



# 2510 and 2520 Series Data and Signal Surge Protective Device INSTALLATION INSTRUCTIONS



## General Information

The Bourns® Model 2510 and 2520 are designed to protect data/signal transmission systems, industrial processing equipment, I/O cards, probes, actuators etc., against the risk of the harmful effects of transient surges. These surges can be the result of:

- Direct and indirect lightning strikes
- Power company load switching
- Upstream load switching at other facilities



## WARNING!

Only qualified personnel should install or service this system. Electrical safety precautions must be followed when installing or servicing this equipment. To prevent risk of electrical shock, turn off and lock out all power sources to the unit before making electrical connections or servicing.

For proper and safe operation, neutral and ground MUST be reliably connected. Failure to operate this unit from a solidly grounded power source of the proper configuration will reduce or impede operation, and may result in unit failure.

## Installation

Before making connections to the unit, verify that the unit model number and nameplate voltage/current rating are appropriate for connection to the intended data or MSR system.

Place the unit as close as possible to the piece of equipment that is being protected. For best performance, the length of the wiring to the surge protective device (SPD) unit should be less than 10 m or 30 ft.

## MOUNT

The 25xx series SPDs are mounted on DIN rail (35 mm, To DIN/EN 60715) in a cabinet or enclosure to protect the measuring and control equipment that is usually located in a control or equipment room.

## CONNECT

This unit is connected in series to the protected circuit/equipment. It is critical that the line and equipment sides are not interchangeable, and severe damage could occur to the dataline device if incorrectly wired. The out (equipment) terminal should be connected to the protected circuit/equipment (please see Fig.1)



Fig 1: Connection of 25xx series



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\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Actual product may differ from image shown.

Specifications are subject to change without notice.

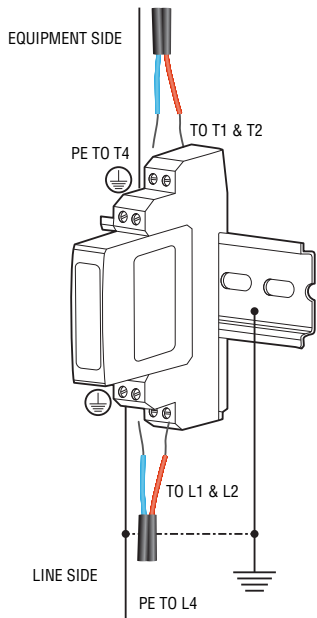
Users should verify actual device performance in their specific applications.

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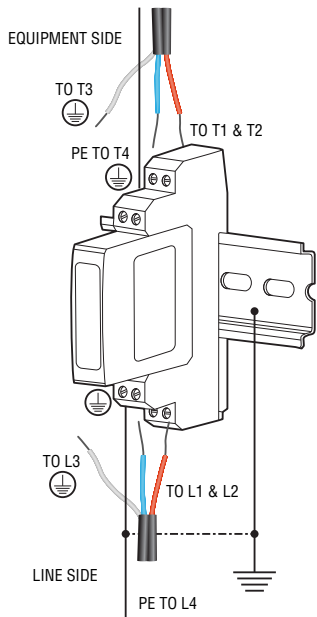
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**Wiring**

A) Line type: 1 pair or two-wires  
Models: 2510-2L1, 2510-2L2, 2510-2L5, 2510-2L6



