



MPT Series

Commercial & Industrial Surge Protection Devices

The **MPT Series** is a 100% **modular** Surge Protection System providing high-energy protection and optional RF filtering for Commercial, Industrial and Remote Site applications. These panel units provide superior control over transients by delivering low clamping voltages combined with **high surge energy handling capabilities**. They are configured for quick and easy parallel installation.

On-board diagnostics include a front panel display equipped with LED indicators that continuously monitor the operational **status of the entire unit**. An **Audible Alarm** is standard with switch positions for test, disable and enable. A **Surge Counter** and a set of NO/NC dry contacts are also standard. Internal filtering and a remote monitor are available options.

All Models are rated for Type 1 or Type 2 service locations and are available with surge ratings from **100kA to 300kA** per phase.



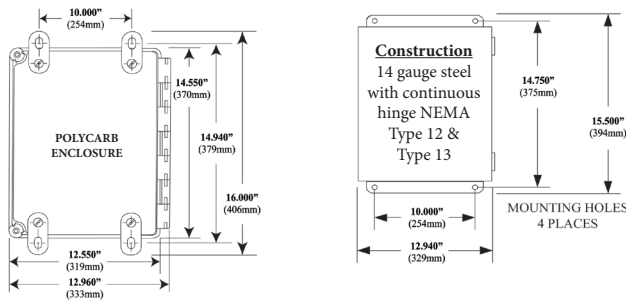
Steel Continuous Hinge Enclosure

Polycarb Enclosure

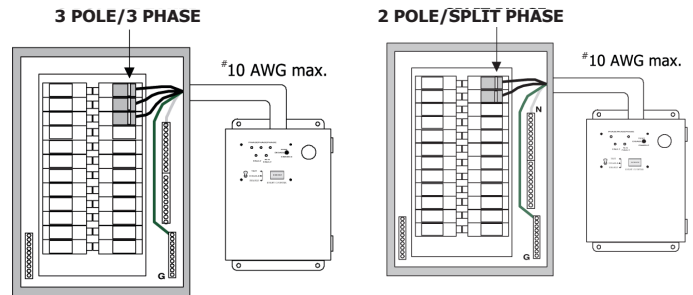


Intertek

Dimensions



Typical Installations



(Diagrams not drawn to scale)

Product Specifications

I_n	10/20 kA
Surge Current Ratings	100/200/300kA per Phase
Fusing	Coordinated Surge & Thermal
Short Circuit Current	100kA RMS Symmetrical
Enclosure Ratings	NEMA 4, 4X & NEMA 12

Mechanical/Environmental Specifications

Safety Standards	UL 1449 (most current)
Operating Frequency	50/60 Hz
Diagnostics	LEDs, Audible Alarm, Surge Counter
Operating Temperature	-40° to +140°F (-40° to +60°C)

Model Number	Service Voltage	MCOV	VPR			
			L - N	L - G	N - G	L - L
MPTXXX/120-10-#-1	120 Volt Single Ø	150Vac	700V	700V	700V	N/A
MPTXXX/120-SP-#-1	120/240 Volt Split Ø	150Vac	700V	700V	700V	1500V
MPTXXX/120-3W-#-1	120/208 Volt 3Ø Wye	150Vac	700V	700V	700V	1500V
MPTXXX/120-3H-0-1	120/240 Volt 3Ø HL Delta	150/320Vac	700/1000V	700/1000V	700V	1500/1800V
MPTXXX/240-3D-0-1	240 Volt, 3Ø Delta	320Vac	N/A	1000V	N/A	2000V
MPTXXX/220-3W-#-1	220/380 Volt, 3Ø Wye	320Vac	1000V	1000V	1000V	2000V
MPTXXX/230-3W-#-1	230/400 Volt, 3Ø Wye	320Vac	1000V	1000V	1000V	2000V
MPTXXX/240-3W-#-1	240/415 Volt, 3Ø Wye	320Vac	1000V	1000V	1000V	2000V
MPTXXX/277-3W-#-1	277/480 Volt, 3Ø Wye	320Vac	1000V	1000V	1000V	2000V
MPTXXX/480-3D-0-1	480 Volt, 3Ø Delta	520Vac	N/A	1800V	N/A	4000V

1. **Replace XXX with:** desired kA rating per phase: 100 for 100kA or 200 for 200kA or 300 for 300kA.
2. **Replace # with:** F if filtering is required (available option on WYE Models only).
3. **Add:** /RM at the end of the Model Number for the Remote Monitoring option.
4. **ENCLOSURE HOUSING OPTIONS:** Add /POL to the end of the Model Number for NEMA 4X NonMetallic or /SS for NEMA 4 Stainless Steel or /WP for Weatherproof.

