

**IMPORTANT:** Please read these instructions carefully. Whilst straightforward, the installation of these devices is critical to their performance. Installation must be performed by a suitably qualified person in accordance with applicable standards.

## 1. Introduction

1.1 These user instructions apply to the intrinsically safe range of Novaris threaded signal line protectors.

**Cat No.:**

IS-SLT1-7v5-M20	IS-SLT1-7v5-N12	IS-SLT1-7v5-N34
IS-SLT1-18-M20	IS-SLT1-18-N12	IS-SLT1-18-N34
IS-SLT1-36-M20	IS-SLT1-36-N12	IS-SLT1-36-N34
IS-SLT3-7v5-M20	IS-SLT3-7v5-N12	IS-SLT3-7v5-N34
IS-SLT3-18-M20	IS-SLT3-18-N12	IS-SLT3-18-N34
IS-SLT3-36-M20	IS-SLT3-36-N12	IS-SLT3-36-N34

Ex ia IIC T4 &  
Ex db IIC Certified

Ex ia IIC T4 Certified only

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 threaded signal line protector

## 2. Before Installation

- 2.1 Ensure that the maximum operating voltage of the signal line does not exceed the clamping voltage of the signal line protector.
- 2.2 Turn the power off before beginning the installation.
- 2.3 Ensure correct thread size has been selected:
- IS-SLT<sub>x</sub>-xxx-M20 has an M20 x 1 thread size
  - IS-SLT<sub>x</sub>-xxx-NPT has a 1/2" NPT thread size
  - IS-SLT<sub>x</sub>-xxx-N34 has a 3/4" NPT thread size

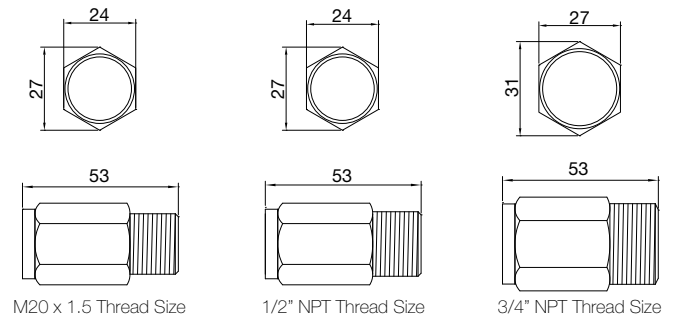


Figure 2: Dimensions of threaded signal line protectors

## 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:** Threaded signal line protectors are screwed directly into housings using the correct thread adapter if required. Ensure fitting is of an appropriate IP rating and use thread sealant if necessary.
- 3.3 **Isolation:** Threaded signal line protectors must be galvanically isolated using a suitable safety barrier.
- 3.5 **Wiring:** Signal line protectors are shunt connected in parallel with the equipment (Figure 3 & Figure 4).

Signal pairs should be connected to the red and black wires for the IS-SLT1 versions (Figure 3). For IS-SLT3 versions the white wire should be connected to the signal terminal (Figure 4).

The green/yellow earth wire should be connected to the earth terminal within the equipment housing. The grey shield wire should be connected to the instrument cable shield.

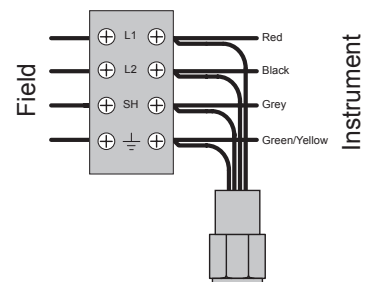


Figure 3: Wiring of IS-SLT1 models

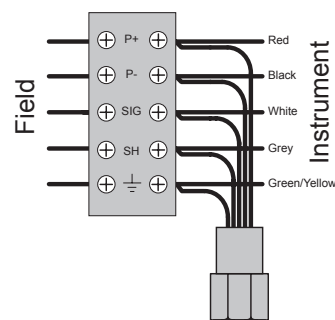


Figure 4: Wiring of IS-SLT3 models

**3.6 Earthing:** The surge protector must be earthed to the same point as the equipment to be protected. The earth connection should be made to a point that is directly connected to the earth of the equipment to be protected (e.g. the metal frame of the equipment).

