

LIGHTNING PROTECTION INTERNATIONAL PTY LTD



LPI BLUETOOTH SURGE PROTECTION RANGE



Comprehensive Lightning, Surge Protection & Earthing Solutions www.lpi.com.au

TECHNICAL DATA SHEET

LPI® Bluetooth Surge Protection Range

Introducing LPI’s patented Bluetooth surge protection range of products. A state of the art circuit designed to meet the latest IEC requirements and combines Bluetooth 4.1 low power communication for cost effective remote monitoring.

Key Benefits

- App based operation removes the need for switchboards to be opened manually when undertaking maintenance checks for surge protection purposes
- The App based operation allows for maintenance checks to be undertaken remotely by non-technical personnel
- Plug and base assembly for easy installation and maintenance
- Alarm Interface Modules (AIM) allow for standalone or integrated communication
- High performance surge protector Class II applications
- Thermal and short circuit disconnect
- 50 kA surge rating capacity



Key Features

- Bluetooth 4.1 communication provides feedback on critical operating elements
- Memory retention of the latest values stored in the SPD module
- Easy pairing and interrogation of SPD for quick and simple diagnostics
- Integrated surge counter in each module
- Individual device identifier tag
- Instant status indication for each module

Available for the following operating platforms:

<i>Version 8 and above</i>	<i>Windows 10 / Windows 10 mobile</i>	<i>Version 4.3 and above</i>

TECHNICAL DATA SHEET

With the aid of the optional Alarm Interface Module (AIM) we can now provide unprecedented connectivity between LPI SPD's. AIM can auto detect up to 19 x SST150B modules within its range and provide individual data upon request.

Table 1.

Alarm Interface Module output options

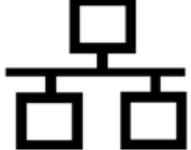
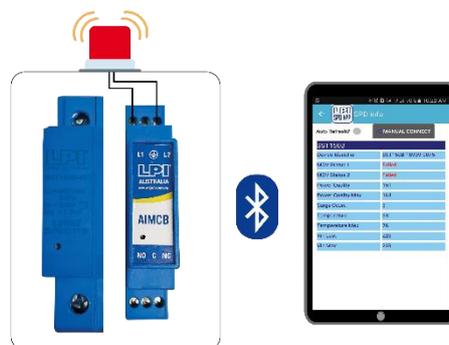
			
AIMCB		AIME	AIMW
1st Release		Future Release phase	Future Release Phase

Figure 1. Simple Bluetooth communication with SST150B inside enclosure using an external Smart device to read back critical information



Figure 2. If local alarm indication is required, the AIMCB will auto pair to the SST150B and allow volt free contacts to be initiated with future releases allowing for simultaneous Bluetooth communication.



Note: LPI does not supply external warning lights or other associated accessories

TECHNICAL DATA SHEET

LPI[®] SPD Module

The LPI SSTB150 is a single mode power line shunt surge protection device rated for 50 kA 8/20 μs single shot surge capacity (I_{max}). The unit is designed for mounting at main power switchboards and distribution boards in category C locations as per the IEC and other international standards.

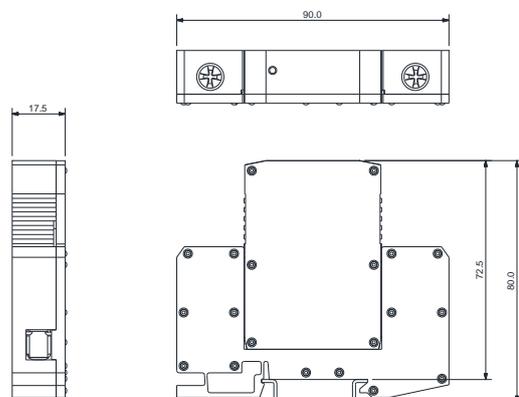
The LPI SSTB150 is designed to provide surge and transient protection in compliance to IEC 61643 international standards. The surge protection design allows it to be configured for Ph-N protection applications for single or multiple phases as required, it is also designed for easy mounting on standard 35 mm DIN rail.

The unit comes with fast, responsive Metal Oxide Varistors (MOV) to provide effective surge protection with low let-through voltage to protect sensitive electronics and electrical circuits.

The unit comes as a two-part item. The base is hardwired into the circuit to be protected, and the protection module is plugged into this base. This enables easy replacement of protection modules should they be degraded or damaged by excessive transient activity. The SSTB150 is supplied with Bluetooth connectivity as detailed in previous pages.

Technical Specifications

Protection Modes:	Ph-N
Status Indication:	LED display: showing operational condition
Bluetooth Connectivity:	Status indication, operating voltage, Harmonic THD %, Internal temp & Surge Impulse Count
Mounting:	TS 35 mm – DIN43880 DIN rail
Weight:	Approx. 135 grams
IP Rating:	IP 20
Colour:	Blue
Conductor Size:	35 mm ² (Max)
Operating Temperatures:	-20 to +40 °C, 0 – 95 % humidity
Designed to Conform to:	IEC 61643-11 & UL 1449 Ed4 where applicable
Surge Withstand:	ANSI C62.41 Cat A, Cat B, Cat C, AS/NZS 1768-1991 Cat A, Cat B, Cat C
Application:	Main and sub-distribution boards
Configuration:	Hardwired base and pluggable module
Warranty:	5 Years



TECHNICAL DATA SHEET

LPI® Neutral / Earth Module



Features

- Encapsulated spark gap technology
- Low follow on current
- 35 mm DIN rail mount

The LPI NE range lightning arrester is intended for applications in unmeasured parts of electrical installations within the lightning protection zones concept at the boundaries LPZ 0 A(B) -1 (according to IEC 62305).