All product dimensions provided are ± 0.125

Meter Treater Inc. • 1349 South Killian Drive • Lake Park, FL 33403

Email: sales@metertreater.com

Sales: 561.845.2007 Toll: Free: 800.638.3788 Fax: 561.848.2372

Website: www.metertreater.com

STATUS INDICATORS:

GREEN LEDs: When the SPD is securely connected and operating properly, the GREEN LEDs, under the headings "ØA", "ØB", "ØC", will be illuminated. No other indicator should be illuminated if the unit is operating normally.

RED LED: If a problem develops with the internal monitoring circuitry or in the unlikely event that there should be a loss or reductions in the protection elements, the RED LED over the words "SYSTEM FAULT" will illuminate.

YELLOW LED: If the YELLOW LED illuminated, at any time, there could be a hazardous system wiring fault. The YELLOW LED does not indicate a suppressor failure; however, it does signal that there may be dangerous Neutral to Ground Voltages present. Consult with a qualified electrician to verify the integrity of the installation's wiring. (Not present on Delta Configurations)

AUDIBLE ALARM: The alarm will sound if protection should be lost on either the L-N or L-G modes. Control of the alarm is managed with a switch located on the front panel next to the alarm. The switch has three (3) settings: Up (momentary only) for testing, which will sound the alarm; Center, this is the disable position and turned the alarm off; And Down, this enables the alarm and sets it for contact monitoring.

OPTIONAL COUNTER: The Optional Surge Counter will show the number of transient events that the suppressor encounters. Control of the Surge Counter is managed with a switch located to the left of the counter display. The switch has three (3) setting: Up (momentary only), for RESET; Center, this is the ENABLE position and turns the Counter on and sets it for constant monitoring; And Down (momentary only), this tests the Counter and will increase the count by 1 increment each time it is activated.

TROUBLE SHOOTING GUIDE:

There is little or no trouble shooting required for this Series of products.

PROBLEM:

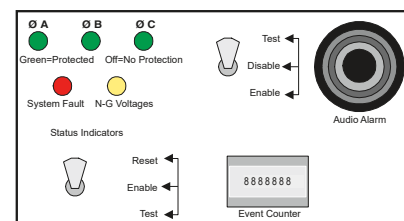
1. No Front Panel Diagnostics or improper operations:

Ensure the SPD unit is properly connected to the AC Service Panel and that all connections are secure.

Confirm that the breaker in the AC supply panel is in the ON position.

2. If Problem still persists: TURN OFF BREAKER, open the SPD door and verify that all VISIBLE cable connections are properly secured, no loose wires. This is especially critical for the connectors on the Sensor Cable as they interface with the RPM Modules.

In the unlikely event that these measures have failed to correct the problem, contact your dealer or the factory for additional information.



Front Panel Diagnostics:

Notes:

1. For Single Phase Models: Only 1 Green LED, in the Phase "B" positions, is provided.
2. For Split Phase Models: 2 Green LEDs, in Phase "A" and "C" positions, are provided.
3. For Delta Models: There is no Yellow, N-G, LED

[Figure #12: 3 Phase Wye Configuration Shown]

MOUNTING INFORMATION

NOTE: BEFORE STARTING THE INSTALLATION, MEASURE THE LINE VOLTAGE WITH AN AC VOLTMETER TO ENSURE THE CORRECT DEVICE HAS BEEN SELECTED FOR THE APPLICATION. L-N/G VOLTAGE SHOULD NOT EXCEED THE MAXIMUM CONTINUOUS OPERATING VOLTAGE (MCOV) LISTED ON THE SPD LABEL.

