

M-Ti MAP Series

Universal - Residential/ Commercial/Light Industrial Surge Protection Device

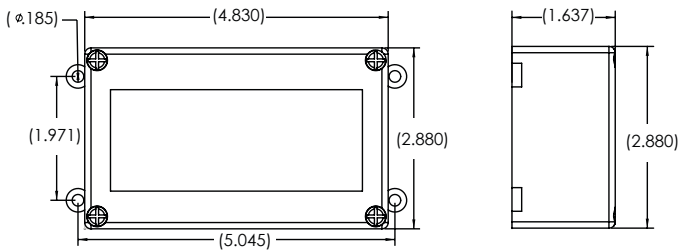
Meter Treater's **MAP Series**, represents a new era in surge protection with our "one size fits all" application flexibility. All units contain short circuit and thermal fusing, and our **"Smart Sensing Technology"** that distinguishes between surges and overcurrent events.

This new suppressor package meets the current industry standards and stops surges right at the electric meter before they can enter a facility. The MAP Series is a Type 1 or Type 2 Surge Protection Device (SPD) that is listed to **ANSI/UL 1449**.

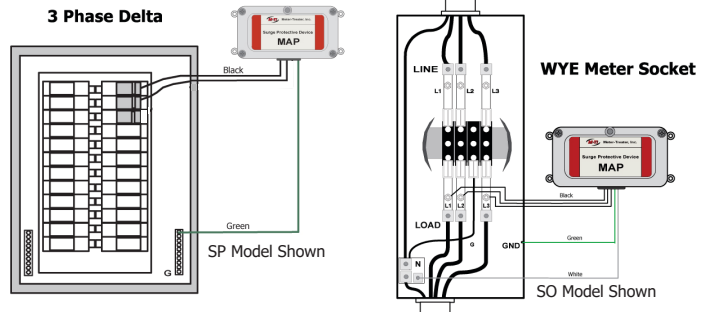
The inventive design, performance and universal application features of the MAP, makes it the ideal choice for Commercial and Light Industrial applications.



Dimensions



Typical Installations



(Diagrams not drawn to scale)

Product Specifications

I_n	10/20 kA (nominal discharge current)
Max Surge Current	150kA (50kA per Phase)
Max Load Current	up to 800 Amps Continuous
Fusing*	Thermal and Short Circuit Fusing
Short Circuit Current	100kA RMS Symmetrical Amps
Diagnostics	Fiber Optics
Housing Rating	NEMA1 Standard with NEMA 4X optional [†]

[†]Other options available. Contact factory.

Mechanical/Environmental Specifications

Enclosure	Polycarbonate
Safety Standards (Type 1 SPD)	UL 1449 (most current)
Operating Frequency	50/60 Hz

*No external fusing required. **Required by ANSI/UL 1449.

Model Number	Service Voltage	MCOV	VPR			
			L - N	L - G	N - G	L - L
MAP050/120-10-0-2	120 Single	150	600	600	1200	-
MAP050/120-SP-0-2	120/240 Split	150	600	1200	600	1200
MAP050/120-3W-0-2	120/208 Wye	150	600	1200	600	1200
MAP050/120-3H-0-2	120/240 Highleg	150	600/1000	1200/1800	600	1200/1800
MAP050/240-3D-0-2	240 Delta	320	-	1000	-	2000
MAP050/240-2P-0-1	240 Volt Two Phase	320	-	1000	-	2000
MAP050/277-3W-0-2	277/480 Wye	320	1000	2000	1000	2000
MAP050/480-3D-0-2	480 Delta	550	-	1800	-	4000
MAP100/120-10-0-1	120 Volt Single Phase	150	600	600	1200	-

