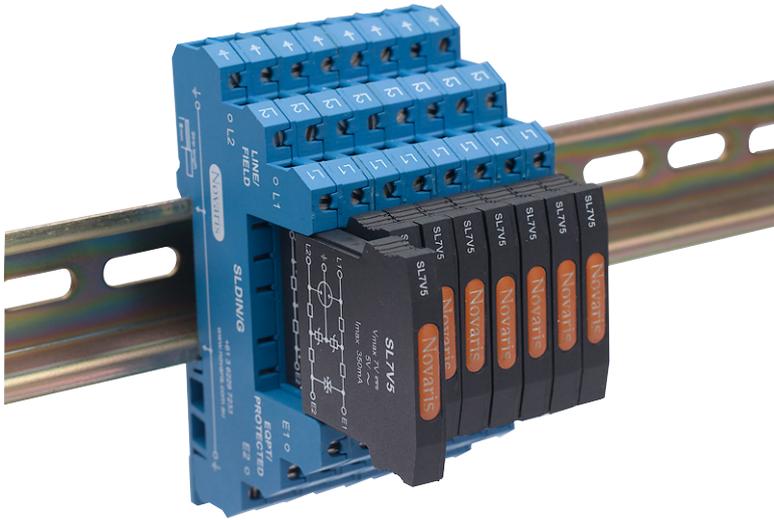




PART OF THE POWERCOM GROUP

# 'Plug In' Surge Protectors

## Installation Instructions



**IMPORTANT:** Please read these instructions carefully. Whilst straightforward, the installation of these devices is critical to their performance. Installation should only be carried out by a suitably qualified person in accordance with all relevant standards.

### 1. Introduction

- 1.1 These installation instructions apply to the Novaris 'Plug-In' range of signal line protectors.

SL 7v5 - G  
Top ——— | ——— Base Option

SSP 6A - 14 - G  
Load Current ——— | ——— Base Option  
Uc

For details about tops and base options, please refer to the Novaris catalogue.

- 1.2 These products are multistage signal line protectors that protect against the effects of lightning induced surges and other transient overvoltages. They provide both common-mode and transverse-mode protection, which is essential for the effective protection of any system.

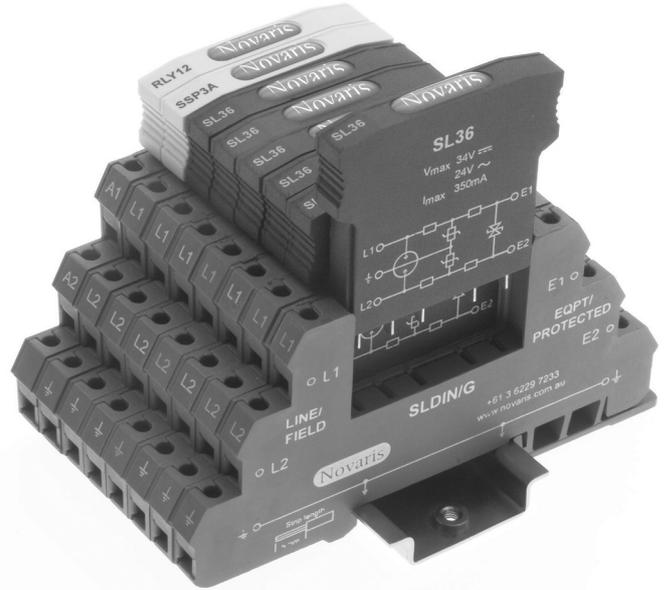


Figure 1: Novaris 'Plug-In' signal line protectors

### 2. Before Installation

- 2.1 Ensure that the maximum operating voltage of the signal line does not exceed the maximum continuous operating voltage of the signal line protector.
- 2.2 Ensure that the operating current of the signal line does not exceed 350mA for standard versions, or 500mA for RS485 and Data Highway versions.
- 2.3 If isolation between the earth terminals and the DIN rail is required Novaris recommends the use of the EC90 base option. This will bond the two earths during a transient overvoltage, while remaining isolated under normal operating conditions
- 2.4 Turn the power off before beginning the installation.

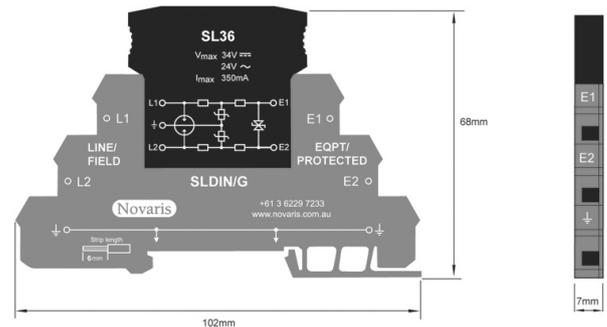


Figure 2: Dimensions of 'Plug-In' signal line protectors

### 3. Installation

- 3.1 **Point of Connection:** The surge protector should be connected at the closest practical point to the equipment to be protected.
- 3.2 **Mounting:** 'Plug-In' surge protectors are most easily and effectively mounted on DIN rail using their integral clip. This also provides an excellent earth connection (provided the DIN rail is properly earthed).

