Diameter Ø conductor	8 mm	8 mm
Cross-section	50 mm²	50 mm²
Material	AlMgSi	AlMgSi
Characteristics	soft, twistable	soft, twistable
Standard	based on EN 62561-2	based on EN 62561-2
Coil weight	approx. 20 kg	approx. 3 kg
PU	148 m	21 m

Type RD ...	10 Al WEI R100M
Part No.	840 010
Diameter Ø conductor	10 mm
Cross-section	78 mm²
Material	Al
Characteristics	soft, twistable
Standard	EN 62561-2
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	10 kA
Coil weight	approx. 21 kg
PU	100 m

Note: Al and AlMgSi may not be installed directly (without a gap) on, in, or under plaster, mortar or concrete, and also not in soil.

DEHNcupal wire

Composite material with low weight in comparison to copper. For use above ground as an air-termination and down conductor, or for equipotential bonding.

Type RD ...	8 AL CU WEI R110M
Part No.	833 008
Diameter Ø conductor	8 mm
Cross-section	50 mm²
Material	Al / Cu
Characteristics	soft, twistable
Standard	based on EN 62561-2
Cu sheath	min. 0.26 mm
Coil weight	approx. 20 kg
PU	110 m

Note: DEHNcupal wire can be twisted or straightened using a wire straightening device.

Copper wire

General technical data:		
Diameter Ø conductor		8 mm
Cross-section		50 mm²
Material		Cu
Standard		EN 62561-2
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)		9.7 kA

Type RD ...	8 CU F20 WEI R100M	8 CU F20 WEI R20M
Part No.	830 008	830 108
Characteristics	soft F20	soft F20
Coil weight	approx. 45 kg	approx. 9 kg
PU	100 m	20 m

Type RD ...	8 CU F25 HH R100M
Part No.	830 038
Characteristics	semi-rigid F25
Coil weight	approx. 45 kg
PU	100 m

DEHNalu wire with plastic sheath

Wire with plastic sheath (halogen-free, frost-resistant and UV-stabilised) as additional mechanical / corrosion protection, e.g. when installed behind facades. Not suitable for underground installation.

Type RD ...	8 ALMGSI WE KM R100M	8 AL WE KM R100M
Part No.	840 118	840 128
Diameter Ø conductor	8 mm	8 mm
Cross-section	50 mm²	50 mm²
Material	AlMgSi	Al
Characteristics	soft	soft
Standard	based on EN 62561-2	EN 62561-2
Outside diameter Ø	11 mm	11 mm
Material of sheath	plastic	plastic
Sheath thickness	1.5 mm	1.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	–	6.4 kA
Coil weight	approx. 20 kg	approx. 20 kg
PU	100 m	100 m

Steel wire, straightened, cut into bars

With zinc coating ≥ 50 µm on average (about 350 g/m²). Suitable for installation in reinforcements (e.g. concrete supports or concrete foundations).

General technical data:		
Diameter Ø conductor		10 mm
Cross-section		78 mm²
Material		St/tZn
Standard		based on EN 62561-2
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)		5.5 kA

Type RD ...	10 STTZN L1000	10 STTZN L2000
Part No.	800 906	800 908
Length	1 m	2 m
PU	10 pc(s)	10 pc(s)

Type RD ...	10 STTZN L3000	10 STTZN L6000
Part No.	800 910	800 911
Length	3 m	6 m
PU	10 pc(s)	1 pc(s)

Steel wire

With zinc coating ≥ 50 µm on average (approx. 350 g/m²).

General technical data:	
Material	St/tZn
Standard	based on EN 62561-2

Type RD ...	8 STTZN R127M	10 STTZN R81M
Part No.	**800 008**	**800 010**
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	3.5 kA	5.5 kA
Coil weight	approx. 50 kg	approx. 50 kg
PU	127 m	81 m

Type RD ...	10 STTZN R30M
Part No.	**800 310**
Diameter Ø conductor	10 mm
Cross-section	78 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	5.5 kA
Coil weight	approx. 18.5 kg
PU	30 m

Steel wire with plastic sheath

With plastic sheath as additional mechanical / corrosion protection, e.g. when connected to the lightning protection system.
Suitable for installation in soil, on, in and under plaster, mortar or concrete.

Type RD ...	8 KM STTZN R75M	10 KM STTZN R50M
Part No.	**800 108**	**800 110**
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Material	St/tZn	St/tZn
Standard	based on EN 62561-2	based on EN 62561-2
Outside diameter Ø	11 mm	13 mm
Material of sheath	plastic	plastic
Sheath thickness	1.5 mm	1.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	3.5 kA	5.5 kA
Coil weight	approx. 33 kg	approx. 34 kg
PU	75 m	50 m

Stainless steel wire

Stainless steel wires (Rd 10 mm) for use in soil have to be made of StSt (V4A) with a molybdenum content > 2 %, e.g. 1.4571 or 1.4404, in accordance with EN 62561-2, IEC/EN 62305-3, DIN 18014 and DIN VDE 0151.

General technical data:	
Standard	based on EN 62561-2

Type RD ...	8 V2A R125M	10 V2A R20M
Part No.	**860 908**	**860 920**
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Material	StSt	StSt
Material No.	1.4301 / 1.4303	1.4301 / 1.4303
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1.9 kA	2.9 kA
Coil weight	approx. 50 kg	approx. 12 kg
PU	125 m	20 m

Type RD ...	10 V2A R50M	10 V2A R80M
Part No.	**860 950**	**860 910**
Diameter Ø conductor	10 mm	10 mm
Cross-section	78 mm²	78 mm²
Material	StSt	StSt
Material No.	1.4301 / 1.4303	1.4301 / 1.4303
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.9 kA	2.9 kA
Coil weight	approx. 31 kg	approx. 50 kg
PU	50 m	80 m

Type RD ...	8 V4A R125M	10 V4A R80M
Part No.	**860 008**	**860 010**
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1.9 kA	2.9 kA
Coil weight	approx. 50 kg	approx. 50 kg
PU	125 m	80 m

Type RD ...	10 V4A R20M	10 V4A R50M
Part No.	**860 020**	**860 050**
Diameter Ø conductor	10 mm	10 mm
Cross-section	78 mm²	78 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.9 kA	2.9 kA
Coil weight	approx. 12 kg	approx. 31 kg
PU	20 m	50 m

Conductor materials can only be supplied in the original coil weights.
Further conductor materials as specified in the standard series EN 62561-2 are available on request.

Strips

According to EN 62561-2, for use in earth-termination and lightning protection systems as well as for ring equipotential bonding.

Steel strip

Zinc coating ≥ 70 µm on average (approx. 500 g/m²).

General technical data:	
Material	St/tZn

Type BA ...	20X2.5 STTZN R100M	30X3.5 STTZN R50M
Part No.	810 225	810 335
Width	20 mm	30 mm
Thickness	2.5 mm	3.5 mm
Cross-section	50 mm²	105 mm²
Standard	based on EN 62561-2	EN 62561-2
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	3.5 kA	7.4 kA
Coil weight	approx. 40 kg	approx. 42 kg
PU	100 m	50 m

Type BA ...	30X3.5 STTZN R25M	30X3.5 STTZN EASY R25M
Part No.	852 335	854 335
Width	30 mm	30 mm
Thickness	3.5 mm	3.5 mm
Cross-section	105 mm²	105 mm²
Standard	EN 62561-2	based on DIN EN 62561-2
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.4 kA	7.4 kA
Coil weight	approx. 21 kg	approx. 21 kg
PU	25 m	25 m

Type BA ...	30X3.5 STTZN EASY R50M	30X4 STTZN R52M
Part No.	814 335	810 304
Width	30 mm	30 mm
Thickness	3.5 mm	4 mm
Cross-section	105 mm²	120 mm²
Standard	based on DIN EN 62561-2	EN 62561-2
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.4 kA	8.4 kA
Coil weight	approx. 42 kg	approx. 50 kg
PU	50 m	52 m

Type BA ...	40X4 STTZN R40M	40X5 STTZN R30M
Part No.	810 404	810 405
Width	40 mm	40 mm
Thickness	4 mm	5 mm
Cross-section	160 mm²	200 mm²
Standard	EN 62561-2	EN 62561-2
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	11.2 kA	14 kA
Coil weight	approx. 50 kg	approx. 50 kg
PU	40 m	30 m

Type BA ...	50X4 STTZN R30M
Part No.	810 504
Width	50 mm
Thickness	4 mm
Cross-section	200 mm²
Standard	EN 62561-2
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14 kA
Coil weight	approx. 50 kg
PU	30 m

Copper strip

Type BA ...	20X2.5 CU R100M
Part No.	831 225
Width	20 mm
Thickness	2.5 mm
Cross-section	50 mm²
Material	Cu
Standard	EN 62561-2
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.7 kA
Coil weight	approx. 45 kg
PU	100 m

Stainless steel strip

General technical data:	
Standard	EN 62561-2

Type BA ...	30X3.5 V2A R25M	30X3.5 V2A R60M
Part No.	860 925	860 900
Width	30 mm	30 mm
Thickness	3.5 mm	3.5 mm
Cross-section	105 mm²	105 mm²
Material	StSt	StSt
Material No.	1.4301 / 1.4303	1.4301 / 1.4303
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	3.9 kA	3.9 kA
Coil weight	approx. 21 kg	approx. 49 kg
PU	25 m	60 m

Type BA ...	30X3.5 V4A R25M	30X3.5 V4A R60M
Part No.	860 325	860 335
Width	30 mm	30 mm
Thickness	3.5 mm	3.5 mm
Cross-section	105 mm²	105 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	3.9 kA	3.9 kA
Coil weight	approx. 21 kg	approx. 49 kg
PU	25 m	60 m

Type BA ...	40X4 V4A R40M	40X5 V4A R30M
Part No.	860 404	860 405
Width	40 mm	40 mm
Thickness	4 mm	5 mm
Cross-section	160 mm²	200 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6 kA	7.4 kA
Coil weight	approx. 50 kg	approx. 50 kg
PU	40 m	30 m

Strips in different dimensions and materials are available upon request.

Cables

For use in lightning protection and earth-termination systems.

Aluminium cable

e.g. for isolated air-termination systems (DEHNiso Combi).

Type	SEIL 9 50Q AL R100M
Part No.	**840 050**
Cross-section	50 mm²
Cable structure qty x Ø wire	19 x 1.8 mm
Material	Al
Standard	EN 62561-2
Outside diameter Ø	9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6.4 kA
Coil weight	approx. 13.5 kg
PU	100 m

Note: Al must not be installed directly (without distance) on, in or under plaster, mortar or concrete, and not in soil.

Copper cable

General technical data:	
Material	Cu
Standard	EN 62561-2

Type	SEIL 9 50Q CU R50M	SEIL 9 50Q CU R100M
Part No.	**832 739**	**832 740**
Cross-section	50 mm²	50 mm²
Cable structure qty x Ø wire	19 x 1.8 mm	19 x 1.8 mm
Outside diameter Ø	9 mm	9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.7 kA	9.7 kA
Coil weight	approx. 22 kg	approx. 44 kg
PU	50 m	100 m

Type	SEIL 10.5 70Q CU R50M	SEIL 10.5 70Q CU R100M
Part No.	**832 192**	**832 193**
Cross-section	70 mm²	70 mm²
Cable structure qty x Ø wire	19 x 2.1 mm	19 x 2.1 mm
Outside diameter Ø	10.5 mm	10.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	13.6 kA	13.6 kA
Coil weight	approx. 30 kg	approx. 60 kg
PU	50 m	100 m

Type	SEIL 12.5 95Q CU R50M	SEIL 14.5 120Q CU R50M
Part No.	**832 095**	**832 120**
Cross-section	95 mm²	120 mm²
Cable structure qty x Ø wire	19 x 2.5 mm	19 x 2.8 mm
Outside diameter Ø	12.5 mm	14.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	18.5 kA	23.4 kA
Coil weight	approx. 42 kg	approx. 53 kg
PU	50 m	50 m

Steel cable

Type	SEIL 10 STGALZN R100M
Part No.	**801 050**
Cross-section	42 mm²
Cable structure qty x Ø wire	[6x] 19 x 0.65 mm
Material	St/gal Zn
Outside diameter Ø	10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	3 kA
Coil weight	approx. 33 kg
PU	100 m

Copper cable

General technical data:	
Material	Cu/gal Sn

Type	Seil 7.5 CUGALSN 35Q R100M	SEIL 9 50Q CUGALSN R100M
Part No.	**832 838**	**832 839**
Cross-section	35 mm²	50 mm²
Cable structure qty x Ø wire	7 x 2.5 mm	19 x 1.8 mm
Standard	–	EN 62561-2
Outside diameter Ø	7.5 mm	9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 150 °C)	5 kA	7.2 kA
Coil weight	approx. 33 kg	approx. 44 kg
PU	100 m	100 m

Type	SEIL 10.5 70Q CUGALSN R50M	SEIL 10.5 70Q CUGALSN R100M
Part No.	**832 202**	**832 292**
Cross-section	70 mm²	70 mm²
Cable structure qty x Ø wire	19 x 2.1 mm	19 x 2.1 mm
Standard	EN 62561-2	EN 62561-2
Outside diameter Ø	10,5 mm	10,5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 150 °C)	10.1 kA	10.1 kA
Coil weight	approx. 30 kg	approx. 60 kg
PU	50 m	100 m

Type	SEIL 12.5 95Q CUGALSN R50M	SEIL 14.5 120Q CUGALSN R50M
Part No.	**832 295**	**832 320**
Cross-section	95 mm²	120 mm²
Cable structure qty x Ø wire	19 x 2.5 mm	19 x 2.8 mm
Standard	EN 62561-2	EN 62561-2
Outside diameter Ø	12.5 mm	14.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 150 °C)	13.8 kA	17.4 kA
Coil weight	approx. 42 kg	approx. 53 kg
PU	50 m	50 m

Round Wires, Strips, Cables

Stainless steel cable

e.g. for equipotential bonding.

Type	SEIL 8 V4A R100M	SEIL 10 V4A R100M
Part No.	**850 008**	**850 010**
Cross-section	27 mm²	42 mm²
Cable structure qty x Ø wire	[7x] 19 x approx. 0.59 mm	[7x] 19 x approx. 0.68 mm
Material	StSt (V4A)	StSt (V4A)
Material-Nr.	1.4571 / 1.4404	1.4571 / 1.4404
Outside diameter Ø	8 mm	10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1 kA	1.5 kA
Coil weight	approx. 23.5 kg	approx. 39.5 kg
PU	100 m	100 m

Cables in different dimensions and materials are available upon request.

Type Cu

With disconnecting sleeve (Part No. 450 007) and KS screws (Part No. 300 007).

Type EESS 16 1500 TM 2KS7.10 ...	CU
Part No.	**480 157**
Material	Cu
Standard	EN 62561-(1+2)
Length	1500 mm
Connection KS screw Rd	6-10 mm
Connection sleeve Rd / Rd	7-10 / 16 mm
PU	1 pc(s)

DEHNIT Earthing Method

For improving and stabilising the earth electrode resistance.

Highly swellable, powdery and extremely moisture retaining special clay provides a conductive earth electrode enclosure and reduces the soil resistivity.

Type	DEHNIT 25KG
Part No.	**573 000**
Material	special clay
Mixture ratio [weight proportions in kg]	5 parts sand / 1 part DEHNIT / 0.5 parts water
Weight	25 kg
PU	25 kg

More information at www.dehn-international.com/

Earth Entry Rod Set

Complete with disconnecting sleeve and connection clamps (KS screws).

Type St/tZn

With disconnecting sleeve (Part No. 450 000) and KS screws (Part No. 300 000).

Type EESS 16 1500 TM 2KS7.10 ...	STTZN
Part No.	**480 150**
Material	St/tZn
Standard	EN 62561-(1+2)
Length	1500 mm
Connection KS screw Rd	7-10 mm
Connection sleeve Rd / Rd	7-10 / 16 mm
PU	1 pc(s)

Earth Entry Rods

For connecting down conductors to the earth-termination system.

Chamfered

General technical data:	
Standard	EN 62561-2
Diameter Ø	16 mm

Type	FS 16 1500 STTZN	FS 16 2000 STTZN
Part No.	**483 150**	**483 200**
Material	St/tZn	St/tZn
Material No.	–	–
ASTM / AISI:	–	–
Length (l1)	1500 mm	2000 mm
PU	10 pc(s)	1 pc(s)

Type	EES 16 1000 V4A	EES 16 1500 V4A
Part No.	**104 903**	**104 905**
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Length (l1)	1000 mm	1500 mm
PU	1 pc(s)	10 pc(s)

Type	EES 16 2000 V4A
Part No.	**104 906**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Length (l1)	2000 mm
PU	1 pc(s)

With forged flat lug

Hole Ø11 mm, hole distance 22 mm.

Type	EES 16 1500 2XB11 STTZN
Part No.	**101 150**
Material	St/tZn
Standard	EN 62561-2
Diameter Ø	16 mm
Length (l1)	1500 mm
Hole distance	22 mm
PU	1 pc(s)

Tapered

Notched conductor Ø10 mm, partly insulated (length approx. 700 mm).

General technical data:	
Material	St/tZn
Standard	EN 62561-2
Diameter Ø	16 / 10 mm

Type	EES 16.10 1500 STTZN	EES 16.10 1750 STTZN
Part No.	**480 018**	**480 019**
Total length (l1)	1500 mm	1750 mm
Partial length Ø16 mm (l2)	1000 mm	750 mm
Partial length Ø10 mm (l3)	500 mm	1000 mm
PU	10 pc(s)	10 pc(s)

Type	EES 16.10 2000 STTZN	EES 16.10 2500 STTZN
Part No.	**480 020**	**480 021**
Total length (l1)	2000 mm	2500 mm
Partial length Ø16 mm (l2)	1000 mm	1500 mm
Partial length Ø10 mm (l3)	1000 mm	1000 mm
PU	10 pc(s)	1 pc(s)

Straightened / Angled Connection Lugs

For connecting down conductors to the earth-termination system; made of corrosion-resistant stainless steel.

Round wires

General technical data:	
Material	StSt (V4A)
Material No.	1.4571 / 1.4404
ASTM / AISI:	316Ti / 316L
Dimensions	Ø10 mm
Cross-section	78 mm²
Standard	EN 62561-2

Type AF ...	10 V4A 1000	10 V4A 1500
Part No.	**860 110**	**860 115**
Length (l1)	1000 mm	1500 mm
PU	5 pc(s)	5 pc(s)

Type AF ...	10 V4A 2000	10 V4A 3000
Part No.	**860 129**	**860 130**
Length (l1)	2000 mm	3000 mm
PU	5 pc(s)	5 pc(s)

Flat strips with holes

Holes at intervals of 500 mm.

Type AF 30X3.5 ...	V2A B6.5X12 3000	V4A B6.5X12 3000
Part No.	**860 425**	**860 430**
Material	StSt	StSt (V4A)
Material No.	1.4301	1.4571 / 1.4404
ASTM / AISI:	–	316Ti / 316L
Length (l1)	3000 mm	3000 mm
Dimensions	30 x 3.5 mm	30 x 3.5 mm
Fixing	[6x] 6.5 x 12 mm	[6x] 6.5 x 12 mm
Hole distance	500 mm	500 mm
Cross-section	105 mm²	105 mm²
Standard	EN 62561-2	EN 62561-2
PU	5 pc(s)	5 pc(s)

Flat strips

General technical data:	
Material	StSt (V4A)
Material No.	1.4571 / 1.4404
ASTM / AISI:	316Ti / 316L
Dimensions	30 x 3.5 mm
Cross-section	105 mm²
Standard	EN 62561-2

Type AF ...	30X3.5 V4A 1000	30X3.5 V4A 1500
Part No.	**860 210**	**860 215**
Length (l1)	1000 mm	1500 mm
PU	5 pc(s)	5 pc(s)

Type AF ...	30X3.5 V4A 3000
Part No.	**860 230**
Length (l1)	3000 mm
PU	5 pc(s)

Flat strips, angled

For wall mounting (without a gap) with holes for countersunk head screws.

Type AF ...	30X3.5 V4A ZW 1500	30X3.5 V4A ZW 3000
Part No.	**860 315**	**860 330**
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
ASTM / AISI:	316Ti / 316L	316Ti / 316L
Length (l1)	1500 mm	3000 mm
Dimensions	30 x 3.5 mm	30 x 3.5 mm
Connection	disconnecting clamp or KS connector	disconnecting clamp or KS connector
Fixing	[3x] Ø6.5 mm	[6x] Ø6.5 mm
Hole distance	500 mm	500 mm
Cross-section	105 mm²	105 mm²
Standard	EN 62561-2	EN 62561-2
PU	5 pc(s)	5 pc(s)

Other dimensions are available upon request.

Marker for Connection Lugs

Attached to round wires or strips to make them conspicuous (as required by DIN 18014) during the construction work.

Type	SK RD10 FL30X3.5 GRGE PVC
Part No.	**478 099**
Material	PVC
Diameter Ø	70 mm
Fits on Fl	30 x 3.5 mm
Fits on Rd	10 mm
Colour	green ● / yellow ●
PU	20 pc(s)

Fixed Earthing Terminals

For installation in concrete as a corrosion-free connection to the earth-termination system for protective equipotential bonding and / or functional equipotential bonding of the down conductor, e.g. to the reinforcement of buildings.
Please observe the following minimum screw lengths for the M10 and M12 double threads:
35 mm of M10 (thread length 40 mm)
15 mm of M12 (thread length 20 mm)

Type M

With connecting shaft
(l = 180 mm, Ø10 mm).

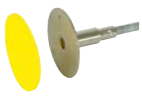
Type	EFPM M10 12 V4A L230 STTZN	EFPM M10 12 V4A L230 V2A
Part No.	**478 011**	**478 019**
Connection thread	M10 / M12	M10 / M12
Material of plate	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Material of shaft	St/tZn	StSt
Connection plate Ø	80 mm	80 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6.5 kA	3.9 kA
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Type M without connecting shaft

Type	EFPM M10 12 V4A
Part No.	**478 012**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Connection plate Ø	80 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.3 kA (with copper cable lug)
Standard	EN 62561-1
PU	20 pc(s)

Type M, press-fitted

Connecting shaft
(l = 180 mm, Ø10 mm).



Type	EFPM M10 12 V4A L245 VP STTZN	EFPM M10 12 V4A L245 VP V2A
Part No.	**478 041**	**478 049**
Connection thread	M10 / M12	M10 / M12
Material of plate	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Material of shaft	St/tZn	StSt
Connection plate Ø	80 mm	80 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	3.7 kA	3.3 kA
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Part No. 478 049 with UL approval.

Type M, press-fitted, with additional water barrier

Protection against water ingress along the shaft into the wall (tested according to EN 62561-5 with 5 bar compressed air and 1 bar pressure water). Suitable for waterproof concrete.

Type	EFPM M10 12 V4A WS L245 VP STTZN
Part No.	**478 051**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of shaft	St/tZn
Connection plate Ø	80 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	3.7 kA
Material of water barrier	PVC
Standard	EN 62561-1
PU	10 pc(s)

Type M with MV clamp

For round conductors 8-10 mm, space-saving installation in the formwork.

Type	EFPM M10 12 V4A MVK8.10 STTZN
Part No.	**478 112**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of MV clamp	St/tZn
Connection plate Ø	80 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.3 kA
Standard	EN 62561-1
PU	25 pc(s)

Type K

With plastic ring and connecting shaft (l = 180 mm, Ø10 mm).

Type	EFPK M10 12 V4A L230 STTZN
Part No.	**478 200**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of shaft	St/tZn
Connection plate Ø	46 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6.5 kA
Standard	EN 62561-1
PU	25 pc(s)

Accessories for Fixed Earthing Terminals

Foam pad

Foam pad is attached to the yellow protective cover of the fixed earthing terminal (see installation instructions DS1476). One side adhesive, with pull-off tab.

Using the foam pad enables a position compensation of approx. 20 mm at the formwork and makes it easier to find and expose the fixed earthing terminal after concreting.

Type	SSP D90 H20
Part No.	**478 098**
Diameter Ø	90 mm
Height	20 mm
PU	10 pc(s)

Fixed Earthing Terminal M16

With M16 connection thread for higher current loads (50 Hz), e.g. for connecting the ring equipotential bonding system with the earth-termination systems of power installations with nominal a.c. voltages over 1 kV (transformer earthing).

Type	EFP M16 V4A SL400
Part No.	**478 027**
Connection thread	M16
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of cable	Cu/gal Sn
Cross-section of connecting cable	70 mm²
Length of connecting cable	400 mm
Diameter Ø connecting cable	10.5 mm
Connection plate Ø	80 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	11 kA
PU	10 pc(s)

Connecting Clamps for Fixed Earthing Terminals and Reinforcement

For connecting the reinforcement with clamping piece.
For round conductors or fixed earthing terminals with simultaneous fixing in the formwork.

Arrangement: (II) = parallel (+) = cross

For small diameters

Type	VK 6.22 FL40 KB6.10 BSB STBL
Part No.	**308 035**
Material	St/bare
Clamping range Rd / Rd	(+/II) 6-22 / 6-10 mm
Clamping range Rd / Fl	(+) 6-22 / 40 mm
Screw	M10 x 60 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1.0 kA
PU	25 pc(s)

U-clamp for large diameters

Type	BVK 16.48 FL40 KB6.10 BSB STBL
Part No.	**308 046**
Material	St/bare
Clamping range Rd / Rd	(+/II) 16-48 / 6-10 mm
Clamping range Rd / Fl	(II) 16-48 / 30-40 mm
Screw	U-bolt M10 x 48 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.9 kA
PU	25 pc(s)

Connection and bridging device for reinforcements

Connection and bridging device for using the reinforcing bars (longitudinal bars) of reinforced concrete supports or walls as a down conductor.

Connection device

Special lengths possible on request.
*) For exact assignment, see test certificate.

Type UES 16 L600 ...	VK RD10 28 EFP
Part No.	**416 940** NEW
Connecting clamp material	St/bare
Clamping range Connecting clamp	10-28 mm
Fixed earthing terminal material	StSt (V4A)
Fixed earthing point terminal thread	M10 / M12
Bridging cable material	Flexible copper conductor, frost-resistant
Bridging cable cable length	600 mm
Bridging cable cable cross section	16 mm²
Standard	EN 62561-1
PU	25 pc(s)

Bridging device

Special lengths possible on request.
*) For exact assignment, see test certificate.

Type UES 16 L600 ...	2VK RD10 28
Part No.	**416 941** NEW
Connecting clamp material	St/bare
Clamping range Connecting clamp	10-28 mm
Bridging cable material	Flexible copper conductor, frost-resistant
Bridging cable cable length	600 mm
Bridging cable cable cross section	16 mm²
Standard	EN 62561-1
PU	25 pc(s)

End Pieces

Screwed to the fixed earthing terminal to connect, e.g. an equipotential bonding bar or structural parts such as steel girders, etc.

Basic design

Universal use for M10 and M12 connections, e.g. at the fixed earthing terminal.
For connection of Rd, e.g. with KS connector (Part No. 301 019), or Fl with M10 or M12 screws and nuts.

Type ES ZF ...	2XB18 V2A
Part No.	**390 499**
Material	StSt
Hole Ø	10.5 / 12.5 mm
PU	50 pc(s)

Design with square holes

Dimensions 11x11 mm, for connecting Rd, e.g. with KS connector (Part No. 301 019), or Fl with M10 screws and nuts.

Type ES ZF ...	2X11.11 1XB13 V2A
Part No.	**390 479**
Material	StSt
Distance of holes	30 mm
Hole Ø	13 mm
PU	50 pc(s)

Design with holes and KS connector

With holes Ø11 mm.

Type ES ZF ...	2XB11 KSV 7.10 STTZN
Part No.	**363 010**
Material	St/tZn
Distance of holes	22 mm
Hole Ø	11 mm
Clamping range Rd	7-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Design with holes

With holes Ø11 mm.

Type ES ZF ...	3XB11 STTZN
Part No.	**363 000**
Material	St/tZn
Distance of holes	22 mm
Hole Ø	11 mm
PU	50 pc(s)

Connection Clamps with Threaded Bolt

For connecting round and flat conductors to fixed earthing terminals with M10 / M12 thread (e.g. Part Nos. 478 011, 478 200) and M16 thread (Part No. 478 027).
Clamps with M10 thread are also suitable for installation on the rear side of the fixed earthing terminal (without connecting shaft), e.g. to connect a flat strip.

Heavy design M10

Type AK ...	7.10 FL40 GBM10X45 STTZN
Part No.	**478 141**
Material of clamp	St/tZn
Clamping range Rd / Fl	7-10 / 30-40 mm
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
PU	10 pc(s)

Heavy design M12

Type AK ...	7.10 FL40 GBM12X55 V4A
Part No.	**478 149**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Fl	7-10 / 30-40 mm
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	3.3 kA
PU	10 pc(s)

Heavy design M16

Type AK ...	7.10 FL40 GBM16X65 V4A
Part No.	**478 150**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Fl	7-10 / 30-40 mm
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	5.9 kA
PU	10 pc(s)

Light design M10

Type AK ...	ZS 8.10 FL30 GBM10X60 V4A
Part No.	**478 129**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Fl	8-10 / 30 mm
Dimensions	58 x 30 x 2.5 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.7 kA
PU	10 pc(s)

Wall Bushings

With MV clamp made of StSt (V4A) for round conductors 8–10 mm.
Water-pressure-tight wall bushing for leading earthing conductors / equipotential bonding conductors through brickwork or walls; with M10 threaded rod made of StSt. For subsequent installation through borehole (Ø14 mm) or through spacer in the formwork.
Test for water pressure-tightness up to 1 bar features an installation depth of 10 m in stagnant water.

General technical data:	
Sealings	Neoprene
Sealing disc Ø	80 mm
Material of disc	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.7 kA
Standard	EN 62561-1

Type EWD MVK8.10 M10 ...	L100 300 V4A	L300 500 V4A
Part No.	**478 410**	**478 430**
Length of bushing (l2)	100-300 mm	300-500 mm
Length of threaded rod (l1)	308 mm	508 mm
PU	5 pc(s)	5 pc(s)

Type EWD MVK8.10 M10 ...	L500 700 V4A
Part No.	**478 450**
Length of bushing (l2)	500-700 mm
Length of threaded rod (l1)	708 mm
PU	1 pc(s)

Water-Pressure-Tight Wall Bushings for White Tank

For installation in the formwork. Is suitable for water-pressure-tight wall bushings; e.g. for connecting the ring earth electrode with the equipotential bonding bar or the equipotential bonding conductor in the foundation.

General technical data:	
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of axis	St/tZn
Connection thread	M10 / 12
Connection plate Ø	80 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	4.1 kA
Standard	EN 62561-(1+5)

Type WD M10 12 V4A ...	DWD L200 300 STTZN	DWD L300 400 STTZN
Part No.	**478 530**	**478 540**
Wall thickness (l1)	200-300 mm	300-400 mm
PU	10 pc(s)	4 pc(s)

Type WD M10 12 V4A DWD ...	L400 500 STTZN
Part No.	**478 550**
Wall thickness (l1)	400-500 mm
PU	4 pc(s)

Threaded Adapter

For connection to fixed earthing terminals with M10 thread, lock nut and spring washer, for use in case of perimeter insulation or thermal insulation composite systems.

Type	GAD EFP M10 10 L130 V4A
Part No.	**478 699**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Female thread	M10 x 25 mm
Male thread	M10 x 80 mm
Total length	130 mm
Standard	EN 62561-1
PU	10 pc(s)

Sealing Collar for Connection Lug

Sealing collar for bushings in case of watertight foundation slabs / walls (e.g. white tank).
Water-pressure-tight for pushing on round / flat conductors with StSt tensioning straps.

Pressurised water test up to 1 bar represents an installation depth of 10 m in stagnant water, additionally tested with 5 bar compressed air according to EN 62561-5.

For round conductors

Type DM AF ...	RD10 D105MM TPE
Part No.	**478 598**
Material	thermoplast elastomer
Diameter Ø	105 mm
Bushing Rd	10 mm
Standard	EN 62561-5
PU	10 pc(s)

For flat conductors

Type DM AF ...	FL30X3.5 D120MM TPE
Part No.	**478 599**
Material	thermoplast elastomer
Diameter Ø	119 mm
Bushing Fl	30 x 3.5 mm
Standard	EN 62561-5
PU	10 pc(s)

DEHNclip Rebar Clamp

Nominal diameter d_s	Outer diameter d_A

The outer diameter including corrugation is approx. $d_A = 1.15 \times d_s$											
Nominal diameter d_s (mm)	6	8	10	12	14	16	20	25	28	32	40
Average outer diameter incl. corrugation d_A (mm)	7.1	9.4	11.8	14.2	16.5	18.9	23.6	29.5	33.1	37.8	47.2
Nominal cross section (mm^2)	28.3	50.3	78.5	113.1	154	201	314	491	616	804	1257

In accordance with DIN 18014 "Foundation earth electrode – Planning, execution and documentation" from March 2014, foundation earth electrodes must be connected to the reinforcement of the foundation slab every 2 metres. To do so, there are various possibilities. Clamping turned out to be the most cost-effective solution since this connection can be made easily and quickly on site.

Moreover, according to the latest lightning protection standards, reinforcing steel, for example, must be used as a natural component of the down-conductor system. Below is an overview of the nominal and outer diameters as well as the cross-sections of reinforcing steels DIN EN 10080:2005.

For connecting reinforcing steel mesh or reinforcements with round and flat conductors.
Arrangement: (II) = parallel (+) = cross

Quick and safe:
The DEHNclip rebar clip for quick connection of the earth electrode to the reinforcement without tools. DEHNclip is tested for a lightning current carrying capability of 50 kA (10/350 µs) in accordance with DIN EN 62561-1.

For connecting round conductors with the reinforcement

General technical data:	
Material	St/bare
Standard	EN 62561-1

Type d.c. BK ...	6 RD10 STBLANK	8 RD10 STBLANK
Part No.	308 130	308 131
Clamping range Rd* / Rd	6-7 / 10 mm	8-9 / 10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.5 kA	2.7 kA
PU	50 pc(s)	50 pc(s)

Type d.c. BK ...	10 RD10 STBLANK	12 RD10 STBLANK
Part No.	308 132	308 133
Clamping range Rd* / Rd	10 / 10 mm	12 / 10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.4 kA	2.7 kA
PU	50 pc(s)	50 pc(s)

*) Nominal diameter d_s of the reinforcement
**) For exact assignment see test certificate.

For connecting flat conductors with the reinforcement

General technical data:	
Material	St/bare
Standard	EN 62561-1

Type d.c. BK ...	6 FL30 STBLANK	8 FL30 STBLANK
Part No.	308 140	308 141
Clamping range Rd* / Fl	6-7 / 30 mm	8-9 / 30 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.0 kA	2.3 kA
PU	50 pc(s)	50 pc(s)

Type d.c. BK ...	10 FL30 STBLANK	12 FL30 STBLANK
Part No.	308 142	308 143
Clamping range Rd* / Fl	10 / 30 mm	12 / 30 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.3 kA	2.3 kA
PU	50 pc(s)	50 pc(s)

*) Nominal diameter d_s of the reinforcement
**) For exact assignment see test certificate.

For connecting reinforcing steel

General technical data:	
Material	St/bare
Standard	EN 62561-1

Type d.c. BK ...	6 RD6 STBLANK	8 RD8 STBLANK
Part No.	308 134	308 135
Clamping range Rd* / Rd*	6-7 / 6-7 mm	8-9 / 8-9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.2 kA	2.4 kA
PU	50 pc(s)	50 pc(s)

Type d.c. BK ...	8 RD12 STBLANK	12 RD12 STBLANK
Part No.	308 137	308 136
Clamping range Rd* / Rd*	8-9 / 12 mm	12 / 12 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.4 kA	2.6 kA
PU	50 pc(s)	50 pc(s)

*) Nominal diameter d_s of the reinforcement
**) For exact assignment see test certificate.

Connecting Clamps for Reinforcements

For T, cross and parallel connections

Type	VK A UNI ST
Part No.	**308 025**
Material	St/tZn
Clamping range Rd / Rd	(+) 6-10 / 6-10 mm
Clamping range Rd / Fl	(+) 6-10 / 30 mm
Clamping range Fl / Fl	(II) 30 / 30 mm
Screw	M10 x 25 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9 kA
PU	50 pc(s)

For T, cross and parallel connections

Type	VK 6.10 FL30 FL30 BSB STTZN
Part No.	**308 026**
Material	St/tZn
Clamping range Rd / Fl	(+) 6-10 / 30 mm
Clamping range Fl / Fl	(+ / II) 30 / 30 mm
Screw	M10 x 25 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	13 kA
PU	25 pc(s)

For T and cross connections Note: recommended tightening torque ≥ 10 Nm

Type	VK A R22 F40 STBL
Part No.	**308 030**
Material	St/bare
Clamping range Rd / Fl	(+) 6-22 / 30-40 mm
Screw	M10 x 40 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1.0 kA
PU	50 pc(s)

For T, cross and parallel connections with clamping piece

For flexible connection of round conductors or for fixed earthing terminals while fixing in the formwork.

Type	VK 6.22 FL40 KB6.10 BSB STBL
Part No.	**308 035**
Material	St/bare
Clamping range Rd / Rd	(+/II) 6-22 / 6-10 mm
Clamping range Rd / Fl	(+) 6-22 / 40 mm
Screw	M10 x 60 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1.0 kA
PU	25 pc(s)

U-bolt clamp for large diameters

Type	BVK 16.48 6.10 FL40 BSB STBL
Part No.	**308 045**
Material	St/bare
Clamping range Rd / Rd	(II) 16-48 / 6-10 mm
Clamping range Rd / Fl	(II) 16-48 / 30-40 mm
Screw	U-bolt M10 x 48 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	16 kA
PU	25 pc(s)

U-bolt clamp for large diameters with two additional clamping pieces

For cross connections of round conductors (6-10 mm) or for fixing and simultaneous connection of fixed earthing terminals.

Type	BVK 16.48 FL40 KB6.10 BSB STBL
Part No.	**308 046**
Material	St/bare
Clamping range Rd / Rd	(+/II) 16-48 / 6-10 mm
Clamping range Rd / Fl	(II) 16-48 / 30-40 mm
Screw	U-bolt M10 x 48 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.9 kA
PU	25 pc(s)

MAXI MV clamps

For T, cross and parallel connections.

Type	MAMVK 8.16 15.25 STTZN	MAMVK 8.16 15.25 STBL
Part No.	**308 041**	**308 040**
Material	St/tZn	St/bare
Clamping range Rd / Rd	(+/II) 8-16 / 15-25 mm	(+/II) 8-16 / 15-25 mm
Screw	M12 x 65 mm	M12 x 65 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6.2 kA	10.2 kA
Approvals	–	UL 467
Stock No.	5999-12-362-1557	–
PU	20 pc(s)	20 pc(s)

MV clamps with hexagon screw

Threaded base part.

Type	MVK 8.10 SKM10X30 STTZN	MVK 10 SKM10X35 STTZN
Part No.	**390 050**	**391 050**
Material	St/tZn	St/tZn
Clamping range Rd	8-10 mm	10 mm
Screw	M10 x 30 mm	M10 x 35 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	5.5 kA	–
PU	50 pc(s)	50 pc(s)

MV clamps with hexagon screw and spring washer

Threaded base part.

Type	MVK 8.10 SKM10X30 FSC STTZN
Part No.	**390 550**
Material	St/tZn
Clamping range Rd	8-10 mm
Screw	M10 x 30 mm
Standard	EN 62561-1
PU	50 pc(s)

Parallel connectors with truss head screw

Type	PV 6.22 FRM10X40 STBLANK	PV 6.22 FRM10X40 STTZN
Part No.	**306 121**	**306 122**
Material	St/bare	St/tZn
Clamping range Rd / Rd	6-22 / 6-22 mm	6-22 / 6-22 mm
Screw	M10 x 40 mm	M10 x 40 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6.1 kA	6.1 kA
PU	50 pc(s)	50 pc(s)

Connecting Clamps for Foundation Earth Electrodes

For connecting round and flat conductors in the concrete foundation.
For T, cross and parallel connections, without having to insert the conductor.

Arrangement: (II) = parallel (+) = cross

Type VK EH R10 F30 ...	ST	V2A
Part No.	**308 120**	**308 129**
Material	St/tZn	StSt
Clamping range Rd / Fl	(II) 10 / 30 mm	(II) 10 / 30 mm
Clamping range Fl / Fl	(+/II) 30 / 30 mm	(+/II) 30 / 30 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Connecting Clamps for Foundation Earth Electrodes and Reinforcements

For connecting round and flat conductors in the concrete foundation or reinforcing steel meshes and reinforcements with round and flat conductors.

Arrangement: (II) = parallel (+) = cross

Connecting clamp with thrust bracket

For T, cross and parallel connections.

Type VK ...	DB 6.20 8.10 FL30 BSB STBL
Part No.	**308 031**
Material	St/bare
Clamping range Rd / Rd	(+/II) 6-20 / 8-10 mm
Clamping range Rd / Fl	(+/II) 6-20 / 30 x 3-4 mm
Clamping range Fl / Fl	(+/II) 30 x 3-4 / 30 x 3-4 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	8.4 kA
Standard	EN 62561-1
PU	25 pc(s)

Connecting clamp MAXI with thrust bracket

For T, cross and parallel connections.

Type VK ...	DB 20.32 8.10 FL40 BSB STBL
Part No.	**308 036**
Material	St/bare
Clamping range Rd / Rd	(+/II) 20-32 / 8-10 mm
Clamping range Rd / Fl	(+/II) 20-32 / 40 x 4-5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14.0 kA
Standard	EN 62561-1
PU	25 pc(s)

Connecting clamp without thrust bracket

For cross connections.

Type VK ...	6.20 FL30 BSB STBL
Part No.	**308 032**
Material	St/bare
Clamping range Rd / Fl	(+) 6-20 / 30 x 3-4 mm
Clamping range Fl / Fl	(+/II) 30 x 3-4 / 30 x 3-4 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.0 kA
Standard	EN 62561-1
PU	25 pc(s)

Connecting clamp MAXI without thrust bracket

For cross connections.

Type VK ...	20.32 FL40 BSB STBL
Part No.	**308 037**
Material	St/bare
Clamping range Rd / Fl	(+) 20-32 / 30 x 3-40 x 5 mm
Standard	EN 62561-1
PU	25 pc(s)

SV Clamps for Aboveground and Underground Connections

Diagonal connecting clamps (Schräg-Verbinder-Klemmen) for cross and T connections, screws with anti-rotation protection.

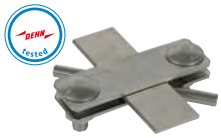
For flat and round conductors

General technical data:	
Clamping range Rd / Rd	7-10 / 7-10 mm
Screw	M10 x 30 mm
Standard	EN 62561-1

Type SVK ...	7.10 7.10 FL30 STTZN	7.10 7.10 FL30 V4A
Part No.	**308 220**	**308 229**
Material of clamp	St/tZn	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30 mm	7-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 4 mm	94 x 3 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.3 kA	3.2 kA
PU	25 pc(s)	25 pc(s)

Type SVK ...	7.10 7.10 FL40 STTZN	7.10 7.10 FL40 V4A
Part No.	**308 320**	**308 329**
Material of clamp	St/tZn	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30-40 mm	7-10 / 30-40 mm
Clamping range Fl / Fl	30-40 / 30-40 mm	30-40 / 30-40 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	108 x 4 mm	108 x 3 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14.0 kA	14.0 kA
PU	25 pc(s)	25 pc(s)

For one flat and round conductor or two flat conductors



Type SVK ...	7.10 FL30 V4A
Part No.	**308 249**
Material of clamp	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm
Screw	M10 x 30 mm
ASTM / AISI:	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 3 mm
Standard	EN 62561-1
PU	25 pc(s)

For flat conductors

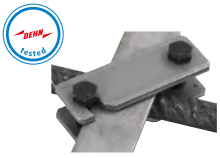
Type SVK ...	FL30 STTZN	FL30 V4A
Part No.	**308 230**	**308 239**
Material of clamp	St/tZn	StSt (V4A)
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Screw	M10 x 30 mm	M10 x 30 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 4 mm	94 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	8.2 kA	3.9 kA
PU	25 pc(s)	25 pc(s)

For flat conductors, round conductors and earth entry rods

Type SVK ...	7.10 16 FL40 STTZN
Part No.	**308 330**
Material of clamp	St/tZn
Clamping range Rd / Rd	7-10 / 16 mm
Clamping range Rd / Fl	16 / 30-40 mm
Screw	M10 x 30 mm
Dimensions (l1 x d1)	108 x 4 mm
Standard	EN 62561-1
PU	25 pc(s)

SV Clamps for Underground Connections

SV clamps (Schräg-Verbinder-Klemmen) for cross and T connections.



Type	SVK 6.28 FL30 STBL
Part No.	**308 062**
Material of clamp	St/bare
Clamping range Rd / Fl	6-28 / 30 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.3 kA
PU	50 pc(s)

Wedge Connector

For T, cross and parallel connections for use in concrete foundations.

Type	KV FE UNI
Part No.	**308 001**
Material	St/tZn
Clamping range Rd / Fl	10 / 30 x 3.5-40 x 4 mm
Clamping range Fl / Fl	30 x 3.5-40 x 4 / 30 x 3.5-40 x 4 mm
PU	25 pc(s)

Components f. Foundation Earth Electrodes

Expansion Strap for Foundation Earth Electrodes

For leading the foundation earth electrode through the expansion joints of large foundations (several sections). It is not necessary to lead the earth electrode out of the base plate.

Type	DB 700X30X4 V2A
Part No.	**308 150**
Material of strap	StSt
Dimensions of strap (l x w x d)	approx. 700 x 30 x (4 x 1) mm
Cross-section	120 mm²
Material of block	polystyrene
Dimensions of block (l x w x d)	180 x 85 x 45 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6 kA
PU	1 pc(s)

Spacers

For the installation of earthing conductors in the foundation slab. With catch lug to avoid loosening of the conductor.

Angled and reinforced design

Type AH FE ...	RF V G
Part No.	**290 001**
Material	St/tZn
Support Fl	40 mm
Support Rd	8-10 mm
Length	300 mm
PU	25 pc(s)

Straight design

Type AH FE ...	RF
Part No.	**290 002**
Material	St/tZn
Support Fl	40 mm
Support Rd	8-10 mm
Length	280 mm
PU	50 pc(s)

Earth Rods

Earthing Kits

Earthing kit for use in residential buildings up to 120 m² Ground area and without lightning protection system.

