

## Surge protection device - S-PT-EX(I)-24DC-3/4 - 2882585

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Surge protection in the IP67 screw-on module for measuring sensors in intrinsically safe circuits, direct mounting with 3/4" NPT outer thread, cable gland for the signal cable, two-stage protective circuit. HART-compatible.

### Your advantages

- ✓ Arresters in hexagonal pipe with various outer threads



### Key Commercial Data

|                                      |                                                                                                         |
|--------------------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit                         | 1 pc                                                                                                    |
| GTIN                                 | <br>4 046356 098076 |
| GTIN                                 | 4046356098076                                                                                           |
| Weight per Piece (excluding packing) | 391.000 g                                                                                               |
| Custom tariff number                 | 85363010                                                                                                |
| Country of origin                    | Germany                                                                                                 |
| Note                                 | Made to Order (non-returnable)                                                                          |

### Technical data

#### Dimensions

|        |         |
|--------|---------|
| Height | 33.5 mm |
| Width  | 33.5 mm |
| Depth  | 148 mm  |

#### Ambient conditions

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Ambient temperature (operation)         | -40 °C ... 50 °C                       |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C                       |
| Altitude                                | ≤ 2000 m (amsl (above mean sea level)) |
| Degree of protection                    | IP67                                   |

#### General

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## Technical data

### General

|                                                 |                                                  |
|-------------------------------------------------|--------------------------------------------------|
| Housing material                                | Zinc die-cast, surface bronzed and nickel-plated |
| Color                                           | silver                                           |
| Standards for clearances and creepage distances | IEC 60664-1                                      |
|                                                 | EN 60079-0                                       |
|                                                 | EN 60079-11                                      |
| Mounting type                                   | direct screw connection                          |
| Type                                            | Screw-in module                                  |
| Number of positions                             | 3                                                |
| Direction of action                             | Line-Line & Line-Earth Ground                    |

### Protective circuit

|                                                                        |                                   |
|------------------------------------------------------------------------|-----------------------------------|
| IEC test classification                                                | C1                                |
|                                                                        | C2                                |
|                                                                        | C3                                |
|                                                                        | D1                                |
| Nominal voltage $U_N$                                                  | 24 V DC                           |
| Maximum continuous voltage $U_C$                                       | 30 V DC                           |
|                                                                        | 21 V AC                           |
| Rated current                                                          | 350 mA (50 °C)                    |
| Operating effective current $I_C$ at $U_C$                             | $\leq 10 \mu A$                   |
| Residual current $I_{PE}$                                              | $\leq 2 \mu A$                    |
| 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 (per path)                  |
| Nominal discharge current $I_n$ (8/20) $\mu s$ (shield-earth)          | 10 kA (optional)                  |
| Pulse discharge current $I_{imp}$ (10/350) $\mu s$                     | 1 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 (per path)                  |
| Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (shield-earth) | 10 kA                             |
| Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (line-line)           | 30 A                              |
| Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (line-earth)          | 100 A (per path)                  |
| Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (shield-earth)        | 100 A                             |
| Output voltage limitation at 1 kV/ $\mu s$ (line-line) spike           | $\leq 50 V$                       |
| Output voltage limitation at 1 kV/ $\mu s$ (line-earth) spike          | $\leq 1.4 kV$ (Direct grounding)  |
| Output voltage limitation at 1 kV/ $\mu s$ (shield-earth) spike        | $\leq 600 V$ (optional)           |
| Output voltage limitation at 1 kV/ $\mu s$ (line-line) static          | $\leq 50 V$                       |
| Output voltage limitation at 1 kV/ $\mu s$ (line-earth) static         | $\leq 1.4 kV$ (Direct grounding)  |
| Residual voltage at $I_n$ (line-line)                                  | $\leq 50 V$                       |
| Residual voltage with $I_{an}$ (10/1000) $\mu s$ (line-line)           | $\leq 50 V$                       |
| Voltage protection level $U_p$ (line-line)                             | $\leq 50 V$ (C1 - 0.5 kV / 250 A) |
|                                                                        | $\leq 55 V$ (C1 - 1 kV/500 A)     |