**IMPORTANT:** Because the unit is shunt connected, the inductance of the connections has a significant effect on performance. **The length of the all wires must be kept as short as possible.**

## 4. After Installation

- 4.1 Check the installation by testing that the equipment is still operating correctly.
- 4.2 Novaris threaded signal line protectors are extremely robust and require very little maintenance. Period inspection and testing is recommended.

## 5. Hazardous Location Application

- 5.1 Novaris threaded signal line protectors are designed to be installed in zone 0,1 and 2 hazardous locations. Typically, the surge protector is installed into a spare gland hole on a field instrument. An example of this is shown in figure 5.
- 5.2 Installation method of the threaded signal line protector in hazardous locations is the same as described in section 3.

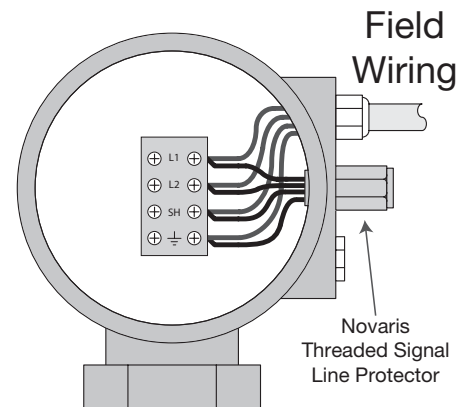


Figure 5: Typical installation of the threaded signal line protector.

## 6. Specifications and Standards Compliance

		IS-SLT1-7V5	IS-SLT1-18	IS-SLT1-36	IS-SLT3-7V5	IS-SLT3-18	IS-SLT3-36
<b>Electrical Specifications:</b>							
Connection Type		Shunt					
Modes of protection		Transverse and common mode					
Maximum continuous voltage (DC)	$U_c$	7V	16V	36V	7V	16V	36V
Maximum continuous voltage (AC)	$U_c$	5V	11V	24V	5V	11V	24V
Maximum discharge current (8/20 $\mu$ s)	$I_{max}$	10kA (common mode)					
Protection stages		MOV and GDT					
Number of lines protected	$I_L$	One pair			Three wire		
Voltage protection level @ 5kV (10/700 $\mu$ s)	$U_p$	45V	50V	80V	45V	50V	80V
<b>Safety Parameters:</b>							
	$U_i$	30V					
	$I_i$	3A					
	$P_i$	2.2W					
	$C_i$	0.2					
	$L_i$	0.2					
<b>Mechanical Specifications:</b>							
Operating temperature range		-20°C to 40°C					
Operating Humidity		5 to 95%					
Connection type		300mm, 0.75mm <sup>2</sup> flying leads					
Environmental		IP 65					
Mounting		Bulk head / gland plate					
Weight		100g					

### IECEX Certification

Ex ia IIC T4  
 Cert No. IECEX ITA 14.0011X  
 Ex db IIC  
 Cert No. IECEX ITA 14.0012U

### ATEX Directive 94/9/EC

Ⓔ II 1 G Ex ia IIC T4 Ga  
 Cert No. TUV 14 ATEX 7569 X  
 Ⓔ II 2 G Ex d IIC Gb  
 Cert No. TUV 14 ATEX 7600 U

### European Standards

EN 60079-0:2012; 60079-1:2007; 60079-11:2012  
 ATEX 94/9/EC - 2006/95/EC - 2011/65/EU

### Other Compliances

EN 61643-21:2000  
 AS1768:2007  
 BS6651:1999  
 CP33:1996  
 IEEE C62.41:2002



72 Browns Road, Kingston, TAS. 7050  
 AUSTRALIA  
 Telephone +61 3 6229 7233  
 Facsimile +61 3 6229 9245  
 E-mail sales@novaris.com.au  
 Web site www.novaris.com.au

Warning: Less than 500V isolation exists between lines and earth. This is part of the surge protection characteristics.