

# PT 2-F-ST - Surge protection plug



2859000

<https://www.phoenixcontact.com/us/products/2859000>

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Surge protection plug for the base element, surge voltage coarse protection for two signal lines grounded on one side.

## Your advantages

- Easy testing and documentation with CHECKMASTER 2 with pluggable protective modules
- Maximum ease of maintenance, thanks to the 2-piece design
- Easy selection for all possible demands in MCR applications with a complete product portfolio
- The signal is not influenced during maintenance work, thanks to the impedance-neutral insertion and removal of protective plugs

## Commercial data

Item number	2859000
Packing unit	10 pc
Minimum order quantity	10 pc
Sales key	CL21
Product key	CL2111
Catalog page	Page 139 (C-4-2019)
GTIN	4017918902452
Weight per piece (including packing)	19.79 g
Weight per piece (excluding packing)	16.121 g
Customs tariff number	85363010
Country of origin	DE

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## Technical data

### Product properties

IEC test classification	C1
	C2
	C3
	D1
Type	Male
Product type	Surge protection for MCR technology
Product family	PLUGTRAB PT
Surge protection fault message	none
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.10

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

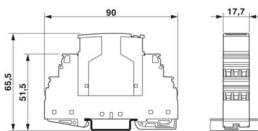
### Electrical properties

Nominal voltage $U_N$	48 V AC
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### Connection data

Connection method	Screw connection (in connection with the base element)
Screw thread	M3
Tightening torque	0.5 Nm
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section rigid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12

### Dimensions

Dimensional drawing	
Width	17.7 mm
Height	45 mm
Depth	52 mm
Horizontal pitch	1 Div.
Complete module width	17.7 mm
Complete module height	90 mm
Complete module depth	65.5 mm

### Material specifications

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Color	black (RAL 9005)
Flammability rating according to UL 94	V-0
Housing material	PA 6.6

## Mechanical properties

### Mechanical data

Open side panel	No
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## Protective circuit

Direction of action	Line-Earth Ground
Maximum continuous voltage $U_C$	60 V DC
	48 V AC
Rated current	2 A AC (80 °C)
	150 mA DC (80 °C)
Operating effective current $I_C$ at $U_C$	$\leq 2 \mu A$
Residual current $I_{pE}$	$\leq 4 \mu A$
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-ground)	20 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu s$ (line-earth)	5 kA
Total discharge current $I_{total}$ (8/20) $\mu s$	20 kA
Output voltage limitation at 1 kV/ $\mu s$ (line-earth) spike	$\leq 600 V$
Output voltage limitation at 1 kV/ $\mu s$ (line-earth) static	$\leq 25 V$
Voltage protection level $U_p$ (line-earth)	$\leq 600 V$ (C2 - 10 kV / 5 kA)
Voltage protection level $U_p$ static (line-earth)	$\leq 25 V$ (C2 - 10 kV / 5 kA)
Response time $t_A$ (line-earth)	$\leq 100 ns$
Input attenuation aE, asym.	typ. 0.1 dB ( $\leq 1 MHz$ / 50 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), asym. (signal ground) in 50 $\Omega$ system	typ. 100 MHz
Capacity (Core-Earth)	typ. 2 pF
Resistance per path	0 $\Omega$
Surge protection fault message	none
Max. required back-up fuse	2 A AC (T)
	150 mA DC (T)
Impulse durability (line-earth)	C2 - 10 kV / 5 kA
	C1 - 1 kV / 500 A
	C3 - 100 A
	D1 - 2.5 kA

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 85 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	$\leq 2000 m$ (amsl)

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## Standards and regulations

Standards/specifications	IEC 61643-21
Note	2000 + corrigendum 2001 + A1:2008, modified + A2:2012
Standards/specifications	EN 61643-21
Note	2001 + A1:2009 + A2:2013