The LPI NE range lightning arresters are constructed as encapsulated (non-venting) chamber carbon spark gaps.

The LPI NE range is a single pole neutral–earth high energy protection device to protect electronic equipment from lightning current surges.

Technical Specifications

Product Code:	NE-15	NE-100
Nominal Operating Voltage: Un		230 V/50 Hz
Max. Continuous Operating Voltage: Uc		255 V/50 Hz
Follow Current Extinguishing Capability at Uc: If	60 Arms	100 Arms
Voltage Protection Level at Limp: UP	<1.3 kV	<1.5 kV
Max. Lightning Impulse Current: Iimp	15 kA (10/350 µs)	100 kA (10/350 µs)
Max. Lightning Charge: Q	7.5 As	50 As
Specific Energy: W/R	50 kJ/Ω	2500 kJ/Ω
Insulation Resistance: Ri		>1000 MΩ
Response Time: Ta		<100 ns
jStandard:	IEC 61643 and EN 61643	
Operating Temperature Range:	-40 to +80 °C	
Recommended Cross-Section of Connected Conductors:	10 mm ² (at 3 Nm clamping force)	50 mm ² (solid) or 35 mm ² (flexible) (at 4 Nm clamping force)
Protection Type:	IP 20	
Mounting:	DIN rail 35 mm	
Housing Material:	SLOVAMID 6FRC2	
Colour:	Blue	
Weight:	84 g	231 g
Application:	Main and sub-distribution boards (between N&E conductors only)	Main and sub-distribution boards (between N&E conductors only)
Dimensions:	65 (H) x 18.5 (W) x 90 mm (L)	65 (H) x 35 (W) x 90 mm (L)
Warranty:	5 Years	

TECHNICAL DATA SHEET

LPI® Alarm Interface Modules

- Instant connection to surge units, no interaction required
- Ability to connect to 19 x SST150B units
- Combination of Bluetooth communication and volt free contact output

Technical Specification

Product Code:	AIMCB
Status Indication:	LED showing operational condition
Bluetooth Connectivity:	Status indication
Mounting:	TS 35 mm – DIN43880 DIN rail
Weight:	Approx. 135 grams
IP Rating:	IP20
Colour:	Blue
Conductor Size:	2.5 mm ²
Operating Temperatures:	-20 to +60 °C, 0 – 95 % humidity.
Contact Rating:	Max switching voltage: 250 Vac / 220 Vdc Max switching current: 2 A Max carrying current: 2 A Max switching power: 60 W / 125 VA

Accessibility

The alarm and surge modules are accessible through the LPI SPD App. Simply scan the QR code below or from the LPI sticker located on applicable enclosures to be taken to the LPI website and choose from iOS, Android or Windows applications.

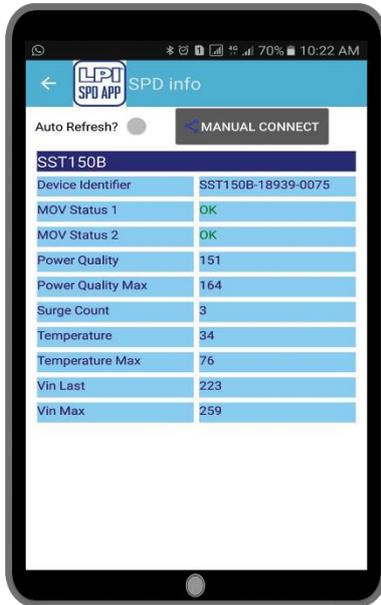


Sample sticker

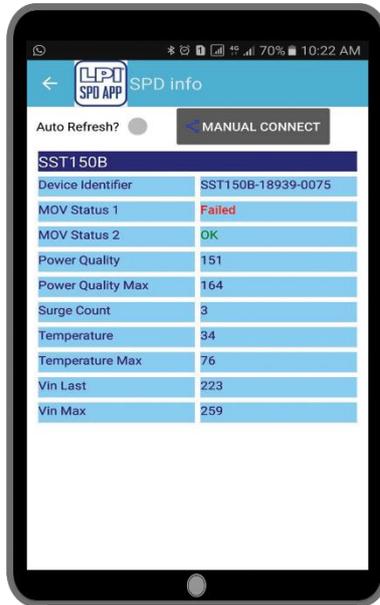


LPI SPD QR code

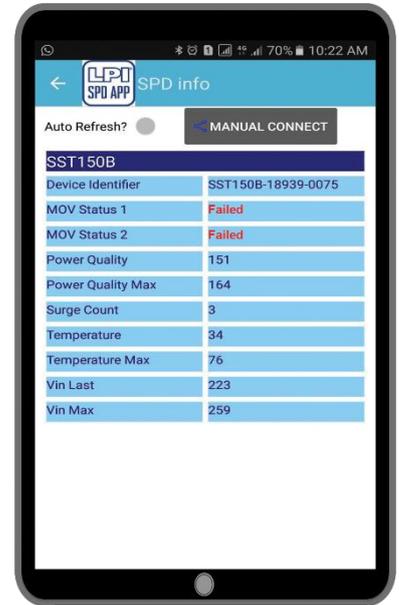
TECHNICAL DATA SHEET



Operational



Replace as protection is reduced



Replace as no protection is left

Combination

The SST150B can be combined into formats to provide a customised solution as given on page 3.