All product dimensions provided are ± 0.125

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

Email: sales@metertreater.com

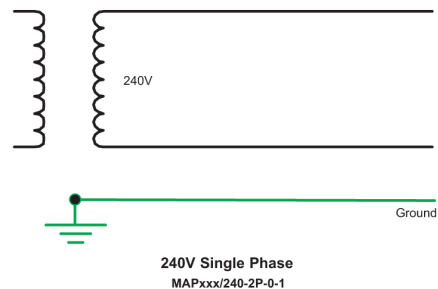
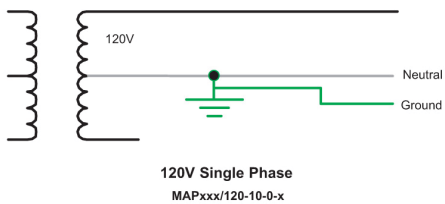
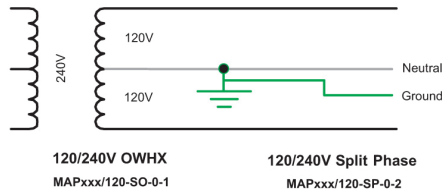
Sales: 561.845.2007 Toll: Free: 800.638.3788 Fax: 561.848.2372

Website: www.metertreater.com

GENERAL

1. This document provides detailed information on how to install and operate the MAP Series of Surge Protective Devices. (SPD)
2. The MAP Series of SPDs are 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.
3. 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.
4. Incorrect installation may significantly impair the performance of the SPD. It is particularly important that all installation procedures and guidelines be followed exactly.
- 5. INSTALLATION OF THIS DEVICE SHOULD ONLY BE PERFORMED BY A QUALIFIED INSTALLER**
6. CHECK TO ENSURE THAT ALL CONNECTIONS ARE CORRECT AND SECURE BEFORE ENERGIZING.
7. KEEP THIS MANUAL IN A SAFE, DRY PLACE FOR FUTURE REFERENCE.

Electrical Configurations



WARRANTY INFORMATION

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IF UNIT(S) ARE RECEIVED DAMAGED,
NOTIFY THE SHIPPING COMPANY
IMMEDIATELY. RETAIN ALL SHIPPING
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Please Note:
There are no user serviceable parts inside.



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MAP Series Hardwire Device (Single & Split Phase)

USER MANUAL AND INSTALLATION GUIDE

RECOGNIZED
COMPONENT



Intertek



SURGE PROTECTION DEVICES FOR
AC POWER APPLICATIONS

120
Volt
AC

240
Volt
AC

The MAP is a Type 1 SPD Component Assembly for use in Type 1 or Type 2 environments. (IEEE Cat C) The MAP Series is built to both UL's OWHX (Secondary Surge Arrestors) and 1449 Fourth Edition SPD standards.

MOUNTING INFORMATION

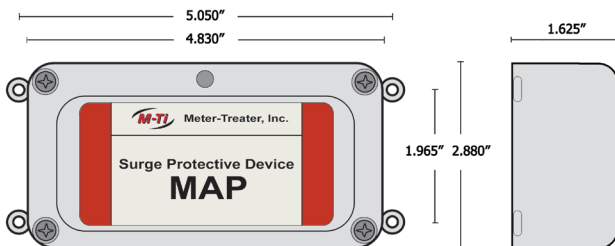
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1. When mounting the MAP SERIES SPD, if applicable, use the four mounting holes.
2. Place the SPD as close as possible to the connection point in the NEMA enclosure. Keeping the lead length short will increase the performance of the unit.

NOTE: IF YOU CHOOSE TO MOUNT THE MAP UNIT, OBSERVE ALL SAEFTY 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.

NOTE: MOUNTING TABS ON THE MAP SPD MAY BE REMOVED IF MOUNTING IS NOT NECESSARY.



