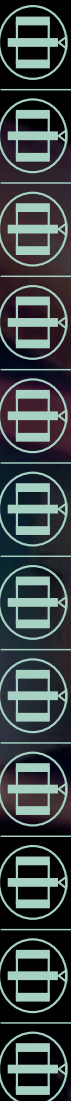
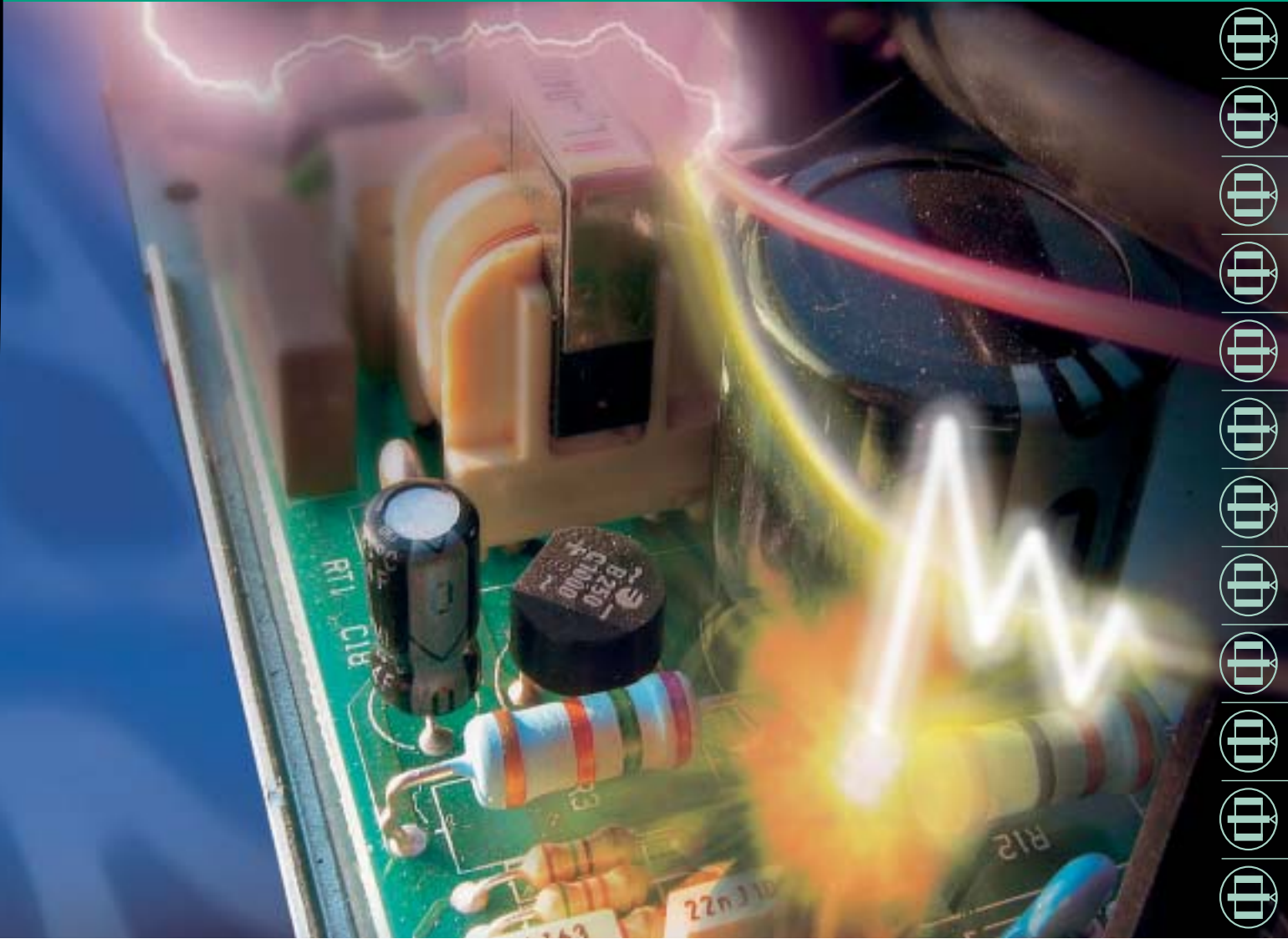




DEHN + SÖHNE

Surge Protection: Safety for your Measuring and Control System.



Damage is often caused by Surges.



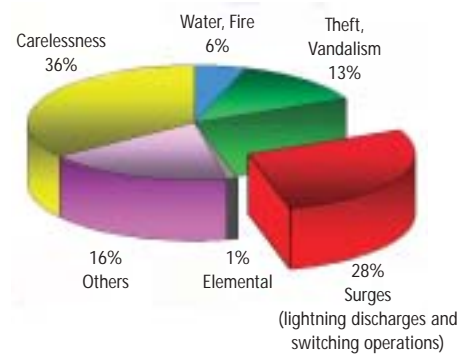
Surges - a Hot Thing!

28 out of 100 cases of damage to electronic equipment are caused by surges. Surges are by far the most frequent cause of damage. This shows a study of 8,400 cases of damage in Germany (see diagram beside). More frequently than carelessness, electronic killer impulses cause defects and breakdowns in an instant.

Anyone who has escaped that event by now has been either lucky – seen from the statistic point of view – or has made provisions.

Automation - Flexibility - Dependence.

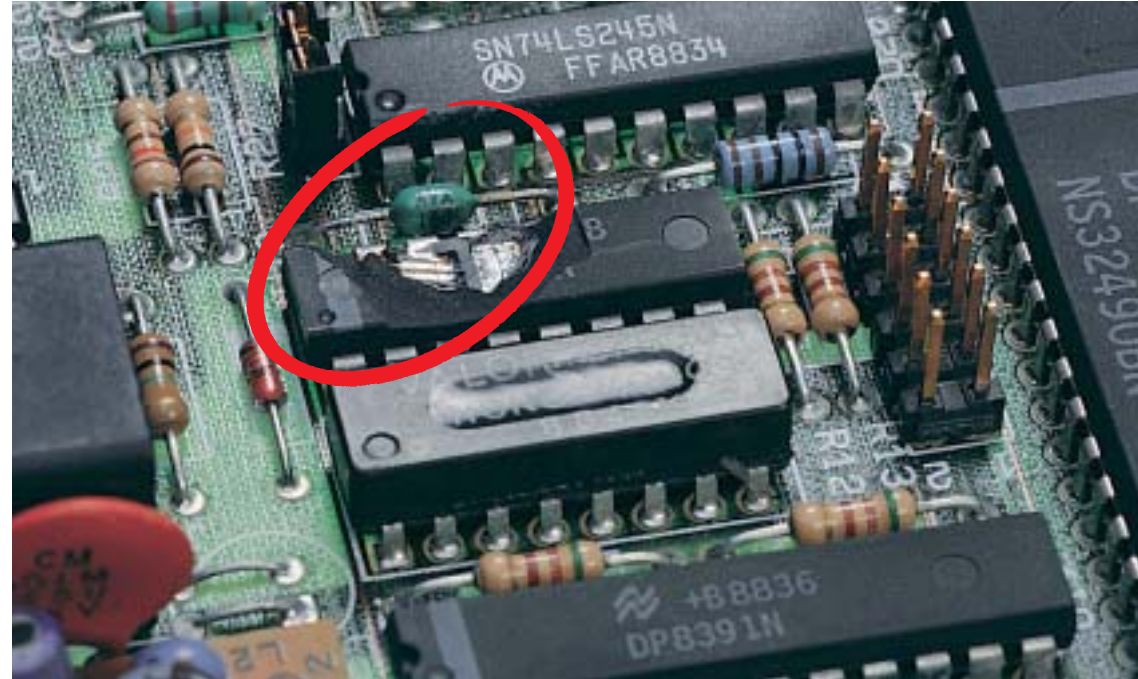
Directional changes in automation and control systems have become evident within the last few years. An increasing variety of industrial products as well as flexible utilization of buildings and installations require the maximum level of automation in a line of processes depending on each other. Therefore, safe and fast communication among the processes is an indispensable factor. A long chain of highly integrated micro-electronic components is responsible for transferring the enormous flood of process information. As everyone knows, a chain is as strong as its weakest link. But what happens if one link of the chain is broken?



Damage to electronic equipment.

28% of all damage to electronic equipment is caused by surges. This shows an analysis of about 8,400 cases of damage.

Source: Württembergische Feuerversicherung AG, 2000.



Is it the specifier who intends to project a trendsetting installation based on the current State of the Art? Is it the installation engineer who has promised to assemble an efficient installation? Or is it the operator who is responsible for the organisation of the process? It does not matter who is made responsible for a single case, all of them have to suffer for it: the designer who could have known it better, the installation engineer who will not get further orders and the operator for whom the damage is hardly repairable.

Things are not bound to happen this way...

When Power Stops, Everything Stops.

The most sensitive systems, i.e. those responsible for the transmission of information, are hit by surges first. These are e.g. programming logic controls (PLCs), control units, measuring sensors and transmission equipment. If only one link of this chain fails due to surges, the whole system is paralysed. The immediate result of the breakdown is already severe: Production standstill, no receipt or dispatch of goods, breakdown of emergency circuits, mal-operation, program faults and, last but not least, life hazards.

Who Is Responsible?

