



- ◆ Suitable for use on ten line LSA-PLUS disconnection modules.
- ◆ For PSTN and U interface ISDN lines, use ESP KT1 and ESP K10T1.
- ◆ For S/T interface ISDN lines, use ESP KT2 & ESP K10T2.
- ◆ Protect single lines with ESP KT1 or ESP KT2 in conjunction with the ESP KE10.
- ◆ Protect all ten lines on a disconnection module with ESP K10T1 or ESP K10T2.

### Application

Use these units to protect PBX telephone exchanges, ISDN and other telecom equipment with LSA-PLUS disconnection modules.

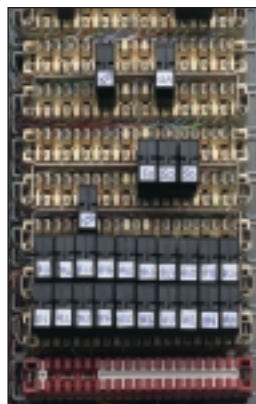
### Features and benefits

- ✓ Low cost protection for large numbers of telephone lines.
- ✓ Low let-through voltage between all sets of conductors.
- ✓ Multiple strike protection, with the ability to protect against at least ten 5kA transients (test to ITU K20).
- ✓ Colour of housing distinguishes electrically different protectors, to help avoid confusion when installed together on the same distribution frame.
- ✓ Quick and easy plug-in installation.
- ✓ At larger installations ESP K10T1/2 provide all in one protection for all ten lines on a standard LSA-PLUS disconnection modules.
- ✓ ESP KT1/2 allow you to protect only the lines you need.
- ✓ Ridged finger holds make it easy to obtain a firm grip for installation or removal.
- ✓ Use the ESP KE10 to provide trouble free earthing for up to ten ESP KT1/2s (per disconnection module).
- ✓ ESP K10T1/2 have an integral earth connection making the ESP KE10 unnecessary.
- ✓ ESP K10T1/2's multi contact earth connection gives it a larger area earth connection than competing devices.
- ✓ UK OfTel Approval NS/G/1235/W/100025.



ESP K10T1 (black housing) and ESP K10T2 (white housing) provide quick, easy, all in one protection, with integral earth, for all ten lines on an LSA-PLUS disconnection module.

For individual telephone lines and lines at unmanned sites the high performance ESP TN, ready boxed derivative ESP TN/BX or ESP TN/2BX, or plug-in ESP TN/JP or ESP TN/RJ11 should be used. For plug-in S/T interface ISDN protection, use the TN or ISDN Series protectors.



Single line protectors (here ESP KT1s) installed on LSA-PLUS disconnection modules, via ESP KE10 earth bars, to all incoming telephone lines and individual extension lines to other buildings.

### Installation

Install protectors on all lines that enter or leave each building (including extensions to other buildings). Identify the lines requiring protection and plug-in the protector (ensuring the correct orientation) for a series connection. Plug ESP K10T1/2 directly into each disconnection module requiring protection.



Firmly push an ESP K10T1 (or ESP K10T2) into each disconnection module requiring protection, so that it clips securely into the earth point, at each end of the module.

ESP KT1/2 must be installed via the ESP KE10 earth bar. Clip an ESP KE10 on to the disconnection module and plug an ESP KT1/2 in to each line on the module that needs protecting.



Having pushed the ESP KE10 earth bar on to the disconnection modules' earth points, firmly push an ESP KT1 (or ESP KT2) into each line/pair requiring protection.

If the protector's ratings are exceeded it will sacrifice itself and fail short circuit, taking the line out of commission - indicating it needs replacing and preventing subsequent transients from damaging equipment.

## Electrical specification

	ESP KT1	ESP KT2	ESP K10T1	ESP K10T2
<b>Maximum working voltage<sup>1</sup></b>				
- line to earth <sup>2</sup>	190V	58V	190V	58V
- line to line	190V	5V	190V	5V
<b>Current rating (signal)</b>	300mA	300mA	300mA	300mA
<b>In-line resistance (<math>\pm 10\%</math>)</b>	4.4W	4.4W	4.4W	4.4W
<b>Bandwidth (-3dB 50W system)</b>	>50MHz	>50MHz	>50MHz	>50MHz

1 Maximum working voltage (DC or AC peak) at  $95\mu\text{A}$  for ESP KT1 and ESP K10T1 and at  $5\mu\text{A}$  for ESP KT2 and ESP K10T2.

2 Post transient recovery voltage >80V (ESP KT1 and ESP K10T1 only).

## Transient specification

	ESP KT1	ESP KT2	ESP K10T1	ESP K10T2
<b>Let-through voltage<sup>1</sup></b>				
5kV, 10/700 $\mu\text{s}$ test to: <i>BS 6651:1999 Appendix C, Cat C-High</i> <i>ITU (formerly CCITT) IX K17</i>				
- line to line	200V	27V	200V	27V
- line to earth	200V	80V	200V	80V
<b>Maximum surge current<sup>2</sup></b>				
- per signal wire	5kA	5kA	5kA	5kA
- per pair	10kA	10kA	10kA	10kA

1 The maximum transient voltage let-through the protector throughout the test ( $\pm 10\%$ ), line to line & line to earth. Response time <10ns.

2 Tested with 8/20 $\mu\text{s}$  waveshape to ITU (formerly CCITT), BS 6651:1999 Appendix C.

## Mechanical specification

	ESP KT1, ESP KT2	ESP K10T1, ESP K10T2	ESP KE10
<b>Temperature range</b>	-25°C to +70°C	-25°C to +70°C	-
<b>Connection type</b>	To LSA-PLUS disconnection modules (BT part number 237A)		
<b>Earth connection</b>	Via ESP KE10 earth bar	Via integral earth clip	-
<b>Weight</b>			
- unit	0.01kg	0.10kg	0.01kg
- packaged	0.12kg (per 10)	0.12kg	0.10kg (per 10)
<b>Dimensions</b>			