Basic earthing kit

Earthing kit content (4 packages)

Package 1:	
5x round steel, StSt, V4A, Ø10 mm, L 2000 mm	
11x round steel, HDG steel, Ø10 mm, L 2000 mm	
Dimensions: approx. 60 x 60 x 2000 mm	Weight: approx. 21 kg
Package 2:	
4x sealing collar	
4x driving spike for earth rods	
4x connection bracket, StSt, V4A	
1x anti-corrosion tape	
17x MV clamps, HDG steel	
12x connecting clamps, HDG steel	
1x equipotential bonding bar	
1x marker for connection lug	
1x glove pair (size 10)	
1x installation instructions	
1x test report	
Dimensions: approx. 240 x 180 x 50 mm	Weight: approx. 7 kg
Package 3:	
6x earth rod, StSt, Ø20 mm, L 1000 mm	
Dimensions: approx. 40 x 60 x 1000 mm	Weight: approx. 15 kg
Package 4:	
6x earth rod, StSt, Ø20 mm, L 1000 mm	
Dimensions: approx. 40 x 60 x 1000 mm	Weight: approx. 15 kg

Type	ESET 1 EFH 120
Part No.	**690 001** NEW
Application	Residential buildings up to 120 m² of ground area
Standard	E DIN 18014:2022-07
PU	1 pc(s)

DEHNIT Earthing Method

For improving and stabilising the earth electrode resistance.

Highly swellable, powdery and extremely moisture retaining special clay provides a conductive earth electrode enclosure and reduces the soil resistivity.

Type	DEHNIT 25KG
Part No.	**573 000**
Material	special clay
Mixture ratio [weight proportions in kg]	5 parts sand / 1 part DEHNIT / 0.5 parts water
Weight	25 kg
PU	25 kg

More information at www.dehn-international.com

Earth Rods

For implementing earth-termination systems for down conductors or transformer stations.

Features:

- No cross section thickening at the coupling point
- Self-locking coupling
- Corrosion resistance
- Easier storage and transport
- Universal use according to local soil conditions
- Constant resistance values
- Easily driven in with a vibration hammer

Type Z

With triple knurled pin.

General technical data:		
Material		St/tZn
Standard		EN 62561-2

Type TE ...	20 1000 Z STTZN	20 1500 Z STTZN
Part No.	620 101	620 151
Rod length (l1)	1000 mm	1500 mm
Diameter Ø (d1)	20 mm	20 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.9 kA	7.9 kA
PU	6 pc(s)	6 pc(s)

Type TE ...	25 1000 Z STTZN	25 1500 Z STTZN
Part No.	625 101	625 151
Rod length (l1)	1000 mm	1500 mm
Diameter Ø (d1)	25 mm	25 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	12.3 kA	12.3 kA
PU	6 pc(s)	6 pc(s)

Type AZ

With offset knurled pin.

Type TE ...	20 1000 AZ V4A	20 1500 AZ V4A
Part No.	620 903	620 902
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Rod length (l1)	1000 mm	1500 mm
Diameter Ø (d1)	20 mm	20 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	4.2 kA	4.2 kA
Standard	EN 62561-2	EN 62561-2
PU	6 pc(s)	6 pc(s)

Driving Spikes

For driving in the first earth rod. The driving spikes can be used for earth rods made of steel and StSt as well as tubular earth rods.

Type SSP TE ...	20 TGTZN	25 TGTZN
Part No.	620 001	625 001
Material	MCI/tZn	MCI/tZn
Type	for earth rods Ø20 mm or tubular earth rods St/tZn Ø27 mm	for earth rods Ø25 mm or tubular earth rods StSt (V4A) Ø25 mm
PU	100 pc(s)	50 pc(s)

Tubular Earth Rods

Light design, for implementing earth-termination systems for down conductors.

Type	RE 25 1500 V4A
Part No.	649 150
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Rod length	1500 mm
Diameter Ø	25 mm
Standard	EN 62561-2
PU	6 pc(s)

Earthing Pipe with Driving Spike

With driving spike for earthing mobile objects such as vehicles, power generators, etc.

Type	ERO SSP ASSM8 600 STTZN
Part No.	646 000
Material	St/tZn
Pipe Ø	34 mm
Length	600 mm
Screw	wing nut M8
Stock No.	5975-12-133-4342
PU	1 pc(s)

Profiled Earth Rods

For the installation of earth-termination systems e.g. for antennas or construction site distribution cabinets.

Profile 50 x 50 x 3 mm

With connection lug and holes, e.g. for KS connector.

General technical data:		
Material		St/tZn
Holes Ø		[2x] 11 / [1x] 13 mm

Type PSE 50X50X3 ...	1000 STTZN	1500 STTZN
Part No.	635 100	635 150
Length (l1)	1000 mm	1500 mm
PU	5 pc(s)	5 pc(s)

Type PSE 50X50X3 ...	2000 STTZN	2500 STTZN
Part No.	635 200	635 250
Length (l1)	2000 mm	2500 mm
PU	5 pc(s)	3 pc(s)

Single-screw Connection Clamps

For connecting round conductors, flat strips or cables to earth rods.
For cross and parallel connection.

Type AK ES TE 20 RD10 ...	FL30 STTZN	FL30 V4A
Part No.	**630 120**	**630 129**
Material	St/tZn	StSt (V4A)
Clamping range Rd / Fl	10 / -30 x 4 mm	10 / -30 x 4 mm
Clamping range of cable	70 mm²	70 mm²
Type for earth rods	Ø20 mm	Ø20 mm
Material No.	–	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	–	316Ti / 316L / 316
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Connection Brackets

For connecting round conductors, cables and flat strips to earth rods.

Diagonal design

Also for use with uncut earth conductors.

General technical data:	
Clamping range Rd / Fl	7-10 / -40 mm
Standard	EN 62561-1

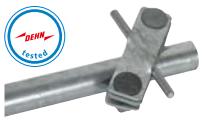
Type AS ...	S TE 20 7.10 FL40 STTZN	S TE 20 7.10 FL40 CU
Part No.	**620 015**	**620 017**
Material	St/tZn	Cu
Clamping range (stranded / cable)	–	35-95 mm²
Type for earth rods	Ø20 mm	Ø20 mm
Material No.	–	–
ASTM / AISI:	–	–
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	21.0 kA	29.0 kA
PU	20 pc(s)	1 pc(s)

Type AS ...	S TE 20 7.10 FL40 V4A	S TE 25 7.10 FL40 STTZN
Part No.	**620 915**	**625 015**
Material	StSt (V4A)	St/tZn
Clamping range (stranded / cable)	35-95 mm²	–
Type for earth rods	Ø20 mm	Ø25 mm
Material No.	1.4571 / 1.4404 / 1.4401	–
ASTM / AISI:	316Ti / 316L / 316	–
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.3 kA	18 kA
PU	20 pc(s)	20 pc(s)

Type AS ...	S TE 25 7.10 FL40 V4A
Part No.	**649 015**
Material	StSt (V4A)
Clamping range (stranded / cable)	35-95 mm²
Type for earth rods	Ø25 mm
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	8 kA
PU	20 pc(s)

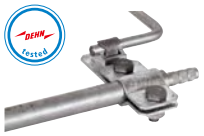
Diagonal design – especially for tubular earth rods St/tZn

Also for use with uncut earth electrodes.



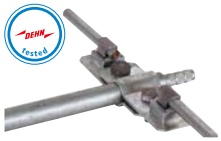
Type AS ...	S RE 27 7.10 FL40 STTZN
Part No.	**640 015**
Material	St/tZn
Clamping range Rd / Fl	7-10 / -40 mm
Type for earth rods	Ø27 mm
Standard	EN 62561-1
PU	1 pc(s)

One-sided connection with KS connector



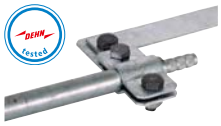
Type AS ...	TE 20 KSV 7.10 STTZN	TE 25 KSV 7.10 STTZN
Part No.	**620 011**	**625 011**
Material	St/tZn	St/tZn
Clamping range Rd	7-10 mm	7-10 mm
Type for earth rods	Ø20 mm	Ø25 mm
Standard	EN 62561-1	EN 62561-1
PU	20 pc(s)	20 pc(s)

Double-sided connection with KS connectors (St/tZn)



Type AS ...	TE 20 2XKSV 7.10 STTZN	TE 25 2XKSV 7.10 STTZN
Part No.	**620 012**	**625 012**
Material	St/tZn	St/tZn
Clamping range Rd	7-10 mm	7-10 mm
Type for earth rods	Ø20 mm	Ø25 mm
Standard	EN 62561-1	EN 62561-1
PU	10 pc(s)	1 pc(s)

One-sided connection with M10 screw



Type AS ...	TE 20 ASSM10 STTZN	TE 25 ASSM10 STTZN
Part No.	**620 021**	**625 021**
Material	St/tZn	St/tZn
Clamping range Fl	-40 mm	-40 mm
Type for earth rods	Ø20 mm	Ø25 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	8.4 kA	8.4 kA
PU	1 pc(s)	20 pc(s)

Connection Clamps

For cross and parallel connection of round conductors, flat strips or cables to earth rods.

For earth rods Ø20-30 mm

Type AK ...	TE 20.30 8.12 FL40 STTZN
Part No.	**610 010**
Material	St/tZn
Clamping range Rd / Fl	8-12.5 / -40 mm
Clamping range (stranded / cable)	50-95 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	18 kA
Standard	EN 62561-1
PU	1 pc(s)

For earth rods Ø20-25 mm

Connection clamp for lightning equipotential bonding connection of pipes (e.g. antenna poles) with earth rods via a solid / stranded conductor.

Type AK ...	8.10 AQ4 50 TE20 25 V4A
Part No.	**540 121**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd	8-10 mm
Connection (solid /stranded)	4-50 mm²
Standard	EN 62561-1
PU	25 pc(s)

For earth rods Ø20 mm

Type AK ...	TE 20 7.10 FL40 V4A
Part No.	**610 020**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Fl	7-10 / -40 mm
Clamping range (stranded / cable)	35-70 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	8 kA
Standard	EN 62561-1
PU	25 pc(s)

Hammer Support

For vibration hammers of the following brands

Design for Wacker Neuson

Type HA VH ...	WA BH55 BH65 BH55RW
Part No.	**600 035**
Types	BH 55, BH 65, BH 55 rw, EH 50, K 2500 H
Material	St/tZn
PU	1 pc(s)

Design for Bosch

Type HA VH ...	BO GSH 27	BO GSH 27 VC
Part No.	**600 050**	**600 055**
Types	GSH 27	GSH 27 VC
Material	St/tZn	St/tZn
PU	1 pc(s)	1 pc(s)

Design for Hilti

Type HA VH ...	HI TE 3000 AVR
Part No.	**600 060**
Types	TE 3000 AVR (up to 2021 model)
Material	St/tZn
PU	1 pc(s)

Selection Guide for Hammer Inserts according to their Brand

Brand	Type	Holder	Earth rod		Tubular earth rods
			Typ Z St/tZn (Ø20) Typ AZ V4A (Ø20)	Typ Z St/tZn (Ø25)	V4A (Ø25)
Wacker Neuson	BH 23 / BH 55 / BH 65 / BH 55rw	round Ø27 x 80 mm	620 005 620 009	625 005 625 009	648 005
	EH 50 / EH 75 / EH 22/400 / EH 23/230 / EH 24/042/200				
	BHF 30				
Atlas Copco	Cobra 149 (Combi) Cobra 248	hexagon SW22 x 108 mm	620 007	625 007	648 007
	Pionjär 120 Pionjär 130				
	TEX 15 PE TEX 19 PE TEX 23 PE	hexagon SW25 x 108 mm	620 008	625 008	-
	TEX 15 PE TEX 19 PE TEX 23 PE TEX 27 H TEX 28 HE TEX 22 PS	hexagon SW28 x 160 mm	620 019	625 019	-
	Cobra TT Cobra PRO	hexagon SW32 x 160 mm	620 010	625 010	-
Chicago Pneumatic	CP Red Hawk Rail CP Red Hawk Road				
	CP Red Hawk Drill	hexagon SW22 x 108 mm	620 007	625 007	648 007
Milwaukee	K 2628 H	hexagon SW28	620 029	625 029	648 029
Bosch	GSH 27 **GSH 27 VC**				
Hilti	**TE 3000 AVR** (bis Modell 2021)				
	TE 1000 AVR **TE 2000 AVR** **TE 2000-22** (Akku)	TE-S (hexagon SW22)	620 031	625 031	648 031
Other	Other	SDS-Max (Ø18 x 175 mm)	620 030	625 030	648 009

our recommendation

Hammer Inserts for Earth Rods

For driving in earth rods with a vibration hammer.
For earth rods Type S and Z.
Ø20 mm (pin Ø12 mm Part No. 620...) or
Ø25 mm (pin Ø15 mm Part No. 625...)

With the Atlas Copco equipment different adapter Types can be used. Please note that when placing your order.

Design for Wacker Neuson

Type HE TE ...	20 R27 VH WN STBLANK	25 R27 VH WN STBLANK
Part No.	**620 005**	**625 005**
Type	BHF 30	BHF 30
Adapter	round Ø27 x 80 mm	round Ø27 x 80 mm
Material	St/bare	St/bare
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	200 mm	200 mm
Earth rod diameter	20 mm	25 mm
Earth rod Type	Z, AZ	S, Z
PU	1 pc(s)	1 pc(s)

Special hammer insert Part No. 620 039 for earth rods Part No. 620 902 Type AZ StSt (V4A).

Heavy design for Wacker Neuson

Type HE TE ...	20 R27 LVH WN STBLANK	25 R27 LVH WN STBLANK
Part No.	**620 009**	**625 009**
Type	BH 55, BH 65, BH 55rw, EH 50, EH 75 and EH 22/400	BH 55, BH 65, BH 55rw, EH 50, EH 75 and EH 22/400
Adapter	round Ø27 x 80 mm	round Ø27 x 80 mm
Material	St/bare	St/bare
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	260 mm	260 mm
Earth rod diameter	20 mm	25 mm
Earth rod Type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for Atlas Copco AF 22

Type HE TE ...	20 SW22 VH AC STBLANK	25 SW22 VH AC STBLANK
Part No.	**620 007**	**625 007**
Type	Cobra Combi, Pionjär 120+130, CP Red Hawk (Cobra Standard)	Cobra Combi, Pionjär 120+130, CP Red Hawk (Cobra Standard)
Adapter	hexagon, wrench size 22 x 108 mm	hexagon, wrench size 22 x 108 mm
Material	St/bare	St/bare
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	240 mm	240 mm
Earth rod diameter	20 mm	25 mm
Earth rod Type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for Atlas Copco AF 25

Type HE TE ...	20 SW25 VH AC STBLANK	25 SW25 VH AC STBLANK
Part No.	**620 008**	**625 008**
Type	TEX 15 PE, 19 PE, 23 PE	TEX 15 PE, 19 PE, 23 PE
Adapter	hexagon, wrench size 25 x 108 mm	hexagon, wrench size 25 x 108 mm
Material	St/bare	St/bare
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	240 mm	240 mm
Earth rod diameter	20 mm	25 mm
Earth rod Type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for Atlas Copco AF 28

Type HE TE ...	20 SW28 VH AC STBLANK	25 SW28 VH AC STBLANK
Part No.	**620 019**	**625 019**
Type	TEX 28 HE, 27 H, 15 PE, 19 PE, 23 PE, 22 PS	TEX 28 HE, 27 H, 15 PE, 19 PE, 23 PE, 22 PS
Adapter	hexagon, wrench size 28 x 160 mm	hexagon, wrench size 28 x 160 mm
Material	St/bare	St/bare
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	350 mm	350 mm
Earth rod diameter	20 mm	25 mm
Earth rod Type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for Atlas Copco AF 32

Type HE TE ...	20 SW32 VH AC STBLANK	25 SW32 VH AC STBLANK
Part No.	**620 010**	**625 010**
Type	TT, PRO, MK1	TT, PRO, MK1
Adapter	hexagon, wrench size 32 x 160 mm	hexagon, wrench size 32 x 160 mm
Material	St/bare	St/bare
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	350 mm	350 mm
Earth rod diameter	20 mm	25 mm
Earth rod Type	Z, AZ	Z, AZ
PU	1 pc(s)	1 pc(s)

Design for Bosch / Hilti / Milwaukee

Type HE TE ...	20 SW28 VH BO STBLANK	25 SW28 VH BO STBLANK
Part No.	**620 029**	**625 029**
Type	GSH 27 / TE 3000 AVR (up to 2021 model) / K 2628 h	GSH 27 / TE 3000 AVR (up to 2021 model) / K 2628 h
Adapter	hexagon, wrench size 28 (1 1/8'')	hexagon, wrench size 28 (1 1/8'')
Material	St/bare	St/bare
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	250 mm	250 mm
Earth rod diameter	20 mm	25 mm
Earth rod Type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for Hilti TE-S

Type HE TE ...	20 TES VH HI STBLANK	25 TES VH HI STBLANK
Part No.	**620 031**	**625 031**
Type	vibration / impact hammer with TE-S adapter	vibration / impact hammer with TE-S adapter
Adapter	hexagon, wrench size 22	hexagon, wrench size 22
Material	St/bare	St/bare
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	280 mm	280 mm
Earth rod diameter	20 mm	25 mm
Earth rod Type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for SDS-max

Type HE TE ...	20 SDS MAX VH STBLANK	25 SDS MAX VH STBLANK
Part No.	**620 030**	**625 030**
Type	vibration / impact hammer with SDS-max adapter	vibration / impact hammer with SDS-max adapter
Adapter	round Ø18 x 175 mm	round Ø18 x 175 mm
Material	St/bare	St/bare
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	260 mm	260 mm
Earth rod diameter	20 mm	25 mm
Earth rod Type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Note: It is recommended to use a hammer with a minimum striking force of 26 joules. The maximum drive-in depth depends on the soil conditions.

Hammer Inserts for Tubular Earth Rods

For driving in tubular earth rods with a vibration hammer.

Design Wacker Neuson

Type HE RE 25 ...	R27 VH WN STBLANK
Part No.	**648 005**
Type	EH 22/400, EH 23/230, EH 24/042/200, BH 23 and BHF 30
Adapter	round Ø27 x 80 mm
Material	St/bare
Hole (d1 x l1)	25.6 x 39 mm
Length	246 mm
Earth rod diameter	25 mm
Earth rod Type	RE
PU	1 pc(s)

Design Atlas Copco

Type HE RE 25 ...	SW22 VH a.c. STBLANK
Part No.	**648 007**
Type	Cobra 149+248 and Pionjär 120+130
Adapter	hexagon, wrench size 22 x 108 mm
Material	St/bare
Hole (d1 x l1)	25.6 x 39 mm
Length	246 mm
Earth rod diameter	25 mm
Earth rod Type	RE
PU	1 pc(s)

Design SDS-max

Type HE RE 25 ...	SDS MAX VH STBLANK
Part No.	**648 009**
Type	vibration / impact hammer with SDS-max adapter
Adapter	round Ø18 x 175 mm
Material	St/bare
Hole (d1 x l1)	25.6 x 39 mm
Length	260 mm
Earth rod diameter	25 mm
Earth rod Type	RE
PU	1 pc(s)

Note: It is recommended to use a hammer with a minimum striking force of 26 joules. The maximum drive-in depth depends on the soil conditions.

Design Bosch / Hilti / Milwaukee

Type HE RE 25 ...	SW28 VH BO STBLANK
Part No.	**648 029**
Type	GSH 27, GSH 27 VC, TE 3000 AVR (up to 2021 model), K 2628 H
Adapter	hexagon AF28
Material	St/bare
Hole (d1 x l1)	25.6 x 39 mm
Length	266 mm
Earth rod diameter	25 mm
Earth rod Type	RE
PU	1 pc(s)

Design Hilti TE-S

Type HE RE 25 ...	TES VH HI STBLANK
Part No.	**648 031**
Type	vibration / impact hammer with TE-S adapter
Adapter	Hilti TE-S
Material	St/bare
Hole (d1 x l1)	25,6 x 39 mm
Length	280 mm
Earth rod diameter	25 mm
Earth rod Type	RE
PU	1 pc(s)

Designs for other Types of hammer available on request.

Driving Heads

For driving in earth rods with a mallet.

Type SKO TE ...	20 STBLANK	25 STBLANK
Part No.	**620 002**	**625 002**
Type of earth rod	Types Z + AZ (Ø20 mm)	Type Z (Ø25 mm)
Material	St/bare	St/bare
PU	1 pc(s)	1 pc(s)

Earthing Cables with Cable Lugs open

Highly flexible copper conductor, frost-resistant, UV-stabilised.
Packing in accordance with VG 96927-11.

Cable lug, 2x open, 2x M8 / M10

General technical data:	
Cable cross section	10 mm²
Cable lug open	2x M8 / M10
Colour	black ●

Type	EL10 L0.35M 2KSO 8.10	EL10 L0.55M 2KSO 8.10
Part No.	**410 003**	**410 005**
Cable length (l1)	0.35 m	0.55 m
Stock No.	6150-12-156-9107	6150-12-156-8386
PU	1 pc(s)	1 pc(s)

Type	EL10 L0.65M 2KSO 8.10	EL10 L1.05M 2KSO 8.10
Part No.	**410 006**	**410 010**
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-156-9108	6150-12-156-8387
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.55M 2KSO 8.10	EL10 L2.05M 2KSO 8.10
Part No.	**410 015**	**410 020**
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-156-9069	6150-12-156-9073
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.55M 2KSO 8.10	EL10 L3.05M 2KSO 8.10
Part No.	**410 025**	**410 030**
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-156-9072	6150-12-156-9109
PU	1 pc(s)	1 pc(s)

Type	EL10 L3.55M 2KSO 8.10	EL10 L4.05M 2KSO 8.10
Part No.	**410 035**	**410 040**
Cable length (l1)	3.55 m	4.05 m
Stock No.	6150-12-156-9071	6150-12-156-9070
PU	1 pc(s)	1 pc(s)

Type	EL10 L5.05M 2KSO 8.10	EL10 L6.05M 2KSO 8.10
Part No.	**410 050**	**410 060**
Cable length (l1)	5.05 m	6.05 m
Stock No.	6150-12-156-6051	6150-12-156-9110
PU	1 pc(s)	1 pc(s)

Type	EL10 L7.05M 2KSO 8.10	EL10 L10.0M 2KSO 8.10
Part No.	**410 070**	**410 099**
Cable length (l1)	7.05 m	10.0 m
Stock No.	6150-12-156-9111	6150-12-156-9112
PU	1 pc(s)	1 pc(s)

Type	EL10 L14.0M 2KSO 8.10	EL10 L15.0M 2KSO 8.10
Part No.	**410 140**	**410 150**
Cable length (l1)	14.0 m	15.0 m
Stock No.	6150-12-156-6207	6150-12-161-4272
PU	1 pc(s)	1 pc(s)

Type	EL10 L20.0M 2KSO 8.10	EL10 L30.0M 2KSO 8.10
Part No.	**410 199**	**410 299**
Cable length (l1)	20.0 m	30.0 m
Stock No.	6150-12-156-9113	6150-12-156-9114
PU	1 pc(s)	1 pc(s)

Cable lug, 2x open, 1x M8 / M10 and 1x M5 / M6

General technical data:	
Cable cross section	10 mm²
Cable lug open	1x M8 / M10 1x M5 / M6
Colour	black ●

Type	EL10 L0.35M 1KSO 8.10 1KSO 5.6	EL10 L0.55M 1KSO 8.10 1KSO 5.6
Part No.	**410 603**	**410 605**
Cable length (l1)	0.35 m	0.55 m
Stock No.	–	–
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.05M 1KSO 8.10 1KSO 5.6	EL10 L1.55M 1KSO 8.10 1KSO 5.6
Part No.	**410 610**	**410 615**
Cable length (l1)	1.05 m	1.55 m
Stock No.	–	6150-12-308-6928
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.05M 1KSO 8.10 1KSO 5.6	EL10 L2.55M 1KSO 8.10 1KSO 5.6
Part No.	**410 620**	**410 625**
Cable length (l1)	2.05 m	2.55 m
Stock No.	–	–
PU	1 pc(s)	1 pc(s)

Type	EL10 L3.05M 1KSO 8.10 1KSO 5.6
Part No.	**410 630**
Cable length (l1)	3.05 m
Stock No.	6150-12-353-5887
PU	1 pc(s)

Cable lug, 2x open, 1x M8 / M10 and 1x M5 / M6

Type	EL16 L1.55M 1KSO 8.10 1KSO 5.6
Part No.	**416 516**
Cable cross section	16 mm²
Cable length (l1)	1.55 m
Cable lug open	1x M8 / M10 1x M5 / M6
Colour	black ●
Stock No.	6150-12-308-6607
PU	1 pc(s)

Cable lug, 2x open, 2x M8 / M10

General technical data:	
Cable cross section	16 mm²
Cable lug open	2x M8 / M10
Colour	black ●
Standard	EN 62561-1

Type	EL16 L0.35M 2KSO 8.10	EL16 L0.55M 2KSO 8.10
Part No.	**416 003**	**416 005**
Cable length (l1)	0.35 m	0.55 m
Stock No.	6150-12-156-9115	6150-12-156-9085
PU	1 pc(s)	1 pc(s)

Type	EL16 L0.65M 2KSO 8.10	EL16 L1.05M 2KSO 8.10
Part No.	**416 006**	**416 010**
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-156-9116	6150-12-156-9084
PU	1 pc(s)	1 pc(s)

Type	EL16 L1.55M 2KSO 8.10	EL16 L2.05M 2KSO 8.10
Part No.	**416 015**	**416 020**
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-156-9117	6150-12-156-9118
PU	1 pc(s)	1 pc(s)

Type	EL16 L2.55M 2KSO 8.10	EL16 L3.05M 2KSO 8.10
Part No.	**416 025**	**416 030**
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-156-9119	6150-12-156-9083
PU	1 pc(s)	1 pc(s)

Type	EL16 L3.55M 2KSO 8.10	EL16 L4.05M 2KSO 8.10
Part No.	**416 035**	**416 040**
Cable length (l1)	3.55 m	4.05 m
Stock No.	6150-12-156-6208	6150-12-156-8388
PU	1 pc(s)	1 pc(s)

Type	EL16 L5.05M 2KSO 8.10	EL16 L6.05M 2KSO 8.10
Part No.	**416 050**	**416 060**
Cable length (l1)	5.05 m	6.05 m
Stock No.	6150-12-156-9120	6150-12-156-9082
PU	1 pc(s)	1 pc(s)

Type	EL16 L7.05M 2KSO 8.10	EL16 L8.05M 2KSO 8.10
Part No.	**416 070**	**416 080**
Cable length (l1)	7.05 m	8.05 m
Stock No.	6150-12-156-9121	6150-12-188-4475
PU	1 pc(s)	1 pc(s)

Type	EL16 L10.05M 2KSO 8.10	EL16 L12.05M 2KSO 8.10
Part No.	**416 100**	**416 120**
Cable length (l1)	10.05 m	12.05 m
Stock No.	6150-12-156-9122	6150-12-188-4476
PU	1 pc(s)	1 pc(s)

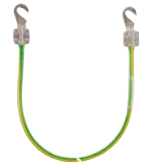
Type	EL16 L14.05M 2KSO 8.10	EL16 L15.05M 2KSO 8.10
Part No.	**416 140**	**416 150**
Cable length (l1)	14.05 m	15.05 m
Stock No.	6150-12-156-9123	6150-12-161-4273
PU	1 pc(s)	1 pc(s)

Type	EL16 L20.05M 2KSO 8.10	EL16 L22.05M 2KSO 8.10
Part No.	**416 200**	**416 220**
Cable length (l1)	20.05 m	22.05 m
Stock No.	6150-12-156-9124	6150-12-188-4477
PU	1 pc(s)	1 pc(s)

Type	EL16 L28.05M 2KSO 8.10	EL16 L30.05M 2KSO 8.10
Part No.	**416 280**	**416 300**
Cable length (l1)	28.05 m	30.05 m
Stock No.	6150-12-188-4478	6150-12-156-9125
PU	1 pc(s)	1 pc(s)

Cable lug, 2x open, 2x M8 / M10 green / yellow

Highly flexible copper conductor (ESY), frost-proof.



General technical data:	
Cable cross section	16 mm²
Cable lug open	2x M8 / M10
Colour	green ● / yellow ●

Type	EL16 L0.55M 2KSO 8.10 GG	EL16 L1.05M 2KSO 8.10 GG
Part No.	**417 005**	**417 010**
Cable length (l1)	0.55 m	1.05 m
Stock No.	6150-12-313-5059	6150-12-313-5060
PU	1 pc(s)	1 pc(s)

Type	EL16 L1.55M 2KSO 8.10 GG	EL16 L2.05M 2KSO 8.10 GG
Part No.	**417 015**	**417 020**
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-313-5061	6150-12-313-5062
PU	1 pc(s)	1 pc(s)

Type	EL16 L3.05M 2KSO 8.10 GG	EL16 L5.05M 2KSO 8.10 GG
Part No.	**417 030**	**417 050**
Cable length (l1)	3.05 m	5.05 m
Stock No.	6150-12-313-5063	6150-12-313-5064
PU	1 pc(s)	1 pc(s)

Type	EL16 L10.05M 2KSO 8.10 GG	EL16 L15.05M 2KSO 8.10 GG
Part No.	**417 100**	**417 115**
Cable length (l1)	10.05 m	15.05 m
Stock No.	6150-12-313-5065	6150-12-313-5066
PU	1 pc(s)	1 pc(s)

Type	EL16 L20.05M 2KSO 8.10 GG	EL16 L25.05M 2KSO 8.10 GG
Part No.	**417 120**	**417 125**
Cable length (l1)	20.05 m	25.05 m
Stock No.	6150-12-313-5067	6150-12-185-8587
PU	1 pc(s)	1 pc(s)

Type	EL16 L30.05M 2KSO 8.10 GG	EL16 L50.05M 2KSO 8.10 GG
Part No.	**417 130**	**417 150**
Cable length (l1)	30.05 m	50.05 m
Stock No.	6150-12-313-5068	6150-12-174-2744
PU	1 pc(s)	1 pc(s)

Earthing Cables with Cable Lugs open / closed

Highly flexible copper cable, frost-resistant, UV stabilised.
Packing in accordance with VG 96927-11.

Cable lug, 1x open M5 / M6 and 1x closed M8

General technical data:	
Cable cross section	10 mm²
Cable lug open	M5 / M6
Cable lug closed	M8
Hole Ø	8.5 mm
Colour	black ●

Type	EL10 L0.35M 1KSO 5.6 1KSG 8	EL10 L0.65M 1KSO 5.6 1KSG 8
Part No.	**410 503**	**410 506**
Cable length (l1)	0.35 m	0.65 m
Stock No.	6150-12-196-7302	6150-12-195-9694
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.05M 1KSO 5.6 1KSG 8	EL10 L1.55M 1KSO 5.6 1KSG 8
Part No.	**410 510**	**410 515**
Cable length (l1)	1.05 m	1.55 m
Stock No.	6150-12-196-7304	6150-12-196-7303
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.05M 1KSO 5.6 1KSG 8	EL10 L2.55M 1KSO 5.6 1KSG 8
Part No.	**410 520**	**410 525**
Cable length (l1)	2.05 m	2.55 m
Stock No.	6150-12-196-7606	6150-12-198-6807
PU	1 pc(s)	1 pc(s)

Type	EL10 L3.05M 1KSO 5.6 1KSG 8
Part No.	**410 530**
Cable length (l1)	3.05 m
Stock No.	6150-12-198-6808
PU	1 pc(s)

Cable lug, 1x open M8 / M10 and 1x closed M8

General technical data:	
Cable cross section	10 mm²
Cable lug open	M8 / M10
Cable lug closed	M8
Hole Ø	8.5 mm
Colour	black ●

Type	EL10 L0.20M 1KSO 8.10 1KSG 8	EL10 L0.35M 1KSO 8.10 1KSG 8
Part No.	**410 401**	**410 403**
Cable length (l1)	0.20 m	0.35 m
Stock No.	6150-12-300-9132	6150-12-195-9490
PU	1 pc(s)	1 pc(s)

Type	EL10 L0.45M 1KSO 8.10 1KSG 8	EL10 L0.55M 1KSO 8.10 1KSG 8
Part No.	**410 404**	**410 450**
Cable length (l1)	0.45 m	0.55 m
Stock No.	6150-12-192-5455	6150-12-197-0088
PU	1 pc(s)	1 pc(s)

Type	EL10 L0.65M 1KSO 8.10 1KSG 8	EL10 L1.05M 1KSO 8.10 1KSG 8
Part No.	**410 406**	**410 411**
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-192-5456	6150-12-192-5457
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.55M 1KSO 8.10 1KSG 8	EL10 L2.05M 1KSO 8.10 1KSG 8
Part No.	**410 415**	**410 420**
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-192-5458	6150-12-198-1217
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.55M 1KSO 8.10 1KSG 8	EL10 L3.05M 1KSO 8.10 1KSG 8
Part No.	**410 425**	**410 430**
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-198-6803	6150-12-198-6805
PU	1 pc(s)	1 pc(s)

Cable lug, 1x open M5 / M6 and 1x closed M8

Type	EL16 L0.55M 1KSO 5.6 1KSG 8
Part No.	**416 505**
Cable cross section	16 mm²
Cable length (l1)	0.55 m
Cable lug open	M5 / M6
Cable lug closed	M8
Hole Ø	8.5 mm
Colour	black ●
Stock No.	6150-12-300-9131
PU	1 pc(s)

Cable lug, 1x open M8 / M10 and 1x closed M10

General technical data:	
Cable cross section	10 mm²
Cable lug open	M8 / M10
Cable lug closed	M10
Hole Ø	10.5 mm
Colour	black ●

Type EL10 L0. ...	35M 1KSO 8.10 1KSG 10	55M 1KSO 8.10 1KSG 10
Part No.	**410 413**	**410 405**
Cable length (l1)	0.35 m	0.55 m
Stock No.	6150-12-196-7301	6150-12-196-6346
PU	1 pc(s)	1 pc(s)

Type	EL10 L0.65M 1KSO 8.10 1KSG 10	EL10 L1.05M 1KSO 8.10 1KSG 10
Part No.	**410 407**	**410 410**
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-198-7027	6150-12-171-2783
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.55M 1KSO 8.10 1KSG 10	EL10 L2.05M 1KSO 8.10 1KSG 10
Part No.	**410 416**	**410 421**
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-198-1216	6150-12-198-1218
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.55M 1KSO 8.10 1KSG 10	EL10 L3.05M 1KSO 8.10 1KSG 10
Part No.	**410 426**	**410 431**
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-198-6804	6150-12-198-6806
PU	1 pc(s)	1 pc(s)

Cable lug, 1x open M8 / M10 and 1x closed M8

General technical data:	
Cable cross section	16 mm²
Cable lug open	M8 / M10
Cable lug closed	M8
Hole Ø	8.5 mm
Colour	black ●

Type EL16 L1. ...	05M 1KSO 8.10 1KSG 8	55M KSO 8.10 KSG 8
Part No.	**416 411**	**416 415**
Cable length (l1)	1.05 m	1.55 m
Stock No.	6150-12-308-6934	6150-12-308-6981
PU	1 pc(s)	1 pc(s)

Type EL16 L2. ...	05M 1KSO 8.10 1KSG 8	55M 1KSO 8.10 1KSG 8
Part No.	**416 420**	**416 425**
Cable length (l1)	2.05 m	2.55 m
Stock No.	6150-12-308-6933	6150-12-308-6932
PU	1 pc(s)	1 pc(s)

Type	EL16 L3.05M 1KSO 8.10 1KSG 8	EL16 L4.05M 1KSO 8.10 1KSG 8
Part No.	**416 430**	**416 440**
Cable length (l1)	3.05 m	4.05 m
Stock No.	6150-12-308-6931	6150-12-308-6930
PU	1 pc(s)	1 pc(s)

Type EL16 L5.05M ...		1KSO 8.10 1KSG 8
Part No.		**416 450**
Cable length (l1)		5.05 m
Stock No.		6150-12-308-6929
PU		1 pc(s)

Cable lug, 1x open M8 / M10 and 1x closed M10

General technical data:	
Cable cross section	16 mm²
Cable lug open	M8 / M10
Cable lug closed	M10
Hole Ø	10.5 mm
Colour	black ●
Standard	EN 62561-1

Type	EL16 L0.35M 1KSO 8.10 1KSG 10	EL16 L1.05M 1KSO 8.10 1KSG 10
Part No.	**416 403**	**416 410**
Cable length (l1)	0.35 m	1.05 m
Stock No.	–	6150-12-308-6941
PU	1 pc(s)	1 pc(s)

Type	EL16 L1.55M 1KSO 8.10 1KSG 10	EL16 L2.05M 1KSO 8.10 1KSG 10
Part No.	**416 416**	**416 421**
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-308-6940	6150-12-308-6939
PU	1 pc(s)	1 pc(s)

Type	EL16 L2.55M 1KSO 8.10 1KSG 10	EL16 L3.05M 1KSO 8.10 1KSG 10
Part No.	**416 426**	**416 431**
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-309-6938	6150-12-308-6937
PU	1 pc(s)	1 pc(s)

Type	EL16 L4.05M 1KSO 8.10 1KSG 10	EL16 L5.05M 1KSO 8.10 1KSG 10
Part No.	**416 441**	**416 451**
Cable length (l1)	4.05 m	5.05 m
Stock No.	6150-12-308-6936	6150-12-308-6935
PU	1 pc(s)	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Earthing Cables with Cable Lugs closed

Highly flexible copper cable, frost-resistant, UV stabilised.
Packing in accordance with VG 96927-11.

Cable lug, 2x closed M10

General technical data:	
Cable cross section	10 mm²
Cable lug closed	2x M10
Hole Ø	10.5 mm
Colour	black ●

Type	EL10 L0.35M 2KSG 10	EL10 L0.55M 2KSG 10
Part No.	**410 903**	**410 905**
Cable length (l1)	0.35 m	0.55 m
Stock No.	6150-12-198-1948	6150-12-198-6809
PU	1 pc(s)	1 pc(s)

Type	EL10 L0.65M 2KSG 10	EL10 L1.05M 2KSG 10
Part No.	**410 906**	**410 910**
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-198-6810	6150-12-198-1482
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.55M 2KSG 10	EL10 L2.05M 2KSG 10
Part No.	**410 915**	**410 920**
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-168-2696	6150-12-168-2695
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.55M 2KSG 10	EL10 L3.05M 2KSG 10
Part No.	**410 925**	**410 930**
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-168-2694	–
PU	1 pc(s)	1 pc(s)

Cable lug, 2x closed M10

General technical data:	
Cable cross section	16 mm²
Cable lug closed	2x M10
Hole Ø	10.5 mm
Colour	black ●
Standard	EN 62561-1

Type	EL16 L0.35M 2KSG 10	EL16 L0.55M 2KSG 10
Part No.	**416 903**	**416 905**
Cable length (l1)	0.35 m	0.55 m
Stock No.	6150-12-198-6812	6150-12-198-6813
PU	1 pc(s)	1 pc(s)

Type	EL16 L0.65M 2KSG 10	EL16 L1.05M 2KSG 10
Part No.	**416 906**	**416 910**
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-198-6814	6150-12-168-9942
PU	1 pc(s)	1 pc(s)

Type	EL16 L1.55M 2KSG 10	EL16 L2.05M 2KSG 10
Part No.	**416 915**	**416 920**
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-168-2693	6150-12-198-6815
PU	1 pc(s)	1 pc(s)

Type	EL16 L2.55M 2KSG 10	EL16 L3.05M 2KSG 10
Part No.	**416 925**	**416 930**
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-198-6816	6150-12-198-1483
PU	1 pc(s)	1 pc(s)

Type	EL16 L7.05M 2KSG 10
Part No.	**416 970**
Cable length (l1)	7.05 m
Stock No.	6150-12-168-2692
PU	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Earthing Cables with Cable Lug / Pin Cable Lug

Made of highly flexible copper conductor, frost-resistant, UV-stabilised.
Packing in accordance with VG 96927-11.

Cable lug, 1x open and pin cable lug size 10

Type	EL10 L2.05M 1KSO 8.10 1SKS 10
Part No.	**410 720**
Cable cross section	10 mm²
Cable length (l1)	2.05 m
Cable lug open	M8 / M10
Pin cable lug	size 10 (w = 4.3)
Colour	black ●
Stock No.	6150-12-308-6979
PU	1 pc(s)

Cable lug, 1x open and pin cable lug size 16

Type	EL16 L1.55M 1KSO 8.10 1SKS 16
Part No.	**416 016**
Cable cross section	16 mm²
Cable length (l1)	1.55 m
Cable lug open	M8 / M10
Pin cable lug	size 16 (w = 5.8)
Colour	black ●
Stock No.	6150-12-178-9673
PU	1 pc(s)

Cable lug, 1x closed and pin cable lug size 10

Type	EL10 L0.65M 1KSG 8 1SKS 10
Part No.	**410 606**
Cable cross section	10 mm²
Cable length (l1)	0.65 m
Cable lug closed	M8
Pin cable lug	size 10 (w = 4.3)
Colour	black ●
Stock No.	6150-12-304-4604
PU	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Earthing Cable Lugs

For mounting on site with integrated strain relief (second half of clamping part).
Please observe the following parameters for mounting:

- Stripping approx. 15 mm
- Wire end ferrule acc. to DIN 46228
- Tightening torque of the locking nut screws ≥ 3 Nm

Open M5 / M6

Type	EKSO 5.6 AQ6 16 CUGALZN
Part No.	**444 006**
Cable cross section	6-16 mm²
Cable lug fitting	M5 / M6
Material	Cu/gal Sn
Stock No.	5940-12-156-9126
PU	100 pc(s)

Open M8 / M10

Type	EKSO 8.10 AQ6 16 CUGALZN
Part No.	**444 010**
Cable cross section	6-16 mm²
Cable lug fitting	M8 / M10
Material	Cu/gal Sn
Stock No.	5940-12-152-3867
PU	100 pc(s)

Closed M8

Type	EKSG 8 AQ6 16 CUGALZN
Part No.	**444 008**
Cable cross section	6-16 mm²
Cable lug fitting	M8
Material	Cu/gal Sn
Stock No.	5940-12-156-9128
PU	1 pc(s)

Closed M10

Type	EKSG 10 AQ6 16 CUGALZN
Part No.	**444 009**
Cable cross section	6-16 mm²
Cable lug fitting	M10
Material	Cu/gal Sn
Stock No.	5940-12-156-9127
PU	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Earthing Clamps

For connecting earthing conductors to pipes.

Small design

Type EK ...	4.45 AQ6 16 TGTZN
Part No.	**435 805**
Material of clamp body	MCI/tZn
Material of spindle	St/gal Zn
Clamping range pipe Ø	4-45 mm (3/8-1 1/4")
Connection cross-section	6-16 mm²
Stock No.	5999-12-156-9129
PU	1 pc(s)

Large design

Type EK ...	12.60 AQ6 16 TGTZN
Part No.	**435 803**
Material of clamp body	MCI/tZn
Material of spindle	St/gal Zn
Clamping range pipe Ø	12-60 mm (1/2-2")
Connection cross-section	6-16 mm²
Stock No.	5999-12-156-2656
PU	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Antenna earthing – telecommunication systems

Pipe clamp for lighning equipotential bonding of pipes (e.g. antenna poles) according to IEC/EN 62305-3.

With gradually adjustable tensioning strap, for connecting one or two conductors and suitable for through-wiring.

Antenna pipe clamps (complete)

Connection of:
1 conductor Rd Ø10 mm or 1-2 conductors Rd Ø6-8 mm **or** 4-50 mm² (solid / stranded).

Type	BRS 16.89 AK1X10 2X6.8 V2A	BRS 16.168 AK1X10 2X6.8 V2A
Part No.	**540 103**	**540 100**
Material	StSt	StSt
Clamping range pipe Ø	16-89 mm (3/8-3")	16-168 mm (3/8-6")
Screw	M8 x 20 mm	M8 x 20 mm
Material of screw	StSt	StSt
Dimensions of strap (l1 x w x d)	330 x 25 x 0.3 mm	570 x 25 x 0.3 mm
Standard	EN 62561-1	EN 62561-1
Stock No.	–	5975-12-120-7744
PU	10 pc(s)	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901).
Connection of 1 conductor Rd Ø10 mm or 1-2 conductors Rd Ø6-8 mm **or** 4-50 mm² (solid / stranded).

Type	SPK 25 BRS AK1X10 2X6.8 V2A
Part No.	**540 110**
Material	StSt
Screw	M8 x 20 mm
Material of screw	StSt
Standard	EN 62561-1
PU	50 pc(s)

Endless tensioning strap

For cutting to length, e.g. with snips.

Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
PU	1 pc(s)

Earthing Busbars

With slot and anti-rotation protection, for fixing to the earthing pipe.

Three-pole design

Type ESS ...	3P M10X35 STTZN
Part No.	**465 801**
Material of busbar	St/tZn
Length	181 mm
Screw	M10 x 35 mm
Stock No.	5940-12-156-8385
PU	1 pc(s)

Five-pole design

Type ESS ...	5P M10X35 STTZN
Part No.	**466 192**
Material of busbar	St/tZn
Length	290 mm
Screw	M10 x 35 mm
Stock No.	5940-12-188-4931
PU	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Earthing Spikes

For earthing mobile objects such as vehicles, power generators, etc.

Type ES 50X50X3 ...	450 V2A	600 V2A
Part No.	**634 145**	**634 160**
Material of profile	St/tZn	St/tZn
Profile	50 x 50 x 3 mm	50 x 50 x 3 mm
Length (l1)	450 mm	600 mm
Screw	M8 x 40 mm	M8 x 40 mm
Nut	wing nut M8	wing nut M8
Stock No.	5975-12-382-6412	–
PU	1 pc(s)	1 pc(s)

Anchoring Pole

For guying rod sections and batten shears, e.g. when traversing telecommunication cables.

Type	AP L405 TGTZN
Part No.	**466 203**
Material of profile	MCI/tZn
Profile	25 x 25 x 3.6 mm
Length	405 mm
Design	hole Ø28 mm
Stock No.	4030-12-320-9037
PU	1 pc(s)

Earthing Pipe with Drilling Spiral

For earthing mobile objects such as vehicles, power generators, etc. Detachable turning handle.

