

TECHNICAL DATA SHEET

LIGHTNING PROTECTION INTERNATIONAL PTY LTD
Comprehensive Lightning and Surge Protection ABN 11 099 190 897



- Direct Strike Protection
- Earthing Products & Solutions
- Surge & Transient Protection for Power, Data, Communications and RF Lines

LPI® SST Power Protection Module in Enclosure

Features

- High performance surge protector for an operating voltage of 220-240Vac
- Nominal impulse discharge current Ph-N 100kA 8/20µs / Single Mode
- Shunt protection in a metal enclosure



Product Description

The LPI Power Protection Module is a power line shunt surge protection device housed in a metal enclosure. The LPI Power Protection Modules comes in 2 ranges: 1 Phase and 3 Phase. Each has Class II surge protection rated for 100kA 8/20µs between P-N, and 100kA 10/350µs between N-E. The unit is designed for mounting at main power switchboards and distribution boards in LP Zones 0 and 1 location as per IEC 62340. The unit is supplied with IEC 61643 Class II MOV Surge Diverters which provide the most effective surge protection with low let through voltage.

Ordering Code	LPI 1PPMSST100KA-NE		LPI 3PPMSST100KA-NE	
Description:	Power Protection Module, Shunt, 100kA 8/20µs P-N, 100kA 10/350µs N-E		Power Protection Module, Shunt, 3 x 100kA 8/20µs P-N, 100kA 10/350µs N-E	
Power distribution systems:	TT, TN-S, TN-C, TN-C-S (MEN), IT			
Dimensions/ Weight:	300 (H) x 200 (W) x 150 (D) mm Approx. 5.0 kg		300 (H) x 200 (W) x 150 (D) mm Approx. 5.0 kg	
Environmental rating / Enclosure/ Mounting:	IP 65/Metal enclosure/ Wall mount type			
Conductor size / Colour:	Accepts: 25mm ²			
Operating temperatures:	-35 to +55°C, 0 – 95% humidity			
Response time:	< 100ns			
Standards:	IEC 61643 Class II, BS 6651 Cat A & B			
Surge withstand:	ANSI C62.41 Cat A, Cat B, Cat C, IEC61643 AS/NZS 1768 Cat A, Cat B, Cat C			
Application:	Main and sub-distribution boards			
Warranty:	5 Years			
Ph-N Protection				
Surge rating:	I_{max}	100kA 8/20µs	100kA 8/20µs	100kA 8/20µs
Nominal voltage:	U_n	220-240Vac	220-240Vac	220-240Vac
Maximum Continuous Operating Voltage	U_c	385Vrms	385Vrms	385Vrms
Let through voltage:	U_p	< 1.5kV @ 50kA 8/20µs	< 1.5kV @ 50kA 8/20µs	< 1.5kV @ 50kA 8/20µs
N-E Protection				
Surge rating:	I_{max}	150kA 8/20µs	150kA 8/20µs	150kA 8/20µs
Surge rating:	I_{imp}	100kA 10/350µs	100kA 10/350µs	100kA 10/350µs
Insulation resistance (R_{isol}):		>1000MΩ	>1000MΩ	>1000MΩ

Operation

LPI 1PPMSST100kA-NE and 3PPMSST100kA-NE Shunt Protectors are designed to operate on 220-240Vac, 50/60Hz power lines. The protectors are designed for use with TN-C, TN-S, TN-C-S (MEN), TT and IT power distribution systems.

Installation

1. Ensure power is disconnected prior to commencing installation.
2. The unit is labelled showing the incoming (point of entry) and outgoing (load) terminals to be used. PHASE IN and PHASE OUT are at the top of the unit whilst the EARTH and NEUTRAL are at the bottom.
3. Ensure that the “V” or Kelvin connections as per figure 1 are observed.
4. Incoming cabling should enter the enclosure on the left hand side and load side cables should exit the enclosure on the right-hand side. This separation is important to ensure induction from “dirty” to “clean” lines does not occur.
5. The earth terminal must be connected to a low impedance earth (<10 Ohms) deploying a single point earthing system, which should be connected to an equipotential earth plane. Integral to this is the elimination of earth loops. It is common, but incorrect from the point of lightning protection to have separate earths for various services. The use of single or multi core copper earth cable of not less than 25mm² (Max. 35mm²) is recommended.
6. Once connections are completed apply power and observe correct operation

