

Surge protection connector - PT 1X2-12DC/FM-ST - 2920065

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Surge protection plug with integrated diagnostic and status indicator on the module and remote indication contact for a 2-wire floating signal circuit.

The figure shows version PT 1X2-24DC/FM-ST

Product Features

- ✓ Plugs can be checked with CHECKMASTER
- ✓ Maximum ease of maintenance thanks to the two-piece design
- ✓ Base element remains an integral part of the installation
- ✓ Consistent plug-in signal circuit protection
- ✓ With floating remote indication contact
- ✓ Permanent and independent monitoring by a diagnostics unit
- ✓ Optical status indication for the individual arresters
- ✓ Impedance-neutral disconnection of plug for test and maintenance purposes



Key commercial data

Packing unit	1 PCE
GTIN	 4 046356 153980
Custom tariff number	85369010
Country of origin	GERMANY

Technical data

General

Housing material	PA 6.6
Inflammability class according to UL 94	V0

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Technical data

General

Color	black
Standards for air and creepage distances	VDE 0110-1
Standards for air and creepage distances	IEC 60664-1
Ambient temperature (operation)	-40 °C ... 85 °C
Mounting type	On base element
Design	DIN rail module, two-section, divisible
Degree of protection	IP20
Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground
Width	17.7 mm
Height	45 mm
Depth	52 mm
Pitch unit	1 Div.

Protective circuit

IEC category	C1
IEC category	C2
IEC category	C3
IEC category	D1
VDE requirement class	C1
VDE requirement class	C2
VDE requirement class	C3
VDE requirement class	D1
Nominal voltage U_N	12 V DC
Maximum continuous operating voltage U_C	13 V DC
Maximum continuous operating voltage U_C	9 V AC
Maximum continuous voltage U_C (wire-wire)	13 V DC
Maximum continuous voltage U_C (wire-wire)	9 V AC
Nominal current I_N	450 mA (45°C)
Operating effective current I_C at U_C	$\leq 5 \mu A$
Residual current I_{PE}	$\leq 2 \mu A$ (Directly grounded)
Residual current I_{PE}	$\leq 1 \mu A$ (BE: 1x2+F)
Nominal discharge surge current I_n (8/20) μs (Core-Core)	10 kA
Nominal discharge surge current I_n (8/20) μs (Core-Earth)	10 kA
Total surge current (8/20) μs	20 kA
Max. discharge surge current I_{max} (8/20) μs maximum (Core-Core)	10 kA
Max. discharge surge current I_{max} (8/20) μs maximum (Core-Earth)	10 kA
Nominal pulse current I_{an} (10/1000) μs (Core-Core)	70 A (25°C / 1x)

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Protective circuit

Nominal pulse current I_{an} (10/1000) μ s (Core-Core)	50 A (25°C)
Lightning test current (10/350) μ s, peak value I_{imp}	2.5 kA
Output voltage limitation at 1 kV/ μ s (Core-Core) spike	≤ 25 V
Output voltage limitation at 1 kV/ μ s (Core-Earth) spike	≤ 450 V
Output voltage limitation at 1 kV/ μ s (Core-Earth) spike	≤ 1 kV (BE: 1x2+F)
Output voltage limitation at 1 kV/ μ s (Core-Core) static	≤ 19 V
Residual voltage at I_{n1} (conductor-conductor)	≤ 18 V
Residual voltage with I_{an} (10/1000) μ s (conductor-conductor)	≤ 23 V
Voltage protection level U_p (Core-Core)	≤ 19 V (C1 (500 V/250 A))
Voltage protection level U_p (Core-Core)	≤ 19 V (C3 (25 A))
Voltage protection level U_p (Core-Earth)	≤ 450 V (C2 (10 kV/5 kA))
Response time t_A (Core-Core)	≤ 1 ns
Response time t_A (Core-Earth)	≤ 100 ns
Input attenuation a_E , sym.	typ. 0.5 dB (≤ 600 kHz / 50 Ω)
Input attenuation a_E , sym.	typ. 0.2 dB (≤ 200 kHz/150 Ω)
Cut-off frequency f_g (3 dB), sym. in 50 Ohm system	typ. 3 MHz
Cut-off frequency f_g (3 dB), sym. in 150 Ohm system	typ. 1 MHz
Capacity (Core-Core)	typ. 3 nF
Capacity (Core-Earth)	typ. 4 pF
Resistance in series	2.2 $\Omega \pm 10\%$ (7-8/11-12)
Max. required back-up fuse	500 mA (e.g. T (IEC 127-2/III))
Surge carrying capacity in acc. with IEC 61643-21 (Core-Core)	C2 (10 kV/5 kA)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Core)	C3 (25 A)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	C2 (10 kV/5 kA)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	D1 (2.5 kA)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	C3 (100 A)
Alternating current carrying capacity in acc. with IEC 61643-21 (Core-Earth)	5 A - 1 s

