TransTrack Medium Voltage Series



Medium Voltage
Surge Protective Device
Installation, Voltage Selection &
Operation Instructions
2400V - 4160V

Read and Understand these Instructions







Warning:

Hazardous & Potentially Deadly Energy Levels Present

- **Risk of Explosion**
- **Risk of Electrical Shock**
- **Risk of Fire**

Total Protection Solutions LLC

PO Box 3760, Winter Park, FL 32790
Tel: 1-800-647-1911 · www.TPSsurge.com

CONDITIONS OF USE
IMPORTANT INFORMATION - WARNING

This Surge Protective Device (SPD) is available for use by those who understand and accept its benefits and risks. It is assumed that users have appropriate system monitoring and controls to prevent unintended effects.

This SPD is designed to control high-energy transient overvoltages having short time durations. In the event of sustained overvoltages caused by electrical distribution system anomalies, this unit will fail short-circuited. The unit will attempt to flow its available fault current. This may result in the clearing of upstream overcurrent protection and/or severe non-passive SPD failure. It is important to note that SPD failures are symptoms of system level overvoltage problems. SPD's do not fail randomly or for no apparent reason. Be aware that ungrounded distribution systems are intended to 'float' and 'move' with respect to ground. A failed SPD may escalate the initial distribution system anomaly, resulting in equipment shutdown, single-phasing, loss of production, etc. This unit should be positioned or shielded in a manner such that rupture failure does not represent a hazard to personnel or property.

This SPD is supplied without internal overcurrent protection. The SPD can be installed at any location in the distribution system. The user/installer is responsible for providing and coordinating fusing or overcurrent protection. Mersen, Bussman, etc., offer full lines of field installable overcurrent protection.

We recommend that any installed overcurrent protection be rated lower than the immediate upstream overcurrent protection. This ensures that a failed SPD will not affect upstream portions of the distribution system. Note that too conservative of overcurrent protection may result in premature or nuisance clearing, which may be difficult to detect.

Total Protection Solutions recommends that medium voltage SPD(s) not be installed unless this information is understood and acceptable to the end-user.

Environmental Specifications:

- **Relative Humidity Range: 0-100% Non-condensing**
- **Operating Frequency: 50Hz & 60Hz Systems**
- **Operating Temperature: -40°F to +160°F (-40°C to +70°C)**
- **NEMA 4 (IP66) Heavy Gauge Steel Enclosure Standard**
- **Standard Size: 14" x 14" x 8")**
- **Weight: 18.4 kg (40.5 lbs)**

Installation:

NOTE: There are no user serviceable parts inside main SPD enclosure. Opening door does not gain access to serviceable parts.

1.) Read all Instructions
2.) All electrical connections should be performed by qualified electrician or technician
3.) Verify system voltages and compare to model number. Ensure that the proper voltage unit is being installed.
4.) Verify that all power circuits are deenergized and locked out.
5.) Verify that overcurrent protection rated 100A or lower exists in the distribution system to protect the SPD. If breakers are used, we recommend use of thermal breakers. If fuses are used, we recommend a fuse type such as A430C. 6.) Identify suitable location for SPD:

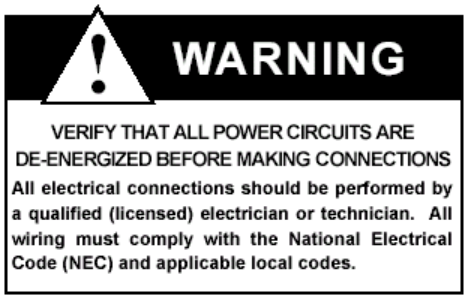
6.) Identify suitable location for SPD:

- **Need leads as short and straight as possible**
- **Need to mount on surface capable of supporting 65lbs (30kg)**
- **Do not cut pre-installed conductors until mounting location is decided and conductors measured.**

7.) Mount SPD, install overcurrent protection and conduit as appropriate. SPD operation is not sensitive to physical orientation.
8.) Connect SPD's #12 ground conductor to system ground
9.) Connect SPD's three #12 phase conductors to phases A, B & C (not phase sensitive)
10.) Verify system is clear of deficiencies. Maintain distance as precaution against misapplication.