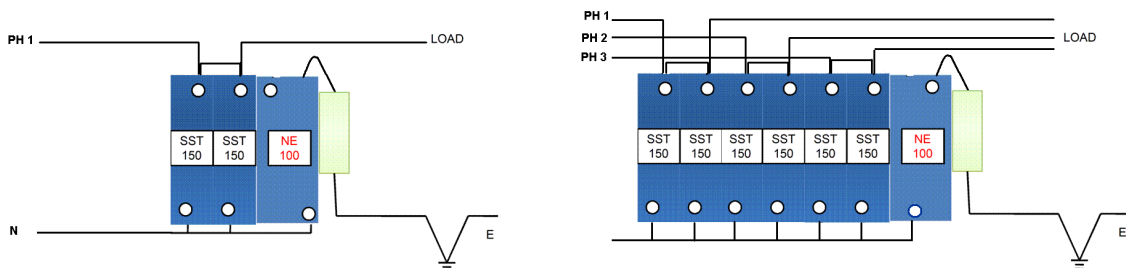
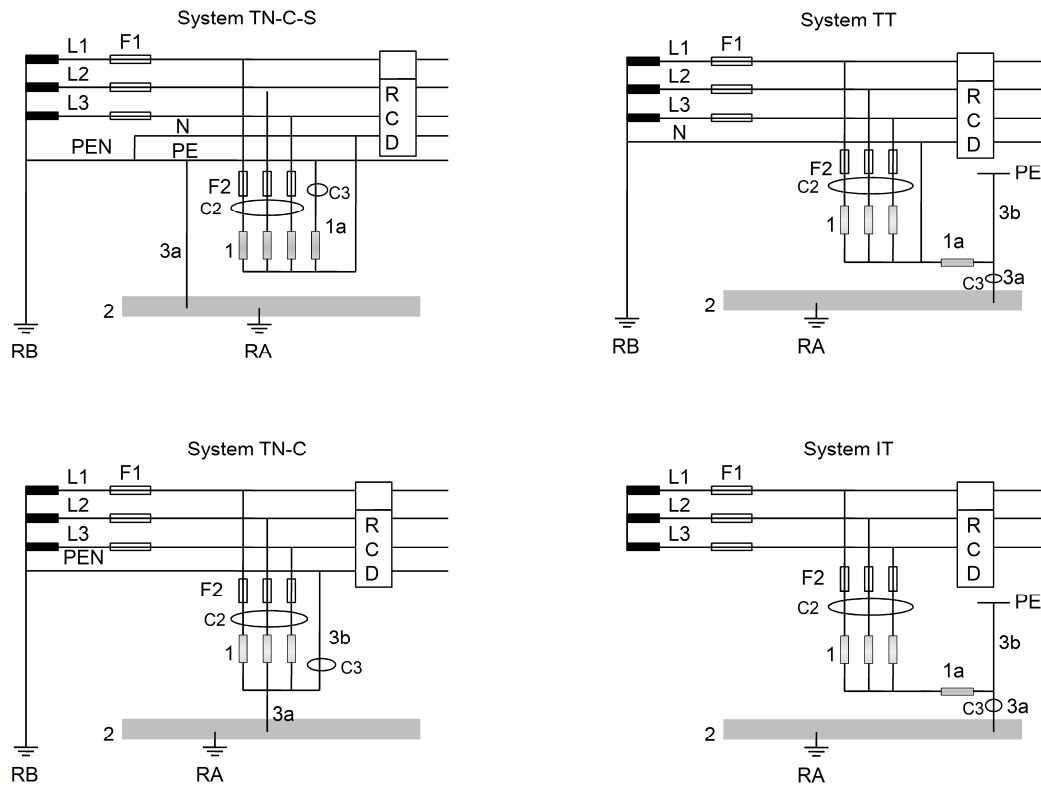


Figure 1 - Connection and Wiring Method (Kelvin Method) for 1PH and 3PH

Location

The Shunt Protection device should be installed at the “Point of Entry” of the power mains, but after the power meter and main breaker so as to protect downstream power connected equipment.



Legend

- 1 LPI SST150
- 1a LPI NE100
- 2 Main equipotential bus bar
- 3a, 3b Grounding wires for arresters
- F1 Main fuse of service main
- F2 Recommended back-up fuse 160AgL/gG (only if the main fuse F1 is fitted with fuses >160AgL/gG)
- RA Equipment grounding
- RB Grounding system
- RCD RCD/ELCB

Recommended Fuse and

Fuse F1 gL/gG	C2 (mm sq.)	C3 (mm sq.)	Fuse F2 gL/gG
25A up to 80A	10	16	Not required
100A	16	16	Not required
125A	16	16	Not required
160A	25	25	Not required
> 160A	25	25	160A

Figure 2: Recommended Fuse and Cable sizes

Connection options:

1. It is recommended that the “V” or Kelvin connection be employed as shown at Fig: 3a to minimize the over voltage applied on the protected equipment. Be sure not to run input and output wiring parallel.
2. If “V” connection is not possible, “T” connection is preferred as shown at Fig: 3b. With this connection method, the input lead length should be kept as short and thick as possible and the wires should be bundled together.

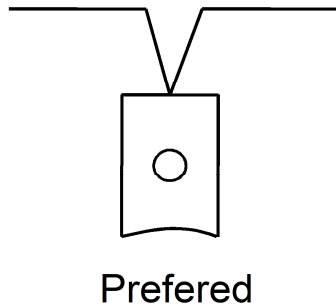


Fig 3a. Connection to moduels

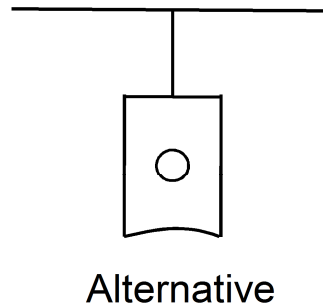


Fig 3b. Alternative Connection