Module Combination (DR)

Single or 3 Phase combinations

- Pre-wired, DIN-Rail mounted, ready for quick install
- Customisable to kA rating capacity
- Dedicated neutral-earth protector



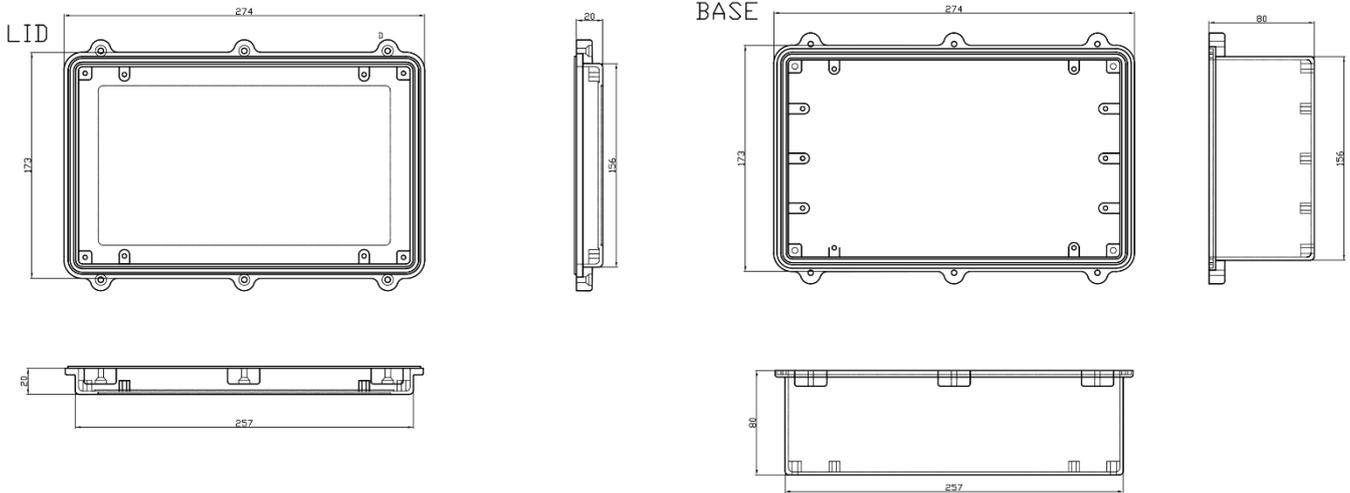
Compact Enclosure (PPM) (PPMT)

- IP67
- Surface mount
- Aluminium enclosure
- Single or 3 phase applications
- With or without integrated connection leads
- Small compact installation
- Screw down lid



TECHNICAL DATA SHEET

Enclosure



IP67 base complete with gasket, aluminium light grey painted, surface mount via external feet

TECHNICAL DATA SHEET

LPI® Bluetooth Surge Protection Range

Single Module and Base

Product Code:	Nominal Operating Voltage Un: @ 50/60 Hz	Surge Rating (Imax): @ 8/20 µs	Nominal Discharge Current (In): @ 8/20 µs	Max. Continuous Operating Voltage (Uc):	Voltage Level at 20 kA 8/20 µs:	Response Time:	Power Distribution Systems:
SST150B-385	220-240 Vac	50 kA	20 kA	385 Vrms	<1.3 kV	<5 ns	TN, TT & for L-N mode
SST150B-480	220-277 Vac	50 kA	20 kA	480 Vrms	<1.7 kV	< 5 ns	TT & TN

Replaceable Surge Module

Product Code:	Nominal Operating Voltage Un: @ 50/60 Hz	Surge Rating (Imax): @ 8/20 µs	Nominal Discharge Current (In): @ 8/20 µs	Max. Continuous Operating Voltage (Uc):
SST150B-385-Module	220-240 Vac	50 kA	20 kA	385 Vrms
SST150B-480-Module	220-277 Vac	50 kA	20 kA	480 Vrms

DIN Mount and PPM Range
Part Number Key

Connection UU	Mounting VVVV	Surge Rating WWW	Mcov XXX	Neutral – Earth YYY	Alarm Module ZZZ
Single (1P)	DIN-mounted (DR)	50 kA	385 V	15 kA	AIMCB
Three (3P)	Compact (PPM)	100 kA	480 V	100 kA	
	Compact with connection tails (PPMT)	150 kA			
		200 kA			

DIN Mount and PPM Ordering Code:

Product Order Code: UU-VVVV-WWW-XXX-YYY-ZZZ

Refer to above part number key.

1. First select connection type (phases)
2. Select mounting type
3. Select surge rating
4. Select operating voltage
5. Select N-E option

Note: 15 kA N-E is not available for PPM range

Example product code for DR type product = **1DR50kA-385-NE15**

Example product code for PPM type product = **3PPM100kA-480-NE100**

Note: All PPM's are supplied with cable ties securing SST150B modules for transport reasons. Remove all cable ties when installing.

