

Data and signal protection

ESP H Series



Combined Category D, C, B tested protector (to BS EN 61643-21) suitable for twisted pair signalling applications which require either a lower in-line resistance or an increased current than the ESP D or E Series. Also suitable for DC power applications less than 16 A. 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.

LPZ 0 → 3	FULL MODE Bonding + Equipment Protection	SIGNAL/TELECOM TEST CAT D + C + B		ENHANCED Low let-through voltage
LOW IN-LINE RESISTANCE 0.05 Ω	CURRENT RATING 16 A			

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-low (< 0.05 Ω) in-line resistance allows resistance critical applications (e.g. alarm loops) to be protected
- Very high (16 A) maximum running current
- Strong, flame retardant ABS housing

- Supplied ready for flat mounting on base or side
- Built-in DIN rail foot for simple clip-on mounting to top hat DIN rails
- Colour coded terminals give a quick and easy installation check - grey for the dirty (line) end and green for clean
- Screen terminal enables easy connection of cable screen to earth
- Substantial earth stud to enable effective earthing
- Integral earth plate enables enhanced connection to earth via CME kit

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

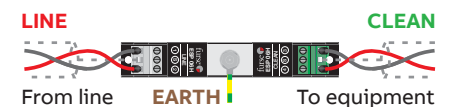
Combined Mounting/Earthing kits:

- CME 4** Mount & earth up to 4 protectors
- CME 8** Mount & earth up to 8 protectors
- CME 16** Mount & earth up to 16 protectors
- CME 32** Mount & earth up to 32 protectors

Weatherproof enclosures:

- WBX 2/G**
For use with up to 2 protectors
- WBX 3, WBX 3/G**
For use with up to 3 protectors
- WBX 4, WBX 4/GS**
For use with a CME 4 and up to 4 protectors
- WBX 8, WBX 8/GS**
For use with a CME 8 and up to 8 protectors
- WBX 16/2/G**
For use with one or two CME 16 and up to 32 protectors

Install in series (in-line)



NOTE: For some data and signal applications with lower current, higher in-line resistance or higher bandwidth requirements, the ESP D or E Series protectors or the Slim Line ESP SL Series may be more suitable. If the protector is to be mounted directly onto a PCB, use the ESP PCB/**D or ESP PCB/**E protectors.

ESP H Series - Technical specification

	ESP 06H	ESP 15H	ESP 30H	ESP 50H	ESP 110H	ESP 180H
ABB order code	7TCA085400R0003	7TCA085400R0009	7TCA085400R0011	7TCA085400R0012	7TCA085400R0008	7TCA085400R0492
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	16.7 V	36.7 V	56.7 V	132 V	190 V
Maximum working voltage U_c (AC RMS)	5 V	11 V	25 V	40 V	93 V	130 V
Current rating (signal) ⁽⁴⁾	16A (25 °C)					
In-line resistance (per line $\pm 10\%$)	0.05 Ω					
Bandwidth (-3 dB 100 Ω system)	640 KHz	1.75 MHz	4 MHz	1.35 MHz	2.5 MHz	8.8 MHz
Transient specification	ESP 06H	ESP 15H	ESP 30H	ESP 50H	ESP 110H	ESP 180H
Let-through voltage (all conductors)⁽³⁾	U_p					
C2 test 4 kV, 1.2/50 μ s, 2 kA 8/20 μ s, line to earth	750 V	750 V	750 V	750 V	850 V	850 V
C1 test 500 V, 1.2/50 μ s, 250 A 8/20 μ s, line to line	26.0 V	44.0 V	74.0 V	156 V	218 V	
B2 test 4 kV 10/700 μ s, 100 A 5/310 μ s, line to earth	600 V	600 V	600 V	600 V	700 V	700 V
B1 test 1 kV 10/700 μ s, 25 A 5/310 μ s, line to line	16.0 V	23.0 V	43.0 V	68.0 V	145 V	210 V
C3 test 1 kV/ μ s, 100 A 10/1000 μ s, line to line	10.0 V	22.0 V	46.0 V	79.0 V	160 V	220 V
Maximum surge current						
D1 test 10/350 μ s	Per line to earth I_{total} (total to earth)	2.5 kA 5 kA				
I_n test 8/20 μ s	Line to Line Per line-to-earth I_{total} (total to earth)	700 A 10 kA 20 kA	500 A	250 A	500 A	350 A 250 A
Mechanical specification	ESP 06H	ESP 15H	ESP 30H	ESP 50H	ESP 110H	ESP 180H
Temperature range	-40 to +80 °C					
Connection type	Screw terminal - maximum torque 0.5 Nm					
Conductor size (stranded)	2.5 mm ²					
Earth connection	M6 stud - maximum torque 0.5 Nm					
Case material	FR Polymer UL-94 V-0					
Weight: – Unit	0.08 kg					
Dimensions	See diagram below					

⁽¹⁾ Nominal voltage (DC or AC peak) measured at < 10 μ A (ESP 15H, ESP 30H, ESP 50H, ESP 110H, ESP 180H) and < 200 μ A (ESP 06H)

⁽²⁾ Maximum working voltage (DC or AC peak) measured at < 1 mA leakage (ESP 15H, ESP 30H, ESP 50H, ESP 110H, ESP 180H) and < 10 mA (ESP 06H)

⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), both polarities. Response time < 10 ns

⁽⁴⁾ Current derates to zero at 85°C

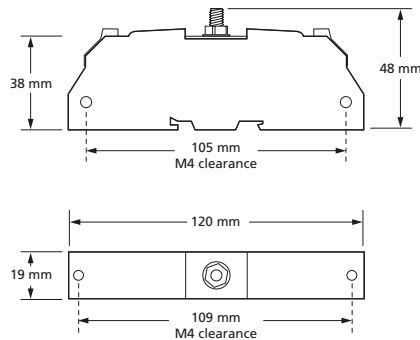


ABB order codes

Part	ABB order code	Part	ABB order code	Part	ABB order code
CME4	7TCA085400R0001	CME8	7TCA085400R0002	CME16	7TCA085410R0002
CME32	7TCA085410R0003	WBX 2/G	7TCA085410R0022	WBX 3	7TCA085410R0023
WBX 3/G	7TCA085410R0024	WBX 4	7TCA085410R0027	WBX 4/GS	7TCA085410R0028
WBX 8	7TCA085410R0030	WBX 8/GS	7TCA085410R0031	WBX 16/2/G	7TCA085410R0020

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