Construction:
Polycarbonate

Mounting Holes:
4 Places

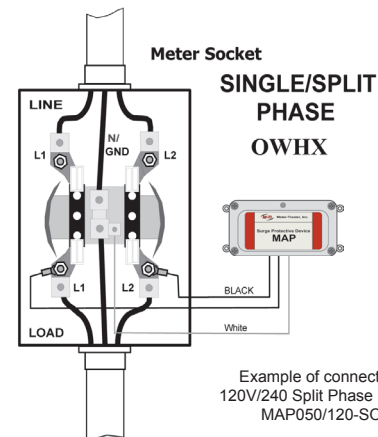
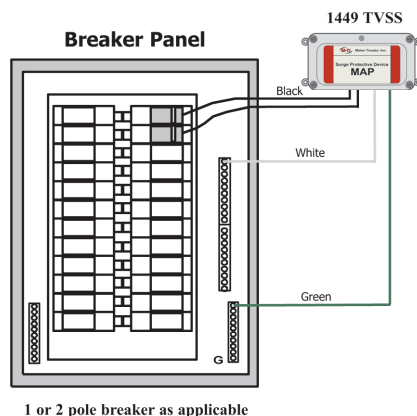
RED LED IS A FUNCTIONALITY/POWER INDICATOR

When all SPD wires are connected properly, and power is applied, the unit is operating normally, the red LED indicator will be ON.

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.

120/240VAC, Single Phase 2 Wire + Ground
120/240VAC, Split Phase, 3 Wire + Ground
120VAC Single Phase, 3 Wire + Ground
240VAC Single Phase, 2 Wire + Ground

1. Deenergize as much as possible prior to installation.
2. Locate the mounting position of the SPD as close as possible to the electrical connection point. The SPD may be connected directly to the load side of the meter socket via spare/additional lugs or through a disconnect, fuse or circuit breaker rated not less than 15amps.
3. Prepare any supplementary conduit, enclosures, or other materials for wire routing. Minimize right angles as they will degrade overall SPD performance.
4. Mount the device in your predetermined location inside the panel or equipment to be protected.
5. If present, connect the Green Ground wire to the system ground.
6. Connect the White Neutral wire to the neutral. Where neutral and ground are bonded (service entrance) and the SPD is equipped with a white neutral wire, the white neutral wire from the SPD should be connected to the same point as the ground.
7. Connect the Black Phase wire(s) to each phase.
8. Energize the circuit if applicable. Check that the LED light is on.



INSTALLATION INSTRUCTIONS FOR:

MAPXXX/12#-SO	120V/240V Single Phase	2 Wire + Gnd
MAPXXX/12#-10	120V Single Phase	2 Wire + Gnd
MAPXXX/12#-SP	120V/240V Split Phase	2 Wire + Gnd
MAPXXX/240-2P	240V SINGLE PHASE	2 Wire + Gnd

ALL MAP MODELS MUST BE INSTALLED INSIDE AN APPROPRIATE NEMA APPROVED ENCLOSURE.

1. MAP Series products can be directly connected across the load side of the meter can or at the line side of the main breaker. A 30Amp or 60 Amp disconnect may be used for ease of maintenance.
2. MAP Series products may be fed from the line side of a distribution panel or via a 20 Amp or 30 Amp circuit breaker in a distribution panel for ease of maintenance.
3. Optimize device performance by keeping connecting wires as short and as straight as possible. Plan the wiring path(s) prior to commencing any installation procedure. This will assist in keeping the wire lengths and inductance to a minimum.

IF POSSIBLE, SECURE ALL POWER FROM THE PANEL TO WHICH THE DEVICE IS BEING INSTALLED.

If desired, mount the SPD using the two (4) mounting holes provided.

ENSURE ALL CONNECTIONS ARE CORRECT AND SECURE BEFORE ENERGIZING SPD

UNIT DIAGNOSTICS

PHASE LED: When the SPD is securely connected and operating properly, the RED LED will be illuminated. Replacement of the SPD is required if the RED LED is not illuminated.

MAINTENANCE: Check the status of the LED indicator at intervals not to exceed 2 months. If the LED Indicator is not illuminated the SPD requires replacement.