TECHNICAL DATA SHEET

Installation Guide

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.

Installation:

Shunt diverters should be installed upstream of any RCD/ELCBs (residual current devices/ earth leakage circuit breakers). Refer to table for recommended fuse and cable sizes.

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 for enclosure and backplane units only.

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 3a. are observed.
4. Incoming cabling should enter the enclosure or backplane from the bottom.
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 25 mm² (Max. 35 mm²) is recommended.
6. Once connections are completed apply power and observe correct operation, place the provided LPI APP sticker to the outside of the enclosure or cabinet as to indicate Bluetooth connection is available to the surge diverter.



LPI App Sticker

TECHNICAL DATA SHEET

Connection options:

1. It is recommended that the “V” or Kelvin connection be employed as shown at figure 3a to minimise 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 figure 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.

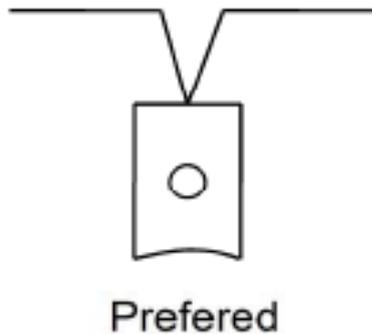


Figure 3a. Connection to Modules

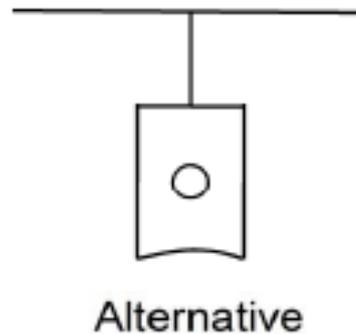
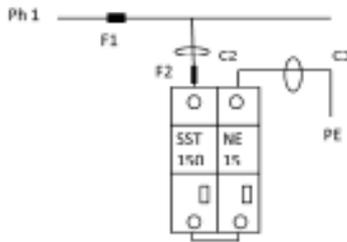


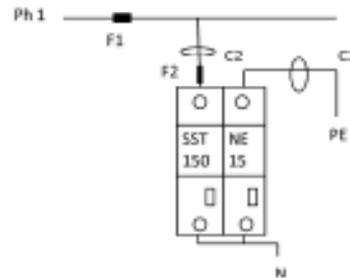
Figure 3b. Alternative Connection

TECHNICAL DATA SHEET

Connection Diagram for 1DR50KA-385-NE15



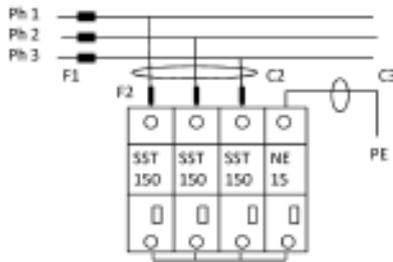
TN-C or IT Power System



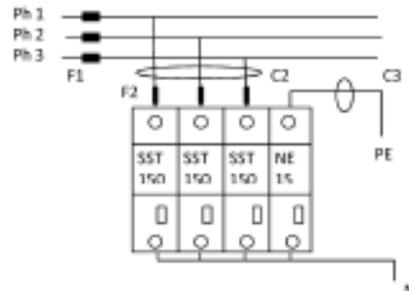
TN-S, TN-CS or TT Distribution System

Note: For 100 kA and above, connect the Ph1 to one of the SST150B modules only.

Connection for 3DR50KA-385-NE15



TN-C or IT Power System



TN-S, TN-CS or TT Distribution System

Note: For 100 kA and above, connect the Ph1, Ph2 and Ph3 to the first, third and fifth SST150B modules only

Recommended Fuse and Cable Sizes

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: Fuse and Cable size for NE15

Fuse F1 gL/gG	C2 (mm sq.)	C3 (mm sq.)	Fuse F2 gL/gG
25A up to 80A	10	16	Not required
100A-125A	16	16	Not required
160A	25	25	Not required
200A-315A	35	35	Not required
> 500A	35	35	315A

Figure 3: Fuse and Cable size for NE100

TECHNICAL DATA SHEET

LPI® Bluetooth Range of Surge Filters

**Features**

- High performance surge protector for an operating voltage of 220-277 Vac
- SSTB150 technology for primary and secondary protection 32 A- 125 A (1 Ph & 3 Ph)
- Encapsulated spark gap and SSTB150 technology capable of operation under fault/overvoltage conditions up to 480 Vrms for 200 A filter and above
- Three stage protection provides highest level of protection for sensitive electronic equipment

Product Description

- Designed to suit TT, TN-C, TN-S & TN-C-S distribution systems
- Inductors – dv/dt and di/dt of the incoming surge will be reduced by 1000 times
- 32 – 125 A filters primary (150 kA 8/20 μ s) and secondary (50 kA 8/20 μ s)
- 200 – 630 A filters primary (50 kA 10/350 μ s, 135 kA 8/20 μ s) and secondary (50 kA 8/20 μ s) surge protection. (NOTE: For 800 A and above, primary protection is 110 kA 10/350 μ s.)
- High N-E protection rating– 100 kA 10/350 μ s, 150 kA 8/20 μ s
- LED Indication, remote alarm contacts, MOV status indication and optional surge counter

Electronic equipment is highly susceptible to damage from lightning and other transient pulses (including man made switching transients), which arrive via the powerlines through direct strike, or inductive and capacitive coupling. Efficient filtering and clamping at the point of entry of power feeds to sensitive electronic equipment is essential to mitigate physical equipment damage, loss of operations and economic loss.