Consisting of:

- Turning handle (Part No. 462 058
- military name VG 96953 T10 AB001
- stock No. 5975-12-133-7084)
- Earthing pipe (Part No. 462 060
- military name VG 96953 T10 AA001
- stock No. 5975-12-133-7271)
- Clamp body with knurled screw (Part No. 644 099
- military name VG 96953 T10 AC001
- stock No. 5975-12-399-5493

Type	ERO BSP ASSM10 1000 STTZN
Part No.	**644 000**
Material	St/tZn
Length	1000 mm
Screw	M10 x 35 mm
Stock No.	5975-12-120-0006
PU	1 pc(s)

Earthing system for railways

Our DEHN railway earthing system has proven itself in traffic engineering as it has been specifically developed for earthing the reinforcement of concrete parts in the vicinity of high-voltage electrical installations. It is used for establishing equipotential bonding of concrete structures and conducting short-circuit currents if the contact wire breaks.
For this purpose, DEHN provides the user with a range of earthing bridges and earthing connectors, which, due to variable end end caps and connection elements, represent a comprehensive modular system with various possible combinations. Our DEHN railway earthing systems are approved by DB Netz AG.

Stainless steel earthing bridges

The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. The stainless steel earthing bridge ensures this via a defined welding seam to the earthing conductor. This earthing bridge also has a technical approval from DB Netz AG and can be reliably used in planning.

General technical data:	
Material of connection element	StSt
Material No.	1.4301
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
DB drawing No.	3 Ebs 15.03.19 - 37

Type D ...	BEB 0 - 63 / EBS 15-03-19	BEB 0 - 70 / EBS 15-03-19
Part No.	**419 000** NEW	**419 001** NEW
Total height	63 mm	70 mm
Installation height	55 mm	62 mm
PU	1 pc(s)	1 pc(s)

Type D ...	BEB 0 - 77 / EBS 15-03-19
Part No.	**419 002** NEW
Total height	77 mm
Installation height	69 mm
PU	1 pc(s)

Note: The D BEB 0 earthing bridges can be made to order up to a height of 100 mm without losing their DB Netz AG approval.

Flat steel earthing bridges D BEB 1

The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and the flat steel is welded to the earthing reinforcement via a defined welding seam. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	BEB 1 / EBS 15-03-19	BEB 1 - L100 / EBS 15-03-19
Part No.	**419 010** NEW	**419 500** NEW
Material of plate	StSt	StSt
Material No.	1.4301	1.4301
Material of socket	St / Cu	St / Cu
Material of flat steel	S235	S235
Short-circuit current	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms
Standard	Ril 997.0205A01	Ril 997.0205A01
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA	12.6 kA
Thread	M16	M16
Diameter of connection plate	50 mm	50 mm
Dimensions of flat steel	400 x 40 x 5 mm	100 x 40 x 5 mm
Total height	58 mm	58 mm
DB drawing No.	3 Ebs 15.03.19 - 30	3 Ebs 15.03.19 - 30
PU	1 pc(s)	1 pc(s)

Flat steel earthing bridges D BEB 1-L

The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and the flat steel is welded to the earthing reinforcement via a defined welding seam. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	BEB 1-L / EBS 15-03-19
Part No.	**419 011** NEW
Material of plate	StSt
Material No.	1.4301
Material of socket	St / Cu
Material of flat steel	S235
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
Dimensions of flat steel	402 x 40 x 5 mm
Total height	58 mm
Installation height	410 mm
DB drawing No.	3 Ebs 15.03.19 - 30
PU	1 pc(s)

Flat steel earthing bridges D BEB 1-NR

The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and the flat steel is welded to the earthing reinforcement via a defined welding seam. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	BEB 1-NR / EBS 15-03-19
Part No.	**419 012** NEW
Material of connection element	StSt
Material No.	1.4301
Material of flat steel	S235
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
Dimensions of flat steel	400 x 50 x 5 mm
Total height	63 mm
DB drawing No.	3 Ebs 15.03.19 - 36
PU	1 pc(s)

Reinforcing steel earthing bridges D BEB 3

The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and welded to the earthing reinforcement with the straight reinforcing steel. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	BEB 3 / EBS 15-03-19
Part No.	**419 030** NEW
Material of plate	StSt
Material No.	1.4301
Material of socket	St / Cu
Material of shaft	reinforcing steel B500B
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
Diameter of reinforcing steel	16 mm
Length	400 mm
DB drawing No.	3 Ebs 15.03.19 - 31
PU	1 pc(s)

Reinforcing steel earthing bridges D BEB 2

The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and welded to the earthing reinforcement with the angled reinforcing steel, particularly in installation situations where space is critical. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	BEB 2 / EBS 15-03-19
Part No.	**419 020** NEW
Material of plate	StSt
Material No.	1.4301
Material of socket	St / Cu
Material of shaft	reinforcing steel B500B
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
Diameter of reinforcing steel	16 mm
Installation height	160 mm
Length	400 mm
DB drawing No.	3 Ebs 15.03.19 - 31
PU	1 pc(s)

Reinforcing steel earthing bridges D BEB 8

The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and the reinforcing steel is welded to the earthing reinforcement. The sockets mounted on both ends allow effective and economical component feed-through. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	BEB 8 / EBS 15-03-19
Part No.	**419 080** NEW
Material of plate	StSt
Material No.	1.4301
Material of socket	St / Cu
Material of shaft	reinforcing steel B500B
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
Diameter of reinforcing steel	16 mm
Length	500 mm
DB drawing No.	3 Ebs 15.03.19 - 33
PU	1 pc(s)

Copper cable earthing bridges D BEB 4 / 5

The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface. The copper-plated steel lug pressed onto the copper cable is welded to the earthing reinforcement. The flexibility of the cable makes installation in the reinforcement easier for the user. The special FLEX versions are particularly suited for installation situations where space is critical since extra-flexible, finely stranded copper cables are used. The earthing bridges also have technical approval from DB Netz AG and can be reliably used in planning.

General technical data:	
Material of plate	StSt
Material No.	1.4301
Material of socket	St / Cu
Material of lug	St / Cu
Material of cable	Cu
Standard	Ril 997.0205A01
Thread	M16
Diameter of connection plate	50 mm
Dimensions of lug	80 x 30 mm
DB drawing No.	3 Ebs 15.03.19 - 32

Type D ...	BEB 4 / EBS 15-03-19	BEB 4-FLEX / EBS 15-03-19
Part No.	419 040 NEW	419 041 NEW
Short-circuit current	≤ 25 kA	≤ 25 kA
Test current	25 kA / 100 ms	25 kA / 100 ms
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	7.9 kA	7.9 kA
Cable	NYY-O	H07V-K
Cable cross-section	70 mm²	70 mm²
Cable diameter	17 mm	17 mm
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Type D ...	BEB 5 / EBS 15-03-19	BEB 5-FLEX / EBS 15-03-19
Part No.	419 050 NEW	419 051 NEW
Short-circuit current	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA	12.6 kA
Cable	NYY-O	H07V-K
Cable cross-section	95 mm²	95 mm²
Cable diameter	19 mm	19 mm
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Type D ...	BEB 5 - L700 / EBS 15-03-19	BEB 5 - L1000 / EBS 15-03-19
Part No.	419 501 NEW	419 502 NEW
Short-circuit current	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA	12.6 kA
Cable	NYY-O	NYY-O
Cable cross-section	95 mm²	95 mm²
Cable diameter	19 mm	19 mm
Length	700 mm	1000 mm
PU	1 pc(s)	1 pc(s)

Type D ...	BEB 5 - L1500 / EBS 15-03-19	BEB 5 - L2000 / EBS 15-03-19
Part No.	419 503 NEW	419 504 NEW
Short-circuit current	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA	12.6 kA
Cable	NYY-O	NYY-O
Cable cross-section	95 mm²	95 mm²
Cable diameter	19 mm	19 mm
Length	1500 mm	2000 mm
PU	1 pc(s)	1 pc(s)

Copper cable earthing bridges D BEB 6 / 7

The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface on both sides and allows the earthing to pass through structural elements. The flexibility of the cable makes installation in the reinforcement easier for the user. The special FLEX versions are particularly suited for installations where space is critical – extra-flexible, finely stranded copper cables are used here. These earthing bridges also have technical approval from DB Netz AG and can be reliably used in planning.

General technical data:	
Material of plate	StSt
Material No.	1.4301
Material of socket	St / Cu
Material of cable	Cu
Standard	Ril 997.0205A01
Thread	M16
Diameter of connection plate	50 mm
Length	500 mm
DB drawing No.	3 Ebs 15.03.19 - 33

Type D ...	BEB 6 / EBS 15-03-19	BEB 6-FLEX / EBS 15-03-19
Part No.	419 060 NEW	419 061 NEW
Short-circuit current	≤ 25 kA	≤ 25 kA
Test current	25 kA / 100 ms	25 kA / 100 ms
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	7.9 kA	7.9 kA
Cable	NYY-O	H07V-K
Cable cross-section	70 mm²	70 mm²
Cable diameter	17 mm	17 mm
PU	1 pc(s)	1 pc(s)

Type D ...	BEB 7 / EBS 15-03-19	BEB 7-FLEX / EBS 15-03-19
Part No.	419 070 NEW	419 071 NEW
Short-circuit current	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA	12.6 kA
Cable	NYY-O	H07V-K
Cable cross-section	95 mm²	95 mm²
Cable diameter	19 mm	19 mm
PU	1 pc(s)	1 pc(s)

Copper cable earthing bridges D BEB 9 / 10

The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version establishes a non-visible connection within the concrete by welding the copper-plated steel lugs pressed onto the copper cable to the earthing reinforcement. The flexibility of the cable makes installation in the reinforcement easier for the user. The special FLEX versions are particularly suited for space-critical installation situations since extra-flexible, finely stranded copper cables are used. The earthing bridges also have technical approval from DB Netz AG and can be reliably used in planning.

General technical data:	
Material of lug	St / Cu
Material of cable	Cu
Standard	Ril 997.0205A01
Dimensions of lug	80 x 30 mm
DB drawing No.	3 Ebs 15.03.19 - 33

Type D ...	BEB 9 / EBS 15-03-19	BEB 9-FLEX / EBS 15-03-19
Part No.	**419 090** NEW	**419 091** NEW
Short-circuit current	≤ 25 kA	≤ 25 kA
Test current	25 kA / 100 ms	25 kA / 100 ms
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	7.9 kA	7.9 kA
Cable	NYY-O	H07V-K
Cable cross-section	70 mm²	70 mm²
Cable diameter	17 mm	17 mm
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Type D ...	BEB 10 / EBS 15-03-19	BEB 10-FLEX / EBS 15-03-19	BEB 10 - L800 / EBS 15-03-19
Part No.	**419 100** NEW	**419 101** NEW	**419 505** NEW
Short-circuit current	> 25 kA	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms	40 kA / 100 ms
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA	12.6 kA	12.6 kA
Cable	NYY-O	H07V-K	NYY-O
Cable cross-section	95 mm²	95 mm²	95 mm²
Cable diameter	19 mm	19 mm	19 mm
Length	500 mm	500 mm	800 mm
PU	1 pc(s)	1 pc(s)	1 pc(s)

Earthing bridge for earthing large pipes D BEB 11

The earthing bridges are designed for earthing, return circuits and equipotential bonding in railway line applications. The version for earthing large pipes is intended for use with pile and large pipe foundations. The product consists of a copper cable with a pressed-on sleeve and stainless steel connection plate with integrated boreholes for the formwork fixing at one end, and a cable lug at the opposite end. The cable lug is used to establish a short-circuit-resistant connection to the pile or large pipe foundation. The flexibility of the cable simplifies installation in the reinforcement for the user. This earthing bridge also has the technical approval of DB Netz AG and can be used there without hesitation in planning.

Type D ...	BEB 11 / EBS 15-03-27	BEB 11 - L1000 / EBS 15-03-27
Part No.	**419 110** NEW	**419 506** NEW
Material of plate	StSt	StSt
Material No.	1.4301	1.4301
Material of socket	St / Cu	St / Cu
Material of cable lug	Cu/gal Sn	Cu/gal Sn
Material of cable	Cu	Cu
Short-circuit current	≤ 25 kA	≤ 25 kA
Test current	25 kA / 100 ms	25 kA / 100 ms
Standard	Ril 997.0205A01	Ril 997.0205A01
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	7.9 kA	7.9 kA
Thread	M16	M16
Diameter of connection plate	50 mm	50 mm
Cable	NYY-O	NYY-O
Cable cross-section	70 mm²	70 mm²
Cable diameter	17 mm	17 mm
Borehole cable lug	13 mm	13 mm
Length	500 mm	1000 mm
DB drawing No.	4 Ebs 15.03.27 - 2	4 Ebs 15.03.27 - 2
PU	1 pc(s)	1 pc(s)

Earthing connector for earthing large pipes D BEB 40

The earthing connectors are designed for earthing, return circuits and equipotential bonding in railway line applications. The version for earthing large pipes is designed for use with pile and large pipe foundations. The product consists of a steel cable with a copper-plated steel lug at one end and a cable lug at the other end. A heat-shrinkable sleeve at the welding lug end prevents water from penetrating the steel cable. The steel cable is therefore a preventative anti-theft measure. This earthing connector also has the technical approval of DB Netz AG and can be used there without hesitation in planning.

Type D ...	BEB 40 / EBS 15-03-25
Part No.	**419 400** NEW
Material of lug	St / Cu
Material of cable lug	Cu/gal Sn
Material of rope	St
Short-circuit current	≤ 25 kA
Test current	25 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	7.9 kA
Rope cross-section	95 mm²
Cable diameter	17 mm
Dimensions of lug	80 x 30 mm
Borehole cable lug	17 mm
Length	500 mm
DB drawing No.	4 Ebs 15.03.25 - 4
PU	1 pc(s)

Steel cable earthing connector D BEB 26

The earthing connectors are designed for earthing, current return circuits and equipotential bonding in railway line applications. The halogen-free (sheathed) version D BEB 26 – for external connection of earthing points or other parts to be earthed – consists of a steel cable as an earthing conductor and is thus a preventive anti-theft measure. This earthing connector also has technical approval from DB Netz AG and can be reliably used in planning.

Type D ...	BEB 26 / EBS 15-03-17
Part No.	**419 260** NEW
Material of cable lug	Cu/gal Sn
Material of rope	St
Short-circuit current	≤ 25 kA
Test current	25 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	7.9 kA
Rope	1-12-12 B 350 sZ PE
Rope cross-section	≥ 95 mm²
Design	halogen-free
Cable diameter	17 mm
Borehole cable lug	17 mm
Length	500 mm
DB drawing No.	3 Ebs 15.03.17 - 11
PU	1 pc(s)

CuStAl cable earthing connection D BEB 29

The earthing connectors are designed for earthing, current return circuits and equipotential bonding in railway line applications. The halogen-free version D BEB 29 / the halogen-free and flame-retardant version D BEB 29-NF – for external connection of earthing points and other connection elements – is a cable lug version for M16 connections. This earthing connector consists of a copper, steel and aluminium cable and is thus a preventive anti-theft measure. The earthing connectors also have technical approval from DB Netz AG and can be reliably used in planning. The halogen-free and flame-retardant version can even be used in tunnels according to EU regulations.

General technical data:	
Material of cable lug	Cu/gal Sn
Material of cable	CuStAl
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300°C)	12.6 kA
Cable diameter	17 mm
DB drawing No.	4 Ebs 15.03.17 - 6 (Bayka)

Type D ...	BEB 29 / EBS 15-03-17	BEB 29-NF / EBS 15-03-17
Part No.	419 290 NEW	419 291 NEW
Cable	(N)2X RF CuStAl	B2ca RF CuStAl
Cable cross-section	≥ 70 mm²	–
Rope cross-section	–	≥ 70 mm²
Design	halogen-free	halogen-free and flame-retardant
Borehole cable lug	17 mm	17 mm
Design cable lug	–	–
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Type D ...	BEB 29 - L350 / EBS 15-03-17	BEB 29 - L800 / EBS 15-03-17
Part No.	419 507 NEW	419 508 NEW
Cable	(N)2X RF CuStAl	(N)2X RF CuStAl
Cable cross-section	≥ 70 mm²	≥ 70 mm²
Rope cross-section	–	–
Design	halogen-free	halogen-free
Borehole cable lug	17 mm	17 mm
Design cable lug	–	–
Length	350 mm	800 mm
PU	1 pc(s)	1 pc(s)

Type D ...	BEB 29 M12 M16 / EBS 15-03-17	BEB 29-NF M12 M16 / EBS 15-03-17
Part No.	419 511 NEW	419 512 NEW
Cable	(N)2X RF CuStAl	B2ca RF CuStAl
Cable cross-section	≥ 70 mm²	–
Rope cross-section	–	≥ 70 mm²
Design	halogen-free	halogen-free and flame-retardant
Borehole cable lug	13 mm for M12 and 17 mm for M16	13 mm for M12 and 17 mm for M16
Design cable lug	–	–
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Type D ...	BEB 29 R / EBS 15-03-17	BEB 29 L / EBS 15-03-17
Part No.	419 513 NEW	419 514 NEW
Cable	(N)2X RF CuStAl	(N)2X RF CuStAl
Cable cross-section	≥ 70 mm²	≥ 70 mm²
Rope cross-section	–	–
Design	halogen-free	halogen-free
Borehole cable lug	17 mm	17 mm
Design cable lug	rotated 90° right	rotated 90° left
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Adhesive pad

The adhesive pad is used to fix railway earthing products to the formwork by means of an adhesive connection. The adhesive pad can be stuck to the StSt connection plate of D BEB 0 and is then connected to the formwork itself.

Type D ...	KLP D50 BEB
Part No.	419 900 NEW
Diameter	50 mm
PU	1 pc(s)

Earthing sticker

The earthing sticker is a spare part for marking installed railway earthing products. It is simply stuck to the StSt connection plate. This kind of marking can be used for earthing bridges D BEB 1 to 8 as well as for the D BEB 11 version for earthing large pipes if the sticker applied in the factory has fallen off or is damaged.

Type D ...	EAK D50 BEB
Part No.	419 901 NEW
Diameter	50 mm
PU	1 pc(s)

Hexagon screw

Type D ...	SKS M16X30 V4A
Part No.	419 902 NEW
Material	StSt A4-70
Thread	M16 x 30 mm
PU	1 pc(s)

Hexagon nut

Type D ...	SKM M16 V4A
Part No.	419 903 NEW
Material	StSt A4-70
Thread	M16
PU	1 pc(s)

Washer

Type D ...	SCH A17 V4A
Part No.	419 904 NEW
Material	StSt A4-70
Outer diameter	30 mm
Inner diameter	17 mm
PU	1 pc(s)

Equipotential Bonding Busbars K12 with Snap-on Terminals

Equipotential bonding busbars for protective and functional equipotential bonding according to IEC 60364-4-41/60364-5-54 and lightning equipotential bonding according to IEC/EN 62305-3.

- Tested according to DIN VDE 0618-1
- VDE sign
- CE sign
- Fixing frames and plastic cover, grey or black (halogen-free)
- Sealable / labelable cover
- Snap-on terminals, St/gal Zn
- With 12 contact studs

Assignment:
For Rd one contact stud each
For Fl two contact studs each

Standard design

Terminals for:
10 conductors 2.5-95 mm² (solid / stranded) **or** Rd Ø10 mm
1 conductor Fl up to 30 x 4 mm.

Type PAS ...	11AK
Part No.	**563 200**
Material of contact rail	Cu/gal Sn
Cross section	30 mm²
Fixing	[2x] 6 x 8 mm
Standard	EN 62561-1
PU	1 pc(s)

UV-stabilised design

Terminals for:
10 conductors 2.5-95 mm²
(solid / stranded) **or** Rd Ø10 mm.
1 conductor Fl up to 30 x 4 mm.

Type PAS ...	11AK UV
Part No.	**563 201**
Material of contact rail	Cu/gal Sn
Cross section	30 mm²
Fixing	[2x] 6 x 8 mm
Standard	EN 62561-1
PU	1 pc(s)

Equipotential Bonding Busbar MS

For equipotential bonding.
Terminals for:
7 conductors 2.5-25 mm²
(solid / stranded).
1 conductor Rd Ø7-10 mm.
1 conductor Fl up to 30 x 3.5 mm
or Rd Ø8-10 mm.

Type	PAS 9AK
Part No.	**563 050**
Contact rail	brass
Cross section	35 mm²
Fixing	[4x] 6 x 9 mm
PU	1 pc(s)

Equipotential Bonding Busbars R15 with Terminal Block System / Kit

Equipotential bonding busbars for protective and functional equipotential bonding according to IEC 60364-4-41/60364-5-54 and lightning equipotential bonding according to IEC/EN 62305-3

- Tested according to DIN VDE 0609
- 15 modules
- Grey plastic bar frames and cover (halogen-free)
- Sealable / labelable cover
- Terminal block, St/gal Zn

Type A

Terminals for:
7 conductors 2.5-25 mm²
(solid / stranded).
2 conductors 16-95 mm² (solid / stranded)
or Rd Ø8-10 mm.
1 conductor Fl up to 30 x 4 mm.

Type PAS AH RK ...	7X25 2X8.10 1XFL30
Part No.	**563 010**
Clamping bar	brass/gal Sn
Cross section	100 mm²
Fixing	[4x] 6 x 12 mm
Standard	EN 62561-1
PU	1 pc(s)

Type B

Terminals for:
5 conductors 2.5-25 mm²
(solid / stranded).
3 conductors 16-95 mm² (solid / stranded)
or Rd Ø8-10 mm.
1 conductor Fl up to 30 x 4 mm.

Type PAS AH RK ...	5X25 3X8.10 1XFL30
Part No.	**563 020**
Clamping bar	brass/gal Sn
Cross section	100 mm²
Fixing	[4x] 6 x 12 mm
Standard	EN 62561-1
PU	1 pc(s)

Type C

Terminals for:
13 conductors 2.5-25 mm² (solid / stranded).
1 conductor 16-95 mm² (solid / stranded)
or Rd Ø8-10 mm.

Type PAS AH RK ...	13X25 1X8.10
Part No.	**563 030**
Clamping bar	brass/gal Sn
Cross section	100 mm²
Fixing	[4x] 6 x 12 mm
Standard	EN 62561-1
PU	1 pc(s)

Type D

Terminals for:
7 conductors 2.5-25 mm² (solid / stranded).
2 conductors 16-95 mm² (solid / stranded) **or** Rd Ø8-10 mm.
1 conductor Fl up to 40 x 5 mm.

Type PAS AH RK ...	7X25 2X8.10 1XFL40
Part No.	**563 040**
Clamping bar	brass/gal Sn
Cross section	100 mm²
Fixing	[4x] 6 x 12 mm
Standard	EN 62561-1
PU	1 pc(s)

Accessories for Equipotential Bonding Busbars R15 with Terminal Block System / Kit

Terminal block

Connection of:
1 conductor 2.5-25 mm² (solid / stranded).

Type	RK 16 PAS
Part No.	**563 011**
Material	St/gal Zn
Modules	1
Standard	EN 62561-1
PU	200 pc(s)

Terminal block

Connection of:
1 conductor 16-95 mm² (solid / stranded) **or** Rd Ø8-10 mm.

Type	RK 95 PAS
Part No.	**563 013**
Material	St/gal Zn
Modules	2
Standard	EN 62561-1
PU	100 pc(s)

Terminal block

Connection of:
1 conductor Fl up to 30 x 4 mm.

Type	RK FL30 PAS
Part No.	**563 012**
Material	St/gal Zn
Modules	4
Standard	EN 62561-1
PU	1 pc(s)

Terminal block

Connection of:
1 conductor Fl up to 40 x 5 mm.

Type	RK FL40 PAS
Part No.	**563 019**
Material	St/gal Zn
Modules	5
Standard	EN 62561-1
PU	1 pc(s)

Clamping bar

General technical data:		
Material		brass/gal Sn
Cross section		100 mm²

Type	KS 198 PAS	KS 398 PAS
Part No.	**563 016**	**563 017**
Length (l1)	198 mm	398 mm
Modules	15	30
Number of bar frames	2	4
Number of covers	1	2
PU	10 pc(s)	10 pc(s)

Type	KS 798 PAS
Part No.	**563 018**
Length (l1)	798 mm
Modules	60
Number of bar frames	8
Number of covers	4
PU	1 pc(s)

Bar frame

Type	SB PAS RK
Part No.	**563 014**
Material	plastic
Colour	grey
Fixing	[2x] 6 x 12 mm
Modules	2
PU	50 pc(s)

Cover

Snap-on / can be labelled

Type	AH PAS RK
Part No.	**563 015**
Material	plastic
Colour	grey
Modules	15
PU	10 pc(s)

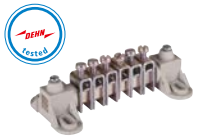
Equipotential Bonding Busbar with Miniature Terminal Block System

Equipotential bonding busbars for protective and functional equipotential bonding according to IEC 60364-4-41/60364-5-54 in small installations.

- Tested according to DIN EN 60999-2
- Terminal block, St/gal Zn

Without cover.

Terminals for:
6 conductors 2.5-25 mm²
(solid / stranded).



Type	PAS 6RK OH
Part No.	**563 105**
Clamping bar	brass/gal Sn
Cross section	100 mm²
Bar frames	plastic
Fixing	[4x] 6 x 12 mm
Standard	EN 62561-1
PU	10 pc(s)

Equipotential Bonding Busbars Industry

Equipotential bonding busbars for the protective and functional equipotential bonding according to IEC 60364-4-41/60364-5-54 (DIN VDE 0100-410/540) and lightning equipotential bonding according to IEC/EN 62305-3.
Also for use in potentially explosive atmospheres (secured against self-loosening of screws).

- With spring washer
- Insulator UP (duroplastic, red) with M10 thread
- UV-stabilised and halogen-free

6 terminals

Type PAS I ...	6AP M10 CU	6AP M10 V2A
Part No.	**472 207**	**472 209**
Material	Cu	StSt
Dimensions (l x w x d1)	295 x 40 x 5 mm	295 x 40 x 6 mm
Cross-section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

8 terminals

Type PAS I ...	8AP M10 CU	8AP M10 V2A
Part No.	**472 227**	**472 229**
Material	Cu	StSt
Dimensions (l x w x d1)	365 x 40 x 5 mm	365 x 40 x 6 mm
Cross-section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

10 terminals

Type PAS I ...	10AP M10 CU	10AP M10 V2A
Part No.	**472 217**	**472 219**
Material	Cu	StSt
Dimensions (l x w x d1)	435 x 40 x 5 mm	435 x 40 x 6 mm
Cross-section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

12 terminals

Type PAS I ...	12AP M10 CU	12AP M10 V2A
Part No.	**472 237**	**472 239**
Material	Cu	StSt
Dimensions (l x w x d1)	505 x 40 x 5 mm	505 x 40 x 6 mm
Cross-section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

Special designs available on request.

Accessories for Equipotential Bonding Busbars Industry

Cover for EBB industry

Covers for EBB with insulators.

General technical data:	
Material	StSt

Type	AD PAS 6AP V2A	AD PAS 8AP V2A
Part No.	**472 279**	**472 269**
Type of EBB	6 terminals	8 terminals
Dimensions (l x w x d)	301 x 60 x 0.8 mm	371 x 60 x 0.8 mm
PU	1 pc(s)	1 pc(s)

Type	AD PAS 10AP V2A	AD PAS 12AP V2A
Part No.	**472 289**	**472 299**
Type of EBB	10 terminals	12 terminals
Dimensions (l x w x d)	441 x 60 x 0.8 mm	511 x 60 x 0.8 mm
PU	1 pc(s)	1 pc(s)

Insulator for EBB industry

Type	IS PAS M10
Part No.	**472 210**
Material	UP (thermoset)
Connection thread	M10 (length 12 mm)
Colour	rot ●
Dimensions (d x h)	32 x 40 mm
PU	1 pc(s)

Fixing kit for EBB industry

For mounting the insulators, e.g. on walls.

Type	BFS M10X20 PAS STTZN	BFS M10X20 PAS V2A
Part No.	**472 201**	**472 202**
Material of screw	St/tZn	StSt
Screw	45 mm ⚲ M10 x 20 mm	45 mm ⚲ M10 x 20 mm
Plastic dowel	Ø12 x 60 mm	Ø12 x 60 mm
Total length	80 mm	80 mm
PU	1 pc(s)	1 pc(s)

Single-Row Earthing Busbars

Earthing busbars for screwing on steel contructions, hole spacing 35 mm.

Connection possibilities:

- Flat strip with hole: with M10 flat head screws (with anti-rotation protection), nuts and spring washer
- Round conductor: with KS connector, e.g. Part No. 301 000 / 301 019 or with clamping frame, e.g. Part No. 390 150

1x 4 terminals

Type ES ...	4AP 11X11 V2A
Part No.	**472 309**
Material	StSt
Cross-section	105 mm²
Connection holes	11 x 11 mm
Dimensions (l x w x d1)	232 x 30 x 3.5 mm
Fixing	[2x] 12 x 15 mm
Standard	EN 62561-1
PU	1 pc(s)

1x 6 terminals

Type ES ...	6AP 11X11 V2A
Part No.	**472 319**
Material	StSt
Cross-section	105 mm²
Connection holes	11 x 11 mm
Dimensions (l x w x d1)	292 x 30 x 3.5 mm
Fixing	[2x] 12 x 15 mm
Standard	EN 62561-1
PU	1 pc(s)

1x 8 terminals

Type ES ...	8AP 11X11 V2A
Part No.	**472 329**
Material	StSt
Cross-section	105 mm²
Connection holes	11 x 11 mm
Dimensions (l x w x d1)	352 x 30 x 3.5 mm
Fixing	[2x] 12 x 15 mm
Standard	EN 62561-1
PU	1 pc(s)

1x 10 terminals

Type ES ...	10AP 11X11 V2A
Part No.	**472 339**
Material	StSt
Cross-section	105 mm²
Connection holes	11 x 11 mm
Dimensions (l x w x d1)	412 x 30 x 3.5 mm
Fixing	[2x] 12 x 15 mm
Standard	EN 62561-1
PU	1 pc(s)

1x 12 terminals

Type ES ...	12AP 11X11 V2A
Part No.	**472 349**
Material	StSt
Cross-section	105 mm²
Connection holes	11 x 11 mm
Dimensions (l x w x d1)	472 x 30 x 3.5 mm
Fixing	[2x] 12 x 15 mm
Standard	EN 62561-1
PU	1 pc(s)

Special designs are available on request.

Two-Row Earthing Busbars

Earthing busbars for screwing on steel constructions, hole spacing 50 mm.

Connection possibilities:

- Flat strip with hole: with hexagon screws M10, nuts and spring washer
- Flat strip (-40 mm) without hole: with clamping plate of disconnecting clamps, e.g. Part No. 454 100
- Round conductor: with KS connector, e.g. Part No. 301 000 / 301 019 or with clamping piece, e.g. Part No. 390 150

2x 2 terminals

Type ES ...	2X2 ASB11 STTZN	2X2 ASB11 V2A
Part No.	**472 023**	**472 109**
Material	St/tZn	StSt
Cross-section	240 mm²	300 mm²
Connection bores Ø	11 mm	11 mm
Dimension s (l x w x d1)	196 x 60 x 4 mm	196 x 60 x 5 mm
Fixing	[2x] 12 x 15 mm	[2x] 12 x 15 mm
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

2x 3 terminals

Type ES ...	2X3 ASB11 STTZN	2X3 ASB11 V2A
Part No.	**472 022**	**472 119**
Material	St/tZn	StSt
Cross-section	240 mm²	300 mm²
Connection bores Ø	11 mm	11 mm
Dimension s (l x w x d1)	242 x 60 x 4 mm	242 x 60 x 5 mm
Fixing	[2x] 12 x 15 mm	[2x] 12 x 15 mm
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

2x 4 terminals

Type ES ...	2X4 ASB11 STTZN	2X4 ASB11 V2A
Part No.	**472 024**	**472 129**
Material	St/tZn	StSt
Cross-section	240 mm²	300 mm²
Connection bores Ø	11 mm	11 mm
Dimension s (l x w x d1)	293 x 60 x 4 mm	293 x 60 x 5 mm
Fixing	[2x] 12 x 15 mm	[2x] 12 x 15 mm
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

2x 6 terminals

Type ES ...	2X6 ASB11 STTZN	2X6 ASB11 V2A
Part No.	**472 021**	**472 139**
Material	St/tZn	StSt
Cross-section	240 mm²	300 mm²
Connection bores Ø	11 mm	11 mm
Dimension s (l x w x d1)	393 x 60 x 4 mm	393 x 60 x 5 mm
Fixing	[2x] 12 x 15 mm	[2x] 12 x 15 mm
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

Special designs available on request.

Earthing Pipe Clamps

Earthing pipe clamps for integrating pipes into the protective and functional equipotential bonding according to IEC 60364-4-41/5-54, with continuously adjustable tensioning strap.

Type standard

For connecting 1 or 2 conductors or through-wiring, connection cross-section 4-25 mm² (solid / stranded).

General technical data:	
Material	StSt
Connection (solid / stranded)	4-25 mm²
Standard	EN 62561-1

Type	BRS 27.60 AQ4 25 V2A	BRS 27.114 AQ4 25 V2A
Part No.	**540 910**	**540 911**
Clamping range pipe Ø	27-60 mm (3/4-2'')	27-114 mm (3/4-4'')
Dimensions of strap (l1 x w x d)	240 x 25 x 0.3 mm	410 x 25 x 0.3 mm
PU	10 pc(s)	10 pc(s)

Type	BRS 27.168 AQ4 25 V2A
Part No.	**540 912**
Clamping range pipe Ø	27-168 mm (3/4-6'')
Dimensions of strap (l1 x w x d)	570 x 25 x 0.3 mm
PU	10 pc(s)

Type BRS17

For connecting 1 or 2 conductors or through-wiring, connection cross-section 2.5-10 mm² (solid).

Type	BRS 10.27 AQ2.5 10 V2A
Part No.	**540 920**
Material	StSt
Clamping range pipe Ø	10-27 mm (1/8-3/4")
Dimensions of strap (l1 x w x d)	135 x 14 x 0.3 mm
Connection (solid)	2.5-10 mm²
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901), connection cross-section 4-25 mm² (solid / stranded).

Type	SPK 25 BRS AQ4 25 V2A
Part No.	**540 900**
Material	StSt
Connection	4-25 mm²
Standard	EN 62561-1
PU	50 pc(s)

Endless tensioning strap

For cutting to length, e.g with snips.

Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Antenna Earthing

Pipe clamp for lightning equipotential bonding of pipes (e.g. antenna poles) according to IEC/EN 62305-3.

With gradually adjustable tensioning strap, for connecting one or two conductors and suitable for through-wiring.

Pipe clamps for antennas - complete

Connection for:
1 conductor Rd Ø10 mm or 1-2 conductors Rd Ø6-8 mm **or** 4-50 mm² (solid / stranded).

Type	BRS 16.89 AK1X10 2X6.8 V2A	BRS 16.168 AK1X10 2X6.8 V2A
Part No.	**540 103**	**540 100**
Material	StSt	StSt
Clamping range pipe Ø	16-89 mm (3/8-3")	16-168 mm (3/8-6")
Dimensions of strap (l1 x w x d)	330 x 25 x 0.3 mm	570 x 25 x 0.3 mm
Connection (solid / stranded)	4-50 mm²	4-50 mm²
Screw	M8 x 20 mm	M8 x 20 mm
Material of screw	StSt	StSt
Standard	EN 62561-1	EN 62561-1
Stock No.	–	5975-12-120-7744
PU	10 pc(s)	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901).
Connection for:
1 conductor Rd Ø10 mm or 1-2 conductors Rd Ø6-8 mm **or** 4-50 mm² (solid / stranded).

Type	SPK 25 BRS AK1X10 2X6.8 V2A
Part No.	**540 110**
Material	StSt
Connection (solid / stranded)	4-50 mm²
Screw	M8 x 20 mm
Material of screw	StSt
Standard	EN 62561-1
PU	50 pc(s)

Endless tensioning strap

For cutting to length, e.g. with snips.

Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Connection clamp for earth rods

Connection clamp for lightning equipotential bonding connection of pipes (e.g. antenna poles) to the earth rod via a solid /stranded conductor.

Type	AK 8.10 AQ4 50 TE20 25 V4A
Part No.	**540 121**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
For earth rods Ø	20-25 mm
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
Screw	M8 x 20 / 25 mm
Standard	EN 62561-1
PU	25 pc(s)

UNI KS connector

Universal clamping screw connector for the lightning-current-carrying connection of round conductors and also of solid / stranded conductors, e.g. to flat profiles, downpipe clamps as well as equipotential bonding bars.

Type	UKSV 6.10 AQ16 50 V4A
Part No.	**540 122**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd	6-10 mm
Connection (solid / stranded)	16-50 mm²
Screw	M10 mm
Standard	EN 62561-1
PU	25 pc(s)

Gutter clamp

Gutter clamp for the lightning-current-carrying connection of the antenna earthing (e.g. 16 mm²) at the cross point with the gutter.

Type	DRK 8.10 AQ4 50 W16.22 V2A
Part No.	**540 120**
Material	StSt
Clamping range bead	16-22 mm
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
Screw	M8 x 20 / 25 mm
Material of screw	StSt
Standard	EN 62561-1
PU	25 pc(s)

Lightning Protection Pipe Clamp with Tines

Pipe clamp for the integration of pipes with surface protection into the lightning equipotential bonding according to IEC/EN 62305-3. For use on surfaces (e.g. varnished or powder-coated) with a coating thickness up to 0.2 mm.
The special tines penetrate the surface protection and provide the necessary contact so that it is not necessary to remove the surface protection.

Lightning protection pipe clamp with tines, complete

Connection for: 1 conductor Rd Ø10 mm or 1-2 conductors Rd Ø6-8 mm **or** 4-50 mm² (solid / stranded).

Type	BRS 27.168 Z AK1X10 2X6.8 V2A
Part No.	**540 200**
Material	StSt
Clamping range pipe Ø	27-168 mm (3/4-6")
Dimensions of strap (l1 x w x d)	570 x 25 x 0.3 mm
Standard	EN 62561-1
PU	10 pc(s)

Grip head, separate

For combination with endless tensioning strap (Part No. 540 901).
Connection for: 1 conductor Rd Ø10 mm or 1-2 conductors Rd Ø6-8 mm **or** 4-50 mm² (solid / stranded).

Type	SPK Z 25 BRS AK1X10 2X6.8 V2A
Part No.	**540 210**
Material	StSt
Standard	EN 62561-1
PU	50 pc(s)

Lightning Protection Earthing Pipe Clamps

Earthing pipe clamps for integrating pipes into the protective and functional equipotential bonding according to IEC 60364-4-41/ 60364-5-54 and lightning equipotential bonding according to IEC/ EN 62305-3. The clamping range (specified in mm and inch) refers to the outer diameter according to DIN EN ISO 228-1 of the pipes.

With M10 screws

Connection for Rd 4-10 mm or conductor cross-section max. 70 mm².

General technical data:		
Material		MCI / St/tZn
Standard		EN 62561-1

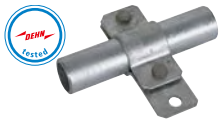
Type ERS ...	21 AS4.10 TG STTZN	27 AS4.10 TG STTZN
Part No.	407 012	407 034
Clamping range pipe Ø	21 mm	27 mm
Dimensions (l1 x r1)	80 x 11 mm	83 x 14 mm
PU	10 pc(s)	10 pc(s)

Type ERS ...	34 AS4.10 TG STTZN	42 AS4.10 TG STTZN
Part No.	407 100	407 114
Clamping range pipe Ø	34 mm	42 mm
Dimensions (l1 x r1)	85 x 17.5 mm	100 x 24.5 mm
PU	10 pc(s)	10 pc(s)

Type ERS ...	48 AS4.10 TG STTZN	60 AS4.10 TG STTZN
Part No.	407 112	407 200
Clamping range pipe Ø	48 mm	60 mm
Dimensions (l1 x r1)	95 x 22 mm	113 x 30.5 mm
PU	10 pc(s)	1 pc(s)

Type St/tZn with M8 screws

St/tZn, material thickness 3 mm. Connection for Fl with M10 screws and nuts, for Rd 7-10 mm, e.g. KS connector (Part No. 301 000) or clamping piece (Part No. 390 150).



General technical data:		
Material		St/tZn
Standard		EN 62561-1

Type ERS ...	17 AB11 STTZN	21 AB11 STTZN
Part No.	410 038	410 012
Clamping range pipe Ø	17 mm	21 mm
Dimensions (l1 x r1)	110 x 8.5 mm	115 x 10.5 mm
PU	25 pc(s)	25 pc(s)

Type ERS ...	27 AB11 STTZN	34 AB11 STTZN
Part No.	410 034	410 100
Clamping range pipe Ø	27 mm	34 mm
Dimensions (l1 x r1)	115 x 13.5 mm	124 x 17 mm
PU	25 pc(s)	25 pc(s)

Type ERS ...	42 AB11 STTZN	48 AB11 STTZN
Part No.	410 114	410 112
Clamping range pipe Ø	42 mm	48 mm
Dimensions (l1 x r1)	132.5 x 21 mm	140.5 x 24 mm
PU	25 pc(s)	25 pc(s)

Type ERS ...	55 AB11 STTZN	60 AB11 STTZN
Part No.	410 134	410 200
Clamping range pipe Ø	55 mm	60 mm
Dimensions (l1 x r1)	145 x 27.5 mm	151 x 30 mm
PU	1 pc(s)	25 pc(s)

Type ERS ...	76 AB11 STTZN	89 AB11 STTZN
Part No.	410 212	410 300
Clamping range pipe Ø	76 mm	89 mm
Dimensions (l1 x r1)	169 x 38 mm	182.5 x 44.5 mm
PU	1 pc(s)	1 pc(s)

Type StSt with M8 screws

StSt, material thickness 2.5 mm. Connection for Fl with M10 screws and nuts, for Rd 7-10 mm, e.g. KS connector (Part No. 301 000) or clamping piece (Part No. 390 150).

General technical data:		
Material		StSt
Standard		EN 62561-1

Type ERS ...	17 AB11 V2A	21 AB11 V2A
Part No.	410 309	410 319
Clamping range pipe Ø	17 mm	21 mm
Dimensions (l1 x r1)	110.5 x 8.5 mm	114.5 x 10.5 mm
PU	1 pc(s)	25 pc(s)

Type ERS ...	27 AB11 V2A	34 AB11 V2A
Part No.	410 329	410 339
Clamping range pipe Ø	27 mm	34 mm
Dimensions (l1 x r1)	115.5 x 13.5 mm	124 x 17 mm
PU	25 pc(s)	25 pc(s)

Type ERS ...	42 AB11 V2A	48 AB11 V2A
Part No.	410 349	410 359
Clamping range pipe Ø	42 mm	48 mm
Dimensions (l1 x r1)	132.5 x 21 mm	140.5 x 24 mm
PU	1 pc(s)	1 pc(s)

Type ERS ...	55 AB11 V2A	60 AB11 V2A
Part No.	410 369	410 379
Clamping range pipe Ø	55 mm	60 mm
Dimensions (l1 x r1)	145 x 27.5 mm	151 x 30 mm
PU	25 pc(s)	1 pc(s)

Type ERS ...	76 AB11 V2A	89 AB11 V2A
Part No.	410 389	410 399
Clamping range pipe Ø	76 mm	89 mm
Dimensions (l1 x r1)	169 x 38 mm	182.5 x 44.5 mm
PU	1 pc(s)	1 pc(s)

UNI Saddle Clamp

For integrating mounting systems, e.g. of PV installations, in the functional equipotential bonding / functional earthing (black conductor possible) and lightning equipotential bonding.
The StSt contact plate (intermediate element) allows different conductor materials (Cu, Al, St/tZn and StSt) to be connected to the normal mounting systems, e.g. to aluminium, without the risk of contact corrosion.

With M8 screw and self-locking nut

Type	UNI FK 8.10 KBF0.7 8 AL V2A
Part No.	365 250
Clamping range of saddle	0.7-8 mm
Material of clamping bracket	Al
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
Material of double clamp	StSt
Standard	EN 62561-1
PU	50 pc(s)

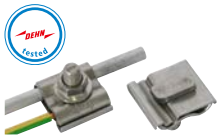
UNI Earthing Clamps

For integrating the mounting systems, e.g. of PV installations in the functional equipotential bonding / functional earthing (black conductor possible) and lightning equipotential bonding.
The StSt contact plate (intermediate element) allows different conductor materials (Cu, Al, St/tZn and StSt) to be connected to the usual mounting systems, e.g. to aluminium, without the risk of contact corrosion.

With M8 hammer-head bolt and self-locking nut

Type	UEK 8.10 AQ4 50 HKSM8 V2A
Part No.	**540 250**
Material of clamp	StSt
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
Screw	hammer-head bolt M8 x 30 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	50 pc(s)

With M10 hammer-head bolt and self-locking nut



Type	UEK 8.10 AQ4 50 HKSM10 V2A	UEK 8.10 AQ4 50 HKSBM10 V2A
Part No.	**540 260**	**540 262**
Material of clamp	StSt	StSt
Clamping range Rd	8-10 mm	8-10 mm
Connection (solid / stranded)	4-50 mm²	4-50 mm²
Screw	Hammer-head bolt (23 x 11 mm), M10 x 30 mm	Hammer-head bolt (31 x 13 mm), M10 x 30 mm
Material of screw / nut	StSt	StSt
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With M10 truss head screw and self-locking nut with serrated bearing

Type	KP AQ4 50 DUL 8.10 VKL11 FRSM10 V2A
Part No.	**540 263**
Material of clamp	StSt
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
Screw	M10 x 35 mm
Material of screw / nut	StSt
PU	10 pc(s)

Contact plate and double clamp (separate) with square hole for M8 screw

Type	KP AQ4 50 DUL 8.10 VKL9 V2A
Part No.	**540 251**
Material of clamp	StSt
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
PU	100 pc(s)

Contact plate and double clamp (separate) with square hole for M10 screw

Type	KP AQ4 50 DUL 8.10 VKL11 V2A
Part No.	**540 261**
Material of clamp	StSt
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
PU	100 pc(s)

Protective Spark Gap

Protective spark gap in closed design with plastic sheath for indirect connection of an overhead line roof pole to the external lightning protection system.

DSFS

Plastic-insulated protective spark gap for indirect connection of an overhead line roof pole to the external lightning protection system.

Type	DSFS
Part No.	**920 000**
100% lightning impulse sparkover voltage (1.2/50 µs) (U_{rimp})	~ 25 kV
Nominal discharge current (8/20 µs) (I_n)	25 kA
Power frequency sparkover voltage (50 Hz) (U_{aw})	~ 10 kV

Isolating Spark Gaps

For lightning equipotential bonding according to IEC 62305 as well as for use in IT installations according to IEC 60364-5-54.

TFS / KFSU

Isolating spark gaps with plastic sheath and two stainless steel connections (Rd 10 mm).

