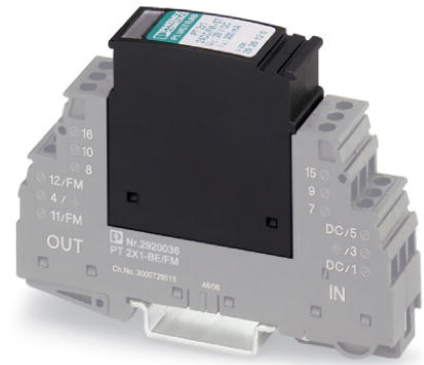


# PT 2X1-24DC/FM-ST


Order No.: 2920120



<http://eshop.phoenixcontact.de/phoenix/treeViewClick.do?UID=2920120>

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



Commercial data	
GTIN (EAN)	4  046356 154079
sales group	J213
Pack	10 pcs.
Customs tariff	85369010
Catalog page information	Page 91 (TT-2011)

### Product notes

WEEE/RoHS-compliant since:  
01/01/2007



<http://www.download.phoenixcontact.com>  
Please note that the data given here has been taken from the online catalog. For comprehensive information and data, please refer to the user documentation. The General Terms and Conditions of Use apply to Internet downloads.

## Technical data

General	
Housing material	PA 6.6
Inflammability class acc. to UL 94	V0
Color	black

Standards for air and creepage distances	VDE 0110-1
	IEC 60664-1: 1992-10
Total surge current (8/20) $\mu$ s	20 kA
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	17.70 mm
Height	52.00 mm
Length	45.00 mm
Pitch unit	1 Div.

**Protective circuit**

IEC category	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
Ground conductor current $I_{PE}$	$\leq 1 \mu$ A (BE: 2x1+F)
	$\leq 10 \mu$ A (Directly grounded)
Nominal discharge surge current $I_n$ (8/20) $\mu$ s (Core-Earth)	10 kA
Total surge current (8/20) $\mu$ s	20 kA
Max. discharge surge 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)
Lightning test 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)
Output voltage limitation at 1 kV/ $\mu$ s (Core-GND) spike	$\leq 50$ V
Output voltage limitation at 1 kV/ $\mu$ s (Core-Earth) static	$\leq 40$ V
Output voltage limitation at 1 kV/ $\mu$ s (Core-GND) static	$\leq 40$ V
Residual voltage at $I_n$ , (conductor-ground)	$\leq 40$ V
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (conductor-ground)	$\leq 50$ V
Protection level $U_p$ (Core-Earth)	$\leq 40$ V (C1 (500 V/250 A))
	$\leq 40$ V (C3 (25 A))
Protection level $U_p$ (Core-GND)	$\leq 40$ V (C1 (500 V/250 A))
	$\leq 40$ V (C3 (25 A))
Response time $t_A$ (Core-Earth)	$\leq 1$ ns
Input attenuation $a_E$ , asym.	Typ. 0.5 dB ( $\leq 1$ MHz / 50 $\Omega$ )
	Typ. 0.2 dB ( $\leq 400$ kHz / 150 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), asym. (GND) in 50 Ohm system	Typ. 6 MHz
Cut-off frequency $f_g$ (3 dB), asym. (GND) in 150 Ohm system	Typ. 2.5 MHz
Resistance in series	4.7 $\Omega$ (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

#### Connection, protective circuit

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

#### Certificates / Approvals



Certification

GOST, UL Listed

#### Accessories

Item	Designation	Description
<b>Marking</b>		
0811228	X-PEN 0,35	Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm
0814717	ZBF 15:SO/CMS	Zack strip, flat, 10-section, divisible, special printing, marking according to customer requirements
0808671	ZBF 5,LGS:FORTL.ZAHLEN	Zack marker strip, flat, printed horizontally: 10-section, with the numbers 1 - 10, 11 - 20, and so on up to 491 - 500, color: white
0810821	ZBF 5,LGS:GERADE ZAHLEN	Zack marker strip, flat, printed horizontally: 10-section, with even numbers, printed with the numbers: 2-20, 22-40, etc. up to 82-100
0810863	ZBF 5,LGS:UNGERADE ZAHLEN	Zack strip, flat, printed horizontally: 10-section, with odd numbers, printed with the numbers: 1-19, 21-39 etc. up to 81-99
0808697	ZBF 5,QR:FORTL.ZAHLEN	Zack marker strip, flat, printed vertically: 10-section, with the numbers 1 - 10, 11 - 20, and so on up to 91 - 100, color: white
0808668	ZBF 5/WH-100:UNBEDRUCKT	Zack strip, flat, unprinted: 10-section, for individual labeling with M-PEN or ZBF-T, large batch, sufficient for labeling 1000 terminal blocks, color: white

0808642	ZBF 5:UNBEDRUCKT	Zack strip, flat, unprinted: 10-section, for individual labeling with M-PEN or ZBF-T, sufficient for 100 terminal blocks, color: white
0800763	ZBN 18:SO/CMS	Marker labels, 5-section, special printing, labeled according to customer requirements (Please specify the required marking with order), for terminal width: 17.5 mm, color: White
2809128	ZBN 18:UNBEDRUCKT	Unprinted marker labels, strips with 5 labels for individual labeling with M-PEN or CMS system, for terminal block width: 17.5 mm, color: White

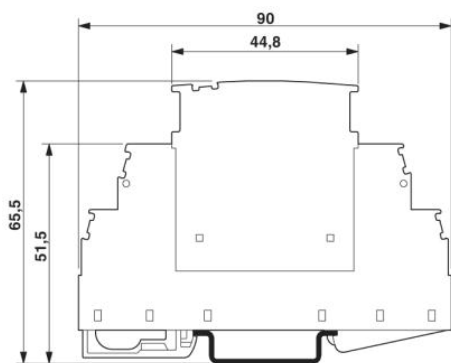
**Additional products**

Item	Designation	Description
<b>Assembly</b>		
2839295	SSA 3-6	shield fast connections for conductor diameter 3 - 6 mm. Potential connection cable: 200 mm, black
2839512	SSA 5-10	Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black

<b>General</b>		
2920049	PT 2X1+F-BE/FM	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.
2920036	PT 2X1-BE/FM	Base element to accept a protective plug with diagnostic and status indicator for two signal wires with common reference potential.

**Diagrams/Drawings**

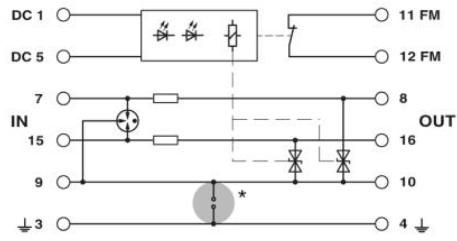
Dimensioned drawing



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

Circuit diagram

---



**Address**

PHOENIX CONTACT Inc., USA  
586 Fulling Mill Road  
Middletown, PA 17057, USA  
Phone (800) 888-7388  
Fax (717) 944-1625  
<http://www.phoenixcon.com>



© 2011 Phoenix Contact  
Technical modifications reserved;