wieland

Electrical
Connections

wietap/wietam

Surge protection

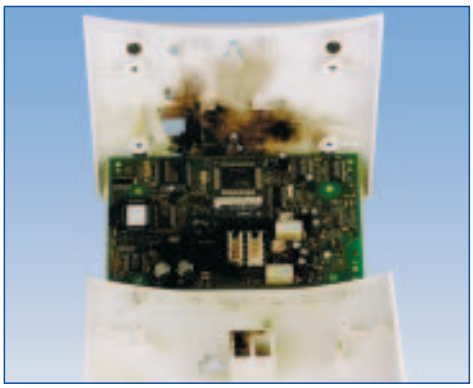
for energy, measurement and control systems

0116.0 H 10/02

Technical information about overvoltage protection

wietap

This picture shows a damaged telephone. However, the amount of damage incurred is relatively small when compared to what could happen when complete information systems for production plants are affected.



The disruption or destruction of these types of systems can have far-reaching consequences which as a minimum means, a cessation of material supply and therefore revenue.

The causes can be of a varying nature and origin, whereby electromagnetic interference plays an extremely important role. While it was usual in the past to wait for a fault to occur before rectifying it with little or no effort, it is nowadays imperative in a highly technical, electromagnetic susceptible environment, to plan and implement preventative measures.

The law governing the electromagnetic compatibility (EMC) of devices was therefore drafted to ensure that electrical and electronic systems function correctly. It came into effect on 01.01.1996.
The aim of this law is to only have installations or devices in operation which meet the EMC guideline and which guarantee adherence to the protection measures.

An element of electromagnetic compatibility is the lightning and overvoltage protection of electrical and electronic systems. Current technology enables the set-up of an effective protection system for installations and systems against the effects of lightning discharge and overvoltage from varying origins.

Cause of overvoltage	**Protection measures described in**			**Installation of protective devices described in DIN V VDE V 0100-534: 1999-04**
	DIN V ENV 61024-1	DIN VDE 0185-103	E DIN VDE 0100 Part 443	
Direct lightning strike	**X**	**X**		**X**
Remote lightning strike		**X**	**X**	**X**
Lightning fields		**X**		**X**
Switching operations			**X**	**X**

The EMC-oriented zone concept for lightning protection embraces all the stresses caused by lightning strike current and overvoltage situations. Only this type of protection concept, in which all the components utilised are co-ordinated with each other electrically, can the required level of operational reliability be achieved. Overvoltage with direct and inductive/capacitive coupling must be made safe.
Protection based purely on the classical "External and internal lightning protection" in accordance with DIN VDE 0185, part 1 + 2 no longer corresponds to the latest technology.
The EMC-oriented zone concept was developed as a self-contained method of lightning protection.
It divides the area for protection into various protection zones. These are formed by shielding the building, rooms and devices using available components (such as metal fabrication, reinforcements and framework etc.). The new international norm IEC 61312-1 (VDE 0185, part 103) recommends the zone concept for lightning protection. The area to be protected is divided into various zones (LPZ's). Each zone is classified as to the likelihood of a lightening strike and to the size if the electromagnetic pulse (LEMP) produced. The ***wietam***/***wietap*** ranges are correspondingly LPZ rated, enabling the correct selection of protection to provide a co-ordinated installation. Thereby, providing protection for the most sensitive data network installation from damage in the event of a lighting strike. This results in a reduction in risk as regards mains-borne interference and exposure to LEMP.
The lightning protection zones (LPZ) are defined as follows:

- $LPZ0_A$: Direct lightning strikes and high electromagnetic fields
- $LPZ0_B$: No direct lightning strikes but high electromagnetic fields
- LPZ1: Protected electrical installation, attenuated electromagnetic field (typically 30 dB)
- LPZ2: Terminal unit with central protection, weakened electromagnetic field
- LPZ3: Protected area within a terminal unit

These different zones must be safeguarded accordingly with the appropriate type of protective device(s).

Technical information about overvoltage protection

wietap

- Transition from zone 0_A to 1: Lightning arrester (e.g. ***wietap*** Block)
- Transition from zone 0_B to 1 and zone 1 to 2_B: Surge arrester (e.g. ***wietap*** G, ***wietap*** GT)
- Transition from zone 1 to 2 and higher: ***wietam*** range of surge arresters

  Electronic devices that are protected according to this concept can continue to operate without any disruptions even in the event of direct lightning strikes or close-up strikes

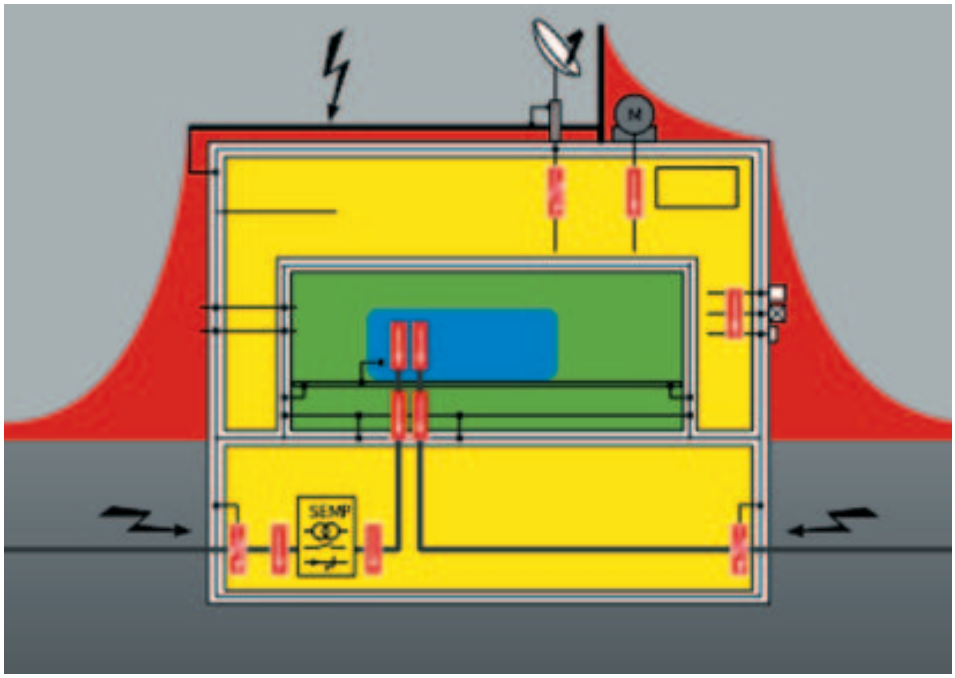


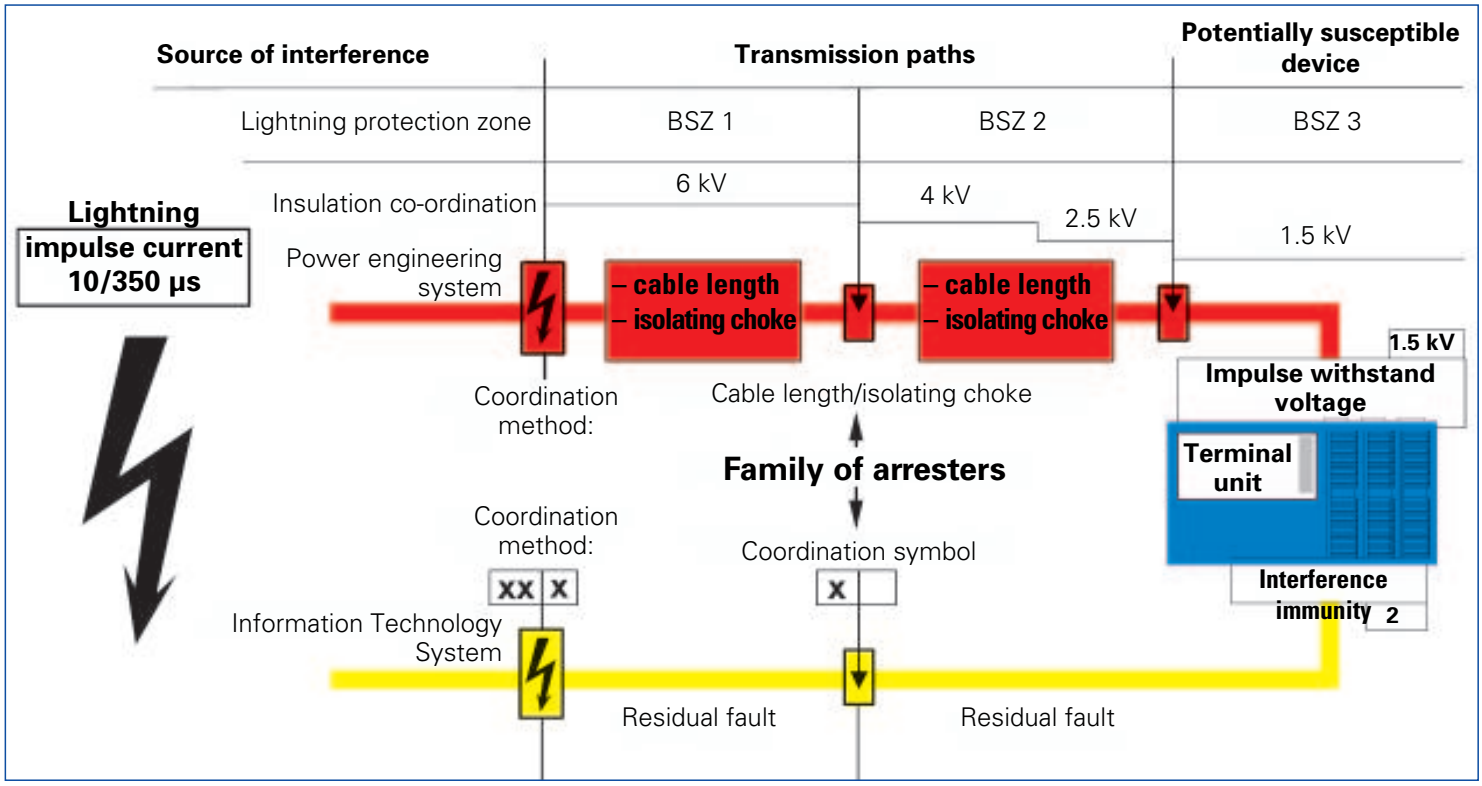
Diagram 1
Lightning protection zone concept