The LPI Bluetooth series surge filter provides multiple stage protection against incoming surges & transients and shall be installed in series with the incoming mains power supply to the equipment or building. Shunt-only clamping alone is not sufficient, as it does not limit the excessive wavefront characteristic of the pre-clamped waveform. The LPI surge filter will reduce the rate of rise of voltage (dv/dt) to below 15 V/ μ s as per AS1768 Cat B 3 kA (8/20 μ s) applied impulse and to below 30 V/ μ s for AS 1768 Cat C 20 kA (8/20 μ s) applied impulse.

TECHNICAL DATA SHEET

LPI® Bluetooth Range of Surge Filters 32-125 A (Single and Three Phase)

Description	LPI® Bluetooth Range of Surge Filters 32-125 A (Single and Three Phase)		
Nominal Operating Voltage U_n :	220 – 240	V AC P-N @ 50/60 Hz	220 - 277
Max Continuous Operating Voltages U_c :	385 Vrms		480 Vrms
Operating Time:	< 1 ns		
Power Distribution Systems:	TT, TN-S, TN-C, TN-C-S (MEN)		
Primary Surge Protection Rating P-N:	Configurable 100 kA 8/20 μ s single-shot rating replaceable modules* ¹		
Secondary Surge Protection Rating P-N:	Configurable 50 kA 8/20 μ s single-shot rating replaceable modules* ²		
N-E Protection:	100 kA 10/350 μ s I_{imp} Class 1 to IEC 61643-11 255 V rms or 200 kA 8/20 μ s I_{max}		
Protection Modes:	Transverse and common mode		
Inductor:	Non-saturating, low pass, power and noise filtering		
Capacitor Type:	Separately-fused, self-healing, X-grade rating at high voltage ratings		
Surge Counter :	Build-in memory retained surge counter displayed via LPI SPD App		
Efficiency:	99 %		
Overload / Short Circuit Protection:	In-line circuit breaker, for 32 A, 40 A and 63 A only		
Performance:	Typical let-through voltage < 700 V		
Filter 3 dB Point:	Approximately 4000 Hz		
Standards (Primary and Secondary) :	Meets requirements of IEC 61643-11 and UL1449 Ed 3		
Standards (N-E):	Meets requirements of IEC 61643-11		
Surge Withstand:	ANSI/IEEE C62.41, AS/NZS 1768 Cat. A, B and C surge tests		
Protection Status Indication:	Bluetooth connectivity on status of MOV, surge counts, voltage and temperature. LED Status and voltage-free change-over contact output		
Environmental Rating:	IP 55		
Enclosure:	Metal enclosure with durable powder coat finish		
Colour:	Grey		
Mounting:	Wall mount		
Operating Temperatures:	-20 to +40 °C, 0 – 95 % humidity		
Conductor Size:	Accepts up to 35 mm ² (M8 Studs)		
Warranty:	5 years manufacturer's warranty		

*1 Configurable 50, 100, 150 or 200 kA 8/20 μ s

*2 Configurable 50 or 100 kA 8/20 μ s

TECHNICAL DATA SHEET

Description	LPI® Bluetooth Range of Surge Filters 200 A and Above
Nominal Operating Voltage Un:	220 – 277 Vac Ph - N @ 50/60 Hz
Max Continuous Operating Voltage Uc:	385 + 480 Vrms
Operating Time:	< 1 ns
Power Distribution Systems:	TT, TN-S, TN-C, TN-C-S (MEN)
Primary Surge Protection Rating per Phase:	135 kA 8/20 μ s single shot surge capacity between phase and neutral for 800 A and above, phase to neutral protection is 110 kA 10/350 μ s.
Secondary Surge Protection Rating per Phase:	50 kA 8/20 μ s single shot surge capacity between phase and neutral, Bluetooth Technology
Total Surge Protection per Phase:	185 kA 8/20 μ s
N–E Protection:	100 kA 10/350 μ s, 150kA 8/20 μ s. For 800 A and above, neutral to earth protection is 110 kA 10/350 μ s.
Protection Modes:	Transverse and common mode
Inductor:	Ferro cored, low pass, power and noise filtering
Capacitor Type:	Self-healing X grade
Current Crest Factor:	> 3:1
Voltage Drop:	< 2 V at full load
Efficiency:	99 %
Frequency Response:	3 dB point below 3000 Hz
Performance:	Typical let-through voltage for all models < 2 x mains peak voltage
Standards (Primary and Secondary):	IEC 61643-1
Standards (N-E):	IEC 61643-1
Surge Withstand:	ANSI/IEEE C62.41 and AS 1768 Cat. A, B and C surge tests
Environmental Rating:	IP 55
Enclosure:	Metal enclosure with durable polyester powder coat finish
Colour:	RAL 7032
Mounting:	Wall mount
Operating Temperatures:	-35 to +40 °C, 0 – 95 % humidity
Warranty:	5 Years manufacturer's warranty