It is clear: Insurance companies cover damages of hardware, provided an insurance was taken out. But who is responsible for the resulting damage caused by data loss, production standstill or even personal injury?

Surges and their Ways into the Installation.

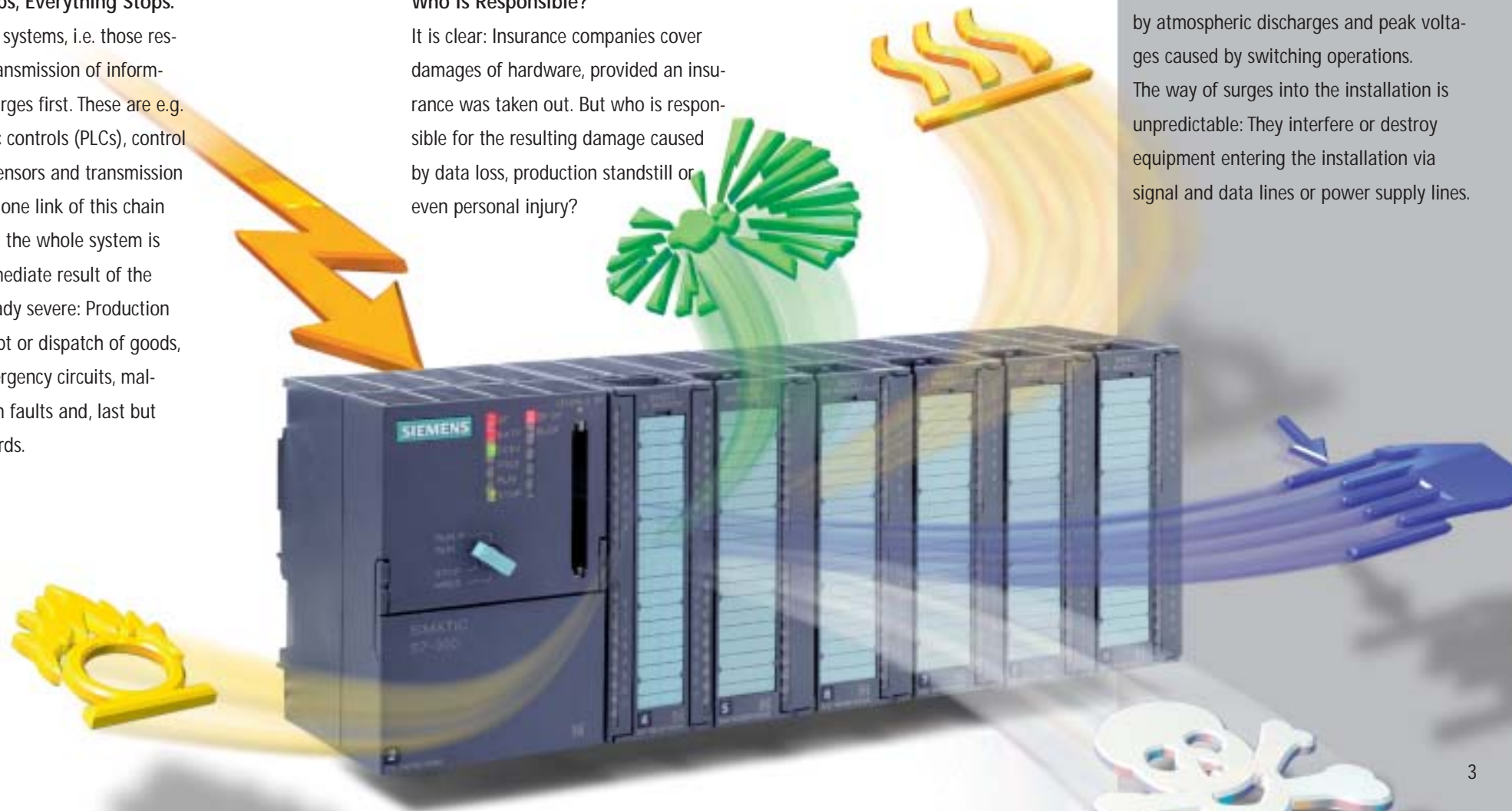
Surges are short-duration peak voltages – i.e. transient voltages – arising in time intervals of only milliseconds. They come up to peak voltages of some thousand Volts.

These surges are caused by

- direct lightning strikes
- indirect lightning strikes within a distance of some kilometres
- switching operations in the power supply system
- faults due to switching operations within the installation.

Electronic equipment can be destroyed by both high electromagnetic impulses caused by atmospheric discharges and peak voltages caused by switching operations.

The way of surges into the installation is unpredictable: They interfere or destroy equipment entering the installation via signal and data lines or power supply lines.



The most efficient Protection Concept against Lightning Currents and Surges.



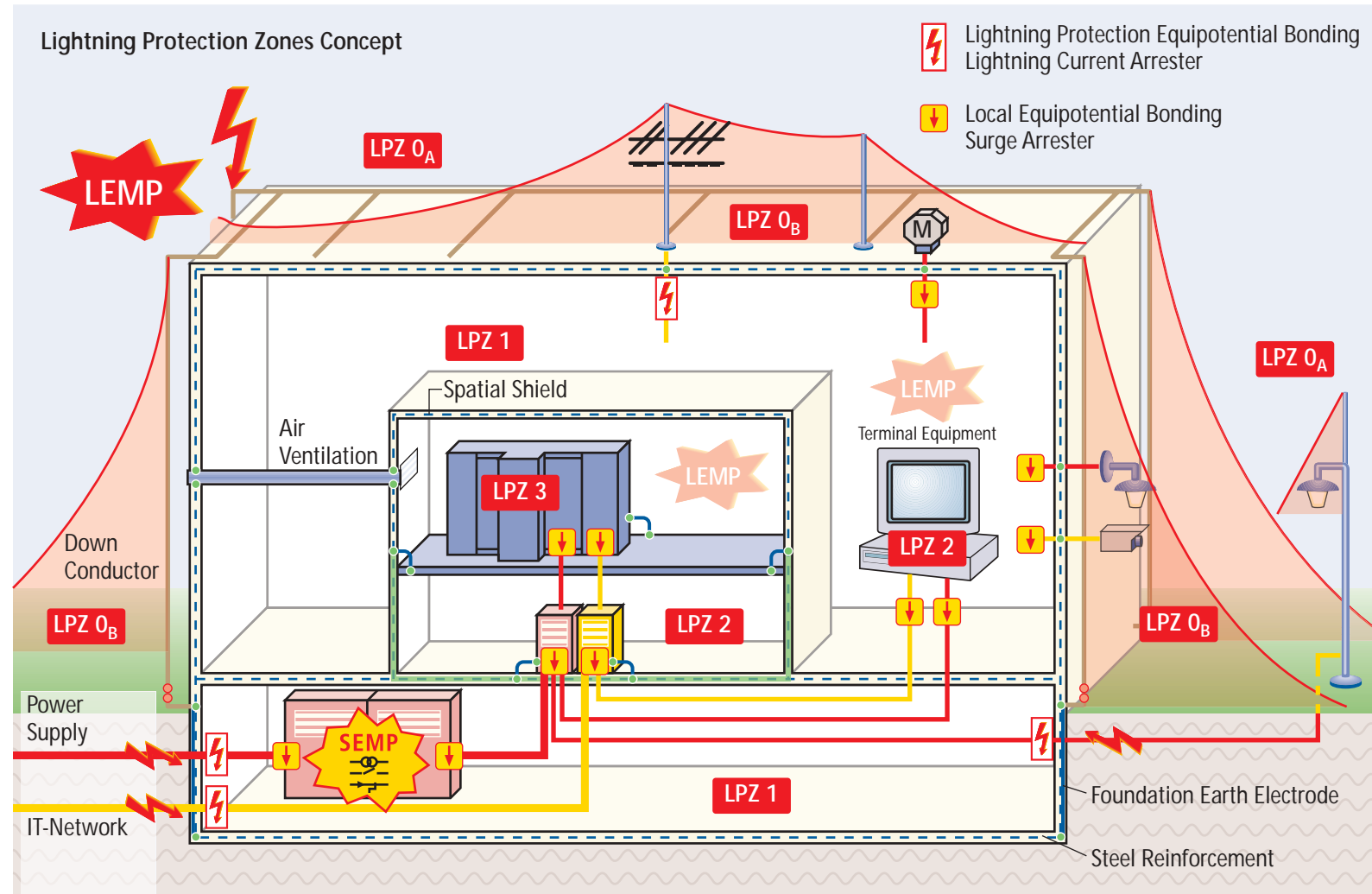
Safety in line with Economic Efficiency.

In order to achieve an optimum protection, a guideline is necessary that provides a basis for the protection of installations also against lightning electromagnetic impulses (LEMP).

The interference effects of resistive and electromagnetic field coupling must be reduced to a harmless level.

For this purpose, the new international Standard IEC 62305-4 (DIN V VDE V 0185-4)* recommends the Lightning Protection Zones Concept. By dividing the volume to be protected into lightning protection zones, an integrated installation of surge protective devices is simplified even in large measuring and control systems. In this way, the effectiveness of the lightning protection system can be increased. This protection concept is also a safe guide for extension or reconstruction measures.

*Title: „Protection against lightning electromagnetic impulse- Part 1: General“



Lightning Protection Zones Concept.