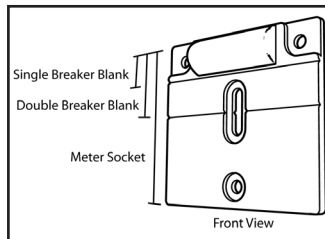
OPI-II Socket Mount Diagnostic Light Kit Installation

Tools Needed:

Power Driver
1/4" Hex Power Drill Bit
Pliers

Kit Includes:

OPI-II Lens
Fiber Cable
Speed Nut
Self-Tapping 1/4 Hex #6 Screws



Step 4: Connect the fiber optic line.

Connect the fiber optic line from the MAP silicon indicator hole to the fiber light pipe on the lens by pushing the fiber line into each of the holes until the fiber line stops.



Step 5. Finish Installation

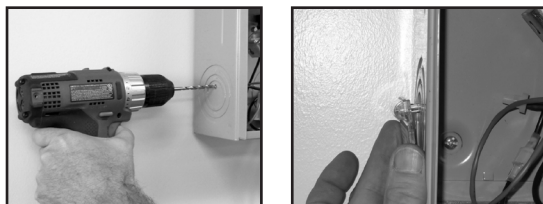
Make sure that the work area is safe before you apply power to check operation.

Step 1: Determine the best mounting location.

The lens should be located on the side of the meter can as close to the bottom as possible. The lens may be broken down into smaller pieces at the score lines, if necessary.

Step 2: Mount Lens

Make 1/4" hole for the light pipe in the desired location. Insert the light pipe into the drilled hole. Push the speed nut on to the light pipe to secure the lens in place. Use pliers to push the speed nut in place for a tight fit.



Step 3: Secure the lens

Secure lens to sockets by using the provided self-tapping screw through the elongated oval opening in the center of the lens.



MAP Hardwire Installation for 320 Amp Meter Socket

1. Remove .25 slide connectors from black wires. Attach supplied ring terminal to each wire using a crimping tool.
2. Using provided washers and appropriate jam nut, attach ring terminal to exposed threads on connector lug mounting stud. Torque between 75 and 100 inch-pounds.
3. A Neutral/Ground connection can be made in one of two ways:
 - A. Attach the neutral to the meter can with self-tapping screw (Figure 2)
 - B. Connect the neutral to the existing unused compression lug (Figure 3)

MAP Series Devices are NOT rated for outdoor use and must be installed within an enclosure.

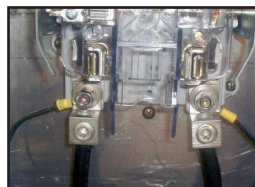


Figure 1

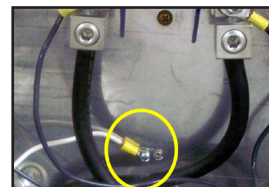


Figure 2

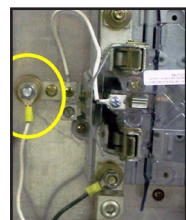


Figure 3

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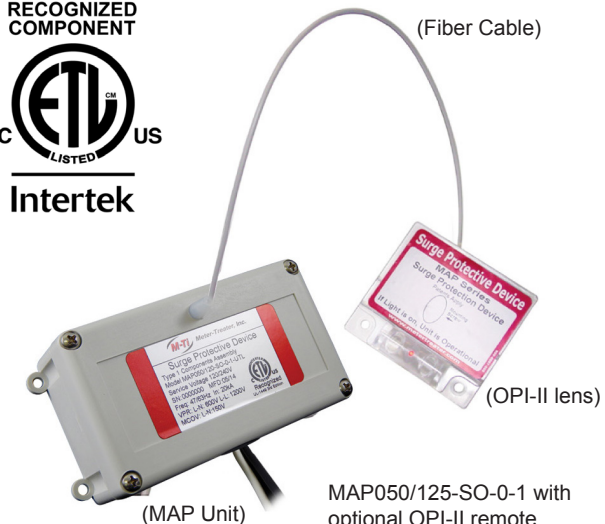
MAP Series Hardwire Device (Single & Split Phase)

