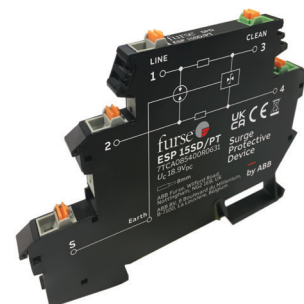


Data and signal protection

ESP Standard Slimline Series (SD)



Combined Category D, C, B tested SPD (Surge Protective Device, to BS EN 61643) suitable for twisted pair signalling applications. Available for working voltages of up to 6, 15, 30, 50, 110 and 180 Volts. ESP TN suitable for Broadband, POTS, dial-up, T1/E1, lease line and *DSL telephone applications. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.



| | | | |
|---|---|---|---|
| LPZ 0 → 3 | FULL MODE Bonding + Equipment Protection | SIGNAL/ TELECOM TEST CAT D + C + B | ENHANCED Low let-through voltage |
| LOW IN-LINE RESISTANCE 10 Ω | CURRENT RATING 400 mA | | |

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Very low (10 Ω) in-line resistance allows resistance critical applications (e.g. alarm loops) to be protected
- 400mA maximum running current

- Strong, flame retardant housing
- Built-in DIN rail foot for simple clip-on mounting to top hat DIN rails
- Colour coded terminals give a quick and easy installation check - grey for the dirty (line) end and green for clean
- ESP STN is suitable for telecommunication applications in accordance with Telcordia and ANSI Standards (see Application Note AN005)

Installation

Connect in series with the data communication or signal line either near where it enters or leaves the building or close to the equipment being protected (e.g. within its control panel). Either way, it must be very close to the system's earth star point. Install protectors either within an existing cabinet/ cubicle or in a separate enclosure.

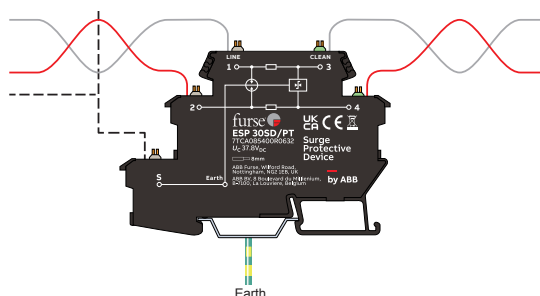
Accessories

Weatherproof enclosures:
WBX SLQ, WBX SLQ/G
For use with up to 16 protectors

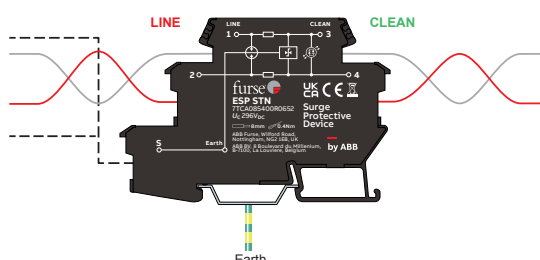
Application

Use on twisted pair lines, e.g. those found in process control equipment, modems and computer communications interfaces.

ESP 30SD/PT installation in series (spring terminal, top cable entry)



ESP STN installation in series (screw terminal, side cable entry)



