

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

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://download.phoenixcontact.com>)



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

### Why buy this product

- ✓ 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	10 pc
GTIN	 4 046356 154079
Weight per Piece (excluding packing)	27.18 g
Custom tariff number	85369010
Country of origin	Germany

### Technical data

#### Dimensions

Height	45 mm
Width	17.7 mm
Depth	52 mm
Horizontal pitch	1 Div.
Complete module height	90 mm
Complete module width	17.7 mm

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

## Technical data

### Dimensions

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
Inflammability class according to UL 94	V0
Color	black
Standards for air and creepage distances	VDE 0110-1
	IEC 60664-1
Mounting type	On base element
Type	DIN rail module, two-section, divisible
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 operating voltage $U_C$	28 V DC
	20 V AC
Maximum continuous voltage $U_C$ (wire-ground)	28 V DC
	20 V AC
Nominal current $I_N$	300 mA (45°C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu A$
Residual current $I_{PE}$	$\leq 1 \mu A$ (BE: 2x1+F)
	$\leq 10 \mu A$ (Directly grounded)
Nominal discharge current $I_n$ (8/20) $\mu s$ (Core-Earth)	10 kA
Total surge current (8/20) $\mu s$	20 kA
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (Core-Earth)	10 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (Core-Earth)	33 A (25 °C)
Impulse discharge current (10/350) $\mu s$ , peak value $I_{imp}$	2.5 kA (per path)
Output voltage limitation at 1 kV/ $\mu s$ (Core-Earth) spike	$\leq 50 V$
	$\leq 600 V$ (BE: 2x1+F)

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

### Technical data

#### Protective circuit

Output voltage limitation at 1 kV/μs (Core-GND) spike	≤ 50 V
Output voltage limitation at 1 kV/μs (Core-Earth) static	≤ 40 V
Output voltage limitation at 1 kV/μs (Core-GND) static	≤ 40 V
Residual voltage at I <sub>n</sub> , (conductor-ground)	≤ 40 V
Residual voltage with I <sub>an</sub> (10/1000)μs (conductor-ground)	≤ 50 V
Voltage protection level U <sub>p</sub> (Core-Earth)	≤ 40 V (C1 (500 V/250 A))
	≤ 40 V (C3 (25 A))
Voltage protection level U <sub>p</sub> (Core-GND)	≤ 40 V (C1 (500 V/250 A))
	≤ 40 V (C3 (25 A))
Response time t <sub>A</sub> (Core-Earth)	≤ 1 ns
Input attenuation a <sub>E</sub> , asym.	typ. 0.5 dB (≤ 1 MHz / 50 Ω)
	typ. 0.2 dB (≤ 400 kHz / 150 Ω)
Cut-off frequency f <sub>g</sub> (3 dB), asym. (GND) in 50 Ohm system	typ. 6 MHz
Cut-off frequency f <sub>g</sub> (3 dB), asym. (GND) in 150 Ohm system	typ. 2.5 MHz
Resistance in series	4.7 Ω (7-8/11-12)
Max. required back-up fuse	315 mA (e.g. T ( IEC 127-2/III))
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	C2 (10 kV/5 kA)
	D1 (2.5 kA)
	C3 (25 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 <sup>2</sup>
Conductor cross section stranded max.	2.5 mm <sup>2</sup>
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	4 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	12

#### Standards and Regulations

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

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

## Classifications

### 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
eCl@ss 8.0	27130807

### ETIM

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	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 / GOST

---

Ex Approvals

---

Approvals submitted

---

### Approval details

UL Listed
-----------

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

### Approvals



### Accessories

#### Accessories

#### Device marking

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

#### 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: 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

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

### Accessories

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

---

### 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

---

### Terminal marking

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

---

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

---

### 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 plug - PT 2X1-24DC/FM-ST - 2920120

## Accessories

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

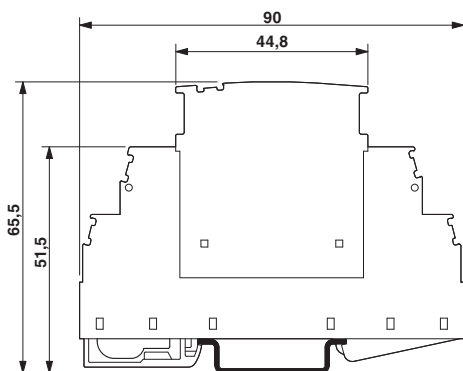
Shield connection - SSA 5-10 - 2839512



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

## Drawings

Dimensioned drawing



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

Circuit diagram