TECHNICAL DATA SHEET

LPI® Bluetooth Range of Surge Filters

Single Phase Surge Filters

Surge Filter Type:	Nominal Operating Voltage Un: @ 50/60 Hz	Surge Rating (Imax): @ 8/20 µs Per SST150B module primary/secondary	Nominal Discharge Current (In): @ 8/20 µs	Max. Continuous Operating Voltage (Uc):	Voltage Level at 20 kA 8/20 µs:	Response Time:	Power Distribution Systems:
SF1-385	220-240 Vac	50 kA	20 kA	385 Vrms	<1.3 kV	<5 ns	TN, TT & for L-N mode
SF1-480	220-277 Vac	50 kA	20 kA	480 Vrms	<1.7 kV	<5 ns	TT & TN

3 Phase Surge Filters (32 A – 125 A)

SF3-385	220-240 Vac	50 kA	20 kA	385 Vrms	<1.3 kV	<5 ns	TN, TT & for L-N mode
SF3-480	220-277 Vac	50 kA	20 kA	480 Vrms	<1.7 kV	<5 ns	TT & TN

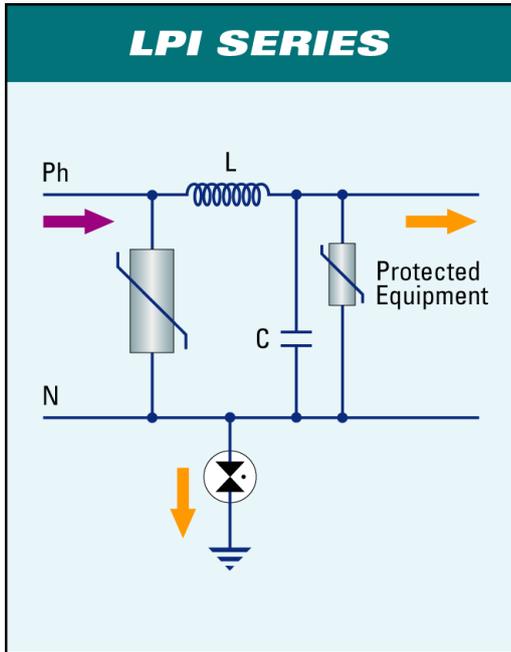
3 Phase Surge Filters (200 A – 1750 A)

Surge Filter Type:	Nominal Operating Voltage Un: @ 50/60 Hz	Primary Surge Rating (Imax): @ 8/20 µs	Secondary Surge Rating (Imax): @ 8/20 µs	Nominal Discharge Current (In): @ 8/20 µs	Max. Continuous Operating Voltage (Uc):	Voltage Level at 20 kA 8/20 µs:	Response Time:	Power Distribution Systems:
SF3-385	220-240 Vac	135 kA	50 kA	20 kA	385 Vrms	<1.3 kV	<5 ns	TN, TT & for L-N mode
SF3-480	220-277 Vac	135 kA	50 kA	20 kA	480 Vrms	<1.7 kV	<5 ns	TT & TN

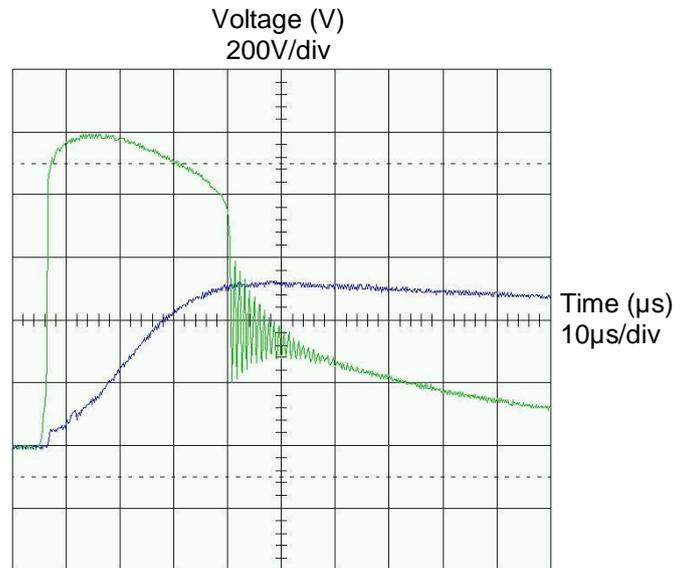
Surge Filter Part Number Key

Product Type	Phases	(A) Load Current	Mcov	Primary Protection	Secondary Protection	Alarm Module
T	UU	VVVV	WWW	XXX	YYY	Z
SF	1	32 Amps	230 V	100 kA	50 kA	AIMCB
	3	40 Amps	385 V	135 kA	100 kA	
		63 Amps	480 V	150 kA		
		125 Amps				
		200 Amps				
		315 Amps				
		400 Amps				
		630 Amps				
		800 Amps				
		1000 Amps				
		1250 Amps				
		1500 Amps				
		1750 Amps				

TECHNICAL DATA SHEET



- Low let-through voltage
- Wavefront slowed (low)
- Energy diverted and filtered
- Poor power conditions
- Based on load current
- Vital for sensitive electronics
- Fine protection
- Common & differential mode



Green: Shunt Protector

Blue: Series Filter

Surge Filter Type	Enclosure Dimensions mm (Unpacked: W x H x D)	Weight kg (Unpacked)
SF132A	300 x 300 x 150	5
SF140A	300 x 300 x 150	6
SF163A	300 x 300 x 150	6
SF1125A	300 x 300 x 150	7
SF332A	400 x 400 x 150	10
SF340A	400 x 400 x 150	10
SF363A	400 x 400 x 150	10
SF3125A	400 x 400 x 150	11
SF3200A	500 x 600 x 200	40
SF3315A	600 x 700 x 200	64
SF3400A	600 x 700 x 200	64
SF3630A	600 x 800 x 200	95
SF3800A	1200 x 800 x 350	153
SF31000A	1200 x 800 x 350	165
SF31250A	1200 x 800 x 350	165
SF31500A	1200 x 800 x 350	165
SF31750A	1200 x 800 x 350	175

TECHNICAL DATA SHEET

Surge Filter Ordering Code:

Product Order Code: T-UU-VVVV-WWW-XXX-YYY-Z

Refer to above part number key.