As a first step, the different zones are defined. The sensitive equipment, e.g. Programming Logic Controls (PLCs), alarm signalling systems and measuring sensors, should be classified as lightning protection zone 2, at least. Distribution boards, e.g. terminal blocks and boxes, are able to withstand threats in lightning protection zone (LPZ) 1. Bonding must be provided for all conductive parts crossing a lightning protection zone boundary.

For instance, metal tubes and cable ducts as well as cable shields should be bonded to the main earthing busbars directly at the zone boundaries. Surge protective devices used for bonding live lines, such as electrical power or communication lines, must correspond to the requirements of the respective zone boundary. When selecting the surge protective devices, their withstand capabilities as well as the electrical and mechanical requirements of the boundary have to be observed.

Earthing and Shielding.

It is beneficial to have many parallel paths to reduce the injected currents in the cables/shields. This is achieved by building/room shields and a meshed earthing system including all equipotential bonding lines and earth electrodes. It is recommended to take suitable measures already in the planning phase

such as bonding the metal reinforcements of concrete walls, ceilings and floors, the integration of the metal facades and the connection of these parts with the down conductors of the external lightning protection. The installation of main earthing busbars and their connection with all conductive parts is mandatory. Adequate bonding of cable shields is an essential part of the Lightning Protection Zones Concept. Generally, all shields should be bonded at both ends - at the control unit as well as at the terminal equipment/measuring sensor - directly or indirectly via arresters. Local bonding should be provided and installed at the boundaries of LPZs for metal parts and systems crossing the zone boundaries.

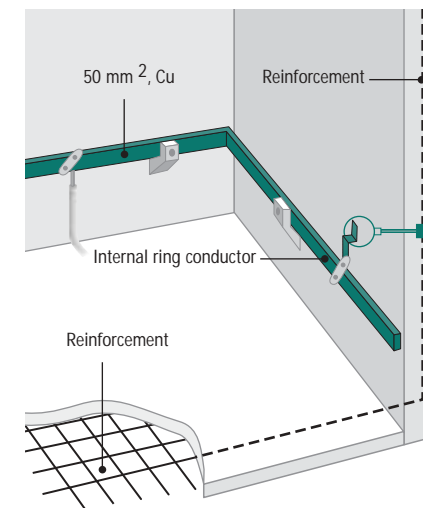
Surge Protection in Data and Power Supply Systems.

There is hardly any communication/signaling equipment which is not supplied with electrical energy. In most cases, the energy is provided by the power supply system. Furthermore, there are a lot of interfaces between the measuring and control systems and data networks (LANs) or telecommunication networks (WANs). Therefore, an effective protection includes the protection of all interfaces of the installation in one protection concept. Lightning current arresters, surge arresters and protective devices adapted to special applications are designed to protect power supply and data systems.

For further information please refer to our special publications describing the protection concepts and making the selection of the protective devices easier.

Do not hesitate to ask for our publications:

- DS 649/E „Surge Protection: Easy choice“
- DS 647/E „Surge Protection: Safety for Your Data Network“



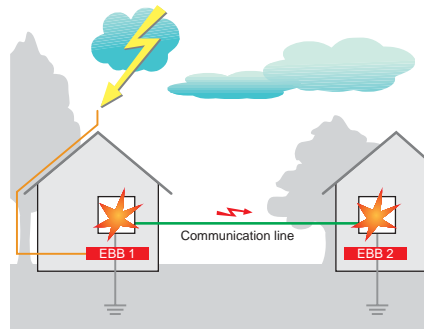
Internal ring conductor in accordance with DIN VDE 0800, Part 2.

Know the Danger - Avert the Danger.

How to reduce Surges to a Compatible Level.

Resistive Coupling

When lightning strikes, impulse currents in the range of up to 200 kA enter the air-termination system. This causes an enormous rise in the electrical potential of the building structure with the effect that there are potential differences of up to some 100 kV between the power supply, telecommunication lines and other communication lines with external potential. This is the reason for uncontrolled flashovers in the electrical equipment allowing destructive partial lightning currents to run to the remote earth. Electrical equipment connected to the lines within a distance of some kilometres away from the point of strike can be affected. MCR systems as well as telecommunication systems are especially endangered.

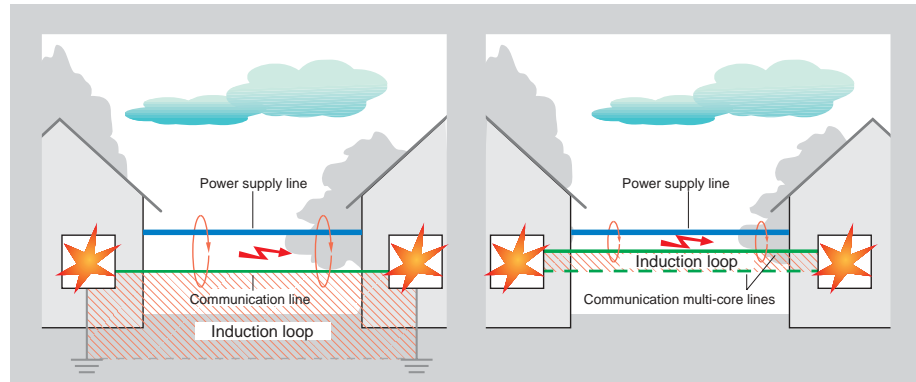


Protection Measures

There is a way for controlling the effects of direct lightning. The lightning current arrester BLITZDUCTOR® CT Type B is designed for reducing lightning currents of 10/350 µs without problem or destruction. Lightning current arresters should be installed at the service entry (LPZ boundary 0_A to 1) in order to limit interferences on internal installations of the building structure.

Magnetic Field Coupling

External lightning protection systems conducting lightning currents to earth as well as switching operations or short-circuits in electrical power systems generate high electromagnetic fields. These fields can induce destructive impulse voltages up to some 10 kV and impulse currents up to some 1,000 A in signal lines.



Common Mode Voltages

The signal lines of measuring and control systems connected to ground form an induction loop. Common mode voltages in the range of up to 10 kV arise between these signal lines and ground. RS 485 bus systems and current loops (e.g. 0-20 mA) are also endangered. The majority of interferences in MCR systems are common modes. The effects are apparent within milliseconds: The insulation of terminal

Protection Measures

Common mode and differential mode voltages can arise anywhere, also within building structures. Therefore, powerful surge arresters with a low voltage protection level are designed to control the generated interferences safely and without damage. It is useful to install surge arresters directly upstream of the terminal equipment (LPZ boundary 1/2). Furthermore, the area of the induction loop should be kept as small as possible.

equipment is punctured and in- or outputs are demolished.

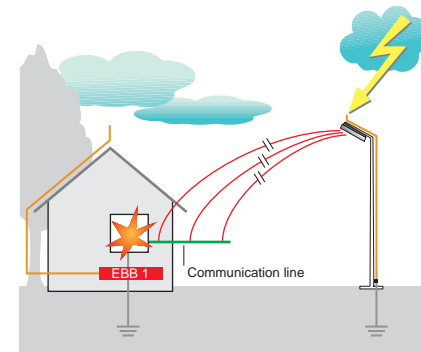
Differential Mode Voltages

The two-core signal line mainly used in telecommunication systems forms an induction loop due to the unbalanced state and different mounting of the lines. In this way, differential mode voltages are produced between these cores (up to some 1,000 V) destroying the terminal equipment connected to them.

Parallel installation of elements of the air-termination system or power supply lines should be avoided. Shielded and twisted pair lines should be preferred.

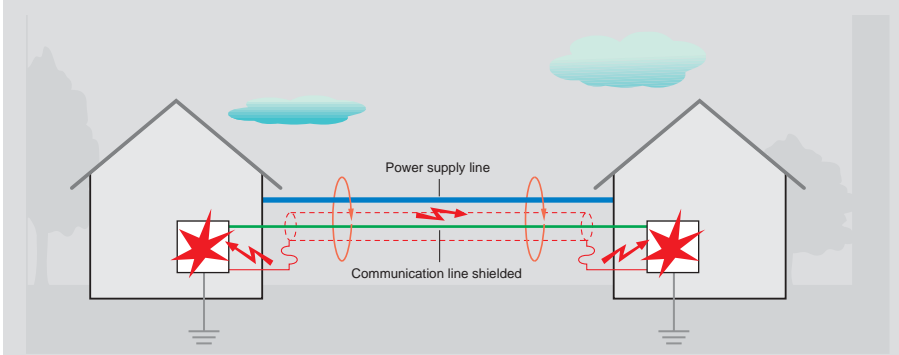
Electric Field Coupling

The lightning channel of a nearby lightning strike has a high electric field (rise in potential of some 100 kV) charging electrically conductive parts like an immense capacitor. The air is the dielectric medium here. Thus currents of up to some 10 A arise in the communication/signal lines due to different coupling capacities. The surge voltages caused puncture the isolation of the terminal equipment and allow the current to flow to ground.



Protection Measures

If lightning does not hit the installation directly, the effects of the electric field coupling can be controlled safely and without danger by means of surge arresters, e.g. BLITZDUCTOR® CT Type M..., installed at the LPZ boundary $0_B/1$. If no other protection measures are implemented, the installation directly upstream of the terminal equipment is useful. Furthermore, electric field coupling can be limited by shielded lines.