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SURGE PROTECTION DEVICES FOR
AC POWER APPLICATIONS

120
Volt
AC

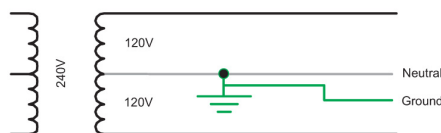
240
Volt
AC

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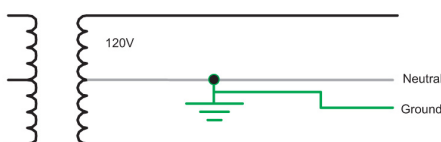
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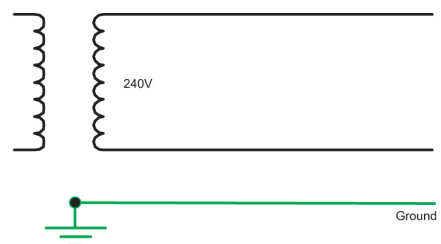


120/240V OWHX
MAPxxx/120-SO-0-1

120/240V Split Phase
MAPxxx/120-SP-0-2



120V Single Phase
MAPxxx/120-10-0-x



240V Single Phase
MAPxxx/240-2P-0-1

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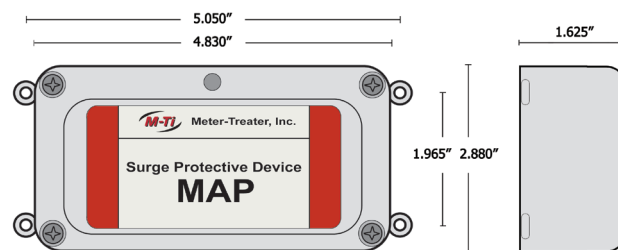
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Construction:
Polycarbonate

Mounting Holes:
4 Places

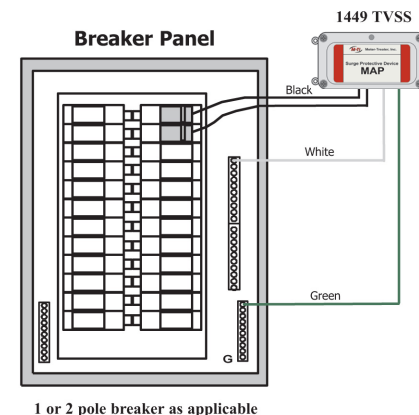
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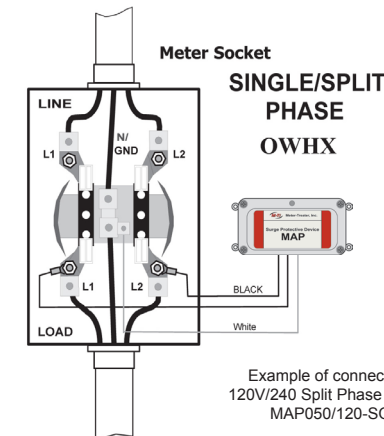
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120/240VAC, Single Phase 2 Wire + Ground
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120VAC Single Phase, 3 Wire + Ground
240VAC Single Phase, 2 Wire + Ground

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7. Connect the Black Phase wire(s) to each phase.
8. Energize the circuit if applicable. Check that the LED light is on.



1 or 2 pole breaker as applicable



Example of connection to a 120V/240 Split Phase Meter Can MAP050/120-SO-0-1

INSTALLATION INSTRUCTIONS FOR:

MAPXXX/12#-SO	120V/240V Single Phase	2 Wire + Gnd
MAPXXX/12#-10	120V Single Phase	2 Wire + Gnd
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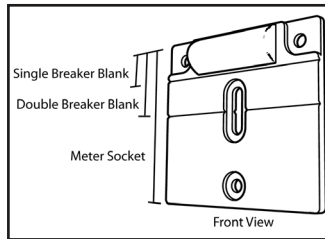
OPI-II Socket Mount Diagnostic Light Kit Installation (optional)

Tools Needed:

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1/4" Hex Power Drill Bit
Pliers

Kit Includes:

OPI-II Lens
Fiber Cable
Speed Nut
Self-Tapping 1/4 Hex #6 Screws



Step 4: Connect the fiber optic line.

