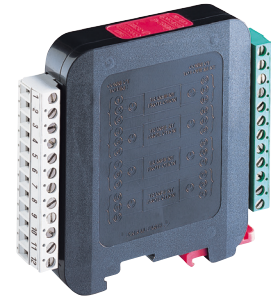


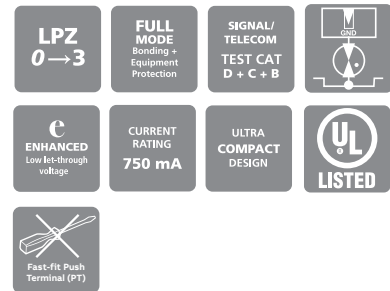
TECHNICAL DATA SHEET

Data & signal protection

ESP Q Series



Combined Category D, C, B (to IEC/BS EN 61643) Surge Protective Device (SPD) suitable for 4 twisted pair lines. Available for working voltages of up to 6, 15, 30, 50, 110 and 180 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 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
- 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

Application

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

Accessories

Weather proof enclosures:

ESP WBX SLQ (with transparent lid)

ABB order code
7TCA085410R0037

ESP WBX SLQ/G (with opaque grey lid)

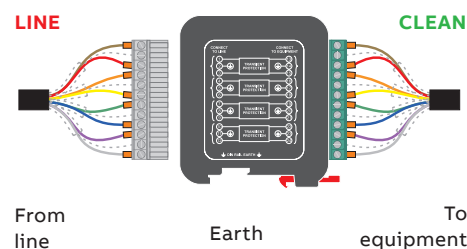
ABB order code
7TCA085410R0036

- Fast fit screwless Push Terminal versions (ESP X/PT) allow quick tool-less cable connection saving installation time.
- Very low resistance to minimize 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 with Push Terminal options (/PT) for simple 'spring' connections, to provide fast and reliable cable termination
- ESP 06Q-180Q (and /PT variants) have UL497b approval under file E240341

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.

ESP 06Q, ESP 15Q, ESP 30Q, ESP 50Q, ESP 110Q, ESP 180Q and ESP TNQ installed in series (in-line)



NOTE: 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.

ESP Q Series - Technical specification

Electrical specification	ESP 06Q Series	ESP 15Q Series	ESP 30Q Series	ESP 50Q Series	ESP 110Q Series	ESP 180Q Series	ESP TNQ Series
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V	180 V	–
Maximum working voltage U_c (DC) ⁽²⁾	7.79 V	18.8 V	37.8 V	57.8 V	132 V	190 V	296 V
Maximum working voltage U_c (AC RMS)	5 V	13 V	26 V	41 V	93 V	130 V	–
Current rating (signal)	750 mA	750 mA	750 mA	750 mA	500 mA	250 mA	300 mA
In-line resistance (per line $\pm 10\%$)	1.0 Ω	1.0 Ω	1.0 Ω	1.0 Ω	3.3 Ω	6.8 Ω	4.3 Ω
Bandwidth (-3 dB 50 Ω system)	45 MHz	55 MHz	45 MHz	45 MHz	45 MHz	45 MHz	20 MHz
Transient specification							
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	215 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	205 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	203 V	298 V
5 kV, 10/700 μ s ⁽⁴⁾	10.8 V	26.2 V	44.3 V	65.8 V	150 V	200 V	300 V
Maximum surge current							
D1 test 10/350 μ s to wire – Per signal BS EN/EN/IEC 61643-21: – Per pair	2.5 kA 5 kA					1.25 kA 2.5 kA	2.5 kA 5 kA
8/20 μ s to ITU-T K.45:2003, – Per signal wire	10 kA						
IEEE C62.41.2:2002: – Per pair	20 kA						
Mechanical specification							
Temperature range	-40 to +80 °C						
Connection type	Pluggable 12 way screw terminal - maximum torque 0.6 Nm /PT version: Pluggable 12 way screwless Push Terminal						
Conductor size (stranded)	2.5 mm ²						
Earth connection	Via DIN rail or M5 threaded hole in base of unit						
Case material	FR Polymer UL-94 V-0						
Weight: – Unit	0.1 kg						
– Packaged (each)	0.12 kg						
Dimensions	See diagram below						

⁽¹⁾ Nominal voltage (DC or AC peak) measured at < 5 μ A (ESP 15Q, ESP 30Q, ESP 50Q, ESP 110Q, ESP 180Q) 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, ESP 180Q) 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)

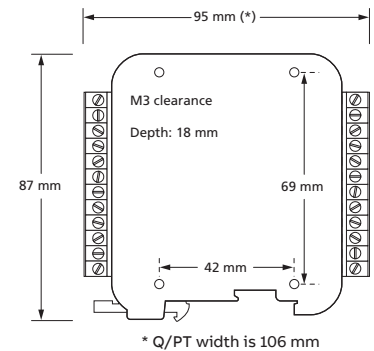


ABB order codes

Part	ABB order code	Part	ABB order code	Part	ABB order code
ESP 06Q	7TCA085400R0087	ESP 30Q(UL)	7TCA085400R0108	ESP 180Q	7TCA085400R0462
ESP 06Q/PT	7TCA085400R0473	ESP 30Q/PT(UL)	7TCA085400R0561	ESP 180Q/PT	7TCA085400R0479
ESP 06Q(UL)	7TCA085400R0553	ESP 50Q	7TCA085400R0118	ESP 180Q(UL)	7TCA085400R0557
ESP 06Q/PT(UL)	7TCA085400R0559	ESP 50Q/PT	7TCA085400R0477	ESP 180Q/PT(UL)	7TCA085400R0564
ESP 15Q	7TCA085400R0098	ESP 50Q(UL)	7TCA085400R0555	ESP TNQ	7TCA085400R0183
ESP 15Q/PT	7TCA085400R0474	ESP 50Q/PT(UL)	7TCA085400R0562	ESP TNQ/PT	7TCA085400R0472
ESP 15Q(UL)	7TCA085400R0554	ESP 110Q	7TCA085400R0088	WBXSLQ	7TCA085410R0037
ESP 15Q/PT(UL)	7TCA085400R0560	ESP 110Q/PT	7TCA085400R0478	WBXSLQ/G	7TCA085410R0036
ESP 30Q	7TCA085400R0107	ESP 110Q(UL)	7TCA085400R0556		
ESP 30Q/PT	7TCA085400R0476	ESP 110Q/PT(UL)	7TCA085400R0563		

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