

# Specific systems protection

## ESP CCTV Series



\*NOTE: product label design may vary.

<b>LPZ</b> 0 → 3	<b>FULL MODE</b> Bonding + Equipment Protection	<b>HIGH</b> BANDWIDTH	<b>SIGNAL/ TELECOM</b> TEST CAT D + C + B	<b>e</b> ENHANCED Low let-through voltage
<b>LOW IN-LINE RESISTANCE</b> 1 Ω	<b>CURRENT RATING</b> 300 mA			

**Combined Category D, C, B tested protector (to BS EN 61643) suitable for coaxial CCTV cables with BNC connectors (ESP CCTV/B) or twisted pair CCTV lines (ESP CCTV/T) on systems with either an earthed or an isolated screen. Not suitable for use on broadcast, satellite or cable TV systems. 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
- 100 MHz bandwidth prevents the degradation of high frequency signals
- Low in-line resistance to minimise unnecessary reductions in signal strength and maximizes signalling distance
- Very low reflection coefficient/VSWR ensure that the protector doesn't disrupt system operations
- Suitable for either earthed or isolated screen systems
- Sturdy, conductive ABS housing for 2 way shielding - preventing emissions & providing signals with immunity from external interference
- Convenient holes for flat mounting on base or side
- Built-in DIN rail foot for easy installation on a top hat DIN rail
- ESP CCTV/T has colour coded terminals for a quick and easy installation check - grey for the dirty (line) end and green for the clean end
- Substantial earth stud to enable effective earthing
- Integral earthing plate for enhanced connection to earth via CME kit
- ESP CCTV/B has Network Rail Approval PA05/02510. NRS PADS reference 086/023410

### Application

Use these protectors on the video cable to outdoor CCTV cameras and central control and monitoring equipment.

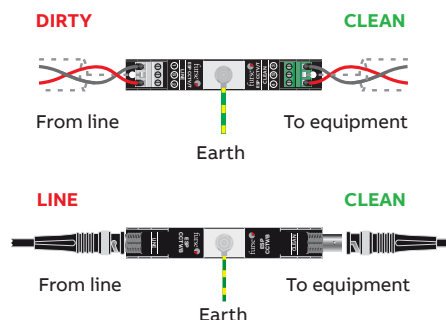
### Installation

Connect in series with the CCTV cable in a convenient place close to the equipment being protected. For outdoor CCTV cameras, protectors should be mounted in the junction box, or in a separate enclosure, close to the camera. Protect central control and monitoring equipment inside the building by installing protectors on all incoming or outgoing lines, either:

- a) near where they enter or leave the building, or
- b) close to the equipment being protected (or actually within its control panel).

### Accessories

When CCTV protectors are installed in groups, or alongside protectors for signal and mains power lines, these can be mounted and earthed simultaneously on a CME kit. A CME 4 will accommodate the video, telemetry and power protectors to a camera. If protectors cannot be incorporated within an existing panel or enclosure, WBX enclosures are available for up to 4, 8, 16 or 32 protectors and their associated CME kit. The WBX 4/GS is a secure IP66 enclosure suitable for a CME 4 and associated protectors.



**NOTE:** Camera telemetry or control lines should be protected with a suitable Lightning Barrier from the ESP D or E Series. Protectors for the power supply to individual cameras (e.g. ESP 240-16A) and the mains supply to the control room (e.g. ESP 240 D1) are available. For coaxial RF (ESP RF Series) cable protectors and CATV systems (ESP CATV/F) are also available.

ESP CCTV Series - Technical specification

Electrical specification	ESP CCTV/B	ESP CCTV/B-15V	ESP CCTV/B-30V	ESP CCTV/B-50V	ESP CCTV/T	ESP CCTV/T-15V	ESP CCTV/T-30V	ESP CCTV/T-50V
<b>ABB order code</b>	7TCA085400R0123	7TCA085400R0124	7TCA085400R0125	7TCA085400R0126	7TCA085400R0129	7TCA085400R0270	7TCA085400R0271	7TCA085400R0027
Nominal voltage <sup>(1)</sup> (peak-peak)	1 V				2 V			
Maximum working voltage $U_c^{(2)}$ (peak)	7.79 V	16.7 V	36.7 V	56.7 V	7.79 V	16.7 V	36.7 V	56.7 V
Current rating (signal)	300 mA							
In-line resistance ( $\pm 10\%$ )	1 $\Omega$ inserted in coax inner				1 $\Omega$ per line			
Bandwidth (-3 dB 75 $\Omega$ system) <sup>(3)</sup>	> 100 MHz							
Voltage standing wave ratio	< 1.2:1							

