

Surge protection plug - PT 3-PB-ST - 2858030

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Surge protection plug for the base element, normal mode voltage coarse and fine protection for two floating signal wires in IT, common mode voltage coarse protection to ground.

Your advantages

- ✓ 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
- ✓ Protection for fieldbus systems, PROFIBUS, and signal circuits with 3 to 5-wire technology
- ✓ Consistent plug-in signal circuit protection
- ✓ Impedance-neutral disconnection of plug for test and maintenance purposes



Key Commercial Data

| | |
|--------------|---|
| Packing unit | 10 pc |
| GTIN |  4 017918 878030 |
| GTIN | 4017918878030 |

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 |
| Complete module depth | 65.5 mm |

Ambient conditions

| | |
|---------------------------------|------------------|
| Ambient temperature (operation) | -40 °C ... 85 °C |
|---------------------------------|------------------|

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Ambient conditions

| | |
|----------------------|-------------|
| Altitude | max. 2000 m |
| Degree of protection | IP20 |

General

| | |
|--|--|
| Housing material | PA |
| Flammability rating according to UL 94 | V-0 |
| Color | black |
| Standards for clearances and creepage distances | DIN EN 61664-1 |
| | IEC 60664-1 |
| Mounting type | on base element |
| Type | Male |
| Number of positions | 2 |
| Direction of action | Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground |
| Arrester can be tested with CHECKMASTER from software version: | From SW rev. 1.10 |

Protective circuit

| | |
|--|-----------------------------------|
| IEC test classification | C1 |
| | C2 |
| | C3 |
| | D1 |
| VDE requirement class | C1 |
| | C2 |
| | C3 |
| | D1 |
| Nominal voltage U_N | 5 V DC |
| Maximum continuous voltage U_C | 5.2 V DC |
| | 3.6 V AC |
| Rated current | 450 mA (45 °C) |
| Operating effective current I_C at U_C | $\leq 300 \mu A$ |
| Residual current I_{PE} | $\leq 300 \mu A$ (with PT 1X2-BE) |
| | $\leq 1 \mu A$ (with PT 1X2+F-BE) |
| Nominal discharge current I_n (8/20) μs (line-line) | 10 kA |
| Nominal discharge current I_n (8/20) μs (line-earth) | 10 kA |
| Pulse discharge current I_{imp} (10/350) μs | 2.5 kA |
| Total discharge current I_{total} (8/20) μs | 20 kA |
| Max. discharge current I_{max} (8/20) μs maximum (line-line) | 10 kA |
| Max. discharge current I_{max} (8/20) μs maximum (line-earth) | 10 kA |
| Nominal pulse current I_{an} (10/1000) μs (line-line) | 90 A |
| Output voltage limitation at 1 kV/ μs (line-line) spike | $\leq 55 V$ |
| Output voltage limitation at 1 kV/ μs (line-earth) spike | $\leq 55 V$ (with PT 1X2-BE) |
| | $\leq 700 V$ (with PT 1X2+F-BE) |

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Protective circuit

| | |
|--|-------------------------------|
| Output voltage limitation at 1 kV/μs (line-line) static | ≤ 15 V |
| Output voltage limitation at 1 kV/μs (line-earth) static | ≤ 15 V |
| | ≤ 30 V (with PT 1X2+F-BE) |
| Residual voltage at I _n (line-line) | ≤ 15 V |
| Residual voltage at I _n (line-earth) | ≤ 30 V (with PT 1X2-BE) |
| Residual voltage at I _n (line-signalground) | ≤ 15 V (with PT 1X2-BE) |
| Residual voltage with I _{an} (10/1000) μs (line-line) | ≤ 15 V |
| Residual voltage with I _{an} (10/1000) μs (line-signalground) | ≤ 15 V |
| Voltage protection level U _p (line-line) | ≤ 70 V (C1 - 1 kV/500 A) |
| | ≤ 45 V (C3 - 25 A) |
| | ≤ 100 V (C2 - 10 kV / 5 kA) |
| | ≤ 70 V (6 kV / 3 kA) |
| Voltage protection level U _p (line-earth) | ≤ 80 V (C1 - 1 kV/500 A) |
| | ≤ 110 V (C2 - 10 kV / 5 kA) |
| | ≤ 100 V (6 kV / 3 kA) |
| | ≤ 45 V (C3 - 25 A) |
| Voltage protection level U _p (line-signalground) | ≤ 45 V (C3 - 25 A) |
| Response time t _A (line-line) | ≤ 500 ns |
| Response time t _A (line-signalground) | ≤ 500 ns |
| Response time t _A (line-earth) | ≤ 500 ns |
| Input attenuation aE, sym. | typ. 0.3 dB (≤ 5 MHz / 100 Ω) |
| Cut-off frequency f _g (3 dB), sym. in 100 Ohm system | typ. 60 MHz |
| Capacity (line-line) | typ. 30 pF |
| Resistance in series | 2.2 Ω ±10 % (7-8/11-12) |
| Max. required back-up fuse | 500 mA (T) |
| Impulse durability (line-line) | C2 - 10 kV / 5 kA |
| | C3 - 90 A |
| Impulse durability (line-earth) | C2 - 10 kV / 5 kA |
| | C3 - 90 A |
| | D1 - 2.5 kA |

