

Combined Category D, C, B tested protector (to BS EN 61643) suitable for twisted pair 4-20 mA loop systems with innovative LED protector status indication. For use at boundaries up to LPZ 0_B to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment (e.g. transmitters, monitors, controllers).

Features and benefits

- ✓ Very low let-through voltage (enhanced protection to 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
- ✓ Innovative LED indication of protection status provides easy visual checking and quick maintenance
- ✓ Ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- ✓ 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
- ✓ Very low (1Ω) in-line resistance for minimal system interference
- ✓ High (75 mA) maximum running current - can also be used on 10-50 mA systems (e.g. process control)
- ✓ Screen terminal enables easy connection of cable screen to earth
- ✓ Strong, flame retardant, polycarbonate housing
- ✓ Built-in innovative DIN rail foot with locking feature for simple positioning and clip-on mounting to top hat DIN rails
- ✓ 4 mm^2 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

Technical note

4-20 mA current loops can serve multiple devices over a long distance. The devices and wiring produce a voltage drop (also known as "loop drops") but these do not reduce the 4-20 mA current as long as the power supply voltage is greater than the sum of the voltage drops around the loop at the maximum signalling current of 20 mA. For design considerations, each ESP SL30L/4-20 device installed within the loop introduces a 1.7 V loop drop.

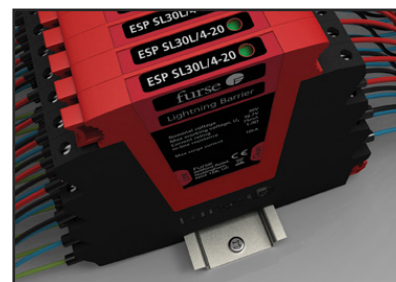
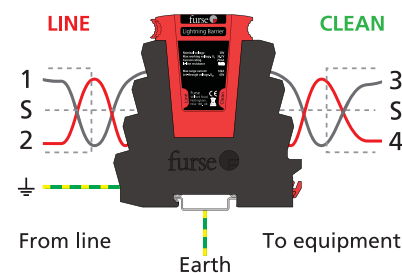
Application

Use these protectors on 4-20 mA loop systems - ideal where installation space is at a premium and large numbers of lines require protection, or for systems with long signal lines.

Installation

Connect in series with the 4-20 mA current loop 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

ESP SL30L/4-20/M
Module replacement

ESP SL/B
Base replacement

For suitable enclosures for the ESP SL LED 4-20 mA Series, please contact us.

Technical specification

NEW

Electrical specification

ESP SL30L/4-20

Nominal voltage ¹	30 V
Maximum working voltage U_c^2	36.7 V
Current rating (signal) ³	75 mA
In-line resistance (per line $\pm 10\%$)	1.0 Ω
Series voltage drop ⁴	1.7 V

Transient specification

ESP SL30L/4-20

Let-through voltage (all conductors) ⁵ Up	
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	63.0 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	51.3 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	45.4 V
5 kV, 10/700 μ s ⁶	46.3 V
Maximum surge current	
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21	- per signal wire - per pair
	1.25 kA 2.5 kA
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002	- per signal wire - per pair
	10 kA 20 kA

Mechanical specification

ESP SL30L/4-20

Temperature range	-40 to +80 °C
Connection type	Screw terminal
Conductor size (stranded)	4 mm ²
Earth connection	Via DIN rail or 4 mm ² earth terminal
Case material	FR polycarbonate UL94 V-0
Weight - unit - packaged (per 10)	0.08 kg 0.85 kg
Dimensions	

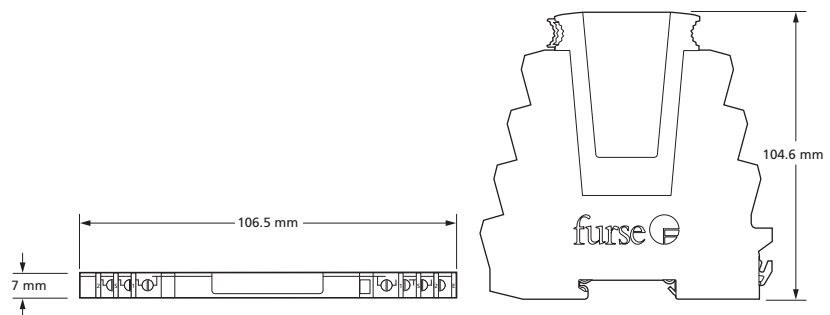
¹ Nominal voltage (DC or AC peak) measured at < 10 μ A.

² Maximum working voltage (DC or AC peak) measured at < 1 mA leakage.

³ The minimum current for LED indicator operation is 2 mA.
⁴ At 20 mA.

⁵ 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.

⁶ 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).



The ESP SL 'Slim Line' Series is also available for protection of systems up to 110 V as well as 3-wire, RS 485, RTD & telecommunication applications (ESP SL/3W, ESP SL RS485, ESP SL RTD & ESP SL TN). The ESP SL X Series has approvals for use in hazardous areas.

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