Division of arresters according to requirement category

Arrester requirement class	Requirements of arrester according to			Wieland Protective devices
	Area of application	Protection level	Load capability	
A For use in low voltage overhead lines	no protection required against direct contact can be overloaded or damaged if direct lightning strikes occur insulation resistance against weather effects	In accordance with – IEC 99.1 – Impulse withstand voltage category IV in accordance with DIN VDE 0110-1	In accordance with – DIN VDE 0110-1	
B Intended for equipotential bonding of lightning protection in accordance with DIN VDE 0185-1, VDE 0185-100, DIN VDE 0185-103	protection required against direct contact no defect or risk of fire due to stress in accordance with load capability	In accordance with – Impulse withstand voltage category IV in accordance with DIN VDE 0110-1	– DIN VDE 0110-1	***wietap***-Block
C Intended for overvoltage protection in fixed installations, preferably for use in impulse withstand category (overvoltage category) III		– Impulse withstand voltage category III in accordance with DIN VDE 0110-1	– DIN VDE 0110-1	***wietap*** G ***wietap*** GT
D Intended for overvoltage protection in mobile/ fixed installations, preferably for use in impulse withstand category (overvoltage category) II		– Impulse withstand voltage category II in accordance with DIN VDE 0110-1	– DIN VDE 0110-1	***wietap*** R

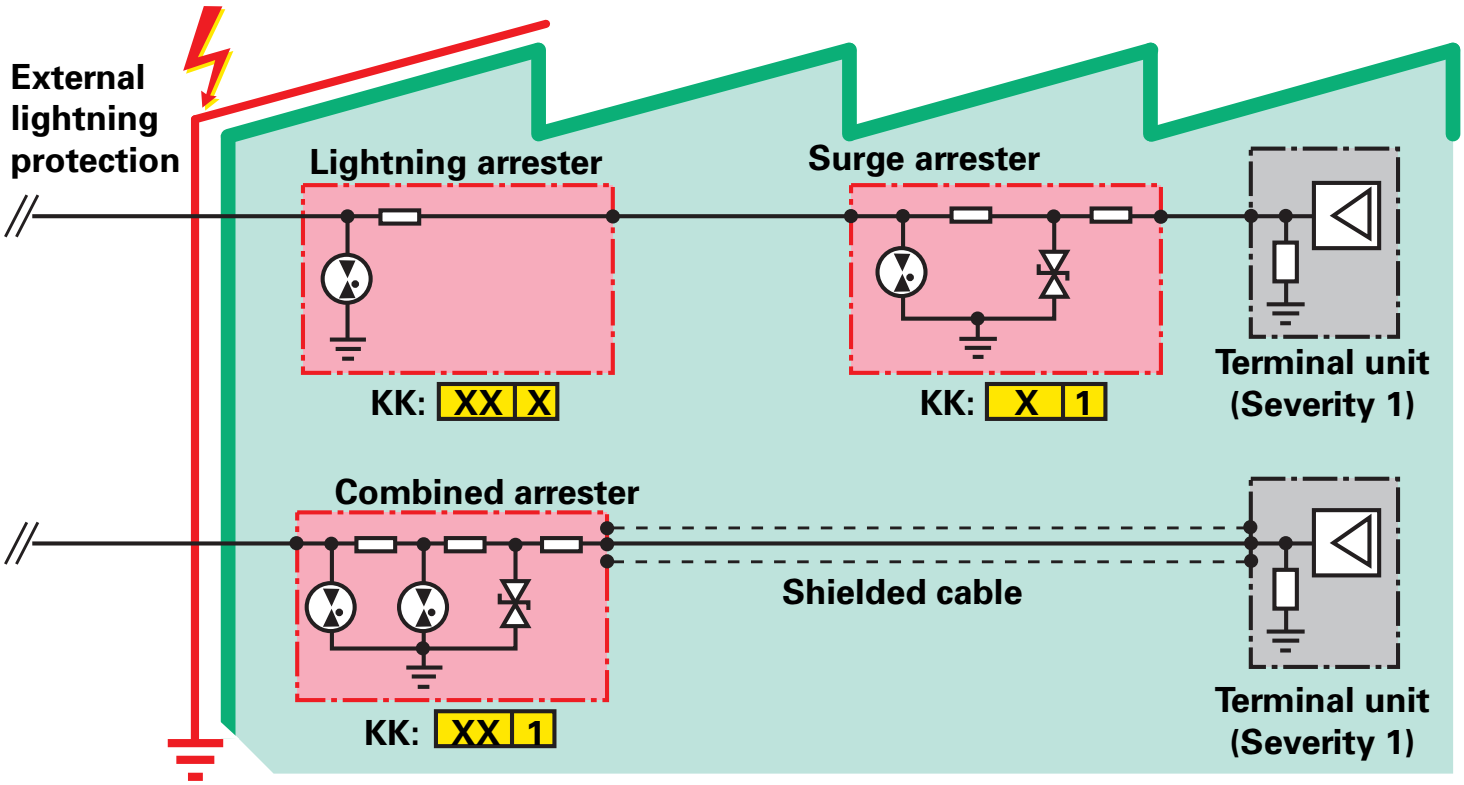
Lightning and overvoltage protection of IT systems

Surge arresters are implemented to protect input and output modules used in information technology from being damaged. Their task is to divert and limit any overvoltage that occurs in the IT system so that it no longer presents a danger to the modules. The term "overvoltage limiter" is therefore used in E DIN VDE 0845-2 1993-07. To guarantee that the IT devices operate without any disruption, the fault must be limited so that it lies below the destruction limit of the device. In contrast to the selection of protective devices for low voltage loads (230/400 V networks) that have standard conditions with regard to voltage and frequency, there are a wide variety of different types of signals that can be transmitted in IT installations. A further factor is that the signals must not be influenced. This largely determines the selection of suitable protective devices. The combination of the various types of devices is carried out via their co-ordination symbols (Diagram 2).



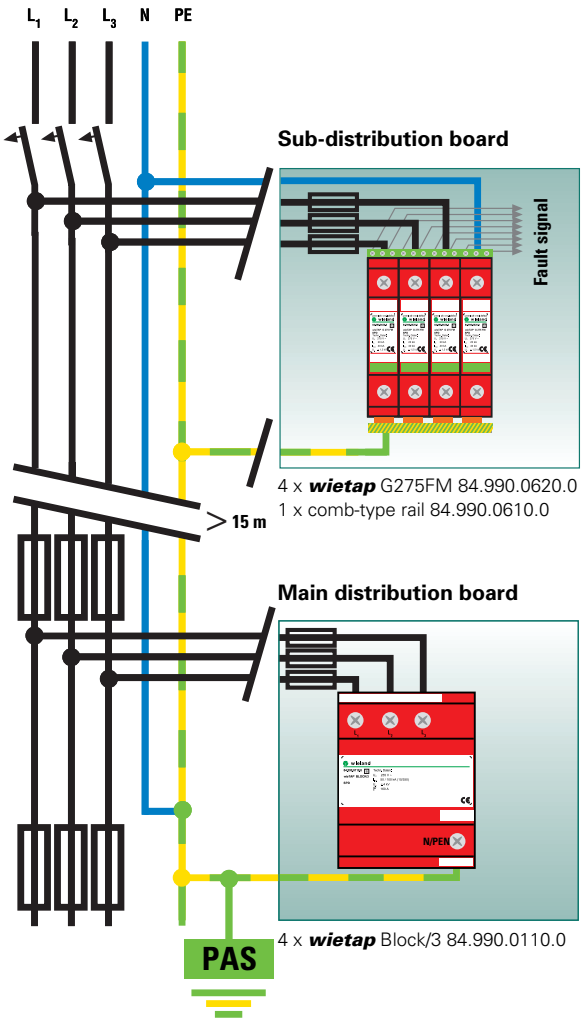
Technical information about overvoltage protection

This provides information about the interference that is to be diverted as well as the desired level of protection. The protective devices from the ***wietam*** product range must be mounted side by side so that the energy that flows through from the arrester is less than or identical to the interference immunity of the protected terminal unit or the discharge capacity of the series-connected arrester (Diagram 3). A co-ordinated use of protective devices from the ***wietam*** series is thus possible.



wietap/wietam

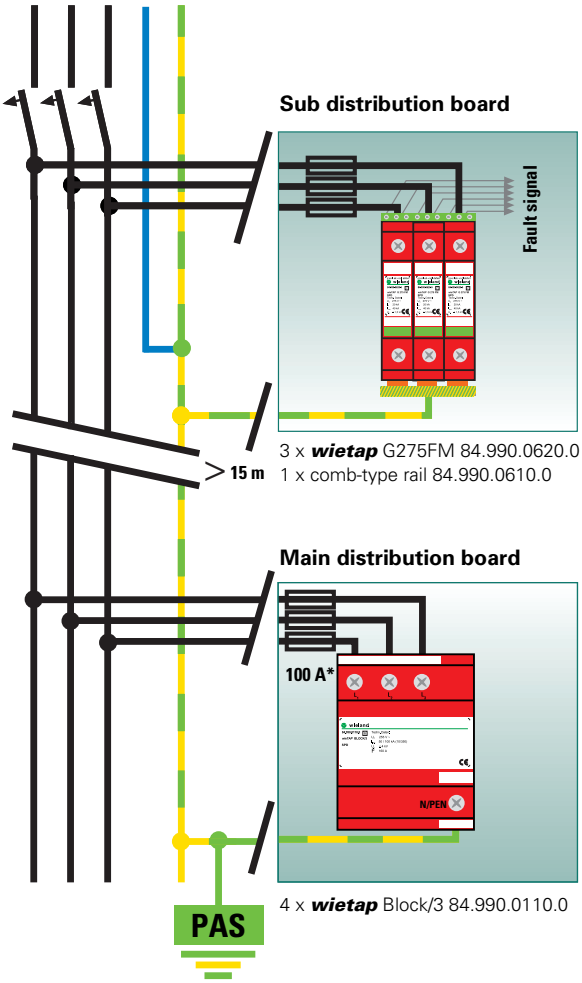
TN System
(Separation of PEN in main distribution board)



