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INSTALLATION, OPERATION AND MAINTENANCE MANUAL

# OVRHMSU series SPDs



## Guide to installation and assistance

Thank you for choosing the OVRHMSU Surge Protective Device (SPD). We look forward to fulfilling your facility wide surge protection needs.

Install the 2 Port OVRHMSU electrically in series between the AC electrical power source and the load to be protected.

### WARNING

HAZARDOUS VOLTAGES PRESENT: The following is intended for qualified electrical personnel only. Completely read these instructions before installation. It is the final responsibility of the installing electrician to ensure that all local codes and other applicable safety/ environmental conditions are met and the unit is correctly installed.

### WARNING

IMPORTANT SAFETY INSTRUCTIONS: Serious injury or damage may result from installing a product with an improper voltage rating.

## Pre-installation checklist



Confirm that the voltage rating(s) of the intended OVRHMSU match those of the electrical system or circuit to which the product is to be installed. Verify that the intended load does not exceed 24 RMS amperes.

Table 1b: Operating voltage ranges

Model number	Nominal voltages (L-N)
MSU50-120-1G-24A-3-ABB	120
MSU50-220-1G-24A-3-ABB	220
MSU50-227-1G-24A-3-ABB	277

Model number	Nominal voltages (L-N/L-L)
MSU50-120/240-2G-24A-6-ABB	120/240
MSU50-220/380-2G-24A-6-ABB	220/380
MSU50-227/480-2G-24A-6-ABB	277/480

The Two-Port OVRHMSU series SPD is provided with a Power ON indicator. When power is applied to the OVRHMSU series SPD, the Power ON indicator will illuminate. When power is removed from the OVRHMSU series SPD, the Power ON indicator will extinguish.

The OVRHMSU series is intended to installed and operated in an ambient environment that does not exceed 104°F (+40°C), and does not contain conductive liquids or combustible dusts, fibers, vapors, or liquids. The environment should also maintain a humidity range of 5% – 95% (non-condensing).

The OVRHMSU series is intended to be stored in a dry location where the temperature range does not exceed -40°F to +140°F (-40°C to +60°C).

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## Mounting

1. The OVRHMSU series is intended to be installed in a control cabinet or similar enclosure with a degree of protection of at least IP20 (NEMA 1). The enclosure shall provide protection against accidental contact by requiring a tool, key or similar device to ensure only Qualified Personnel are allowed access to exposed live (energized) circuits. Metal enclosures shall be adequately bonded (grounded).
2. Remove all power feeding the site of the OVRHMSU connection.
3. The OVRHMSU series is designed for installation in or adjacent to electrical or electrically-driven equipment. Adjacent installation requires a sealed enclosure. Care should be taken to ensure exposed terminals do not come in contact with personnel.
4. Within the equipment to be protected, mount the OVRHMSU securely to the enclosure or other mounting surface using the holes provided in the opposite corners.
5. Using 10 AWG (5MM<sup>2</sup>) conductors and #8 insulated ring terminals, connect the OVRHMSU series using the provided #8 (m4) screws. The maximum torque to be applied to the mounting hardware is 16 in-lbs (1.8Nm).

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## Electrical connections

1. The OVRHMSU must be protected via a circuit breaker with a maximum capacity of 30 amps.
2. Determine the location of the AC source supplying power to the load.
3. The OVRHMSU is to be installed in series between the AC power source and the equipment to be protected.
4. Using the appropriate phase, neutral and ground conductors, connect the incoming power source to the input terminals of the OVRHMSU.
5. Connect the Line 1 conductor to the L1 terminal of the OVRHMSU.
6. Connect the Neutral conductor to the N terminal of the OVRHMSU.
7. Connect the PE (Ground) conductor to the G terminal of the OVRHMSU.
8. For systems that have a single-phase 3W+G supply and load, connect the Line 2 conductor to the L2 terminal of the OVRHMSU.
9. Repeat Steps 5 through 8 on the load side of the OVRHMSU series SPD.
10. For best performance, the SPD should be connected as close as possible to the load. Additionally, load side conductors should not be run in the same conduit, cable tray, or cable trough as the input conductors.

Apply power to the device once proper installation has been completed. An illuminated LED indicates proper operation of the device. See Figures 1 and 2 for OVRHMSU line diagram. This unit contains no serviceable parts.