Shield Lines and their Effects

As a matter of fact, shielded lines are suitable for protecting the installation against electromagnetic impulses and should be given preference to unshielded lines. But when is a line "properly" shielded in the sense of lightning and surge protection?

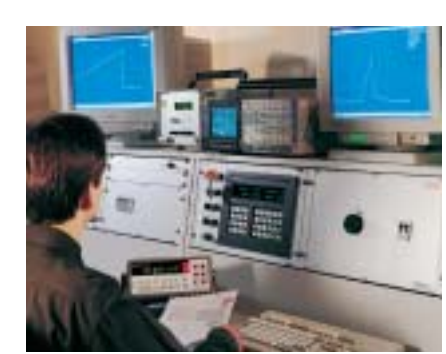
- The line shield must be interconnected throughout the whole length and grounded at both ends at least. Only a shield connected at both ends can limit electromagnetic impulses.
- The shield bonding should be carried out at low impedance. This prevents peak voltages of many 1,000 V being generated at the terminal equipment due to inappropriate bonding of the shield. It is especially favourable to connect the line shield to the equipotential bonding system using shield bonding terminals, e.g. Type SAS1.

- The line shields of externally mounted lines must be able to conduct short duration impulse currents. This is only possible if a sufficiently large shield area is provided. Foil shields only are not sufficient in this case.
- For economic reasons, discontinuously shielded lines are used in practice. This results in residual impulses on the signal lines. This can be prevented by multiply shielded cables.

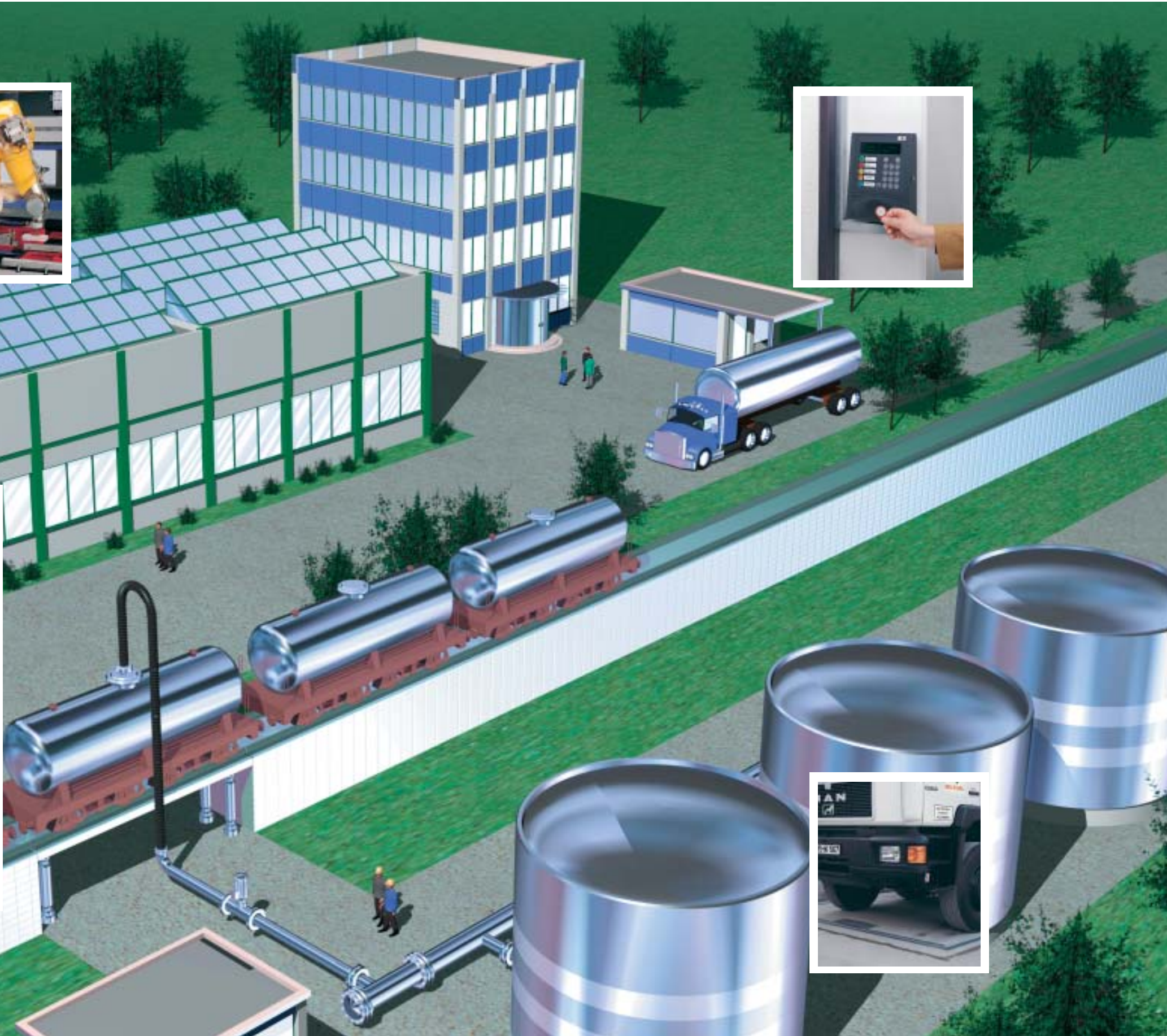
Effects

The installation of lightning current and surge arresters together with additional mounting of shielded conductors offers the best protection against surge voltages. Shielded lines only can limit but not prevent interferences or damage to terminal equipment. Often, the installation of arresters is indispensable.

Measuring and Control Systems require DEHN Surge Protective Devices.



Process Control and Automation
 The level of automation rapidly increases especially in the field of process control and supervision. However, this is only possible by interconnecting decentral components ... and by providing protection against surges.
 See pages 12/13 for more detailed information.



Building Services Management Systems
 In modern installations, interconnected high-tech control and alarm signal systems are used. They provide flexible and supervised control of the technical processes within the building structure ... and need to be protected against surges.
 See pages 10/11 for more detailed information.



Analogue Measuring Equipment
 Electrical measurements, e.g. temperature, weight or liquid level control, are performed in all branches of industry. This is mostly achieved via analogue measuring sensors or transmitters ... which should be protected against surges.
 See pages 14/15 for more detailed information.

DEHN Surge Protective Devices for Building Services Management Systems.



Protection of Fire Alarm Systems



Protection of IEB Bus Couplers

Building Services Management Systems

... are used to provide an ideal system of lighting, communication and power distribution within a building structure. Bus systems interconnect sensors and control units. The lines are mostly mounted in campus backbone, building and horizontal subsystems.

The Protection: If a bus line is installed externally between buildings, a lightning current arrester BLITZDUCTOR® CT Type B (LPZ 0_A/1) or a BLITZDUCTOR® CT Type B... (LPZ 0_A/2) should be connected to each balanced line at the service entry. The internal measuring and control units are protected by different protective devices. For example the bus coupler of an IEB is connected to a BUSector instead of a normal bus terminal (LPZ 1/2).

See standard interface 6 on page 18.

Alarm Signalling Systems

Control boards of alarm signalling systems are connected to fire and burglar alarm systems. Many detectors which are widely spread in complex installations are interconnected. The control board releases the alarm when activated by one of the detectors.

The Protection: Lightning-current-proof combined arresters BLITZDUCTOR® CT Type BE should be installed at each service entry to protect the control board and the detectors for controlling lightning currents and surges.

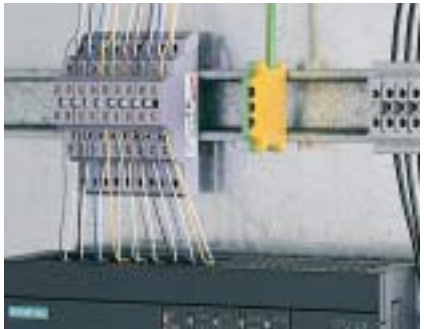
BLITZDUCTOR® CT is also suitable for connection to signal lines. If the control board is equipped with an automatic self-service mechanism for intrusion to the telephone line, it must also be protected by the installation.

See application-specific interfaces on page 21.

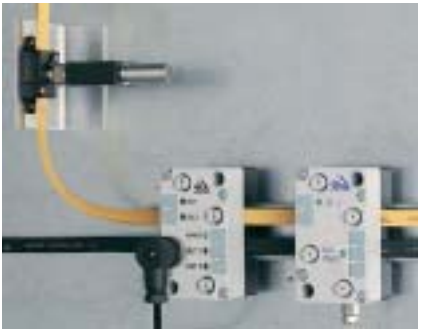
DEHN Surge Protective Devices for Process Control and Automation Systems.



Protection of PROFIBUS-DP Equipment



Protection of in-/outputs of PLCs*



Protection of AS Interfaces



RS 485 - Field Bus Interface

On the process control level high-tech components are interconnected by means of twisted lines. The demand for "real-time" processing resulted in the development of especially fast and therefore sensitive field bus systems. The bus cabling structure can be extended over several kilometres.

The Protection: A lightning current arrester ⚡ e.g. Type BLITZDUCTOR® CT BD HF 5 (LPZ 0_A/2) should be installed for each balanced line of a bus line entering a building structure. The shield should be bonded with low impedance directly at the protective device. The surge arrester ⚡ FS 9E PB 6 (LPZ 2/3) is simply plugged in for fine protection of PROFIBUS-DP equipment.