PE Protective Earth
N Neutral

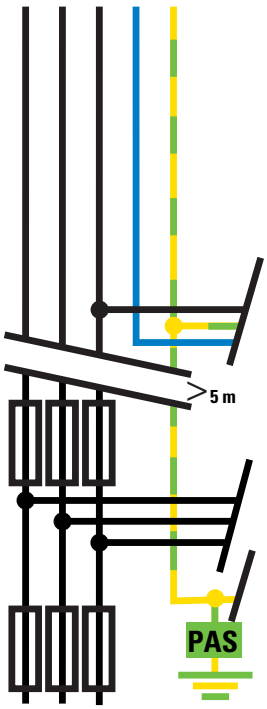
* Only required if a fuse is not already present in the network with an identical or smaller nominal value

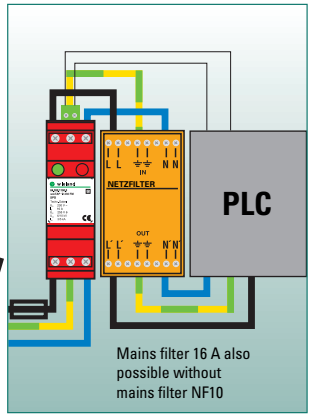
TN System
(Separation of PEN in sub-distribution board)



wietam

TN System
(Separation of PEN within the sub-distribution board)



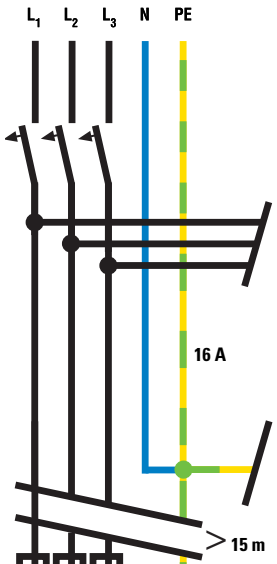


Control cabinet/ machine

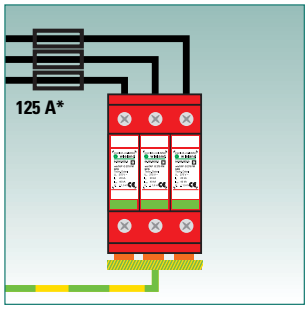
1 x ***wietap*** R230FM 84.990.1100.0

Mains distribution board

TN System
Mains distribution board with a directly connected sub-distribution board

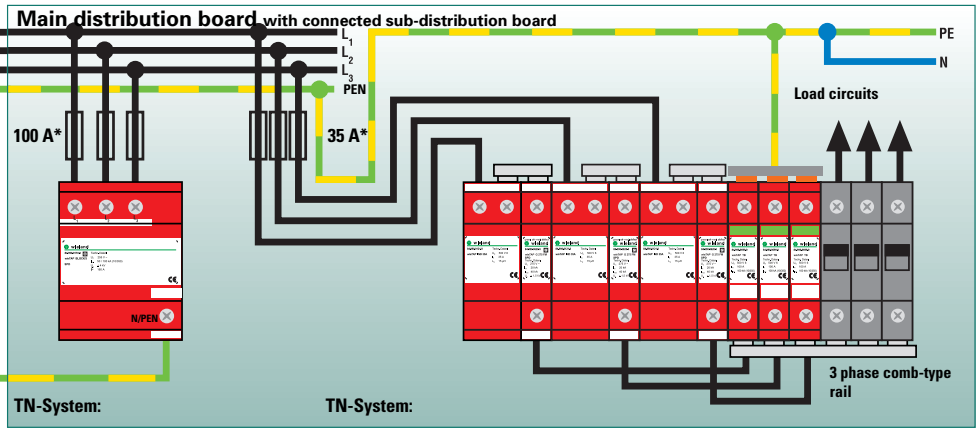


Sub-distribution board



4 x ***wietap*** G275FM 84.990.0620.0
1 x comb-type rail 84.990.0610.0

Alternative:
4 x ***wietap*** G275FM 84.990.0680.0
1 x comb-type rail 84.990.0610.0



1 x ***wietap*** Block/3 84.990.0110.0
1 x comb-type rail 84.990.0595.0

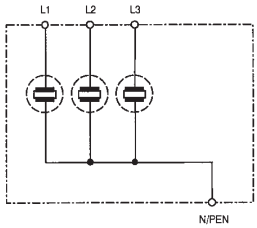
3 x ***wietap*** IND35A 84.990.0121.0
3 x ***wietap*** G275FM 84.990.0620.0

3 x ***wietap*** TB 84.990.0699.0
3 x comb-type rail 84.990.0610.0

Lightning arrester
Class B, enclosed

wietap

– Encapsulated non-exhaust creepage distance
– Energy co-ordination possible due to “breakwater” function with series-connected varistor surge arrester
– Low voltage protection level
– Rapid response
– Can be used upstream of the meter due to high insulation resistance
– Connection possibility for conductor and comb type rail
– One and three pole versions



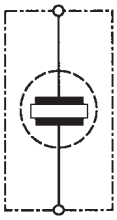
Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
Lightning arrester, class B enclosed, 1 pole	wieTAP Block/1	84.990.0111.0	1	wieTAP Block/3	84.990.0110.0	1
For the integration of power lines into lightning protection						
equipotential bonding systems						
For use in the lightning protection zone concept at the						
Interfaces 0_A-1						
Application	For the protection of low voltage installations from overvol-			For the protection of low voltage installations from overvol-		
	tage surges, also in the event of direct lightning strikes (in			tage surges, also in the event of direct lightning strikes (in		
	overvoltage category IV in accordance with DIN VDE 0110-1)			overvoltage category IV in accordance with DIN VDE 0110-1)		
	Testing with lighting current (10/350) in accordance with			Testing with lighting current (10/350) in accordance with		
	DIN V ENV 61024-1 (VDE V 0185 Part 100), DIN VDE 0185-103			DIN V ENV 61024-1 (VDE V 0185 Part 100), DIN VDE 0185-103		
	Arrester from requirement category B in accordance with			Arrester from requirement category B in accordance with		
	DIN VDE 0110-1			DIN VDE 0110-1		
Technical Data						
Max. operating voltage. (rated discharge voltage U_C)	255 V / 50 Hz			255 V / 50 Hz		
Follow current reset capability at U_C (I_f)	3 kA_{eff}			3 kA_{eff}		
Lightning impulse current (10/350) (I_{imp})	50 kA			100 kA		
Protection level (lightning impulse sparkover voltage 1.2/50) (I_{sn})	≤ 4 kV			≤ 4 kV		
Operating time (t_a)	≤ 100 ns			≤ 100 ns		
Back-up fuse (if not already present in system)	160 A gL/gG			160 A gL/gG		
Short circuit withstand capability with maximum back-up fuse	50 kA / 50 Hz			50 kA / 50 Hz		
Temperature range	–40 ... +80 °C			–40 ... +80 °C		
Wire range	min. 10 mm^2 single core/finely stranded			min. 10 mm^2 single core/finely stranded		
	max. 50 mm^2 stranded; 35 mm^2 finely stranded			max. 50 mm^2 stranded; 35 mm^2 finely stranded		
Insulation resistance (R_{isol})	> 10^3 MΩ			> 10^3 MΩ		
Installation	TS 35 in accordance with EN 60715			TS 35 in accordance with EN 60715		
Housing material	Thermoplast GF, red			Thermoplast GF, red		
Type of protection	IP 20			IP 20		
Mounting dimensions	2 TE in accordance with DIN 43880, Overall height 58 mm			4 TE in accordance with DIN 43880, Overall height 58 mm		
Test in accordance with	DIN VDE 0110-1			DIN VDE 0110-1		
Approval	KEMA in preparation			KEMA in preparation		
Accessories	See pages 12 – 13			See pages 12 – 13		

N-PE lightning arrester
Class B, enclosed

wietap

– Specifically for use in the TT system in the “3 + 1” switching operation in accordance with DIN VDE V 0100-534: 1999-04 between the neutral conductor (N) and the protective earth conductor (PE) for equipotential bonding

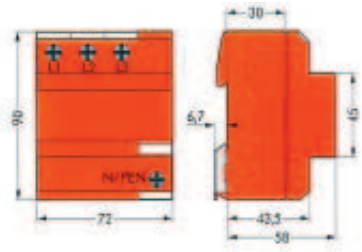
– Encapsulated, non-exhaust creepage distance



