Product manual

OVRHS3/OVRHS3U series
Surge protective devices
Installation, operation and maintenance manual

OVRHS3 OVRHS3-F1 OVRHS3U

Product features

– Listed to UL 1449 4th Edition for Type 1 and Type 2 SPD applications.
– Multiple Metal Oxide Varistors (MOVs) with individual and overcurrent protection.
– LED indicates proper functioning of MOVs

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Guide to installation and assistance

Thank you for choosing the ABB OVRHS3/OVRHS3U series Surge Protective Device (SPD). We look forward to fulfilling your facilitywide surge protection needs.

This manual provides guidelines for the proper installation of the OVRHS3/OVRHS3U series of devices. Proper product selection and compliance with these guidelines will help your new suppression system provide years of reliable service. If installers are unsure about the facility electrical configuration or have other installation-related questions, it is recommended they consult with a qualified electrical professional.

When shortcuts are taken or installation procedures are not followed, the OVRHS3/OVRHS3U series may become damaged or may not provide adequate protection. It is extremely important to follow these installation procedures carefully.

△ WARNING!:

THE OVRHS3/OVRHS3U SERIES WARRANTY IS VOIDED if the unit is damaged as a result of improper installation or the installer's failure to verify the following conditions prior to installation.

△ WARNING!:

HAZARDOUS VOLTAGES PRESENT: Improper installation or misapplication may result in serious personal injury or damage to the electrical system. Read the complete installation instructions before proceeding with installation. Remove all power to the electrical panel before installing or servicing the SPD.

△ WARNING!:

IMPORTANT SAFETY INSTRUCTIONS: All work must be performed by licensed and qualified personnel. Follow applicable electrical specifications for the country the unit is being used in.

△ WARNING!:

Check to ensure that a proper bond is installed between neutral and ground at the transformer upstream from all 3-phase Wye, 3-phase High-Leg or 2-phase OVRHS3/OVRHS3U series device. If the transformer is not accessible, check the main service disconnect/panel for the NG bond. Lack of a proper bond will damage OVRHS3/OVRHS3U series and void the warranty.

△ WARNING!:

Do not HIPOT the OVRHS3/OVRHS3U series units or the electrical system to which the OVRHS3/OVRHS3U series unit is connected without disconnecting the OVRHS3/OVRHS3U series units conductors including phases, neutral and ground.

Warning!
Installation by person with electrotechnical expertise only.

Warnung!
Installation nur durch elektrotechnische Fachkraft.

Avertissement!
Installation uniquement par des personned qualifiées électrotechnique.

¡Advertencia!
La instalación deberá ser realizada únicamente por electricistas especializados.

Important safety instructions

Installation

Refer to Table 1 to see if an upstream overcurrent protection device is required. Type 1 SPD devices do not require upstream overcurrent protection, but Type 2 SPDs must be installed behind an overcurrent protection device. The suppressor must be installed on the load side of the main service disconnect. The unit must be installed in parallel to the electrical distribution system. Careful consideration should be made in selecting the knockout location because excess lead length and sharp bends in the wire drastically decrease the effectiveness of the SPD. For this reason choose a knockout location that minimizes lead length and sharp bends. The SPD may also be mounted by it's metal bracket (option) within the equipment enclosure.

1. Disconnect all power supplying the electrical panel.
2. Remove the panel screws and cover. Retain these parts for re-installation.
3. Either remove a knockout 13mm (0.5 inches) or install provided metal bracket (option).
4. Remove lock washer from the SPDs threaded nipple. Carefully feed the wires through to avoid cutting wire insulation. Slide lock washer over the wires to anchor the threaded nipple. Rotate the SPD so that the function status LED indicators can be easily viewed. Tighten the lock washer to secure the SPD.
5. Locate the neutral bar inside the electrical panel and connect the white or blue wire to the neutral bar and tighten to torque specified on inside of panel. Keep conductor length as short as possible and avoid sharp bends in the wire.
6. Locate the ground bar inside the electrical panel. Connect the green/yellow wire to the ground bar and tighten the terminal to the torque specified on the panel. Keep conductor length as short as possible and avoid sharp bends. If neutral is bonded to ground, green wire may be terminated to neutral.
7. Black or brown wires (model dependent) should be connected to either the breaker or the bus of the panel, as long as the short circuit current rating does not exceed 65 or 100kAIC (see Table 1 for specific model ratings). On the OVRHS3401203H (120/240 High-Leg Delta) protector connect the orange wire to phase B (the high leg). If you would like to be able to turn the unit off, then you may consider connecting it to a breaker (# of breaker pole positions determined by the # of black or brown wires provided with the unit). Tighten terminals to torque specified on inside of panel. Keep lead lengths as short as possible and avoid sharp bends.
8. Re-install panel cover.

