

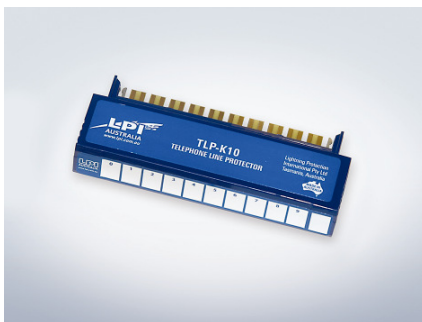


### LPI® Telephone Pair Protector : TLP- K10

#### Features

- High impulse rating
- Wide operating frequency / Low insertion and return loss
- Easy installation

#### Product Description



The TLP-K10 is a multistage protection module designed for the protection of analogue telephone and data circuits against transient over-voltages caused by lightning, induced impulses and other voltage surges. Traditional shunt-connected gas filled arresters by themselves can no longer provide adequate or required protection for sensitive line cards or newer generation digital switching systems.

The TLP-K10 contains ten line protection circuits on a single PCB. Each circuit consists of a primary three terminal gas filled arrester followed by a secondary transient clamping circuit.

The gas arrester provides common mode protection by bypassing transient currents to ground. The arrester chosen by LPI has a fast impulse response compatible with the requirements of advanced high speed data networks.

The secondary transient clamping circuit comprises a series resistor in each leg plus shunt connected silicon transient protection devices.

The effect of this series impedance is to provide decoupling between the primary and secondary protection elements during fast rise time impulses associated with lightning type transient events. The effect is that fast rise time events, with high  $dV/dt$ , are diverted to the primary gas filled arrester rather than passed through to the equipment.

Following the series impedance, silicon transient protection devices provide transverse mode fine protection.

TLP-K10 is earthed through two spring clips, which connect to the Krone LSA frame. These robust tabs provide excellent electrical contact with the frame.

#### Application

The TLP-K10 can be used to protect at the MDF, Public Exchange (PSTN), PBX, Key Telephone Systems (KTS), Pay phones, Security systems and Fire alarms as well as data distribution systems, remote instrumentation, radio transmitters etc.

The LPI TLP-K10 is designed for installation into the Krone LSA-Plus Series 2\* termination system. The LPI TLP-K10 must be installed into disconnect blocks to allow the series impedance elements to be inserted in circuit.

**Technical Data:**

Ordering Code	TLP - K10
Configuration:	10 pair plug in module
Protection Stages:	Gas arrester / series impedance / Silicon Protection
Bandwidth:	144 kbits/s (1MHz)
DC Breakdown:	190-276V line to earth 190-262 V line to line
Max working voltage:	190V line to earth 190V line to line
Surge rating:	a+b-e 20kA (8/20µs) a-b or a-e 10kA (8/20µs)
Typical Let-through Voltage:	240V @ 5kV (10/700µs)
Max Line Current:	150mA @ 25°, 110mA @ 65°C
AC discharge current:	a+b-e 10A @ 50Hz for 1second
Return loss:	>23dB @ 1MHz 120Ω
Loop resistance:	6.6 Ω nominal
Insertion loss:	<3dB at 120 Ω, 1MHz
Insulation Resistance:	> 5M Ω @ 190Vdc line to ground and line to earth
Dimensions	119mm long x 20mm high 45mm from front of KRONE* Series 2 block when plugged in
Weight	80 g
Connection:	PCB plug in, to Krone LSA* disconnect block
Earthing:	Via spring clips to KRONE* frame
Temperature range	0 - 45°C, 10 – 90% RH
Location	Krone LSA-Plus* disconnect block MDF or IDF. BD & CD as stipulated in the Australian Standards.