Type	TFS	KFSU
Part No.	**923 023**	**923 021**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA	–
Class (lightning current carrying capability)	H	–
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 4 kV	≤ 4 kV
Degree of protection protection	IP 65	IP 65

Pipe Clamps for Service Entry Masts

For connecting spark gaps with service entry masts

Type ERS ...	76 AB11 STTZN	89 AB11 STTZN
Part No.	**410 212**	**410 300**
Clamping range Ø pipe	76 mm (2 1/2")	89 mm (3")
Material	St/tZn	St/tZn
Hole Ø	11 mm	11 mm
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

Conductor Holders for Service Entry Masts

For fixing round conductors to service entry masts, insulated with clamp bush.

Type LH KD 8.10 ...	D76 STTZN	D89 STTZN
Part No.	**425 076**	**425 089**
Clamping range Ø pipe	76 mm	89 mm
Material	St/tZn	St/tZn
Conductor support Rd	8-10 mm	8-10 mm
Conductor routing	fixed	fixed
PU	50 pc(s)	1 pc(s)

Downpipe Clamps

Pipe clamps for connecting downpipes to the lightning equipotential bonding according to IEC/EN 62305-3.
Connection possibilities for Rd, e.g. with KS connector (Part No. 301 000) or with clamping piece (Part No. 390 150) (depending on material).

For fixed pipe diameters

General technical data:		
Hole Ø		11 mm
Standard		EN 62561-1

Type	RRS 100 B11 STTZN	RRS 120 B11 STTZN
Part No.	**420 100**	**420 120**
Material	St/tZn	St/tZn
Clamping range pipe Ø (d1)	100 mm	120 mm
PU	50 pc(s)	1 pc(s)

Type	RRS 100 B11 CU	RRS 120 B11 CU
Part No.	**420 107**	**420 127**
Material	Cu	Cu
Clamping range pipe Ø (d1)	100 mm	120 mm
PU	1 pc(s)	1 pc(s)

Type RV, adjustable

With additional anti-rotation protection of the fixing screw and markings, predetermined bending points as well as pre-punched cutting aids.

General technical data:		
Hole Ø		10.5 mm
Standard		EN 62561-1

Type	RRS V 60.100 B10.5 STTZN	RRS V 60.100 B10.5 AL
Part No.	**423 010**	**423 011**
Material	St/tZn	Al
Clamping range pipe Ø (d1)	60-100 mm	60-100 mm
Length (l1)	337 mm	337 mm
PU	50 pc(s)	50 pc(s)

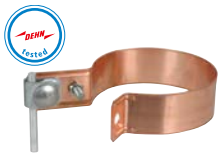
Type	RRS V 60.100 B10.5 CU	RRS V 60.100 B10.5 V2A
Part No.	**423 017**	**423 019**
Material	Cu	StSt
Clamping range pipe Ø (d1)	60-100 mm	60-100 mm
Length (l1)	337 mm	337 mm
PU	1 pc(s)	50 pc(s)

Type	RRS V 60.150 B10.5 STTZN	RRS V 60.150 B10.5 AL
Part No.	**423 020**	**423 021**
Material	St/tZn	Al
Clamping range pipe Ø (d1)	60-150 mm	60-150 mm
Length (l1)	494 mm	494 mm
PU	50 pc(s)	50 pc(s)

Type	RRS V 60.150 B10.5 CU	RRS V 60.150 B10.5 V2A
Part No.	**423 027**	**423 029**
Material	Cu	StSt
Clamping range pipe Ø (d1)	60-150 mm	60-150 mm
Length (l1)	494 mm	494 mm
PU	50 pc(s)	50 pc(s)

Bimetallic Type

For connecting St conductors with Cu downpipes, with St/tZn clamping piece and intermediate plate (Cupal).



Type	ZMRRS 100 KB 6.10 CU STTZN
Part No.	**420 207**
Material	Cu / St/tZn
Clamping range pipe Ø (d1)	100 mm
Clamping range Rd	6-10 mm
Standard	EN 62561-1
PU	1 pc(s)

Earthing Tongs

- For connection to tank vehicles, aircraft, etc.
- For discharging static charge
- For use in hazardous areas

Small design

Brass jaw with steel tips (Material No. 1.4104) and copper contact clip.
Connection: Flat head screw with slot or with enclosed crimped cable lug 25 mm² – M6 (Cu/gal Sn).
Part No. 546 002 may also be combined with earthing conductor. See Safety Equipment catalogue Part No. 758 216.

Type EZ ...	16 FL13 ASM6 STGALZN	16 FL13 ASM6 V2A
Part No.	**546 025**	**546 002**
Material of tongs	St/gal Zn	StSt
Clamping range Rd / Fl	up to Ø16 / up to 13 mm	up to Ø16 / up to 13 mm
Length	140 mm	140 mm
Connection screw	M6 x 12 mm	M6 x 16 mm
PU	1 pc(s)	1 pc(s)

Large design

Brass jaw without steel tips and copper contact clip.
Connection: Threaded bolt with nut.

Type EZ ...	55 FL45 ASM10 STGALZN	55 FL45 ASM10 V2A
Part No.	**546 000**	**546 001**
Material of tongs	St/gal Zn	StSt
Clamping range Rd / Fl	up to Ø55 / up to 45 mm	up to Ø55 / up to 45 mm
Length	205 mm	205 mm
Connection nut	M10	M10
PU	1 pc(s)	1 pc(s)

Conductor Holder

Conductor holder for installing round and flat conductors for equipotential bonding,e.g. in transformer stations, processor rooms. Insulated conductor holder.

Type	LH 6.13 FL30 B10 K GR
Part No.	**277 130**
Conductor support Rd / Fl	6-13 / 30 x 4 mm
Fixing	Ø10 and 6 x 19 mm
Material	plastic
Colour	grey
PU	50 pc(s)

Connection Clamp

For universal connection to the ring equipotential bonding for St/tZn, copper or stainless steel (StSt).

Type	AK RPA V2A
Part No.	**563 169**
Conductor support Rd / Fl	Ø8-10 / 30 x 3 up to 11 mm
Material	StSt
Material (cage clamp)	St/galZn
Terminal cross section	2.5-95 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	5.5 kA
Standard	EN 62561-1
PU	50 pc(s)

Flat Strip / Round Conductor Holders with Thrust Piece

For wall mounting.
Thrust piece with M8 screw for installing flat strips up to 11 mm and round conductors 6-10 mm.

Distance from wall 11 mm

General technical data:	
Fixing	Ø13 and 7 x 20 mm
Slot width	12 mm
Material of screw	StSt
Standard	EN 62561-4

Type FRH 11 6.10 ...	WA11 B7 STTZN	WA11 B7 CU
Part No.	**277 230**	**277 237**
Material of conductor holder	St/tZn	Cu
PU	25 pc(s)	25 pc(s)

Type FRH 11 6.10 ...	WA11 B7 V2A
Part No.	**277 239**
Material of conductor holder	StSt
PU	25 pc(s)

Distance from wall 15 mm

Type FRH 11 6.10 ...	WA15 B7 STTZN
Part No.	**277 240**
Material of conductor holder	St/tZn
Fixing	7 x 15 mm
Slot width	12 mm
Material of screw	StSt
Standard	EN 62561-4
PU	25 pc(s)

Pipe Clamps for Ex Zones 1/21, 2/22

Pipe clamp for electrically contacting pipes in Ex zones 1 and 2 (gases, vapours, mists) as well as Ex zones 21 and 22 (dusts). Non-sparking lightning equipotential bonding according to IEC/EN 62305-3.

- For use in Ex zones 1 and 2 (gases, vapours, mists) as well as Ex zones 21 and 22 (dusts)
- Tested according to explosion group IIB
- Time-saving installation – no need to deactivate systems/areas for welding or drilling works

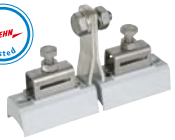
Type EX BRS 27

Clamping range of Ø6-27 mm (3/4")

Type	EX BRS 27
Part No.	**540 821**
Lightning impulse current (10/350 µs) Cu Ø6-12 mm (I_{imp})	10 kA
Lightning impulse current (10/350 µs) Cu Ø12-27 mm (3/4") (I_{imp})	20 kA
Lightning impulse current (10/350 µs) Cu Ø27 mm (3/4") (I_{imp})	25 kA
Lightning impulse current (10/350 µs) St/tZn Ø17-27 mm (3/4") (I_{imp})	25 kA
Lightning impulse current (10/350 µs) StSt Ø6-12 mm (I_{imp})	10 kA
Lightning impulse current (10/350 µs) StSt Ø12-27 mm (3/4") (I_{imp})	12 kA
Lightning impulse current (10/350 µs) StSt Ø27 mm (3/4") (I_{imp})	25 kA
Connection	M8
Clamping range pipe Ø	6-27 mm (3/4")
Material of clamp body	polyamide
Material of grip head / tensioning strap	StSt
Material of contact piece	brass/gal Sn
Standard	based on EN 62561-1
PU	1 pc(s)

Separate clamp body

For use with endless tensioning strap (Part No. 540 901), clamping ranges Ø27 (3/4") to 500 mm.



Type	SCK EX BRS ASSM10 V2A
Part No.	**540 810**
Lightning impulse current (10/350 µs) Cu (I_{imp})	50 kA
Lightning impulse current (10/350 µs) St/tZn (I_{imp})	50 kA
Lightning impulse current (10/350 µs) StSt (I_{imp})	25 kA
Connection	M10
Clamping range pipe Ø	27 (3/4")-500 mm
Material of clamp body	polyamide
Material of grip head / tensioning strap	StSt
Material of contact piece	Cu/gal Sn
Standard	EN 62561-1
PU	1 pc(s)

Type EX BRS 90 / 300 / 500

Type EX BRS 90 (Part No. 540 801) clamping range Ø27 (3/4") to 89 mm (3").
Type EX BRS 300 (Part No. 540 803) clamping range Ø89 (3") to 300 mm.
Type EX BRS 500 (Part No. 540 805) clamping range Ø300 to 500 mm.

General technical data:	
Connection	M10
Material of clamp body	polyamide
Material of grip head / tensioning strap	StSt
Material of contact piece	Cu/gal Sn
Standard	EN 62561-1

Type	EX BRS 90	EX BRS 300
Part No.	**540 801**	**540 803**
Lightning impulse current (10/350 µs) Cu (I_{imp})	50 kA	50 kA
Lightning impulse current (10/350 µs) St/tZn (I_{imp})	50 kA	50 kA
Lightning impulse current (10/350 µs) St/bare (I_{imp})	–	–
Lightning impulse current (10/350 µs) StSt (I_{imp})	25 kA	50 kA
Clamping range pipe Ø	27-89 mm (3/4-3")	89 (3")-300 mm
PU	1 pc(s)	1 pc(s)

Type	EX BRS 500
Part No.	**540 805**
Lightning impulse current (10/350 µs) Cu (I_{imp})	–
Lightning impulse current (10/350 µs) St/tZn (I_{imp})	–
Lightning impulse current (10/350 µs) St/bare (I_{imp})	50 kA
Lightning impulse current (10/350 µs) StSt (I_{imp})	50 kA
Clamping range pipe Ø	300-500 mm
PU	1 pc(s)

With regard to corrosion resistance, it must be checked whether the materials used for the Ex pipe clamps, Ex BRS ... (e.g. Cu/galSn, brass/galSn, StSt, polyamide) can be used in the existing ambient conditions.

Accessories for Pipe Clamps for Ex Zones 1/21, 2/22

Tensioning strap

Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Mounting set for Ex pipe clamps

For positioning tensioning straps for pipe fastening.
For use with a bit screwdriver, power drill or manual installation.

Type	BRS VSW
Part No.	**540 902** NEW
Material	Al / St/chem. Ni
PU	1 pc(s)

Parallel Connectors for Ex Zones 1/21, 2/22

Parallel connector with spring washer for connecting round conductors/cables in Ex zones 1/21, 2/22. The clamps are secured against self-loosening in accordance with DIN EN 62305-3 Supplement 2.

For equal and different cable diameters, small

Type PV ...	5.12.5 SKM8X45 GSG CUGALSN
Part No.	**306 105**
Material of clamp	Cu/gal Sn
Clamping range Rd / Rd	5-12.5 mm
Clamping range (stranded / cable)	16-95 mm²
Lightning impulse current (10/350 µs) (non-sparking)	25 kA
Short-circuit current (50 Hz) (0.1 s) (non-sparking)	1.65 kA
Standard	based on EN 62561-1
PU	1 pc(s)

For equal and different cable diameters, large

Type PV ...	5.16 SKM10X50 GSG CUGALSN
Part No.	**306 106**
Material of clamp	Cu/gal Sn
Clamping range Rd / Rd	5-16 mm
Clamping range (stranded / cable)	16-150 mm²
Lightning impulse current (10/350 µs) (non-sparking)	25 kA
Short-circuit current (50 Hz) (0.1 s) (non-sparking)	1.65 kA
Standard	based on EN 62561-1
PU	1 pc(s)

Pipe Clamp GSG for Ex Zone 2/22

Pipe clamp for electrically contacting pipes in Ex zone 2/22. The pipe clamp is secured against self-loosening according to DIN/EN 62305-3 Supplement 2.

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Pipe clamps - Complete

Type	BRS 27.89 AK1X10 2X6.8 GSG V2A
Part No.	**540 104**
Material	StSt
Clamping range pipe Ø	27-89 mm (3/4-3'')
Dimensions of strap (l1 x w x d)	330 x 25 x 0.3 mm
Connection (solid / stranded)	4-50 mm²
Standard	EN 62561-1
Tightening torque	≥ 15 Nm
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901), connection cross-section 4-50 mm² (solid / stranded).

Type	SPK 27.89 BRS AK1X10 2X6.8 GSG V2A
Part No.	**540 199**
Material	StSt
Connection (solid / stranded)	4-50 mm²
Standard	EN 62561-1
PU	25 pc(s)

Endless tensioning strap

For cutting to length, e.g. with snips.

Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
PU	1 pc(s)

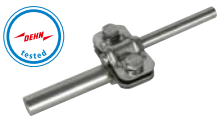
Clamps for Ex Zone 2/22

Clamps with spring washer for connecting round / flat conductors in Ex zone 2/22. The clamps are secured against self-loosening according to DIN EN 62305-3 Supplement 2.

UNI disconnecting clamp 200 kA (10/350 µs) with spring washer for two round conductors

Type	UTK 200 2X10 FL30 ZP V2A
Part No.	**459 200**
Material	StSt
Clamping range Rd / Rd	10 / 10 mm
Clamping range Rd / Fl	10 / 30 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA
Standard	based on EN 62561-1
PU	1 pc(s)

UNI disconnecting clamp 200 kA (10/350 µs) with spring washer for earth entry rods



Type	UTK 200 8.10 16 ZP V2A
Part No.	**459 219**
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA
Standard	based on EN 62561-1
PU	1 pc(s)

Clamping piece 200 kA (10/350 µs) with spring washer

Type	KS 200 B11.11 FL30X4 V2A
Part No.	**380 209**
Material	StSt
Clamping range Fl	30 x 4 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA
Standard	based on EN 62561-1
PU	1 pc(s)

KS connector 200 kA (10/350 µs) with spring washer

Type	KSV 200 10 FER V2A
Part No.	**301 209**
Material	StSt
Clamping range Rd	10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp 200 kA (10/350 µs) with spring washer for round conductors

Type	MVK 200 8.10 SKM10X30 V2A
Part No.	**390 209**
Material	StSt
Clamping range Rd / Rd	8-10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp 200 kA (10/350 µs) with spring washer for air-termination rods

Type	MVK 200 8.10 16 SKM10X40 FSC V2A
Part No.	**392 209**
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA
Standard	based on EN 62561-1
PU	1 pc(s)

KS connector 100 kA (10/350 µs), one-piece, with spring washer

Type	KSV 7.10 FER STTZN	KSV 6.10 FER CU
Part No.	**301 010**	**301 017**
Material of clamping screw	St/tZn	Cu
Material of clamp	ZDC	RCB
Clamping range Rd	7-10 mm	6-10 mm
Connection (single-wire / multi-wire)	–	25-70 mm²
Type	+ spring washer	+ spring washer
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA	I_{imp} 100 kA
Standard	EN 62561-1	EN 62561-1
PU	100 pc(s)	100 pc(s)

KS connector 100 kA (10/350 µs), two-piece, with spring washer

Type	AP 2X6.10 V2A
Part No.	**301 229**
Material of clamping screw	StSt
Material of clamp	StSt
Clamping range Rd	6-10 mm
Type	+ spring washer
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA / I_{imp} 50 kA *)
Standard	EN 62561-1
PU	1 pc(s)

Connection clamps for steel girders for hazardous areas zone 2/22

Heavy design; for connection to steel structures.
All connections secured against self-loosening:

- Connection to the steel structure using adhesive-coated screws
- Round conductor connection using spring washer

Vertical design with KS connector

Type AK 6.10 KSV FER ...	S KBF3 18 V2A	S KBF18 35 V2A
Part No.	**372 169**	**372 179**
Clamping range	3-18 mm	18-35 mm
Material of clamp	StSt	StSt
Clamping range Rd	6-10 mm	6-10 mm
Standard	EN 62561-1	EN 62561-1
PU	10 pc(s)	10 pc(s)

Horizontal design with KS connector

Type AK 6.10 KSV FER ...	W KBF3 18 V2A	W KBF18 35 V2A
Part No.	**372 269**	**372 279**
Clamping range	3-18 mm	18-35 mm
Material of clamp	StSt	StSt
Clamping range Rd	6-10 mm	6-10 mm
Standard	EN 62561-1	EN 62561-1
PU	10 pc(s)	10 pc(s)

Non-sparking, Ex equipotential bonding bar for hazardous areas of zones 1/21, 2/22

Non-sparking, Ex equipotential bonding bar for integrating metallic conductors and wires into the lightning equipotential bonding according to VDE 0185-305-3 (IEC 62305-3) as well as for protective and functional equipotential bonding according to DIN VDE 0100 Part 410/540.

PAS EX 7(11)AP SET

- For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts).
- Screws secured against self-loosening
- With the push-in adapter, only indoor use is permissible

Type	PAS EX 7AP SET	PAS EX 11AP SET
Part No.	472 415 NEW	472 425 NEW
Connection Rd/Fl	1x flat conductor 30/40 mm or 1x round conductor 10 mm	1x flat conductor 30/40 mm or 1x round conductor 10 mm
Connection connecting clamp	4x 4-16 mm²	4x 4-16 mm²
Connection cable lug	1x flexible / rigid conductor 16-95mm²	5x flexible / rigid conductor 16-95 mm²
Dimensions	382 x 140 x 101 mm	522 x 140 x 101 mm
Lightning impulse current (10/350 µs) StSt (V4A) 30x3.5 mm / 40x5 mm	2HExIIC 75 kA (non-sparking) T4	2HExIIC 75 kA (non-sparking) T4
Lightning impulse current (10/350 µs) St/tZn 30x3.5 mm/40x5 mm	1HExIIC 100 kA (non-sparking) T4	1HExIIC 100 kA (non-sparking) T4
Lightning impulse current (10/350 µs) StSt (V4A) Ø10 mm	NExIIC 50 kA (non-sparking) T4	NExIIC 50 kA (non-sparking) T4
Lightning impulse current (10/350 µs) St/tZn Ø10 mm	2HExIIC 75 kA (non-sparking) T4	2HExIIC 75 kA (non-sparking) T4
Lightning impulse current (10/350 µs) Cu 16-95 mm²	1HExIIC 100 kA (non-sparking) T4	1HExIIC 100 kA (non-sparking) T4
Lightning impulse current (10/350 µs) Cu 4-16 mm² (per core)	3 kA (non-sparking)	3 kA (non-sparking)
Nominal discharge current (8/20 µs) per core (I_n) Cu 4-10 mm²	10 kA (non-sparking)	10 kA (non-sparking)
Nominal discharge current (8/20 µs) per core (I_n) Cu 16 mm²	15 kA (non-sparking)	15 kA (non-sparking)
Max. short-circuit current (a.c. 50 Hz / d.c. / 5 s) StSt (V4A) 30x3.5 mm / 40x5 mm	750 A / T4	750 A / T4
Max. short-circuit current (a.c. 50 Hz / d.c. / 5 s) St/tZn 30x3.5 mm / 40x5 mm	1500 A / T4	1500 A / T4
Max. short-circuit current (a.c. 50 Hz /d.c. /5 s) StSt (V4A) Ø10 mm	650 A / T4	650 A / T4
Max. short-circuit current (a.c. 50 Hz / d.c. / 5 s) St/tZn Ø10 mm	1000 A / T4	1000 A / T4
Standard	IEC 62561-1 / CLC 50703-2	IEC 62561-1 / CLC 50703-2
PU	1 pc(s)	1 pc(s)

PAS EX 1+5(9)AP M10 V2A

- For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts).
- Screws secured against self-loosening
- Both indoor and outdoor installation permissible

Type	PAS EX 1+5AP M10 V2A	PAS EX 1+9AP M10 V2A
Part No.	472 410 NEW	472 420 NEW
Connection Fl	1x flat conductor 30/40mm	1x flat conductor 30 / 40 mm
Connection cable lug	5x flexible / rigid conductor 16-95 mm²	9x flexible / rigid conductor 16-95 mm²
Dimensions	382 x 140 x 65 mm	522 x 140 x 65 mm
Lightning impulse current (10/350 µs) StSt (V4A) 30x3.5 mm / 40x5 mm	2HExIIC 75 kA (non-sparking) T4	2HExIIC 75 kA (non-sparking) T4
Lightning impulse current (10/350 µs) St/tZn 30x3.5 mm/40x5 mm	1HExIIC 100 kA (non-sparking) T4	1HExIIC 100 kA (non-sparking) T4
Lightning impulse current (10/350 µs) Cu 16-95 mm²	1HExIIC 100 kA (non-sparking) T4	1HExIIC 100 kA (non-sparking) T4
Max. short-circuit current (a.c. 50 Hz / d.c. / 5 s) StSt (V4A) 30x3.5 mm / 40x5 mm	750 A / T4	750 A / T4
Max. short-circuit current (a.c. 50 Hz / d.c. / 5 s) St/tZn 30x3.5 mm / 40x5 mm	1500 A / T4	1500 A / T4
Standard	IEC 62561-1 / CLC 50703-2	IEC 62561-1 / CLC 50703-2
PU	1 pc(s)	1 pc(s)

With regard to corrosion resistance, it must be checked whether the materials used for the PAS EX (e.g. Cu/galSn, StSt, polyamide, polyurethane ester) can be used in the existing ambient conditions.

PAS EX 7(11)AP M10 V2A

- For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts).
- Screws secured against self-loosening
- Both indoor and outdoor installation permissible

Type	PAS EX 7AP M10 V2A	PAS EX 11AP M10 V2A
Part No.	472 411 NEW	472 421 NEW
Connection cable lug	7x flexible / rigid conductor 16-95 mm²	11x flexible / rigid conductor 16-95 mm²
Dimensions	382 x 140 x 50 mm	522 x 140 x 50 mm
Lightning impulse current (10/350 µs) Cu 16-95 mm²	1HExIIC 100 kA (non-sparking) T4	1HExIIC 100 kA (non-sparking) T4
Standard	IEC 62561-1 / CLC 50703-2	IEC 62561-1 / CLC 50703-2
PU	1 pc(s)	1 pc(s)

With regard to corrosion resistance, it must be checked whether the materials used for the PAS EX (e.g. Cu/galSn, StSt, polyamide, polyurethane ester) can be used in the existing ambient conditions.

Equipotential Bonding for Ex Areas

PAS EX AD 7(11) AP

Cover with distance bolts for non-sparking Ex equipotential bonding bar PAS EX. With connection numbering and label.

Type	PAS EX AD 7 AP	PAS EX AD 11 AP
Part No.	**472 412** NEW	**472 422** NEW
Material	StSt	StSt
PU	1 pc(s)	1 pc(s)

PAS EX CC

Push-in adapter for non-sparking, Ex equipotential bonding bar PAS EX for convenient connection of flexible conductors. For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts). Use indoors only permissible.

Type	PAS EX CC
Part No.	**472 497** NEW
Material	Polyamide
Lightning impulse current (10/350 µs) Cu 4-16 mm² (per core)	3 kA (non-sparking)
Nominal discharge current (8/20 µs) per core (I_n) Cu 4-10 mm²	10 kA (non-sparking)
Nominal discharge current (8/20 µs) per core (I_n) Cu 16 mm²	15 kA (non-sparking)
PU	1 pc(s)

Note: Non-sparking only ensured in connection with PAS EX ...!

PAS EX R

Adapter for non-sparking Ex equipotential bonding bar PAS EX for connecting a round conductor. For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts). Both indoor and outdoor installation permissible.

Type	PAS EX R
Part No.	**472 498** NEW
Lightning impulse current (10/350 µs) StSt (V4A) Ø10 mm	NExIIC 50 kA (non-sparking) T4
Lightning impulse current (10/350 µs) St/tZn Ø10 mm	2HExIIC 75 kA (non-sparking) T4
Max. short-circuit current (a.c. 50 Hz /d.c. /5 s) StSt (V4A) Ø10 mm	650 A / T4
Max. short-circuit current (a.c. 50 Hz / d.c. / 5 s) St/tZn Ø10 mm	1000 A / T4
PU	1 pc(s)

Note: Non-sparking only ensured in connection with PAS EX ...!

PAS EX FL

Adapter for non-sparking Ex equipotential bonding bar PAS EX for connecting a flat conductor. For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts). Both indoor and outdoor installation permissible.

Type	PAS EX FL
Part No.	**472 499** NEW
Lightning impulse current (10/350 µs) StSt (V4A) 30x3.5 mm / 40x5 mm	2HExIIC 75kA (non-sparking) T4
Lightning impulse current (10/350 µs) St/tZn 30x3.5 mm/40x5 mm	1HExIIC 100 kA (non-sparking) T4
Max. short-circuit current (a.c. 50 Hz / d.c. / 5 s) StSt (V4A) 30x3.5 mm / 40x5 mm	750 A / T4
Max. short-circuit current (a.c. 50 Hz / d.c. / 5 s) St/tZn 30x3.5 mm / 40x5 mm	1500 A / T4
PU	1 pc(s)

Note: Non-sparking only ensured in connection with PAS EX ...!

PAS ... CUGALSSN

Crimped cable lug according to DIN 46235 with nickel barrier layer to avoid whisker formation.

General technical data:	
Material	Cu/gal (Ni)Sn
Cable lug hole	M10

Type	PKS 16 10 CUGALSN	PKS 25 10 CUGALSN
Part No.	**472 432** NEW	**472 433** NEW
Conductor cross-section	16 mm²	25 mm²
PU	3 pc(s)	3 pc(s)

Type	PKS 35 10 CUGALSN	PKS 50 10 CUGALSN
Part No.	**472 434** NEW	**472 435** NEW
Conductor cross-section	35 mm²	50 mm²
PU	3 pc(s)	3 pc(s)

Type	PKS 70 10 CUGALSN	PKS 95 10 CUGALSN
Part No.	**472 436** NEW	**472 437** NEW
Conductor cross-section	70 mm²	95 mm²
PU	3 pc(s)	3 pc(s)

Note: Non-sparking only ensured in connection with PAS EX ...!

Equipotential Bonding Busbars for Ex Zone 2/22

Equipotential bonding busbars for protective and functional equipotential bonding according to IEC 60364-4-41/60364-5-54 and lightning equipotential bonding according to IEC/EN 62305-3. Screws are secured against self-loosening according to DIN EN 62305-3 Supplement 2 by means of a spring washer.

6 terminals

Type PAS I ...	6AP M10 CU	6AP M10 V2A
Part No.	**472 207**	**472 209**
Material	Cu	StSt
Dimensions (l x w x d1)	295 x 40 x 5 mm	295 x 40 x 6 mm
Cross section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

8 terminals

Type PAS I ...	8AP M10 CU	8AP M10 V2A
Part No.	**472 227**	**472 229**
Material	Cu	StSt
Dimensions (l x w x d1)	365 x 40 x 5 mm	365 x 40 x 6 mm
Cross section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

10 terminals

Type PAS I ...	10AP M10 CU	10AP M10 V2A
Part No.	**472 217**	**472 219**
Material	Cu	StSt
Dimensions (l x w x d1)	435 x 40 x 5 mm	435 x 40 x 6 mm
Cross section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

12 terminals

Type PAS I ...	12AP M10 CU	12AP M10 V2A
Part No.	**472 237**	**472 239**
Material	Cu	StSt
Dimensions (l x w x d1)	505 x 40 x 5 mm	505 x 40 x 6 mm
Cross section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

Accessories for Equipotential Bonding Busbars for Ex Zone 2/22

Cover for EBB industry

Covers for EBB with insulators.

General technical data:	
Material	StSt

Type	AD PAS 6AP V2A	AD PAS 8AP V2A
Part No.	**472 279**	**472 269**
Type of EBB	6 terminals	8 terminals
Dimensions (l x w x d)	301 x 60 x 0.8 mm	371 x 60 x 0.8 mm
PU	1 pc(s)	1 pc(s)

Type	AD PAS 10AP V2A	AD PAS 12AP V2A
Part No.	**472 289**	**472 299**
Type of EBB	10 terminals	12 terminals
Dimensions (l x w x d)	441 x 60 x 0.8 mm	511 x 60 x 0.8 mm
PU	1 pc(s)	1 pc(s)

Insulator for EBB industry

Type	IS PAS M10
Part No.	**472 210**
Material	UP (thermoset)
Connection thread	M10 (length 12 mm)
Colour	rot
Dimensions (d x h)	32 x 40 mm
PU	1 pc(s)

Fixing kit for EBB industry

For mounting the insulators, e.g. on walls.

Type	BFS M10X20 PAS STTZN	BFS M10X20 PAS V2A
Part No.	**472 201**	**472 202**
Material of screw	St/tZn	StSt
Screw	45 mm M10 x 20 mm	45 mm M10 x 20 mm
Plastic dowel	Ø12 x 60 mm	Ø12 x 60 mm
Total length	80 mm	80 mm
PU	1 pc(s)	1 pc(s)

Equipotential Bonding on Cable Tray Systems for Ex Zone 2/22

The equipotential bonding system is mounted on cable tray systems. All conductive system parts and electrical equipment are integrated in the Ex equipotential bonding by means of equipotential bonding plates and clamps as well as a closed ring equipotential bonding conductor.

EB clamp for cable trays and EB plate

Equipotential bonding clamp for cable trays

- Connection only with ring equipotential bonding conductor (tinned copper cable)
- For mounting on the perforated cable tray or on the equipotential bonding plate (PAP 1 / PAP 2)
- EB clamp to be mounted approx.
- every 0.5 m

General technical data:	
Material	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
Connection to	PAP 1 EX KB ER or PAP 2 EX KB ER or cable tray or wide span cable tray
Material of screw / nut	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
EX zone	2/22

Type	PAK 35 M8 EX KB ER	PAK 50 M8 EX KB ER
Part No.	**306 200**	**306 201**
Clamping range EB ring conductor	35 mm², Cu/gal Sn	50 mm², Cu/gal Sn
Screw	M8 x 40 mm	M8 x 40 mm
Short-circuit current a.c. (50 Hz / 5 s)	1.5 kA	–
Short-circuit current d.c. (5 s)	250 A	–
PU	50 pc(s)	50 pc(s)

Type	PAK 70 M8 EX KB ER	PAK 35 M6 EX KB ER
Part No.	**306 202**	**306 204**
Clamping range EB ring conductor	70 mm², Cu/gal Sn	35 mm², Cu/gal Sn
Screw	M8 x 40 mm	M6 x 35 mm
Short-circuit current a.c. (50 Hz / 5 s)	1.5 kA	–
Short-circuit current d.c. (5 s)	250 A	–
PU	50 pc(s)	50 pc(s)

Type	PAK 50 M6 EX KB ER	PAK 70 M6 EX KB ER
Part No.	**306 205**	**306 206**
Clamping range EB ring conductor	50 mm², Cu/gal Sn	70 mm², Cu/gal Sn
Screw	M6 x 35 mm	M6 x 35 mm
Short-circuit current a.c. (50 Hz / 5 s)	–	–
Short-circuit current d.c. (5 s)	–	–
PU	50 pc(s)	50 pc(s)

EB clamp for wire cable trays

Equipotential bonding clamp PAK for wire cable trays

- Connection only with ring equipotential bonding conductor 35 mm², Part No. 832 838 (tinned copper cable)
- For mounting on the wire cable tray or on the EB plate (PAP 1 / PAP 2)
- EB clamp to be mounted approx. every 0.5 m

Type	PAK 35 M8 EX GI ER
Part No.	**306 203**
Material	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
Connection to	PAP 1 EX GI ER / PAP 2 EX GI ER or wire cable tray
Clamping range EB ring conductor	35 mm², Cu/gal Sn
Screw	M8 x 40 mm
Material of screw / nut	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
EX zone	2/22
Short-circuit current a.c. (50 Hz / 5 s)	1.5 kA
Short-circuit current d.c. (5 s)	250 A
PU	50 pc(s)

EB plate for cable trays

Equipotential bonding plate for cable trays

- For attaching the equipotential bonding clamp for the ring equipotential bonding conductor (tin-plated copper cable)
- For mounting on the cable tray with side perforations

Type	PAP 1 EX KB ER	PAP 2 EX KB ER
Part No.	**306 210**	**306 211**
Material	StSt	StSt
Material No.	1.4301	1.4301
ASTM / AISI:	AISI 304	AISI 304
Dimensions	120 x 180 mm	120 x 195 mm
Connection holes for EB conductor with cable lug	3x Ø11 mm, 3x Ø9 mm, strain relief 3x cable clamp M6	2x Ø11 mm, 12x Ø7 mm
Connection possibilities for EB clamps	PAK ... EX KB ER	PAK ... EX KB ER
Fixing holes for cable tray	[4x] 9 x 20 / [1x] 9 x 9 mm	[4x] 9 x 20 / [1x] 9 x 9 mm
EX zone	2/22	2/22
Short-circuit current a.c. (50 Hz / 5 s)	1.5 kA	1.5 kA
Short-circuit current d.c. (5 s)	250 A	250 A
PU	15 pc(s)	15 pc(s)

Equipotential Bonding for Ex Areas

EB plate for wire cable trays

Equipotential bonding plate for wire cable trays

- For attaching the equipotential bonding clamp for the ring equipotential bonding conductor (tin-plated copper cable)
- For mounting on the wire cable tray

Type	PAP 1 EX GI ER	PAP 2 EX GI ER
Part No.	**306 212**	**306 213**
Material	StSt	StSt
Material No.	1.4301	1.4301
ASTM / AISI:	AISI 304	AISI 304
Dimensions	120 x 180 mm	120 x 195 mm
Connection holes for EB conductor with cable lug	3x Ø11 mm, 3x Ø9 mm, strain relief 3x cable clamp M6	2x Ø11 mm, 12x Ø7 mm
Connection possibilities for EB clamps	PAK ... EX KB ER	PAK ... EX KB ER
Fixing holes for wire cable tray	wire cable tray [4x] 9 x 20 / [1x] 9 x 9 mm	[4x] 9 x 20 / [1x] 9 x 9 mm
EX zone	2/22	2/22
Short-circuit current a.c. (50 Hz / 5 s)	1.5 kA	1.5 kA
Short-circuit current d.c. (5 s)	250 A	250 A
PU	15 pc(s)	15 pc(s)

EB pipe clamps

Equipotential bonding pipe clamp (SBD 60 PAK 35)

- For connection only with ring equipotential bonding conductors (35 mm)², Part no. 832 838 (tin-plated copper cable)
- For mounting on round pipe DN50 (60 mm)
- EB clamp to be mounted approx. every 0.5 m

Type	SBD 60 PAK 35 EX ER
Part No.	**306 220**
Material	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
Dimensions	Ø60 mm
Clamping range EB ring conductor	35 mm², Cu/gal Sn
EX zone	2/22
PU	50 pc(s)

Cable clamp

Cable clamp as strain relief for installing copper cables on the equipotential bonding plate PAP1 EX KB ER or PAP1 EX GI ER.

Type	MPE S 35 ER	MPE S 50/70 ER
Part No.	**306 230**	**306 231**
Material	StSt	StSt
Material No.	1.4301	1.4301
ASTM / AISI:	AISI 304	AISI 304
Connection to	PAP1 EX KB ER or PAP1 EX GI ER	PAP1 EX KB ER or PAP1 EX GI ER
Clamping range copper cable	35 mm²	50 or 70 mm²
EX zone	2/22	2/22
PU	10 pc(s)	10 pc(s)

Locknut

for cable clamps (MPE S 35 ER and MPE S 50/70 ER).

Type	SM SS M6 ER
Part No.	**306 240**
Material	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
Type	M6
EX zone	2/22
PU	20 pc(s)

Hexagon nut

for cable clamps (MPE S 35 ER and MPE S 50/70 ER).

Type	SKM M6 DIN 934 V2A
Part No.	**505 901**
Material	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
Type	M6
PU	20 pc(s)

Spring washer

for cable clamps (MPE S 35 ER and MPE S 50/70 ER).

Type	FR A6 V2A
Part No.	**524 906**
Material	StSt
Material No.	1.4310
ASTM / AISI:	AISI 301
Type	A6
PU	20 pc(s)

Accessories for Equipotential Bonding on Cable Tray Systems for Ex Zone 2/22

Tinned copper cable

For use as a ring equipotential bonding conductor or equipotential bonding.

General technical data:	
Material	Cu/gal Sn

Type	SEIL 7.5 CUGALSN 35Q R100M	SEIL 9 50Q CUGALSN R100M
Part No.	**832 838**	**832 839**
Cross-section	35 mm²	50 mm²
Cable structure qty x Ø wire	7 x 2.5 mm	19 x 1.8 mm
PU	100 m	100 m

Type	SEIL 10.5 70Q CUGALSN R100M
Part No.	**832 292**
Cross-section	70 mm²
Cable structure qty x Ø wire	19 x 2.1 mm
PU	100 m

EXFS L / EXFS KU

For bridging insulating flanges and insulating glands in cathodically protected pipe sections (e.g., pipelines or LPG plants) in hazardous areas in case of surges and lightning currents.

EXFS L

Ex isolating spark gap for aboveground installation.

General technical data:	
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Class (lightning current carrying capability)	N
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 2.5 kV
Degree of protection	IP 54
ATEX approvals	DEKRA 11ATEX0146 X
Ex marking according to EN 60079-0 and EN 60079-15: gas	II 3 G Ex nC IIC T4 Gc
IECEx approvals	IECEx DEK 11.0063X
Ex marking according to EN 60079-0	Ex nC IIC T4 Gc

Type EXFS ...	L100	L200
Part No.	923 060	923 061
Cable length	100 mm	200 mm

Type EXFS ...	L300
Part No.	923 062
Cable length	300 mm

EXFS KU

Ex isolating spark gap with connecting cables for aboveground and underground installation; with water-proof sheath; can be shortened to keep cables as short as possible.

Type EXFS ...	KU
Part No.	923 019
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Class (lightning current carrying capability)	N
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 2.5 kV
Degree of protection	IP 67
ATEX approvals	DEKRA 11ATEX0146 X
Ex marking according to EN 60079-0 and EN 60079-15: gas	II 3 G Ex nC IIC T4 Gc
IECEx approvals	IECEx DEK 11.0063X
Ex marking according to EN 60079-0	Ex nC IIC T4 Gc
Cable length	2x approx. 1500 mm

EXFS 100 / EXFS 100 KU

For bridging insulating flanges and insulating glands in cathodically protected pipe sections (e.g. pipelines or LPG plants) in hazardous areas in case of surges and lightning currents.

- Class (lighning current carrying capability) H (100 kA)
- Particularly low sparkover voltage
- ATEX and IECEx approvals for zone 1 and zone 21

EXFS 100

Isolating spark gap for use in hazardous areas with plastic sheath and M10 threaded screws.

Type EXFS ...	100
Part No.	923 100
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Class (lightning current carrying capability)	H
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 1.25 kV
Degree of protection	IP 67
Approvals	UL, Inmetro
ATEX approvals	DEKRA 11ATEX0178 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	II 2 G Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	II 2 D Ex tb IIIC T80 °C Db IP 66/67
IECEx approvals	IECEx KEM 09.0051X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67
Inmetro approvals	TÜV 17.0698 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67

EXFS 100 KU

Ex isolating spark gap with connecting cable for aboveground and underground installation; with water-proof sheath; can be shortened to keep cables as short as possible.

Type EXFS ...	100 KU
Part No.	923 101
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Class (lightning current carrying capability)	H
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 1.25 kV
Degree of protection	IP 67
Approvals	Inmetro
ATEX approvals	DEKRA 11ATEX0178 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	II 2 G Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	II 2 D Ex tb IIIC T80 °C Db IP 66/67
IECEx approvals	IECEx KEM 09.0051X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80°C Db IP 66/67
Inmetro approvals	TÜV 17.0698 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67
Cable length	2x approx. 2000 mm

Accessories for EXFS 100 / EXFS 100 KU

Angled connection brackets – IF 1 –

Angled connection bracket for EXFS ...; diameter corresponds to the bolt diameter of the flange joint; material: St/tZn.

Type	AB EXFS IF1 W 11	AB EXFS IF1 W 14
Part No.	**923 311**	**923 314**
Borehole diameter d1	11 mm	14 mm

Type	AB EXFS IF1 W 18	AB EXFS IF1 W 22
Part No.	**923 318**	**923 322**
Borehole diameter d1	18 mm	22 mm

Type	AB EXFS IF1 W 26	AB EXFS IF1 W 30
Part No.	**923 326**	**923 330**
Borehole diameter d1	26 mm	30 mm

Type	AB EXFS IF1 W 33	AB EXFS IF1 W 36
Part No.	**923 333**	**923 336**
Borehole diameter d1	33 mm	36 mm

Type	AB EXFS IF1 W 39	AB EXFS IF1 W 42
Part No.	**923 339**	**923 342**
Borehole diameter d1	39 mm	42 mm

Type	AB EXFS IF1 W 48	AB EXFS IF1 W 56
Part No.	**923 348**	**923 356**
Borehole diameter d1	48 mm	56 mm

Type		AB EXFS IF1 W 62
Part No.		**923 362**
Borehole diameter d1		62 mm

Flat connection brackets – IF 3 –

Flat connection bracket for EXFS ...; diameter corresponds to the bolt diameter of the flange joint; material: St/tZn.

Type	AB EXFS IF3 G 11	AB EXFS IF3 G 14
Part No.	**923 211**	**923 214**
Borehole diameter d1	11 mm	14 mm

Type	AB EXFS IF3 G 18	AB EXFS IF3 G 22
Part No.	**923 218**	**923 222**
Borehole diameter d1	18 mm	22 mm

Type	AB EXFS IF3 G 26	AB EXFS IF3 G 30
Part No.	**923 226**	**923 230**
Borehole diameter d1	26 mm	30 mm

Type	AB EXFS IF3 G 33	AB EXFS IF3 G 36
Part No.	**923 233**	**923 236**
Borehole diameter d1	33 mm	36 mm

Type	AB EXFS IF3 G 39	AB EXFS IF3 G 42
Part No.	**923 239**	**923 242**
Borehole diameter d1	39 mm	42 mm

Accessories for EXFS 100 / EXFS 100 KU

EXFS 100: Connecting Cable, Cu, 25 mm²

Connecting cable for EXFS 100; two cable lugs (Ø10.5 mm) made of Cu/gal Sn, screw, nut and spring washer.

Type	AL EXFS L100 KS	AL EXFS L200 KS
Part No.	**923 025**	**923 035**
Cable length	100 mm	200 mm

Type		AL EXFS L300 KS
Part No.		**923 045**
Cable length		300 mm

Earth Resistance Meter MI 3123

For all kinds of earth resistance measurement, such as the 4conductor method (Wenner method) for measuring the soil resistivity and resistance measurements in earth-termination systems.

Accessories:

- Power supply adapter + 6 batteries NiMH AA
- CD with instruction manual and handbook
- Calibration certificate for first calibration
- PC software Euro Link Pro PLUS according to ZVEH for Smartec incl. USB/RS232 cable
- Padded carrying bag and hand strap

The earthing test leads, test clamps and augers must be ordered separately.

Type	EMG METREL MI 3123
Part No.	**578 351**
Display	digital LCD display
Resistance measuring range acc. EN 61557	0.67 to 9 999 ohms
Measuring method	earth resistance, earth resistivity
Frequency of the test voltage	125 Hz
Measurement category	CAT IV
Dimensions (l x w x d)	135 x 230 x 75 mm
PU	1 pc(s)

Accessories for Earth Resistance Meter MI 3123

METREL A1018 clip-on current transducer (1000A / 1A current clamp with connection cable)

The Metrel A1018 clip-on current transducer with connection cable (length 1.5 m) and banana pins can be directly plugged into the MI 3123 earth resistance meter. Connection points see METREL MI 3123 instruction manual.

Measuring methods on the down conductor:

- (Selective) earth resistance measurement with one current clamp
- Contactless earth resistance measurement (with both current clamps A1018 and A1019)

Type	ZSW METREL A1018
Part No.	**578 352**
Rated current	1000 A
Current measurement range	0.001 A - 1200 A
Overvoltage category	CAT III 600 V
Dimensions	220 x 120 x 48 mm
PU	1 pc(s)

METREL A1019 clip-on current transducer (1000A / 1A generator clamp with connection sockets)

The A1019 clip-on current transducer with banana sockets (Ø 4 mm) for connection via measuring cable to an MI3123 earth resistance meter. Connection points see METREL MI 3123 instruction manual.

Measuring methods on the down conductor:

- Contactless earth resistance measurement (with both current clamps A1018 and A1019)

Type	ZSW METREL A1019
Part No.	**578 353**
Rated current	1000 A
Current measurement range	0.2 A - 1200 A
Overvoltage category	CAT III 600 V
Dimensions	220 x 120 x 48
PU	1 pc(s)

Earth Resistance Meter GEOHM C

For measuring the earth resistance and soil resistvity, with automatic selection of the measuring range and checking of sensor and auxiliary earth electrode resistance.

Type	EMG GEOHM C
Part No.	**578 110**
Display	digital LCD display
Resistance measuring range	0.01 to 20 000 Ω
Measuring frequency	45 to 200 Hz
Measuring method	3-/4-pole
Dimensions (l x w x d)	275 x 140 x 65 mm
PU	1 pc(s)

Earth Resistance Meter Metraclip Earth

For earth loop measurement. Easy handling, high-resolution OLED display. Automatic calibration, Bluetooth interface incl. software.