Connection data

Connection method	Screw connection (in connection with the base element)
Connection type IN	PLUGTRAB plug-in system
Connection type OUT	PLUGTRAB plug-in system
Screw thread	M3
Tightening torque	0.8 Nm
Stripping length	8 mm
Conductor cross section stranded min.	0.2 mm ²
Conductor cross section stranded max.	2.5 mm ²

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Connection data

Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	4 mm ²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	12

Connection, protective circuit

Standards/regulations	IEC 61643-21
Standards/regulations	DIN EN 61643-21

Classifications

ETIM

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	EC000943

UNSPSC

UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620
UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610

eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801
eCl@ss 5.0	27130801
eCl@ss 5.1	27130801
eCl@ss 6.0	27130807
eCl@ss 7.0	27130807

Approvals

Approvals

Approvals

UL Listed / GOST

Surge protection connector - PT 1X2-12DC/FM-ST - 2920065

Approvals

Ex Approvals

Approvals submitted

Approval details

UL Listed 

GOST 

Accessories

Accessories

Marking

Marker pen - X-PEN 0,35 - 0811228



Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm

Zack Marker strip, flat - ZBF 5:UNBEDRUCKT - 0808642



Zack Marker strip, flat, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.1 x 5.2 mm

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Accessories

Zack Marker strip, flat - ZBF 5/WH-100:UNBEDRUCKT - 0808668



Zack Marker strip, flat, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

Zack Marker strip, flat - ZBF 5,LGS:FORTL.ZAHLEN - 0808671



Zack Marker strip, flat, Strip, white, labeled, Printed horizontally: Consecutive numbers 1 - 10, 11 - 20, etc. up to 491 - 500, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

Zack Marker strip, flat - ZBF 5,LGS:GERADE ZAHLEN - 0810821



Zack Marker strip, flat, Strip, white, labeled, Printed horizontally: Consecutive numbers 2 - 20, 22 - 40, etc. up to 82 - 100, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

Zack Marker strip, flat - ZBF 5,LGS:UNGERADE ZAHLEN - 0810863



Zack Marker strip, flat, Strip, white, labeled, Printed horizontally: Odd numbers 1 - 19, 21 - 39, etc. up to 81 - 99, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

Zack Marker strip, flat - ZBF 5,QR:FORTL.ZAHLEN - 0808697



Zack Marker strip, flat, Strip, white, labeled, Printed vertically: Consecutive numbers 1 - 10, 11 - 20, etc. up to 91 - 100, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

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Accessories

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



Zack marker strip, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 18 mm, Lettering field: 18 x 5 mm

Required add-on products

Surge protection base element - PT 1X2+F-BE/FM - 2920023



Base element to accept a protective plug with diagnostic and status indicator for one floating double wire, integrated spark gap to provide a high-resistance connection between the ground of the protective circuit of the plug and ground potential.

Surge protection base element - PT 1X2-BE/FM - 2920010



Base element to accept a protective plug with diagnostic and status indicator for one floating double wire

Additional products

Shield connection - SSA 3-6 - 2839295



shield fast connections for conductor diameter 3 - 6 mm. Potential connection cable: 200 mm, black

Shield connection - SSA 5-10 - 2839512



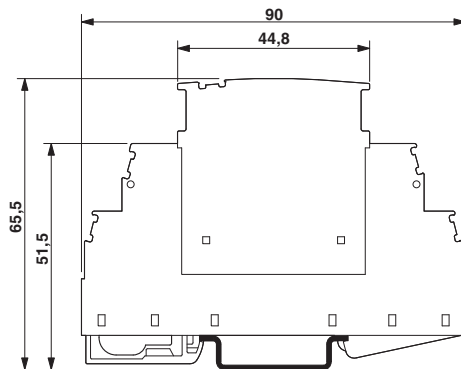
Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black

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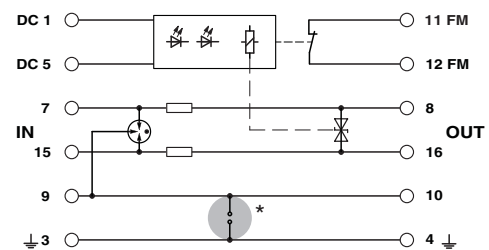
Accessories

Drawings

Dimensioned drawing



Circuit diagram



The figure shows the complete module consisting of a base element and connector