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## Surge protection plug - PT 1X2-24DC/FM-ST - 2920078

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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.

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



### Key Commercial Data

Packing unit	10 STK
GTIN	 4 046356 154000
GTIN	4046356154000

### Technical data

#### Note

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

Height	45 mm
Width	17.7 mm
Depth	52 mm
Horizontal pitch	1 Div.

# Surge protection plug - PT 1X2-24DC/FM-ST - 2920078

## Technical data

### Dimensions

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 clearances 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	450 mA (45°C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu A$
Standby power consumption $P_C$	$\leq 1.78 VA$
Residual current $I_{PE}$	$\leq 2 \mu A$ (Directly grounded)
	$\leq 1 \mu A$ (with PT 1X2+F-BE)
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-line)	10 kA
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-earth)	10 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu s$	2.5 kA
Total discharge current $I_{total}$ (8/20) $\mu s$	20 kA
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (line-line)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (line-earth)	10 kA

# Surge protection plug - PT 1X2-24DC/FM-ST - 2920078

## Technical data

### Protective circuit

Nominal pulse current $I_{an}$ (10/1000) $\mu$ s (line-line)	33 A (25 °C)
Output voltage limitation at 1 kV/ $\mu$ s (line-line) spike	$\leq$ 45 V
Output voltage limitation at 1 kV/ $\mu$ s (line-earth) spike	$\leq$ 450 V
	$\leq$ 1 kV (with PT 1X2+F-BE)
Output voltage limitation at 1 kV/ $\mu$ s (line-line) static	$\leq$ 40 V
Residual voltage at $I_n$ (line-line)	$\leq$ 40 V
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (line-line)	$\leq$ 50 V
Voltage protection level $U_p$ (line-line)	$\leq$ 40 V (C1 - 500 V / 250 A)
	$\leq$ 40 V (C3 - 25 A)
Voltage protection level $U_p$ (line-earth)	$\leq$ 450 V (C2 - 10 kV / 5 kA)
Response time $t_A$ (line-line)	$\leq$ 1 ns
Response time $t_A$ (line-earth)	$\leq$ 100 ns
Input attenuation aE, sym.	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), sym. in 50 Ohm system	typ. 6 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system	typ. 2.5 MHz
Capacity (line-line)	typ. 1.4 nF
Capacity (line-earth)	typ. 4 pF
Resistance in series	2.2 $\Omega$ $\pm$ 10 % (7-8/11-12)
Surge protection fault message	Optical, remote indicator contact
Max. required back-up fuse	500 mA (T)
Impulse durability (line-line)	C2 - 10 kV/5 kA
	C3 - 25 A
Impulse durability (line-earth)	C2 - 10 kV/5 kA
	D1 - 2.5 kA
	C3 - 100 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
Stripping length	8 mm
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section solid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12

### Standards and Regulations

Standards/specifications	IEC 61643-21 2002
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### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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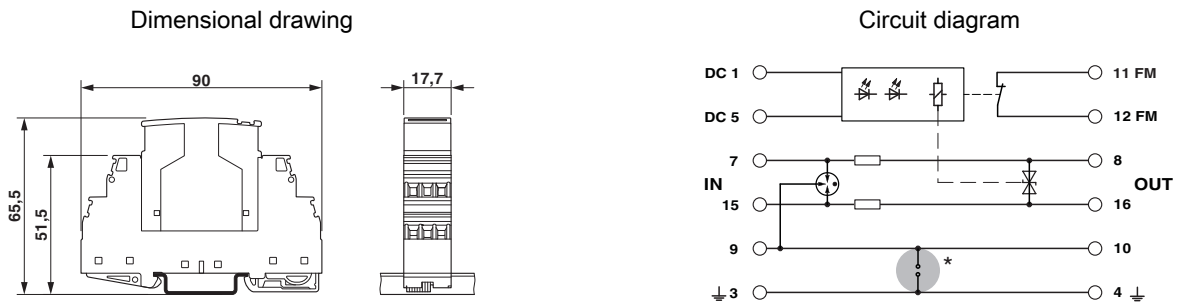
# Surge protection plug - PT 1X2-24DC/FM-ST - 2920078

## Technical data

### Environmental Product Compliance

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

## Drawings



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

## Approvals

### Approvals

Approvals

UL Listed / EAC / EAC

Ex Approvals

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 138168
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EAC		EAC-Zulassung
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EAC		RU C- DE.A*30.B01561
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