The integral DIN rail clips are engineered to be tight, this ensures a dependable earth connection. The key to easily securing the unit to the DIN rail is in the technique: when clipping the units to the DIN rail, install the LINE side on the DIN rail first and firmly pull the unit downwards until the LINE end clips in, then press the unit onto the DIN rail.

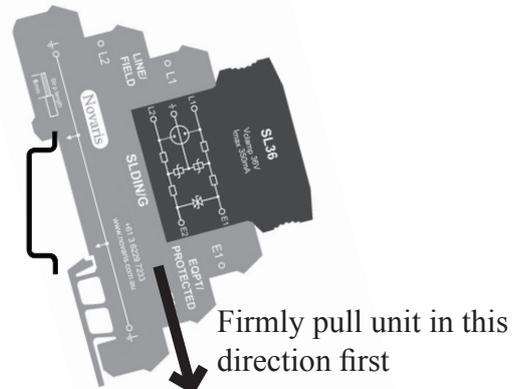


Figure 3: Installation Technique

If the unit is to be positioned in an exposed environment it should be mounted in a suitably rated enclosure. Suitable polycarbonate enclosures are available from Novaris.

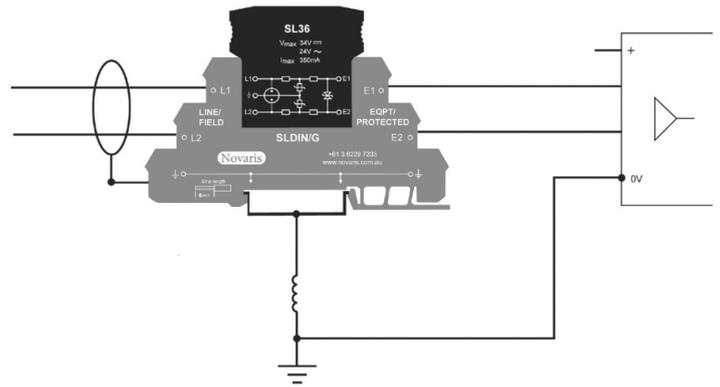
**3.3 Wiring:** Incorrect installation of surge protection devices (SPDs) can render them ineffective. The Novaris 'Plug-In' range of signal line SPDs connect in series. These should be located as close as possible to the equipment requiring protection.

**3.4 Earthing:** Earthing is important. Normally the DIN rail provides a low impedance earth connection to the frame. Where connection to a separate earth bar is required, wire this from the LINE/FIELD earth connection. Choose the most suitable base configuration to suit your application.

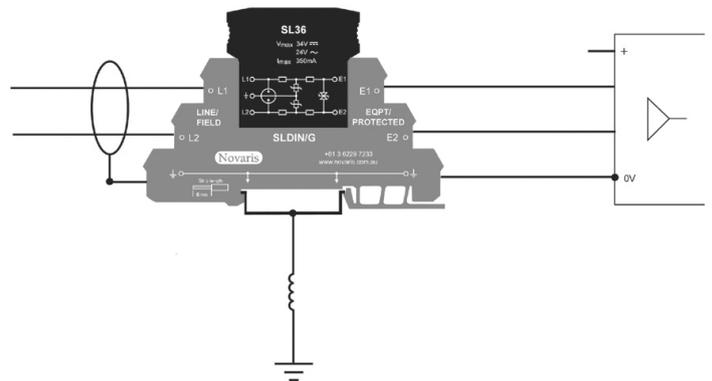
Figure 4 shows an incorrect wiring scheme where the transient voltage developed across the earth lead inductance directly adds to the common mode let through voltage of the SPD. This will appear across the terminals of the protected equipment and if sufficiently high could cause damage - despite the presence of the SPD.

Figure 5 shows the correct installation scheme. The earth reference from the protected equipment must connect to the EQPT/PROTECTED earth terminal of the SPD.

**IMPORTANT:** Because the earth is shunt-connected, the inductance of the connection has a significant effect on performance. Most importantly, **the length of the earth connection must be kept as short as possible.** This is not the case with the other connections because they are series-connected.



**Figure 4: Incorrect installation scheme**



**Figure 5: Correct Installation Scheme**

#### **4. After Installation**

- 4.1 Check the installation by testing that the equipment is still operating correctly.
- 4.2 Novaris 'Plug-In' signal line protectors are extremely robust and require very little maintenance. They feature failsafe overcurrent fusing. In the event of a surge that is large enough to damage the surge protection components, the fuses will operate. This is easily detectable as the signal will no longer pass. Under these circumstances the signal line protector should be replaced as soon as possible.



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