SPDV60-300 SURGE DIVERTER

(Single mode, 220-250V (380-440V), 60/30kA)

INSTALLATION INSTRUCTIONS

FEATURES

- 1 mode plug-in protection (L-N)
- Compact solution for primary protection
- DIN43880 base, 35 mm DIN-rail mountable
- MOV is thermally protected
- Includes dry-contact alarm

Applications

- *Mains point-of-entry /Main SWB*
- *Telecommunication Systems / Rectifiers*
- *Process and Control Systems / Factories & Units*
- *Computer Systems / Medical Systems*
- *All sensitive Electronic Equipment*

SPECIFICATIONS	
Manufacturers name and model	**Eaton Powerware SPDV60-300**
Method of mounting	Fixed. DIN Rail mount
Input voltage	220-250VAC (380-440V) 40-70Hz
Maximum continuous operating voltage - MCOV	300VAC
Service type	TN-C and TN C-S (3-phase with grounded neutral)
Test classification	Class II
Supply current	<10mA
Initial clamp voltage	470V
Maximum rated surge current - Ismax 8/20us	60kA
Nominal surge current - In 8/20us	30kA
Residual voltage (Vpl) @ 3kA, 8/20uS	1.0kV
Residual voltage (Vpl) @ Ismax 30kA, 8/20uS	1.4kV
Energy absorbtion (2ms)	2130j
Nominal surge lifetime (In)	30kA (8/20uS), 20 times
Internal protection	MOV thermal disconnect device
External disconnector requirements	Gg/Gl HRC fuses, 1 per unit/phase, 160A maximum.
Terminations	Power terminals 25mm^2 , Alarm terminals 1.5mm^2
Alarms/indicators	Flag indicator, dry contact alarm relay – 250VAC/24VDC, 2A
Location Category	Indoor
Enclosure rating	IP20
Applicable standards.	IEC61643-1, IEC610006, ANSI/IEEE C62.41, AS1768-1991, AS3100
Dimensions	DIN43880, 1 units (17mm)
Weight	100g
Environment	-10 to 60C, 0-90%RH
Warranty	12 months, workmanship and materials

FUNCTIONAL DESCRIPTION

The SPDV60-300 is designed to protect single and 3-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 sub-board protection and is connected in parallel with the power system via HRC fuses. The unit features a plug-in module that may be replaced without rewiring in the event of a fault. Check that the model you have purchased is rated correctly for your power system.

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This model (SPDV60-300) is designed for single and 3-phase power systems, with a grounded neutral, in the range of 220-250V(380-440V). If your power system is "delta" (i.e. ungrounded), or a different voltage, this model is NOT suitable.

Please contact your supplier for a suitable model to suit your application.

OPERATION

The operational status of the unit is shown by a flag indicator on the front of the module. In normal operation, the flag is green. If the unit becaomes damaged, the flag changes to red, indicating that replacement is necessary. A 'dry-contact' alarm output is fitted to the base unit and will change over if the module is faulty or not in place.

WARRANTY

Eaton Power Quality warrants this unit against faulty parts and workmanship for a period of 12 months from the date of purchase. If this product fails to operate correctly, please contact your Eaton representative. This warranty doesn't cover neglect or intentional misuse. As this product is intended for use in electrically harsh environments no claim is made of suitability for purpose. This unit is designed to reduce the likelihood of damage, not prevent it. Please also note that an excessive surge, such as from a direct lightning strike to the site or a power system fault, may cause damage to the unit and render it inoperable. A unit that has been damaged in this way is not warrantable.

For installation details, see over page.

INSTALLATION
Refer to the procedure and diagram shown to connect the SPDV60-300.

PROCEDURE:

1. **CHECK**
   - Always work safely – disconnect power before making connections.
   - All wiring must be carried out by suitably qualified personnel according to the applicable standards.
   - Check for correct operating voltage and power system. This model (SPDV60-300) is designed for power systems in the range of 220-250V(380-440V). **If your power system is "delta" (i.e. ungrounded), or a different voltage, this model is not suitable**. Please contact your supplier.
   - ** For installation adjacent to an M.E.N. link, use as shown.
   - ** For installations remote from the M.E.N., a separate N-E protector is required (SPD50Ngi).
   - Always use the correct size HRC fuses.
   - For services >160A, use 160A fuses. For services <160A, no fuse is necessary however an SPD fault may cause a loss of power to the site.
   - Always use Gg or Gl-rated fuses. Do not use delay types or 'semiconductor' fuses.
   - For 80A domestic supplies, no fuse is necessary.
2. **INSTALL**
   - Locate a fuse position as close as possible to the Main Switch.
   - Install fuseholders or fuse-switch.
   - Locate a suitable position for the SPD, ensuring adequate space for cables. Do not install above heat-generating objects or in any position that is exposed to weather.
   - Install unit to DIN-rail in switchboard or cabinet.
3. **CONNECT**
   - Connect wiring - refer to connection diagrams. If using stranded cable, always use wire ferrules for lowest resistance and to prevent damage to the wire.
   - Use a suitably-rated cable for power connections. Cable should be rated for operation at the system voltage and should be 6mm^2 to 25mm^2.
   - Use short cables for all connections or protection will be reduced.
   - Use a suitably-rated cable for alarm connections. Cable should be rated for operation at the system voltage and should be 0.5mm^2 to 1.5mm^2.
4. **NOTES:**
   - 160A fuses are rated such for maximum surge rating. On services below 160A, high-level surges may cause disconnection of the supply.
   - Wiring from fuse to SPD is carrying surge currents only, not load current. This means that smaller cables may be used than is normal for the current rating.
   - If using under-sized cables, some energy authorities require double insulation (i.e. sleeving) of the cables.
   - Maximum alarm relay resistive load is 2A.
   - Unplug the alarm connector for termination.
   - It is recommended not to connect the alarm contacts to AC mains circuits if possible, to prevent flashover from surges on the AC line. Connect to a PLC or BMS if available.
   - Do not Megger test cabling with unit connected – unit may be damaged.

EARTHING
For proper operation, all surge diverters rely upon a good earth connection:

- The main earth wire (from earth link on switchboard to ground rod or system) MUST be as short and direct as possible. Extra cable must not be looped.
- Earth connections from the unit to neutral or earth link **MUST** be as short as possible.

Failure to consider the above points can result in improper operation of the unit and possible damage to the installation.