Connect the fiber optic line from the MAP silicon indicator hole to the fiber light pipe on the lens by pushing the fiber line into each of the holes until the fiber line stops.



Step 5. Finish Installation

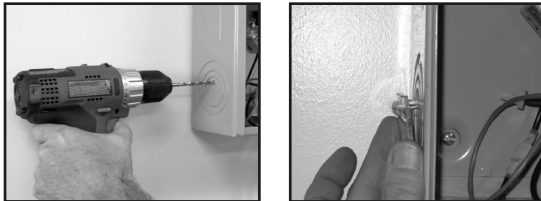
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Step 3: Secure the lens

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MAP Hardwire Installation for 320 Amp Meter Socket

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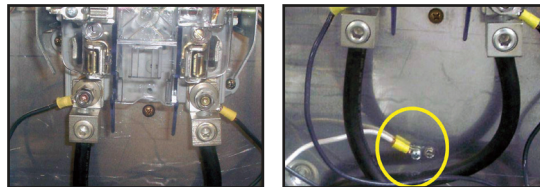


Figure 1

Figure 2

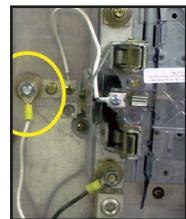


Figure 3

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Please Note:
There are no user serviceable parts inside.

M-Ti Meter-Treater, Inc.
QUALITY SURGE PROTECTION DEVICES SINCE 1986

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Email: sales@metertreater.com
Website: www.metertreater.com

MT-MAPTHREEINSTALL-1/2016

MAP Series Hardwire Device (Three Phase)

USER MANUAL AND INSTALLATION GUIDE

RECOGNIZED
COMPONENT



Intertek



SURGE PROTECTION DEVICES FOR
AC POWER APPLICATIONS

120
Volt
AC

240
Volt
AC

277
Volt
AC

480
Volt
AC

The MAP is a Type 1 SPD Component Assembly for use in Type 1 or Type 2 environments. (IEEE Cat C) The MAP Series is built to both UL's OWHX (Secondary Surge Arrestors) and 1449 Fourth Edition SPD standards.

GENERAL

1. This document provides detailed information on how to install and operate the MAP Series of Surge Protective Devices (SPD).
2. The MAP Series of SPDs are 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.
3. 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.
4. Incorrect installation may significantly impair the performance of the SPD. It is particularly important that all installation procedures and guidelines be followed exactly.
5. **INSTALLATION OF THIS DEVICE SHOULD ONLY BE PERFORMED BY A QUALIFIED INSTALLER**
6. CHECK TO ENSURE THAT ALL CONNECTIONS ARE CORRECT AND SECURE BEFORE ENERGIZING.
7. KEEP THIS MANUAL IN A SAFE, DRY PLACE FOR FUTURE REFERENCE.

MAPXXX/125-3W	3 Phase Wye	4 Wire + Gnd
MAPXXX/220-3W	3 Phase Wye	4 Wire + Gnd
MAPXXX/230-3W	3 Phase Wye,	4 Wire + Gnd
MAPXXX/240-3W	3 Phase Wye,	4 Wire + Gnd
MAPXXX/125-3H	High Leg Delta	4 Wire + Gnd
MAPXXX/240-3D	3 Phase Delta	3 Wire + Gnd
MAPXXX/277-3W	3 Phase Wye	4 Wire + Gnd
MAPXXX/480-3D	3 Phase Delta	3 Wire + Gnd

ALL MAP MODELS MUST BE INSTALLED INSIDE AN APPROPRIATE NEMA APPROVED ENCLOSURE.