Description	Type	Part No.	Box Qty
Lightning arrester, class B enclosed, 1 pole	wieTAP LAB/N	84.990.0132.0	1
For the integration of power lines into lightning protection			
Blitzschutz-Potential-Ausgleich speziell im TT-System			
For use in the lightning protection zone concept at the			
Interfaces 0_A-1			
Application	For the protection of low voltage installations from overvol-		
	tage surges, also in the event of direct lightning strikes (in		
	overvoltage category IV in accordance with DIN VDE 0110-1)		
	Testing with lighting current (10/350) in accordance with		
	DIN V ENV 61024-1 (VDE V 0185 Part 100), DIN VDE 0185-103)		
	Arrester from requirement category B in accordance with		
	DIN VDE 0110-1		
Technical Data			
Max. operating voltage. (rated discharge voltage U_C)	255 V / 50 Hz		
Follow current reset capability at U_C (I_f)	100 A_{eff}		
Lightning impulse current (10/350) (I_{imp})	100 kA		
Protection level (lightning impulse sparkover voltage 1,2/50) (I_{sn})	≤ 4 kV		
Operating time (t_a)	≤ 100 ns		
Back-up fuse (if not already present in system)	–		
Short circuit withstand capability with maximum back-up fuse	–		
Temperature range	–40 ... +80 °C		
Wire range	min. 10 mm^2 single core/finely stranded		
	max. 50 mm^2 stranded; 35 mm^2 finely stranded		
Insulation resistance (R_{isol})	> 10^3 MΩ		
Installation	TS 35 in accordance with EN 60715		
Housing material	Thermoplast GF, red		
Type of protection	IP 20		
Mounting dimensions	2 TE in accordance with DIN 43880, Overall height 58 mm		
Test in accordance with	DIN VDE 0110-1		
Approval	KEMA in preparation		
Accessories	See pages 12 – 13		

Dimensions

84.990.0111.0



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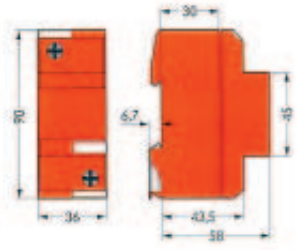

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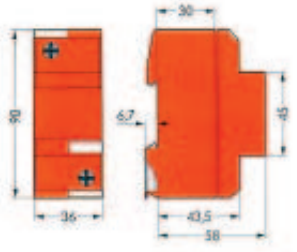
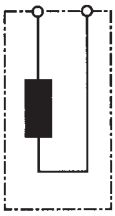
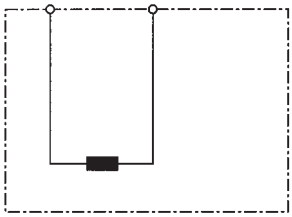


Isolating choke

wietap

– The concentrated inductance replaces the cable length that is otherwise required for isolation between the lightning arrester and surge arrester
– Problem-free arrangement of elements directly adjacent to each other
– Transition into the lightning protection zone concept on interface 0A-2 is possible in the most confined of spaces
– Connection for conductor and comb-type rails





Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
Isolating choke 35 A	wieTAP IND35A	84.990.0121.0	1			
Isolating choke 63 A				wieTAP IND63A	84.990.0122.0	1
Application						
	Isolating choke			Isolating choke		
	For the energy co-ordination of lighting arresters (wieTAP			For the energy co-ordination of lighting arresters (wieTAP		
	Block, wieTAP LA B/N) and surge arresters (wieTAP G) at a			Block, wieTAP LA B/N) and surge arresters (wieTAP G) at a		
	lighting current of 10/350			lighting current of 10/350		
	Testing with lighting current (10/350) in accordance with			Testing with lighting current (10/350) in accordance with		
	DIN V ENV 61024-1 (VDE V 0185 Part 100), DIN VDE 0185-103)			DIN V ENV 61024-1 (VDE V 0185 Part 100), DIN VDE 0185-103)		
Technical Data						
Nominal voltage (U_N)	500 V AC / DC			500 V AC / DC		
Nominal frequency (f_N)	50 Hz			50 Hz		
Nominal current (I_N)	35 A			63 A		
Nominal inductance (L_N)	15 µH ± 20%			15 µH ± 20% (L_N)		
Back-up fuse (if not already present in system)	35 A gL/gG			63 A gL/gG		
Short circuit withstand capability with maximum back-up fuse	50 kA / 50 Hz			50 kA / 50 Hz		
Ohmic resistance (R_{CU})	ca. 4 mΩ			ca. 2 mΩ		
Temperature range (device with self heating)	–40 ... +115 °C			–40 ... +115 °C		
Wire range	min. 1.5 mm² single core/finely stranded			min. 10 mm² single core/finely stranded		
	max. 35 mm² stranded; 25 mm² finely stranded			max. 50 mm² stranded; 35 mm² finely stranded		
Installation	TS 35 in accordance with EN 60715			TS 35 in accordance with EN 60715		
Housing material	Thermoplast GF, red			Thermoplast GF, red		
Type of protection	IP 20			IP 20		
Mounting dimensions	2 TE in accordance with DIN 43880, Overall height 58 mm			4 TE in accordance with DIN 43880, Overall height 58 mm		
Test in accordance with	DIN IEC 85 (VDE 0301 Part 1): 1993-03			DIN IEC 85 (VDE 0301 Part 1): 1993-03		
	DIN VDE 0532 Part 1: 1982-03			DIN VDE 0532 Part 1: 1982-03		
	EN 60950: 1995-10			EN 60950: 1995-10		
Approval	KEMA in preparation			KEMA in preparation		
Accessories	See pages 12 – 13			See pages 12 – 13		

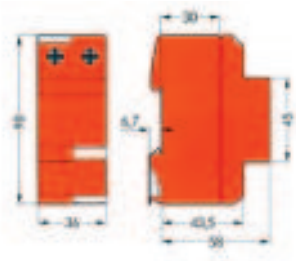
Modular terminal

wietap

Description	Type	Part No.	Box Qty
Modular terminal	wieTAP TB	84.990.0699.0	1
Application			
	Modular terminal		
	Feed through terminal for the connection of the commo-		
	ning busbar for lightning and surge arresters.		
Technical Data			
Nominal voltage (U_N)	500 V AC / DC		
Nominal current (I_N)	100 A		
Test current ($I_{prüf}$) in accordance with EN 60947-7-1	125 A		
Lightning impulse current (10/350 µs) (I_{imp})	100 kA (I_{imp})		
Back-up fuse if device is used purely as an arrester	≤ 250 A gL/gG		
Back-up fuse with operating current flowing through	≤ 100 A gL/gG		
Short circuit withstand capability with maximum back-up fuse	50 kA / 50 Hz		
Temperature range	–40 ... +80 °C		
Wire range	min. 1.5 mm² single core/finely stranded		
	max. 35 mm² stranded; 25 mm² finely stranded		
Installation	TS 35 in accordance with EN 60715		
Housing material	Thermoplast GF, red		
Type of protection	IP 20		
Mounting dimensions	1 TE in accordance with DIN 43880, Overall height 58 mm		
Test in accordance with	DIN IEC 85 (VDE 0301 Part 1): 1993-03		
	DIN VDE 0532 Part 1: 1982-03		
	EN 60950: 1995-10		
Approval	KEMA in preparation		
Accessories	See pages 12 – 13		

Dimensions

84.990.0121.0



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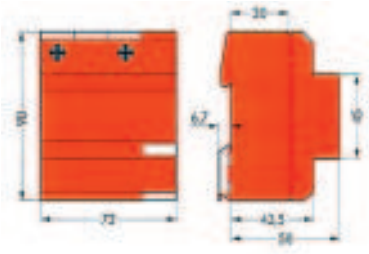

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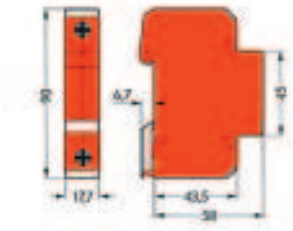


wietap

84.990.0613.0

84.990.0614.0

84.990.0595.0

Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
Three phase, 57 pole, 16 mm²; length: approx. 1 m	Kammschiene	84.990.0613.0	1			
Three phase, 6 pole, 16 mm²	Kammschiene	84.990.0595.0	1			
Four phase, 57 pole, 16 mm²; length: approx. 1 m				Kammschiene	84.990.0614.0	1
Application						
	Comb-type rails for equipotential distribution			Comb-type rails for equipotential distribution		
	84.990.0613.0 and 84.990.0595.0			84.990.0614.0		
	For phase connection of surge arresters			For phase connection of surge arresters		

wietap

84.990.0610.0

84.990.0616.0

84.990.0612.0

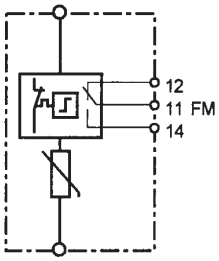
84.990.0619.0

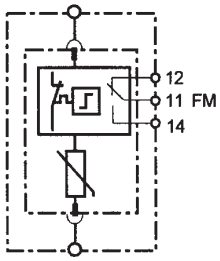
Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
Single phase, 4 pole, 16 mm^2	Kammschiene	84.990.0610.0	1			
Single phase, 57 pole, 16 mm^2; length: approx. 1 m	Kammschiene	84.990.0612.0	1			
Two phase, 16 pole, 16 mm^2				Kammschiene	84.990.0616.0	1
Two phase, 22 pole, 16 mm^2				Kammschiene	84.990.0619.0	1
Application						
	Comb-type rails for equipotential distribution			Comb-type rails for equipotential distribution		
	84.990.0610.0			84.990.0616.0 and 84.990.0619.0		
	For earthed jumpering of e.g. 4 surge arresters			For linking the neutral conductor N and N' when using the		
				"3+1" switching operation with wieTAP Block, wieTAP IND		
	wieTAP G or wieTAP GT			and wieTAP G		
	84.990.0612.0					
	For earthed jumpering of lightning and surge arresters or					
	combinations of arresters					