1. First select product type which for surge filter = SF
2. Select number of phases
3. Select load current
4. Select operating voltage
5. Select primary protection. Note: for surge filters 200 A and above primary protection is 135 kA
6. Select secondary protection
7. Include alarm module

*Example product code for single phase filter = **SF132-385-100+50-AIMCB***

*Example product code for three phase filter = **SF3125-385-150+50-AIMCB***

*Example product code for three phase filter 200 A and above = **SF3630-480-135-50-AIMCB***

Note: All filters are fitted with 100 kA 10/350 μ s or 200 kA 8/20 μ s neutral earth protection.

All filters are supplied with cable ties securing SST150B modules for transport purposes. Remove all cable ties when installing.

TECHNICAL DATA SHEET

Installation

All installation work *must* be carried out by licensed electrical personnel.

The power *must* be disconnected. Ensure no dangerous neutral to earth voltages exist prior to commencing installation work.

1. The surge filter should be installed as close as practical to the power distribution panel. Filters rated at 315 A and above are fitted with two mounting rails (refer to Figure 1) to assist with mounting the unit to the wall.
2. The input and output power cables that connect to the surge filter must have a current rating at least equal to that of the unit being installed.
3. All cables are routed through the bottom of the cabinet. Suitable cable glands should be fitted to the gland plates. All connection points are clearly labelled on the backplane.
4. Connect the input and output power lines as illustrated in figure 2 and figure 3. Input cables are considered “dirty” and must be physically separate by at least 300 mm from the “clean” output cables. This will prevent any over voltage carried by the incoming cables from being induced onto the outgoing or “clean” cables.
5. The earthing impedance of the electrical system should be less than 10Ω, with 5Ω recommended.
6. Connect the earth terminal on the surge filter unit to the nearest electrical main earth using the shortest possible route. Earthing cable should be a minimum of 16 mm² with 25 mm² recommended.
7. All connections must be rechecked to confirm that they are securely connected.
8. Connect power to the surge filter and confirm that power is being delivered to the load and that all status indicators are green. The surge filter is in series with the load and turning off the filter’s internal circuit protection will disconnect power to the load.

- 32 A, 40 A and 63 A with MCCB built in
- 125 A and above no MCCB

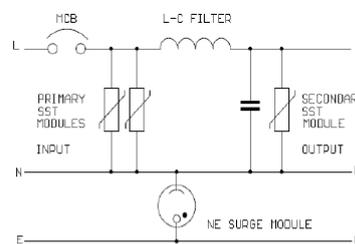


Figure 1. Schematic of 1Ø Surge Filter

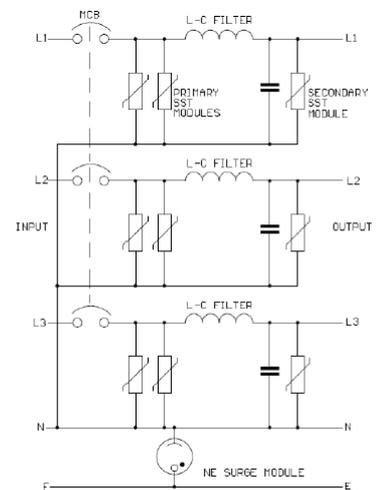


Figure 2. Schematic of 3Ø Surge Filter

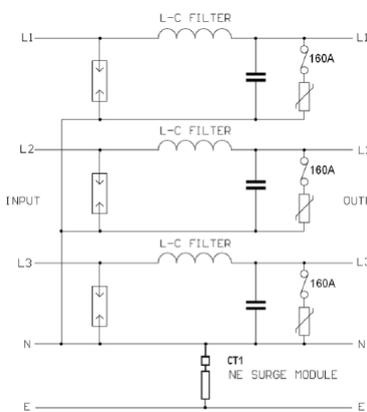


Figure 2 – Schematic of 3Ø Surge Filter (400A and below, no 160A fuse on Filters below 125A)

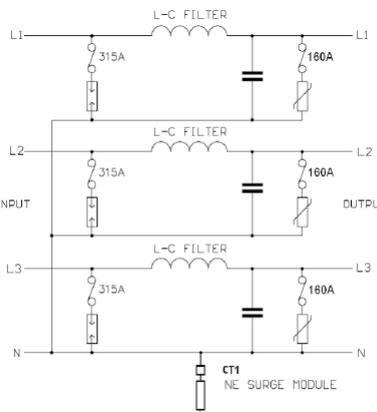


Figure 3 – Schematic of 3Ø Surge Filter (above 400A)

TECHNICAL DATA SHEET

Maintenance

1. Use LPI Bluetooth connectivity to check the status of all modules.
2. Do not perform maintenance work until power to the surge filter has been disconnected.
3. All surge protection devices will degrade and must be replaced at the end of their life cycle. The frequency of replacement is subject to the magnitude and number of incident surges applied to the device – therefore status indication is very important.