See standard interface 1 on page 17.

Actuator-Sensor Interface

A lot of information and a number of actions are required for correct processing. The sensors record the process data and the actuators control the process.

The Protection: The sensitive control units as well as the production lines are classified in lightning protection zones. Surges are controlled by suitable protective devices installed at the zone boundaries (LPZ1/2). The surge protection terminal block ⚡ DEHNconnect RK is especially suitable for protecting multi-stranded lines.

AS interfaces, for example, require an especially adapted surge protection module ⚡

See standard interface 5 on page 18.

*PLC = Programming Logic Controls

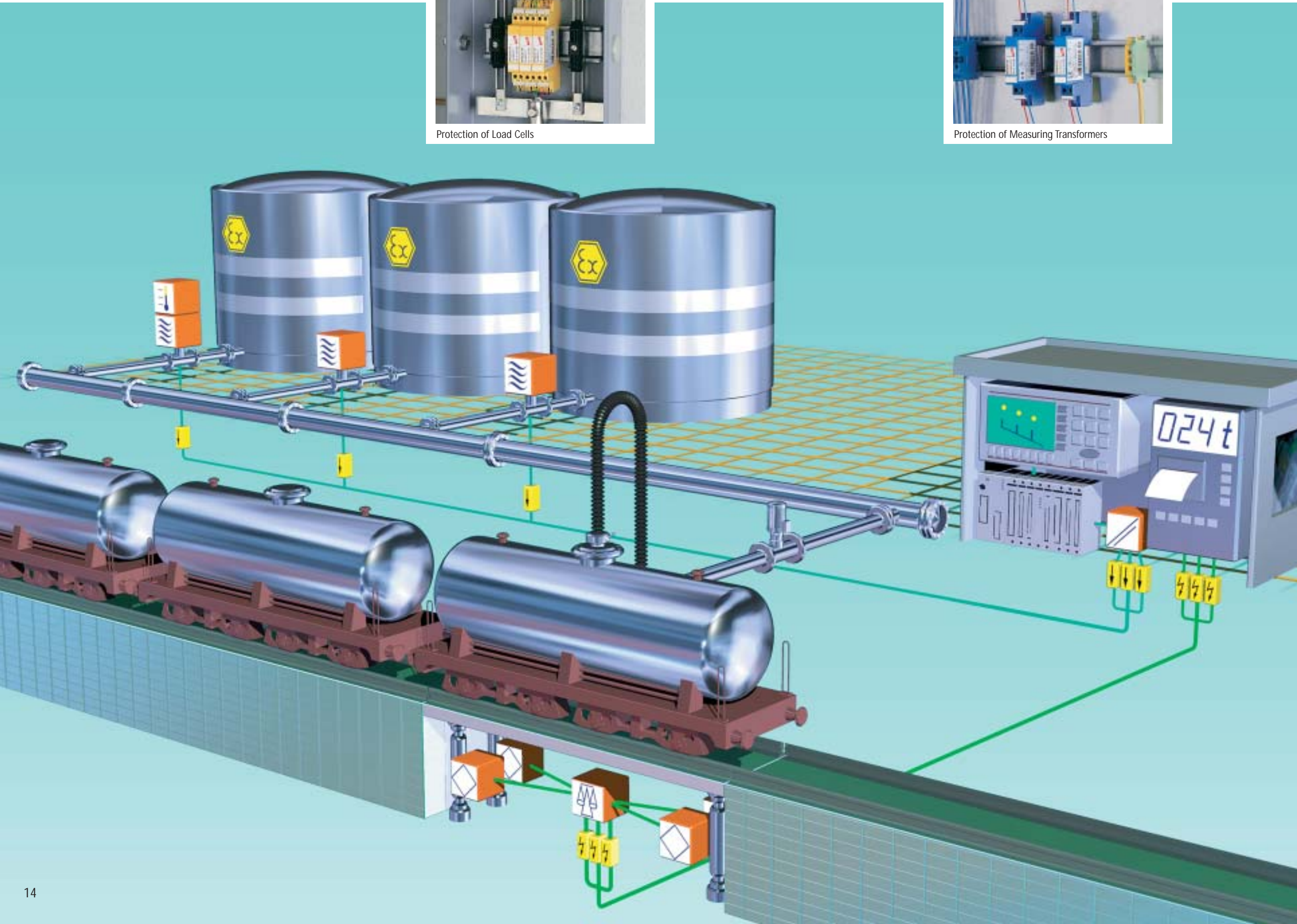
DEHN Surge Protective Devices for Analogue Measuring Equipment.



Protection of Load Cells



Protection of Measuring Transformers



Weighing Systems

Electromechanical weighing bridge systems are often designed in 6-wire configurations. One balanced line is used for the power supply, one for transmission of signals and one for compensation of the cable length.

The Protection: A weighing system located outdoors is exposed to direct lightning strikes. The load cells as well as the measuring sensors should be protected by lightning current proof combined arresters ⚡ Type BLITZDUCTOR® (LPZ 0_A/2).

A low-impedance shield connection is used for electromagnetic field attenuation of multi-balanced lines.

See standard interface 12 on page 21.

Intrinsically Safe Measuring Circuits

Intrinsic safety is based on the limitation of the energy in a measuring circuit. The measured values are often transmitted as injected currents. Additionally, a remote control of the measuring sensors is possible via the signal lines.

The Protection: In the process engineering industry, there is often a very good equipotential bonding between the single installations (LPZ 1/2). Surge arresters ⚡ e.g. BLITZDUCTOR® MD/EX are therefore designed to provide protection of equipment not directly hit by lightning. In addition, the self-impedance and -capacitance of the protection device certified in accordance with ATEX may be omitted for the dimensioning of the measuring circuit.

Because of its design in accordance with FISCO it can also be used in intrinsically safe circuits without problem.

See standard interfaces 10 and 11 on page 20.

Selection Guide for Standard Interfaces. Installation of DEHN Surge Protective Devices.



Our Advice:

The following standard interfaces show examples for arrester circuits to protect communication/signal interfaces.

Please note that both information technology system and the power supply system must be integrated in the equipotential bonding system to provide efficient surge protection.



BLITZDUCTOR® CT

2-pole, Universal Lightning Current/Surge Arrester in terminal block design.

① BLITZDUCTOR® CT BD HF 5V

Part No. 919 506 + 919 670

② BLITZDUCTOR® CT B 110V

Part No. 919 506 + 919 510

③ BLITZDUCTOR® CT MD HF 5V

Part No. 919 506 + 919 570

④ BLITZDUCTOR® CT ME 5V

Part No. 919 506 + 919 520



BLITZDUCTOR® VT RS485

Surge Protective Device for systems and equipment of measuring and control systems with 4-wire data transmissions

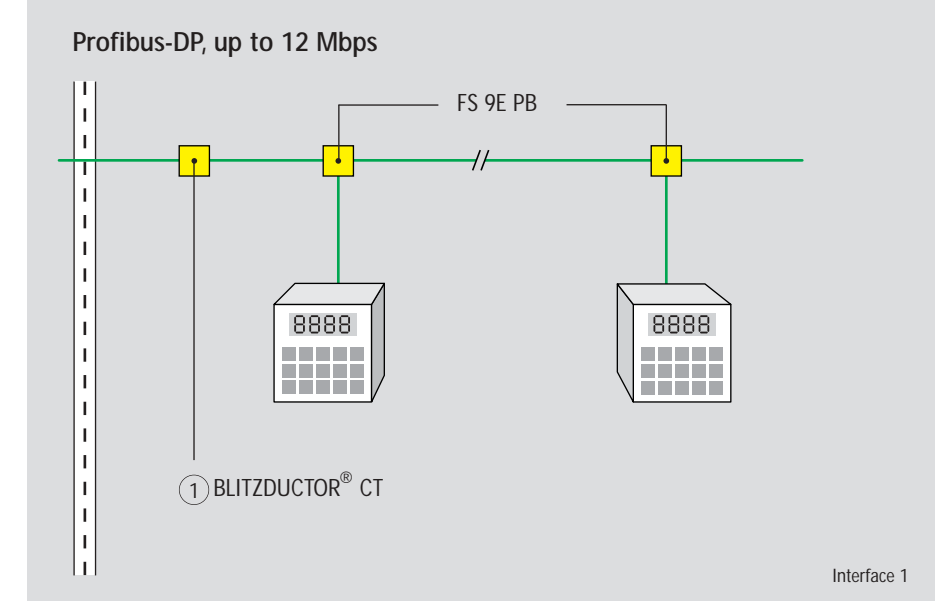
Part No. 918 401



FS 9E PB

Plug-in Surge Protection Adapter for fine protection at the interface of terminal equipment.