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## Technical data

### Protective circuit

|                                                        |                                 |
|--------------------------------------------------------|---------------------------------|
|                                                        | ≤ 55 V (C2 - 2 kV/1 kA)         |
|                                                        | ≤ 55 V (C2 - 10 kV / 5 kA)      |
|                                                        | ≤ 50 V (C3 - 10 A)              |
|                                                        | ≤ 50 V (C3 - 25 A)              |
|                                                        | ≤ 80 V (D1 - 1 kA)              |
| Voltage protection level $U_p$ (line-earth)            | ≤ 1.4 kV (C1 - 1 kV/500 A)      |
|                                                        | ≤ 1.4 kV (C2 - 2 kV/1 kA)       |
|                                                        | ≤ 1.4 kV (C2 - 10 kV / 5 kA)    |
|                                                        | ≤ 1.4 kV (C3 - 25 A)            |
|                                                        | ≤ 1.4 kV (C3 - 100 A)           |
|                                                        | ≤ 1.4 kV (D1 - 1 kA)            |
| Voltage protection level $U_p$ (shield-earth)          | ≤ 600 V (C1 - 0.5 kV / 250 A)   |
|                                                        | ≤ 650 V (C1 - 1 kV/500 A)       |
|                                                        | ≤ 650 V (C2 - 2 kV/1 kA)        |
|                                                        | ≤ 650 V (C2 - 10 kV / 5 kA)     |
|                                                        | ≤ 650 V (C3 - 10 A)             |
|                                                        | ≤ 750 V (C3 - 25 A)             |
|                                                        | ≤ 750 V (C3 - 100 A)            |
|                                                        | ≤ 650 V (D1 - 1 kA)             |
| Response time $t_A$ (line-line)                        | ≤ 1 ns                          |
| Response time $t_A$ (line-earth)                       | ≤ 100 ns                        |
| Response time $t_A$ (shield-earth)                     | ≤ 100 ns                        |
| Input attenuation aE, sym.                             | typ. 0.5 dB (≤ 1 MHz / 50 Ω)    |
|                                                        | typ. 0.2 dB (≤ 400 kHz / 150 Ω) |
| 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                    |
| Resistance per path                                    | 2.2 Ω ±10 %                     |
| Surge protection fault message                         | none                            |
| Impulse durability (line-line)                         | C1 - 1 kV / 500 A               |
|                                                        | C2 - 10 kV / 5 kA               |
|                                                        | C3 - 25 A                       |
|                                                        | D1 - 1 kA                       |
| Impulse durability (line-earth)                        | C1 - 1 kV / 500 A               |
|                                                        | C2 - 10 kV / 5 kA               |
|                                                        | C3 - 100 A                      |
|                                                        | D1 - 1 kA                       |
| Impulse durability (shield-earth)                      | C1 - 1 kV/500 A                 |
|                                                        | C2 - 10 kV/5 kA                 |
|                                                        | C3 - 100 A                      |
|                                                        | D1 - 1 kA                       |

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## Technical data

### Protective circuit

|                                                      |            |
|------------------------------------------------------|------------|
| Alternating current carrying capacity (line-earth)   | 10 A - 1 s |
| Alternating current carrying capacity (shield-earth) | 10 A - 1 s |

### Connection data

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Connection method                | Screw connection                             |
| Connection method IN             | Screw terminal blocks                        |
| Connection method OUT            | Connection line                              |
| Connection technology            | Screw connection                             |
| Screw thread                     | M3                                           |
| Tightening torque                | 0.6 Nm                                       |
| Stripping length                 | 6 mm                                         |
| Conductor cross section flexible | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section solid    | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section AWG      | 26 ... 16                                    |

### Standards and Regulations

|                          |                     |
|--------------------------|---------------------|
| Standards/specifications | EN 61643-21 A2:2013 |
|                          | EN 60079-0 2012     |
|                          | EN 60079-11 2012    |
|                          | EN 60079-26 2007    |
|                          | IEC 60079-0 2011    |
|                          | IEC 60079-11 2011   |
|                          | IEC 60079-26 2006   |

### General

|                                 |                            |
|---------------------------------|----------------------------|
| Maximum inner capacitance $C_i$ | 2 nF                       |
| Max. internal inductance $L_i$  | 1 $\mu$ H                  |
| Max. input current $I_i$        | 350 mA (T4 / $\leq$ 50 °C) |
|                                 | 350 mA (T5 / $\leq$ 50 °C) |
|                                 | 350 mA (T6 / $\leq$ 50 °C) |
| Max. input voltage $U_i$        | 30 V                       |
| max. input power $P_i$          | 3 W                        |
| Insulation voltage to ground    | 500 V AC                   |
| Ambient temperature (operation) | -40 °C ... 50 °C           |

### Conformity / approvals

|       |                              |
|-------|------------------------------|
| ATEX  | # II 1G Ex ia IIC T4...T6 Ga |
| IECEX | Ex ia IIC T4...T6 Ga         |

### Environmental Product Compliance

|            |                                          |
|------------|------------------------------------------|
|            | Lead 7439-92-1                           |
| China RoHS | Environmentally Friendly Use Period = 50 |

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Technical data

Environmental Product Compliance

|  |                                                                                                     |
|--|-----------------------------------------------------------------------------------------------------|
|  | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |
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