1. When mounting the MPT SERIES SPD, use the four mounting holes.

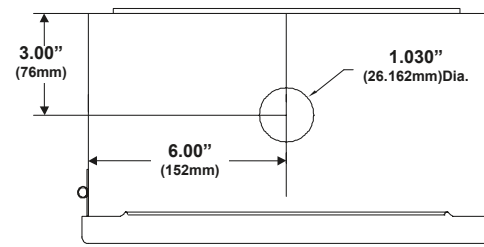
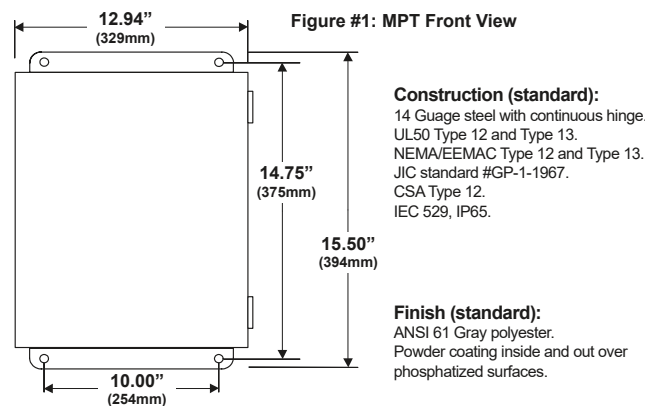
2. Place the SPD as close as possible to the connection point in the NEMA enclosure. Keeping the lead length short will increase the performance of the unit.

3. Drill a hole in the MPT for the conduit to run the wires from the distribution panel to the connecting lugs inside the SPD. Installation is simplified if the wires enter the enclosure at the top (see Figure #2) of the enclosure)

4. Securely mount the TVSS unit using 1/4-20 bolts in the four (4) mounting holes provided in the enclosure's mounting flanges.

NOTE: IF YOU CHOOSE TO MOUNT THE MPT UNIT, OBSERVE ALL SAFETY PROCEDURES APPLICABLE FOR A LIVE METER SOCKET OR ELECTRICAL PANEL.

NOTE: SPLICING WIRES TO GAIN EXTRA LEAD LENGTH IS NOT ADVISABLE AS THE EXTRA LEAD LENGTH WILL DEGRADE THE PERFORMANCE OF THE DEVICE.



WORKING NEAR EXPOSED LIVE CONDUCTORS IS HAZARDOUS. POWER SHOULD BE SECURED OR APPROPRIATE ELECTRICAL SAFETY EQUIPMENT SHOULD BE USED TO THE GREATEST EXTENT POSSIBLE BEFORE CONNECTING.

WARRANTY INFORMATION

Meter-Treater, Inc. (MTI) warrants all MPT Series models to be free from defects, and will at our option repair or replace the product should it fail within fifteen (15) years from the first date of shipment. This warranty is limited to defects in workmanship or materials, and does not cover customer damage, abuse or unauthorized modification. If this product fails or does not perform as warranted, your sole recourse shall be repair or replacement as described above. Under no condition shall MTI be liable for any damages incurred by the use of this product. Damages include, but are not limited to, the following: lost profits, lost savings and incidental or consequential damages arising from the use of or inability to use this product. MTI specifically disclaims all other warranties, expressed or implied, and the installation or use of this product shall be deemed an acceptance of these terms by the user.

WARRANTY RETURNS

All warranty and non-warranty repairs must be returned freight prepaid and insured to MTI. All returns must have a Return Authorization (RA) number on the outside of the shipping container. This number may be obtained from MTI Warranty Department (800) 342-6890. Products returned without an RA number will not be accepted.

IF UNIT(S) ARE RECEIVED DAMAGED, NOTIFY THE SHIPPING COMPANY IMMEDIATELY. RETAIN ALL SHIPPING CONTAINERS AND PACKING MATERIALS FOR INSPECTION.

Please Note:
There are no user serviceable parts inside.