Type	EMZ M312N METRA CLIP EARTH
Part No.	**578 386**
Display	OLED display
Resistance measuring range	0.01 to 1 500 ohms
Current measuring range	0.2 mA to 40 A
Category of measurement	CAT IV 600 V
Inside diameter clamp	35 mm
PU	1 pc(s)

EP4 Continuity Tester

Continuity tester for measuring the resistance of e.g. air-termination and down conductors and subsequently installed reinforcing bars of buildings. The tester is suited for measuring the resistance of earth-termination systems according to DIN 18014 with a test current of 200 mA.

Type	DGP EP4
Part No.	**578 370**
Display	digital LCD display
Resistance measuring range	0.01 Ω to 2 000 kΩ
Measuring current	200 mA in the range up to 10 Ω acc. to EN 61557-4
Dimensions (l x w x d)	230 x 60 x 40 mm
PU	1 pc(s)

Case with Measuring Accessory for Continuity Tester

For storing the continuity tester and measuring accessories.

Equipment includes:

- 2 coilers with unwinding handle and 50 m measuring line, blue, with banana pin, Part No. 585 320
- 1 measuring line 0.75 mm², 3 m long, black, with banana pin on both sides, Part No. 545 020
- 1 test clamp, clamping range 2-21 mm, Part No. 588 000

Type	DGPKO ML PK ... KL
Part No.	**582 620**
Material	artificial leather
Dimensions (l x w x h)	370 x 130 x 220 mm
PU	1 pc(s)

Earth Resistance Measuring Equipment in a Case

Case with shoulder strap for easy transport.

Equipment includes:

- 1 coiler with unwinding handle and 25 m red measuring line with banana pin, Part No. 585 310
- 1 coiler with unwinding handle and 50 m blue measuring line with banana pin, Part No. 585 320
- 2 auger drills, 350 mm long, Part No. 587 460
- 2 black measuring lines 0.75 mm², 3 m long, with banana pin on both sides, Part No. 545 010 (connection between earth-termination system and earth resistance meter)
- 1 red measuring line 0.75 mm², 0.5 m long, with banana pin on both sides, Part No. 545 010
- 1 blue measuring line 0.75 mm², 0.5 m long, with banana pin on both sides, Part No. 545 011 (connection between coiler and auger drill)
- 1 test clamp, clamping range 2-21 mm, Part No. 588 000
- With storage compartment for Metrel MI 3123 or GEOHM C measuring device.

Type	EMKO ML EB PK ... KL
Part No.	**582 600**
Material	artificial leather
Dimensions (l x w x h)	400 x 200 x 240 mm
PU	1 pc(s)

Accessories for Earth Resistance Measuring Equipment in a Case

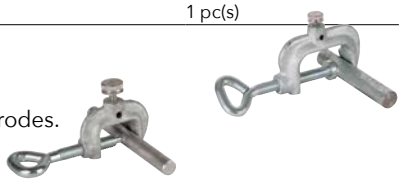
Auger

As an auxiliary earth electrode and probe for measuring the earth and soil resistance. With hole for banana pin of the measuring line.

Type	EB ASSM5 L350 TGGALZN
Part No.	**587 460**
Connection	✹ M5
Material	MCI/gal Zn
Length	350 mm
PU	1 pc(s)

Test clamp up to 21 mm

For measuring earth electrodes.



Type	PK 2.21 ASSM5 TGTZN
Part No.	**588 000**
Connection	✹ M5
Material	MCI/tZn
Clamping range	2-21 mm
Clamping spindle	M8
PU	1 pc(s)

Accessories for Earth Resistance Measuring Equipment in a Case

Coiler, width 40 mm
With split plug, socket and handle.

General technical data:	
Width	40 mm
Material	plastic

Type	DH K 40 BS ML0.75 L25M RT	DH K 40 BS ML0.75 L50M RT
Part No.	585 310	585 051
Length of measuring line	25 m	50 m
Colour of measuring line	rot ●	rot ●
PU	1 pc(s)	1 pc(s)

Type	DH K 40 BS ML0.75 L25M BL	DH K 40 BS ML0.75 L50M BL
Part No.	585 025	585 320
Length of measuring line	25 m	50 m
Colour of measuring line	blue ●	blue ●
PU	1 pc(s)	1 pc(s)

Coiler, width 80 mm
With banana pin, socket and handle.

Type	DH K 80 BS ML0.75 L100M RT	DH K 80 BS ML0.75 L100M BL
Part No.	585 211	585 210
Length of measuring line	100 m	100 m
Colour of measuring line	rot ●	blue ●
Width	80 mm	80 mm
Material	plastic	plastic
PU	1 pc(s)	1 pc(s)

Coiler, empty
With socket and handle.

Type	DH K 40 BB ASG L	DH K 80 BB ASG L
Part No.	585 010	585 200
Length of measuring line	0 m	0 m
Width	40 mm	80 mm
Material	plastic	plastic
Colour	grey ●	grey ●
PU	1 pc(s)	1 pc(s)

Measuring line

Type	ML 0.75 L100M CU BL	ML 0.75 L100M CU RT
Part No.	545 000	545 001
Cross section	0.75 mm²	0.75 mm²
Material	Cu	Cu
Designation	H05V-K	H05V-K
Insulation	PVC	PVC
Colour	blue ●	rot ●
PU	100 m	100 m

Wire Straighteners

For straightening round conductors made of different materials (HDG steel, Cu and Al).

5 guide pulleys, with handles

Type DRG ...	5RO 7.10 HG STGALZN
Part No.	597 004
Material	St/gal Zn
Support Rd	7-10 mm
Material of guide pulleys	St/gal Zn
Dimensions	approx. 180 x 290 mm
PU	1 pc(s)

10 guide pulleys, with handles

Type DRG ...	10RO 7.10 HG STGALZN
Part No.	597 005
Material	St/gal Zn
Support Rd	7-10 mm
Material of guide pulleys	St/gal Zn
Dimensions	approx. 650 x 180 mm
PU	1 pc(s)

10 guide pulleys, with derrick
For stationary set-up.

Type DRG ...	10RO 7.10 DB STTZN
Part No.	597 003
Material	St/tZn
Support Rd	7-10 mm
Material of guide pulleys	St/gal Zn
Dimensions	approx. 1350 x 580 mm
PU	1 pc(s)

10 guide pulleys, movable on rubber wheels
With wire unwinding device, for handling coils (St/tZn, Cu and Al) with an inner diameter of 450-800 mm and widths up to 150 mm.

Type DRG ...	10RO 7.10 FB STTZN
Part No.	597 006
Material	St/tZn
Support Rd	7-10 mm
Material of guide pulleys	St/gal Zn
Dimensions	approx. 1650 x 1200 mm
PU	1 pc(s)

Straightening Tool

For bending and straightening conductors.

Straight design

Type RE ...	G 8.10 FL4 STBRUE
Part No.	**596 000**
Material	St/burnished
For Rd / Fl	8-10 / -4 mm
Length	260 mm
PU	1 pc(s)

Cranked design

Wrench size 13 for screwing.

Type RE ...	GK 8.10 SW13 STBRUE
Part No.	**595 000**
Material	St/burnished
For Rd	8-10 mm
Length	260 mm
PU	1 pc(s)

Spider Wrench

Universal use for installing lightning protection systems. With four wrench sizes.

Type	KSS SW10 13 17 19 STGALZN
Part No.	**572 000**
Material	St/gal Zn
Wrench size	10, 13, 17, 19 mm
PU	1 pc(s)

Anti-Corrosion Tape

For wrapping aboveground and underground connections.
In reels, length 10 m,
UV-stabilised.

Type KSB ...	50 L10M	100 L10M
Part No.	**556 125**	**556 130**
Material	petrolatum	petrolatum
Length	10 m	10 m
Width	50 mm	100 mm
PU	24 pc(s)	12 pc(s)

Heat-Shrinkable Sleeve

Heat-shrinkable sleeve for coating Rd and Fl conductors, e.g. when leading terminal lugs out of the concrete or earth entries out of the ground.
UV-stabilised, customised length.

Type	SCSC 16 FL30 L...M SW
Part No.	**554 011**
For Rd	16 mm
For Fl	30 mm
Material	DERAY
Colour	black ●
PU	1 m

Notes

Notes

Notes

Since we do not plan systems or parts of systems, our product recommendations should be regarded as product information and for advisory purposes only. Our oral and written application proposals are based on experience and are specified to the best of our knowledge. We do not accept any liability in this respect. This particularly applies to the different conditions of use which are beyond our control. We recommend checking whether the respective DEHN product is suitable for the intended application. Application, use and processing of our products are beyond our control and therefore the product is completely subject to the responsibility of the user.

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*** GTIN (EAN code)**
In the catalogue, you will find the GTIN (EAN code) next to the Part No. For reasons of clarity, only the individual GTIN part is specified.

The country and DEHN code (40 13364) must be put in front of this number.

[1)] The country and DEHN code (69 42299) must be put in front of this number.

Abbreviations:

PG	Product Group
PU	Packing Unit
SU	Sales Unit (Piece, Meter, Millimeter, Kilogram, Gram, Liter, Set or Pair)
Pc(s)	Piece(s)
m	Meter
mm	Millimeter
kg	Kilogram
g	Gram
Ltr	Liter
Pa	Pair
Pak	Set
Weight	Weight per sales unit

Part No. Index

Part No.	GTIN*	PG	Weight	PU	SU	Page
100 100	019119	01 01 01 01	1.64 kg	10	pc(s)	185
100 150	019140	01 01 01 01	2.44 kg	10	pc(s)	185
101 000	094505	01 01 01 01	212 g	20	pc(s)	185/200
101 001	105539	01 07 01 01	600 g	1	pc(s)	206
101 007	128705	01 01 01 01	700 g	20	pc(s)	185
101 009	128699	01 01 01 01	600 g	20	pc(s)	185/200
101 010	138698	01 01 01 01	208 g	10	pc(s)	201
101 110	138704	01 01 01 01	305 g	1	pc(s)	201
101 150	019515	01 02 01 01	2.42 kg	1	pc(s)	157/286
102 002	105126	01 01 01 01	17.02 kg	54	pc(s)	194
102 003	105133	01 01 01 01	8.52 kg	120	pc(s)	194
102 010	057814	01 01 01 01	17.62 kg	54	pc(s)	194/225
102 010	057814	01 01 01 01	17.62 kg	54	pc(s)	234/252
102 010	057814	01 01 01 01	17.62 kg	54	pc(s)	257/268
102 010	057814	01 01 01 01	17.62 kg	54	pc(s)	272
102 012	105089	01 01 01 01	17.60 kg	54	pc(s)	194/253
102 012	105089	01 01 01 01	17.60 kg	54	pc(s)	269
102 050	045996	01 01 01 01	217 g	1	pc(s)	194/225
102 050	045996	01 01 01 01	217 g	1	pc(s)	234/252
102 050	045996	01 01 01 01	217 g	1	pc(s)	253/257
102 050	045996	01 01 01 01	217 g	1	pc(s)	268/269
102 050	045996	01 01 01 01	217 g	1	pc(s)	273
102 060	094987	01 01 01 01	140 g	1	pc(s)	194/ 225
102 060	094987	01 01 01 01	140 g	1	pc(s)	234/256
102 060	094987	01 01 01 01	140 g	1	pc(s)	271
102 075	094215	01 01 01 01	8.46 kg	120	pc(s)	194/224
102 075	094215	01 01 01 01	8.46 kg	120	pc(s)	234/256
102 075	094215	01 01 01 01	8.46 kg	120	pc(s)	271
102 340	105119	01 01 01 01	17.82 kg	54	pc(s)	194/225
103 013	129818	01 01 01 02	228.00 kg	1	pc(s)	197
103 016	129825	01 01 01 02	230.00 kg	1	pc(s)	197
103 019	129832	01 01 01 02	310.00 kg	1	pc(s)	197
103 022	129849	01 01 01 02	452.00 kg	1	pc(s)	197
103 025	129856	01 01 01 02	550.00 kg	1	pc(s)	197
103 030	129917	01 01 01 02	2620.00 kg	1	pc(s)	198
103 031	129924	01 01 01 02	4900.00 kg	1	pc(s)	198
103 040	129894	01 01 01 02	22.90 kg	1	pc(s)	198
103 041	129900	01 01 01 02	38.00 kg	1	pc(s)	198
103 121	112711	01 01 01 02	33.00 kg	1	pc(s)	197
103 122	112728	01 01 01 02	33.20 kg	1	pc(s)	197
103 123	112735	01 01 01 02	37.60 kg	1	pc(s)	197
103 124	112742	01 01 01 02	37.60 kg	1	pc(s)	197
103 125	112759	01 01 01 02	42.20 kg	1	pc(s)	197
103 126	112841	01 01 01 02	42.40 kg	1	pc(s)	197
103 210	066311	01 01 01 01	480 g	10	pc(s)	185
103 211	078529	01 01 01 01	480 g	10	pc(s)	185
103 220	066328	01 01 01 01	760 g	10	pc(s)	185
103 221	078536	01 01 01 01	760 g	10	pc(s)	185
103 230	066335	01 01 01 01	1.02 kg	10	pc(s)	185
103 231	078543	01 01 01 01	1.02 kg	10	pc(s)	185
103 240	066342	01 01 01 01	1.30 kg	10	pc(s)	185
103 241	081857	01 01 01 01	1.30 kg	10	pc(s)	185
103 250	093485	01 01 01 01	1.52 kg	10	pc(s)	185
103 251	093515	01 01 01 01	1.52 kg	10	pc(s)	185
103 260	093492	01 01 01 01	1.85 kg	10	pc(s)	185
103 261	093522	01 01 01 01	1.73 kg	10	pc(s)	185
103 280	093508	01 01 01 01	2.40 kg	10	pc(s)	185
103 410	105775	01 01 01 01	360 g	10	pc(s)	186/200
103 417	128682	01 01 01 01	1.20 kg	10	pc(s)	186
103 419	128651	01 01 01 01	1.10 kg	10	pc(s)	186
103 420	105782	01 01 01 01	500 g	10	pc(s)	186
103 429	128668	01 01 01 01	1.60 kg	10	pc(s)	186
103 430	105799	01 01 01 01	570 g	10	pc(s)	186
103 439	128675	01 01 01 01	2.05 kg	10	pc(s)	186
103 440	105805	01 01 01 01	800 g	10	pc(s)	186
103 449	128798	01 01 01 01	2.57 kg	10	pc(s)	186
103 450	105812	01 01 01 01	900 g	10	pc(s)	186
103 460	105829	01 01 01 01	1.10 kg	10	pc(s)	186
103 480	105836	01 01 01 01	1.30 kg	10	pc(s)	186
104 150	028487	01 01 01 01	820 g	10	pc(s)	185
104 200	056343	01 01 01 01	1.08 kg	10	pc(s)	185
104 250	056350	01 01 01 01	1.40 kg	10	pc(s)	185
104 300	056367	01 01 01 01	1.68 kg	10	pc(s)	185
104 600	076556	01 01 01 01	3.32 kg	1	pc(s)	186
104 903	030497	01 02 01 01	1.60 kg	1	pc(s)	157/286
104 905	030503	01 02 01 01	2.38 kg	10	pc(s)	157/286
104 906	082854	01 02 01 01	3.20 kg	1	pc(s)	157/286
105 071	101456	01 01 01 05	694 g	1	pc(s)	206/209
105 079	100183	01 01 01 05	96 g	1	pc(s)	206/209
105 140	112650	01 01 01 05	653 g	1	pc(s)	196/238
105 160	113022	01 01 01 05	506 g	1	pc(s)	196/239
105 161	118324	01 01 01 05	667 g	1	pc(s)	238
105 162	146433	01 01 01 05	600 g	1	pc(s)	196/210
105 162	146433	01 01 01 05	600 g	1	pc(s)	239
105 163	248281	01 01 01 05	586 g	1	pc(s)	196
105 170	151192	01 01 01 01	4.17 kg	1	pc(s)	192
105 171	151215	01 01 01 01	5.60 kg	1	pc(s)	192
105 172	151239	01 01 01 01	7.20 kg	1	pc(s)	192
105 173	151253	01 01 01 01	8.60 kg	1	pc(s)	192
105 174	151277	01 01 01 01	10.14 kg	1	pc(s)	192
105 175	151208	01 01 01 01	4.40 kg	1	pc(s)	192
105 176	151222	01 01 01 01	6.00 kg	1	pc(s)	192
105 177	151246	01 01 01 01	7.45 kg	1	pc(s)	192
105 178	151260	01 01 01 01	9.00 kg	1	pc(s)	192
105 179	151284	01 01 01 01	10.40 kg	1	pc(s)	192
105 185	481411	01 01 01 01	3.72 kg	1	pc(s)	190
105 186	481435	01 01 01 01	5.89 kg	1	pc(s)	190
105 188	481442	01 01 01 01	8.88 kg	1	pc(s)	190
105 190	152045	01 01 01 01	9.20 kg	1	pc(s)	192
105 191	152052	01 01 01 01	12.60 kg	1	pc(s)	192
105 192	152069	01 01 01 01	16.20 kg	1	pc(s)	192
105 193	152076	01 01 01 01	19.40 kg	1	pc(s)	192
105 194	152083	01 01 01 01	22.40 kg	1	pc(s)	192
105 195	152090	01 01 01 01	10.00 kg	1	pc(s)	192
105 196	152106	01 01 01 01	14.30 kg	1	pc(s)	192
105 197	152113	01 01 01 01	16.80 kg	1	pc(s)	192
105 198	152120	01 01 01 01	20.00 kg	1	pc(s)	192
105 199	152137	01 01 01 01	23.60 kg	1	pc(s)	192
105 200	095908	01 01 01 01	9.60 kg	1	pc(s)	193/211
105 201	095915	01 01 01 01	17.23 kg	1	pc(s)	211/252
105 201	095915	01 01 01 01	17.23 kg	1	pc(s)	267
105 229	280625	01 07 01 01	89 g	10	pc(s)	222/249
105 229	280625	01 07 01 01	89 g	10	pc(s)	264
105 240	135116	01 07 01 02	7.23 kg	1	pc(s)	241
105 241	361225	01 07 01 01	4.66 kg	1	pc(s)	195/242
105 245	135383	01 07 01 02	1.16 kg	1	pc(s)	241
105 246	135390	01 07 01 02	1.14 kg	1	pc(s)	241
105 272	255777	01 07 01 01	2.30 kg	1	pc(s)	238
105 273	255807	01 07 01 01	2.65 kg	1	pc(s)	238
105 274	255814	01 07 01 01	3.20 kg	1	pc(s)	238
105 280	255838	01 07 01 01	3.59 kg	1	pc(s)	238
105 281	260962	01 07 01 01	4.00 kg	1	pc(s)	241
105 288	256040	01 07 01 01	4.55 kg	1	pc(s)	240
105 300	098534	01 01 01 05	5.20 kg	1	pc(s)	208
105 301	098541	01 01 01 05	7.23 kg	1	pc(s)	208
105 302	100077	01 01 01 05	10.20 kg	1	pc(s)	208
105 306	106024	01 01 01 05	5.23 kg	1	pc(s)	209
105 314	157781	01 07 01 01	10.10 kg	1	pc(s)	249
105 315	157804	01 07 01 01	12.00 kg	1	pc(s)	250
105 316	157798	01 07 01 01	15.60 kg	1	pc(s)	249
105 317	157811	01 07 01 01	17.12 kg	1	pc(s)	250
105 320	152373	01 07 01 03	10.60 kg	1	pc(s)	265
105 321	152397	01 07 01 03	12.20 kg	1	pc(s)	265
105 322	152380	01 07 01 03	15.80 kg	1	pc(s)	265
105 323	152403	01 07 01 03	16.30 kg	1	pc(s)	265
105 325	157828	01 07 01 01	5.42 kg	1	pc(s)	250
105 326	157842	01 07 01 01	5.82 kg	1	pc(s)	250
105 327	157835	01 07 01 01	8.15 kg	1	pc(s)	250
105 328	157859	01 07 01 01	8.34 kg	1	pc(s)	250
105 330	152496	01 07 01 01	5.60 kg	1	pc(s)	249
105 331	152502	01 07 01 01	6.12 kg	1	pc(s)	250
105 332	152519	01 07 01 01	8.25 kg	1	pc(s)	249
105 333	152526	01 07 01 01	8.51 kg	1	pc(s)	250

*) and 1) see page 342

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Part No.	GTIN*	PG	Weight	PU	SU	Page
105 336	157866	01 07 01 01	9.90 kg	1	pc(s)	250
105 337	157880	01 07 01 01	11.64 kg	1	pc(s)	250
105 338	157873	01 07 01 01	15.13 kg	1	pc(s)	250
105 339	157897	01 07 01 01	16.90 kg	1	pc(s)	250
105 340	098794	01 01 01 05	618 g	1	pc(s)	209/254
105 340	098794	01 01 01 05	618 g	1	pc(s)	269
105 341	098800	01 01 01 05	607 g	1	pc(s)	209/254
105 341	098800	01 01 01 05	607 g	1	pc(s)	269
105 342	111141	01 01 01 05	514 g	1	pc(s)	196/209
105 342	111141	01 01 01 05	514 g	1	pc(s)	238/254
105 342	111141	01 01 01 05	514 g	1	pc(s)	270
105 343	118515	01 01 01 05	3.60 kg	1	pc(s)	196/209
105 343	118515	01 01 01 05	3.60 kg	1	pc(s)	239/254
105 343	118515	01 01 01 05	3.60 kg	1	pc(s)	270
105 344	147300	01 01 01 05	1.52 kg	1	pc(s)	196/209
105 344	147300	01 01 01 05	1.52 kg	1	pc(s)	239/254
105 344	147300	01 01 01 05	1.52 kg	1	pc(s)	270
105 345	110489	01 01 01 05	3.60 kg	1	pc(s)	246/263
105 347	278554	01 01 01 05	2.42 kg	1	pc(s)	196/209
105 347	278554	01 01 01 05	2.42 kg	1	pc(s)	239/254
105 347	278554	01 01 01 05	2.42 kg	1	pc(s)	270
105 348	287013	01 01 01 05	540 g	1	pc(s)	196/209
105 348	287013	01 01 01 05	540 g	1	pc(s)	238/254
105 348	287013	01 01 01 05	540 g	1	pc(s)	270
105 349	288614	01 01 01 05	5.80 kg	1	pc(s)	196/209
105 349	288614	01 01 01 05	5.80 kg	1	pc(s)	239/254
105 349	288614	01 01 01 05	5.80 kg	1	pc(s)	270
105 351	238916	01 01 01 05	11.50 kg	1	pc(s)	252/267
105 354	098725	01 01 01 05	617 g	5	pc(s)	196/210
105 354	098725	01 01 01 05	617 g	5	pc(s)	239/254
105 354	098725	01 01 01 05	617 g	5	pc(s)	270
105 355	098732	01 01 01 05	690 g	1	pc(s)	210/254
105 355	098732	01 01 01 05	690 g	1	pc(s)	270
105 356	098749	01 01 01 05	562 g	5	pc(s)	210/255
105 356	098749	01 01 01 05	562 g	5	pc(s)	270
105 360	099777	01 01 01 05	358 g	1	pc(s)	210/254
105 360	099777	01 01 01 05	358 g	1	pc(s)	269
105 361	102033	01 01 01 05	385 g	1	pc(s)	210/254
105 361	102033	01 01 01 05	385 g	1	pc(s)	269
105 362	110496	01 01 01 05	467 g	1	pc(s)	210/254
105 362	110496	01 01 01 05	467 g	1	pc(s)	269
105 363	106031	01 01 01 05	8.87 kg	1	pc(s)	255/270
105 364	106048	01 01 01 05	10.85 kg	1	pc(s)	255/270
105 365	106055	01 01 01 05	14.63 kg	1	pc(s)	255/270
105 374	493308	01 05 01 02	263 g	1	pc(s)	190/191
105 375	493315	01 05 01 02	334 g	1	pc(s)	190/191
105 376	115545	01 01 01 05	660 g	1	pc(s)	210/255
105 376	115545	01 01 01 05	660 g	1	pc(s)	270
105 392	157903	01 07 01 03	10.20 kg	1	pc(s)	266
105 394	157910	01 07 01 03	15.10 kg	1	pc(s)	266
105 395	157934	01 07 01 03	17.12 kg	1	pc(s)	266
105 400	094383	01 01 01 01	13.40 kg	1	pc(s)	187
105 440	099692	01 01 01 05	7.64 kg	1	pc(s)	208
105 450	094413	01 01 01 01	13.80 kg	1	pc(s)	187
105 455	099715	01 01 01 05	11.45 kg	1	pc(s)	208
105 460	381513	01 07 01 02	529 g	1	pc(s)	225
105 461	381520	01 07 01 01	821 g	1	pc(s)	256
105 462	381537	01 07 01 03	830 g	1	pc(s)	272
105 466	484900	01 07 01 04	667 g	1	pc(s)	234
105 467	381599	01 07 01 03	4.10 kg	1	pc(s)	272
105 468	381582	01 07 01 03	3.65 kg	1	pc(s)	272
105 469	381575	01 07 01 01	3.64 kg	1	pc(s)	256
105 470	100138	01 01 01 05	14.65 kg	1	pc(s)	208
105 500	094420	01 01 01 01	15.00 kg	1	pc(s)	187
105 513	270282	01 07 01 03	5.00 kg	1	pc(s)	266
105 515	271821	01 07 01 03	7.84 kg	1	pc(s)	266
105 525	241985	01 01 01 01	3.40 kg	1	pc(s)	187
105 530	242029	01 01 01 01	3.80 kg	1	pc(s)	187
105 535	242043	01 01 01 01	4.10 kg	1	pc(s)	187
105 543	271845	01 07 01 03	6.24 kg	1	pc(s)	266
105 545	271876	01 07 01 03	8.72 kg	1	pc(s)	266
105 550	094437	01 01 01 01	15.20 kg	1	pc(s)	187
105 563	271937	01 07 01 03	5.54 kg	1	pc(s)	265
105 565	271944	01 07 01 03	7.92 kg	1	pc(s)	265
105 573	271975	01 07 01 03	6.40 kg	1	pc(s)	265
105 575	272026	01 07 01 03	8.74 kg	1	pc(s)	265
105 600	094444	01 01 01 01	29.40 kg	1	pc(s)	188
105 601	142336	01 01 01 01	6.00 kg	1	pc(s)	211/252
105 601	142336	01 01 01 01	6.00 kg	1	pc(s)	267
105 650	094451	01 01 01 01	30.00 kg	1	pc(s)	188
105 672	494473	01 07 01 04	2.50 kg	1	pc(s)	231
105 673	494497	01 07 01 04	2.77 kg	1	pc(s)	231
105 674	494503	01 07 01 04	3.50 kg	1	pc(s)	231
105 675	494510	01 07 01 04	3.77 kg	1	pc(s)	231
105 677	500044	01 07 01 04	3.30 kg	1	pc(s)	231
105 678	500051	01 07 01 04	3.57 kg	1	pc(s)	231
105 688	499775	01 07 01 04	4.74 kg	1	pc(s)	232
105 700	094468	01 01 01 01	31.20 kg	1	pc(s)	188
105 710	500969	01 01 01 01	11.58 kg	1	pc(s)	191
105 711	500976	01 01 01 01	13.32 kg	1	pc(s)	191
105 712	500983	01 01 01 01	15.74 kg	1	pc(s)	191
105 713	501041	01 01 01 01	25.82 kg	1	pc(s)	191
105 714	501058	01 01 01 01	19.38 kg	1	pc(s)	191
105 715	501065	01 01 01 01	29.88 kg	1	pc(s)	191
105 716	501072	01 01 01 01	28.81 kg	1	pc(s)	191
105 750	094475	01 01 01 01	31.40 kg	1	pc(s)	188
105 800	094338	01 01 01 01	32.60 kg	1	pc(s)	188
105 850	094482	01 01 01 01	32.80 kg	1	pc(s)	188
105 900	240766	01 01 01 01	33.29 kg	1	pc(s)	188
105 910	256941	01 01 01 01	53.00 kg	1	pc(s)	188
105 911	256958	01 01 01 01	54.00 kg	1	pc(s)	188
105 922	240520	01 01 01 01	97.31 kg	1	pc(s)	189
105 923	242081	01 01 01 01	98.31 kg	1	pc(s)	189
105 924	242104	01 01 01 01	103.31 kg	1	pc(s)	189
106 008	099241	01 01 01 01	352 g	1	pc(s)	201
106 090	100190	01 01 01 06	470 g	1	pc(s)	202
106 100	092907	01 01 01 06	545 g	1	pc(s)	202
106 105	100206	01 01 01 06	658 g	1	pc(s)	202
106 115	100213	01 01 01 06	488 g	1	pc(s)	202
106 120	092945	01 01 01 06	552 g	1	pc(s)	202
106 123	100220	01 01 01 06	686 g	1	pc(s)	202
106 125	099517	01 01 01 06	1.15 kg	10	pc(s)	203
106 126	093324	01 01 01 06	82 g	20	pc(s)	203
106 127	093317	01 01 01 06	228 g	20	pc(s)	203
106 128	123731	01 01 01 06	131 g	20	pc(s)	203
106 129	123748	01 01 01 06	135 g	20	pc(s)	203
106 150	092914	01 01 01 06	340 g	1	pc(s)	203
106 160	092938	01 01 01 06	286 g	1	pc(s)	203
106 165	100237	01 01 01 06	242 g	1	pc(s)	203
106 170	097285	01 01 01 06	310 g	1	pc(s)	203
106 175	100244	01 01 01 06	448 g	1	pc(s)	203
106 178	100251	01 01 01 06	260 g	1	pc(s)	204
106 180	097292	01 01 01 06	326 g	1	pc(s)	204
106 185	100268	01 01 01 06	465 g	1	pc(s)	204
106 207	127623	01 01 01 06	493 g	10	pc(s)	206
106 210	127630	01 01 01 06	625 g	10	pc(s)	206
106 217	128811	01 01 01 06	280 g	10	pc(s)	206
106 220	128828	01 01 01 06	410 g	10	pc(s)	206
106 225	100299	01 01 01 06	684 g	1	pc(s)	202
106 226	098930	01 01 01 06	722 g	1	pc(s)	202
106 228	100305	01 01 01 06	878 g	1	pc(s)	202
106 245	100336	01 01 01 06	561 g	1	pc(s)	202
106 246	098954	01 01 01 06	608 g	1	pc(s)	202
106 248	100343	01 01 01 06	762 g	1	pc(s)	202
106 301	096806	01 01 01 06	50 g	20	pc(s)	204
106 309	129276	01 01 01 06	100 g	20	pc(s)	204
106 310	096813	01 01 01 06	100 g	20	pc(s)	107
106 310	096813	01 01 01 06	100 g	20	pc(s)	204
106 311	096820	01 01 01 06	150 g	20	pc(s)	204
106 312	098756	01 01 01 05	327 g	5	pc(s)	204/211
106 314	136304	04 02 08 50	100 g	1	pc(s)	107
106 315	096943	01 01 01 06	98 g	20	pc(s)	204
106 316	096844	01 01 01 06	244 g	1	pc(s)	204
106 319	124820	01 01 01 06	271 g	1	pc(s)	206
106 320	149434	01 01 01 06	48 g	20	pc(s)	205
106 321	096851	01 01 01 06	121 g	10	pc(s)	205
106 322	097308	01 01 01 06	146 g	10	pc(s)	205

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106 323	097315	01 01 01 06	110 g	10	pc(s)	205
106 323	097315	01 01 01 06	110 g	10	pc(s)	235/258
106 323	097315	01 01 01 06	110 g	10	pc(s)	260/273
106 323	097315	01 01 01 06	110 g	10	pc(s)	275
106 324	099074	01 01 01 06	48 g	20	pc(s)	205/235
106 324	099074	01 01 01 06	48 g	20	pc(s)	258/260
106 324	099074	01 01 01 06	48 g	20	pc(s)	273/275
106 325	096929	01 01 01 06	222 g	10	pc(s)	205
106 326	096936	01 01 01 06	337 g	1	pc(s)	205
106 328	099098	01 01 01 05	547 g	1	pc(s)	211
106 329	107182	04 02 08 50	143 g	1	pc(s)	107
106 331	100367	01 01 01 05	715 g	1	pc(s)	211
106 340	096868	01 01 01 06	104 g	20	pc(s)	205
106 341	096875	01 01 01 06	104 g	20	pc(s)	205
106 342	096882	01 01 01 06	104 g	20	pc(s)	205
106 352	096905	01 01 01 06	375 g	10	pc(s)	204/210
106 353	096912	01 01 01 06	466 g	1	pc(s)	204/210
106 812	104907	01 07 01 01	435 g	1	pc(s)	225
106 814	381483	01 07 01 03	673 g	1	pc(s)	272
106 815	381506	01 07 01 01	538 g	1	pc(s)	234/257
106 852	119307	01 07 01 02	229 g	1	pc(s)	225
107 390	478466	01 07 01 01	7.22 kg	1	pc(s)	193/251
107 390	478466	01 07 01 01	7.22 kg	1	pc(s)	253/266
107 390	478466	01 07 01 01	7.22 kg	1	pc(s)	268
107 391	478473	01 07 01 01	15.60 kg	1	pc(s)	193/251
107 391	478473	01 07 01 01	15.60 kg	1	pc(s)	253/267
107 391	478473	01 07 01 01	15.60 kg	1	pc(s)	268
107 396	478442	01 07 01 01	934 g	1	pc(s)	193/252
107 396	478442	01 07 01 01	934 g	1	pc(s)	253/267
107 396	478442	01 07 01 01	934 g	1	pc(s)	268
107 399	478411	01 06 01 01	644 g	1	pc(s)	193/252
107 399	478411	01 06 01 01	644 g	1	pc(s)	253/267
107 399	478411	01 06 01 01	644 g	1	pc(s)	269
107 490	478480	01 07 01 01	9.85 kg	1	pc(s)	193/251
107 490	478480	01 07 01 01	9.85 kg	1	pc(s)	253/267
107 490	478480	01 07 01 01	9.85 kg	1	pc(s)	268
107 491	478497	01 07 01 01	17.57 kg	1	pc(s)	193/251
107 491	478497	01 07 01 01	17.57 kg	1	pc(s)	253/267
107 491	478497	01 07 01 01	17.57 kg	1	pc(s)	268
107 496	478459	01 07 01 01	1.25 kg	1	pc(s)	193/252
107 496	478459	01 07 01 01	1.25 kg	1	pc(s)	253/267
107 496	478459	01 07 01 01	1.25 kg	1	pc(s)	269
108 009	133686	01 01 01 03	288 g	1	pc(s)	201
110 000	021440	01 01 01 03	20 g	50	pc(s)	201
110 017	021457	01 01 01 03	28 g	10	pc(s)	201
123 021	092822	01 01 01 03	2.20 kg	1	pc(s)	198
123 032	242067	01 01 01 03	17.70 kg	1	pc(s)	199
123 040	353817	01 03 01 01	167 g	12	pc(s)	195/199
123 040	353817	01 03 01 01	167 g	12	pc(s)	242
123 041	353787	01 03 01 01	180 g	12	pc(s)	195/199
123 041	353787	01 03 01 01	180 g	12	pc(s)	242
123 042	353794	01 03 01 01	122 g	12	pc(s)	195/199
123 042	353794	01 03 01 01	122 g	12	pc(s)	242
123 043	353824	01 03 01 01	75 g	12	pc(s)	195/199
123 043	353824	01 03 01 01	75 g	12	pc(s)	242
123 050	402454	01 06 01 01	5.66 kg	1	pc(s)	195/242
123 051	402461	01 06 01 01	8.17 kg	1	pc(s)	195/242
123 052	402478	01 06 01 01	10.68 kg	1	pc(s)	195/242
123 109	107366	01 01 01 03	340 g	1	pc(s)	199
123 110	147911	01 01 01 03	321 g	1	pc(s)	200
123 116	147966	01 01 01 03	1.11 kg	1	pc(s)	200
123 425	129009	01 01 01 03	2.82 kg	1	pc(s)	198
123 430	129016	01 01 01 03	3.22 kg	1	pc(s)	198
123 435	129023	01 01 01 03	3.42 kg	1	pc(s)	198
145 241	022584	01 01 01 04	13.89 kg	1	pc(s)	144
146 309	072398	01 01 01 04	864 g	1	pc(s)	144
200 027	031258	01 04 01 04	46 g	10	pc(s)	152
200 029	031265	01 04 01 04	45 g	10	pc(s)	152
200 039	129283	01 04 01 04	40 g	10	pc(s)	100
200 039	129283	01 04 01 04	40 g	10	pc(s)	152
200 057	041530	01 04 01 04	30 g	25	pc(s)	151
200 059	041547	01 04 01 04	26 g	25	pc(s)	151
200 067	041554	01 04 01 04	34 g	25	pc(s)	151
200 069	041561	01 04 01 04	28 g	25	pc(s)	151
200 077	082335	01 04 01 04	32 g	50	pc(s)	151
200 079	069138	01 04 01 04	49 g	50	pc(s)	151
200 087	082342	01 04 01 04	36 g	50	pc(s)	151
200 089	074729	01 04 01 04	54 g	50	pc(s)	151
200 600	098220	01 06 01 01	4 g	50	pc(s)	156/163
200 601	098237	01 06 01 01	7 g	50	pc(s)	156/163
202 000	019881	01 03 01 02	9 g	50	pc(s)	151
202 001	020474	01 03 01 02	3 g	50	pc(s)	151
202 005	022041	01 03 01 01	70 g	50	pc(s)	146
202 010	019874	01 03 01 01	159 g	50	pc(s)	141
202 015	022089	01 03 01 01	59 g	50	pc(s)	147
202 017	019904	01 03 01 01	189 g	1	pc(s)	141
202 020	020764	01 03 01 01	250 g	25	pc(s)	138
202 021	020788	01 03 01 01	264 g	1	pc(s)	138
202 027	020771	01 03 01 01	290 g	1	pc(s)	138
202 030	022362	01 03 01 01	114 g	50	pc(s)	133
202 037	019942	01 03 01 01	187 g	50	pc(s)	141
202 040	019935	01 03 01 01	170 g	50	pc(s)	141
202 050	020214	01 03 01 01	137 g	25	pc(s)	142
202 060	022263	01 03 01 01	226 g	1	pc(s)	133
202 080	020276	01 03 01 01	250 g	50	pc(s)	142
202 169	105737	01 03 01 02	6 g	100	pc(s)	151
202 227	020795	01 03 01 01	290 g	25	pc(s)	138
202 829	159822	01 07 01 01	119 g	1	pc(s)	234/243
202 829	159822	01 07 01 01	119 g	1	pc(s)	257
202 850	354135	01 07 01 01	201 g	25	pc(s)	225/234
202 850	354135	01 07 01 01	201 g	25	pc(s)	243/257
202 851	354142	01 07 01 01	208 g	25	pc(s)	226/235
202 851	354142	01 07 01 01	208 g	25	pc(s)	243/257
202 852	354159	01 07 01 01	153 g	25	pc(s)	226/235
202 852	354159	01 07 01 01	153 g	25	pc(s)	243/257
202 853	354166	01 07 01 01	109 g	25	pc(s)	226/235
202 853	354166	01 07 01 01	109 g	25	pc(s)	243/257
202 857	153189	01 07 01 03	127 g	1	pc(s)	273
202 860	354180	01 07 01 03	207 g	25	pc(s)	274
202 861	354197	01 07 01 03	217 g	25	pc(s)	274
202 862	354203	01 07 01 03	160 g	25	pc(s)	274
202 863	354210	01 07 01 03	115 g	25	pc(s)	274
202 900	020801	01 03 01 01	127 g	1	pc(s)	138
202 901	019928	01 03 01 01	83 g	50	pc(s)	141
202 902	020467	01 03 01 01	81 g	50	pc(s)	141
202 906	022102	01 03 01 01	32 g	50	pc(s)	147
204 001	018990	01 03 01 02	8 g	100	pc(s)	148
204 002	019195	01 03 01 02	8 g	50	pc(s)	148
204 003	019034	01 03 01 02	15 g	100	pc(s)	148
204 004	019003	01 03 01 02	15 g	50	pc(s)	148
204 006	028371	01 03 01 02	19 g	50	pc(s)	148
204 007	019188	01 03 01 02	9 g	50	pc(s)	148
204 017	019058	01 03 01 02	9 g	100	pc(s)	148
204 027	018969	01 03 01 02	12 g	100	pc(s)	148
204 029	032286	01 03 01 01	35 g	50	pc(s)	139
204 037	019331	01 03 01 02	16 g	50	pc(s)	148
204 039	032293	01 03 01 01	35 g	50	pc(s)	139
204 049	032309	01 03 01 01	40 g	50	pc(s)	142
204 059	032316	01 03 01 01	41 g	50	pc(s)	142
204 069	032675	01 03 01 01	31 g	50	pc(s)	142
204 079	032668	01 03 01 01	31 g	50	pc(s)	142
204 089	109568	01 03 01 01	67 g	1	pc(s)	140
204 107	028104	01 03 01 01	105 g	25	pc(s)	138
204 109	028098	01 03 01 01	98 g	25	pc(s)	138
204 120	085749	01 03 01 02	20 g	50	pc(s)	148
204 127	028142	01 03 01 01	110 g	25	pc(s)	138
204 129	021433	01 03 01 01	102 g	25	pc(s)	138
204 147	042513	01 03 01 01	51 g	50	pc(s)	139
204 149	042285	01 03 01 01	52 g	50	pc(s)	139

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204 157	042520	01 03 01 01	83 g	50	pc(s)	139
204 159	042537	01 03 01 01	78 g	50	pc(s)	139
204 169	042551	01 03 01 01	100 g	1	pc(s)	139
204 170	072435	01 03 01 01	40 g	50	pc(s)	140
204 171	073708	01 03 01 01	38 g	50	pc(s)	140
204 177	042568	01 03 01 01	70 g	50	pc(s)	140
204 179	042575	01 03 01 01	60 g	50	pc(s)	140
204 187	042582	01 03 01 01	91 g	50	pc(s)	140
204 189	042599	01 03 01 01	83 g	50	pc(s)	140
204 197	042605	01 03 01 01	112 g	1	pc(s)	140
204 199	042278	01 03 01 01	111 g	50	pc(s)	140
204 229	035300	01 03 01 01	31 g	50	pc(s)	143
204 239	035317	01 03 01 01	31 g	50	pc(s)	143
204 247	041806	01 03 01 01	72 g	25	pc(s)	137
204 249	041790	01 03 01 01	68 g	25	pc(s)	137
204 267	035805	01 03 01 01	70 g	25	pc(s)	137
204 269	035812	01 03 01 01	64 g	25	pc(s)	137
204 359	082779	01 03 01 01	61 g	1	pc(s)	142
204 449	124837	01 03 01 01	66 g	25	pc(s)	137
204 469	124851	01 03 01 01	63 g	25	pc(s)	137
204 906	028456	01 03 01 01	19 g	50	pc(s)	147
204 911	030640	01 03 01 01	98 g	25	pc(s)	138
204 913	030664	01 03 01 01	108 g	25	pc(s)	138
204 916	030565	01 03 01 01	19 g	50	pc(s)	147
204 921	030589	01 03 01 01	50 g	1	pc(s)	139
204 924	030619	01 03 01 01	64 g	50	pc(s)	140
204 925	030626	01 03 01 01	90 g	50	pc(s)	140
204 935	029958	01 03 01 01	40 g	1	pc(s)	139
204 936	029927	01 03 01 01	40 g	50	pc(s)	139
204 937	029941	01 03 01 01	46 g	50	pc(s)	139
204 938	029989	01 03 01 01	47 g	50	pc(s)	139
204 949	129290	01 03 01 01	54 g	50	pc(s)	139
204 957	129269	01 03 01 01	55 g	50	pc(s)	139
206 049	242982	01 03 01 01	25 g	50	pc(s)	142
206 105	083189	01 03 01 01	74 g	50	pc(s)	146
206 109	042810	01 03 01 01	110 g	25	pc(s)	138
206 170	082816	01 03 01 01	51 g	50	pc(s)	141
206 171	089488	01 03 01 01	51 g	50	pc(s)	141
206 207	054257	01 03 01 01	65 g	50	pc(s)	140
206 209	042759	01 03 01 01	59 g	50	pc(s)	140
206 217	052208	01 03 01 01	93 g	50	pc(s)	140
206 219	042766	01 03 01 01	83 g	50	pc(s)	140
206 227	054264	01 03 01 01	117 g	50	pc(s)	140
206 229	042773	01 03 01 01	114 g	50	pc(s)	140
206 237	077300	01 03 01 01	81 g	25	pc(s)	137
206 239	042650	01 03 01 01	74 g	25	pc(s)	137
206 247	078574	01 03 01 01	92 g	25	pc(s)	137
206 249	042803	01 03 01 01	80 g	25	pc(s)	137
206 289	149427	01 03 01 01	76 g	50	pc(s)	141
206 309	042780	01 03 01 01	60 g	50	pc(s)	141
206 319	042667	01 03 01 01	87 g	50	pc(s)	141
206 329	042797	01 03 01 01	110 g	50	pc(s)	141
206 339	047730	01 03 01 01	27 g	50	pc(s)	147
206 349	047716	01 03 01 01	48 g	50	pc(s)	143
206 359	047723	01 03 01 01	65 g	50	pc(s)	142
206 369	086494	01 03 01 01	50 g	50	pc(s)	143
206 379	430983	01 03 01 01	56 g	50	pc(s)	143
206 389	109544	01 03 01 01	62 g	50	pc(s)	143
206 399	109551	01 03 01 01	63 g	50	pc(s)	143
206 439	124875	01 03 01 01	72 g	25	pc(s)	137
206 449	124899	01 03 01 01	78 g	25	pc(s)	137
206 807	046306	01 03 01 01	107 g	25	pc(s)	138
206 809	077485	01 03 01 01	114 g	25	pc(s)	138
206 817	078581	01 03 01 01	122 g	25	pc(s)	138
206 819	077362	01 03 01 01	115 g	25	pc(s)	138
207 007	054899	01 03 01 02	16 g	50	pc(s)	147
207 009	054882	01 03 01 02	16 g	50	pc(s)	147
207 017	054905	01 03 01 02	16 g	50	pc(s)	147
207 019	054912	01 03 01 02	20 g	50	pc(s)	147
207 027	042728	01 03 01 02	26 g	50	pc(s)	147
207 029	042711	01 03 01 02	24 g	50	pc(s)	147
207 037	042742	01 03 01 02	26 g	50	pc(s)	147
207 039	042735	01 03 01 02	24 g	50	pc(s)	147
207 107	235649	01 03 01 02	30 g	50	pc(s)	147
207 109	085800	01 03 01 02	27 g	50	pc(s)	147
216 000	020054	01 03 01 01	74 g	25	pc(s)	139
223 005	099937	01 03 01 03	481 g	1	pc(s)	200
223 010	092778	01 03 01 01	184 g	50	pc(s)	145
223 011	092785	01 03 01 01	167 g	50	pc(s)	145
223 020	092792	01 03 01 01	121 g	50	pc(s)	145
223 021	092808	01 03 01 01	103 g	50	pc(s)	146
223 031	092815	01 03 01 01	117 g	50	pc(s)	145
223 040	096752	01 03 01 01	100 g	50	pc(s)	145
223 041	096769	01 03 01 01	96 g	50	pc(s)	145
223 070	108738	01 03 01 01	103 g	50	pc(s)	145
223 071	108745	01 03 01 01	94 g	50	pc(s)	145
239 000	022621	01 01 01 04	4.70 kg	1	pc(s)	144
239 001	022638	01 01 01 04	5.17 kg	1	pc(s)	144
239 009	072350	01 01 01 04	4.04 kg	1	pc(s)	144
239 019	093560	01 01 01 04	5.20 kg	1	pc(s)	144
240 000	022614	01 01 01 04	1.50 kg	1	pc(s)	144
241 009	072985	01 01 01 04	376 g	20	pc(s)	144
250 000	023871	01 03 01 02	30 g	50	pc(s)	148
250 001	023888	01 03 01 02	29 g	50	pc(s)	148
250 007	023895	01 03 01 02	29 g	50	pc(s)	148
251 002	095779	01 04 01 02	135 g	50	pc(s)	177
251 027	096394	01 04 01 02	148 g	50	pc(s)	177
252 000	023963	01 03 01 03	45 g	50	pc(s)	161
253 015	022201	01 03 01 01	1.04 kg	10	pc(s)	132/224
253 015	022201	01 03 01 01	1.04 kg	10	pc(s)	233/255
253 021	022256	01 03 01 01	6 g	50	pc(s)	133
253 023	022249	01 03 01 01	8 g	50	pc(s)	133
253 025	053984	01 03 01 01	6 g	50	pc(s)	133
253 026	100169	01 07 01 01	8 g	50	pc(s)	224/233
253 026	100169	01 07 01 01	8 g	50	pc(s)	255
253 027	110427	01 07 01 01	8 g	50	pc(s)	255
253 030	054271	01 03 01 01	58 g	100	pc(s)	133
253 050	079687	01 03 01 01	1.04 kg	10	pc(s)	132
253 051	079823	01 03 01 01	38 g	100	pc(s)	132
253 060	081628	01 03 01 01	1.04 kg	10	pc(s)	132
253 115	129870	01 03 01 01	4.82 kg	24	pc(s)	207
253 125	129887	01 03 01 01	4.84 kg	24	pc(s)	207
253 229	159846	01 07 01 01	4.89 kg	1	pc(s)	224/233
253 229	159846	01 07 01 01	4.89 kg	1	pc(s)	255
253 239	159853	01 07 01 01	8.70 kg	1	pc(s)	224/233
253 239	159853	01 07 01 01	8.70 kg	1	pc(s)	255
253 279	159877	01 07 01 01	178 g	1	pc(s)	224/233
253 279	159877	01 07 01 01	178 g	1	pc(s)	256
253 289	159860	01 07 01 01	89 g	1	pc(s)	224/233
253 289	159860	01 07 01 01	89 g	1	pc(s)	255
253 300	129771	01 03 01 01	165 g	24	pc(s)	207/224
253 300	129771	01 03 01 01	165 g	24	pc(s)	233/256
253 300	129771	01 03 01 01	165 g	24	pc(s)	271
253 301	129788	01 03 01 01	4.60 kg	24	pc(s)	207/224
253 301	129788	01 03 01 01	4.60 kg	24	pc(s)	233/255
253 301	129788	01 03 01 01	4.60 kg	24	pc(s)	271
253 302	129764	01 03 01 01	13 g	24	pc(s)	207
253 310	129795	01 03 01 01	470 g	10	pc(s)	207
253 315	129801	01 03 01 01	55 g	24	pc(s)	200/207
253 325	129863	01 03 01 01	77 g	24	pc(s)	200/207
253 330	153585	01 07 01 03	96 g	1	pc(s)	271
253 331	155206	01 07 01 03	180 g	25	pc(s)	271
253 333	153578	01 07 01 03	4.74 kg	24	pc(s)	271
253 334	154933	01 07 01 03	8.59 kg	1	pc(s)	271
260 106	023512	01 03 01 03	112 g	50	pc(s)	160
260 108	023413	01 03 01 02	96 g	50	pc(s)	150

