RCHW Series

Extrusion Case

Residential/Commercial Hardwired Surge Protection Device

The **RCHW Series** provides **high-energy surge protection** and optional **RF filtering** for Residential, Commercial, Industrial and Remote Site applications.

These hardwired units provide superior control over transients by delivering low clamping voltages combined with high surge energy handling capabilities. All RCHW models are Type 1 or Type 2 Surge Protection Devices that are listed to **ANSI/UL 1449**.

They are configured for **quick and easy parallel installation** and require little maintenance while in service. The high energy handling capabilities of the RCHW Series is due to the utilization of large diameter MOV technology.

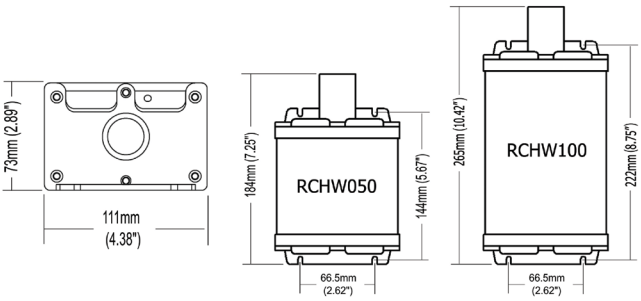
The RCHW Series is available for all standard service voltages and phase configurations and can be equipped with several specialized diagnostic options. All Models have a 100kA RMS symmetrical fault current rating suitable for IEEE category C locations, and are available with surge ratings of 50kA and 100kA per phase. (200kA is also available)† (please contact factory)

15 YEAR WARRANTY

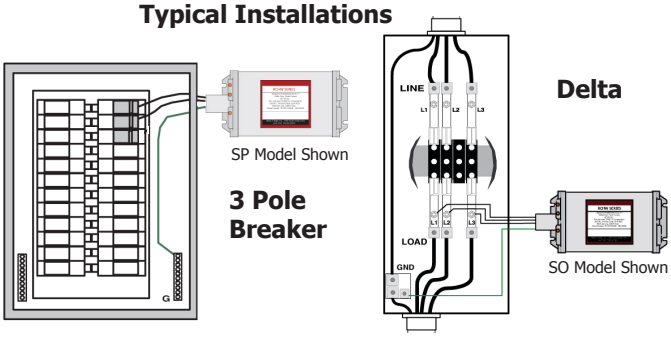
MADE IN THE USA

Intertek

Dimensions



Typical Installations



(Diagrams not drawn to scale)

Product Specifications				
Max Surge Current	100kA per Phase (see /POL)		Diagnostics	Red Status LED, SUNBRIGHT
Fusing	Coordinated Surge & Thermal		Safety Standards (Type 1 SPD)	ANSI/UL1449 (most current)
Short Circuit Current	100kA RMS Symmetrical		I_n	20kA*
Housing Rating	NEMA, 1, 2, 3, 3X, 4X, 12 & 13		Flexible Elbow option available	/FLEXELB
Enclosure	Extruded aluminum with plastic end caps			

†Special orders options and 200KA models, please contact the manufacturer for details.
* Devices that are rated 480V delta have a 10kA I_n

Model Number	Service Voltage	MCOV	L-N	L-G	N-G	L-L
RCHWxxx/120-10-#-1	120 Volt Single Ø	150Vac	600V	600V	600V	N/A
RCHWxxx/120-SP-#-1	120/240 Volt Split Ø	150Vac	600V	600V	600V	1200V
RCHWxxx/120-3W-#-1	120/208 Volt 3Ø Wye	150Vac	600V	600V	600V	1200V
RCHWxxx/120-3H-0-1	120/240 Volt 3Ø Delta	150/320Vac	600/1000V	600/1000V	600V	1200/1800V
RCHWxxx/240-3D-0-1	240 Volt 3Ø Delta	320Vac	N/A	1000V	N/A	2000V
RCHWxxx/220-3W-#-1	220/380 Volt 3Ø Wye	320Vac	1000V	1000V	1000V	2000V
RCHWxxx/230-3W-#-1	230/400 Volt 3Ø Wye	320Vac	1000V	1000V	1000V	2000V
RCHWxxx/240-3W-#-1	240/415 Volt 3Ø Wye	320Vac	1000V	1000V	1000V	2000V
RCHWxxx/277-3W-#-1	277/480 Volt 3Ø Wye	320Vac	1000V	1000V	1000V	2000V
RCHWxxx/480-3D-0-1	480 Volt 3Ø Delta	520Vac	N/A	1800V	N/A	4000V

1. **Replace xxx with:** 050 for 50kA or with 100 for 100kA (200 for 200kA per phase) Surge Ratings
2. **Replace # with:** F if filtering is required (available option on WYE Models only).
3. **Options**: Add /DC for Dry Contacts, Add /AA for Audible Alarm, Add /FM for Flush Mount Kit.
4. **Add:** /POL to the end of the Model Number for the optional NEMA 4X Non-Metallic Housing
5. **Add:** /WP to the end of the Model Number for the optional weatherproof, NEMA 4X, 3/4" grey thick flexible nonmetallic conduit
6. **Add:** /FLEX to the end of the Model Number for the optional weatherproof, NEMA 4X, 3/4" black thin nonmetallic conduit

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

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 30 amps.