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 ² ... 2.5 mm ² |
| Conductor cross section solid | 0.2 mm ² ... 4 mm ² |
| Conductor cross section AWG | 24 ... 12 |

Connection, equipotential bonding

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Technical data

Connection, equipotential bonding

| | |
|---------------------------------------|---------------------|
| Stripping length | 8 mm |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 2.5 mm ² |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 4 mm ² |
| Conductor cross section AWG min. | 24 |
| Conductor cross section AWG max. | 12 |

Standards and Regulations

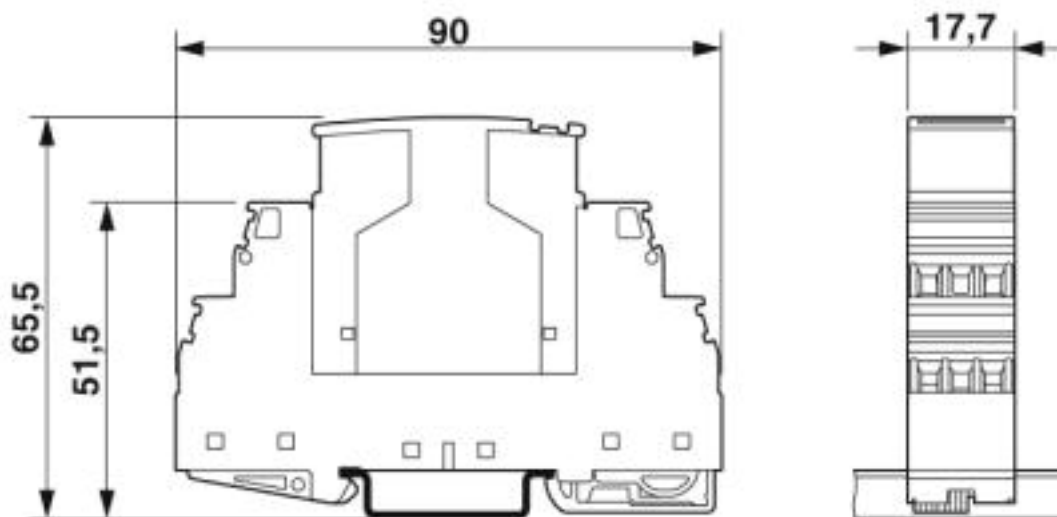
| | |
|--------------------------|----------------------|
| Standards/specifications | EN 61643-21/A1 2009 |
| | IEC 61643-21/A1 2008 |

Environmental Product Compliance

| | |
|------------|---|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

Drawings

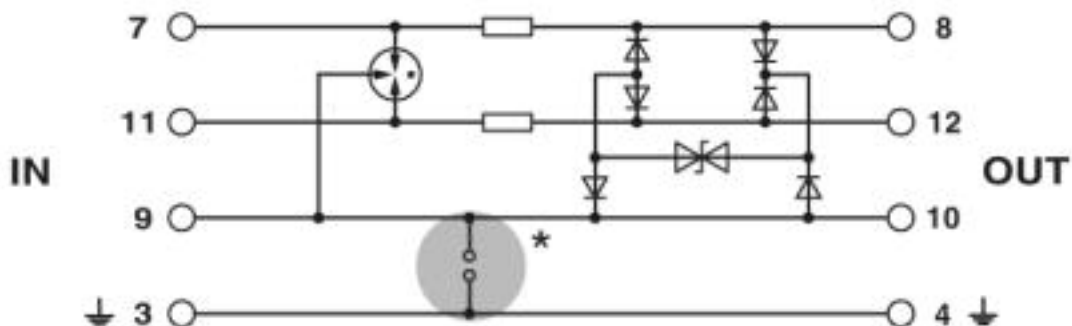
Dimensional drawing



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

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Circuit diagram



Approvals

Approvals

Approvals

DNV GL / UL Listed / EAC / EAC

Ex Approvals

Approval details

| | | | |
|--------|--|---|------------|
| DNV GL | | https://approvalfinder.dnvgl.com/ | TAE00001N6 |
|--------|--|---|------------|

| | | | |
|-----------|--|---|---------------|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 138168 |
|-----------|--|---|---------------|

| | | | |
|-----|--|--|---------------|
| EAC | | | EAC-Zulassung |
|-----|--|--|---------------|

| | | | |
|-----|--|--|-------------------------|
| EAC | | | RU C- DE.A*30.B01561 |
|-----|--|--|-------------------------|

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