Part No. 924 017

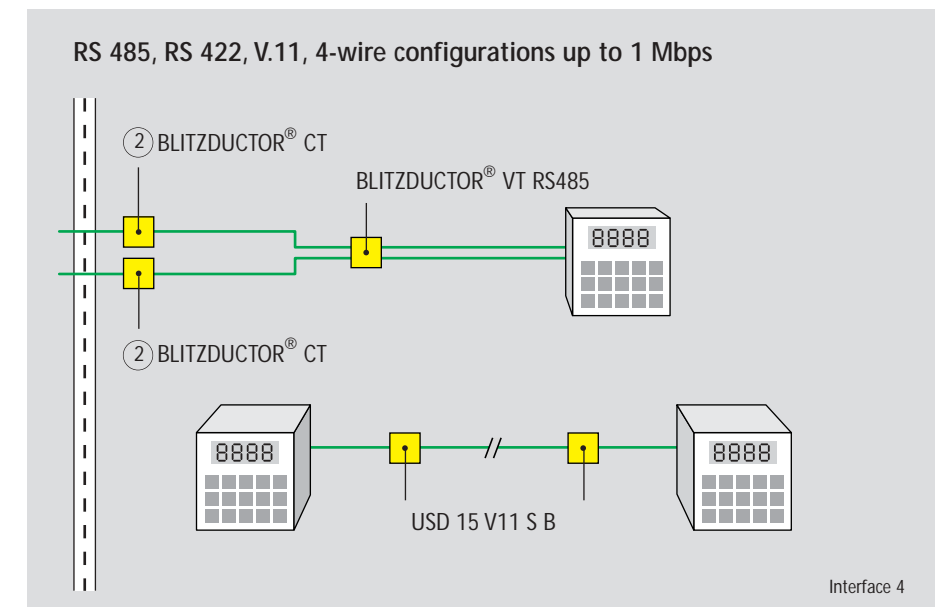
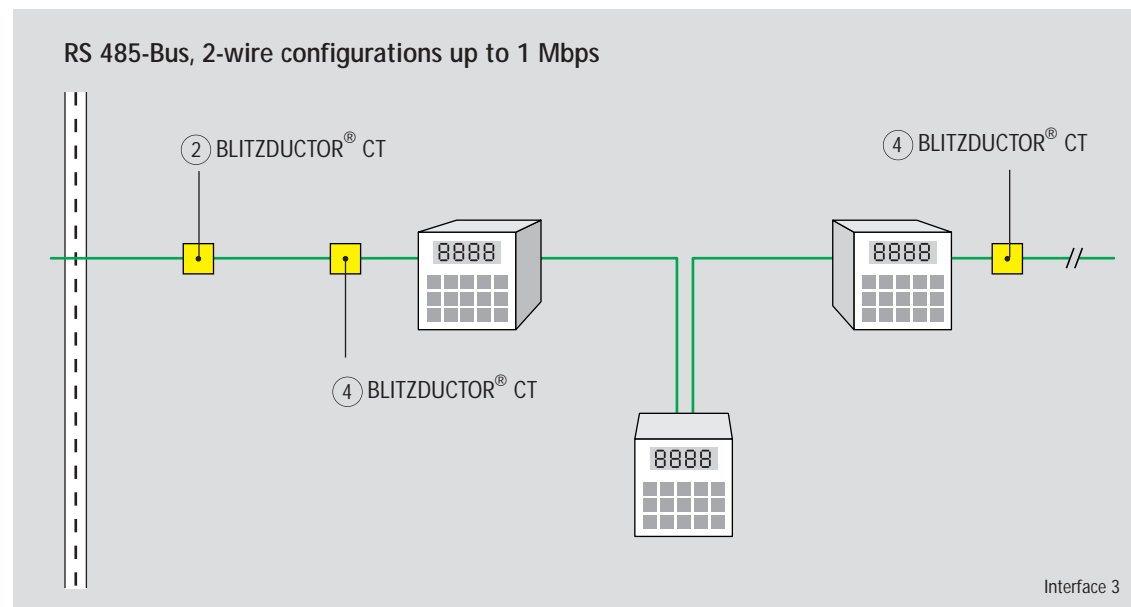
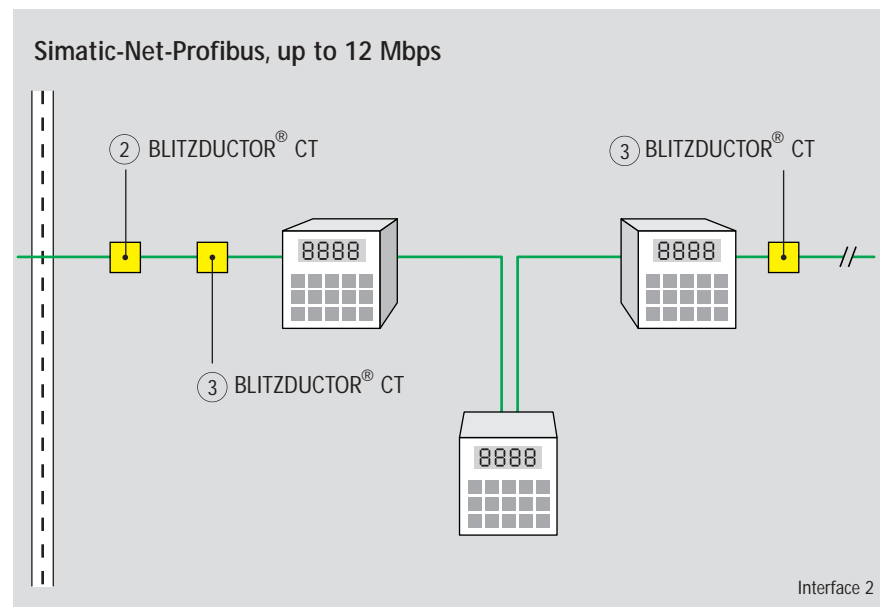


USD 15 V11 S B

Plug-in Surge Protection Adapter for protection at the interface of terminal equipment.

Part No. 924 051

The numbers refer to the exact description of the protective device and its corresponding part number. Please see the descriptions beside.



Selection Guide for Standard Interfaces. Installation of DEHN Surge Protective Devices.



BLITZDUCTOR® CT

2-pole, Universal Lightning Current/
Surge Arrester in terminal block design.

② BLITZDUCTOR® CT B 110V

Part No. 919 506 + 919 510

⑤ BLITZDUCTOR® CT BE C 24V

Part No. 919 506 + 919 662

⑥ BLITZDUCTOR® CT ME 30V

Part No. 919 506 + 919 524

⑦ BLITZDUCTOR® CT BE 30V

Part No. 919 506 + 919 624

⑧ BLITZDUCTOR® CT MD 48V

Part No. 919 506 + 919 545

BLITZDUCTOR® VT TTY

Surge Protective Device for measuring
and control systems and equipment
with 4-wire transmissions.

Part No. 918 400

DEHNconnect RK

2-pole Surge Protective Terminal
Block

⑥ DCO RK ME 24V

Part No. 919 921

⑧ DCO RK MD 48V

Part No. 919 942

AS-i Surge Protection Module

Protection Module for system sections
and equipment in AS-i systems.

Part No. 925 010

BUSector

Surge Protection Bus Terminal in
accordance with the EIBA requirements.