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1349 South Killian Drive • Lake Park, FL 33403
Phone: 561.845.2007 • Fax: 561.848.2372
Email: sales@metertreater.com
Website: www.metertreater.com

MPT Series

USER MANUAL AND INSTALLATION GUIDE



COMMERCIAL APPLICATIONS

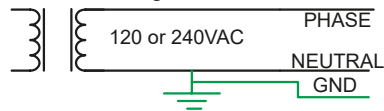
SURGE PROTECTION DEVICES FOR AC POWER APPLICATIONS

GENERAL

1. This document provides detailed information on how to install and operate the MPT Series Surge Protection Devices (SPD).
2. Locate a position to mount the SPD that will minimize the length of connecting wires required. SPD's should be located as close as possible to the AC panel or service area. Mount the units using the mounting holes provided on the enclosure as shown by the illustrations in these instructions. It is recommended that conduit, preferably metallic, be utilized to accomplish this connection.
3. The MST Series is installed and connected in parallel ("shunt") across the AC supply to be protected. Connecting wires do not carry the supply current, only the short duration currents associated with the suppression of a transient event.
4. Identified or indicated leads/wires must be connected exactly with respect to the AC Power feeding the SPD. Failure to do so may result in damage to the device or pose a danger to personnel.
5. Installation of this device should only be performed by a qualified licensed installer. Incorrect installation may significantly impair the performance of the SPD. It is particularly important that all installation procedures and guidelines be followed exactly.
6. Before starting any installation procedures, verify service voltages with an AC voltmeter to ensure that the correct SPD model has been selected.
7. Check to ensure that all connections are correct and secure before energizing.
8. Keep this manual in a safe, dry place for future reference.

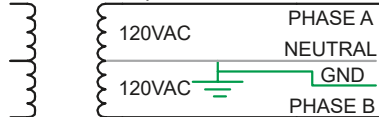
STANDARD ELECTRICAL CONFIGURATIONS

120 or 240VAC, Single Phase, 2 Wire + Ground



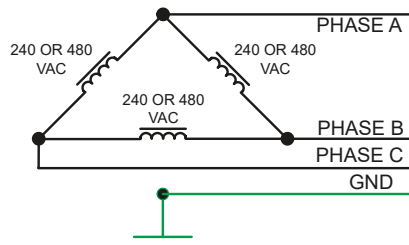
Requires a 1 Pole Breaker [Figure #3]

120 /240VAC, Split Phase, 3 Wire + Ground



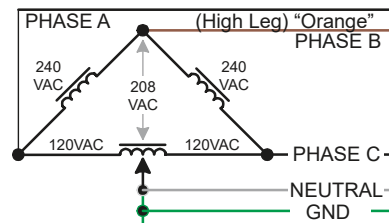
Requires a 2 Pole Breaker [Figure #4]

240 or 480VAC, Three Phase Delta, 3 Wire + Ground



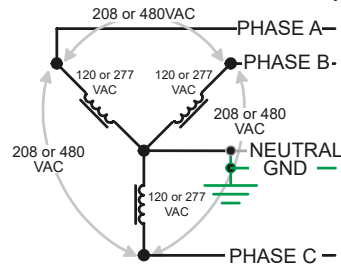
Requires a 3 Pole Breaker [Figure #5]

120 /240VAC, Three Phase Delta, 4 Wire + Ground



Requires a 3 Pole Breaker [Figure #6]

120/208VAC, Three Phase Wye, 4 Wire + Ground
OR
277/480VAC, Three Phase Wye, 4 Wire + Ground



Requires a 3 Pole Breaker [Figure #7]

NOTE:
Wye Configuration is also applicable for:

220/380VAC
230/400VAC
240/415VAC

INSTALLATION INSTRUCTION

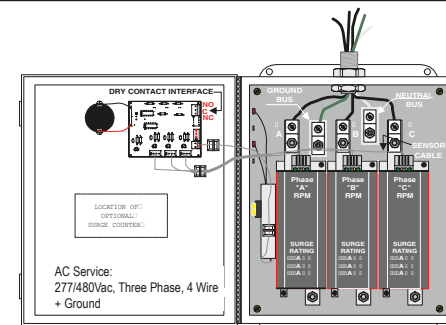
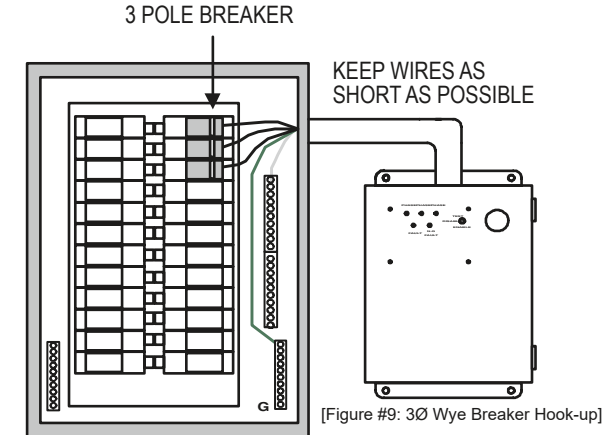
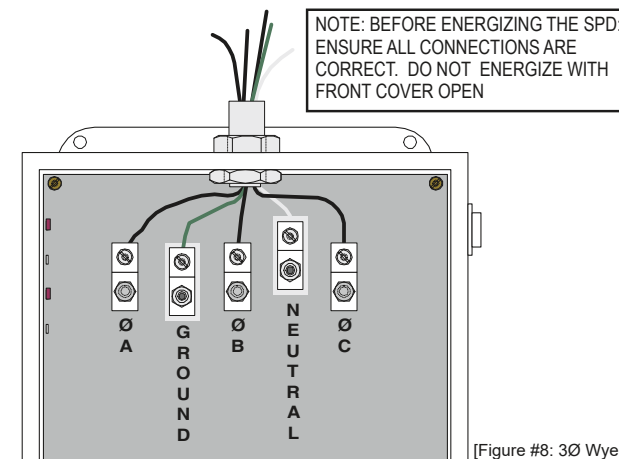
Before starting the installation, measure the Line voltage with an AC voltmeter to ensure the correct device has been selected for the current application. The MCOV (maximum continuous operating voltage) CANNOT exceed the maximum limits for the following service voltages:

120VAC = 150MCOV	240VAC = 320MCOV
220VAC = 320MCOV	277VAC = 320MCOV
230VAC = 320MCOV	480VAC = 550MCOV

1. Connect the ground wire to the service panel ground buss.
2. Connect the neutral wire from the service panel neutral buss to the lug labeled neutral. (Not Applicable for Delta Applications)
3. Connect the phase (hot) wires from a 3 pole breaker to the SPD device connectors labeled phase "A", "B", and "C", as appropriate.

Notes:

1. For Single Phase Models, Phase "A" and Phase "C" lines are left vacant.
2. For Split Phase Models, Phase "B" is left vacant
3. For Delta Configurations, the Neutral position is left vacant
4. Use #10 to 1/0 Wire for installation



MPT (100/200/100 Models):

The specific product you have in service may be configured for any one of the following kA ratings: (100=100kA/Phase) (200=200kA/Phase) and (300=300kA/Phase)

- | | |
|------------------------------|-------------------------|
| 120 or 240VAC, Single Phase | 277/480VAC, 3 Phase Wye |
| 120/240VAC, Split Phase | 220/380VAC, 3 Phase Wye |
| 240 or 480VAC, 3 Phase Delta | 230/400VAC, 3 Phase Wye |
| 120/208VAC, 3 Phase Wye | 240/415VAC, 3 Phase Wye |
| 120/240VAC, 3 Phase Delta | |
- (High Leg)

RPM REMOVAL AND REPLACEMENT

1. Make sure the power has been turned off to the MPT unit. Never work on the SPD unit while energized.
2. Disconnect the Sensor Cable from the RPM module. (Ø Side End Cap)
3. Remove the 1/4-20 bolts securing the RPM module to the phase and neutral tabs. (One bolt at each end of the module) and the compression lug.
4. Remove the 2 #6 Screws (1 at each end of the unit) securing the RPM to the Back Plane PC Board.
5. Remove the module from the MPT unit.
6. To mount the replacement module reverse steps 4, 3 and 2.
7. Reinstall the compression lug.
8. Close the MPT door and reconnect power.

