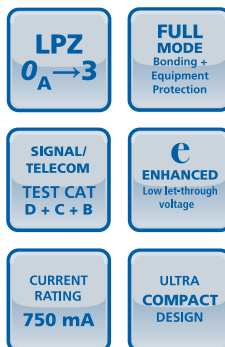
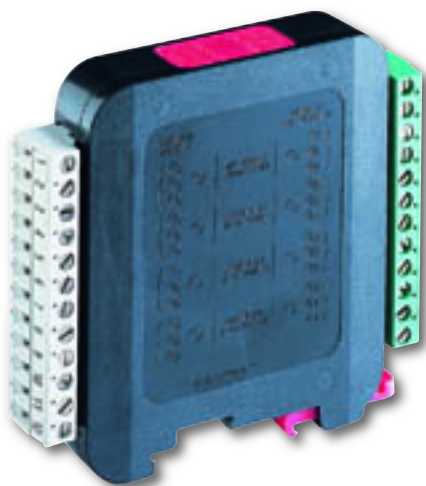


ESP Q & TNQ Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable for 4 twisted pair lines. Available for working voltages of up to 6, 15, 30, 50 and 110 Volts. ESP TNQ suitable for Broadband, POTS, dial-up, T1/E1, lease line and *DSL telephone applications. For use at boundaries up to LPZ 0_A to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features and benefits

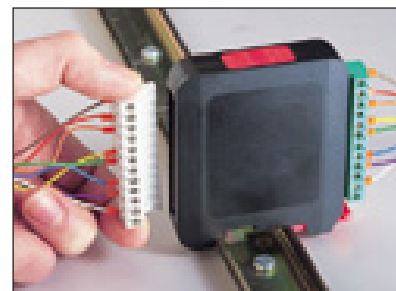
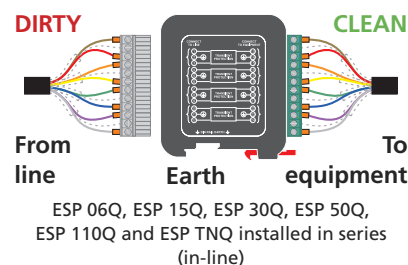
- ✓ Very low let-through voltage (enhanced protection to BS EN 62305) between all lines - Full Mode protection
- ✓ Full mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- ✓ Repeated protection in lightning intense environments
- ✓ Almost twice as space efficient as smallest competitor
- ✓ Standard DIN module (18 mm) depth
- ✓ Removable (plug-in) terminals allow pre-wiring of cable looms, for easier installation
- ✓ Suitable for earthed or isolated screen systems
- ✓ Built-in DIN rail foot for clip-on mounting to top hat or G DIN rails
- ✓ Optional flat mounting on side
- ✓ 2.5 mm² terminals allow for larger cross section wiring, stranded wires terminated with ferrules or fitting two wires into a single terminal
- ✓ Very low resistance to minimise unwanted signal strength reductions
- ✓ Strong, flame retardant, ABS housing
- ✓ Colour coded terminals (grey for line, green for clean) give a quick and easy installation check
- ✓ Screen terminal enables easy connection of cable screen to earth
- ✓ Simple, yet substantial, connection to earth via DIN rail
- ✓ ESP TNQ is suitable for telecommunication applications in accordance with Telcordia and ANSI Standards (see **Application Note AN005**)
- ✓ Available as a 'UL Listed' version, add /UL to part code (ESP 06Q, ESP 15Q, ESP 30Q and ESP 50Q only)

Application

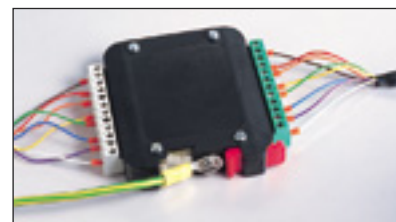
Use these protectors where installation space is at a premium and large numbers of lines require protection.

Installation

Connect in series with the signal or data line either near where it enters or leaves the building or close to the equipment being protected. Install in a cabinet/ cubicle close to the system's earth star point.



An ESP Q Series protector mounted on a top hat DIN rail. Note the plug-in terminals for easier installation in confined spaces



The ESP Q Series can be earthed via DIN rail, or via the M5 threaded hole in its base

Accessories

For suitable enclosures for the ESP Q & TNQ Series, please contact us.

Technical specification

Electrical specification	ESP 06Q	ESP 15Q	ESP 30Q	ESP 50Q	ESP 110Q	ESP TNQ
Nominal voltage ¹	6 V	15 V	30 V	50 V	110 V	-
Maximum working voltage U_c^2	7.79 V	18.8 V	37.8 V	57.8 V	132 V	296 V
Current rating (signal)	750 mA	750 mA	750 mA	750 mA	750 mA	300 mA
In-line resistance (per line $\pm 10\%$)	1.0 Ω	1.0 Ω	1.0 Ω	1.0 Ω	1.0 Ω	4.3 Ω
Bandwidth (-3 dB 50 Ω system)	1 MHz	2.5 MHz	6 MHz	5 MHz	15 MHz	20 MHz

Transient specification	ESP 06Q	ESP 15Q	ESP 30Q	ESP 50Q	ESP 110Q	ESP TNQ
Let-through voltage (all conductors) ³ Up						
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	15.0 V	28.0 V	53.0 V	84.0 V	188 V	395 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	12.5 V	26.5 V	48.0 V	76.0 V	175 V	390 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	10.0 V	23.0 V	43.5 V	64.5 V	145 V	298 V
5 kV, 10/700 μ s ⁴	10.8 V	26.2 V	44.3 V	65.8 V	150 V	300 V
Maximum surge current						
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21 - per signal wire - per pair				2.5 kA 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		

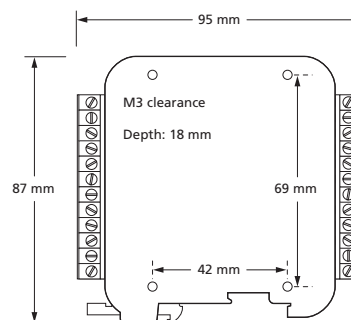
Mechanical specification	ESP 06Q	ESP 15Q	ESP 30Q	ESP 50Q	ESP 110Q	ESP TNQ
Temperature range	-40 to +80 °C					
Connection type	Pluggable 12 way screw terminal					
Conductor size (stranded)	2.5 mm ²					
Earth connection	Via DIN rail or M5 threaded hole in base of unit					
Case material	ABS UL94 V-0					
Weight - unit - packaged (each) - packaged (per 10)	0.1 kg 0.12 kg 1.3 kg					
Dimensions						

¹ Nominal voltage (DC or AC peak) measured at < 5 μ A (ESP 15Q, ESP 30Q, ESP 50Q, ESP 110Q) and < 200 μ A (ESP 06Q).

² Maximum working voltage (DC or AC peak) measured at < 5 mA leakage (ESP 15Q, ESP 30Q, ESP 50Q, ESP 110Q) and < 10 μ A (ESP TNQ).

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).



The ESP Q Series is also available for protection of RS 485 and RTD applications (ESP RS485Q, ESP RTDQ). Protectors for individual data and signal lines are available (ESP D Series and Slim Line ESP SL Series), or ready-boxed to IP66 (ESP **D/BX etc). Alternatively, for individual protectors with higher current or bandwidth use the ESP E and ESP H Series.