Surge protection plug - PT 2X1-24DC/FM-ST - 2920120

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Surge protection plug with integrated diagnostic and status indicator on the module and remote indication contact for two signal wires with common reference potential. Nominal voltage: 24 V DC

Your advantages

- 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
- With floating remote indication contact
- Consistent plug-in signal circuit protection
- Permanent and independent monitoring by a diagnostics unit
- Impedance-neutral disconnection of plug for test and maintenance purposes
- Optical status indication for the individual arresters

Key Commercial Data

Packing unit	1 pc
GTIN	4 046356 154079
GTIN	4046356154079
Weight per Piece (excluding packing)	30.630 g
Custom tariff number	85363010
Country of origin	Germany

Technical data

Note

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Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area

Dimensions

Height	44.8 mm
Width	17.5 mm
Depth	51.7 mm
Horizontal pitch	1 Div.
Complete module height	90 mm
Complete module width	17.7 mm
Complete module depth	65.5 mm

Ambient conditions

Ambient temperature (operation)	-40 °C ... 85 °C
Degree of protection	IP20

General

Housing material	PA 6.6
Flammability rating according to UL 94	V-0
Color	black
Standards for cearances and creepage distances	VDE 0110-1
	IEC 60664-1
Mounting type	on base element
Type	Male
Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground

Protective circuit

IEC test classification	C1
	C2
	C3
	D1
VDE requirement class	C1
	C2
	C3
	D1
Nominal voltage U_N	24 V DC
Maximum continuous voltage U_C	28 V DC
	20 V AC
Rated current	300 mA (45 °C)

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Protective circuit

Operating effective current I_C at U_C	≤ 5 µA
Standby power consumption P_C	≤ 1.73 VA
Residual current I_{PE}	≤ 1 µA (with PT 2X1+F-BE)
	≤ 10 µA (Directly grounded)
Nominal discharge current I_n (8/20) µs (line-earth)	10 kA
Pulse discharge current I_{imp} (10/350) µs	2.5 kA (per path)
Total discharge current I_{total} (8/20) µs	20 kA
Max. discharge current I_{max} (8/20) µs maximum (line-earth)	10 kA
Nominal pulse current Ian (10/1000) µs (line-earth)	33 A (25 °C)
Output voltage limitation at 1 kV/µs (line-earth) spike	≤ 50 V
	≤ 600 V (with PT 2X1+F-BE)
Output voltage limitation at 1 kV/µs (line-signalground) spike	≤ 50 V
Output voltage limitation at 1 kV/µs (line-earth) static	≤ 40 V
Output voltage limitation at 1 kV/µs (line-signalground) static	≤ 40 V
Residual voltage at I_n (line-earth)	≤ 40 V
Residual voltage with Ian (10/1000) µs (line-earth)	≤ 50 V
Voltage protection level U_p (line-earth)	≤ 40 V (C1 - 500 V / 250 A)
	≤ 40 V (C3 - 25 A)
Voltage protection level U_p (line-signalground)	≤ 40 V (C1 - 500 V / 250 A)
	≤ 40 V (C3 - 25 A)
Response time t_A (line-earth)	≤ 1 ns
Input attenuation aE, asym.	typ. 0.5 dB (≤ 1 MHz / 50 Ω)
	typ. 0.2 dB (≤ 400 kHz / 150 Ω)
Cut-off frequency fg (3 dB), asym. (GND) in 50 Ohm system	typ. 6 MHz
Cut-off frequency fg (3 dB), asym. (GND) in 150 Ohm system	typ. 2.5 MHz
Resistance in series	4.7 Ω (7-8/11-12)
Surge protection fault message	Optical, remote indicator contact
Max. required back-up fuse	315 mA (T)
Impulse durability (line-earth)	C2 - 10 kV / 5 kA
	D1 - 2.5 kA
	C3 - 25 A
Alternating current carrying capacity (line-earth)	5 A - 1 s

Connection data

Connection method	Screw connection (in connection with the base element)
Screw thread	M3
Tightening torque	0.8 Nm

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Connection data

Stripping length	8 mm
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section solid	0.2 mm² ... 4 mm²
Conductor cross section AWG	24 ... 12

Remote indication contact

Switching function	N/C contact
Maximum operating voltage $U_{max.}$ AC	250 V AC
Max. operating current I_{max}	0.2 A (250 V AC)
	0.2 A (220 V DC)
	1 A (60 V AC)
	1 A (60 V DC)

Standards and Regulations

Standards/regulations	IEC 61643-21
	DIN EN 61643-21
Standards/specifications	IEC 61643-21 2002