B) Line type: 1 pair or two-wires with shield (SG)  
Models: 2510-2L3, 2510-2L4



C) Line type: 2 pairs or four-wires  
Models: 2520-4L1, 2520-4L2, 2520-4L3

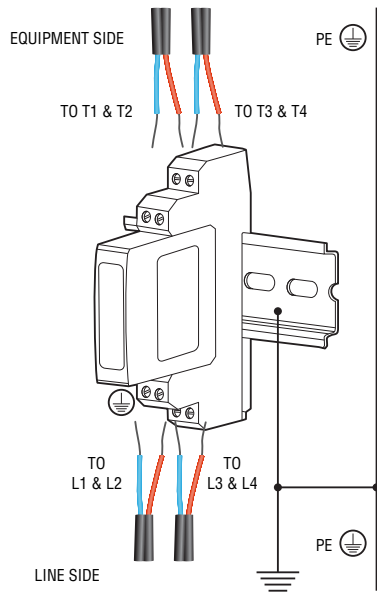


Fig 2: Wiring diagrams

**Wiring Connections**

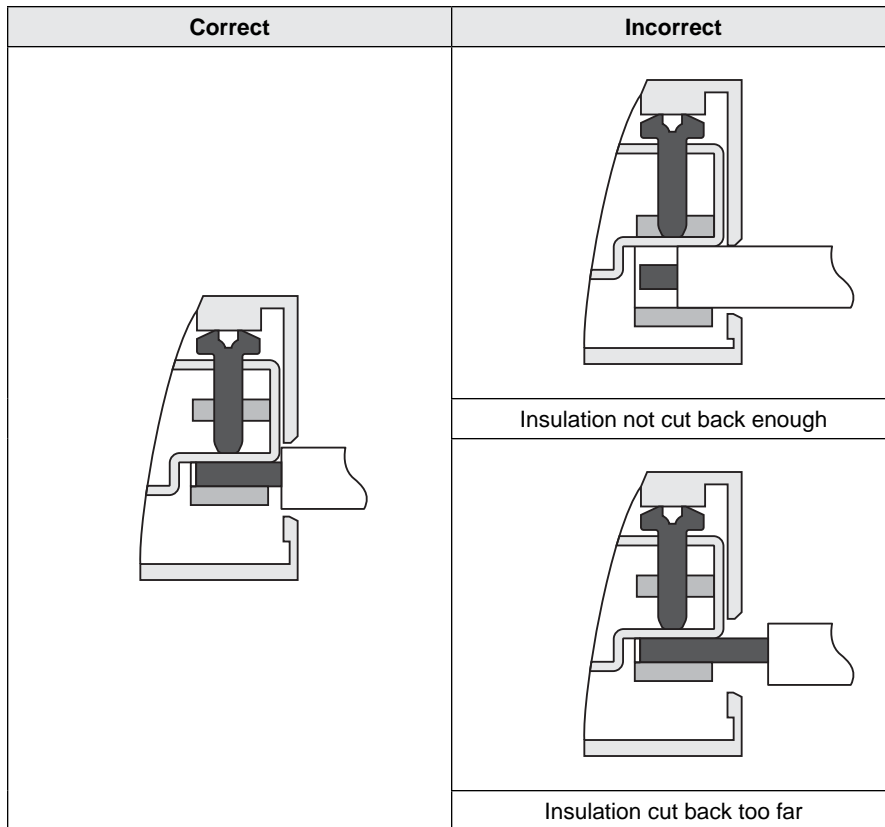


Fig. 3: Tightening the terminal

Each SPD terminal is designed to accept wire sizes from 0.4 mm<sup>2</sup> to 1.5 mm<sup>2</sup> (#21-#15 AWG). Insulation should be stripped back 5.0 mm (0.2 in) before terminating into terminal tunnel (Fig. 3).

Do not use excessive force when tightening the terminal; 0.5 Nm (4.425 lb-in) is recommended.

Protected and unprotected cables must be kept well apart to limit coupling.

**Earthing**

For proper operation, all surge devices rely upon a good earth connection. Earthing of this unit can be achieved through metallic DIN Rail.

Earth connections from the DIN Rail to earth link **MUST** be as short as possible (should be less than 500 mm) and have a cross-sectional area of at least 2.5 mm<sup>2</sup> (or follow local codes).

Extra cable must not be looped.

**Maintenance**

This unit does not adversely affect the performance or operation of the loop or combined equipment during operation. The device allows signals to pass with very little attenuation while diverting surge currents safely to the ground and clamping output voltages to safe levels.

Once the communication is off, please check/replace the DM modules.

Signal transmission is not interrupted when exchanging module.

Do not Megger/Hi-Pot test cabling with unit connected – unit may be damaged.



**WARNING!**

Select the proper Bourns® SPD unit according to your system voltage, configuration, and the anticipated surge environment.

Prior to installing the SPD, ensure that your facility's electric supply system is properly installed and connected in accordance with all applicable national and local codes and safety procedures.

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## Troubleshooting

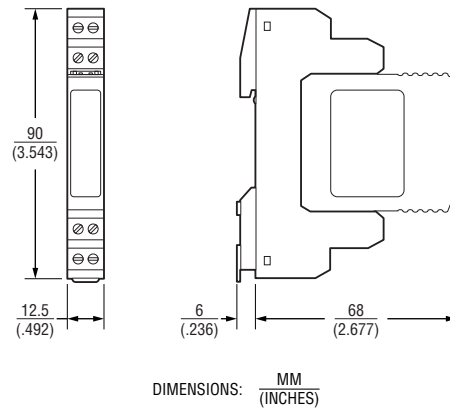
If the communication is off after SPD installation, check all connections and voltages/current to the unit. If all connections are made and reliable, and proper signal voltages/current are supplied to the unit, please contact [www.bourns.com](http://www.bourns.com).

## NOTE

This guide is not comprehensive. It is assumed that the user will follow established safety precautions for working in an electrical environment. For more information on safety precautions and procedures, please consult the related organizations listed below.

- Underwriters Laboratories (UL)
- American National Standards Association (ANSI)
- Institute of Electrical and Electronics Engineers (IEEE).
- National Fire Protection Association (NFPA)
- National Electrical Mfgs. Association (NEMA)
- International Electrotechnical Commission (IEC)

## Product Dimensions



REV. 11/23

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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