TECHNICAL DATA SHEET

LPI® SF163A-480-200+100



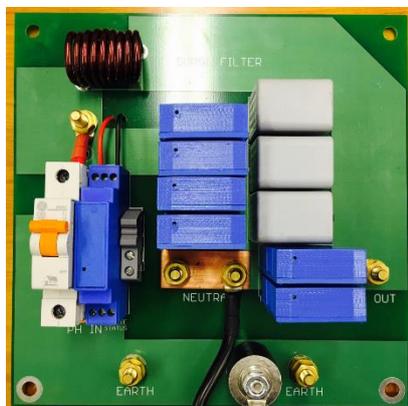
*Actual product may differ slightly from picture

Nominal Operating Voltage U_n :	220 – 277 V AC P-N @ 50/60 Hz
Max Continuous Operating Voltages U_c :	480 Vrms, in excess of IEC 61643 requirements
Operating time:	< 1 ns
Power distribution systems:	TT, TN-S, TN-C, TN-C-S (MEN)
Primary surge protection rating P-N:	Configurable 200 kA 8/20 μ s single-shot rating replaceable modules
Secondary surge protection rating P-N:	Configurable 100 kA 8/20 μ s single-shot rating replaceable modules
N-E protection:	100 kA 10/350 μ s I_{imp} Class 1 to IEC 61643-11 255 Vrms or 200 kA 8/20 μ s I_n
Protection Modes:	Transverse and common mode
Inductor:	Non-saturating, low pass, power and noise filtering
Capacitor type:	Separately-fused, self-healing, X-grade rating at high voltage ratings
Surge counter :	Build-in memory retained surge counter displayed via LPI SPD App
Efficiency:	99%
Overload / short circuit protection:	In-line circuit breaker, 63 A
Performance:	Typical let-through voltage < 700 V
Filter 3 dB point:	Approximately 4000 Hz
LC Filter:	Custom-built Inductor and 3 x 20 μ F capacitors
Standards (primary and secondary) :	Meets requirements of IEC 61643-11 and UL1449 Ed 3
Standards (N-E):	Meets requirements of IEC 61643-11
Surge withstand:	ANSI/IEEE C62.41, AS/NZS 1768 Cat. A, B and C surge tests
Protection status indication:	Bluetooth connectivity on status of MOV, surge counts, voltage and temperature. LED Status and voltage-free change-over contact output
Environmental rating:	IP 65
Enclosure:	Metal enclosure with durable powder coat finish
Colour and dimension	RAL 7032, 300 x 300 x 150 mm (height)
Mounting:	Wall mount
Operating temperatures:	-20 to +80°C, 0 – 95% humidity
Conductor size:	Accepts up to 35 mm ²
Warranty:	5 year manufacturer's warranty

Note: Add “BP” to part number for Back Plain version

TECHNICAL DATA SHEET

LPI® SF163A-480-200+100-IP22



*Actual product may differ slightly from picture

Nominal Operating Voltage U_n :	220 – 277 V AC P-N @ 50/60 Hz
Max Continuous Operating Voltages U_c :	480 Vrms, in excess of IEC 61643 requirements
Operating time:	< 1 ns
Power distribution systems:	TT, TN-S, TN-C, TN-C-S (MEN)
Primary surge protection rating P-N:	Configurable 200 kA 8/20 μ s single-shot rating replaceable modules
Secondary surge protection rating P-N:	Configurable 100 kA 8/20 μ s single-shot rating replaceable modules
N-E protection:	100 kA 10/350 μ s I_{imp} Class 1 to IEC 61643-11 255 Vrms or 200 kA 8/20 μ s I_n
Protection Modes:	Transverse and common mode
Inductor:	Non-saturating, low pass, power and noise filtering
Capacitor type:	Separately-fused, self-healing, X-grade rating at high voltage ratings
Surge counter :	Build-in memory retained surge counter displayed via LPI SPD App
Efficiency:	99%
Overload / short circuit protection:	In-line circuit breaker, 63 A
Performance:	Typical let-through voltage < 700 V
Filter 3 dB point:	Approximately 4000 Hz
LC Filter:	Custom-built inductor and 3 x 20 μ F capacitors
Standards (Primary and secondary) :	Meets requirements of IEC 61643-11 and UL1449 Ed 3
Standards (N - E):	Meets requirements of IEC 61643-11
Surge withstand:	ANSI/IEEE C62.41, AS/NZS 1768 Cat. A, B and C surge tests
Protection status indication:	Bluetooth connectivity on status of MOV, surge counts, voltage and temperature. LED Status and voltage-free change over contact output
Environmental rating:	IP 22
Enclosure:	Metal enclosure with durable powder coat finish
Colour and dimension	RAL 7032, 300 x 300 x 150 mm (height)
Mounting:	Wall mount
Operating temperatures:	-20 to +80°C, 0 – 95% humidity
Conductor size:	Accepts up to 35 mm ²
Warranty:	5 year manufacturer's warranty

Note: Add “BP” to part number for Back Plain version