## Mounting

Mounting type	on base element
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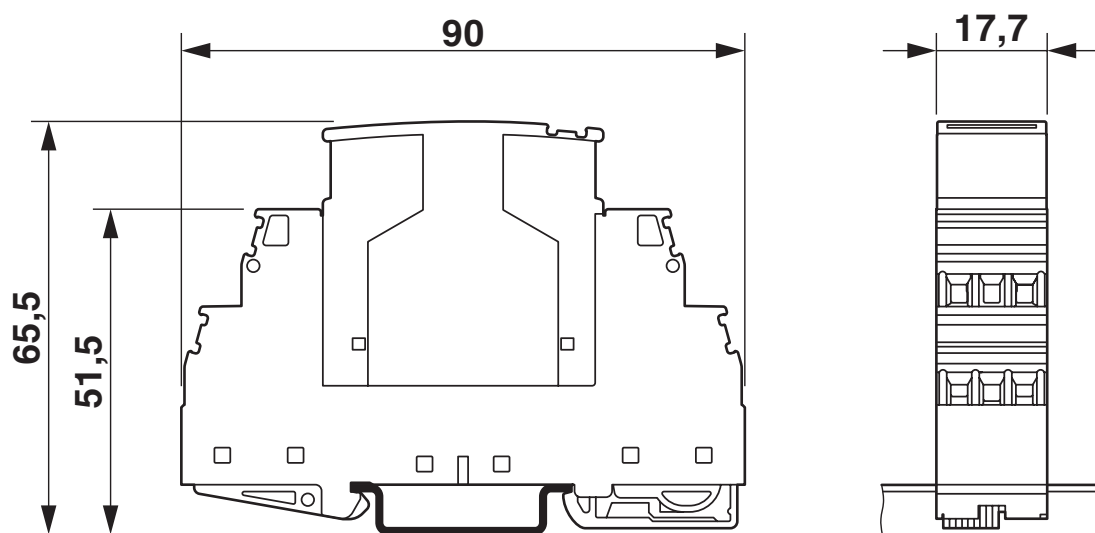
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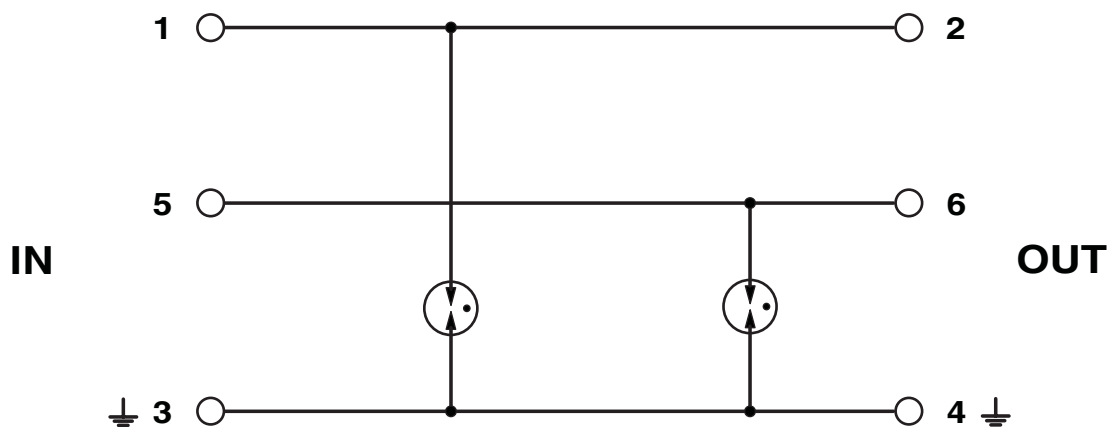
## Drawings

Dimensional drawing



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

Circuit diagram




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## Approvals

 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2859000>



**EAC**

Approval ID: EAC-Zulassung



**EAC**

Approval ID: RU C-DE.\*09.B.00169

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## Classifications

### ECLASS

ECLASS-11.0	27130807
ECLASS-13.0	27171501

### ETIM

ETIM 9.0	EC001625
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### UNSPSC

UNSPSC 21.0	39121600
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## Environmental product compliance

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

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