Operation

1. Apply power to the panel. If the electrical and grounding wirings are done correctly, the green function status LED will illuminate. If the LED does not turn on, remove the power and review all of the previous installation procedures.
2. If after a known heavy lightning strike has occurred and the LED is off, reset the breaker if the OVRHS3 is tied to a breaker. If the LED light(s) come(s) back on then the protector is fine. If the LEDs are still out, or you can not reset the breaker, the protector must be replaced. This unit contains no user serviceable parts.

Performance data

Table 1

Model number	SPD type	kAIC rating	Upstream breaker	Wire gauge
OVRHS3401201P	1, 2	100	Not required	14 AWG
OVRHS3402301P	2	100	30A	14 AWG
OVRHS3404801P	2	100	30A	14 AWG
OVRHS3401202S	1, 2	100	Not required	14 AWG
OVRHS3401203H	2	100	30A	14 AWG
OVRHS3401203Y	1, 2	100	Not required	14 AWG
OVRHS3402403D	1, 2	100	Not required	14 AWG
OVRHS3402773Y	2	100	30A	14 AWG
OVRHS3402773D	2	100	30A	14 AWG
OVRHS3402303Y	2	100	30A	14 AWG
OVRHS3401202SF1	2	65	60A	12 AWG
OVRHS3601202SF1	2	65	60A	12 AWG
OVRHS3801202SF1	2	65	60A	12 AWG
OVRHS3U401201P	1, 2	100	Not required	14 AWG
OVRHS3U402401P	2	100	30A	14 AWG
OVRHS3U401202S	1, 2	100	Not required	14 AWG
OVRHS3U802402SR	2	100	30A	14 AWG
OVRHS3U402403D	1, 2	100	Not required	14 AWG
OVRHS3U404803D	2	65	20A	14 AWG
OVRHS3U401202S	2	65	20A	14 AWG
OVRHS3U402083Y	1, 2	100	Not required	14 AWG
OVRHS3U402773Y	2	65	20A	14 AWG
OVRHS3U402303Y	2	65	20A	14 AWG

All units are furnished with 36" leads.