**Circuit Schematic Diagram:**

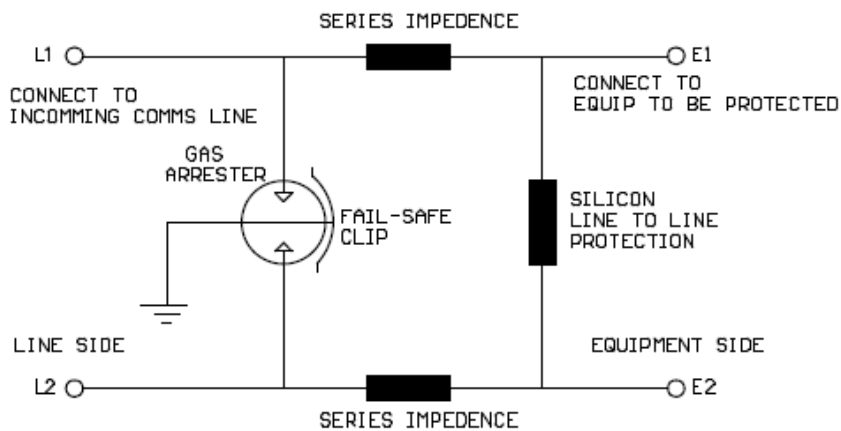


Figure 1: Circuit Diagram of TLP-K10

## Installation

To install the LPI-TLP-K10 plug into a Krone LSA\* disconnect block. Ensure that the **top side** of the module is plugged into the **Line Side** while the **bottom side** of the module to the **Equipment Side** of the block .

Make sure that the LPI TLP-K10 is plugged fully into the KRONE\* block. The **edge** of the plastic cover **should be level** with the front of the KRONE\* block when the module is fully inserted.

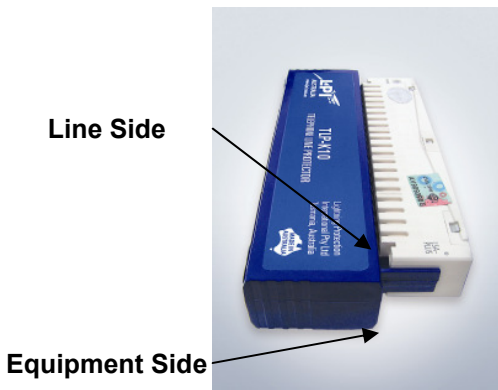


Figure 2: Installation

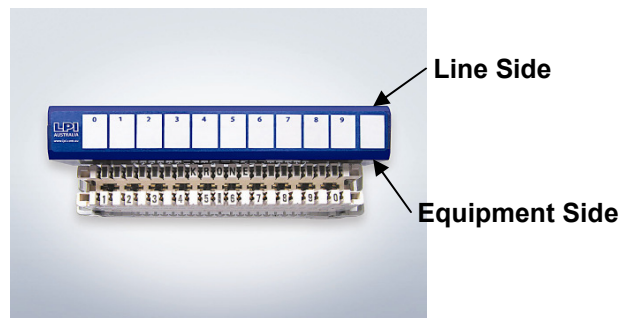


Figure 3: Installation

The earth connection for the LPI TLP-K10 is derived from the spring clips on each end of the board which engage with the KRONE\* frame upon insertion of the module. The TLP-K10 may be fitted to the KRONE\* blocks in either a standard or PROFIL\* type frame. It is absolutely essential that the frame is earthed in accordance with ACA TS009. The frame must connect to the stations protective earth.

If a PROFIL\* frame is used, it is important that earthing clips are fitted to each disconnect block before it is attached to the frame. These are the KRONE\* supplied clips which fit into the ends of the disconnect block, and then engage with the bars on the PROFIL\* frame when the block is fitted into the frame.

Note: Specifications are subject to change without notice.

\*KRONE, KRONE LSA-Plus, KRONE LSA and PROFIL are registered trademarks of KRONE GmbH, Germany.

# INSTALLATION INSTRUCTION SHEET

LIGHTNING PROTECTION INTERNATIONAL PTY LTD ABN 11 099 190 897



## Notes:

*LPI® has a policy of continuing product development. Therefore, the above specifications are subject to change without notice.*

**LPI® LIGHTNING PROTECTION INTERNATIONAL PTY LTD**  
ABN 11 099 190 897

16 Mertonvale Circuit, Kingston Tasmania, Australia 7050

■ Phone: +61 3 6227 1955 ■ Fax: +61 3 6229 1900

■ Email: [info@lpi.com.au](mailto:info@lpi.com.au) ■ Web: [www.lpi.com.au](http://www.lpi.com.au)