

Telecoms & computer line protection

ESP LA & LB Series



Combined Category C, B tested protector (to BS EN 61643) suitable to protect PCs and other computer equipment on systems using 9, 15 or 25 pins. For use on lines running within buildings at boundaries up to LPZ 2 through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Let-through voltage below equipment susceptibility levels
- Negligible in-line resistance
- Suitable for equipment using “D” connectors - DB-9, DB-15 and DB-25
- ESP LA-5/25 protects pins 1, 2, 3, 7 & 20 to earth/shell. Note pin 1 is connected to earth
- ESP LA-25/25 and ESP LB-25/25 protects all pins. Note pin 1 is connected to earth/shell
- ESP LA-9/9, ESP LB-9/9, ESP LA-15/15 and ESP LB-15/15 protect all pins
- Sturdy plastic housing
- Male/female connectors allow easy plug-in installation without rewiring
- Earthed via shell and supplementary earth strap

Application

Use on cables running within a building to protect equipment locally from transients induced on to data cables from the magnetic field caused by a lightning strike.

- For Asynchronous RS 232 systems, use ESP LA-5/25
- For RS 232 systems, use ESP LA-25/25, ESP LA-9/9 or ESP LA-15/15
- For RS 422, RS 423 and RS 485 systems, use ESP LB-9/9, ESP LB-15/15 or ESP LB-25/25

Installation

Simple plug-in connection to the communication port, between the equipment to be protected and its incoming data cable. Make suitable attachment to earth.

TECHNICAL NOTE: ESP LA... and ESP LB... protectors are designed only for use on cables running within a building (typically LPZ 2) to offer local protection to equipment. They therefore will not be able to handle the higher level transients that occur when lines between buildings are protected. ESP LA... and ESP LB... protectors should not be used in such an application (up to LPZ 0) where high energy ESP lightning barriers (such as ESP E Series) should be employed. If they are used in lines between buildings, there is a high risk of the protector being overloaded and destroyed during transient activity. Connected equipment will, in most cases, still be protected, but there is a small risk that equipment will suffer damage in such circumstances.

NOTE: For cabling up to Cat-6 with RJ45 connections (running external to the building) and local protection for up to Cat-6 with RJ45 connections, (running within a building) products are also available. For protection of legacy coaxial Ethernet networks, please contact us for details of our ESP ThinNet and ESP ThickNet protectors.

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ESP LA & LB Series - Technical specification

Electrical Specification	ESP LA-5/25	ESP LA-25/25	ESP LA-9/9	ESP LB-9/9	ESP LA-15/15	ESP LB-15/15	ESP LB-25/25
Nominal voltage ⁽¹⁾	23.1 V	23.1 V	23.1 V	5.8 V	15.3 V	6.4 V	5.8 V
Maximum working voltage U_c ⁽²⁾	25.7 V	25.7 V	25.7 V	6.4 V	17.1 V	7.13 V	6.4 V
Capacitance	< 500 pF	< 500 pF	< 500 pF	< 2000 pF	< 50 pF	< 50 pF	< 2000 pF
Current rating	300 mA						
In-line resistance	~ 0 Ω						

Transient Specification	ESP LA-5/25	ESP LA-25/25	ESP LA-9/9	ESP LB-9/9	ESP LA-15/15	ESP LB-15/15	ESP LB-25/25
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Let-through voltage⁽³⁾ Up

C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	–	–	–	12.5 V	31.5 V	16.0 V	12.5 V
B2 test 1 kV 10/700 μ s to BS EN/EN/IEC 61643-21	36.5 V	36.5 V	36.5 V	10.0 V	27.5 V	14.0 V	10.0 V
5 kV, 10/700 μ s ⁽⁴⁾	37.5 V	37.5 V	37.5 V	10.5 V	28.5 V	14.6 V	10.5 V
Protection provided	Pins 1, 2, 3, 7 and 20 to earth/shell ⁽⁵⁾	Pins 1-25 to earth/shell ⁽⁵⁾	Pins 1-9 to earth/shell	Pins 1-9 to earth/shell	Pins 1-15 to earth and each other	Pins 1-15 to earth and each other	Pins 1-25 to earth/shell ⁽⁵⁾

Maximum surge current

8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002	200 A	200 A	200 A	300 A	350 A	700 A	300 A
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Mechanical Specification	ESP LA-5/25	ESP LA-25/25	ESP LA-9/9	ESP LB-9/9	ESP LA-15/15	ESP LB-15/15	ESP LB-25/25
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Temperature range	-40 to +80 °C						
Connection type	DB-25 m-f	DB-25 m-f	DB-9 m-f	DB-9 m-f	DB-15 m-f	DB-15 m-f	DB-25 m-f
Earth connection	Shell or 150 mm earth lead (supplied)						
Case Material	ABS UL94 V-0						
Weight: – Unit	50 g	50 g	40 g	40 g	50 g	50 g	50 g
– Packaged	70 g	70 g	50 g	50 g	60 g	60 g	70 g
Dimensions	See diagram below						

⁽¹⁾ Nominal voltage (DC or AC peak) measured at 5 μ A (ESP LA-5/25, ESP LA-9/9, ESP LA-25/25, ESP LA-15/15), 0.5 mA (ESP LB-15/15) and 1 mA (ESP LB-9/9, ESP LB-25/25)

⁽²⁾ Maximum working voltage (DC or AC peak) measured at 1 mA leakage (ESP LA-5/25, ESP LA-9/9, ESP LA-25/25, ESP LA-15/15) and 10 mA (ESP LB-15/15, ESP LB-9/9 and ESP LB-25/25)

⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$). 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)

⁽⁵⁾ Pin 1 connected to earth/shell