Surge arrester
Class C, single pole

wietap

– Energy co-ordination possible with series-connected lightning arresters
– High discharge capacity due to powerful zinc-oxide varistor arrester
– High level of monitoring reliability due to an arrester disconnector with "thermo dynamic control" and two-way supervision
– Fault indicated by red mark in inspection window
– Connection for conductor and comb-type rails
– Compact design in accordance with DIN 43880
– Potential-free, remote signalling contact enables remote diagnostics
– Modular design is also available

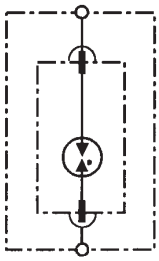




Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
	Compact design			Modular design		
1 pole surge arrester class C without FM contact	wieTAP GT275	84.990.0600.0	1			
1 pole surge arrester class C with FM contact	wieTAP GT275FM	84.990.0620.0	1	wieTAP GT275FM	84.990.0680.0	1
Surge arrester for use in the lightning protection zone concept at interfaces 0_B-1 and higher						
Application						
	For the protection of low voltage installations from overvoltage surges (in overvoltage category III in accordance with DIN VDE 0110-1)			For the protection of low voltage installations from overvoltage surges (in overvoltage category III in accordance with DIN VDE 0110-1)		
	Arrester from requirement category C in accordance with DIN VDE 0110-1			Arrester from requirement category C in accordance with DIN VDE 0110-1		
	Remote signalling contact			Remote signalling contact		
	After disconnection of the faulty arrester as a result of an overload, the plug-in remote signalling contacts are switched via a potential free changeover contact			After disconnection of the faulty arrester as a result of an overload, the plug-in remote signalling contacts are switched via a potential free changeover contact		
Technical Data						
Max. operating voltage. (rated discharge voltage U_C)	275 VAC; 350 V DC			275 VAC; 350 V DC		
Nominal discharge current (8/20) (I_{sn})	20 kA			20 kA		
Increased discharge current (8/20) (i_{max})	40 kA			40 kA		
Lightning impulse current (10/350) (I_{imp})	–			–		
Protection level at 5 kA (8/20) (U_p)	≤ 1 kV			≤ 1 kV		
Protection level at I_{sn} (U_p)	≤ 1.5 kV			≤ 1.5 kV		
Lightning impulse sparkover voltage (1.2/50)	–			–		
Operating time (t_a)	≤ 25 ns			≤ 25 ns		
Back-up fuse (if not already present in system)	125 A gL/gG			125 A gL/gG		
Short circuit withstand capability with maximum back-up fuse	50 kA / 50 Hz			50 kA / 50 Hz		
Temperature range	–40 ... +80 °C			–40 ... +80 °C		
Wire range	min. 1.5 mm² single core/finely stranded			min. 1.5 mm² single core/finely stranded		
	max. 35 mm² stranded; 25 mm² finely stranded			max. 35 mm² stranded; 25 mm² finely stranded		
Installation	TS 35 in accordance with EN 60715			TS 35 in accordance with EN 60715		
Housing material	Thermoplast, red			Thermoplast, red		
Type of protection	IP 20			IP 20		
Mounting dimensions	1 TE in accordance with DIN 43880, Overall height 58 mm			1 TE in accordance with DIN 43880, Overall height 58 mm		
Test in accordance with	DIN VDE 0110-1			DIN VDE 0110-1		
Approval	KEMA			KEMA		
Remote signalling contact						
Contact type	1 Changeover contact			1 Changeover contact		
Switching capacity	AC: 250 V / 0.5 A			AC: 250 V / 0.5 A		
	DC 250 V / 0.1 A			DC 250 V / 0.1 A		
	DC 125 V / 0.2 A			DC 125 V / 0.2 A		
	DC 75 V / 0.5 A			DC 75 V / 0.5 A		
Wire range	maximal 1.5 mm² single core/finely stranded			maximal 1.5 mm² single core/finely stranded		
Accessories	See pages 12 – 13			See pages 12 – 13		

wietap

– Specifically for use in the TT system in the "3 + 1" switching operation in accordance with DIN VDE V 0100-534: 1999-04 between the neutral conductor (N) and the protective earth conductor (PE) for equipotential bonding
– Very high discharge capacity
– Modular design

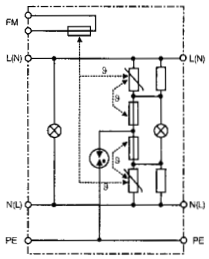


Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
1 pole surge arrester, Class C	Modular design			Male connector		
	wieTAP GPC/T	84.990.0133.0	1	wieTAP PLT/C	84.990.0134.0	1
Surge arrester specially for TT systems				wieTAP PLT275FM	84.990.0670.0	1
Surge arrester for use in the lightning protection zone concept at interfaces 0_B-1 and higher						
Application						
	For the protection of low voltage installations from overvoltage surges (in overvoltage category III in accordance with			PL T/C: Replacement male connector 84.990.0133.0		
	DIN VDE 0110-1)			PLT 275 FM: Replacement male connector 84.990.0680.0		
	Arrester from requirement category C in accordance with					
	DIN VDE 0110-1					
Technical Data				**Dimensions**		
Max. operating voltage. (rated discharge voltage U_C)	255 V AC; 50 Hz			84.990.0620.0		
Nominal discharge current (8/20) (I_{sn})	20 kA					
Follow current reset capability at U_C (I_f)	100 A_{eff}					
Lightning impulse current (10/350)	12 kA					
Lightning impulse sparkover voltage 1.2/50 (U_p)	≤ 1.5 kV					
Operating time (t_a)	≤ 100 ns					
Temperature range	–40 ... +80 °C					
Wire range	min. 1.5 mm^2 single core/finely stranded					
	max. 35 mm^2 stranded; 25 mm^2 finely stranded					
Installation	TS 35 in accordance with EN 60715					
Housing material	Thermoplast, red					
Type of protection	IP 20					
Mounting dimensions	1 TE in accordance with DIN 43880, Overall height 58 mm					
Test in accordance with	DIN VDE 0110-1					
				84.990.0680.0; 84.990.0133.0		

Surge arrester
Class D, single pole

wietap

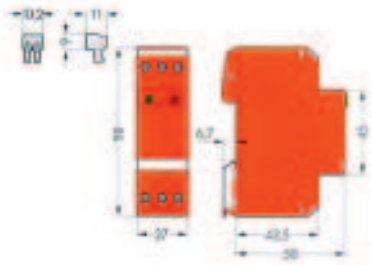
– Two pole overvoltage protection with monitoring device and disconnector
– Visual functional display (green), visual fault display (red)
– Potential-free, remote signalling contact (normally closed contact) for fault display (no mains disconnection)



Description	Type	Part No.	Box Qty
2 pole surge arrester, Class D	wieTAP R 230 FM	84.990.1100.0	1
For the protection of the mains supply of devices in industrial electronics from surges in control cabinets			
Application	For the protection of electronic devices from overvoltage surges (in overvoltage category II in accordance with DIN VDE 0110-1) Arrester from requirement category D in accordance with DIN VDE 0110-1		
	Remote signalling contact		
	After disconnection of the faulty arrester as a result of an overload, the plug-in remote signalling contacts are switched via a potential free normally closed contact		
Technical Data			
Nominal voltage (U_N)	230 V AC		
Max. operating voltage. (rated discharge voltage U_C)	255 V AC/DC		
Nominal current (I_N)	16 A		
Nominal discharge current (8/20) (I_{sn})	L (N) ▶ PE: L ▶ N: 3 kA;	L+N ▶ PE: 5 kA	
Combined surge (U_{OC})	L (N) ▶ PE: L ▶ N: 6 kV;	L+N ▶ PE: 10 kV	
Protection level	L ▶ N: ≤ 1.25 kV;	L(N) ▶ PE: ≤ 1.5 kV	
Operating time (t_a)	L ▶ N: ≤ 25 ns;	L(N) ▶ PE: ≤ 100 ns	
Back-up fuse (if not already present in system)	16 A gL/gG or C 16 A		
Temperature range	–40 ... +80 °C		
Wire range	min. 0.5 mm² single core/finely stranded		
	max. 4 mm² stranded; 6 mm² finely stranded		
Installation	TS 35 in accordance with EN 60715		
Housing material	Thermoplast, red		
Type of protection	IP 20		
Mounting dimensions	1 TE in accordance with DIN 43880, Overall height 58 mm		
Test in accordance with	DIN VDE 0110-1		
Approval			
Remote signalling contact			
Contact type	1 normally closed contact		
Switching capacity	AC: 250 V / 0.5 A		
	DC 250 V / 0.1 A		
	DC 125 V / 0.2 A		
	DC 75 V / 0.5 A		
Wire range	maximal 1.5 mm² single core/finely stranded		
Accessories	See pages 12 – 13		

Dimensions

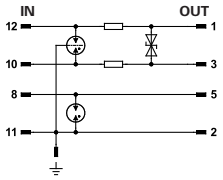
84.990.1100.0

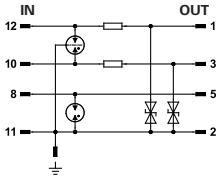


wietap

wietam

- Two part structure
  Base component for location of the protection modules. Selectable overvoltage protection modules.
- Screw or spring clamp connection
- Device width 17,5 mm;
  Overall height 100 mm
- Can be installed directly in the distribution board through a protection device
- Staggered arrester function can be co-ordinated without additional cable lengths
- Protected signals can be bridged
- Individual channels can be labelled
- 64 coding options
- safe earthing via mounting foot with snap-on fixing