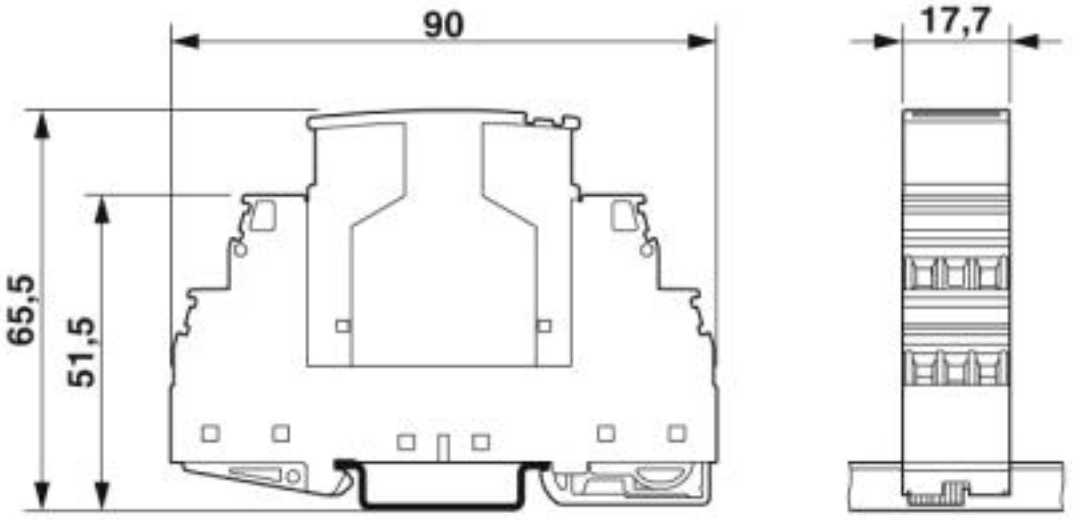
Environmental Product Compliance

	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Drawings

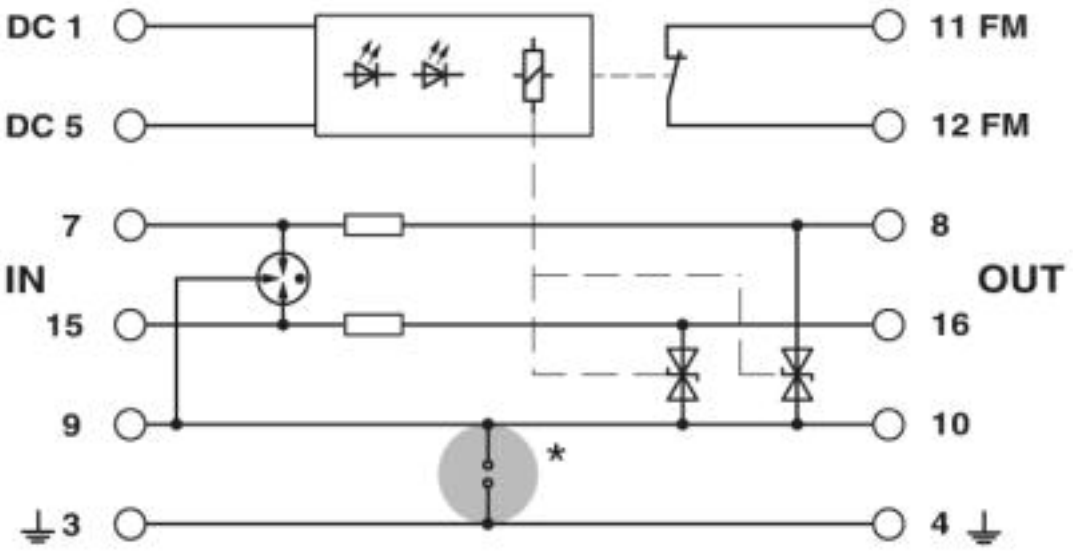
Surge protection plug - PT 2X1-24DC/FM-ST - 2920120

Dimensional drawing



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

Circuit diagram



Classifications

eCl@ss

eCl@ss 4.0	27130800
eCl@ss 4.1	27130800
eCl@ss 5.0	27130800

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Classifications

eCl@ss

eCl@ss 5.1	27130800
eCl@ss 6.0	27130800
eCl@ss 7.0	27130807
eCl@ss 8.0	27130807
eCl@ss 9.0	27130807

ETIM

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	EC000943
ETIM 6.0	EC000943
ETIM 7.0	EC000943

UNSPSC

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

Approvals

Approvals

Approvals

UL Listed / EAC / EAC

Ex Approvals

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 138168

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Approvals

EAC	EAC	EAC-Zulassung

EAC	EAC	RU C-DE.A*30.B01561

Accessories

Accessories

Device marking

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128

Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into tall marker groove, for terminal block width: 18 mm, lettering field size: 18 x 5 mm

Labeled terminal marker

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 size: 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 size: 5.15 x 5.15 mm

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Accessories

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 size: 5.15 x 5.15 mm

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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 size: 5.15 x 5.15 mm

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Marker pen

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

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Terminal marking

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

Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.1 x 5.2 mm

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

Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm

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Accessories

Necessary add-on products

Surge protection base element - PT 2X1+F-BE/FM - 2920049

Base element to accept a protective plug with diagnostic and status indicator for two signal wires with common reference potential, 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 2X1-BE/FM - 2920036

Base element to accept a protective plug with diagnostic and status indicator for two signal wires with common reference potential.

Additional products

Shield connection - SSA 3-6 - 2839295

Shield fast connection for 3 ... 6 mm cable diameter. Potential connecting cable: 200 mm, 1 mm², color: black

Shield connection - SSA 5-10 - 2839512

Shield fast connection for 5 ... 10 mm cable diameter. Potential connecting cable: 200 mm, 1 mm², color: black

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