1. MAP Series products can be directly connected across the load side of the meter can or at the line side of the main breaker. A 30Amp or 60 Amp disconnect may be used for ease of maintenance.
 2. MAP Series products may be fed from the line side of a distribution panel or via a 20 Amp or 30 Amp circuit breaker in a distribution panel for ease of maintenance.
 3. Optimize device performance by keeping connecting wires as short and as straight as possible. Plan the wiring path(s) prior to commencing any installation procedure. This will assist in keeping the wire lengths and inductance to a minimum.
- IF POSSIBLE, SECURE ALL POWER FROM THE PANEL TO WHICH THE DEVICE IS BEING INSTALLED.**
- If desired, mount the SPD using the four (4) mounting holes provided.

ENSURE ALL CONNECTIONS ARE CORRECT AND SECURE BEFORE ENERGIZING SPD

UNIT DIAGNOSTICS

RED LED IS A FUNCTIONALITY/POWER INDICATOR

When all wires are connected properly, power is applied, and the unit is operating normally, the red LED indicator will be ON.

PHASE LED: When the SPD is securely connected and operating properly, the RED LED will be illuminated. Replacement of the SPD is required if the RED LED is not illuminated.

MAINTENANCE: Check the status of the LED indicator at intervals not to exceed 2 months. If the LED Indicator is not illuminated the SPD requires replacement.

MOUNTING INFORMATION

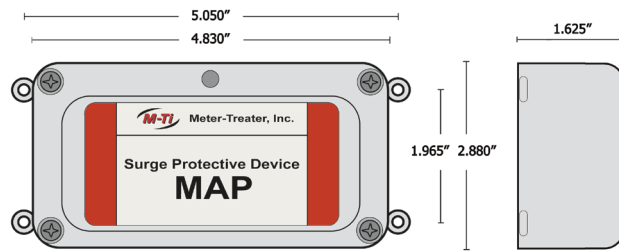
NOTE: BEFORE STARTING THE INSTALLATION, MEASURE THE LINE VOLTAGE WITH AN AC VOLTMETER TO ENSURE THE CORRECT DEVICE HAS BEEN SELECTED FOR THE APPLICATION. L-N/G VOLTAGE SHOULD NOT EXCEED THE MAXIMUM CONTINUOUS OPERATING VOLTAGE (MCOV) LISTED ON THE SPD LABEL.

1. When mounting the MAP SERIES SPD, if applicable, 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.

NOTE: IF YOU CHOOSE TO MOUNT THE MAP 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.

NOTE: MOUNTING TABS ON THE MAP SPD MAY BE REMOVED IF MOUNTING IS NOT NECESSARY.