Electrical connections

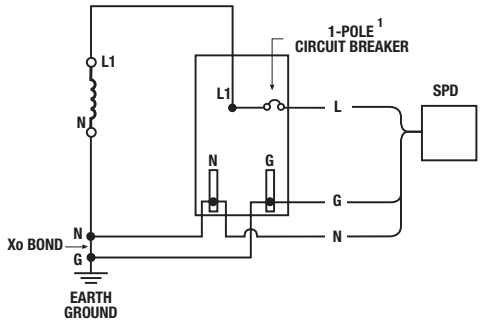


Figure 1: 1-phase, 2-wire

OVRHS3(U)401201P
OVRHS3(U)402401P
OVRHS3401201P
OVRHS3402301P
OVRHS3404801P

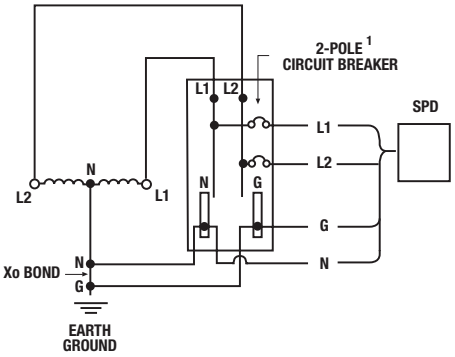


Figure 2: 2-phase, 3-wire

OVRHS3(U)401202S

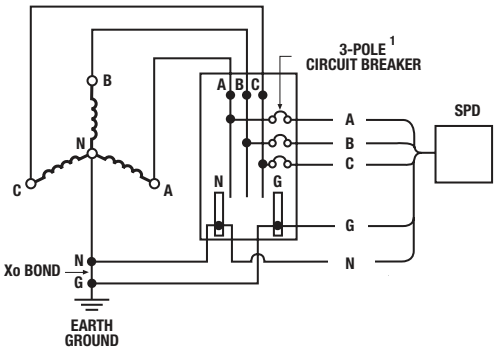


Figure 3: 3-phase Wye, 4-wire

OVRHS3(U)402083Y
OVRHS3(U)402773Y
OVRHS3(U)402303Y
OVRHS3401203Y
OVRHS3402773Y
OVRHS3402303Y

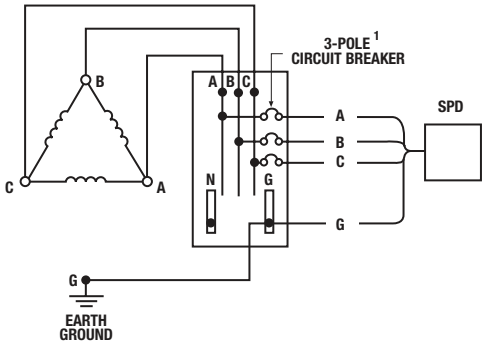


Figure 4: 3-phase Delta, 3-wire

OVRHS3(U)402403D
OVRHS3(U)404803D
OVRHS3402403D
OVRHS3402773D

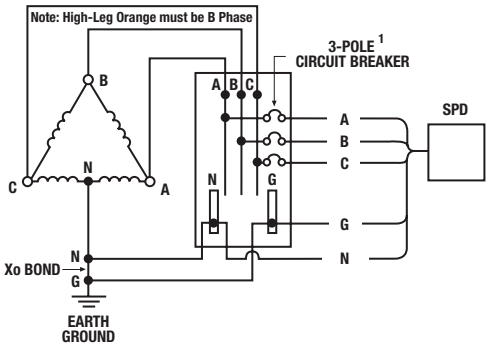


Figure 5: 3-phase High-Leg Delta, 4-wire

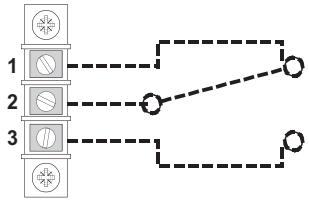
OVRHS3401203H

[1] Please see Table 1 for required circuit breaker.

Connecting the remote contacts to an alarm

(If option chosen on the OVRHS3U)

For “Fail-safe” Form A monitoring, connect the alarm leads to terminals 2 and 3. Terminals 2 and 3 will be closed during normal (Power ON) operation and the protector is functioning properly. If the protector should fail contacts 2 and 3 will open and contacts 1 and 2 will close. Relay contacts are rated at 5A at 250Vac or 30Vdc maximum, 50mVA minimum.

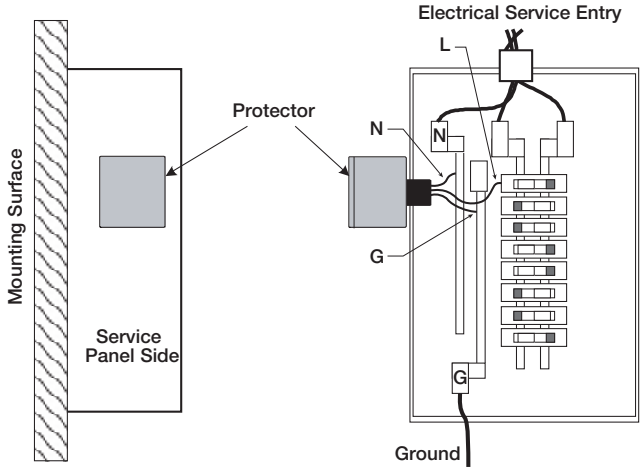


Relay contacts shown in the relaxed position (protector alarm or loss of power).

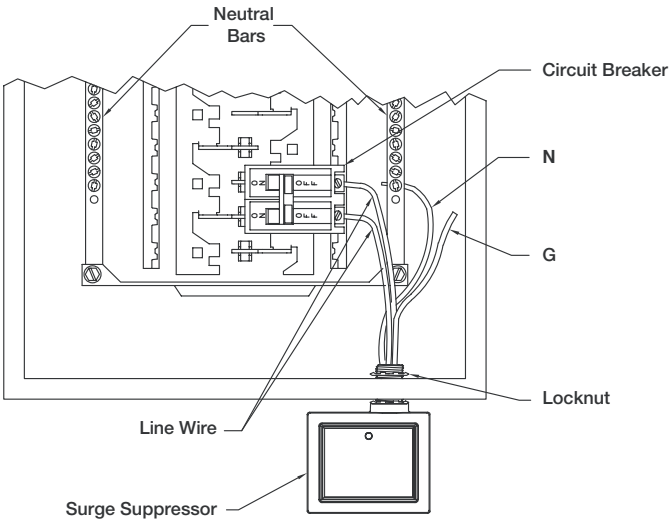
Note: Maximum torque on terminals is 10 in-lbs.

△ CAUTION:

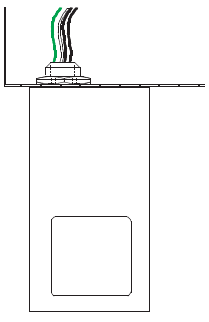
Do not assume the circuit is de-energized! Remove power before performing any maintenance to these devices.



OVRHS3 mounting



OVRHS3-F1 mounting



OVRHS3U mounting

Contact us

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Model #

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Date of purchase

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Date installed

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Installer

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