## Service configurations

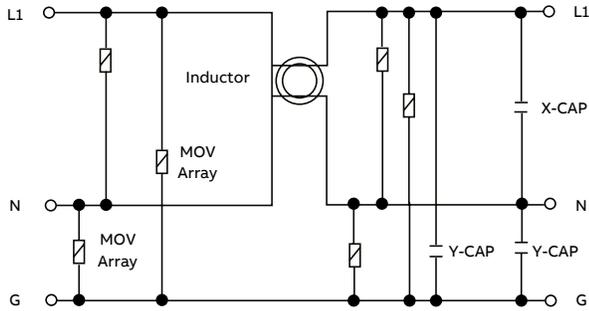


Figure 1 Single-Phase

Use only the L1 Terminal lug for the phase wires (input & output) when connecting a single-phase configuration.

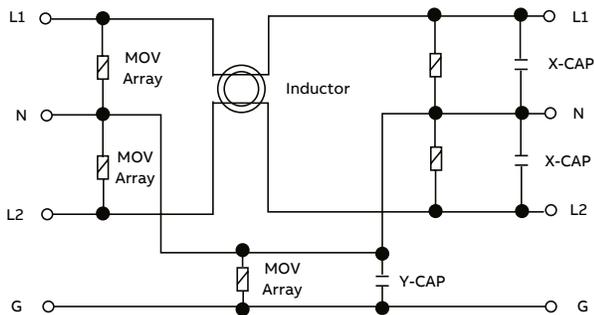
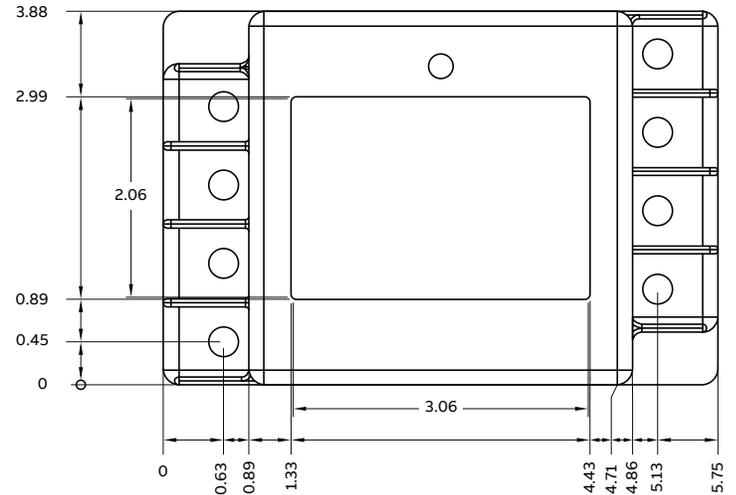


Figure 2 Split-Phase

Match the corresponding L1 & L2 terminal lugs for the input & output phase wires when connecting a split-phase configuration.

## Dimensional specifications



## Standards and listings

The following standards and listings apply to the OVRHMSU series product line:

- Listed to UL 1449 5th Edition, Type 4 for Type 2 SPD applications, cUL, and UL 1283



- Compliant to IEEE C62.41.1-2002, C62.41.2-2002 and C62.45-2002
- NFPA 70 [NEC], Article 28
- RoHS Compliant
- CE, IEC 61643-11-2011
- E MC Directive 2004/108/EC
- Low Voltage Directive 2006/95/EC

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## Warranty

ABB warrants that Equipment (excluding Software) shall be delivered free of defects in material and workmanship. The Warranty Remedy Period for Equipment (excluding Software) shall end five (5) years after the original date of purchase. If a nonconformity to the foregoing warranty is discovered in the Equipment during the applicable Warranty Remedy Period, as specified above, under normal and proper use and provided the Equipment has been properly stored, installed, operated and maintained and written notice of such nonconformity is provided to ABB promptly after such discovery and within the applicable Warranty Remedy Period, ABB shall, at its option, either (i) repair or replace the nonconforming portion of the Equipment or (ii) refund the portion of the price applicable to the nonconforming portion of Equipment. If any portion of the Equipment so repaired or replaced fails to conform to the foregoing warranty, and written notice of such nonconformity is provided to ABB promptly after discovery and within the original Warranty Remedy Period applicable to such Equipment or 30 days from completion of such repair, replacement or re-performance, whichever is later, ABB will repair or replace such nonconforming Equipment. The original Warranty Remedy Period shall not otherwise be extended. ABB shall not be responsible for providing temporary power, removal, installation, reimbursement for labor costs or working access to the nonconforming Equipment, including disassembly and re assembly of non-ABB supplied equipment, or for providing transportation to or from any repair facility, or for any other expenses incurred in connection with the repair or replacement, all of which shall be at Purchaser's risk and expense. ABB shall have no obligation hereunder with respect to any Equipment which (i) has been improperly repaired or altered; (ii) has been subjected to misuse, negligence or accident; (iii) has been used in a manner contrary to ABB's instructions; (iv) is comprised of materials provided by or a design specified by Purchaser; or (v) has failed as a result of

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