

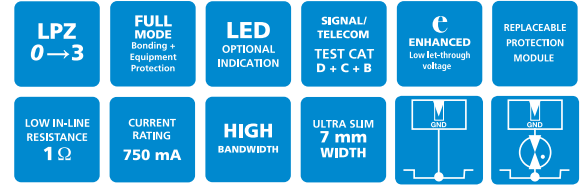
DATASHEET

Data & signal protection

ESP SL Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable for twisted pair signalling applications which require either a lower in-line resistance, an increased current and/or higher bandwidth. Also suitable for DC power applications less than 0.75 Amps. Available for working voltages of up to 6, 15, 30, 50, 110 and 180 Volts. 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.



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
- Ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- Optional LED status indication versions available for low current DC power applications - add L suffix to part number - e.g. ESP SL30L
- Two stage removable protection module with simple quick release mechanism allowing partial removal for easy line commissioning and maintenance as well as full removal for protection replacement
- Strong, flame retardant, polycarbonate housing
- High (750 mA) maximum running current
- High bandwidth enables higher frequency (high traffic or bit rate) data communications
- Screen terminal enables easy connection of cable screen to earth
- Suitable for earthed or isolated screen systems - add /I suffix to part number for versions that require isolated screens - e.g. ESP SL30/I
- Built-in innovative DIN rail foot with locking feature for simple positioning and clip-on mounting to top hat DIN rails
- 4 mm² terminals allow for larger cross section wiring, stranded wires terminated with ferrules or fitting two wires into a single terminal
- Convenient earthing through DIN foot and/or earth terminal
- Very low (1 Ω) in-line resistance (for products from 6V to 110V) allows resistance critical applications (e.g. alarm loops) to be protected

Application

Use these protectors where installation space is at a premium and large numbers of lines require protection (e.g. process control, high speed digital communication equipment or systems with long signal lines).

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

Replacement modules:

ESP SLXX/M

Standard module replacement where XX is voltage rating (06, 15, 30, 50, 110 or 180)

ESP SLXXL/M

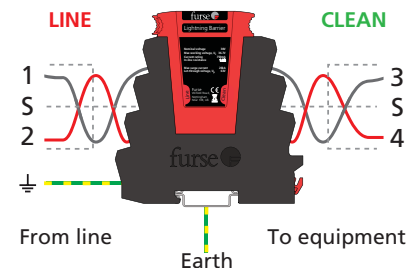
LED module replacement where XX is voltage rating, as above

ESP SL/B

Base replacement (common for standard and LED modules)

ESP SL/I/B

Base replacement with isolated screen from earth



NOTE: The ESP SL 'Slim Line' Series is also available for protection of 3-wire, RS 485 and RTD applications (ESP SL/3W, ESP SL RS485 & ESP SL RTD). The ESP SL X Series has approvals for use in hazardous areas.

ESP SL Series - Technical specification

Electrical specification	ESP SL06	ESP SL15	ESP SL30	ESP SL50	ESP SL110	ESP SL180	ESP SL TN
ABB order code	7TCA085400R0058	7TCA085400R0063	7TCA085400R0067	7TCA085400R0074	7TCA085400R0061	7TCA085400R0420	7TCA085400R0195
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V	180 V	–
Maximum working voltage U _c (RMS/DC) ⁽²⁾	5 V / 7.79 V	11 V / 16.7 V	25 V / 36.7 V	40 V / 56.7 V	93 V / 132 V	130 V/190 V	– / 296 V
Current rating (signal)	750 mA					250 mA	300 mA
In-line resistance (per line ±10%)	1.0 Ω				3.3 Ω	6.8 Ω	4.5 Ω
Bandwidth (-3 dB 50 Ω system)	45 MHz	45 MHz	45 MHz	45 MHz	45 MHz	45 MHz	20 MHz
Transient specification	ESP SL06	ESP SL15	ESP SL30	ESP SL50	ESP SL110	ESP SL180	ESP SL TN
Let-through voltage (all conductors)⁽³⁾ Up							
C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21	36.0 V	38.4 V	63.0 V	90.3 V	185 V	215 V	395 V
C1 test 1 kV, 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21	26.2 V	29.4 V	51.3 V	77.2 V	175 V	205 V	390 V
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21	16.0 V	26.8 V	45.4 V	68.3 V	165 V	203 V	298 V
5 kV, 10/700 μs ⁽⁴⁾	17.0 V	27.5 V	46.3 V	69.1 V	170 V	200 V	300 V
Maximum surge current							
D1 test 10/350 μs to BS EN/EN/IEC 61643-21: – Per signal wire	1.25 kA						
– Per pair	2.5 kA						
8/20 μs to ITU-T K.45:2003, IEEE C62.41.2-2002: – Per signal wire	5 kA						
– Per pair	10 kA						
Mechanical specification	ESP SL06	ESP SL15	ESP SL30	ESP SL50	ESP SL110	ESP SL180	ESP SL TN
Temperature range	–40 to +80 °C						
Connection type	Screw terminal - maximum torque 0.8 Nm						
Conductor size (stranded)	4 mm ²						
Earth connection	Via DIN rail or 4 mm ² earth terminal - maximum torque 0.8 Nm						
Case material	FR Polymer UL-94 V-0						
Weight: – Unit	0.08 kg						
Dimensions	See diagram below						

- ⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μA (ESP SL15, ESP SL30, ESP SL50, ESP SL110, ESP SL180 and LED variants) and < 200 μA (ESP SL06 and ESP SL06L)
- ⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 1 mA leakage
- ⁽³⁾ The maximum transient voltage let-through of the protector throughout the test (±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)

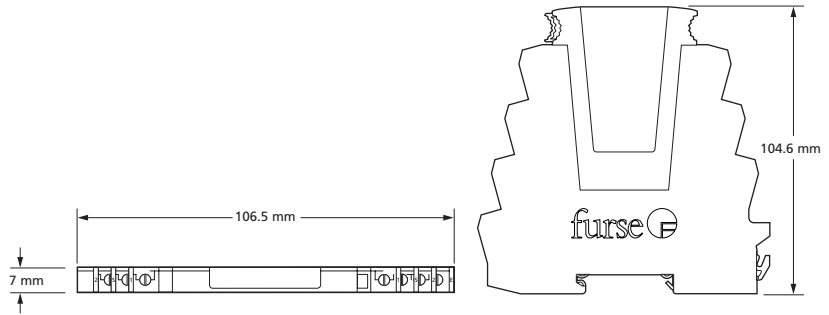


ABB order codes

Part	ABB order code	Part	ABB order code	Part	ABB order code
ESP SL06	7TCA085400R0058	ESP SL15	7TCA085460R0058	ESP SL30	7TCA085400R0067
ESP SL06/I	7TCA085400R0265	ESP SL15/I	7TCA085400R0264	ESP SL30/I	7TCA085400R0068
ESP SL06L	7TCA085400R0060	ESP SL15L	7TCA085460R0058	ESP SL30L	7TCA085400R0069
ESP SL06L/I	7TCA085400R0280	ESP SL15L/I	7TCA085400R0064	ESP SL30L/I	7TCA085400R0234
ESP SL06/M	7TCA085400R0243	ESP SL15/M	7TCA085400R0198	ESP SL30/M	7TCA085400R0197
ESP SL06L/M	7TCA085400R0240	ESP SL15L/M	7TCA085400R0249	ESP SL30L/M	7TCA085400R0199
ESP SL50	7TCA085400R0074	ESP SL110	7TCA085400R0061	ESP SL/B	7TCA085400R0194
ESP SL50/I	7TCA085400R0075	ESP SL110/I	7TCA085400R0279	ESP SL/I/B	7TCA085400R0261
ESP SL50L	7TCA085400R0076	ESP SL110L	7TCA085400R0062	ESP WBX SLQ	7TCA085400R0326
ESP SL50L/I	7TCA085400R0201	ESP SL110L/I	7TCA085400R0284	ESP WBX SLQ/G	7TCA085400R0327
ESP SL50/M	7TCA085400R0254	ESP SL110/M	7TCA085400R0245		
ESP SL50L/M	7TCA085400R0256	ESP SL110L/M	7TCA085400R0248		
ESP SL180L	7TCA085400R0419	ESP SL 180/I	7TCA085400R0422		
ESP SL180	7TCA085400R0420	ESP SL180L/M	7TCA085400R0427		
ESP SL180L/I	7TCA085400R0421	ESP SL180/M	7TCA085400R0428		