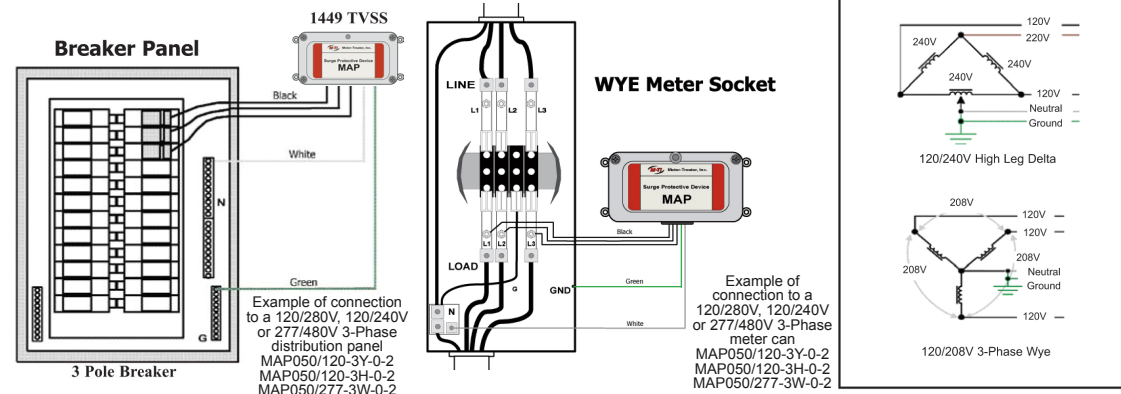
Construction:
Polycarbonate

Mounting Holes:
4 Places

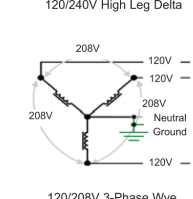
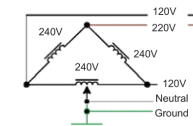
WORKING NEAR EXPOSED LIVE CONDUCTORS IS HAZARDOUS. POWER SHOULD BE SECURED OR APPROPRIATE ELECTRICAL SAFETY EQUIPMENT SHOULD BE USED TO THE GREATEST EXTENT POSSIBLE BEFORE CONNECTING.

120/240VAC, High Leg Delta, 4 Wire + Ground
120/208VAC, Three Phase Wye, 4 Wire + Ground
277/480VAC Three Phase Wye, 4 Wire + Ground

1. Deenergize as much as possible prior to installation.
2. Locate the mounting position of the SPD as close as possible to the electrical connection point. The SPD may be connected directly to the load side of the meter socket via spare/additional lugs or through a disconnect, fuse or circuit breaker rated not less than 20 amps.
3. Prepare any supplementary conduit, enclosures, or other materials for wire routing. Minimize right angles as they will degrade overall SPD performance.
4. Mount the device in your predetermined location inside the panel or equipment to be protected.
5. If present, connect the Green Ground wire to the system ground.
6. Connect the White Neutral wire to the neutral. Where neutral and ground are bonded (service entrance) and the SPD is equipped with a white neutral wire, the white neutral wire from the SPD should be connected to the same point as the ground.
7. Connect the Black Phase wire(s) to each phase.
8. Energize the circuit if applicable. Check that the LED light is on.

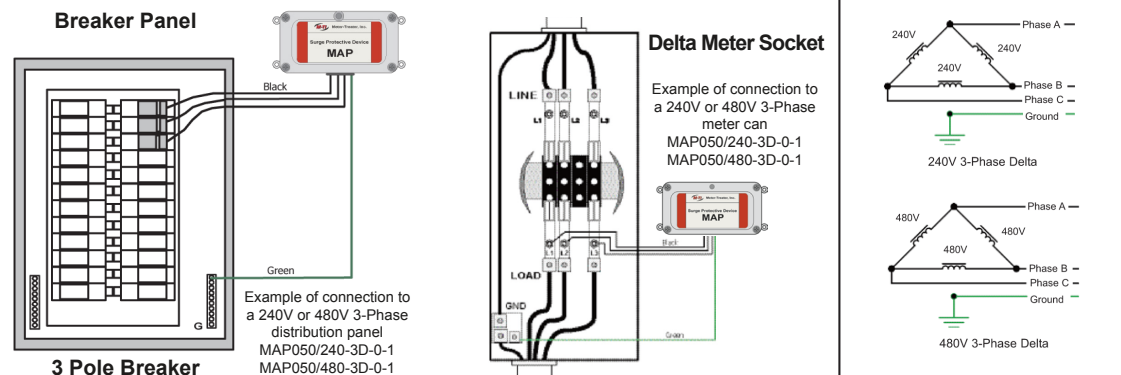


Electrical Configurations



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

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3. Prepare any supplementary conduit, enclosures, or other materials for wire routing. Minimize right angles as they will degrade overall SPD performance.
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5. If present, connect the Green Ground wire to the system ground.
6. Connect the Black Phase wire(s) to each phase.
7. Energize the circuit if applicable. Check that the LED light is on.



Electrical Configurations