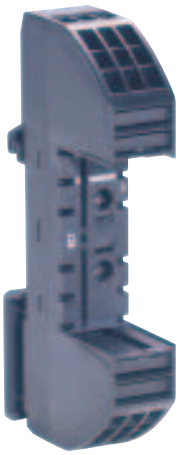


Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
2 pole, universal overvoltage protection device with a	Male connector			Male connector		
modular terminal system for the protection of installations	wieTAM CMD 12V DC 1D	84.991.9541.2	1	wieTAM CME 12V DC 1 D	84.991.9521.2	1
and devices in the IT sector	wieTAM CMD 24V DC 1D	84.991.9543.2	1	wieTAM CME 24V DC 1 D	84.991.9523.2	1
Application						
The co-ordinated overvoltage protection devices of the	For use at the interfaces 0_B-2, 0_B-2 and 1-2			For use at the interfaces 0_B-2, 0_B-2 and 1-2		
wieTAM range can be used as lightning, combination or						
surge arresters. This enables a co-ordinated implementa-	Modules for the protection of asymmetric interfaces with			Modules for the protection of 2 individual cores, asymme-		
tion in the EMC-oriented lighting zone protection concept	electrical isolation, telecommunication			tric interfaces as well as RS485, RS422, V11		
in accordance with VDE 0185-103, with a protection level						
that has been adapted to EMC interference immunity						
(mains borne, spurious energy pulses) for devices involved						
in telecommunications and data technology and for measur-						
ing and control equipment						
Technical data	**12 V**		**24 V**	**12 V**		**24 V**
Nominal voltage (U_N)	12 V DC		24 V DC	12 V DC		24 V DC
Max. operating voltage (rated discharge voltage)(U_C)	14.5 V DC		26.8 V DC	14.5 V DC		26.8 V DC
Nominal current (I_N)		1 A			1 A	
Total nominal discharge current (8/20) (I_{sn})		10 kA			10 kA	
Nominal discharge current (8/20) per core (I_{sn})		10 kA			10 kA	
Max. discharge current (8/20) (I_{max})		20 kA			20 kA	
Total lightning impulse current (10/350) (I_{imp})		–			–	
Lightning impulse current (10/350) per core (I_{imp})		–			–	
Protection level at I_{sn}: core/core (U_P)	≤ 27 V		≤ 45 V	≤ 70 V		≤ 100 V
Protection level at I_{sn}: core/conduit thread (U_P)		–		≤ 60 V		≤ 80 V
Protection level at 1 kV/µs: core/core (U_P)	≤ 19 V		≤ 35 V	≤ 38 V		≤ 70 V
Protection level at 1 kV/µs: core/conduit thread (U_P)		≤ 600 V		≤ 19 V		≤ 35 V
Co-ordination symbol		X1			X1	
Operating times: core/core (t_A)		≤ 1 ns			≤ 1 ns	
Operating times: core/conduit thread (t_A)		≤ 1 ns			≤ 100 ns	
Asymmetric limit frequency (f_G)		–		2.9 MHz		5.6 MHz
Symmetric limit frequency (f_G)	3 MHz		5.3 MHz	–		–
Longitudinal impedance / core (R)	1.5 Ω		1.8 Ω	1.5 Ω		1.8 Ω
Case capacitance of core / core (C)	2 nF		1.3 nF	1 nF		0.7 nF
Case capacitance of core / conduit thread (C)		6 pF		2 nF		1.3 nF
Temperature range		–40 ... +80 °C			–40 ... +80 °C	
Tested category in accordance with E DIN EN 61644-1:1999-07		A2, B2, C2, C3, D1			A2, B2, C2, C3, D1	
Wire range						
finely stranded/stranded						
single core						
with ferrule without/with plastic sleeve						
Installation		See module carrier			See module carrier	
Housing material						
Dimensions in mm		17.5 x 45 x 71			17.5 x 45 x 71	

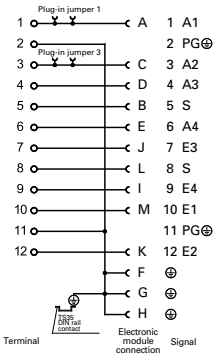
Lightning and surge arresters

wietam

– Two part structure
  Base component as through terminal for location of the protection module
– Screw or spring clamp connection
– Device width 17,5 mm;
  Overall height 100 mm
– Can be installed directly in the distribution board through a protection device
– Staggered arrester function can be co-ordinated without additional cable lengths
– Protected signals can be bridged
– Individual channels can be labelled
– 64 coding options
– safe earthing via mounting foot with snap-on fixing



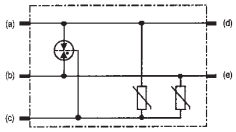
Circuit diagram

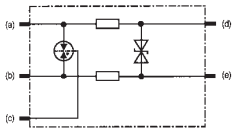


Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
2 pole, universal overvoltage protection device with a	Male connector			Module carrier wieTAM		
modular terminal system for the protection of installations	wieTAM CME/C 12V DC 1 D	84.991.9561.2	1	with screw terminals (M3)		
and devices in the IT sector	wieTAM CME/C 24V DC 1 D	84.991.9562.2	1	with spring-clamp terminals		
Application						
The co-ordinated overvoltage protection devices of the	For use at the interfaces 0_B-2, 0_B-2 and 1-2			Module carrier with wieTAM		
wieTAM range can be used as lightning, combination or				wieTAM BCT SC	84.991.9506.2	1
surge arresters. This enables a co-ordinated implementa-	Modules for the protection of asymmetric interfaces with			wieTAM BCT SP	84.991.9506.1	1
tion in the EMC-oriented lighting zone protection concept	input suppressor circuit, for current loop (TTY), opto-					
in accordance with VDE 0185-103, with a protection level	couppler inputs					
that has been adapted to EMC interference immunity						
(mains borne, spurious energy pulses) for devices involved						
in telecommunications and data technology and for measur-						
ing and control equipment						
Technical data	**12 V**		**24 V**			
Nominal voltage (U_N)	12 V DC		24 V DC			
Max. operating voltage (rated discharge voltage)(U_C)	14.5 V DC		26.8 V DC			
Nominal current (I_N)		100 mA				
Total nominal discharge current (8/20) (I_{sn})		10 kA				
Nominal discharge current (8/20) per core (I_{sn})		10 kA				
Max. discharge current (8/20) (I_{max})		20 kA				
Total lightning impulse current (10/350) (I_{imp})		–				
Lightning impulse current (10/350) per core (I_{imp})		–				
Protection level at I_{sn}: core/core (U_P)	≤ 40 V		≤ 65 V			
Protection level at I_{sn}: core/conduit thread (U_P)	≤ 50 V		≤ 75 V			
Protection level at 1 kV/µs: core/core (U_P)	≤ 19 V		≤ 36 V			
Protection level at 1 kV/µs: core/conduit thread (U_P)	≤ 19 V		≤ 36 V			
Co-ordination symbol		X1				
Operating times: core/core (t_A)		≤ 1 ns				
Operating times: core/conduit thread (t_A)		≤ 1 ns				
Asymmetric limit frequency (f_G)		–				
Symmetric limit frequency (f_G)		0.85 MHz*)				
Longitudinal impedance / core (R)	13.5 Ω		23.8 Ω			
Case capacitance of core / core (C)	3 nF		2 nF			
Case capacitance of core / conduit thread (C)	3 nF		2 nF			
Temperature range		–40 ... +80 °C				
Tested category in accordance with E DIN EN 61644-1:1999-07		A2, B2, C2, C3, D1				
Wire range				**Screw terminals**		**Spring terminals**
finely stranded/stranded				0.2 mm² – 2.5 mm²		0.08 mm² – 2.5 mm²
single core				0.2 mm² – 4 mm²		0.08 mm² – 2.5 mm²
with ferrule without/with plastic sleeve				0.25 mm² – 2.5 mm²/ – 1.5 mm²		0.08 mm² – 1.5 mm²
Installation		See module carrier			TS 35	
Housing material					Polyamide 6.0	
Dimensions in mm		17.5 x 45 x 71			100 x 50.4	
*) measured in 100 Ω systems						

wietam

– Two-part structure
  Base component as modular terminal for location of the protection modules
  Selectable overvoltage protection modules
– Compact, space-saving design
  Device width 12 mm (2/3 overall height)
  overall height 58 mm
– Staggered arrester function can be co-ordinated without additional cable lengths
– No signal disruption when replacing the modules
– Module carrier with integral shield connection
– Indirect shield earthing possible with additional plug-in gas diverter
– Safe earthing via mounting foot with snap-on fixing
– Coordination symbol (CS) for the protection module (See pages 4 & 5)



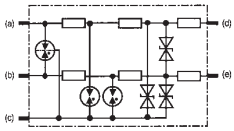


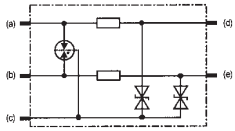
Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
2 pole, universal overvoltage protection device with a	Modular design			Male connector		
modular terminal system for the protection of installations	wieTAM ME110 V AC	84.991.9527.0	1	wieTAM MD12VDC	84.991.9541.0	1
and devices in the IT sector						
				wieTAM MD24DC	84.991.9543.0	1
Application						
The co-ordinated overvoltage protection devices of the	For use at the interfaces 0_B-2, 0_B-2 and 1-2			For use at the interfaces 0_B-2, 0_B-2 and 1-2		
wieTAM range can be used as lightning, combination or						
surge arresters. This enables a co-ordinated implementati-	Modules for the protection of 2 individual cores, asymme-			Modules for the protection of asymmetric interfaces with		
on in the EMC-oriented lightning protection zone concept	tric interfaces as well as RS485, RS422, V11			electrical isolation, Telecommunication		
in accordance with VDE 0185-103, with a protection level						
that has been adapted to EMC interference immunity						
(mains-borne, spurious energy pulses) for devices involved						
in telecommunications and data technology and for measu-						
ring and control equipment.						

