Powering Business Worldwide

TECHNICAL SPECIFICATION AND INSTALLATION GUIDE

SPD3200-TN-E PRIMARY SURGE DIVERTER

(IEC61643-11 Class I & II, 200kA, 3 phase, All mode, 380-440vac)

APPLICATIONS

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

FEATURES

- **Compact 3 phase, panel mount metal enclosure**
- **Includes 3 phase MCB safety disconnect housed inside enclosure.**
- **200kA L-E each phase, 100kA N-E**
- **Dry contact alarm outputs**
- **LED visual indicators for protection and power**
- **Integrated surge counter visible from front panel.**

FUNCTIONAL DESCRIPTION

The SPD3200-TN-E is designed to protect 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 its own safety disconnect MCB.

Differential and common mode transients are diverted to mains earth via internally mounted surge diverters through a common earth bus. All internal connections are designed for minimum impedance to enable maximum current flow back to earth.

This model (SPD3200-TN-E) is designed for use in systems with a grounded neutral where connected for N-E operation. Line transients are diverted directly in L-E mode.

OPERATION

Indicators - The operation status of the SPD3200 is indicated by blue indicators on the front panel. These 4 indicators show the status of each of the L and N surge diverters inside the unit. The indicators are blue when the unit is powered on and operating. When any of these extinguishes then the corresponding internal surge diverter should be replaced. When any indicator fails the protection relay contacts change over. The power failure alarm will also operate when mains voltage falls below 180VAC.

External safety disconnector - The prescribed safety disconnector is provided as part of the unit and is a 63A MCB specially tested for this application. This MCB is mounted on the inside of the unit and is where all connections are made.

Surge counter - The unit comes with a LCD display surge counter. The counter will operate each time there is a current pulse event occurring between L-E and has a threshold trigger level of <1.5kA. Each event will cause the counter to increment.

Key lock - The unit comes with a key lock on the front panel to prevent uncontrolled access.

Cable entry – L and N connections are made through a separate cable gland entry point at the top left of the unit. Earth connections can be made via a separate cable gland connection also on the top of the unit.

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PHYSICAL AND ELECTRICAL SPECIFICATIONS

Model	SPD3200-TN-E
Number of ports	**1 Port (parallel connect)**
Method of mounting	**Fixed panel mount**
Input voltage – Uc	**380-440vac 3P**
Maximum continuous voltage – MCOV	**300vac L-E**
Temporary overvoltage - TOV	**320vac L-E**
Service type	**TN, TN C-S, 3 phase system with a grounded neutral or TT 3 phase with no neutral.**
Test classification (IEC61643-11)	**Class I and II**
Protection modes	**Line-Earth, Line –Neutral, Neutral-Earth,**
Inom 8/20us (Line-Earth). Nominal surge level. Class II	**100kA**
Imax 8/20us (Line-Earth). Maximum surge level. Class II	**200kA**
I imp 10/350us (Line –Earth) Impulse surge level. Class I	**25kA**
Residual voltage (Vpl) (Line-Earth). (Let through voltage)	**<1kV (3kA, 8/20us) <1.3kV(20kA,8/20us)**
Safety disconnect	**Series thermal fusing on MOV's**
Response time	**<25ns**
External disconnector requirement	**Uses internally mounted 63A MCB.**
Terminations	**All conductors 16-35mm^2**
Alarms/indicators	**Neon indicators each phase and Neutral**
Surge counter sensitivity	**< 3kA, 8/20us. 5 digit display, resettable.**
Enclosure rating	**IP50, steel**
Standards. Designed in accordance with :	**IEC61643-11, ANSI/IEEE C62.41 Cat C & D, AS1768-2007 Cat C & D,**
Installation instructions	**Supplied with unit.**
Dimensions	**(280W x 125D x 360H)**
Weight	**7kg**
Environment	**-40 to 70ºC, 5 to 95%RH (non-condensing)**
Warranty	**5 years**

INSTALLATION

Refer to the following procedure to connect the SPD3200-TN-E.

1. CHECK

Always work safely-disconnect power before making connections.

All wiring must be carried out by suitably qualified personnel according to applicable standards.

2. INSTALL

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 supplied with unit.
Always use bootlace connectors for lowest resistance and to prevent damage to wire.
Use suitably rated cable for power connections. Cable should be rated for operation at system voltage and be 16mm to 35mm sq.
Earth connection should use cable that is equal to or greater in size than line conductors.
Use shortest possible cables for all connections or protection will be reduced.
For alarm cables use cable rated at system voltage at between 0.5mm to 1.5mm sq.

4. NOTES

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 megger test this unit as it contains voltage limiting components which may be damaged during testing.

5. EARTHING

The main earth wire (from earth link on switchboard to ground rod or system) MUST be at least 16mm 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.

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