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Part No.	GTIN*	PG	Weight	PU	SU	Page
260 158	023420	01 03 01 02	117 g	1	pc(s)	150
260 708	023406	01 03 01 02	80 g	50	pc(s)	150
273 019	031487	01 03 01 02	22 g	50	pc(s)	151
273 731	096691	01 03 01 03	146 g	1	pc(s)	161
273 740	096714	01 03 01 02	111 g	50	pc(s)	150/160
273 741	096721	01 03 01 02	123 g	50	pc(s)	150/160
273 742	096738	01 03 01 02	145 g	50	pc(s)	150/160
274 030	130340	01 03 01 02	34 g	50	pc(s)	155/161
274 110	123434	01 03 01 02	30 g	50	pc(s)	149/158
274 113	123403	01 03 01 02	36 g	50	pc(s)	149/159
274 116	123410	01 03 01 03	37 g	50	pc(s)	160/186
274 117	128194	01 03 01 02	30 g	50	pc(s)	149/158
274 150	128187	01 03 01 02	33 g	50	pc(s)	149/158
274 160	123380	01 03 01 02	40 g	50	pc(s)	149/159
274 160	123380	01 03 01 02	40 g	50	pc(s)	280
274 167	128200	01 03 01 02	41 g	50	pc(s)	149/159
274 230	130456	01 03 01 02	45 g	50	pc(s)	155/161
274 260	123489	01 03 01 03	48 g	50	pc(s)	160/186
275 019	031494	01 03 01 03	31 g	50	pc(s)	161
275 030	095847	01 03 01 02	87 g	50	pc(s)	155/162
275 110	095793	01 03 01 02	65 g	50	pc(s)	149/159
275 113	095816	01 03 01 02	82 g	50	pc(s)	150/159
275 116	095823	01 03 01 03	96 g	50	pc(s)	160
275 129	106758	01 07 01 01	21 g	10	pc(s)	278
275 160	095809	01 03 01 02	76 g	50	pc(s)	149/159
275 220	103450	01 07 01 01	18 g	25	pc(s)	226/236
275 220	103450	01 07 01 01	18 g	25	pc(s)	243/258
275 220	103450	01 07 01 01	18 g	25	pc(s)	278
275 225	103467	01 07 01 01	18 g	1	pc(s)	258
275 229	102040	01 07 01 01	59 g	50	pc(s)	236/259
275 229	102040	01 07 01 01	59 g	50	pc(s)	278
275 230	095854	01 03 01 02	94 g	50	pc(s)	155/162
275 239	115811	01 07 01 01	73 g	1	pc(s)	259
275 240	152335	01 07 01 03	53 g	25	pc(s)	273
275 241	152342	01 07 01 03	53 g	25	pc(s)	273
275 242	152359	01 07 01 03	52 g	25	pc(s)	273
275 249	152366	01 07 01 03	56 g	25	pc(s)	273
275 250	155602	01 07 01 01	46 g	25	pc(s)	226/235
275 250	155602	01 07 01 01	46 g	25	pc(s)	243/258
275 251	155619	01 07 01 01	46 g	25	pc(s)	226/235
275 251	155619	01 07 01 01	46 g	25	pc(s)	243/258
275 252	155626	01 07 01 01	46 g	25	pc(s)	226/236
275 252	155626	01 07 01 01	46 g	25	pc(s)	243/258
275 259	155633	01 07 01 01	49 g	25	pc(s)	226/236
275 259	155633	01 07 01 01	49 g	25	pc(s)	243/258
275 260	095830	01 03 01 03	100 g	50	pc(s)	160
275 319	229952	01 07 01 01	124 g	10	pc(s)	235/258
275 320	099876	01 07 01 01	250 g	1	pc(s)	235/258
275 330	105065	01 07 01 01	218 g	1	pc(s)	236/258
275 333	105072	01 07 01 01	220 g	1	pc(s)	258
275 339	223332	01 07 01 01	247 g	1	pc(s)	273
275 359	223271	01 07 01 01	131 g	1	pc(s)	273
275 440	146914	01 07 01 01	152 g	10	pc(s)	259
275 441	146921	01 07 01 01	240 g	10	pc(s)	259
275 442	146938	01 07 01 01	250 g	10	pc(s)	260
275 444	244252	01 07 01 01	158 g	10	pc(s)	260
275 450	244436	01 07 01 01	168 g	10	pc(s)	274
275 451	244498	01 07 01 01	273 g	10	pc(s)	274
275 454	244504	01 07 01 01	173 g	10	pc(s)	274
275 455	244535	01 07 01 01	277 g	10	pc(s)	275
275 460	485921	01 07 01 04	138 g	10	pc(s)	232
275 461	485938	01 07 01 04	211 g	10	pc(s)	232
275 462	485952	01 07 01 04	214 g	10	pc(s)	232
275 464	485945	01 07 01 04	145 g	10	pc(s)	232
275 498	146945	01 07 01 01	320 g	10	pc(s)	232/259
275 498	146945	01 07 01 01	320 g	10	pc(s)	274
275 711	124233	01 03 01 02	37 g	50	pc(s)	154
275 716	124226	01 03 01 03	40 g	50	pc(s)	154
275 730	124219	01 03 01 02	42 g	50	pc(s)	154
276 006	023291	01 03 01 02	2 g	100	pc(s)	150
276 007	028166	01 03 01 02	2 g	100	pc(s)	150
276 009	083318	01 03 01 02	8 g	100	pc(s)	150
276 016	123373	01 03 01 02	3 g	100	pc(s)	150
276 017	126596	01 03 01 02	3 g	100	pc(s)	150
276 056	104983	01 06 01 01	2 g	100	pc(s)	130
276 057	104990	01 06 01 01	2 g	1	pc(s)	130
277 130	022669	01 03 01 02	28 g	50	pc(s)	325
277 230	110984	01 05 01 04	120 g	25	pc(s)	156/162
277 230	110984	01 05 01 04	120 g	25	pc(s)	325
277 237	110991	01 05 01 04	126 g	25	pc(s)	156/162
277 237	110991	01 05 01 04	126 g	25	pc(s)	325
277 239	111004	01 05 01 04	117 g	25	pc(s)	156/162
277 239	111004	01 05 01 04	117 g	25	pc(s)	325
277 240	022577	01 05 01 04	167 g	25	pc(s)	156/162
277 240	022577	01 05 01 04	167 g	25	pc(s)	325
284 030	022485	01 03 01 02	54 g	100	pc(s)	155/161
284 040	022492	01 03 01 02	65 g	100	pc(s)	155/161
286 030	022508	01 03 01 02	60 g	50	pc(s)	155/162
286 139	035393	01 03 01 02	45 g	50	pc(s)	155/162
286 819	085824	01 03 01 02	70 g	50	pc(s)	149/159
290 001	027909	03 01 01 01	326 g	25	pc(s)	296
290 002	027893	03 01 01 01	89 g	50	pc(s)	296
297 015	023383	01 03 01 01	131 g	25	pc(s)	133
297 025	023390	01 03 01 01	5 g	100	pc(s)	133
297 110	100886	01 03 01 01	32 g	50	pc(s)	146
297 120	100916	01 03 01 01	40 g	50	pc(s)	146
297 199	107526	01 50 01 03	864 g	1	liter	146
300 002	024052	01 04 01 02	115 g	25	pc(s)	153/170
300 017	024069	01 04 01 02	154 g	1	pc(s)	153/170
301 000	067035	01 04 01 02	61 g	100	pc(s)	153/170
301 007	021358	01 04 01 02	75 g	100	pc(s)	153/170
301 009	081284	01 04 01 02	61 g	100	pc(s)	153/170
301 010	067028	01 04 01 02	61 g	100	pc(s)	153/170
301 010	067028	01 04 01 02	61 g	100	pc(s)	328
301 017	053502	01 04 01 02	79 g	100	pc(s)	153/170
301 017	053502	01 04 01 02	79 g	100	pc(s)	328
301 019	081277	01 04 01 02	63 g	100	pc(s)	153/170
301 020	481541	01 04 01 02	118 g	50	pc(s)	153/170
301 089	304161	01 04 01 02	61 g	100	pc(s)	153/170
301 099	304178	01 04 01 02	63 g	100	pc(s)	153/170
301 209	158252	01 04 01 02	59 g	1	pc(s)	184/261
301 209	158252	01 04 01 02	59 g	1	pc(s)	275/328
301 229	101562	01 07 01 01	167 g	1	pc(s)	154/170
301 229	101562	01 07 01 01	167 g	1	pc(s)	328
302 010	134904	01 04 01 01	137 g	50	pc(s)	154/170
305 000	041936	01 04 01 01	146 g	50	pc(s)	171
305 007	052307	01 04 01 01	151 g	50	pc(s)	171
306 020	096264	01 04 01 01	145 g	50	pc(s)	171
306 029	129467	01 04 01 01	120 g	50	pc(s)	171
306 100	024113	01 04 01 01	238 g	25	pc(s)	172
306 101	024120	01 04 01 01	412 g	25	pc(s)	172
306 105	269125	01 05 01 05	242 g	1	pc(s)	327
306 106	269149	01 05 01 05	420 g	1	pc(s)	327
306 121	284920	03 01 01 01	161 g	50	pc(s)	171/217
306 121	284920	03 01 01 01	161 g	50	pc(s)	294
306 122	284937	03 01 01 01	165 g	50	pc(s)	171/217
306 122	284937	03 01 01 01	165 g	50	pc(s)	294
306 200	327368	01 05 01 05	74 g	50	pc(s)	332
306 201	327375	01 05 01 05	74 g	50	pc(s)	332
306 202	327351	01 05 01 05	71 g	50	pc(s)	332
306 203	327382	01 05 01 05	74 g	50	pc(s)	332
306 204	336766	01 05 01 05	75 g	50	pc(s)	332
306 205	336773	01 05 01 05	73 g	50	pc(s)	332
306 206	336780	01 05 01 05	71 g	50	pc(s)	332
306 210	327399	01 05 01 05	356 g	15	pc(s)	332

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Part No.	GTIN*	PG	Weight	PU	SU	Page
306 211	327405	01 05 01 05	340 g	15	pc(s)	332
306 212	327412	01 05 01 05	314 g	15	pc(s)	333
306 213	327429	01 05 01 05	392 g	15	pc(s)	333
306 220	327436	01 05 01 05	394 g	50	pc(s)	333
306 230	327443	01 05 01 05	11 g	10	pc(s)	333
306 231	327450	01 05 01 05	11 g	10	pc(s)	333
306 240	327467	01 05 01 05	2 g	20	pc(s)	333
307 000	024151	01 04 01 01	105 g	50	pc(s)	171
307 007	024168	01 04 01 01	104 g	50	pc(s)	171
308 001	027947	03 01 01 01	216 g	25	pc(s)	295
308 025	035881	03 01 01 01	100 g	50	pc(s)	216/293
308 026	035874	03 01 01 01	107 g	25	pc(s)	216/293
308 030	030749	03 01 01 01	125 g	50	pc(s)	216/293
308 031	136571	03 01 01 01	230 g	25	pc(s)	218/294
308 032	152823	03 01 01 01	169 g	25	pc(s)	218/294
308 035	123472	03 01 01 01	165 g	25	pc(s)	214/216
308 035	123472	03 01 01 01	165 g	25	pc(s)	289/293
308 036	136588	03 01 01 01	266 g	25	pc(s)	218/294
308 037	154704	03 01 01 01	208 g	25	pc(s)	218/294
308 040	055902	03 01 01 01	450 g	20	pc(s)	169/217
308 040	055902	03 01 01 01	450 g	20	pc(s)	293
308 041	056411	03 01 01 01	471 g	20	pc(s)	169/217
308 041	056411	03 01 01 01	471 g	20	pc(s)	293
308 045	124455	03 01 01 01	262 g	25	pc(s)	217/293
308 046	124462	03 01 01 01	288 g	25	pc(s)	214/217
308 046	124462	03 01 01 01	288 g	25	pc(s)	289/293
308 060	066281	03 01 01 01	138 g	50	pc(s)	175
308 062	344051	03 01 01 01	156 g	50	pc(s)	174/295
308 070	066298	03 01 01 01	197 g	1	pc(s)	175
308 120	099258	03 01 01 01	134 g	25	pc(s)	217
308 120	099258	03 01 01 01	134 g	25	pc(s)	294
308 129	099265	03 01 01 01	131 g	25	pc(s)	217/294
308 130	288942	03 01 01 01	18 g	50	pc(s)	215/292
308 131	288881	03 01 01 01	18 g	50	pc(s)	215/292
308 132	288423	03 01 01 01	20 g	50	pc(s)	215/292
308 133	288911	03 01 01 01	20 g	50	pc(s)	215/292
308 134	308091	03 01 01 01	18 g	50	pc(s)	216/292
308 135	308107	03 01 01 01	18 g	50	pc(s)	216/292
308 136	308114	03 01 01 01	18 g	50	pc(s)	216/292
308 137	308121	03 01 01 01	18 g	50	pc(s)	216/292
308 140	288935	03 01 01 01	21 g	50	pc(s)	216/292
308 141	288904	03 01 01 01	19 g	50	pc(s)	216/292
308 142	288522	03 01 01 01	18 g	50	pc(s)	216/292
308 143	289123	03 01 01 01	18 g	50	pc(s)	216/292
308 150	106970	03 01 01 01	682 g	1	pc(s)	296
308 220	084216	03 01 01 01	250 g	25	pc(s)	175/295
308 229	083745	03 01 01 01	190 g	25	pc(s)	175/295
308 230	090859	03 01 01 01	241 g	25	pc(s)	175/295
308 239	090866	03 01 01 01	197 g	25	pc(s)	175/295
308 249	129313	03 01 01 01	200 g	25	pc(s)	175
308 249	129313	03 01 01 01	200 g	25	pc(s)	295
308 320	028531	03 01 01 01	266 g	25	pc(s)	175/295
308 329	081338	03 01 01 01	220 g	25	pc(s)	175/280
308 329	081338	03 01 01 01	220 g	25	pc(s)	295
308 330	096660	03 01 01 01	266 g	25	pc(s)	175/295
308 403	070509	04 02 10 01	26 g	10	pc(s)	109
308 404	070516	04 02 10 01	32 g	10	pc(s)	109
308 405	070523	04 02 10 01	37 g	10	pc(s)	109
308 406	070530	04 02 10 01	49 g	10	pc(s)	109
308 407	070547	04 02 10 01	60 g	10	pc(s)	109
308 408	070554	04 02 10 01	73 g	10	pc(s)	109
308 411	070578	04 02 10 01	56 g	5	pc(s)	109
308 421	070561	04 02 10 50	974 g	10	pc(s)	109
308 425	058798	04 02 10 01	19 g	10	pc(s)	109
309 008	024229	01 04 01 01	140 g	50	pc(s)	171
309 087	024243	01 04 01 01	99 g	50	pc(s)	171
310 008	024328	01 04 01 01	124 g	50	pc(s)	171
314 300	096400	01 04 01 01	120 g	50	pc(s)	172
314 307	096417	01 04 01 01	132 g	50	pc(s)	172
314 310	042841	01 04 01 01	174 g	50	pc(s)	172
315 119	134072	01 04 01 01	90 g	50	pc(s)	171
316 163	024502	01 04 01 01	191 g	1	pc(s)	172
316 167	035386	01 04 01 01	209 g	25	pc(s)	172
318 033	021471	03 01 01 01	236 g	25	pc(s)	174
318 201	021464	03 01 01 01	234 g	25	pc(s)	173
318 203	159914	03 01 01 01	329 g	1	pc(s)	174
318 205	159921	03 01 01 01	242 g	25	pc(s)	174
318 207	021488	03 01 01 01	253 g	1	pc(s)	173
318 209	035973	03 01 01 01	245 g	25	pc(s)	173
318 219	129320	03 01 01 01	235 g	25	pc(s)	173
318 229	159938	03 01 01 01	323 g	25	pc(s)	174
318 233	096646	03 01 01 01	225 g	25	pc(s)	174
318 239	159945	03 01 01 01	240 g	25	pc(s)	174
318 251	046559	03 01 01 01	241 g	25	pc(s)	173
318 252	048454	03 01 01 01	251 g	25	pc(s)	174
319 201	024519	03 01 01 01	320 g	25	pc(s)	173
319 202	024526	03 01 01 01	333 g	25	pc(s)	173
319 207	020047	03 01 01 01	349 g	25	pc(s)	173
319 209	035980	03 01 01 01	313 g	25	pc(s)	173
319 219	069916	03 01 01 01	319 g	25	pc(s)	173
319 229	108752	03 01 01 01	409 g	25	pc(s)	173
320 044	021501	03 01 01 01	301 g	25	pc(s)	174
321 045	021518	03 01 01 01	413 g	25	pc(s)	173
321 047	021525	03 01 01 01	453 g	25	pc(s)	173
338 000	024847	01 04 01 02	171 g	25	pc(s)	179
338 001	054172	01 04 01 02	68 g	25	pc(s)	179
338 007	024854	01 04 01 02	190 g	25	pc(s)	179
338 009	057982	01 04 01 02	136 g	25	pc(s)	179
339 010	024823	01 04 01 02	195 g	25	pc(s)	179
339 050	096257	01 04 01 02	138 g	25	pc(s)	179
339 051	127388	01 04 01 02	95 g	25	pc(s)	179
339 057	096332	01 04 01 02	150 g	25	pc(s)	179
339 059	096301	01 04 01 02	132 g	25	pc(s)	179
339 060	046870	01 04 01 02	133 g	25	pc(s)	179
339 061	127395	01 04 01 02	83 g	25	pc(s)	179
339 067	046887	01 04 01 02	136 g	25	pc(s)	179
339 069	079960	01 04 01 02	122 g	25	pc(s)	179
339 100	092068	01 04 01 02	180 g	25	pc(s)	178
339 101	092082	01 04 01 02	84 g	1	pc(s)	178
339 110	092105	01 04 01 02	176 g	25	pc(s)	178
339 111	092129	01 04 01 02	92 g	25	pc(s)	178
339 157	096325	01 04 01 02	142 g	25	pc(s)	179
339 167	034426	01 04 01 02	140 g	1	pc(s)	179
343 000	024861	01 04 01 02	167 g	25	pc(s)	180
343 007	024878	01 04 01 02	180 g	1	pc(s)	180
345 008	025073	01 04 01 02	27 g	100	pc(s)	180
345 010	025080	01 04 01 02	25 g	100	pc(s)	180
347 205	136601	01 04 01 02	25 g	100	pc(s)	180
363 000	045750	01 04 01 02	66 g	50	pc(s)	214/290
363 010	045743	01 04 01 02	124 g	50	pc(s)	214/290
365 000	024731	01 04 01 02	109 g	50	pc(s)	177
365 007	024748	01 04 01 02	131 g	50	pc(s)	177
365 010	096318	01 04 01 02	107 g	50	pc(s)	177
365 017	096349	01 04 01 02	105 g	50	pc(s)	177
365 019	096295	01 04 01 02	83 g	50	pc(s)	177
365 020	035126	01 04 01 02	120 g	50	pc(s)	177
365 027	035133	01 04 01 02	146 g	50	pc(s)	177
365 030	046894	01 04 01 02	100 g	50	pc(s)	177
365 031	055438	01 04 01 02	49 g	50	pc(s)	177
365 037	046900	01 04 01 02	103 g	50	pc(s)	177

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Part No.	GTIN*	PG	Weight	PU	SU	Page
365 039	057777	01 04 01 02	89 g	50	pc(s)	177
365 040	069053	01 04 01 02	124 g	50	pc(s)	178
365 047	069046	01 04 01 02	139 g	50	pc(s)	178
365 050	091825	01 04 01 02	155 g	50	pc(s)	178
365 051	091832	01 04 01 02	75 g	50	pc(s)	178
365 057	091849	01 04 01 02	165 g	50	pc(s)	178
365 059	091856	01 04 01 02	134 g	50	pc(s)	145/178
365 117	035331	01 04 01 02	115 g	50	pc(s)	178
365 127	080317	01 04 01 02	104 g	1	pc(s)	178
365 220	096103	01 04 01 02	171 g	50	pc(s)	178
365 221	092396	01 04 01 02	91 g	50	pc(s)	178
365 227	096127	01 04 01 02	197 g	50	pc(s)	178
365 229	096110	01 04 01 02	161 g	50	pc(s)	178
365 250	148307	01 04 01 02	83 g	50	pc(s)	322
365 419	128927	01 04 01 03	458 g	5	pc(s)	136
365 509	141773	01 04 01 03	335 g	1	pc(s)	136
365 519	130869	01 04 01 03	333 g	1	pc(s)	136
370 014	096387	01 04 01 02	188 g	25	pc(s)	176
370 018	024724	01 04 01 02	290 g	25	pc(s)	176
371 007	024663	01 04 01 02	231 g	1	pc(s)	175
371 008	024670	01 04 01 02	148 g	50	pc(s)	176
371 009	024656	01 04 01 02	208 g	20	pc(s)	175
372 018	104624	01 04 01 02	158 g	25	pc(s)	177
372 019	104631	01 04 01 02	154 g	25	pc(s)	177
372 035	104648	01 04 01 02	177 g	25	pc(s)	177
372 110	119055	01 04 01 02	283 g	25	pc(s)	176
372 119	119178	01 04 01 02	277 g	25	pc(s)	176
372 120	119062	01 04 01 02	288 g	25	pc(s)	176
372 129	119185	01 04 01 02	283 g	25	pc(s)	176
372 140	119086	01 04 01 02	336 g	25	pc(s)	176
372 149	119208	01 04 01 02	326 g	25	pc(s)	176
372 150	119093	01 04 01 02	339 g	25	pc(s)	176
372 159	119215	01 04 01 02	333 g	25	pc(s)	176
372 169	463660	01 04 01 02	280 g	10	pc(s)	328
372 179	463684	01 04 01 02	333 g	10	pc(s)	328
372 210	119116	01 04 01 02	284 g	25	pc(s)	176
372 219	119239	01 04 01 02	278 g	25	pc(s)	176
372 220	119123	01 04 01 02	288 g	25	pc(s)	176
372 229	119246	01 04 01 02	283 g	25	pc(s)	176
372 240	119147	01 04 01 02	335 g	25	pc(s)	176
372 249	119260	01 04 01 02	326 g	1	pc(s)	176
372 250	119154	01 04 01 02	338 g	25	pc(s)	176
372 259	119277	01 04 01 02	331 g	25	pc(s)	176
372 269	463677	01 04 01 02	281 g	10	pc(s)	328
372 279	463691	01 04 01 02	332 g	10	pc(s)	328
374 011	030701	01 04 01 03	80 g	25	pc(s)	134
374 020	030725	01 04 01 03	37 g	50	pc(s)	134
377 005	024908	01 04 01 02	22 g	50	pc(s)	180
377 006	024922	01 04 01 03	37 g	50	pc(s)	134
377 007	092686	01 04 01 03	107 g	10	pc(s)	135
377 009	119284	01 04 01 02	52 g	50	pc(s)	180
377 015	092693	01 04 01 03	36 g	10	pc(s)	135
377 016	083417	01 04 01 03	36 g	50	pc(s)	134
377 017	024915	01 04 01 02	49 g	50	pc(s)	180
377 026	068582	01 04 01 03	45 g	50	pc(s)	134
377 027	034204	01 04 01 03	112 g	50	pc(s)	134
377 045	099296	01 04 01 03	36 g	100	pc(s)	135
377 100	078604	01 04 01 02	74 g	50	pc(s)	180
377 107	092709	01 04 01 03	172 g	10	pc(s)	135
377 115	092716	01 04 01 03	59 g	10	pc(s)	135
377 200	136465	01 04 01 02	70 g	50	pc(s)	180
377 210	083028	01 04 01 03	53 g	10	pc(s)	136
377 216	494565	01 04 01 03	412 g	1	pc(s)	135
377 217	494572	01 04 01 03	412 g	1	pc(s)	135
377 225	494589	01 04 01 03	559 g	1	pc(s)	135
377 226	494596	01 04 01 03	559 g	1	pc(s)	135
377 235	494602	01 04 01 03	146 g	1	pc(s)	135
377 236	494619	01 04 01 03	937 g	1	pc(s)	135
377 250	494725	01 04 01 03	1.02 kg	1	pc(s)	135
377 251	494732	01 04 01 03	1.02 kg	1	pc(s)	135
377 270	494749	01 04 01 03	1.40 kg	1	pc(s)	135
377 271	494756	01 04 01 03	1.40 kg	1	pc(s)	135
377 310	033382	01 04 01 03	72 g	100	pc(s)	136
377 410	083035	01 04 01 03	90 g	10	pc(s)	136
377 510	033399	01 04 01 03	110 g	10	pc(s)	136
380 020	066373	01 04 01 01	86 g	50	pc(s)	181
380 029	066359	01 04 01 01	70 g	50	pc(s)	181
380 110	133273	01 04 01 01	100 g	50	pc(s)	180
380 116	133280	01 04 01 01	100 g	50	pc(s)	181
380 129	150416	01 04 01 02	100 g	50	pc(s)	180
380 209	158269	01 04 01 02	102 g	1	pc(s)	184/260
380 209	158269	01 04 01 02	102 g	1	pc(s)	275/328
385 202	068131	01 04 01 01	69 g	50	pc(s)	172
385 203	035669	01 04 01 01	64 g	50	pc(s)	172
385 207	049093	01 04 01 01	64 g	50	pc(s)	172
385 213	090873	01 04 01 01	38 g	50	pc(s)	172
385 216	100565	01 04 01 01	133 g	10	pc(s)	181
390 050	095991	01 04 01 01	99 g	50	pc(s)	167/217
390 050	095991	01 04 01 01	99 g	50	pc(s)	293
390 051	096219	01 04 01 01	55 g	50	pc(s)	167
390 057	096073	01 04 01 01	118 g	50	pc(s)	167
390 059	096004	01 04 01 01	92 g	50	pc(s)	167
390 060	096011	01 04 01 01	108 g	50	pc(s)	168
390 061	096196	01 04 01 01	67 g	50	pc(s)	168
390 063	159396	01 04 01 01	103 g	50	pc(s)	168
390 067	096080	01 04 01 01	122 g	50	pc(s)	168
390 079	128996	01 04 01 01	96 g	50	pc(s)	167/280
390 110	104921	01 04 01 02	18 g	100	pc(s)	151
390 119	104945	01 04 01 02	18 g	100	pc(s)	151
390 120	346901	01 03 01 02	12 g	50	pc(s)	151
390 121	346918	01 03 01 02	20 g	50	pc(s)	151
390 122	346925	01 03 01 02	18 g	50	pc(s)	151
390 150	032187	01 04 01 02	53 g	100	pc(s)	153/169
390 157	032194	01 04 01 02	53 g	1	pc(s)	153/169
390 159	032200	01 04 01 02	61 g	100	pc(s)	153/169
390 209	158245	01 04 01 01	104 g	1	pc(s)	184/261
390 209	158245	01 04 01 01	104 g	1	pc(s)	275/328
390 250	031791	01 04 01 01	74 g	50	pc(s)	169
390 257	031807	01 04 01 01	78 g	50	pc(s)	169
390 259	031814	01 04 01 01	71 g	50	pc(s)	169
390 267	034402	01 04 01 01	79 g	50	pc(s)	169
390 479	035324	01 04 01 02	74 g	50	pc(s)	214/290
390 499	127517	01 04 01 02	57 g	50	pc(s)	214/290
390 550	096042	01 04 01 01	101 g	50	pc(s)	168/217
390 550	096042	01 04 01 01	101 g	50	pc(s)	294
390 551	096202	01 04 01 01	58 g	50	pc(s)	168
390 557	096097	01 04 01 01	118 g	50	pc(s)	168
390 559	096035	01 04 01 01	98 g	50	pc(s)	168
390 565	385313	01 04 01 01	50 g	50	pc(s)	169
390 657	096165	01 04 01 01	100 g	50	pc(s)	168
391 050	087064	01 04 01 01	101 g	50	pc(s)	167/217
391 050	087064	01 04 01 01	101 g	50	pc(s)	293
391 058	293236	01 04 01 01	98 g	50	pc(s)	167
391 059	087071	01 04 01 01	98 g	50	pc(s)	167
391 060	088009	01 04 01 01	113 g	50	pc(s)	168
391 066	288577	01 04 01 01	111 g	50	pc(s)	168
391 068	385320	01 04 01 01	114 g	50	pc(s)	168
391 069	087095	01 04 01 01	106 g	50	pc(s)	168
391 070	487123	01 04 01 01	103 g	50	pc(s)	169
391 079	487130	01 04 01 01	93 g	50	pc(s)	169
391 550	088016	01 04 01 01	105 g	50	pc(s)	168
391 559	087088	01 04 01 01	100 g	50	pc(s)	168
392 050	096066	01 04 01 01	121 g	50	pc(s)	168/181
392 059	096059	01 04 01 01	119 g	50	pc(s)	168/181
392 060	096141	01 04 01 01	130 g	50	pc(s)	168/181
392 069	096158	01 04 01 01	126 g	50	pc(s)	168/181
392 209	158238	01 04 01 01	140 g	1	pc(s)	184/261
392 209	158238	01 04 01 01	140 g	1	pc(s)	276/328

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393 069	094079	01 04 01 01	150 g	50	pc(s)	205
405 020	098459	01 07 01 01	81 g	1	pc(s)	256
407 012	026100	01 05 01 02	432 g	10	pc(s)	322
407 034	026117	01 05 01 02	443 g	10	pc(s)	322
407 100	026124	01 05 01 02	457 g	10	pc(s)	322
407 112	026148	01 05 01 02	502 g	10	pc(s)	322
407 114	026131	01 05 01 02	480 g	10	pc(s)	322
407 200	026162	01 05 01 02	556 g	1	pc(s)	322
410 003	028722	03 07 01 01	105 g	1	pc(s)	303
410 005	028715	03 07 01 01	120 g	1	pc(s)	303
410 006	028708	03 07 01 01	140 g	1	pc(s)	303
410 010	028692	03 07 01 01	190 g	1	pc(s)	303
410 012	026186	01 05 01 02	234 g	25	pc(s)	322
410 015	028685	03 07 01 01	248 g	1	pc(s)	303
410 020	028678	03 07 01 01	300 g	1	pc(s)	303
410 025	028661	03 07 01 01	370 g	1	pc(s)	303
410 030	028654	03 07 01 01	438 g	1	pc(s)	303
410 034	026247	01 05 01 02	231 g	25	pc(s)	322
410 035	028647	03 07 01 01	490 g	1	pc(s)	303
410 038	026223	01 05 01 02	211 g	25	pc(s)	322
410 040	028630	03 07 01 01	550 g	1	pc(s)	303
410 050	028623	03 07 01 01	680 g	1	pc(s)	303
410 060	028616	03 07 01 01	800 g	1	pc(s)	303
410 070	028609	03 07 01 01	920 g	1	pc(s)	303
410 099	028593	03 07 01 01	1.27 kg	1	pc(s)	303
410 100	026254	01 05 01 02	246 g	25	pc(s)	322
410 112	026278	01 05 01 02	296 g	25	pc(s)	322
410 114	026261	01 05 01 02	276 g	25	pc(s)	322
410 134	026285	01 05 01 02	312 g	1	pc(s)	322
410 140	028586	03 07 01 01	1.78 kg	1	pc(s)	303
410 150	028579	03 07 01 01	1.87 kg	1	pc(s)	303
410 199	028562	03 07 01 01	2.48 kg	1	pc(s)	303
410 200	026292	01 05 01 02	324 g	25	pc(s)	322
410 212	026308	01 05 01 02	402 g	1	pc(s)	322
410 212	026308	01 05 01 02	402 g	1	pc(s)	324
410 219	118829	01 07 01 02	74 g	1	pc(s)	222
410 222	482289	01 07 01 04	42 g	1	pc(s)	230
410 229	107731	01 07 01 01	72 g	1	pc(s)	248
410 239	152465	01 07 01 01	80 g	1	pc(s)	264
410 299	028555	03 07 01 01	3.66 kg	1	pc(s)	303
410 300	026315	01 05 01 02	416 g	1	pc(s)	322/324
410 309	081451	01 05 01 02	180 g	1	pc(s)	322
410 319	081505	01 05 01 02	188 g	25	pc(s)	322
410 329	081512	01 05 01 02	192 g	25	pc(s)	322
410 339	081550	01 05 01 02	206 g	25	pc(s)	322
410 349	081604	01 05 01 02	232 g	1	pc(s)	322
410 359	081468	01 05 01 02	248 g	1	pc(s)	322
410 369	081529	01 05 01 02	260 g	25	pc(s)	322
410 379	081475	01 05 01 02	272 g	1	pc(s)	322
410 389	081482	01 05 01 02	315 g	1	pc(s)	322
410 399	081499	01 05 01 02	360 g	1	pc(s)	322
410 401	029200	03 07 01 01	90 g	1	pc(s)	305
410 403	029194	03 07 01 01	109 g	1	pc(s)	305
410 404	029187	03 07 01 01	122 g	1	pc(s)	305
410 405	029262	03 07 01 01	140 g	1	pc(s)	306
410 406	029163	03 07 01 01	147 g	1	pc(s)	305
410 407	029255	03 07 01 01	145 g	1	pc(s)	306
410 410	029248	03 07 01 01	200 g	1	pc(s)	306
410 411	029156	03 07 01 01	197 g	1	pc(s)	305
410 413	029279	03 07 01 01	110 g	1	pc(s)	306
410 415	029149	03 07 01 01	261 g	1	pc(s)	305
410 416	029231	03 07 01 01	250 g	1	pc(s)	306
410 420	029132	03 07 01 01	320 g	1	pc(s)	305
410 421	029224	03 07 01 01	320 g	1	pc(s)	306
410 425	029125	03 07 01 01	385 g	1	pc(s)	305
410 426	029217	03 07 01 01	370 g	1	pc(s)	306
410 430	029118	03 07 01 01	445 g	1	pc(s)	305
410 431	029590	03 07 01 01	430 g	1	pc(s)	306
410 450	029170	03 07 01 01	135 g	1	pc(s)	305
410 503	029408	03 07 01 01	100 g	1	pc(s)	305
410 506	029415	03 07 01 01	116 g	1	pc(s)	305
410 510	029422	03 07 01 01	185 g	1	pc(s)	305
410 515	029439	03 07 01 01	250 g	1	pc(s)	305
410 520	029446	03 07 01 01	300 g	1	pc(s)	305
410 525	029453	03 07 01 01	365 g	1	pc(s)	305
410 530	029460	03 07 01 01	425 g	1	pc(s)	305
410 603	029330	03 07 01 01	100 g	1	pc(s)	303
410 605	029347	03 07 01 01	120 g	1	pc(s)	303
410 606	029491	03 07 01 01	114 g	1	pc(s)	307
410 610	029354	03 07 01 01	185 g	1	pc(s)	303
410 615	029361	03 07 01 01	240 g	1	pc(s)	303
410 620	029378	03 07 01 01	305 g	1	pc(s)	303
410 625	029385	03 07 01 01	365 g	1	pc(s)	303
410 630	029392	03 07 01 01	430 g	1	pc(s)	303
410 720	032415	03 07 01 01	292 g	1	pc(s)	307
410 903	029033	03 07 01 01	110 g	1	pc(s)	306
410 905	029040	03 07 01 01	140 g	1	pc(s)	306
410 906	029057	03 07 01 01	140 g	1	pc(s)	306
410 910	029064	03 07 01 01	200 g	1	pc(s)	306
410 915	029071	03 07 01 01	260 g	1	pc(s)	306
410 920	029088	03 07 01 01	320 g	1	pc(s)	306
410 925	029095	03 07 01 01	380 g	1	pc(s)	306
410 930	029101	03 07 01 01	440 g	1	pc(s)	306
416 003	028937	03 07 01 01	126 g	1	pc(s)	304
416 005	028920	03 07 01 01	165 g	1	pc(s)	304
416 006	028913	03 07 01 01	184 g	1	pc(s)	304
416 010	028906	03 07 01 01	262 g	1	pc(s)	304
416 015	028890	03 07 01 01	360 g	1	pc(s)	304
416 016	029484	03 07 01 01	340 g	1	pc(s)	307
416 020	028883	03 07 01 01	460 g	1	pc(s)	304
416 025	028876	03 07 01 01	545 g	1	pc(s)	304
416 030	028869	03 07 01 01	650 g	1	pc(s)	304
416 035	028852	03 07 01 01	748 g	1	pc(s)	304
416 040	028845	03 07 01 01	830 g	1	pc(s)	304
416 050	028838	03 07 01 01	1.04 kg	1	pc(s)	304
416 060	028821	03 07 01 01	1.24 kg	1	pc(s)	304
416 070	028814	03 07 01 01	1.44 kg	1	pc(s)	304
416 080	028807	03 07 01 01	1.60 kg	1	pc(s)	304
416 100	042933	03 07 01 01	2.01 kg	1	pc(s)	304
416 120	028791	03 07 01 01	2.43 kg	1	pc(s)	304
416 140	028784	03 07 01 01	2.73 kg	1	pc(s)	304
416 150	028777	03 07 01 01	3.01 kg	1	pc(s)	304
416 200	028760	03 07 01 01	3.95 kg	1	pc(s)	304
416 220	028753	03 07 01 01	4.38 kg	1	pc(s)	304
416 280	028746	03 07 01 01	5.64 kg	1	pc(s)	304
416 300	028739	03 07 01 01	5.94 kg	1	pc(s)	304
416 403	029286	03 07 01 01	130 g	1	pc(s)	306
416 410	032422	03 07 01 01	265 g	1	pc(s)	306
416 411	032545	03 07 01 01	266 g	1	pc(s)	107/306
416 415	032439	03 07 01 01	364 g	1	pc(s)	306
416 416	032453	03 07 01 01	364 g	1	pc(s)	306
416 420	032446	03 07 01 01	464 g	1	pc(s)	306
416 421	036116	03 07 01 01	461 g	1	pc(s)	306
416 425	032460	03 07 01 01	558 g	1	pc(s)	306
416 426	032477	03 07 01 01	558 g	1	pc(s)	306
416 430	032484	03 07 01 01	654 g	1	pc(s)	306
416 431	032491	03 07 01 01	655 g	1	pc(s)	306
416 440	032507	03 07 01 01	849 g	1	pc(s)	306
416 441	032514	03 07 01 01	849 g	1	pc(s)	306
416 450	032521	03 07 01 01	1.04 kg	1	pc(s)	306
416 451	032538	03 07 01 01	1.04 kg	1	pc(s)	306
416 505	029477	03 07 01 01	158 g	1	pc(s)	305
416 516	032408	03 07 01 01	341 g	1	pc(s)	303
416 903	028944	03 07 01 01	132 g	1	pc(s)	307
416 905	028951	03 07 01 01	180 g	1	pc(s)	307
416 906	028968	03 07 01 01	190 g	1	pc(s)	307
416 910	028975	03 07 01 01	265 g	1	pc(s)	307
416 915	028982	03 07 01 01	365 g	1	pc(s)	307
416 920	028999	03 07 01 01	455 g	1	pc(s)	307
416 925	029002	03 07 01 01	550 g	1	pc(s)	307
416 930	029019	03 07 01 01	660 g	1	pc(s)	307
416 940	360280	03 01 01 01	513 g	25	pc(s)	289
416 941	360273	03 01 01 01	497 g	25	pc(s)	289

