

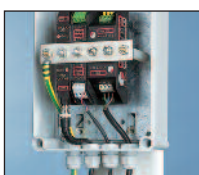


LPZ $0_A \rightarrow 3$	FULL MODE Bonding + Equipment Protection
SIGNAL/ TELECOM TEST CAT D + C + B	ENHANCED Low let-through voltage
LOW INLINE 1Ω RESISTANCE	CURRENT 300mA RATING
HIGH BANDWIDTH	

Combined Category D, C, B tested protector (to BS EN 61643-21) 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_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
- ✓ 100MHz bandwidth prevents the degradation of high frequency signals
- ✓ Low in-line resistance to minimise unnecessary reductions in signal strength and maximise 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 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



Protectors for the video (ESP CCTV/B, left), camera telemetry (ESP 06E, centre) and the low current mains power (ESP 240-5A, right) inputs to a camera, installed together on a CME 4 mounting and earthing kit. Note that the protectors have been cross bonded to the metalwork of the pole (out of shot)

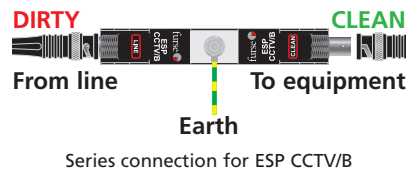
Application

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 simultaneously mounted and earthed 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.

Electrical specification

	ESP CCTV/B	ESP CCTV/T
Nominal voltage¹ (peak – peak)	1V	2V
Maximum working voltage U_c^2 (peak)	6.45V	
Current rating (signal)	300mA	
In-line resistance ($\pm 10\%$)	1 Ω inserted in coax inner	1 Ω per line
Bandwidth (-3dB 75 Ω system) ³	>100MHz	
Voltage standing wave ratio	<1.2	

¹ Nominal voltage (DC or AC peak) measured at <1 μ A leakage.

² Maximum working voltage (DC or AC peak) measured at 10mA leakage. Other voltages available – contact Furse for details.

³ Capacitance <30pF.

Transient specification

	ESP CCTV/B	ESP CCTV/T
Let-through voltage (all conductors) ¹ U_p		
C2 test 4kV 1.2/50 μ s, 2kA 8/20 μ s to BS EN/EN/IEC 61643-21	39.5V	
C1 test 1kV, 1.2/50 μ s, 0.5kA 8/20 μ s to BS EN/EN/IEC 61643-21	26.0V	
B2 test 4kV 10/700 μ s to BS EN/EN/IEC 61643-21	16.0V	
5kV, 10/700 μ s ²	17V	
Maximum surge current³		
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21		
– per signal wire	2.5kA	2.5kA
– per pair	–	5kA
8/20 μ s to ITU (formerly CCITT), BS 6651:1999 Appendix C		
– per signal wire	10kA	10kA
– per pair	–	20kA

¹ The maximum transient voltage let-through the protector throughout the test ($\pm 10\%$), line to line & line to earth. Screen to earth let-through voltage will be up to 600V (with 5kV 10/700 test), when protector is configured for use with non-earthed or isolated screen systems. Response time <10ns.

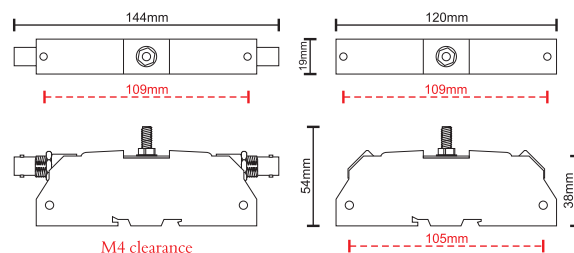
² Test to BS 6651:1999 Appendix C, Cat C-High, IEC 61000-4-5:1995, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68).

³ The installation and connectors external to the protector may limit the capability of the protector.

Mechanical specification

	ESP CCTV/B	ESP CCTV/T
Temperature range	-25°C to +70°C	
Connection type	Coaxial BNC female	Screw terminal
Conductor size (stranded)	Not applicable	2.5mm ²
Earth connection	M6 stud	
Casing material	Conductive ABS UL94 V-0	
Weight – unit	0.08kg	
– packaged (per 10)	0.9kg	

Dimensions



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