Energize unit.









Problems & Failures:

- **SPDs are purposely put in harm's way to protect load**
- **SPDs will protect load or Die Trying**
- **SPDs will protect until failure**
- **SPDs rarely fail from surges**
- **Failed SPD is usually caused by system related Sustained Overvoltage – there is usually a problem in the system – check it!**
- **SPD does not draw current unless it is actively suppressing an overvoltage. Therefore, it does not normally generate heat. In the event of overtemperature, paint discoloration, deformed enclosure, deformed conductors or other abnormal condition, maintain safe distance and deenergize SPD immediately.**

Open Nearby Overcurrent Protection:

This is usually a signal of problems on the system, such as equipment fault, etc. Under certain conditions, it is possible that an equipment failure can skew system voltages far enough that the SPD will attempt to control any overvoltages. Due to relatively sustained conditions, this may fail the SPD. This may not be obvious. Be aware that SPD's rarely fail from surges; they almost always fail from system level overvoltage problems. When the equipment is serviced and reenergized, the SPD may fail. We recommend that the SPD be tested in conjunction with any other equipment failure as follows:

Troubleshooting:

Safely deenergize unit and isolate from all other equipment. Use a DC ohmmeter or continuity meter to measure the impedance of each phase's suppression elements. The following combinations exist: A-B, B-C, C-A, A-G, B-G and C-G. The ohmmeter should show Megaohm to Infinite impedance for every mode of protection. (AC ohmmeters may load down the circuit and provide false indication of low impedance.) Any short circuits clearly indicate an internal fault - *do not reuse SPD - replace it*. If you have or suspect problems, call TPS Tech Support at 1-800-647-1911.

Operational Status: Standard TT Medium Voltage Series

The standard TT MV Series SPD does not have operational indicators. One may assume that it is 100% functional when energized. Treat the SPD as suspect whenever an upstream overcurrent protection clears or opens.

WARRANTY

During the one year warranty period, any Total Protection Solution MV surge suppressor which fails due to defect in materials or workmanship shall be repaired or replaced at the expense of the manufacturer. Additionally, during the warranty period there shall be a one (1) time free replacement of the unit if it fails due to any transient surge event, including lightning.

Prior to shipment of any suspect or known defective product a Return Material Authorization (RMA) number must be obtained. An official RMA number and shipping instructions can be obtained from the distributor where the product was originally purchased. Distributors can obtain the official RMA number by contacting the Total Protection Solutions Customer Service Department at 800-647-1911. Products arriving without an official RMA number will not be accepted and will be returned freight collect to the original point of shipment.

Products being returned with an official RMA number should be shipped by prepaid freight to the nominated point of return as shown on the RMA documentation.

Total Protection Solutions shall have no liability under this warranty for problems or defects directly or indirectly caused by misuse of the Product, alteration of the Product (including removal of any warning labels), accidents, improper installation, application, operation or improper repair of the Product.

THIS WARRANTY REPRESENTS THE ENTIRE WARRANTY OF TOTAL PROTECTION SOLUTIONS. ALL OTHER WARRANTIES EXPRESS OR IMPLIED, ORAL OR WRITTEN, INCLUDING, BUT NOT LIMITED TO, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. THE LIABILITY OF TOTAL PROTECTION SOLUTIONS, AT ITS SOLE OPTION, UNDER THIS WARRANTY IS EXPRESSLY LIMITED TO THE REPLACEMENT OR REPAIR OF THE DEFECTIVE PART THEREOF. IN NO EVENT SHALL TOTAL PROTECTION SOLUTIONS BE LIABLE OR RESPONSIBLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND OR CHARACTER, NOR SHALL ITS LIABILITY EVER EXCEED THE PURCHASE PRICE PAID FOR SUCH DEFECTIVE PRODUCT.

Warranty period begins from date of original end-user purchase. This warranty is not transferable and may only be enforced by the original end user. Claims under this warranty must be submitted to Total Protection Solutions within thirty (30) days of discovery of any suspected product defect.