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416 970	029026	03 07 01 01	1.46 kg	1	pc(s)	307
417 005	031982	03 07 01 01	168 g	1	pc(s)	304
417 010	031975	03 07 01 01	259 g	1	pc(s)	304
417 015	031968	03 07 01 01	353 g	1	pc(s)	304
417 020	031951	03 07 01 01	447 g	1	pc(s)	304
417 030	031944	03 07 01 01	635 g	1	pc(s)	304
417 050	031937	03 07 01 01	1.01 kg	1	pc(s)	304
417 100	031920	03 07 01 01	1.95 kg	1	pc(s)	304
417 115	031913	03 07 01 01	2.89 kg	1	pc(s)	304
417 120	031906	03 07 01 01	3.83 kg	1	pc(s)	304
417 125	031890	03 07 01 01	4.77 kg	1	pc(s)	304
417 130	031883	03 07 01 01	5.71 kg	1	pc(s)	304
417 150	031876	03 07 01 01	9.47 kg	1	pc(s)	304
419 000	439412	03 09 01 01	840 g	1	pc(s)	310
419 001	439429	03 09 01 01	950 g	1	pc(s)	310
419 002	439436	03 09 01 01	1.05 kg	1	pc(s)	310
419 010	439443	03 09 01 01	760 g	1	pc(s)	310
419 011	439450	03 09 01 01	740 g	1	pc(s)	310
419 012	439467	03 09 01 01	1.46 kg	1	pc(s)	311
419 020	439405	03 09 01 01	950 g	1	pc(s)	311
419 030	439474	03 09 01 01	750 g	1	pc(s)	311
419 040	439481	03 09 01 01	610 g	1	pc(s)	312
419 041	439498	03 09 01 01	560 g	1	pc(s)	312
419 050	439504	03 09 01 01	700 g	1	pc(s)	312
419 051	439511	03 09 01 01	630 g	1	pc(s)	312
419 060	439528	03 09 01 01	590 g	1	pc(s)	312
419 061	439535	03 09 01 01	530 g	1	pc(s)	312
419 070	439542	03 09 01 01	700 g	1	pc(s)	312
419 071	439559	03 09 01 01	620 g	1	pc(s)	312
419 080	439566	03 09 01 01	1.00 kg	1	pc(s)	311
419 090	439573	03 09 01 01	610 g	1	pc(s)	313
419 091	439580	03 09 01 01	570 g	1	pc(s)	313
419 100	439597	03 09 01 01	700 g	1	pc(s)	313
419 101	439603	03 09 01 01	640 g	1	pc(s)	313
419 110	439665	03 09 01 01	550 g	1	pc(s)	313
419 260	439610	03 09 01 02	630 g	1	pc(s)	313
419 290	439627	03 09 01 02	400 g	1	pc(s)	314
419 291	439634	03 09 01 02	400 g	1	pc(s)	314
419 400	439672	03 09 01 02	700 g	1	pc(s)	313
419 500	458383	03 09 01 01	205 g	1	pc(s)	310
419 501	458390	03 09 01 01	980 g	1	pc(s)	312
419 502	458406	03 09 01 01	1.40 kg	1	pc(s)	312
419 503	458413	03 09 01 01	2.10 kg	1	pc(s)	312
419 504	458420	03 09 01 01	2.80 kg	1	pc(s)	312
419 505	458437	03 09 01 01	1.12 kg	1	pc(s)	313
419 506	458444	03 09 01 01	1.10 kg	1	pc(s)	313
419 507	458451	03 09 01 02	280 g	1	pc(s)	314
419 508	458468	03 09 01 02	640 g	1	pc(s)	314
419 511	480513	03 09 01 02	396 g	1	pc(s)	314
419 512	480520	03 09 01 02	414 g	1	pc(s)	314
419 513	480506	03 09 01 02	398 g	1	pc(s)	314
419 514	480537	03 09 01 02	398 g	1	pc(s)	314
419 900	439641	03 09 01 03	2 g	1	pc(s)	314
419 901	439658	03 09 01 03	3 g	1	pc(s)	314
419 902	439689	03 09 01 03	77 g	1	pc(s)	314
419 903	439696	03 09 01 03	34 g	1	pc(s)	314
419 904	439702	03 09 01 03	9 g	1	pc(s)	314
420 100	022805	01 04 01 04	137 g	50	pc(s)	152/324
420 107	045828	01 04 01 04	158 g	1	pc(s)	152/324
420 120	022829	01 04 01 04	160 g	1	pc(s)	152/324
420 127	045804	01 04 01 04	186 g	1	pc(s)	152/324
420 207	045873	01 04 01 04	215 g	1	pc(s)	152/324
421 100	086050	01 04 01 04	108 g	50	Stk.	152
421 107	086180	01 04 01 04	119 g	50	Stk.	152
421 120	086074	01 04 01 04	114 g	50	Stk.	152
421 127	086203	01 04 01 04	132 g	50	Stk.	152
423 010	054325	01 04 01 04	113 g	50	pc(s)	152/324
423 011	054332	01 04 01 04	48 g	50	pc(s)	152/324
423 017	054349	01 04 01 04	119 g	1	pc(s)	152/324
423 019	054356	01 04 01 04	109 g	50	pc(s)	152/324
423 020	054288	01 04 01 04	138 g	50	pc(s)	152/324
423 021	054295	01 04 01 04	61 g	50	pc(s)	152/324
423 027	054301	01 04 01 04	156 g	50	pc(s)	152/324
423 029	054318	01 04 01 04	151 g	50	pc(s)	152/324
425 076	022683	01 04 01 04	208 g	50	pc(s)	324
425 089	022706	01 04 01 04	231 g	1	pc(s)	324
429 100	086142	01 04 01 04	99 g	50	Stk.	152
429 120	086159	01 04 01 04	111 g	50	Stk.	152
435 803	029781	03 07 01 01	468 g	1	pc(s)	308
435 805	029798	03 07 01 01	317 g	1	pc(s)	308
444 006	029323	03 07 01 01	29 g	100	pc(s)	308
444 008	029293	03 07 01 01	36 g	1	pc(s)	308
444 009	029309	03 07 01 01	36 g	1	pc(s)	308
444 010	029316	03 07 01 01	34 g	100	pc(s)	308
444 050	291218	03 07 01 01	24 g/PAK	1	PAK	223/249
444 050	291218	03 07 01 01	24 g/PAK	1	PAK	264
450 000	025158	01 04 01 03	122 g	50	pc(s)	183
450 001	090903	01 04 01 03	62 g	50	pc(s)	183
450 007	025165	01 04 01 03	133 g	1	pc(s)	183
450 011	025172	01 04 01 03	134 g	50	pc(s)	184
450 101	094093	01 04 01 03	44 g	50	pc(s)	184
453 100	025523	01 04 01 03	333 g	10	pc(s)	163
454 000	025387	01 04 01 03	261 g	25	pc(s)	183
454 100	035904	01 04 01 03	177 g	25	pc(s)	183
454 107	035911	01 04 01 03	198 g	25	pc(s)	183
455 000	025394	01 04 01 03	250 g	1	pc(s)	183
459 000	025189	01 04 01 03	127 g	50	pc(s)	182
459 003	025202	01 04 01 03	126 g	50	pc(s)	182
459 010	099838	01 04 01 03	110 g	1	pc(s)	183
459 019	031272	01 04 01 03	87 g	50	pc(s)	183
459 020	099845	01 04 01 03	103 g	50	pc(s)	183
459 029	047587	01 04 01 03	87 g	50	pc(s)	183
459 030	099852	01 04 01 03	101 g	50	pc(s)	183
459 039	047594	01 04 01 03	88 g	50	pc(s)	183
459 119	051379	01 04 01 03	124 g	50	pc(s)	182
459 127	119291	01 04 01 03	152 g	1	pc(s)	182
459 129	051386	01 04 01 03	120 g	50	pc(s)	182
459 129	051386	01 04 01 03	120 g	50	pc(s)	280
459 139	078628	01 04 01 03	122 g	50	pc(s)	182
459 159	152830	01 04 01 03	122 g	50	pc(s)	183
459 200	155527	01 04 01 03	132 g	1	pc(s)	184/260
459 200	155527	01 04 01 03	132 g	1	pc(s)	275/327
459 219	158221	01 04 01 03	126 g	1	pc(s)	184/260
459 219	158221	01 04 01 03	126 g	1	pc(s)	275/327
460 147	025349	01 04 01 03	340 g	1	pc(s)	184
460 213	034358	01 04 01 03	166 g	50	pc(s)	183
460 507	034266	01 04 01 03	126 g	1	pc(s)	182
460 517	034259	01 04 01 03	105 g	50	pc(s)	182
460 557	034242	01 04 01 03	80 g	50	pc(s)	182
463 010	025493	01 04 01 03	138 g	50	pc(s)	171
465 801	030091	03 07 01 01	321 g	1	pc(s)	309
466 192	030084	03 07 01 01	550 g	1	pc(s)	309
466 203	033009	03 07 01 01	813 g	1	pc(s)	309
472 021	027879	01 05 01 03	866 g	1	pc(s)	319
472 022	030305	01 05 01 03	588 g	1	pc(s)	319
472 023	030312	01 05 01 03	517 g	1	pc(s)	319
472 024	034495	01 05 01 03	677 g	1	pc(s)	319
472 109	074477	01 05 01 03	604 g	1	pc(s)	319
472 119	074484	01 05 01 03	740 g	1	pc(s)	319

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Part No.	GTIN*	PG	Weight	PU	SU	Page
472 129	074491	01 05 01 03	841 g	1	pc(s)	319
472 139	074507	01 05 01 03	1.10 kg	1	pc(s)	319
472 201	089631	01 06 01 01	66 g	1	pc(s)	318/331
472 202	147331	01 06 01 01	70 g	1	pc(s)	318/331
472 207	090927	01 05 01 03	964 g	1	pc(s)	317/331
472 209	090934	01 05 01 03	1.01 kg	1	pc(s)	107/317
472 209	090934	01 05 01 03	1.01 kg	1	pc(s)	331
472 210	096790	01 50 50 01	92 g	1	pc(s)	318/331
472 217	090941	01 05 01 03	1.35 kg	1	pc(s)	317/331
472 219	090958	01 05 01 03	1.41 kg	1	pc(s)	317/331
472 227	096424	01 05 01 03	1.14 kg	1	pc(s)	317/331
472 229	096431	01 05 01 03	1.18 kg	1	pc(s)	317/331
472 237	096448	01 05 01 03	1.53 kg	1	pc(s)	317/331
472 239	096455	01 05 01 03	1.59 kg	1	pc(s)	317/331
472 269	096462	01 05 01 03	322 g	1	pc(s)	318/331
472 279	090972	01 05 01 03	285 g	1	pc(s)	318/331
472 289	090989	01 05 01 03	366 g	1	pc(s)	318/331
472 299	096479	01 05 01 03	403 g	1	pc(s)	318/331
472 309	157170	01 05 01 03	226 g	1	pc(s)	318
472 319	157187	01 05 01 03	267 g	1	pc(s)	318
472 329	157194	01 05 01 03	307 g	1	pc(s)	318
472 339	157200	01 05 01 03	348 g	1	pc(s)	318
472 349	157217	01 05 01 03	387 g	1	pc(s)	319
472 410	470521	01 05 01 05	1.75 kg	1	pc(s)	329
472 411	470460	01 05 01 05	1.44 kg	1	pc(s)	329
472 412	470491	01 05 01 05	364 g	1	pc(s)	330
472 415	470590	01 05 01 05	2.59 kg	1	pc(s)	329
472 420	476059	01 05 01 05	2.28 kg	1	pc(s)	329
472 421	470477	01 05 01 05	1.95 kg	1	pc(s)	329
472 422	470507	01 05 01 05	446 g	1	pc(s)	330
472 425	470606	01 05 01 05	3.18 kg	1	pc(s)	329
472 432	470538	01 05 01 05	13 g	3	pc(s)	330
472 433	470545	01 05 01 05	17 g	3	pc(s)	330
472 434	470552	01 05 01 05	32 g	3	pc(s)	330
472 435	470569	01 05 01 05	49 g	3	pc(s)	330
472 436	470576	01 05 01 05	65 g	3	pc(s)	330
472 437	470583	01 05 01 05	93 g	3	pc(s)	330
472 497	470484	01 05 01 05	174 g	1	pc(s)	330
472 498	476042	01 05 01 05	756 g	1	pc(s)	330
472 499	470514	01 05 01 05	386 g	1	pc(s)	330
476 001	028548	01 04 01 03	468 g	10	pc(s)	163
476 010	025578	01 04 01 03	797 g	1	pc(s)	164
476 016	125216	01 04 01 03	559 g	1	pc(s)	164
476 020	126916	01 04 01 03	800 g	1	pc(s)	163
476 050	219717	01 04 01 03	869 g	1	pc(s)	165
476 053	219724	01 04 01 03	185 g	1	pc(s)	165
476 055	219755	01 04 01 03	1.02 kg	1	pc(s)	165
476 100	086470	01 04 01 03	460 g	10	pc(s)	163
478 011	033054	01 05 01 01	301 g	25	pc(s)	212/288
478 012	069183	01 05 01 01	182 g	20	pc(s)	212/288
478 019	072107	01 05 01 01	299 g	25	pc(s)	212/288
478 027	125995	01 05 01 01	603 g	10	pc(s)	213/289
478 041	105157	01 05 01 01	304 g	25	pc(s)	212/288
478 049	105164	01 05 01 01	303 g	25	pc(s)	212/288
478 051	124448	01 05 01 01	370 g	10	pc(s)	212/288
478 098	337411	01 05 01 01	8 g	10	pc(s)	212/288
478 099	120334	01 06 01 01	52 g	20	pc(s)	129/158
478 099	120334	01 06 01 01	52 g	20	pc(s)	287
478 112	118140	01 05 01 01	276 g	25	pc(s)	212/288
478 129	118508	01 05 01 01	140 g	10	pc(s)	215/290
478 141	101425	01 05 01 01	338 g	10	pc(s)	215/290
478 149	154964	01 05 01 01	390 g	10	pc(s)	215/290
478 150	359512	01 05 01 01	464 g	10	pc(s)	215/290
478 200	035652	01 05 01 01	263 g	25	pc(s)	212/288
478 410	136335	01 05 01 01	580 g	5	pc(s)	213/291
478 430	136342	01 05 01 01	680 g	5	pc(s)	213/291
478 450	136359	01 05 01 01	780 g	1	pc(s)	213/291
478 530	120341	01 05 01 01	697 g	10	pc(s)	213/291
478 540	120358	01 05 01 01	750 g	4	pc(s)	213/291
478 550	120365	01 05 01 01	838 g	4	pc(s)	213/291
478 598	158016	01 06 01 01	120 g	10	pc(s)	213/291
478 599	158023	01 06 01 01	170 g	10	pc(s)	213/291
478 699	158054	01 05 01 01	122 g	10	pc(s)	214/291
480 003	035348	01 06 01 01	24 g	50	pc(s)	167
480 004	035355	01 06 01 01	26 g	50	pc(s)	167
480 018	076372	01 02 01 01	1.90 kg	10	pc(s)	157/287
480 019	068339	01 02 01 01	1.82 kg	10	pc(s)	157/287
480 020	051638	01 02 01 01	2.24 kg	10	pc(s)	157/287
480 021	051621	01 02 01 01	3.06 kg	1	pc(s)	157/287
480 113	112681	01 06 01 01	61 g	50	pc(s)	166
480 150	019591	01 02 01 01	2.58 kg	1	pc(s)	157/286
480 157	019577	01 02 01 01	2.87 kg	1	pc(s)	157/286
480 291	149441	01 06 01 01	9 g	100	pc(s)	166
480 598	105607	01 07 01 01	84 g	1	pc(s)	236/259
480 599	105614	01 07 01 01	5 g	10	pc(s)	236/259
480 698	144590	01 07 01 01	128 g	1	pc(s)	279
480 699	107229	01 07 01 01	137 g	1	pc(s)	279
483 100	019430	01 01 01 01	1.60 kg	10	pc(s)	185
483 125	019416	01 01 01 01	2.00 kg	10	pc(s)	185
483 150	019492	01 02 01 01	2.40 kg	10	pc(s)	157/185
483 150	019492	01 02 01 01	2.40 kg	10	pc(s)	286
483 200	019713	01 02 01 01	3.20 kg	1	pc(s)	157/185
483 200	019713	01 02 01 01	3.20 kg	1	pc(s)	286
484 000	327306	01 06 01 01	24 g	50	pc(s)	167
484 001	327313	01 06 01 01	26 g	50	pc(s)	167
484 010	482272	01 06 01 01	16 g	1	pc(s)	167
490 000	306417	01 06 01 01	1 g	100	pc(s)	166
490 001	306431	01 06 01 01	1 g	100	pc(s)	166
490 002	306493	01 06 01 01	1 g	100	pc(s)	166
490 003	306509	01 06 01 01	1 g	100	pc(s)	166
490 004	306516	01 06 01 01	1 g	100	pc(s)	166
490 005	306523	01 06 01 01	1 g	100	pc(s)	166
490 006	306530	01 06 01 01	1 g	100	pc(s)	166
490 007	306547	01 06 01 01	1 g	100	pc(s)	166
490 008	306554	01 06 01 01	1 g	100	pc(s)	166
490 009	306561	01 06 01 01	1 g	100	pc(s)	166
490 020	306578	01 06 01 01	4 g	100	pc(s)	166
490 021	306585	01 06 01 01	34 g	50	pc(s)	166
490 022	306592	01 06 01 01	10 g	100	pc(s)	166
490 099	306455	01 06 01 01	7.93 kg	1	pc(s)	166
490 100	306486	01 06 01 01	6 g	100	pc(s)	165
490 110	306462	01 06 01 01	23 g	50	pc(s)	165
490 116	306479	01 06 01 01	24 g	50	pc(s)	165
490 900	306424	01 06 01 01	1 g	100	pc(s)	166
490 999	306448	01 06 01 01	7.93 kg	1	pc(s)	165
505 901	019355	01 50 50 01	2 g	20	pc(s)	333
524 906	004009	01 50 50 01	1 g	20	pc(s)	333
528 610	150553	01 06 01 01	3 g	500	pc(s)	136
528 619	108882	01 06 01 01	7 g	1	pc(s)	136
528 820	400122	01 06 01 01	99 g	1	pc(s)	195/242
528 821	400139	01 06 01 01	98 g	1	pc(s)	195/242
528 850	020955	01 06 01 01	15 g	1	pc(s)	156/163
528 870	020962	01 06 01 01	22 g	1	pc(s)	156/163
538 010	054868	01 03 01 02	8 g	500	pc(s)	154/162
538 030	026902	01 03 01 02	19 g	300	pc(s)	156
540 100	094109	01 05 01 02	133 g	10	pc(s)	308/320
540 103	101302	01 05 01 02	120 g	10	pc(s)	308/320
540 104	239685	01 05 01 05	127 g	10	pc(s)	327
540 105	115880	01 05 01 02	359 g	1	pc(s)	200
540 110	094116	01 05 01 02	98 g	50	pc(s)	309/320
540 120	379947	01 04 01 02	144 g	25	pc(s)	321
540 121	380660	01 04 01 02	144 g	25	pc(s)	299/321
540 122	379930	01 04 01 02	63 g	25	pc(s)	153/170
540 122	379930	01 04 01 02	63 g	25	pc(s)	321
540 199	304741	01 05 01 05	107 g	25	pc(s)	327
540 200	113039	01 05 01 02	136 g	10	pc(s)	100/321
540 210	221284	01 05 01 02	98 g	50	pc(s)	321

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Part No.	GTIN*	PG	Weight	PU	SU	Page
540 250	138650	01 04 01 02	60 g	50	pc(s)	323
540 251	138674	01 04 01 02	37 g	100	pc(s)	323
540 260	138667	01 04 01 02	60 g	50	pc(s)	323
540 261	138681	01 04 01 02	24 g	100	pc(s)	323
540 262	449237	01 04 01 02	78 g	50	pc(s)	323
540 263	449244	01 04 01 02	77 g	10	pc(s)	323
540 271	385306	01 04 01 01	50 g	50	pc(s)	169/279
540 801	115460	01 05 01 05	503 g	1	pc(s)	326
540 803	115477	01 05 01 05	566 g	1	pc(s)	326
540 805	128873	01 05 01 05	766 g	1	pc(s)	326
540 810	115484	01 05 01 05	550 g	1	pc(s)	326
540 821	123724	01 05 01 05	249 g	1	pc(s)	326
540 900	076532	01 05 01 02	55 g	50	pc(s)	320
540 901	076525	01 05 01 02	6.28 kg	1	pc(s)	205/235
540 901	076525	01 05 01 02	6.28 kg	1	pc(s)	258/260
540 901	076525	01 05 01 02	6.28 kg	1	pc(s)	273/275
540 901	076525	01 05 01 02	6.28 kg	1	pc(s)	309/320
540 901	076525	01 05 01 02	6.28 kg	1	pc(s)	326/327
540 902	478688	01 06 01 01	49 g	1	pc(s)	326
540 905	273269	01 05 01 02	3.45 kg	1	pc(s)	154
540 910	025684	01 05 01 02	71 g	10	pc(s)	319
540 911	025691	01 05 01 02	76 g	10	pc(s)	319
540 912	035362	01 05 01 02	94 g	10	pc(s)	319
540 920	144194	01 05 01 02	29 g	10	pc(s)	320
540 930	101319	01 05 01 02	24 g	25	pc(s)	154
540 931	101296	01 05 01 02	1.69 kg	1	pc(s)	154
545 000	027367	03 05 01 03	10.50 g/m	100	m	338
545 001	141131	03 05 01 03	10.50 g/m	100	m	338
546 000	019959	03 06 01 01	451 g	1	pc(s)	325
546 001	019973	03 06 01 01	446 g	1	pc(s)	325
546 002	004016	03 06 01 01	177 g	1	pc(s)	325
546 025	004023	03 06 01 01	178 g	1	pc(s)	325
549 000	025547	01 04 01 03	6.20 kg	1	pc(s)	164
549 001	025554	01 04 01 03	6.10 kg	1	pc(s)	164
549 050	128217	01 04 01 03	1.90 kg	1	pc(s)	164
549 051	128224	01 04 01 03	1.38 kg	1	pc(s)	164
549 090	128231	01 04 01 03	3.58 kg	1	pc(s)	164
549 091	128248	01 04 01 03	3.00 kg	1	pc(s)	164
552 010	021150	01 01 01 03	33 g	25	pc(s)	134
552 030	021563	01 01 01 03	196 g	25	pc(s)	134
554 011	030756	01 06 01 01	46 g/m	1	m	339
556 125	028517	01 06 01 01	560 g	24	pc(s)	280/339
556 130	028524	01 06 01 01	1.28 kg	12	pc(s)	280/339
562 001	019782	01 06 01 01	4 g	100	pc(s)	181
562 035	019744	01 06 01 01	3 g	100	pc(s)	181
562 050	019751	01 06 01 01	4 g	100	pc(s)	181
562 101	019799	01 06 01 01	3 g	100	pc(s)	181
562 135	019768	01 06 01 01	2 g	100	pc(s)	181
562 150	019775	01 06 01 01	4 g	100	pc(s)	181
562 250	019737	01 06 01 01	2 g	100	pc(s)	181
562 440	019805	01 06 01 01	38 g	1	pc(s)	182
562 460	019812	01 06 01 01	57 g	1	pc(s)	182
563 010	027800	01 05 01 03	469 g	1	pc(s)	315
563 011	027732	01 05 01 03	13 g	200	pc(s)	316
563 012	027749	01 05 01 03	63 g	1	pc(s)	316
563 013	027756	01 05 01 03	32 g	100	pc(s)	316
563 014	027787	01 05 01 03	11 g	50	pc(s)	316
563 015	027794	01 05 01 03	59 g	10	pc(s)	316
563 016	027763	01 05 01 03	166 g	10	pc(s)	316
563 017	027770	01 05 01 03	370 g	10	pc(s)	316
563 018	083585	01 05 01 03	672 g	1	pc(s)	316
563 019	096998	01 05 01 03	65 g	1	pc(s)	316
563 020	027817	01 05 01 03	476 g	1	pc(s)	315
563 030	027824	01 05 01 03	444 g	1	pc(s)	315
563 040	082861	01 05 01 03	460 g	1	pc(s)	316
563 050	054707	01 05 01 03	226 g	1	pc(s)	315
563 105	027831	01 05 01 03	210 g	10	pc(s)	317
563 169	104839	01 05 01 04	76 g	50	pc(s)	325
563 200	056558	01 05 01 03	410 g	1	pc(s)	315
563 201	101234	01 05 01 03	397 g	1	pc(s)	315
572 000	021723	01 06 01 02	190 g	1	pc(s)	339
573 000	021617	01 06 01 01	25 kg/Stk	25	kg	286
573 000	021617	01 06 01 01	25 kg/Stk	25	kg	296
578 110	096974	03 05 01 01	1.20 kg	1	pc(s)	336
578 351	356429	03 05 01 01	850 g	1	Stk.	336
578 352	370982	03 05 01 01	677 g	1	Stk.	336
578 353	390263	03 05 01 01	616 g	1	Stk.	336
578 370	110953	03 05 01 01	240 g	1	pc(s)	337
578 386	353329	03 05 01 01	2.23 kg	1	pc(s)	336
582 600	034730	03 05 01 02	5.88 kg	1	pc(s)	337
582 620	110960	03 05 01 02	3.77 kg	1	pc(s)	337
585 010	029620	03 05 01 03	211 g	1	pc(s)	338
585 025	029637	03 05 01 03	468 g	1	pc(s)	338
585 051	141155	03 05 01 03	740 g	1	pc(s)	338
585 200	029712	03 05 01 03	211 g	1	pc(s)	338
585 210	029729	03 05 01 03	1.33 kg	1	pc(s)	338
585 211	141162	03 05 01 03	1.33 kg	1	pc(s)	338
585 310	034679	03 05 01 03	468 g	1	pc(s)	338
585 320	148024	03 05 01 03	740 g	1	pc(s)	338
587 460	035263	03 05 01 03	368 g	1	pc(s)	337
588 000	027404	03 05 01 03	100 g	1	pc(s)	337
589 000	027411	03 05 01 03	292 g	1	pc(s)	337
595 000	046535	01 06 01 02	329 g	1	pc(s)	339
596 000	046528	01 06 01 02	362 g	1	pc(s)	339
597 003	027725	01 06 01 02	30.44 kg	1	pc(s)	338
597 004	027701	01 06 01 02	5.95 kg	1	pc(s)	338
597 005	027718	01 06 01 02	15.70 kg	1	pc(s)	338
597 006	029606	01 06 01 02	42.80 kg	1	pc(s)	338
597 020	154957	01 06 01 02	155 g	1	pc(s)	278
597 032	155008	01 06 01 02	1.49 kg	1	pc(s)	227/244
597 032	155008	01 06 01 02	1.49 kg	1	pc(s)	262/276
597 101	143838	01 06 01 02	10 g/PAK	1	PAK	227/244
597 101	143838	01 06 01 02	10 g/PAK	1	PAK	261
597 102	153127	01 06 01 02	3.30 g/PAK	1	PAK	276
597 103	463103	01 06 01 02	13 g	1	pc(s)	276
597 120	142497	01 06 01 02	100 g	1	pc(s)	227/244
597 120	142497	01 06 01 02	100 g	1	pc(s)	261
597 127	153110	01 06 01 02	412 g	1	pc(s)	276
597 130	155022	01 06 01 02	1 g	1	pc(s)	227/244
597 130	155022	01 06 01 02	1 g	1	pc(s)	262
597 139	157941	01 06 01 02	172 g	1	pc(s)	227/244
597 139	157941	01 06 01 02	172 g	1	pc(s)	261/276
597 220	144972	01 06 01 02	330 g	1	pc(s)	227/244
597 220	144972	01 06 01 02	330 g	1	pc(s)	261
597 227	153103	01 06 01 02	699 g	1	pc(s)	276
597 230	155015	01 06 01 02	202 g	1	pc(s)	227/244
597 230	155015	01 06 01 02	202 g	1	pc(s)	262
597 320	154940	01 06 01 02	442 g	1	pc(s)	278
600 035	460003	03 04 01 03	5.78 kg	1	pc(s)	299
600 050	462854	03 04 01 03	5.39 kg	1	pc(s)	299
600 055	443433	03 04 01 03	5.36 kg	1	pc(s)	299
600 060	443440	03 04 01 03	5.54 kg	1	pc(s)	299
610 010	022010	03 04 01 01	786 g	1	pc(s)	299
610 020	054110	03 04 01 01	436 g	25	pc(s)	299
618 214	322950	03 03 01 01	2.00 kg	1	pc(s)	279

*) and 1) see page 342

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Part No.	GTIN*	PG	Weight	PU	SU	Page
620 001	021938	03 04 01 02	36 g	100	pc(s)	297
620 002	066052	03 04 01 03	857 g	1	pc(s)	302
620 005	027039	03 04 01 03	1.07 kg	1	pc(s)	300
620 007	027084	03 04 01 03	1.08 kg	1	pc(s)	300
620 008	066151	03 04 01 03	1.44 kg	1	pc(s)	301
620 009	118119	03 04 01 03	2.80 kg	1	pc(s)	300
620 010	244764	03 04 01 03	2.31 kg	1	pc(s)	301
620 011	026636	03 04 01 01	315 g	20	pc(s)	298
620 012	026698	03 04 01 01	418 g	10	pc(s)	298
620 015	026582	03 04 01 01	370 g	20	pc(s)	298
620 017	026612	03 04 01 01	420 g	1	pc(s)	298
620 019	027008	03 04 01 03	1.98 kg	1	pc(s)	301
620 021	026667	03 04 01 01	289 g	1	pc(s)	298
620 029	066113	03 04 01 03	1.43 kg	1	pc(s)	301
620 030	244818	03 04 01 03	800 g	1	pc(s)	301
620 031	244849	03 04 01 03	1.13 kg	1	pc(s)	301
620 101	021860	03 03 01 01	2.50 kg	6	pc(s)	297
620 151	021846	03 03 01 01	3.70 kg	6	pc(s)	297
620 902	021914	03 03 01 02	3.67 kg	6	pc(s)	297
620 903	342859	03 03 01 02	2.43 kg	6	pc(s)	297
620 915	026629	03 04 01 01	298 g	20	pc(s)	298
625 001	021945	03 04 01 02	69 g	50	pc(s)	297
625 002	095380	03 04 01 03	810 g	1	pc(s)	302
625 005	027046	03 04 01 03	1.05 kg	1	pc(s)	300
625 007	027091	03 04 01 03	1.06 kg	1	pc(s)	300
625 008	066144	03 04 01 03	1.41 kg	1	pc(s)	301
625 009	118126	03 04 01 03	2.80 kg	1	pc(s)	300
625 010	157613	03 04 01 03	2.25 kg	1	pc(s)	301
625 011	026643	03 04 01 01	340 g	20	pc(s)	298
625 012	026704	03 04 01 01	424 g	1	pc(s)	298
625 015	026599	03 04 01 01	383 g	20	pc(s)	298
625 019	027015	03 04 01 03	1.94 kg	1	pc(s)	301
625 021	026674	03 04 01 01	310 g	20	pc(s)	298
625 029	066120	03 04 01 03	1.41 kg	1	pc(s)	301
625 030	244825	03 04 01 03	760 g	1	pc(s)	301
625 031	244856	03 04 01 03	1.44 kg	1	pc(s)	301
625 101	021877	03 03 01 01	3.72 kg	6	pc(s)	297
625 151	021853	03 03 01 01	5.72 kg	6	pc(s)	297
630 120	107427	03 04 01 01	152 g	25	pc(s)	298
630 129	107434	03 04 01 01	150 g	25	pc(s)	298
634 145	125735	03 07 01 01	1.20 kg	1	pc(s)	309
634 160	125728	03 07 01 01	1.60 kg	1	pc(s)	309
635 100	056640	03 02 01 01	2.53 kg	5	pc(s)	297
635 150	056657	03 02 01 01	3.75 kg	5	pc(s)	297
635 200	056664	03 02 01 01	5.28 kg	5	pc(s)	297
635 250	067011	03 02 01 01	6.20 kg	3	pc(s)	297
640 015	106864	03 04 01 01	389 g	1	pc(s)	298
644 000	030268	03 07 01 01	4.45 kg	1	pc(s)	309
646 000	078161	03 07 01 01	2.24 kg	1	pc(s)	297
648 005	129160	03 04 01 03	1.46 kg	1	pc(s)	302
648 007	129177	03 04 01 03	1.46 kg	1	pc(s)	302
648 009	315501	03 04 01 03	973 g	1	pc(s)	302
648 029	236059	03 04 01 03	1.60 kg	1	pc(s)	302
648 031	293182	03 04 01 03	1.51 kg	1	pc(s)	302
649 015	119376	03 04 01 01	300 g	20	pc(s)	298
649 150	126350	03 03 01 03	1.71 kg	6	pc(s)	297
690 001	500013	03 50 01 01	58.30 kg	1	pc(s)	296
723 199	151703	05 03 01 01	750 g	1	pc(s)	119
800 008	018716	02 01 01 01	394 g/m	127	m	128/283
800 010	018723	02 01 01 01	617 g/m	81	m	128/283
800 108	018754	02 01 01 01	440 g/m	75	m	129/283
800 110	018761	02 01 01 01	680 g/m	50	m	129/283
800 310	131064	02 01 01 01	617 g/m	30	m	128/283
800 906	486829	02 01 01 01	641 g	10	pc(s)	129/282
800 908	486836	02 01 01 01	1.28 kg	10	pc(s)	129/282
800 910	253315	02 01 01 01	1.85 kg	10	pc(s)	129/282
800 911	273689	02 01 01 01	4.10 kg/Stk	1	pc(s)	129/282
801 050	018921	02 03 01 01	330,00 g/m	100	m	285/131
810 225	018815	02 02 01 01	400 g/m	100	m	130/284
810 304	019232	02 02 01 01	960 g/m	52	m	130/284
810 335	032880	02 02 01 01	840 g/m	50	m	130/284
810 404	048256	02 02 01 01	1.28 kg/m	40	m	130/284
810 405	032897	02 02 01 01	1.60 kg/m	30	m	130/284
810 504	456303	02 02 01 01	1.60 kg/m	30	m	130/284
814 335	442979	02 02 01 01	840 g/m	50	m	130/284
819 110	436008	01 07 01 01	630 g/m	400	m	247
819 124	329003	01 07 01 02	520 g/m	500	m	222/237
819 125	118416	01 07 01 02	520 g/m	100	m	222/237
819 129	223158	01 07 01 02	3.16 kg	1	pc(s)	222/237
819 129	223158	01 07 01 02	3.16 kg	1	pc(s)	240
819 131	223189	01 07 01 01	2.88 kg	1	pc(s)	241/247
819 132	223172	01 07 01 01	3.78 kg	1	pc(s)	247
819 135	141759	01 07 01 01	488 g/m	100	m	247
819 136	147140	01 07 01 01	630 g/m	100	m	247
819 137	152625	01 07 01 03	854 g/m	100	m	264
819 138	434523	01 07 01 01	488 g/m	500	m	247
819 142	152458	01 07 01 03	403 g	1	pc(s)	264
819 145	152533	01 07 01 01	344 g	1	pc(s)	241/247
819 146	152540	01 07 01 01	368 g	1	pc(s)	247
819 147	152557	01 07 01 01	356 g	1	pc(s)	248
819 148	152564	01 07 01 01	376 g	1	pc(s)	248
819 149	272057	01 07 01 03	757 g	1	pc(s)	264
819 160	152298	01 07 01 03	4.80 kg	1	pc(s)	263
819 161	281646	01 07 01 03	25.97 kg	1	pc(s)	264
819 163	280199	01 07 01 03	4.36 kg	1	pc(s)	264
819 165	272224	01 07 01 03	4.48 kg	1	pc(s)	263
819 183	249325	01 07 01 01	737 g	1	pc(s)	251/266
819 184	249318	01 07 01 01	2.00 kg	1	pc(s)	251/266
819 185	249288	01 07 01 01	1.15 kg	1	pc(s)	251/266
819 186	249295	01 07 01 01	3.25 kg	1	pc(s)	251/266
819 196	222229	01 07 01 01	192 g	1	pc(s)	248
819 197	222236	01 07 01 01	196 g	1	pc(s)	247
819 198	222250	01 07 01 01	190 g	1	pc(s)	248
819 199	222274	01 07 01 01	184 g	1	pc(s)	248
819 220	244238	01 07 01 01	2.80 kg	1	pc(s)	246
819 223	157675	01 07 01 01	4.00 kg	1	pc(s)	246
819 226	260528	01 07 01 01	13.86 kg	1	pc(s)	246
819 227	157712	01 07 01 01	3.90 kg	1	pc(s)	246
819 235	477216	01 07 01 01	77 g	1	pc(s)	249/251
819 243	255951	01 07 01 02	7.93 kg	1	pc(s)	239
819 247	260900	01 07 01 01	6.80 kg	1	pc(s)	240
819 255	255371	01 07 01 02	5.68 kg	1	pc(s)	237
819 256	255388	01 07 01 02	6.03 kg	1	pc(s)	237
819 257	255395	01 07 01 02	6.58 kg	1	pc(s)	237
819 258	255418	01 07 01 02	6.97 kg	1	pc(s)	237
819 271	255845	01 07 01 02	316 g	1	pc(s)	238
819 272	255876	01 07 01 02	291 g	1	pc(s)	238/240
819 282	252073	01 07 01 02	4.60 kg	1	pc(s)	223
819 283	499621	01 07 01 04	422 g	1	pc(s)	231
819 287	252097	01 07 01 02	4.47 kg	1	pc(s)	223
819 288	236479	01 07 01 02	172 g	1	pc(s)	249
819 289	236486	01 07 01 02	430 g	1	pc(s)	222
819 294	152571	01 07 01 01	701 g	1	pc(s)	248
819 296	492684	01 07 01 04	34 g	1	pc(s)	231/236
819 297	492691	01 07 01 04	29 g	1	pc(s)	231/236
819 298	492653	01 07 01 04	117 g	1	pc(s)	231
819 299	118911	01 07 01 02	135 g	1	pc(s)	222
819 326	260511	01 07 01 01	8.40 kg	1	pc(s)	245
819 328	260504	01 07 01 01	8.80 kg	1	pc(s)	245
819 336	241237	01 07 01 01	9.60 kg	1	pc(s)	245
819 338	241244	01 07 01 01	10.00 kg	1	pc(s)	245
819 371	260498	01 07 01 01	17.00 kg	1	pc(s)	245

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Part No.	GTIN*	PG	Weight	PU	SU	Page
819 373	260481	01 07 01 01	17.90 kg	1	pc(s)	245
819 380	241916	01 07 01 02	13.76 kg	1	pc(s)	223
819 381	241954	01 07 01 01	18.50 kg	1	pc(s)	245
819 383	241961	01 07 01 01	19.10 kg	1	pc(s)	245
819 385	241923	01 07 01 02	13.15 kg	1	pc(s)	223
819 390	241930	01 07 01 02	13.15 kg	1	pc(s)	223
819 426	260474	01 07 01 01	11.30 kg	1	pc(s)	245
819 430	152236	01 07 01 03	15.40 kg	1	pc(s)	262
819 431	155442	01 07 01 03	17.00 kg	1	pc(s)	262
819 433	155459	01 07 01 03	21.00 kg	1	pc(s)	262
819 438	241251	01 07 01 01	12.50 kg	1	pc(s)	245
819 473	260450	01 07 01 01	37.00 kg	1	pc(s)	246
819 483	241978	01 07 01 01	38.20 kg	1	pc(s)	246
819 600	499645	01 07 01 04	470 g	100	m	230
819 605	499652	01 07 01 04	470 g	500	m	230
819 609	481794	01 07 01 04	4.25 kg	1	pc(s)	230
819 636	485815	01 07 01 04	4.56 kg	1	pc(s)	229
819 638	499935	01 07 01 04	4.57 kg	1	pc(s)	230
819 640	481763	01 07 01 04	153 g	10	pc(s)	230
819 642	499638	01 07 01 04	368 g	1	pc(s)	231
819 645	481770	01 07 01 04	314 g	1	pc(s)	230
819 672	494527	01 07 01 04	7.07 kg	1	pc(s)	228
819 673	494534	01 07 01 04	7.34 kg	1	pc(s)	228
819 674	494541	01 07 01 04	8.07 kg	1	pc(s)	228
819 675	494558	01 07 01 04	8.34 kg	1	pc(s)	228
819 680	494442	01 07 01 04	12.94 kg	1	pc(s)	229
819 682	494428	01 07 01 04	12.74 kg	1	pc(s)	228
819 685	494459	01 07 01 04	6.12 kg	1	pc(s)	228
819 687	494435	01 07 01 04	12.90 kg	1	pc(s)	229
819 688	499782	01 07 01 04	9.30 kg	1	pc(s)	229
819 690	494466	01 07 01 04	6.40 kg	1	pc(s)	228
819 730	243477	01 07 01 01	53.00 kg	1	pc(s)	246
819 735	499539	01 07 01 04	51.72 kg	1	pc(s)	229
819 760	240391	01 07 01 03	56.64 kg	1	pc(s)	263
819 998	494251	01 07 01 04	6 g	100	pc(s)	236
819 999	222779	01 07 01 01	15 g	50	pc(s)	223
819 999	222779	01 07 01 01	15 g	50	pc(s)	249
819 999	222779	01 07 01 01	15 g	50	pc(s)	265
830 008	018785	02 01 01 02	448 g/m	100	m	128/282
830 038	035690	02 01 01 02	448 g/m	100	m	128/282
830 108	080430	02 01 01 02	448 g/m	20	m	128/282
830 208	106116	01 07 01 01	2.60 kg	1	pc(s)	278
830 218	106123	01 07 01 01	3.60 kg	1	pc(s)	278
831 225	018891	02 02 01 02	450 g/m	100	m	131
831 225	018891	02 02 01 02	450 g/m	100	m	284
832 095	048324	02 03 01 02	845 g/m	50	m	131/285
832 120	129610	02 03 01 02	1.06 kg/m	50	m	131/285
832 192	018914	02 03 01 02	597 g/m	50	m	131/285
832 193	093430	02 03 01 02	597 g/m	100	m	285
832 202	081048	02 03 01 02	597 g/m	50	m	132/285
832 292	093171	02 03 01 02	597 g/m	100	m	132/285
832 292	093171	02 03 01 02	597 g/m	100	m	333
832 295	093447	02 03 01 02	845 g/m	50	m	132/285
832 320	129641	02 03 01 02	1.06 kg/m	50	m	132/285
832 739	018907	02 03 01 02	438 g/m	50	m	131/285
832 740	093454	02 03 01 02	438 g/m	100	m	131/285
832 838	335776	02 03 01 02	334 g/m	100	m	132/285
832 838	335776	02 03 01 02	334 g/m	100	m	333
832 839	093164	02 03 01 02	438 g/m	100	m	132/285
832 839	093164	02 03 01 02	438 g/m	100	m	333
833 008	151987	02 01 01 02	182 g/m	110	m	128/282
840 008	018730	02 01 01 04	135 g/m	148	m	128/282
840 010	018747	02 01 01 04	210 g/m	100	m	128/282
840 018	035706	02 01 01 04	135 g/m	148	m	128/282
840 028	131163	02 01 01 04	135 g/m	21	m	128/282
840 050	070141	02 03 01 04	133 g/m	100	m	131/285
840 108	080423	02 01 01 04	135 g/m	21	m	128/282
840 118	071483	02 01 01 04	200 g/m	100	m	128/282
840 128	160002	02 01 01 04	200 g/m	100	m	128/282
850 008	129627	02 03 01 03	235,00 g/m	100	m	131/286
850 010	129634	02 03 01 03	395,00 g/m	100	m	131/286
852 335	031067	02 02 01 01	840 g/m	25	m	130/284
854 335	439955	02 02 01 01	840 g/m	25	m	130/284
860 008	018808	02 01 01 03	395 g/m	125	m	129/283
860 010	019997	02 01 01 03	617 g/m	80	m	129/280
860 010	019997	02 01 01 03	617 g/m	80	m	283
860 020	092662	02 01 01 03	617 g/m	20	m	129/280
860 020	092662	02 01 01 03	617 g/m	20	m	283
860 050	139923	02 01 01 03	617 g/m	50	m	129/280
860 050	139923	02 01 01 03	617 g/m	50	m	283
860 110	150256	02 01 01 03	624 g	5	pc(s)	157/280
860 110	150256	02 01 01 03	624 g	5	pc(s)	287
860 115	101104	02 01 01 03	930 g	5	pc(s)	157/280
860 115	101104	02 01 01 03	930 g	5	pc(s)	287
860 129	486782	02 01 01 03	1.24 kg	5	pc(s)	157/287
860 130	101111	02 01 01 03	1.80 kg	5	pc(s)	157/280
860 130	101111	02 01 01 03	1.80 kg	5	pc(s)	287
860 210	159365	02 02 01 03	830 g	5	pc(s)	158/287
860 215	101081	02 02 01 03	1.25 kg	5	pc(s)	158/287
860 230	101098	02 02 01 03	2.48 kg	5	pc(s)	158/287
860 315	150058	02 02 01 03	1.25 kg	5	pc(s)	158/287
860 325	093157	02 02 01 03	825 g/m	25	m	130/284
860 330	150065	02 02 01 03	2.50 kg	5	pc(s)	158/287
860 335	143388	02 02 01 03	827 g/m	60	m	130/284
860 404	276482	02 02 01 03	1.26 kg/m	40	m	130/284
860 405	276499	02 02 01 03	1.57 kg/m	30	m	130/284
860 425	227774	02 02 01 03	2.40 kg	5	pc(s)	158/287
860 430	227781	02 02 01 03	2.00 kg	5	pc(s)	158/287
860 900	143395	02 02 01 03	824 g/m	60	m	130/284
860 908	019362	02 01 01 03	395 g/m	125	m	129/283
860 910	019300	02 01 01 03	617 g/m	80	m	129/283
860 920	092679	02 01 01 03	617 g/m	20	m	129/283
860 925	093140	02 02 01 03	825 g/m	25	m	130/284
860 950	155596	02 01 01 03	617 g/m	50	m	129/283
900 050	107496	04 01 01 14	507 g	1	pc(s)	31
900 070	[1] 504521	04 01 01 05	509 g	1	pc(s)	24
900 071	[1] 504545	04 01 01 05	562 g	1	pc(s)	24
900 075	[1] 504538	04 01 01 05	511 g	1	pc(s)	24
900 076	[1] 504552	04 01 01 05	564 g	1	pc(s)	24
900 120	109377	04 01 01 13	873 g	1	pc(s)	30
900 220	106734	04 01 01 11	699 g	1	pc(s)	28
900 222	102521	04 01 01 13	331 g	1	pc(s)	30
900 230	153783	04 01 01 07	1.49 kg	1	pc(s)	25
900 255	125773	04 01 01 09	194 g	1	pc(s)	26
900 261	094352	04 01 02 16	158 g	1	pc(s)	53
900 262	072572	04 01 02 16	158 g	1	pc(s)	53
900 263	094369	04 01 02 16	194 g	1	pc(s)	53
900 264	073661	04 01 02 16	157 g	1	pc(s)	53
900 270	106703	04 01 02 16	223 g	1	pc(s)	53
900 271	106710	04 01 02 16	224 g	1	pc(s)	53
900 411	107205	04 01 01 50	54 g	1	pc(s)	22/27
900 411	107205	04 01 01 50	54 g	1	pc(s)	52/66
900 417	120419	04 01 01 50	66 g	1	pc(s)	22/27
900 417	120419	04 01 01 50	66 g	1	pc(s)	52/66
900 418	159884	04 01 02 50	49 g	1	pc(s)	41/66
900 419	156821	04 01 02 50	39 g	1	pc(s)	22/52
900 419	156821	04 01 02 50	39 g	1	pc(s)	66
900 429	159891	04 01 02 50	59 g	1	pc(s)	41/66
900 430	157286	04 01 02 05	59 g	1	pc(s)	46
900 431	310827	04 01 02 05	46 g	1	pc(s)	46
900 432	157309	04 01 02 05	61 g	1	pc(s)	46
900 433	157316	04 01 02 05	48 g	1	pc(s)	46
900 435	292963	04 01 02 05	54 g	1	pc(s)	47
900 439	436053	04 01 02 05	105 g	1	pc(s)	46
900 443	394322	04 01 02 05	785 g	20	pc(s)	47
900 445	280380	04 01 02 05	58 g	1	pc(s)	47
900 446	292970	04 01 02 05	49 g	1	pc(s)	47
900 447	282216	04 01 02 05	130 g	1	pc(s)	47
900 448	293007	04 01 02 05	113 g	1	pc(s)	47