Part No. 925 001

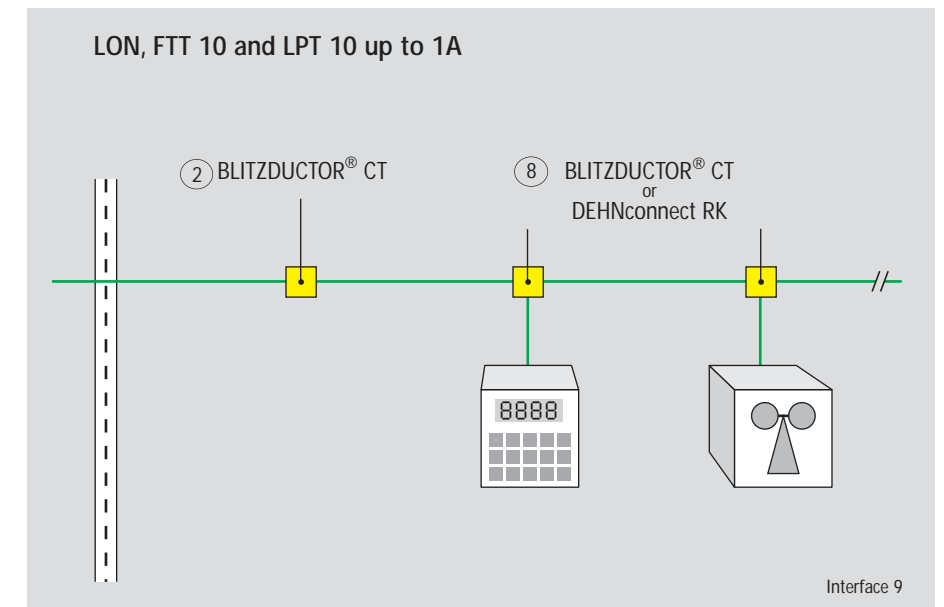
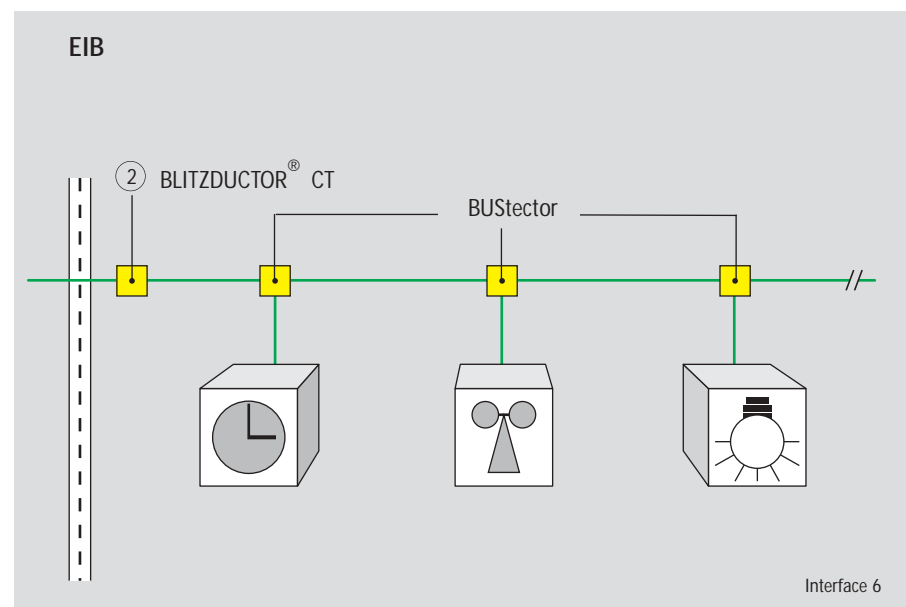
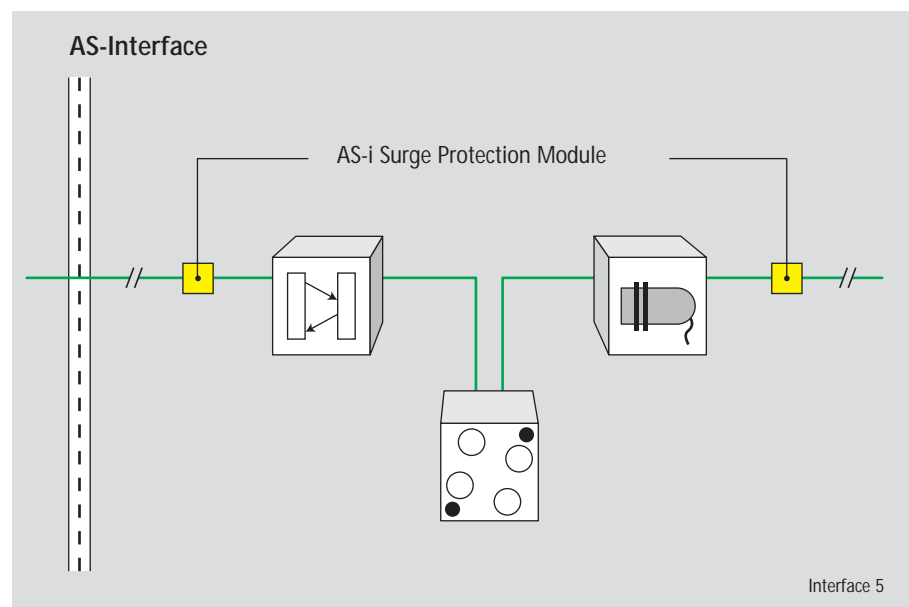
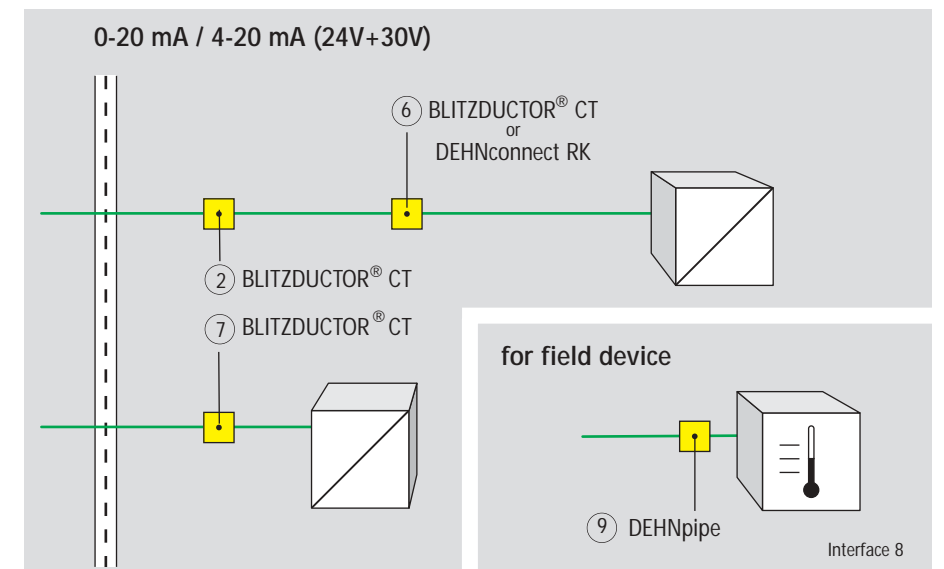
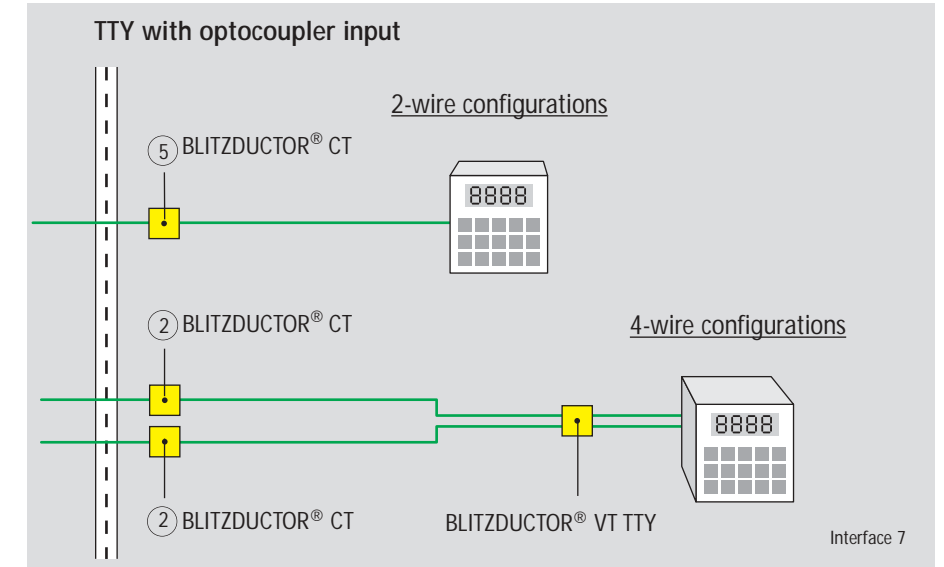


DEHNpipe

Surge Arrester for screwing into
the field device.

⑨ DPI MD 24 M 2S

Part No. 929 941



The numbers refer to
the exact description of
the protective device
and its corresponding
part number. please see
the descriptions beside.

Selection Guide for Standard Interfaces. Installation of DEHN Surge Protective Devices.



BLITZDUCTOR® CT

2-pole, Universal Lightning Current/
Surge Arrester in terminal block design.

⑩ BLITZDUCTOR® CT ME 24V

Part No. 919 506 + 919 523

⑪ BLITZDUCTOR® CT BE 12V

Part No. 919 506 + 919 621

BLITZDUCTOR® CT MD EX 30V

2-pole Surge Arrester in terminal block
design for intrinsically safe circuits and
bus systems. Also for FISCO.

⑪ BLITZDUCTOR® CT MD EX 30

Part No. 919 507 + 919 581

⑫ BLITZDUCTOR® CT MD EX HFD 6

Part No. 919 507 + 919 583

DEHNconnect RK MD EX 24V

2-pole, Surge Protective Terminal Block
for intrinsically safe measuring circuits.

Designed according to FISCO.

Part No. 919 960



DEHNpipe

Surge Arrester for screwing into the
field device.

⑨ DPI MD EX 24 M 2

Part No. 929 960

Application-specific Interfaces

DEHN provides a documentation of
application-specific interfaces for the
customers. This documentation is exten-
ded and updated at regular intervals.
It comprises information on surge pro-
tection measures for power supply and
information technology systems as well
as equipotential bonding measures.
The latest overview can be downloaded
from our website: www.dehn.de