3. Prepare any supplementary conduit, or other materials for wire routing. Minimize right angles as they will degrade overall SPD performance.

4. Mount the device in your predetermined location next to the panel or equipment to be protected.

5. Connect the Green Ground wire to the system ground.

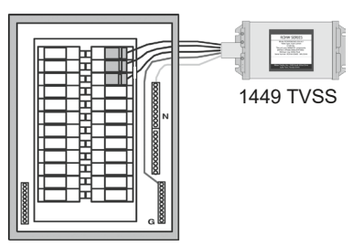
6. Connect the White Neutral wire to the neutral bus. Where there is no neutral bus and the SPD is equipped with a white neutral wire, the white neutral wire from the SPD should be connected to ground.

7. If applicable, for high leg delta systems, connect the orange wire to the high leg phase. CONNECTING A BLACK WIRE TO THE HIGH LEG OF A HIGH LEG DELTA WILL DAMAMGE THE SPD

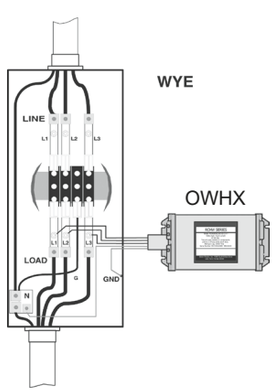
8. Connect the Black Phase wire(s) to each phase.

9. Energize the circuit if applicable. Check that the LED light is on.

Example of connection to a 120/208V, 120/240V, or 277/480V 3-Phase distribution panel



1449 TVSS



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Example of connection to a 120/208V, 120/240V, or 277/480V 3-Phase meter can

240VAC, Three Phase Delta, 3 Wire + Ground
480VAC, Three Phase Delta, 3 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 30 amps.

3. Prepare any supplementary conduit, or other materials for wire routing. Minimize right angles as they will degrade overall SPD performance.

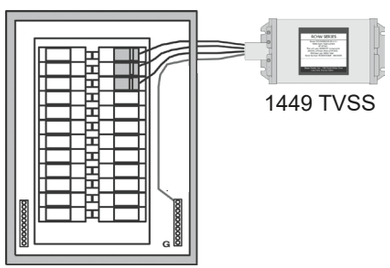
4. Mount the device in your predetermined location next to the panel or equipment to be protected.

5. Connect the Green Ground wire to the system ground.

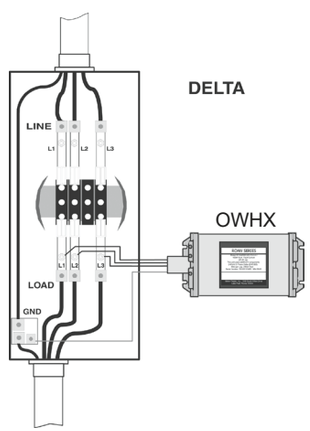
6. Connect the Black Phase wire(s) to each phase.

7. Energize the circuit if applicable. Check that the LED light is on.

Example of connection to a 240V or 480V 3-Phase distribution panel



1449 TVSS



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Example of connection to a 240V or 480V 3-Phase meter can

WARRANTY INFORMATION

Meter-Treater, Inc. (MTI) warrants all RCHW Series models to be free from defects, and will at our option repair or replace the product should it fail within fifteen (15) (residential installations) 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 warranteed, 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.

Meter-Treater, Inc.
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MTI-RCHWINSTALL-72016

RCHW Series Hardwire Device

USER MANUAL AND INSTALLATION GUIDE
(ALL MODELS)

C ETL LISTED US
Intertek

The RCHW is a Type 1 Device (IEEE Category C)
The RCHW Series is built to both UL's OWHX (Secondary Surge Arrestor) and 1449 Fourth Edition SPD Standards

SURGE PROTECTION DEVICES FOR AC POWER APPLICATIONS

RESIDENTIAL & COMMERCIAL INSTALLATIONS

GENERAL

1. This document provides detailed information on how to install and operate the RCHW Series of 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 as possible. Mount the units using the mounting holes provided on the enclosure as shown by the illustrations in these instructions.

3. The RCHW Series of protectors 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.

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 post a danger to personnel.

5. Incorrect installation may siginificantly inpair the performance of the Surge Protection Device. It is particularly important that all installation procedures and guidelines be followed exactly

6. Installation of this decide should only be performed by a qualified licensed installer.

7. Before starting any installation procedures, verify service voltages with an AC voltmeter to ensure that the correct SPD model has been selected.

