

## TECHNICAL SPECIFICATION AND INSTALLATION GUIDE

### SPD150i SURGE DIVERTER

( IEC61643-11 Class I & II, 150kA, 2 mode, 220-300vac, L-E or L-N )

#### APPLICATIONS

- Primary power circuits
- Telecommunication Systems / Rectifiers
- Process and Control Systems
- Computer Systems / Medical Systems

#### FEATURES

- Patented MTMOV technology ( Failsafe thermal disconnect )
- UL1449 ed3 Type 4 listed components
- 150kA, 2 mode, L-N or L-E
- UL94-V0 ABS din rail mount housing
- Din 43880 form factor 4 din wide
- Dry contact alarm
- LED visual indicators for protection, power and fault conditions.

#### FUNCTIONAL DESCRIPTION

The SPD150i is designed to protect single and three phase power systems against damage from surges and spikes caused by lightning and other electrical sources. The unit is intended for point of entry or main board protection and is connected in parallel with the power system via HRC fuses.

**This model ( SPD150i ) is designed for use in systems with a grounded neutral in L-N mode. If your system does not have a grounded Neutral or is of a different voltage, this model is NOT suitable.**

#### OPERATION

**Indicators** - The operation status of the SPD150i is indicated by leds on the front panel. The 'OK' ( blue ) light indicates that power is applied to the SPD150i. The 'FAULT' light ( red ) indicates that the surge protection circuitry is damaged and the unit should be replaced. The additional 3 leds ( blue ) indicate the status of each MOV element. When the fault indicator lights, the protection relay contacts change over. The power failure alarm will operate when mains voltage falls below 180VAC.



#### PHYSICAL AND ELECTRICAL SPECIFICATIONS

Model	SPD150i
Number of ports	1 Port
Method of mounting	Fixed. DIN Rail mount
Input voltage – Uc	220-300vac 1P, 380-480vac 3P
Maximum continuous voltage – MCOV	320 L-N, L-E
Temporary overvoltage - TOV	350VAC L-N, 15 mins
Service type	TT, TN, TN C-S or any 1 or 3phase system with a grounded neutral.
Test classification (IEC61643-11)	Class II
Maximum over current protection	125A
Protection modes	Line-Neutral, Line-Earth
Inom 8/20us (Line-Neutral/Earth). Nominal surge life.	60kA
Imax 8/20us (Line-Neutral/Earth). Maximum surge level.	120kA
Residual voltage (Vpl) (Line-Neutral/Earth). (Let through voltage)	<1000v (3kA, 8/20us, ( IEC61643-11)
Safety disconnect	Series thermal fusing on MOV's
External disconnect requirement	Max 125A HRC fuse
Terminations	Power 16mm <sup>2</sup>
Alarms/indicators	5 LED display, dry contact alarm relay output – 250VAC/32VDC, 5A, 5kV isolation
Enclosure rating	IP20
Standards. Designed in accordance with :	IEC61643-11, ANSI/IEEE C62.41 Cat A & B, AS1768-2007 Cat A & B, UL1449ed3 type 4
Installation instructions	Supplied with unit.
Dimensions	70W x 58D x 90H (mm)
Weight	200g
Environment	-10 to 60°C, 0 to 95%RH (non-condensing)
Warranty	5 years, workmanship and materials

## INSTALLATION

Refer to the following procedure to connect the SPD150i.

### 1. CHECK

- Always work safely-disconnect power before making connections.
- All wiring must be carried out by suitably qualified personnel according to applicable standards.
- For installation adjacent to an M.E.N. link, use the L-N mode. Insert insulated link as shown.
- For installation remote from the M.E.N. link, use the L-E mode. Remove link. A separate N-E protector may be required.
- Always use correct size HRC fuses.
- For services >125A use 125A HRC fuses. For services <125A use 1 step below service size. **DO NOT USE AN MCB.**
- Always use Gg or GI rated fuses. Do not use delay types or semiconductor fuses.

### 2. INSTALL

- Locate fuse position as close as possible to the Main Switch.
- Install fuse holders or fuse switch.
- Locate suitable position for SPD ensuring adequate space for cables. Do not install above heat generating objects or any position exposed to weather.

### 3. CONNECT

- Connect wiring-refer to connection diagram on this page. Always use bootlace wire ferrules for lowest resistance to prevent damage to wire.
- Use suitably rated cable for power connections. Cable should be rated for operation at system voltage and be 4mm to 16mm sq.
- Use shortest possible cables for all connections or protection will be reduced.
- For alarm cables use cable rated at system voltage at between 0.5-1.5mm<sup>2</sup>.

### 3. NOTES

- 125A fuses are rated for maximum surge rating.
- Wiring from fuse to SPD carries surge currents only. This means lower size cables can be used than service size rating.
- If using undersize cables we recommend double insulating same.
- It is recommended NOT to connect alarm contacts to AC mains circuits if possible, to

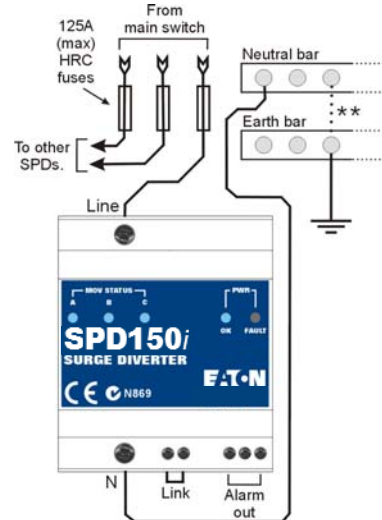
prevent flashover from surges on AC line. Connect to a BMS or PLC if possible.

- Do not perform an insulation resistance test on this unit as it contains voltage limiting components which may be damaged during testing.

### 3. EARTHING

- The main earth wire (from earth link on switchboard to ground rod or system ) **MUST** be at least 6mm dia or larger.
- Earth connections from the unit to neutral or earth link **MUST** be as short as possible.
- **Failure to comply with the above points can result in improper operation of the unit and possible damage to the installation.**

#### L-N mode connections



#### L-E mode connections