Yellow/Line-Seminar

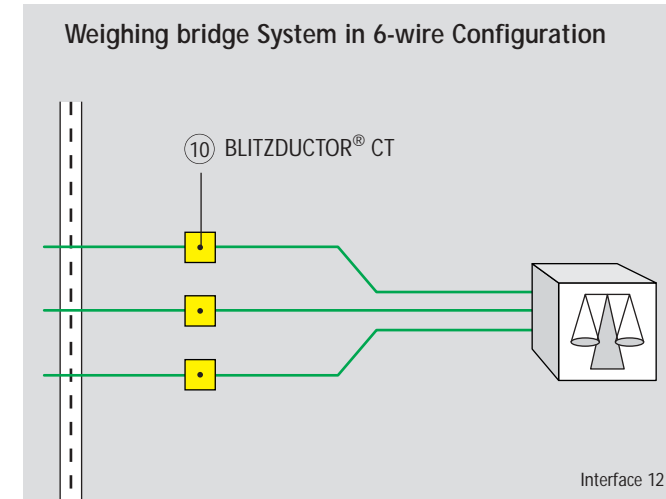
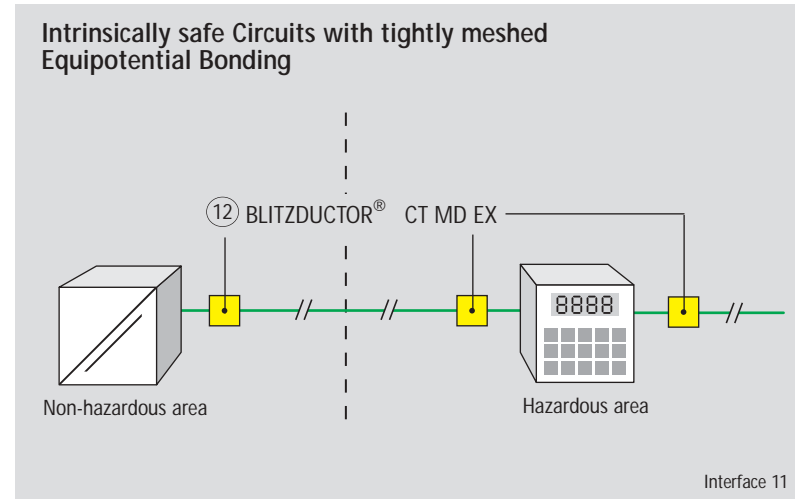
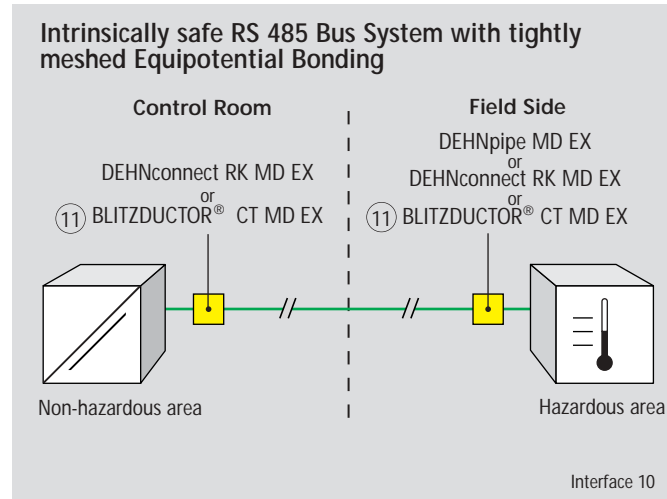
"Lightning and Surge Protection for
Measuring, Control and Instrumentation
Systems"



The Yellow/Line seminar is to enhance your
knowledge of lightning and surge protec-
tion in information technology systems.
Protection concepts according to the cur-
rent state of standardisation are discussed
for electrical and electronic systems. The
main topics are lightning protection equipo-
tential bonding and surge protection. The
parameters for the selection of protective
devices are explained and possible concepts
are worked out.



Please contact us for more information
on our seminars/trainings.



The numbers refer to the
exact description of the
protective device and
its corresponding part
number. Please see the
descriptions upside.

Surge Protective Devices made by DEHN. Safety for your Measuring and Control Systems.



DEHN Surge Protection is a complete concept...

- a concept for performing complex lightning protection zones concepts as well as protection concepts for local protection requirements.

The arresters of our Yellow/Line product family are coordinated with respect to their energy capabilities and adapted to the protection requirements of your terminal equipment.



BLITZDUCTOR® CT

Lightning Current/Surge Arrester, 2-pole, Universal surge protective device of the Yellow/Line family in terminal block design. The protection modules are coordinated with each other: Lightning current arrester, combined arrester and surge arrester. 2-part (base and attachable module), space-saving design (w = 12 mm, h = 58 mm).

Universal Base

- as feed-through terminal to accept the protection
- signal transmission is not interrupted when installing the module
- integrated shield bonding terminal with direct or indirect grounding facility for the shield (accessories)
- safe earthing and quick installation via snap-on foot

Standard Version (yellow)

Part No. 919 506

For intrinsically safe circuits (blue)

Part No. 919 507

Adapted Protection Modules

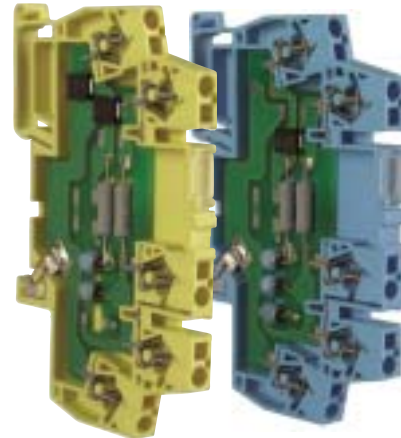
- coordination characteristics for easy selection of protection modules.
- low series resistances permits high signal currents and transmission rates
- protection module for intrinsically safe circuits, ATEX-certified: EEx ia IIC T6

Suitable Protection Modules for Lightning Currents

B	Part No. 919 510
BE 12V	Part No. 919 621
BE 30V	Part No. 919 624
BE C 24V	Part No. 919 662
BD HF 5V	Part No. 919 670

Suitable Protection Modules for Surge Voltages

ME 5V	Part No. 919 520
ME 24V	Part No. 919 523
ME 30V	Part No. 919 524
MD 48V	Part No. 919 545
MD HF 5V	Part No. 919 570
MD EX 30V (blue)	Part No. 919 581
MD EX HFD 6V (blue)	Part No. 919 583



DEHNconnect RK

Surge Protective Terminal Block, 2-pole terminal with integrated two-stage surge protection, two pole.

- WAGO Cage Clamp
- Slim design (w = 6 mm)
- Safe earthing via snap-on foot

DCO RK ME 24	Part No. 919 921
DCO RK MD 48V	Part No. 919 942
DCO RK MD EX 24V	Part No. 919 960
Cover	
AD DCO RK GE (yellow)	Part No. 919 979
AD DCO RK BL (blue)	Part No. 919 978



DEHNpipe

Surge Arrester
Water-proof and corrosion-resistant protective device for outside areas to be screwed into field devices with 2-conductor metrology (e.g. 4-20 mA).

Also suitable for retrofitting due to its installation between the field device and the cable gland (not included in delivery)

DPI MD 24 M 2S	Part No. 929 941
DPI MD EX 24 M 2	Part No. 929 960



FS

Plug-in Surge Protection Adapter designed for direct installation upstream of the terminal equipment.

- specific protection circuit for D-Sub interface, 9-, 15-, or 25-pole version
 - for high transmission rates
- | | |
|------------------------|------------------|
| FS 9E PB | Part No. 924 017 |
| FS 15 E | |
| (for RS 485/422, V.11) | Part No. 924 016 |



USD

Plug-in Surge Protection Adapter available with D-sub connector or data cable and plug.

- specific protection circuit for D-Sub interface, 9-, 15, or 25-pole version
- for high transmission rates

Examples:

USD 15 V11 S B	Part No. 924 051
USD 25 TTY B S (for TTY)	Part No. 924 048
USD 9 PB B KS (for Profibus)	Part No. 924 064



AS-i-Surge Protection Module

Surge Arrester
Protection module for AS-i system sections and equipment in accordance with the AS-i transmission lines and power supply.

- 2 LEDs indicate that the device is ready for operation
- for mounting on FK-E- or PG-E-coupling modules
- no bus address required

Part No. 925 010



BUStector

Surge Arrester
Protective device in bus terminal design for the EIB in accordance with EIBA requirements.

- small design (approx. 11 mm x 11 mm x 11 mm)
- European-Patent

Part No. 925 001



BLITZDUCTOR® VT

Surge Arrester
Compact surge protective device of the Yellow/Line family for installation into engineering systems and equipment with 4-wire data transmission (h = 58 mm).

BLITZDUCTOR® VT TTY

- protection for current interfaces
- decoupling resistances at the output
- permits the installation directly upstream of optocouplers

Part No. 918 400

BLITZDUCTOR® VT RS485

- protection for RS 485/422- and V.11 interfaces
- grounding of the shield directly or indirectly via integrated gas discharge tube

Part No. 918 401

...your safety is our concern.



DEHN + SÖHNE

DEHN + SÖHNE provides only high-quality devices – as safety is always a matter of confidence.

Because of our quality-related thinking, closeness to customers and a diversified service programme, DEHN + SÖHNE is your reliable partner for safety. This is confirmed by our leading cooperation with numerous national and international standardization committees. Due to innovative practical developments in all fields of Lightning and Surge Protection, we offer solutions for the EMC-oriented Lightning Protection Zones Concept. DEHN + SÖHNE always brings in the latest results of scientific research in order to come up to the customers' requirements.

More Information

I would like to have more information about the following topics:

- Main Catalogue "Surge Protection"
- DS 614 E: "DEHN stops Surges"
- DS 649 E: "RedLine: ... Easy Choice"
- DS 647 E: "Safety for your Data "

Please arrange for a visit of one of your Sales Engineers (by appointment)

Name

Company

Address

Country

Phone / Fax

eMail

Please fill in and send to us!

DEHN + SÖHNE is certified in accordance with ISO 9001 so that you can rely on the quality of our products.

DEHN + SÖHNE offers a wide range of services:

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- Detailed installation instructions
- Sample specifications for tenders on disc
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**Lightning Protection
Surge Protection
Safety Equipment**

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