ESP SD Series - Technical specification

| Electrical Specification | ESP 06SD ESP 06SD/PT | ESP 15SD ESP 15SD/PT | ESP 30SD ESP 30SD/PT | ESP 50SD ESP 50SD/PT | ESP 110SD ESP 110SD/PT | ESP 180SD ESP 180SD/PT | ESP STN ESP STN/PT |
|--|--|-------------------------|-------------------------|-------------------------|---------------------------|---------------------------|-----------------------|
| Nominal Voltage (DC) ⁽¹⁾ | 6 V | 15 V | 30 V | 50 V | 110 V | 180 V | – |
| Maximum working voltage U_c (DC) ⁽²⁾ | 7.9 V | 18.9 V | 37.8 V | 57.8 V | 134 V | 189 V | 296 V |
| Maximum working voltage U_c (AC RMS) ⁽²⁾ | 5.6 V | 13.4 V | 26.7 V | 41 V | 95 V | 134 V | 296 V |
| Current rating (signal, at 25°C) | 400 mA | | | | | | |
| In-line resistance (per line ±10%) | 10 Ω | | | | | | |
| Bandwidth (-3 dB 100Ω Balanced system) | 0.9 MHz | 1.7 MHz | 3 MHz | 5 MHz | 8 MHz | 9.5 MHz | 20 MHz |
| Transient specification | ESP 06SD ESP 06SD/PT | ESP 15SD ESP 15SD/PT | ESP 30SD ESP 30SD/PT | ESP 50SD ESP 50SD/PT | ESP 110SD ESP 110SD/PT | ESP 180SD ESP 180SD/PT | ESP STN ESP STN/PT |
| Let-through voltage (all conductors) U_p⁽³⁾ | | | | | | | |
| C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21 | 15.8 V | 25.8 V | 44.2 V | 69.0 V | 163.5 V | 217 V | 395 V |
| C1 test 1 kV, 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21 | 12.6 V | 27.5 V | 47.9 V | 73.6 V | 154.5 V | 210 V | 390 V |
| B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21 | 10.7 V | 24.0 V | 43.8 V | 68.0 V | 152.5 V | 214 V | 298 V |
| 5 kV, 10/700 μs ⁽⁴⁾ | 11 V | 24.5 V | 44.0 V | 69.5 V | 154.0 V | 215 V | 300 V |
| Maximum surge current | | | | | | | |
| D1 test 10/350 μs to BS EN/EN/IEC 61643-21: | – Per signal wire | 2.5 kA | | | | | |
| | – Per pair | 5 kA | | | | | |
| 8/20 μs to ITU-T K.45:2003, IEEE C62.41.2:2002: | – Per signal wire | 10 kA | | | | | |
| | – Per pair | 20 kA | | | | | |
| Mechanical specification | | | | | | | |
| Temperature range | -40 to +80 °C | | | | | | |
| Connection type | Screw terminal - maximum torque (0.4 Nm/3.47 lb-in) Spring terminal (/PT) | | | | | | |
| Conductor size (stranded) / (Solid) | 0.2 to 2.5 mm² (24 to 14 AWG), stranded cable must be ferruled for /PT | | | | | | |
| Earth connection | Din Rail Earth & Earth Terminal | | | | | | |
| Case material | Flame retardant Polymer UL 94-V0 | | | | | | |
| Weight: – Unit | 0.08 Kg | | | | | | |
| Dimensions | See diagram below | | | | | | |

- ⁽¹⁾ Nominal voltage (DC) measured at < 5 μ A leakage
- ⁽²⁾ Maximum working voltage (AC RMS or DC) measured at < 1 mA leakage
- ⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns
- ⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

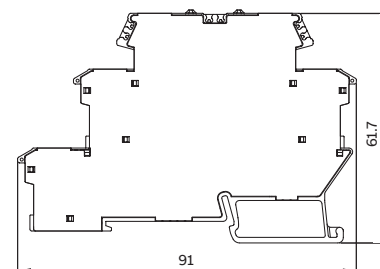


ABB order codes

| Part | ABB order code | Part | ABB order code | Part | ABB order code |
|-------------|-----------------|--------------|-----------------|------------|-----------------|
| ESP 06SD | 7TCA085400R0613 | ESP 50SD | 7TCA085400R0616 | ESP STN | 7TCA085400R0652 |
| ESP 06SD/PT | 7TCA085400R0630 | ESP 50SD/PT | 7TCA085400R0633 | ESP STN/PT | 7TCA085400R0653 |
| ESP 15SD | 7TCA085400R0614 | ESP 110SD | 7TCA085400R0617 | WBX SLQ | 7TCA085410R0037 |
| ESP 15SD/PT | 7TCA085400R0631 | ESP 110SD/PT | 7TCA085400R0634 | WBX SLQ/G | 7TCA085410R0036 |
| ESP 30SD | 7TCA085400R0615 | ESP 180SD | 7TCA085400R0618 | | |
| ESP 30SD/PT | 7TCA085400R0632 | ESP 180SD/PT | 7TCA085400R0635 | | |

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