

## Surge protection plug - PT 1X2-24AC/FM-ST - 2920094

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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
- Impedance-neutral disconnection of plug for test and maintenance purposes
- Optical status indication for the individual arresters



### Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	21.0 g
Custom tariff number	85369010
Country of origin	Germany

### Technical data

#### Dimensions

Height	45 mm
Width	17.7 mm
Depth	52 mm

## Surge protection plug - PT 1X2-24AC/FM-ST - 2920094

### Technical data

#### Dimensions

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	V0
Color	black
Standards for clearances 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 AC
Maximum continuous voltage $U_C$	40 V DC 28 V AC
Maximum continuous voltage $U_C$ (wire-wire)	40 V DC 28 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) $\leq 1 \mu A$ (BE: 1x2+F)
Nominal discharge current $I_n$ (8/20) $\mu s$ (Core-Core)	10 kA

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### Technical data

#### Protective circuit

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-Core)	10 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-Core)	23 A (25 °C)
Impulse discharge current (10/350) $\mu$ s, peak value $I_{imp}$	2.5 kA
Output voltage limitation at 1 kV/ $\mu$ s (Core-Core) spike	$\leq 70$ V
Output voltage limitation at 1 kV/ $\mu$ s (Core-Earth) spike	$\leq 450$ V
	$\leq 1$ kV (BE: 1x2+F)
Output voltage limitation at 1 kV/ $\mu$ s (Core-Core) static	$\leq 55$ V
Residual voltage at $I_n$ (conductor-conductor)	$\leq 55$ V
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (conductor-conductor)	$\leq 65$ V
Voltage protection level $U_p$ (core-core)	$\leq 55$ V (C1 - 500 V / 250 A)
	$\leq 55$ V (C3 - 10 A)
Voltage protection level $U_p$ (core-ground)	$\leq 450$ V (C2 - 10 kV / 5 kA)
Response time $t_A$ (Core-Core)	$\leq 1$ ns
Response time $t_A$ (Core-Earth)	$\leq 100$ ns
Input attenuation aE, sym.	typ. 0.5 dB ( $\leq 1.5$ MHz / 50 $\Omega$ )
	typ. 0.2 dB ( $\leq 500$ kHz / 150 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 50 Ohm system	typ. 8 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system	typ. 3 MHz
Capacity (Core-Core)	typ. 1.1 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))
Impulse durability (conductor-conductor)	C2 - 10 kV/5 kA
	C3 - 10 A
Impulse durability (conductor-ground)	C2 - 10 kV/5 kA
	D1 - 2,5 kA
	C3 - 100 A
Alternating current carrying capacity (conductor-ground)	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

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### Technical data

#### Connection data

Tightening torque	0.8 Nm
Stripping length	8 mm
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible 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 min.	24
Conductor cross section AWG max.	12

#### Standards and Regulations

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

### 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
eCl@ss 9.0	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

# Surge protection plug - PT 1X2-24AC/FM-ST - 2920094

## Approvals

Approvals

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Approvals

UL Listed / EAC

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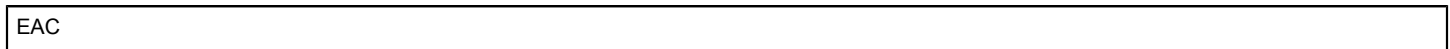
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Approvals submitted

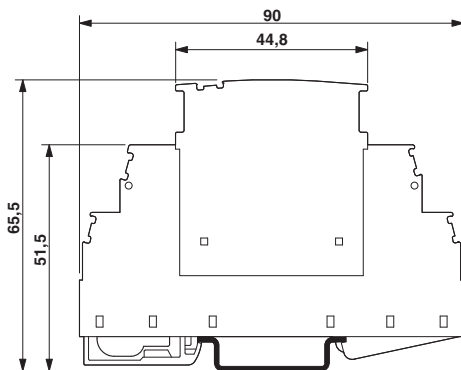
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## Approval details

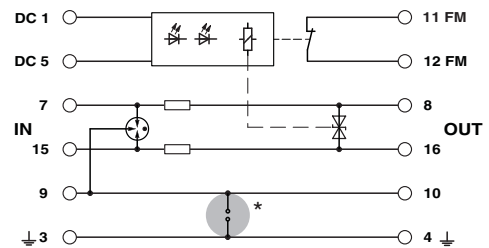


## Drawings

Dimensional drawing



Circuit diagram



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

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