Transient specification	ESP CCTV/B	ESP CCTV/B-15V	ESP CCTV/B-30V	ESP CCTV/B-50V	ESP CCTV/T	ESP CCTV/T-15V	ESP CCTV/T-30V	ESP CCTV/T-50V
<b>Let-through voltage (all conductors)<sup>(4)</sup> <math>U_p</math></b>								
C2 test 4 kV 1.2/50 $\mu$ s, 2 kA 8/20 $\mu$ s to BS EN/EN/IEC 61643-21	39.5 V	55.0 V	78.0 V	105.0 V	39.5 V	55.0 V	78.0 V	105.0 V
C1 test 1 kV 1.2/50 $\mu$ s, 0.5 kA 8/20 $\mu$ s to BS EN/EN/IEC 61643-21	26.0 V	42.0 V	66.5 V	93.5 V	26.0 V	42.0 V	66.5 V	93.5 V
B2 test 4 kV 10/700 $\mu$ s to BS EN/EN/IEC 61643-21	16.0 V	27.2 V	47.5 V	73.6 V	16.0 V	27.2 V	47.5 V	73.6 V
5 kV, 10/700 $\mu$ s <sup>(5)</sup>	17.0 V	28.2 V	49.5 V	76.2 V	17.0 V	28.2 V	49.5 V	76.2 V
<b>Maximum surge current<sup>(6)</sup></b>								
D1 test 10/350 $\mu$ s to BS EN/EN/IEC 61643-21:	2.5 kA (per signal wire)				2.5 kA (per signal wire)			
	-				5 kA (per pair)			
8/20 $\mu$ s to ITU (formerly CCITT):	10 kA (per signal wire)				10 kA (per signal wire)			
	-				20 kA (per pair)			

Mechanical specification	ESP CCTV/B variants	ESP CCTV/T variants
Temperature range	-40 to +80°C	
Connection type	Coaxial BNC female	Screw terminal
Conductor size (stranded)	Not applicable	2.5 mm <sup>2</sup>
Earth connection	M6 stud	
Case Material	Conductive ABS UL94 V-0	
Weight	0.08 kg	
Dimensions	See diagram below	

- <sup>(1)</sup> Nominal voltage (DC or AC peak) measured at <10  $\mu$ A leakage.
- <sup>(2)</sup> Maximum working voltage (DC or AC peak) measured at 5 mA leakage.
- <sup>(3)</sup> Capacitance < 30 pF.
- <sup>(4)</sup> The maximum transient voltage let-through of the protector throughout the test ( $\pm 10\%$ ), line to line & line to earth. Screen to earth let-through voltage will be up to 600 V (with 5 kV 10/700 test), when protector is configured for use with non-earthed or isolated screen systems. Response time < 10 ns.
- <sup>(5)</sup> 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).
- <sup>(6)</sup> The installation and connectors external to the protector may limit the capability of the protector.

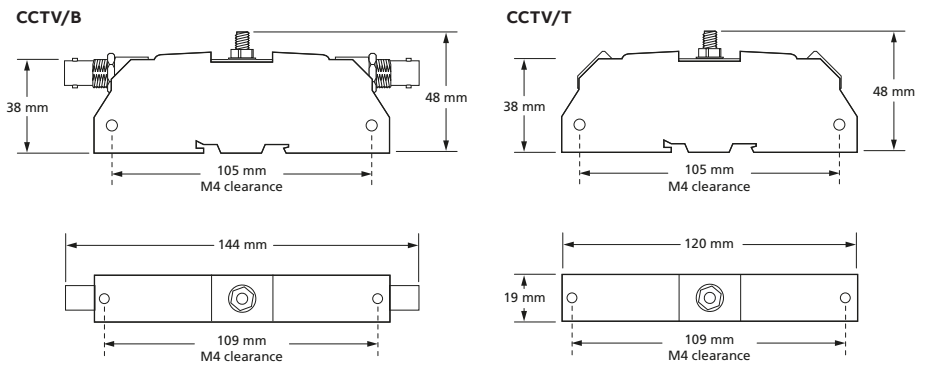


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