Technical Data	**110 V**	**12 V**	**24 V**
Nominal voltage (U_N)	110 V AC	12 V DC	24 V DC
Max. operating voltage. (rated discharge voltage)(U_C)	170 V DC; 130 V AC	14.5 V DC; 10.2 V AC	26.8 V DC; 18.9 V AC
Nominal current (I_N)	1 A	1 A	
Nominal discharge current (8/20) (I_{sn})	20 kA	10 kA	
Nominal discharge current (8/20) per core (I_{sn})	10 kA	10 kA	
Max. discharge current 8/20 (I_{max})	20 kA	20 kA	
Lightning impulse current (10/350) (I_{imp})	–	–	
Lightning impulse current (10/350) per core (I_{imp})	–	–	
Protection level at I_{sn} : core/core (U_P)	≤ 730 V	≤ 27 V	≤ 45 V
Protection level at I_{sn} : core/conduit thread (U_P)	≤ 400 V	–	–
Protection level at 1 kV/µs : core/core (U_P)	≤ 520 V	≤ 19 V	≤ 35 V
Protection level at 1 kV/µs : core/conduit thread (U_P)	≤ 260 V	≤ 600 V	
Co-ordination symbol	X2	X1	
Operating times : core/core (t_A)	≤ 25 ns	≤ 1 ns	
Operating times : core/conduit thread (t_A)	≤ 25 ns	≤ 100 ns	
Asymmetric limit frequency (f_G)	24 MHz	–	–
Symmetric limit frequency (f_G)	–	3 MHz	5.3 MHz
Longitudinal / core (R)	–	1.5 Ω	1.8 Ω
Case capacitance of core/core (C)	0.2 nF	5 nF	1.3 nF
Case capacitance of core/conduit thread (C)	0.4 nF	6 pF	6 pF
Temperature range	–40 ... +80 °C	–40 ... +80 °C	
Tested category in accordance with E DIN EN 61644-1:1999-07	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	
Wire range			
Installation	See module carrier	See module carrier	
Housing material			
Dimensions			

wietam

– Two-part structure
  Base component as modular terminal for location of the protection modules
  Selectable overvoltage protection modules
– Compact, space-saving design
  Device width 12 mm (2/3 overall height)
  overall height 58 mm
– Staggered arrester function can be co-ordinated without additional cable lengths
– No signal disruption when replacing the modules
– Module carrier with integral shield connection
– Indirect shield earthing possible with additional plug-in gas diverter
– Safe earthing via mounting foot with snap-on fixing
– Coordination symbol (CS) for the protection module (See pages 4 & 5)





Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
2 pole, universal overvoltage protection device with a	Modul			Modular design		
modular terminal system for the protection of installations	wieTAM BE/C12VDC	84.991.9661.0	1	wieTAM ME12VDC	84.991.9521.0	1
and devices in the IT sector						
	wieTAM BE/C24VDC	84.991.9662.0	1	wieTAM ME24DC	84.991.9523.0	1
Application	For use at the interfaces 0_A-2 for all user groups			For use at the interfaces 0_B-2, 0B-2 and 1-2		
The co-ordinated overvoltage protection devices of the						
wieTAM range can be used as lightning, combination or						
surge arresters. This enables a co-ordinated implementati-	Modules for the protection of asymmetric interfaces with			Modules for the protection of 2 individual cores, asymme-		
on in the EMC-oriented lightning protection zone concept	input RC circuit, for current loops (TTY), optocoupler inputs			tric interfaces as well as RS485, RS422, V11		
in accordance with VDE 0185-103, with a protection level						
that has been adapted to EMC interference immunity						
(mains-borne, spurious energy pulses) for devices involved						
in telecommunications and data technology and for measu-						
rement and control equipment.						
Technical Data	**12 V**	**24 V**		**12 V**	**24 V**	
Nominal voltage (U_N)	12 V DC	24 V DC		12 V DC	24 V DC	
Max. operating voltage. (rated discharge voltage)(U_C)	14.5 V DC; 10.2 V AC	26.8 V DC; 18.9 V AC		14.5 V DC; 10.2 V AC	26.8 V DC; 18.9 V AC	
Nominal current (I_N)	0.1 A			1 A		
Nominal discharge current (8/20) (I_{sn})	20 kA			10 kA		
Nominal discharge current (8/20) per core (I_{sn})	20 kA			10 kA		
Max. discharge current 8/20 (I_{max})	5 kA			20 kA		
Lightning impulse current (10/350) (I_{imp})	5 kA			–		
Lightning impulse current (10/350) per core (I_{imp})	2.5 kA			–		
Protection level at I_{imp} : core/core (U_P)	≤ 20 V	≤ 40 V		≤ 70 V	≤ 100 V	
Protection level at I_{imp} : core/conduit thread (U_P)	≤ 25 V	≤ 45 V		≤ 60 V	≤ 80 V	
Protection level at 1 kV/µs : core/core (U_P)	≤ 19 V	≤ 35 V		≤ 38 V	≤ 70 V	
Protection level at 1 kV/µs : core/conduit thread (U_P)	≤ 19 V	≤ 35 V		≤ 19 V	≤ 35 V	
Co-ordination symbol	XX1			X1		
Operating times : core/core (t_A)	≤ 1 ns			≤ 1 ns		
Operating times : core/conduit thread (t_A)	≤ 1 ns			≤ 1 ns		
Asymmetric limit frequency (f_G)	–			2.9 MHz	5.6 MHz	
Symmetric limit frequency (f_G)	0.85 MHz*)	0.85 MHz*)		–	–	
Longitudinal / core (R)	13.9 Ω	24.2 Ω		1.5 Ω	1.8 Ω	
Case capacitance of core/core (C)	3 nF	2 nF		1 nF	0.7 nF	
Case capacitance of core/conduit thread (C)	3 nF	2 nF		2 nF	1.3 nF	
Temperature range	–40 ... +80 °C			–40 ... +80 °C		
Tested category in accordance with E DIN EN 61644-1:1999-07	A2, B2, C2, C3, D1			A2, B2, C2, C3, D1		
Wire range						
Installation	See module carrier			See module carrier		
Housing material						
Dimensions						
*) measured in 100 Ω system						

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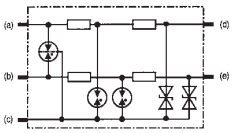
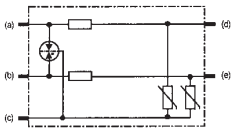
– Two-part structure
  Base component as modular terminal for location of the protection modules
  Selectable overvoltage protection modules
– Compact, space-saving design
  Device width 12 mm (2/3 overall height)
  overall height 58 mm
– Staggered arrester function can be co-ordinated without additional cable lengths
– No signal disruption when replacing the modules
– Module carrier with integral shield connection
– Indirect shield earthing possible with additional plug-in gas diverter
– Safe earthing via mounting foot with snap-on fixing
– Coordination symbol (CS) for the protection module (See pages 4 & 5)





Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
2 pole, universal overvoltage protection device with a	Modular design			Male connector		
modular terminal system for the protection of installations	wieTAM BE12VDC	84.991.9621.0	1	wieTAM BE110VAC	84.991.9627.0	1
and devices in the IT sector						
	wieTAM BE24VDC	84.991.9623.0	1			
Application	For use at the interfaces 0_A-2 for all user groups			For use at the interfaces 0_A-2 for all user groups		
	Modules for the protection of 2 individual cores, asymme-			Modules for the protection of 2 individual cores, asymme-		
	tric interfaces as well as RS485, RS 422, V11			tric interfaces as well as RS485, RS 422, V11		

Technical Data	**12 V**	**24 V**	**110 V**
Nominal voltage (U_N)	12 V DC	24 V DC	110 V AC
Max. operating voltage. (rated discharge voltage)(U_C)	14.5 V DC; 10.2 V AC	26.8 V DC; 18.9 V AC	170 C DC; 130 V AC
Nominal current (I_N)	1 A		1 A
Nominal discharge current (8/20) (I_{sn})	20 kA		20 kA
Nominal discharge current (8/20) per core (I_{sn})	20 kA		20 kA
Lightning impulse current (10/350) (I_{imp})	5 kA		5 kA
Lightning impulse current (10/350) per core (I_{imp})	2.5 kA		2.5 kA
Protection level at I_{imp} : core/core (U_P)	≤ 60 V	≤ 90 V	≤ 600 V
Protection level at I_{imp} : core/conduit thread (U_P)	≤ 30 V	≤ 45 V	≤ 300 V
Protection level at 1 kV/µs : core/core (U_P)	≤ 36 V	≤ 70 V	≤ 520 V
Protection level at 1 kV/µs : core/conduit thread (U_P)	≤ 19 V	≤ 35 V	≤ 260 V
Co-ordination symbol	XX1		XX2
Operating times : core/core (t_A)	≤ 1 ns		≤ 25 ns
Operating times : core/conduit thread (t_A)	≤ 1 ns		≤ 25 ns
Asymmetric limit frequency (f_G)	2.9 MHz	5.4 MHz	24 MHz
Symmetric limit frequency (f_G)	–	–	–
Longitudinal / core (R)	1.9 Ω	2.2 Ω	0.4 Ω
Case capacitance of core/core (C)	1 nF	0.7 nF	0.2 nF
Case capacitance of core/conduit thread (C)	2 nF	1.3 nF	0.4 nF
Temperature range	–40 ... +80 °C		–40 ... +80 °C
Tested category in accordance with E DIN EN 61644-1:1999-07	A2, B2, C2, C3, D1		A2, B2, C2, C3, D1
Wire range			
Installation	See module carrier		See module carrier
Housing material			
Dimensions			

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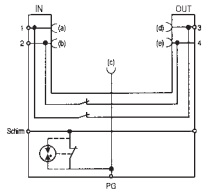
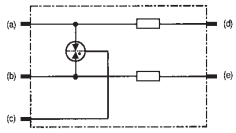
– Two-part structure
  Base component as modular terminal for location of the protection modules
  Selectable overvoltage protection modules
– Compact, space-saving design
  Device width 12 mm (2/3 overall height)
  overall height 58 mm
– Staggered arrester function can be co-ordinated without additional cable lengths
– No signal disruption when replacing the modules
– Module carrier with integral shield connection
– Indirect shield earthing possible with additional plug-in gas diverter
– Safe earthing via mounting foot with snap-on fixing
– Coordination symbol (CS) for the protection module (See pages 4 & 5)





Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
2 pole, universal overvoltage protection device with a	Module carrier			Modular design		
modular terminal system for the protection of installations	wieTAM BCT	84.991.9506.0	1	wieTAM B110VAC	84.991.9510.0	1
and devices in the IT sector						
Application	Module carrier for locating the yellow wieTAM range			For use at the interfaces 0_A-1 for all user groups		
The co-ordinated overvoltage protection devices of the wieTAM						
range can be used as lightning, combination or surge arresters.						
This enables a co-ordinated implementation in the EMC-						
oriented lightning protection zone concept in accordance						
with VDE 0185-103, with a protection level that has been						
adapted to EMC interference immunity (mains-borne,						
spurious energy pulses) for devices involved in						
telecommunications and data technology and for						
measuring and control equipment.						
Technical Data				110 V AVC (U_N)		
Nominal voltage (U_N)				130 V AC; 170 DC (U_C)		
Max. operating voltage. (rated discharge voltage) (U_C)				1 A (I_N)		
Nominal current (I_N)				20 kA (I_{sn})		
Nominal discharge current (8/20) (I_{sn})				20 kA (I_{sn})		
Nominal discharge current (8/20) per core (I_{sn})				5 kA (I_{imp})		
Lightning impulse current (10/350) (I_{imp})				2.5 kA (I_{imp})		
Lightning impulse current (10/350) per core (I_{imp})				–		
Protection level at I_{imp}: core/core (U_p)				–		
Protection level at I_{imp}: core/conduit thread (U_p)				≤ 700 V (U_p)		
Protection level at 1 kV/µs: core/core (U_p)				≤ 600 V (U_p)		
Protection level at 1 kV/µs: core/conduit thread (U_p)				XX X		
Co-ordination symbol				≤ 100 ns (t_A)		
Operating times: core/core (t_A)				≤ 100 ns (t_A)		
Operating times: core/conduit thread (t_A)				130 MHz (f_G)		
Asymmetric limit frequency (f_G)				140 MHz (f_G)		
Symmetric limit frequency (f_G)				0.4 Ω		
Longitudinal / core (R)				6 pF (C)		
Case capacitance of core / core (C)				8 pF (C)		
Case capacitance of core / conduit thread (C)				–40 ... +80° C		
Temperature range				A2, B2, C2, C3, D1		
Tested category in accordance with E DIN EN 61644-1:1999-07						
Wire range	Max. 2.5 mm² finely stranded for signal cores					
	Max. 4 mm² finely stranded for shield connection					
Installation	TS 35 in accordance with EN 60715			See module carrier		
Housing material	Polyamide PA 66/6, yellow					
Dimensions in mm	Width 12 mm (2/3 modules), height 58 mm					

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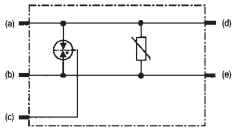
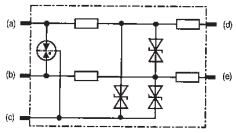
- Two-part structure
  Base component as modular terminal for location of the protection modules
  Selectable overvoltage protection modules
- Compact, space-saving design
  Device width 12 mm (2/3 overall height)
  overall height 58 mm
- Staggered arrester function can be co-ordinated without additional cable lengths
- No signal disruption when replacing the modules
- Module carrier with integral shield connection
- Indirect shield earthing possible with additional plug-in gas diverter
- Safe earthing via mounting foot with snap-on fixing
- Coordination symbol (CS) for the protection module (See pages 4 & 5)





Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
2 pole, universal overvoltage protection device with a	Module			Module design		
modular terminal system for the protection of installations	wieTAM MD110VAC	84.991.9547.0	1	wieTAM ME/C12VDC	84.991.9561.0	1
and devices in the IT sector						
	wieTAM MD250VDC	84.991.9549.0	1	wieTAM ME/C24DC	84.991.9562.0	1
Application	For use at the interfaces 0_B-2, 0_B-2 and 1-2			For use at the interfaces 0_B-2, 0_B-2 and 1-2		
The co-ordinated overvoltage protection devices of the						
wieTAM range can be used as lightning, combination or surge arre-	Modules for the protection of asymmetric interfaces with			Modules for the protection of asymmetric interfaces with		
sters. This enables a co-ordinated implementation in the EMC-	electrical isolation, telecommunication			input RC circuit, for current loops (TTY), optocoupler inputs		
oriented lightning protection zone concept in accordance with VDE 0185-						
103, with a protection level that has been adapted to EMC interference						
immunity (mains-borne, spurious energy pulses) for devices involved in						
telecommunications and data technology and for measuring and control						
equipment.						

Technical Data	**110 V**	**250 V**	**12 V**	**24 V**
Nominal voltage (U_N)	110 V AC	250 V DC	12 V DC	24 V DC
Max. operating voltage. (rated discharge voltage)(U_C)	170 V DC; 130 V AC	280 V DC; 190 V AC	14.5 V DC; 10.2 V AC	26.8 V DC; 18.9 V AC
Nominal current (I_N)	1 A		0.1 A	
Nominal discharge current (8/20) (I_{sn})	20 kA		10 kA	
Nominal discharge current (8/20) per core (I_{sn})	10 kA		10 kA	
Max. discharge current (8/20) (I_{max})	20 kA		20 kA	
Lightning impulse current (10/350) (I_{imp})	–		–	
Lightning impulse current (10/350) per core (I_{imp})	–		–	
Protection level at I_{imp} : core/core (U_P)	≤ 360 V	≤ 630 V	≤ 40 V	≤ 65 V
Protection level at I_{imp} : core/conduit thread (U_P)	–	–	≤ 50 V	≤ 75 V
Protection level at 1 kV/µs : core/core (U_P)	≤ 260 V	≤ 490 V	≤ 19 V	≤ 36 V
Protection level at 1 kV/µs : core/conduit thread (U_P)	≤ 600 V	≤ 700 V	≤ 19 V	≤ 36 V
Co-ordination symbol	X2		X1	
Operating times : core/core (t_A)	≤ 25 ns		≤ 1 ns	
Operating times : core/conduit thread (t_A)	≤ 100 ns		≤ 1 ns	
Asymmetric limit frequency (f_G)	–	–	–	–
Symmetric limit frequency (f_G)	12 MHz	15 MHz	0.85 MHz*)	
Longitudinal / core (R)	–	–	13.5 Ω	23.8 Ω
Case capacitance of core/core (C)	0.7 nF	0.4 pF	3 nF	2 nF
Case capacitance of core/conduit thread (C)	6 nF	10 pF	3 nF	2 nF
Temperature range	–40 ... +80 °C		–40 ... +80 °C	
Tested category in accordance with E DIN EN 61644-1:1999-07	A2, B2, C2, C3, D1		A2, B2, C2, C3, D1	
Wire range				
Installation	See module carrier		See module carrier	
Housing material				
Dimensions				

*) measured in 100 Ω system

Surge arrester, accessories

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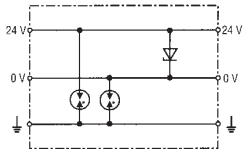

Description	Type	Part No.	Box Qty	Type	Part No.	Box Qty
Overvoltage protection for PLC's	Module carrier					
	wieTAM BCTTVTAD24V	84.991.8402.0	1			
Test/isolating plug for wieTAM, plug-in modules, yellow				wieTAM PRTR-Stecker	84.991.9504.0	1
Application						
	Overvoltage protection with rapid response for			After implementation, the cable run of the connected		
	programmable controllers with direct voltage in a purely			cores is interrupted and led to test sockets with Ø 1 mm		
	electromagnetic environment			located at the front of the test/isolating plug. It is therefore		
				possible to carry out measurements in the installation with-		
	For use in the lightning protection zone concept at the			out disconnecting the cores from the device.		
	interfaces 2-3					
				2 plug-in measuring leads with a length of 1 m each are		
				included with supply (plug 1 mm, socket 4 mm)		
Technical Data						
Nominal voltage (U_N)	24 V DC					
Max. operating voltage. (rated discharge voltage)(U_C)	35 V DC					
Nominal current (I_N)	10 A					
Nominal discharge current (8/20) (I_{sn})	1 kA					
Protection level at I_{sn} : core/core (U_P)	≤ 70 V					
Protection level at I_{sn} : core/conduit thread (U_P)	≤ 700 V					
Protection level at 1 kV/µs : core/core (U_P)	≤ 50 V					
Protection level at 1 kV/µs : core/conduit thread (U_P)	≤ 700 V					
Operating times : core/core (t_A)	≤ 1 ns					
Operating times : core/conduit thread (t_A)	≤ 100 ns					
Limit frequency (f_G)	1 MHz					
For data transmission speed up to (V_S)	1 Mbit/s					
Case capacitance of	7 nF					
Temperature range	-40 ... + 80 °C					
Tested category in accordance with E DIN EN 61644-1:1999-07	A2, B2, C2, C3					
Wire range	up to 4 mm^2 finely stranded					
Type of protection	IP 20					
Installation	TS 35 in accordance with EN 60715					
Housing material	Thermoplastic , yellow					
Dimensions	1.5 TE; Overall height 58 mm					
Accessories						
Gas diverter 90 V	Gasableiter	84.991.9502.0	1			
for indirect shield earthing 5 kA 10/350 µs						
Set of earthing terminals for direct earthing of both cores	Erdungsklemmsatz	84.991.9505.0	1			
EMC spring -clamp terminal	EMV Federklemme	84.991.9508.0	10			

Notice

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