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Part No.	GTIN*	PG	Weight	PU	SU	Page
900 449	320031	04 01 02 05	128 g	1	pc(s)	47
900 450	157989	04 01 02 19	77 g	1	pc(s)	38
900 455	157996	04 01 02 19	143 g	1	pc(s)	38
900 458	320574	04 01 02 19	76 g	1	pc(s)	38
900 459	320581	04 01 02 19	143 g	1	pc(s)	38
900 460	244146	04 01 02 50	37 g	1	pc(s)	40/49
900 460	244146	04 01 02 50	37 g	1	pc(s)	66
900 461	260559	04 01 01 50	64 g	1	pc(s)	26/66
900 462	260566	04 01 01 50	81 g	1	pc(s)	26/66
900 471	067547	04 01 03 04	22 g	1	pc(s)	59
900 588	323933	04 01 04 03	31 g	4	pc(s)	63
900 589	109339	04 01 04 03	20 g	1	pc(s)	63
900 595	078208	04 01 04 03	58 g	1	pc(s)	61
900 595	078208	04 01 04 03	58 g	1	pc(s)	65
900 610	048553	04 01 04 03	19 g	1	pc(s)	65
900 611	048560	04 01 04 03	38 g	1	pc(s)	65
900 615	086562	04 01 04 03	14 g	1	pc(s)	65
900 617	086593	04 01 04 03	9 g	1	pc(s)	65
900 760	156135	04 01 02 20	274 g	1	Stk.	46
900 761	156142	04 01 02 20	294 g	1	Stk.	46
900 762	156159	04 01 02 20	294 g	1	Stk.	46
900 765	156166	04 01 02 20	512 g	1	Stk.	46
900 766	156173	04 01 02 20	545 g	1	Stk.	46
900 767	156180	04 01 02 20	551 g	1	Stk.	46
900 768	156197	04 01 02 20	556 g	1	Stk.	46
900 780	156203	04 01 02 20	368 g	1	Stk.	45
900 781	156210	04 01 02 20	390 g	1	Stk.	45
900 782	156227	04 01 02 20	389 g	1	Stk.	45
900 785	156234	04 01 02 20	693 g	1	pc(s)	45
900 786	156241	04 01 02 20	726 g	1	pc(s)	45
900 787	156258	04 01 02 20	732 g	1	pc(s)	45
900 788	156265	04 01 02 20	736 g	1	pc(s)	45
900 815	087996	04 01 04 03	29 g	1	pc(s)	65
900 839	153059	04 01 04 03	14 g	1	pc(s)	65
900 848	107816	04 01 04 03	34 g	1	pc(s)	65
900 849	473348	04 01 01 50	118 g	1	pc(s)	22/27
900 849	473348	04 01 01 50	118 g	1	pc(s)	65
900 850	460379	04 01 04 03	61 g	5	pc(s)	61/65
900 910	155046	04 01 02 10	426 g	1	pc(s)	55
900 913	492455	04 01 02 10	1.32 kg	1	pc(s)	55
900 920	155053	04 01 02 10	617 g	1	pc(s)	55
900 921	492462	04 01 02 10	1.88 kg	1	pc(s)	56
900 923	492400	04 01 02 10	1.74 kg	1	pc(s)	56
900 945	425118	04 01 02 10	230 g	1	pc(s)	56
902 314	151031	04 01 04 02	786 g	1	pc(s)	64
902 315	125759	04 01 04 02	1.83 kg	1	pc(s)	64
902 316	151048	04 01 04 02	1.92 kg	1	pc(s)	64
902 317	151055	04 01 04 02	5 g	1	pc(s)	64
902 471	108943	04 01 04 02	1.79 kg	1	pc(s)	64
902 472	108950	04 01 04 02	2.39 kg	1	pc(s)	64
902 485	045767	04 01 04 02	612 g	1	pc(s)	64
906 055	071513	04 02 10 02	1.00 kg	1	pc(s)	110
906 058	091658	04 02 10 02	899 g	1	pc(s)	110
906 100	106598	04 02 04 03	3.40 kg	1	pc(s)	94
906 101	106604	04 02 04 03	4.97 kg	1	pc(s)	94
906 102	106611	04 02 04 03	5.70 kg	1	pc(s)	94
906 103	106628	04 02 04 03	7.65 kg	1	pc(s)	94
907 208	107373	04 02 04 50	2 g	1	pc(s)	93
907 214	100879	04 02 04 02	66 g	1	pc(s)	93
907 216	106680	04 02 04 02	66 g	1	pc(s)	93
907 217	107342	04 02 04 50	2 g	1	pc(s)	93
907 218	107588	04 02 04 50	2 g	1	pc(s)	93
907 219	107595	04 02 04 50	2 g	1	pc(s)	92
907 400	107557	04 02 04 01	65 g	1	pc(s)	91
907 401	107564	04 02 04 01	69 g	1	pc(s)	91
907 421	107618	04 02 04 01	4 g	10	pc(s)	91
907 422	107625	04 02 04 01	4 g	10	pc(s)	91
907 423	107632	04 02 04 01	4 g	10	pc(s)	91
907 424	107649	04 02 04 01	4 g	10	pc(s)	91
907 425	107656	04 02 04 01	3 g	10	pc(s)	91
907 430	107670	04 02 04 01	4 g	10	pc(s)	92
907 441	107694	04 02 04 01	4 g	10	pc(s)	92
907 442	107700	04 02 04 01	3 g	10	pc(s)	92
907 443	107717	04 02 04 01	4 g	10	pc(s)	92
907 444	107724	04 02 04 01	3 g	10	pc(s)	92
907 445	118461	04 02 04 01	3 g	10	pc(s)	92
907 470	107663	04 02 04 01	4 g	10	pc(s)	92
907 496	150683	04 02 04 50	13 g	10	pc(s)	93
907 497	112995	04 02 04 50	16 g	1	pc(s)	93
907 498	107540	04 02 04 50	10 g	1	pc(s)	93
907 499	107533	04 02 04 50	45 g	1	pc(s)	92
907 991	112988	04 02 04 50	181 g	1	pc(s)	95
907 993	048584	04 02 04 50	60 g	1	pc(s)	95
907 994	033511	04 02 04 50	105 g	1	pc(s)	95
907 995	033528	04 02 04 50	228 g	1	pc(s)	95
907 996	033535	04 02 04 50	60 g	1	pc(s)	95
907 997	033542	04 02 04 50	48 g	1	pc(s)	95
908 010	148512	04 01 02 17	42 g	1	pc(s)	45
908 011	148482	04 01 02 17	37 g	1	pc(s)	45
908 012	148505	04 01 02 17	40 g	1	pc(s)	45
908 013	148536	04 01 02 17	57 g	1	pc(s)	45
908 014	148529	04 01 02 17	49 g	1	pc(s)	45
908 015	148543	04 01 02 17	60 g	1	pc(s)	45
908 070	148499	04 01 02 17	113 g	1	pc(s)	44
908 074	148567	04 01 02 17	123 g	1	pc(s)	44
908 076	148581	04 01 02 17	130 g	1	pc(s)	44
908 090	148550	04 01 02 17	117 g	1	pc(s)	44
908 094	148574	04 01 02 17	126 g	1	pc(s)	44
908 096	148598	04 01 02 17	134 g	1	pc(s)	44
908 190	148604	04 01 02 17	219 g	1	pc(s)	43
908 192	148628	04 01 02 17	238 g	1	pc(s)	43
908 195	148611	04 01 02 17	225 g	1	pc(s)	43
908 197	148635	04 01 02 17	243 g	1	pc(s)	43
908 203	148642	04 01 02 17	225 g	1	pc(s)	44
908 204	148666	04 01 02 17	259 g	1	pc(s)	44
908 208	148659	04 01 02 17	230 g	1	pc(s)	44
908 209	148673	04 01 02 17	266 g	1	pc(s)	44
908 214	267961	04 01 02 17	304 g	1	pc(s)	43
908 219	267978	04 01 02 17	311 g	1	pc(s)	43
908 300	148680	04 01 02 17	303 g	1	pc(s)	41
908 301	148727	04 01 02 17	363 g	1	pc(s)	41
908 305	148697	04 01 02 17	310 g	1	pc(s)	41
908 306	148734	04 01 02 17	370 g	1	pc(s)	41
908 314	148703	04 01 02 17	339 g	1	pc(s)	41
908 319	148710	04 01 02 17	347 g	1	pc(s)	41
908 340	148840	04 01 02 17	386 g	1	pc(s)	42
908 341	148864	04 01 02 17	423 g	1	pc(s)	42
908 342	148765	04 01 02 17	448 g	1	pc(s)	42
908 343	148789	04 01 02 17	399 g	1	pc(s)	42
908 344	148802	04 01 02 17	430 g	1	pc(s)	42
908 345	148857	04 01 02 17	394 g	1	pc(s)	42
908 346	148871	04 01 02 17	432 g	1	pc(s)	42
908 347	148772	04 01 02 17	456 g	1	pc(s)	42
908 348	148796	04 01 02 17	406 g	1	pc(s)	43
908 349	148819	04 01 02 17	438 g	1	pc(s)	43
908 350	148741	04 01 02 17	373 g	1	pc(s)	41
908 351	148826	04 01 02 17	319 g	1	pc(s)	41
908 355	148758	04 01 02 17	380 g	1	pc(s)	42
908 356	148833	04 01 02 17	325 g	1	pc(s)	42
908 505	228139	04 01 01 15	861 g	1	pc(s)	26
908 506	228146	04 01 01 15	882 g	1	pc(s)	26
909 230	117686	04 01 03 03	199 g	1	pc(s)	60
909 250	132566	04 01 03 03	970 g	1	pc(s)	60
909 251	132573	04 01 03 03	877 g	1	pc(s)	60
909 300	117723	04 02 07 01	224 g	1	pc(s)	102
909 310	117747	04 02 07 01	212 g	1	pc(s)	102
909 321	126152	04 02 07 01	216 g	1	pc(s)	102
909 703	085664	04 02 08 02	233 g	1	pc(s)	105
909 704	105690	04 02 08 02	86 g	1	pc(s)	105
909 705	105706	04 02 08 02	283 g	1	pc(s)	105
909 706	362437	04 02 08 02	222 g	1	pc(s)	105
909 710	118942	04 02 08 01	114 g	1	pc(s)	105
909 711	118980	04 02 08 01	116 g	1	pc(s)	105

*) and 1) see page 342

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910 099	037298	04 02 10 02	38 g	1	pc(s)	110
910 200	144019	04 01 04 01	140 g	1	pc(s)	63
910 486	124479	04 03 01 50	80 g	1	pc(s)	83/112
910 499	157149	04 03 01 50	180 g	1	pc(s)	61/75
910 499	157149	04 03 01 50	180 g	1	pc(s)	87/112
910 508	111363	04 03 01 03	800 g	1	pc(s)	114
910 511	111424	04 03 01 01	1.32 kg	1	pc(s)	63
910 511	111424	04 03 01 01	1.32 kg	1	pc(s)	114
910 513	[1] 506310	04 01 04 01	162 g	1	pc(s)	62
910 631	108196	04 01 01 11	114 g	1	pc(s)	28
910 641	093416	04 01 01 11	1 g	20	pc(s)	28
910 642	107878	04 01 01 11	80 g	1	pc(s)	28
910 652	114531	04 03 01 50	64 g	1	pc(s)	83/113
910 653	113008	04 03 01 02	1.06 kg	1	pc(s)	83/113
910 655	149250	04 03 01 02	835 g	1	pc(s)	83/113
910 694	350212	04 03 01 03	67 g	1	pc(s)	113
910 695	118959	04 03 01 03	180 g	1	pc(s)	83/112
910 696	149359	04 03 01 03	54 g	1	pc(s)	83/112
910 697	123717	04 03 01 50	31 g/PAK	1	PAK	82/113
910 698	337053	04 03 01 03	67 g	1	pc(s)	113
910 710	424678	04 03 01 03	52 g	1	pc(s)	74/87
910 710	424678	04 03 01 03	52 g	1	pc(s)	112
910 797	428829	04 02 01 50	28 g	1	PAK	74/87
910 920	460263	04 03 01 03	380 g	1	pc(s)	61
910 921	460270	04 03 01 03	380 g	1	pc(s)	61
910 935	460676	04 03 01 50	101 g	1	pc(s)	61
910 936	460683	04 03 01 50	111 g	1	pc(s)	61
910 937	460690	04 03 01 50	193 g	1	pc(s)	61
910 938	467668	04 03 01 50	131 g	1	pc(s)	61
912 253	068360	04 01 03 01	563 g	1	pc(s)	58
912 254	073685	04 01 03 01	300 g	1	pc(s)	58
915 000	421271	04 01 07 01	1.02 kg	1	pc(s)	62
915 001	421301	04 01 07 01	1.01 kg	1	pc(s)	62
915 051	422247	04 01 07 01	820 g	1	pc(s)	62
915 105	498822	04 01 07 01	5.80 kg	1	pc(s)	62
915 109	422162	04 01 07 01	4.37 kg	1	pc(s)	62
915 111	422179	04 01 07 01	5.35 kg	1	pc(s)	62
915 113	422209	04 01 07 01	6.15 kg	1	pc(s)	62
915 115	422223	04 01 07 01	6.85 kg	1	pc(s)	62
915 117	422230	04 01 07 01	7.85 kg	1	pc(s)	62
915 120	498839	04 01 07 01	NaN	1	pc(s)	62
918 401	074224	04 02 03 01	182 g	1	pc(s)	88
918 408	125292	04 02 03 01	110 g	1	pc(s)	89
918 409	146709	04 02 03 01	110 g	1	pc(s)	89
918 411	093133	04 02 03 01	99 g	1	pc(s)	89
918 420	094895	04 02 03 01	212 g	1	pc(s)	89
918 421	094901	04 02 03 01	118 g	1	pc(s)	89
918 422	149267	04 02 03 01	97 g	1	pc(s)	89
919 010	071612	04 02 10 01	13 g	10	pc(s)	109
919 011	071605	04 02 10 01	28 g	10	pc(s)	109
919 012	071599	04 02 10 01	40 g	1	pc(s)	109
919 014	071575	04 02 10 01	5 g	10	pc(s)	110
919 015	071568	04 02 10 01	15 g	1	pc(s)	110
919 016	071551	04 02 10 01	481 g	1	pc(s)	109
919 030	103504	04 02 10 01	167 g	1	pc(s)	94/110
919 031	103511	04 02 10 01	2 g	20	pc(s)	94/110
919 032	103528	04 02 10 01	2 g	20	pc(s)	94/110
919 033	103535	04 02 10 01	5 g	20	pc(s)	94/110
919 034	103542	04 02 10 01	7 g	10	pc(s)	94/110
919 035	103559	04 02 10 01	12 g	10	pc(s)	94/110
919 036	103566	04 02 10 01	23 g	25	pc(s)	110
919 037	103573	04 02 10 01	50 g	20	pc(s)	110
919 038	103580	04 02 10 01	82 g	10	pc(s)	110
920 000	057494	04 01 05 01	127 g	1	pc(s)	323
920 211	120570	04 02 01 02	23 g	1	pc(s)	79
920 220	118331	04 02 01 02	36 g	1	pc(s)	78
920 222	118355	04 02 01 02	21 g	1	pc(s)	78
920 224	117785	04 02 01 02	37 g	1	pc(s)	78
920 225	118379	04 02 01 02	21 g	1	pc(s)	78

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920 226	142121	04 02 01 02	23 g	1	pc(s)	78
920 240	118348	04 02 01 02	20 g	1	pc(s)	78
920 242	118362	04 02 01 02	21 g	1	pc(s)	78
920 243	126732	04 02 01 02	21 g	1	pc(s)	79
920 244	117792	04 02 01 02	21 g	1	pc(s)	78
920 245	118386	04 02 01 02	36 g	1	pc(s)	78
920 247	116078	04 02 01 02	43 g	1	pc(s)	78
920 249	127845	04 02 01 03	23 g	1	pc(s)	80
920 270	117549	04 02 01 02	22 g	1	pc(s)	78
920 271	117556	04 02 01 02	22 g	1	pc(s)	79
920 280	142138	04 02 01 05	22 g	1	pc(s)	81
920 288	137363	04 02 01 02	25 g	1	pc(s)	79
920 289	135840	04 02 01 02	22 g	1	pc(s)	79
920 296	340015	04 02 01 02	21 g	1	pc(s)	79
920 300	109179	04 02 01 01	34 g	1	pc(s)	75
920 301	109186	04 02 01 01	53 g	1	pc(s)	80
920 308	109209	04 02 01 02	22 g	1	pc(s)	82
920 309	109193	04 02 01 02	14 g	1	pc(s)	82
920 310	109124	04 02 01 02	25 g	1	pc(s)	76
920 314	261396	04 02 01 02	25 g	1	pc(s)	77
920 320	109032	04 02 01 02	24 g	1	pc(s)	76
920 322	109049	04 02 01 02	24 g	1	pc(s)	76
920 324	109056	04 02 01 02	38 g	1	pc(s)	76
920 325	109063	04 02 01 02	24 g	1	pc(s)	76
920 326	109070	04 02 01 02	24 g	1	pc(s)	76
920 327	109087	04 02 01 02	24 g	1	pc(s)	76
920 334	152229	04 02 01 02	23 g	1	pc(s)	78
920 336	118539	04 02 01 02	40 g	1	pc(s)	76
920 340	108967	04 02 01 02	23 g	1	pc(s)	76
920 342	108974	04 02 01 02	23 g	1	pc(s)	76
920 344	108981	04 02 01 02	37 g	1	pc(s)	76
920 345	108998	04 02 01 02	24 g	1	pc(s)	76
920 346	109001	04 02 01 02	24 g	1	pc(s)	76
920 347	109018	04 02 01 02	24 g	1	pc(s)	76
920 349	126404	04 02 01 03	25 g	1	pc(s)	80
920 350	109131	04 02 01 02	24 g	1	pc(s)	77
920 354	109148	04 02 01 02	24 g	1	pc(s)	77
920 362	120587	04 02 01 02	24 g	1	pc(s)	77
920 364	109155	04 02 01 02	25 g	1	pc(s)	77
920 370	109117	04 02 01 02	24 g	1	pc(s)	77
920 371	109094	04 02 01 02	24 g	1	pc(s)	77
920 375	109100	04 02 01 02	24 g	1	pc(s)	77
920 381	109025	04 02 01 05	23 g	1	pc(s)	80
920 383	126725	04 02 01 05	50 g	1	pc(s)	81
920 384	109162	04 02 01 05	22 g	1	pc(s)	81
920 388	137370	04 02 01 02	28 g	1	pc(s)	77
920 389	118447	04 02 01 02	30 g	1	pc(s)	77
920 395	118157	04 02 01 50	12 g/PAK	1	PAK	82
920 398	126572	04 02 01 50	5.60 g/PAK	1	PAK	82
920 398	126572	04 02 01 50	5.60 g/PAK	1	PAK	113
920 538	125285	04 02 01 05	20 g	1	pc(s)	81
922 020	463561	04 02 07 50	42 g	1	pc(s)	103
922 220	433953	04 02 07 03	64 g	1	pc(s)	103
922 400	137349	04 02 07 03	220 g	1	pc(s)	103
923 019	033177	04 01 05 02	1.70 kg	1	pc(s)	116/334
923 021	036161	04 01 05 01	185 g	1	pc(s)	116/323
923 023	074262	04 01 05 01	185 g	1	pc(s)	116/323
923 025	110397	04 01 05 03	137 g	1	pc(s)	117/335
923 035	110403	04 01 05 03	163 g	1	pc(s)	117/335
923 045	110410	04 01 05 03	190 g	1	pc(s)	117/335
923 060	038899	04 01 05 02	725 g	1	pc(s)	116/334
923 061	038905	04 01 05 02	750 g	1	pc(s)	116/334
923 062	038912	04 01 05 02	781 g	1	pc(s)	116/334
923 100	108325	04 01 05 02	289 g	1	pc(s)	117/334
923 101	108332	04 01 05 02	1.98 kg	1	pc(s)	117/334
923 110	092426	05 03 01 01	46 g	10	pc(s)	119
923 116	085978	05 03 01 01	42 g	10	pc(s)	119
923 117	093478	05 03 01 01	42 g	10	pc(s)	119
923 118	104969	05 03 01 01	38 g	10	pc(s)	119
923 119	104976	05 03 01 01	38 g	10	pc(s)	119
923 211	150904	04 01 05 03	109 g	1	pc(s)	117/335
923 214	150911	04 01 05 03	107 g	1	pc(s)	117/335

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Part No.	GTIN*	PG	Weight	PU	SU	Page
923 218	150928	04 01 05 03	99 g	1	pc(s)	117/335
923 222	150935	04 01 05 03	95 g	1	pc(s)	117/335
923 226	150942	04 01 05 03	92 g	1	pc(s)	117/335
923 230	150959	04 01 05 03	180 g	1	pc(s)	117/335
923 233	150966	04 01 05 03	174 g	1	pc(s)	117/335
923 236	150973	04 01 05 03	167 g	1	pc(s)	117/335
923 239	150980	04 01 05 03	162 g	1	pc(s)	117/335
923 242	150997	04 01 05 03	158 g	1	pc(s)	117/335
923 311	150775	04 01 05 03	105 g	1	pc(s)	117/335
923 314	150782	04 01 05 03	103 g	1	pc(s)	117/335
923 318	150799	04 01 05 03	101 g	1	pc(s)	117/335
923 322	150805	04 01 05 03	96 g	1	pc(s)	117/335
923 326	150812	04 01 05 03	91 g	1	pc(s)	117/335
923 330	150829	04 01 05 03	178 g	1	pc(s)	117/335
923 333	150836	04 01 05 03	172 g	1	pc(s)	117/335
923 336	150843	04 01 05 03	168 g	1	pc(s)	117/335
923 339	150850	04 01 05 03	159 g	1	pc(s)	117/335
923 342	150867	04 01 05 03	158 g	1	pc(s)	117/335
923 348	150874	04 01 05 03	144 g	1	pc(s)	117/335
923 356	150881	04 01 05 03	262 g	1	pc(s)	117/335
923 362	150898	04 01 05 03	244 g	1	pc(s)	117/335
923 401	237766	04 01 06 04	12.15 kg	1	pc(s)	118
923 402	442269	04 01 06 04	3.59 kg	1	pc(s)	118
923 403	442962	04 01 06 04	207 g	1	pc(s)	118
924 017	045934	04 02 09 01	30 g	1	pc(s)	103
924 328	100008	04 01 03 50	15 g	1	pc(s)	59
924 329	099234	04 01 03 50	12 g	1	pc(s)	59
924 335	071773	04 01 03 02	122 g	1	pc(s)	59
924 336	071681	04 01 03 50	13 g	1	pc(s)	59
924 350	076709	04 01 03 04	34 g	1	pc(s)	59
924 370	081321	04 01 03 02	71 g	1	pc(s)	59
924 389	073692	04 01 03 02	36 g	1	pc(s)	60
924 395	076334	04 01 03 02	67 g	1	pc(s)	60
924 396	091016	04 01 03 02	32 g	1	pc(s)	60
925 001	047365	04 02 07 02	10 g	1	pc(s)	102
926 304	157125	04 02 01 01	45 g	1	pc(s)	75
927 010	410114	04 02 01 06	14 g	1	pc(s)	72
927 014	473010	04 02 01 06	14 g	1	pc(s)	73
927 022	410121	04 02 01 06	14 g	1	pc(s)	73
927 024	410138	04 02 01 06	15 g	1	pc(s)	73
927 025	410145	04 02 01 06	14 g	1	pc(s)	73
927 027	468689	04 02 01 06	14 g	1	pc(s)	73
927 042	410152	04 02 01 06	14 g	1	pc(s)	73
927 044	410169	04 02 01 06	14 g	1	pc(s)	73
927 045	410176	04 02 01 06	14 g	1	pc(s)	73
927 047	468672	04 02 01 06	14 g	1	pc(s)	73
927 070	410183	04 02 01 06	14 g	1	pc(s)	73
927 071	410190	04 02 01 06	14 g	1	pc(s)	73
927 074	468573	04 02 01 06	14 g	1	pc(s)	73
927 075	468580	04 02 01 06	14 g	1	pc(s)	73
927 084	410206	04 02 01 06	14 g	1	pc(s)	74
927 090	466531	04 02 01 06	14 g	1	pc(s)	74
927 210	405585	04 02 01 06	33 g	1	pc(s)	71
927 214	473003	04 02 01 06	33 g	1	pc(s)	72
927 222	405592	04 02 01 06	34 g	1	pc(s)	71
927 224	405608	04 02 01 06	34 g	1	pc(s)	71
927 225	405615	04 02 01 06	34 g	1	pc(s)	71
927 227	468658	04 02 01 06	34 g	1	pc(s)	71
927 242	405622	04 02 01 06	34 g	1	pc(s)	71
927 244	405639	04 02 01 06	34 g	1	pc(s)	71
927 245	405646	04 02 01 06	34 g	1	pc(s)	71
927 247	468665	04 02 01 06	34 g	1	pc(s)	71
927 270	405653	04 02 01 06	34 g	1	pc(s)	71
927 271	405660	04 02 01 06	34 g	1	pc(s)	72
927 274	468559	04 02 01 06	34 g	1	pc(s)	71
927 275	468566	04 02 01 06	34 g	1	pc(s)	72
927 284	405677	04 02 01 06	35 g	1	pc(s)	72
927 290	466524	04 02 01 06	36 g	1	pc(s)	72
927 305	454699	04 02 01 50	12 g	10	pc(s)	75
927 318	470644	04 02 01 50	32 g	1	pc(s)	74
927 318	470644	04 02 01 50	32 g	1	pc(s)	87
927 408	463653	04 02 03 06	52 g	1	pc(s)	86
927 910	411739	04 02 02 06	33 g	1	pc(s)	85
927 922	411951	04 02 02 06	33 g	1	pc(s)	85
927 924	411968	04 02 02 06	33 g	1	pc(s)	85
927 925	411975	04 02 02 06	33 g	1	pc(s)	85
927 942	411777	04 02 02 06	33 g	1	pc(s)	85
927 944	411784	04 02 02 06	33 g	1	pc(s)	85
927 945	411807	04 02 02 06	33 g	1	pc(s)	85
927 954	485730	04 02 03 06	58 g	1	pc(s)	86
927 970	411982	04 02 02 06	33 g	1	pc(s)	85
927 971	411999	04 02 02 06	33 g	1	pc(s)	86
927 984	412002	04 02 02 06	33 g	1	pc(s)	86
927 987	485754	04 02 02 06	32 g	1	pc(s)	86
927 988	485747	04 02 02 06	32 g	1	pc(s)	86
927 989	485761	04 02 02 06	32 g	1	pc(s)	86
928 430	261389	04 02 03 02	110 g	1	pc(s)	88
928 440	280809	04 02 03 02	134 g	1	pc(s)	88
929 010	039940	04 02 08 01	68 g	1	pc(s)	105
929 039	135185	04 02 08 03	24 g	1	pc(s)	106
929 042	091030	04 02 08 03	39 g	1	pc(s)	106
929 043	091047	04 02 08 03	90 g	1	pc(s)	106
929 044	091054	04 02 08 03	86 g	1	pc(s)	106
929 045	091061	04 02 08 03	266 g	1	pc(s)	106
929 047	091085	04 02 08 03	467 g	1	pc(s)	106
929 095	113398	04 02 08 50	90 g	1	pc(s)	107
929 096	107212	04 02 08 50	203 g	1	pc(s)	107
929 100	102170	04 02 06 01	244 g	1	pc(s)	99
929 121	118935	04 02 06 01	109 g	1	pc(s)	99
929 126	242258	04 02 06 01	96 g	1	pc(s)	100
929 146	157156	04 02 08 03	471 g	1	pc(s)	106
929 148	157163	04 02 08 03	448 g	1	pc(s)	106
929 161	472921	04 02 06 01	180 g	1	pc(s)	99
929 166	472914	04 02 06 01	167 g	1	pc(s)	100
929 199	103313	04 02 06 50	350 g	1	pc(s)	100
929 200	344082	04 02 06 50	6 g	1	pc(s)	100
929 200	344082	04 02 06 50	6 g	1	pc(s)	107
929 221	342866	04 02 06 01	606 g	1	pc(s)	99
929 309	472938	04 02 06 01	13 g	1	pc(s)	100
929 335	228672	04 02 06 50	1.38 kg	1	pc(s)	100
929 497	104143	04 02 08 50	2 g	1	pc(s)	107
929 498	104136	04 02 08 50	2 g	1	pc(s)	107
929 499	104129	04 02 08 50	2 g	1	pc(s)	107
929 921	098169	04 02 05 01	218 g	1	pc(s)	97
929 941	098152	04 02 05 01	173 g	1	pc(s)	97
929 950	137387	04 02 05 03	222 g	1	pc(s)	98
929 951	137394	04 02 05 03	222 g	1	pc(s)	98
929 960	098145	04 02 05 01	172 g	1	pc(s)	97
929 961	101784	04 02 05 02	169 g	1	pc(s)	97
929 962	101791	04 02 05 02	169 g	1	pc(s)	97
929 963	101807	04 02 05 02	172 g	1	pc(s)	97
929 964	101814	04 02 05 02	169 g	1	pc(s)	97
929 965	360778	04 02 05 01	171 g	1	pc(s)	97
929 969	127418	04 02 05 03	255 g	1	pc(s)	98
929 970	127425	04 02 05 03	248 g	1	pc(s)	98
929 971	120761	04 02 05 01	272 g	1	pc(s)	97
929 982	098695	04 02 05 50	36 g	1	pc(s)	98
929 984	098688	04 02 05 50	30 g	1	pc(s)	98
929 996	098244	04 02 05 50	13 g	1	pc(s)	98
941 110	137899	04 01 01 04	275 g	1	pc(s)	24
941 115	289208	04 01 01 04	285 g	1	pc(s)	24
941 200	138209	04 01 01 04	250 g	1	pc(s)	23
941 205	289185	04 01 01 04	260 g	1	pc(s)	23
941 300	133556	04 01 01 04	386 g	1	pc(s)	22
941 305	275317	04 01 01 04	361 g	1	pc(s)	22
941 310	131798	04 01 01 04	480 g	1	pc(s)	23
941 315	275324	04 01 01 04	448 g	1	pc(s)	23
941 400	133563	04 01 01 04	525 g	1	pc(s)	23
941 405	275331	04 01 01 04	428 g	1	pc(s)	23
942 310	484108	04 01 02 01	344 g	1	pc(s)	34

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Part No.	GTIN*	PG	Weight	PU	SU	Page
942 341	477186	04 01 02 24	378 g	1	pc(s)	32
942 400	484115	04 01 02 01	408 g	1	pc(s)	34
942 405	477124	04 01 02 01	351 g	1	pc(s)	34
942 440	477148	04 01 02 24	377 g	1	pc(s)	32
950 102	105621	04 01 02 13	184 g	1	pc(s)	52
950 112	105638	04 01 02 13	196 g	1	pc(s)	52
950 530	152960	04 01 02 09	300 g	1	pc(s)	55
950 531	152953	04 01 02 09	275 g	1	pc(s)	55
950 535	154988	04 01 02 09	310 g	1	pc(s)	55
950 536	154995	04 01 02 09	285 g	1	pc(s)	55
952 010	108356	04 01 02 01	43 g	1	pc(s)	37/39
952 010	108356	04 01 02 01	43 g	1	pc(s)	51
952 011	109773	04 01 02 01	32 g	1	pc(s)	39/51
952 012	109780	04 01 02 01	35 g	1	pc(s)	37/39
952 012	109780	04 01 02 01	35 g	1	pc(s)	51
952 013	109797	04 01 02 01	46 g	1	pc(s)	37/39
952 013	109797	04 01 02 01	46 g	1	pc(s)	51
952 014	108363	04 01 02 01	50 g	1	pc(s)	37/39
952 014	108363	04 01 02 01	50 g	1	pc(s)	51
952 015	109803	04 01 02 01	53 g	1	pc(s)	37/39
952 015	109803	04 01 02 01	53 g	1	pc(s)	51
952 016	109810	04 01 02 01	64 g	1	pc(s)	39/51
952 017	113329	04 01 02 01	63 g	1	pc(s)	37/39
952 017	113329	04 01 02 01	63 g	1	pc(s)	51
952 018	119482	04 01 02 01	36 g	1	pc(s)	39/51
952 022	376533	04 01 02 24	43 g	1	pc(s)	33/51
952 024	377356	04 01 02 24	52 g	1	pc(s)	33/51
952 025	127357	04 01 02 04	34 g	1	pc(s)	40/52
952 027	127364	04 01 02 04	40 g	1	pc(s)	40/52
952 028	387843	04 01 02 24	52 g	1	pc(s)	33
952 029	127371	04 01 02 04	44 g	1	pc(s)	40/52
952 030	108530	04 01 02 06	111 g	1	pc(s)	48
952 035	108547	04 01 02 06	114 g	1	pc(s)	48
952 041	141841	04 01 02 07	53 g	1	pc(s)	52/54
952 044	141858	04 01 02 07	62 g	1	pc(s)	52/54
952 048	327733	04 01 02 22	51 g	1	pc(s)	52/53
952 049	327740	04 01 02 22	60 g	1	pc(s)	52/53
952 050	108370	04 01 02 01	38 g	1	pc(s)	37/51
952 051	126442	04 01 02 07	49 g	1	pc(s)	52/54
952 054	127975	04 01 02 07	52 g	1	pc(s)	52/54
952 056	149106	04 01 02 08	71 g	1	pc(s)	54
952 060	108387	04 01 02 06	37 g	1	pc(s)	48/51
952 070	108493	04 01 02 02	130 g	1	pc(s)	38
952 071	109834	04 01 02 02	107 g	1	pc(s)	38
952 072	109858	04 01 02 02	109 g	1	pc(s)	38
952 073	109872	04 01 02 02	119 g	1	pc(s)	38
952 074	108516	04 01 02 02	123 g	1	pc(s)	38
952 075	109896	04 01 02 02	142 g	1	pc(s)	38
952 076	109919	04 01 02 02	136 g	1	pc(s)	38
952 077	119680	04 01 02 02	137 g	1	pc(s)	39
952 078	119468	04 01 02 02	109 g	1	pc(s)	38
952 080	127296	04 01 02 04	107 g	1	pc(s)	40
952 081	318182	04 01 02 01	38 g	1	pc(s)	37/51
952 082	127319	04 01 02 04	113 g	1	pc(s)	40
952 083	376540	04 01 02 24	51 g	1	pc(s)	33/51
952 084	127333	04 01 02 04	117 g	1	pc(s)	40
952 085	127302	04 01 02 04	111 g	1	pc(s)	40
952 087	127326	04 01 02 04	116 g	1	pc(s)	40
952 089	127340	04 01 02 04	121 g	1	pc(s)	40
952 090	108509	04 01 02 02	119 g	1	pc(s)	39
952 091	109841	04 01 02 02	110 g	1	pc(s)	39
952 092	109865	04 01 02 02	113 g	1	pc(s)	39
952 093	109889	04 01 02 02	137 g	1	pc(s)	39
952 094	108523	04 01 02 02	140 g	1	pc(s)	39
952 095	109902	04 01 02 02	140 g	1	pc(s)	39
952 096	109926	04 01 02 02	160 g	1	pc(s)	39
952 097	119697	04 01 02 02	140 g	1	pc(s)	39
952 098	119475	04 01 02 02	123 g	1	pc(s)	39
952 100	376526	04 01 02 24	128 g	1	pc(s)	33
952 110	108417	04 01 02 01	242 g	1	pc(s)	37
952 111	119420	04 01 02 01	232 g	1	pc(s)	37
952 113	387874	04 01 02 24	130 g	1	pc(s)	33

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952 115	108424	04 01 02 01	228 g	1	pc(s)	37
952 116	119413	04 01 02 01	236 g	1	pc(s)	37
952 121	376663	04 01 02 24	250 g	1	pc(s)	33
952 122	387867	04 01 02 24	252 g	1	pc(s)	33
952 130	128521	04 01 02 01	247 g	1	pc(s)	37
952 135	128538	04 01 02 01	253 g	1	pc(s)	37
952 181	318175	04 01 02 01	228 g	1	pc(s)	36
952 185	318151	04 01 02 01	228 g	1	pc(s)	36
952 200	108394	04 01 02 01	229 g	1	pc(s)	36
952 201	123915	04 01 02 01	211 g	1	pc(s)	36
952 205	108400	04 01 02 01	232 g	1	pc(s)	36
952 206	123922	04 01 02 01	217 g	1	pc(s)	36
952 220	376656	04 01 02 24	241 g	1	pc(s)	32
952 300	108431	04 01 02 01	334 g	1	pc(s)	34
952 302	113305	04 01 02 01	386 g	1	pc(s)	37
952 303	120709	04 01 02 01	355 g	1	pc(s)	34
952 305	108448	04 01 02 01	328 g	1	pc(s)	34
952 307	113312	04 01 02 01	388 g	1	pc(s)	37
952 308	120716	04 01 02 01	362 g	1	pc(s)	34
952 310	108479	04 01 02 01	405 g	1	pc(s)	35
952 311	119390	04 01 02 01	432 g	1	pc(s)	35
952 313	123939	04 01 02 01	299 g	1	pc(s)	34
952 314	124028	04 01 02 01	342 g	1	pc(s)	34
952 315	108486	04 01 02 01	415 g	1	pc(s)	36
952 316	119406	04 01 02 01	436 g	1	pc(s)	36
952 318	124011	04 01 02 01	306 g	1	pc(s)	34
952 319	124035	04 01 02 01	350 g	1	pc(s)	34
952 320	126794	04 01 02 01	416 g	1	pc(s)	35
952 323	133235	04 01 02 01	381 g	1	pc(s)	35
952 325	126800	04 01 02 01	425 g	1	pc(s)	36
952 328	133242	04 01 02 01	390 g	1	pc(s)	36
952 330	376649	04 01 02 24	354 g	1	pc(s)	32
952 332	469945	04 01 02 01	433 g	1	pc(s)	36
952 341	376632	04 01 02 24	452 g	1	pc(s)	32
952 342	387850	04 01 02 24	452 g	1	pc(s)	32
952 381	318144	04 01 02 01	405 g	1	pc(s)	35
952 385	318137	04 01 02 01	415 g	1	pc(s)	35
952 400	108455	04 01 02 01	414 g	1	pc(s)	35
952 403	128569	04 01 02 01	417 g	1	pc(s)	35
952 404	128545	04 01 02 01	474 g	1	pc(s)	35
952 405	108462	04 01 02 01	453 g	1	pc(s)	35
952 408	128576	04 01 02 01	426 g	1	pc(s)	35
952 409	128552	04 01 02 01	482 g	1	pc(s)	35
952 440	376625	04 01 02 24	449 g	1	pc(s)	32
952 510	126428	04 01 02 07	340 g	1	pc(s)	53
952 512	127951	04 01 02 07	336 g	1	pc(s)	53
952 514	224964	04 01 02 07	499 g	1	pc(s)	54
952 515	126435	04 01 02 07	323 g	1	pc(s)	54
952 517	127968	04 01 02 07	338 g	1	pc(s)	54
952 519	224971	04 01 02 07	509 g	1	pc(s)	54
952 520	149069	04 01 02 08	501 g	1	pc(s)	54
952 525	149076	04 01 02 08	521 g	1	pc(s)	54
952 565	327719	04 01 02 22	322 g	1	pc(s)	53
952 567	327726	04 01 02 22	350 g	1	pc(s)	53
952 589	132306	04 01 04 03	17 g	4	pc(s)	63
952 610	149816	04 01 02 12	18 g	72	pc(s)	50
952 614	149847	04 01 02 12	18 g	72	pc(s)	50
952 641	146334	04 01 02 12	18 g	72	pc(s)	49
952 643	150737	04 01 02 12	18 g	72	pc(s)	49
952 644	149892	04 01 02 12	18 g	72	pc(s)	49
952 650	149823	04 01 02 12	18 g	72	pc(s)	50
952 651	146310	04 01 02 12	18 g	72	pc(s)	49
952 653	150713	04 01 02 12	18 g	72	pc(s)	49
952 654	149878	04 01 02 12	18 g	72	pc(s)	49
952 699	127906	04 01 04 03	103 g	1	pc(s)	63
952 710	149830	04 01 02 12	18 g	72	pc(s)	50
952 714	149854	04 01 02 12	18 g	72	pc(s)	50
952 741	146341	04 01 02 12	18 g	72	pc(s)	50
952 743	150744	04 01 02 12	18 g	72	pc(s)	50
952 744	149908	04 01 02 12	18 g	72	pc(s)	50
952 750	149861	04 01 02 12	18 g	72	pc(s)	50
952 751	146327	04 01 02 12	18 g	72	pc(s)	49
952 753	150720	04 01 02 12	18 g	72	pc(s)	49
952 754	149885	04 01 02 12	18 g	72	pc(s)	49

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Part No.	GTIN*	PG	Weight	PU	SU	Page
952 908	264526	04 01 02 14	112 g	1	pc(s)	40/52
952 910	266865	04 01 02 12	18 g	72	pc(s)	50
952 918	308336	04 01 02 14	112 g	1	pc(s)	40/52
952 920	322622	04 01 02 23	161 g	1	pc(s)	33
952 923	322639	04 01 02 23	167 g	1	pc(s)	33
952 926	322646	04 01 02 23	72 g	1	pc(s)	33/51
952 927	322653	04 01 02 23	78 g	1	pc(s)	33/51
952 938	264014	04 01 02 14	207 g	1	pc(s)	40
952 940	308329	04 01 02 14	207 g	1	pc(s)	40
952 941	228177	04 01 02 12	18 g	72	pc(s)	50
952 948	323919	04 01 02 12	18 g	72	pc(s)	50
952 949	323926	04 01 02 12	18 g	72	pc(s)	50
952 951	228184	04 01 02 12	18 g	72	pc(s)	50
953 010	108295	04 01 03 01	28 g	1	pc(s)	58
953 011	109636	04 01 03 01	27 g	1	pc(s)	58
953 012	109643	04 01 03 01	27 g	1	pc(s)	58
953 013	109650	04 01 03 01	25 g	1	pc(s)	58
953 014	109667	04 01 03 01	26 g	1	pc(s)	58
953 020	117440	04 01 03 01	59 g	1	pc(s)	58
953 021	353077	04 01 03 01	49 g	1	pc(s)	58
953 200	108301	04 01 03 01	81 g	1	pc(s)	56
953 201	109674	04 01 03 01	80 g	1	pc(s)	56
953 202	109681	04 01 03 01	81 g	1	pc(s)	56
953 203	109698	04 01 03 01	79 g	1	pc(s)	56
953 204	109704	04 01 03 01	79 g	1	pc(s)	56
953 205	108318	04 01 03 01	84 g	1	pc(s)	57
953 206	109711	04 01 03 01	84 g	1	pc(s)	57
953 207	109728	04 01 03 01	85 g	1	pc(s)	57
953 208	109735	04 01 03 01	83 g	1	pc(s)	57
953 209	109742	04 01 03 01	82 g	1	pc(s)	57
953 228	158986	04 01 03 01	79 g	1	pc(s)	56
953 229	158993	04 01 03 01	83 g	1	pc(s)	57
953 400	115767	04 01 03 01	147 g	1	pc(s)	57
953 405	115774	04 01 03 01	151 g	1	pc(s)	57
953 406	353060	04 01 03 01	151 g	1	pc(s)	57
954 011	400887	04 01 01 01	167 g	1	pc(s)	21
954 020	400870	04 01 01 01	148 g	1	pc(s)	21
954 030	410282	04 01 01 01	229 g	1	pc(s)	21
954 031	410275	04 01 01 01	307 g	1	pc(s)	21
954 040	410299	04 01 01 01	294 g	1	pc(s)	21
954 115	400924	04 01 01 01	280 g	1	pc(s)	21
954 205	398023	04 01 01 01	271 g	1	pc(s)	21
954 305	400900	04 01 01 01	459 g	1	pc(s)	21
954 315	400917	04 01 01 01	537 g	1	pc(s)	21
954 405	400894	04 01 01 01	524 g	1	pc(s)	21
961 001	118584	04 01 01 08	173 g	1	pc(s)	25
961 002	118591	04 01 01 08	195 g	1	pc(s)	25
961 003	118607	04 01 01 08	180 g	1	pc(s)	25
961 010	118744	04 01 01 14	170 g	1	pc(s)	31/118
961 020	118706	04 01 01 14	139 g	1	pc(s)	31
961 022	118669	04 01 01 08	195 g	1	pc(s)	30
961 101	118676	04 01 01 14	315 g	1	pc(s)	31
961 102	118690	04 01 01 14	284 g	1	pc(s)	31
961 105	118683	04 01 01 14	320 g	1	pc(s)	31
961 110	118560	04 01 01 08	317 g	1	pc(s)	25
961 115	118577	04 01 01 08	321 g	1	pc(s)	25
961 120	118614	04 01 01 08	340 g	1	pc(s)	25
961 122	118652	04 01 01 08	358 g	1	pc(s)	30
961 125	118621	04 01 01 08	343 g	1	pc(s)	25
961 130	118638	04 01 01 08	325 g	1	pc(s)	25
961 135	118645	04 01 01 08	330 g	1	pc(s)	25
961 140	116269	04 01 01 09	516 g	1	pc(s)	27
961 145	116276	04 01 01 09	520 g	1	pc(s)	27
961 146	250062	04 01 01 10	946 g	1	pc(s)	26
961 160	116290	04 01 01 14	369 g	1	pc(s)	31
961 165	116306	04 01 01 14	372 g	1	pc(s)	31
961 175	116283	04 01 01 09	507 g	1	pc(s)	27
961 176	250123	04 01 01 10	908 g	1	pc(s)	26
961 180	157323	04 01 01 14	370 g	1	pc(s)	31
961 185	157330	04 01 01 14	370 g	1	pc(s)	31
961 200	145108	04 01 01 03	432 g	1	pc(s)	22
961 205	145115	04 01 01 03	435 g	1	pc(s)	22
971 001	138605	04 01 01 12	139 g	1	pc(s)	29
971 002	133655	04 01 01 12	106 g	1	pc(s)	29
971 003	144491	04 01 01 12	108 g	1	pc(s)	29
971 010	138636	04 01 01 12	171 g	1	pc(s)	29
971 120	133631	04 01 01 12	252 g	1	pc(s)	29
971 121	138582	04 01 01 12	284 g	1	pc(s)	29
971 122	144477	04 01 01 12	258 g	1	pc(s)	29
971 125	133648	04 01 01 12	226 g	1	pc(s)	29
971 126	138599	04 01 01 12	288 g	1	pc(s)	29
971 127	144484	04 01 01 12	254 g	1	pc(s)	29
971 221	138612	04 01 01 12	608 g	1	pc(s)	29
971 226	138629	04 01 01 12	614 g	1	pc(s)	29
972 010	158672	04 01 02 15	48 g	1	pc(s)	49/ 52
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972 145	158658	04 01 02 15	172 g	1	pc(s)	48
972 146	347960	04 01 02 15	497 g	1	pc(s)	48
989 408	120396	04 02 11 01	1.00 kg	1	pc(s)	82
999 799	328723	04 01 02 07	509 g	1	pc(s)	54
999 906	310926	04 01 02 05	54 g	1	pc(s)	46
999 937	303195	04 01 02 05	56 g	1	pc(s)	46
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