8. Check to ensure that all connections are correct and secure before energizing.

9. Keep this manual in a safe, dry place for future reference.

INSTALLATION INSTRUCTIONS FOR:

RCHWXXX/120-SO	Single Phase	2 Wire + Gnd
RCHWXXX/120-1O	Single Phase	3 Wire + Gnd
RCHWXXX/120-SP	Split Phase	3 Wire + Gnd
RCHWXXX/120-2P	Single Phase	2 Wire + Gnd
RCHWXXX/240-2P	Single Phase	2 Wire + Gnd
RCHWXXX/120-3W	3 Phase Wye	4 Wire + Gnd
RCHWXXX/220-3W	3 Phase Wye	4 Wire + Gnd
RCHWXXX/230-3W	3 Phase Wye	4 Wire + Gnd
RCHWXXX/240-3W	3 Phase Wye	4 Wire + Gnd
RCHWXXX/120-3H	High Leg Delta	4 Wire + Gnd
RCHWXXX/240-3D	3 Phase Delta	3 Wire + Gnd
RCHWXXX/277-3W	3 Phase Wye	4 Wire + Gnd
RCHWXXX/480-2P	Single Phase	2 Wire + Gnd
RCHWXXX/480-3D	3 Phase Delta	3 Wire + Gnd

ALL RCHW MODELS ARE APPROVED FOR OUTSIDE USE

1. Secondary Surge Arrestors listed to UL OWHX can be directly connected across the load side of the meter can or at the line side of the main breaker. A 30 Amp or 60 Amp disconnect may be used for ease of maintenance.

2. TVSS devices listed to UL 1449 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.

INSURE ALL CONNECTIONS ARE CORRECT AND SECURE BEFORE ENERGIZING SPD.

UNIT DIAGNOSTICS

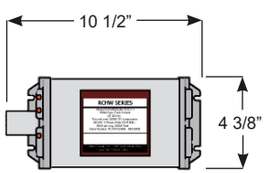
PHASE LED INDICATORS: When the SPD is securely connected and operating properly, the RED LED(S) will be illuminated. Replacement of the SPD is required if the RED LED(S) are not illuminated. If equipped, the YELLOW LED will illuminate only if there is a high neutral-ground voltage detected.

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

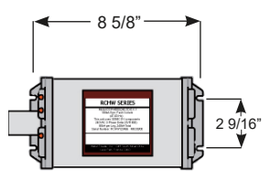
MOUNTING INFORMATION

RED LEDS ARE PHASE/POWER INDICATORS

Three Phase

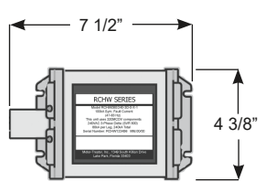


Overall Case Dimensions

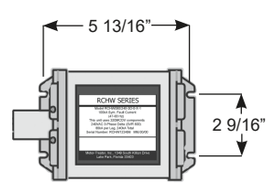


Mounting Hole Dimensions

Small Case



Overall Case Dimensions



Mounting Hole Dimensions

Mount the RCHW Series SPD using the four mounting holes as close as possible to the connections point to the system. Keeping the lead length short will increase the performance of the unit. Connecting conduit should be rated for use in the environment that the SPD is mounted. Splicing wires to gain extra lead length is not advisable as the extra lead length will degrade the performance of the device.

CAUTION: 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, Split Phase, 3 Wire + Ground
120VAC, Single Phase, 3 Wire + Ground
120VAC Single Phase, 2 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 15 amps.

3. Prepare any supplementary conduit, or other materials for wire routing. Minimize right angles as they will degrade overall SPD performance.

4. Mount the device in your predetermined location next to the panel or equipment to be protected.

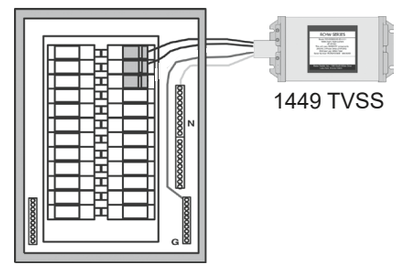
5. Connect the Green Ground wire to the system ground.

6. If applicable, connect the White Neutral wire to the neutral bus. Where there is no neutral bus and the SPD is equipped with a white neutral wire, the white neutral wire from the SPD should be connected to ground.

7. Connect the Black Phase wire(s) to each phase.

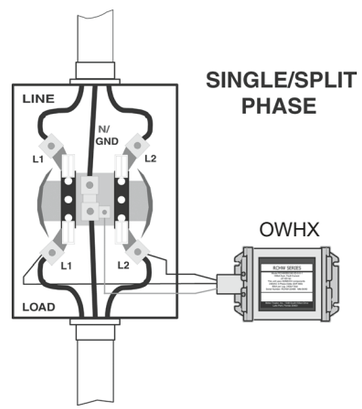
8. Energize the circuit if applicable. Check that the LED light is on.

Example of connection to a 120/240V Split Phase distribution panel



1449 TVSS

SINGLE/SPLIT PHASE



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Example of connection to a 120/240V Split Phase meter can