Novaris

Intrinsically Safe Range
Load Cell Protectors
User Instructions

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 load cell protectors.

Cat No.:

IS-LCP-18	**IS-LCP-18-PCB**
IS-LCP-36	**IS-SLP-36-PCB**

1.2 These products 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.

1.3 The Novaris load cell protectors are fitted to an IP65 aluminium enclosure as standard. However, a printed circuit board (PCB) only version is also available.

1.4 Load cell protectors are suitable for both 4 and 6 wire load cells and measuring instruments.

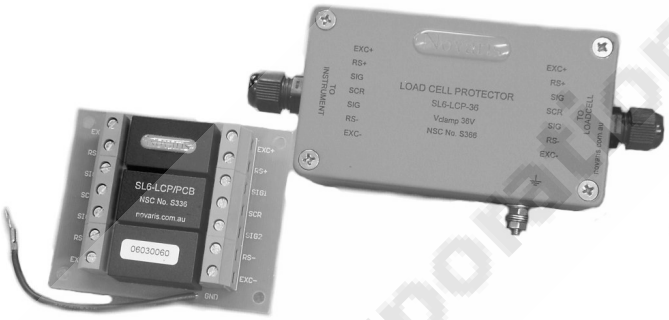

Figure 1: Novaris load cell protectors

2. Before Installation

2.1 Ensure that the maximum operating voltage of the signal lines do not exceed the clamping voltage of the load cell protector.

2.2 Ensure that the maximum operating current of the signal lines do not exceed the maximum load current of the load cell protectors as stated in the specifications.

2.3 Turn the power off before beginning the installation.

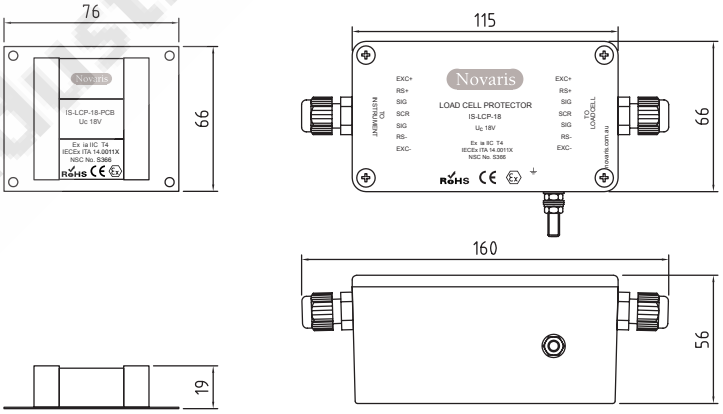

Figure 2: Dimensions of the load cell protectors

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: The load cell protectors are fitted with an IP65 enclosure as standard and are suitable for installation in exposed environments.
The IS-LCP-xx-PCB units are not fitted with an enclosure and must be mounted on stand-offs at least 5mm tall to protect the unit from short circuit. The IS-LCP-xx-PCB must not be installed in an exposed environment.

3.3 Isolation: The signal wiring to the load cell protectors must be galvanically isolated using a suitable safety barrier.

3.4 Wiring: Load cell protectors are connected in series with the equipment (Figure 3).
The load cell or measuring equipment to be protected is connected to the is connected to the load cell (equipment) side of the load cell protector. The field wiring is connected to the instrument (line) side of the load cell protector.
For 4-wire load cells, the RS+ and RS- terminals can be left unconnected.

3.4 Earthing: The surge protector must be earthed to the same point as the equipment to be protected. The earth stud of the load cell protector must be directly connected to the load cell body (e.g. the metal enclosure of the load cell). The connection should be made using a using multistranded conductor with cross-sectional area of at least 6mm^2.

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.

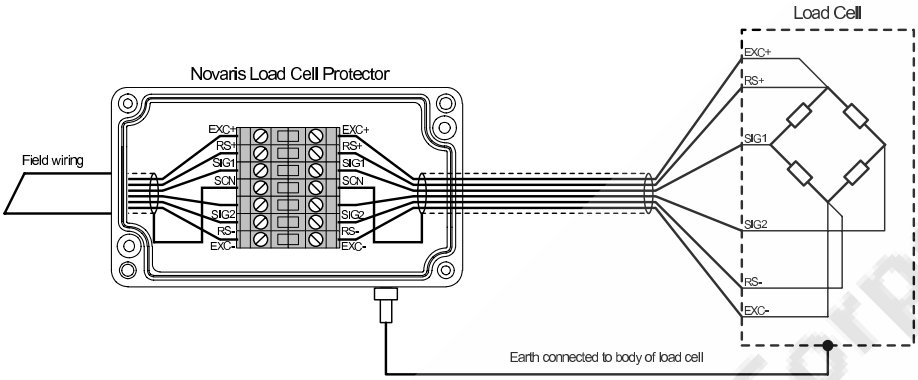

Figure 3: Installation of load cell protector

4. After Installation

4.1 Check the installation by testing that the equipment is still operating correctly.

4.2 Novaris load cell protectors are extremely robust and require very little maintenance. Periodic inspections and testing is recommended.

4.3 Novaris load cell protectors have no user serviceable parts. Please contact Novaris for a replacement unit.

5. Specifications and Standards Compliance

WARNING:

- IS-LCP-18 and IS-LCP-36 devices present a potential friction ignition hazard. Install in an area where there is no risk of impact.
- When installing Novaris load cell protectors into an intrinsically safe loop attention must be given to the input safety parameters as stated in the specifications table listed in this manual. The output safety parameters stated by the manufacturer of the intrinsically safe barrier must not exceed the input safety parameters of the Novaris load cell protectors.
- This series of protectors do not satisfy the requirements for aluminum content in accordance with clause 8.3 of EN 60079-0:2011. Account of this shall be taken on installation to avoid ignition hazards due to impact or friction.
- This series of protectors do not satisfy the requirements of the dielectric strength test in accordance with clause 6.3.13 of EN 60079-11:2011. Manufacturer's documentation must be followed to ensure correct installation.
- This series of protectors has the signal wires electrically connected to SCR terminal
- Less than 500V isolation exists between lines and earth. This is part of the surge protection characteristics.

		LCP-18	LCP-36	LCP-18-PCB	LCP-36-PCB
Electrical Specifications:					
Connection Type		Series			
Modes of protection		Transverse and common mode			
Maximum continuous voltage (DC)	U_c	18V	36V	18V	36V
Maximum discharge current (8/20µs)		250A			
Protection stages		SAD and GDT			
Maximum load current	I_L	6.5A		5A	
Number of lines protected		4 or 6			
Safety Parameters:					
	U_i	30V			
	I_i	-			
	P_i	1.3W			
	C_i	0			
	L_i	0			
Mechanical Specifications:					
Operating temperature range		-20°C to 40°C			
Operating Humidity		0 to 90%			
Terminal capacity		2.5mm^2			
Terminal screw torque		0.5Nm			
Ground connection		M5 s/s stud		100mm lead	
Environmental		IP 20		IP 20	
Mounting		Panel mount			
Enclosure		Aluminium		PCB only	
Colour		Blue			
Weight		600g		80g	

IECEx Certification
Ex ia IIC T4
Cert No. IECEx ITA 14.0011X
ATEX Directive 94/9/EC
⟨Ex⟩ II 1 G Ex ia IIC T4 Ga
Cert No. TUV 14 ATEX 7569 X

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

Other Compliances
EN 61643-21:2000
AS1768:2007
BS6651:1999
CP33:1996
IEEE C62.41:2002
UL497B
NSC No. S366

CE 0035

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