

INTRINSICALLY SAFE SURGE & LIGHTNING PROTECTION

Intrinsically Safe Signal Line Protectors / Series Surge Protectors & Instrument Protectors



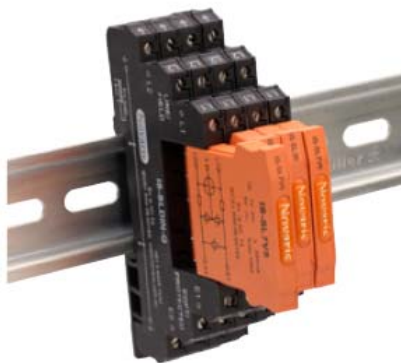
When instrumentation is installed in a potentially explosive environment steps must be taken to ensure that there is no possible way a spark could cause ignition and hence an explosion of the gas, powder or dust that makes up the explosive atmosphere.

One way of ensuring this is to limit the available electrical energy in the explosive environment to levels below which ignition can take place. This technique is called intrinsic safety (IS). This is achieved by placing an energy limiting IS barrier at the boundary between the safe area (non explosive) and hazardous area (explosive). Then all equipment in the hazardous area must be approved for connection, or be defined as simple apparatus.

These IS barriers and field instruments are just like any other pieces of electronics susceptible to damage from surges and transients due to power faults or nearby lightning strikes.

The Novaris range of IS surge protectors and IS instrument protectors are certified for connection in IS circuits on the hazardous side the IS barrier and directly to instruments located in hazardous or explosive environments. They provide effective protection to the IS barriers and field instruments.

Intrinsically Safe Signal Line Protectors



IS-SL Intrinsic Safe Signal Line Protectors

The IS-SL range provides protection to most analogue and digital interfaces. Commonly analogue inputs and outputs are the most susceptible to damage from surge and transients induced onto the signal lines. The IS-SL range is designed exclusively for low current applications less than 350mA. For applications requiring a higher current rating Novaris recommend the IS-SSP6A range. The Novaris IS-SL range can be suitable for both input and output applications.

		IS-SL7V5	IS-SL18	IS-SL36	IS-SL420*
Electrical Specifications					
Maximum continuous voltage (DC)	U_0	7V	16V	34V	34V
Maximum continuous voltage (AC)	U_c	5V	11V	24V	24V
Primary GDT rating 8/20 μ s		10kA			
Maximum load current	I_L	350mA			30mA
Signal Type		Marshalling Cubicle*		Field / Remote*	
0-5V analogue		IS-SL7V5-G		IS-SL7V5-EC90	
0-10V analogue		IS-SL18-G		IS-SL18-EC90	
5V digital		IS-SL7V5-G		IS-SL7V5-EC90	
12V digital		IS-SL18-G		IS-SL18-EC90	
24V digital		IS-SL36-G		IS-SL36-EC90	
0-20mA analogue		IS-SL36-G / IS-SL420-G		IS-SL36-EC90 / IS-SL420-EC90	
4-20mA analogue		IS-SL36-G / IS-SL420-G		IS-SL36-EC90 / IS-SL420-EC90	

* IS-SL420 pending approval at time of printing.



INTRINSICALLY SAFE SURGE & LIGHTNING PROTECTION

Intrinsically Safe Signal Line Protectors



High-speed data applications are catered for with the IS-SL485 and IS-SLDH models feature operation up to 20MHz. The IS-SL485 is ideal for applications such as RS485 serial communication and protocols such as Profibus and CAN. Similarly IS-SLDH is designed for other high speed protocols such as Data Highway and Data Highway Plus. Typically, these models are used in conjunction with the EC90 base to provide isolation from earth.

		IS-SL485	IS-SLDH	IS-SL-RTD
Electrical Specifications				
Maximum continuous voltage (DC)	U_0	7V	34V	7V
Maximum continuous voltage (AC)	U_c	5V	24V	5V
Primary GDT rating 8/20 μ s		10kA		
Maximum load current	I_L	500mA	350mA	
Signal Type	Marshalling Cubicle[#]	Field / Remote[#]		
RS485	IS-SL485-G	IS-SL485-EC90		
Profibus DP	IS-SL485-G	IS-SL485-EC90		
CAN	IS-SL485-G	IS-SL485-EC90		
Data Highway	IS-SLDH-G	IS-SLDH-EC90		
RTD applications	IS-SL-RTD-G	IS-SL-RTD-EC90		

Intrinsically Safe Series Surge Protectors



IS-SSP6A Intrinsically Safe Series Surge Protectors

The IS-SSP6A intrinsically safe series surge protectors complement the IS-SL range for applications of load currents up to 6A. Typical applications may include power supplies, digital outputs and other low voltage requirements up to 6A. The design of the Novaris IS-SSP6A range include high energy metal oxide varistors. The series connected design eliminates the effect of connection leads inductance encountered with shunt connected surge protectors.

		IS-SSP6A-14	IS-SSP6A-26	IS-SSP6A-38
Electrical Specifications				
Maximum continuous voltage (DC)	U_0	14V	26V	38V
Maximum continuous voltage (AC)	U_c	11V	20V	30V
Maximum discharge current 8/20 μ s	I_{max}	9.6kA		
Maximum load current	I_L	6A		
Signal Type	Marshalling Cubicle[#]	Field / Remote[#]		
12VDC	IS-SSP6A-14-G	IS-SSP6A-14-EC90		
24VDC	IS-SSP6A-26-G	IS-SSP6A-26-EC90		
36VDC	IS-SSP6A-38-G	IS-SSP6A-38-EC90		

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Intrinsically Safe Series Surge Protectors

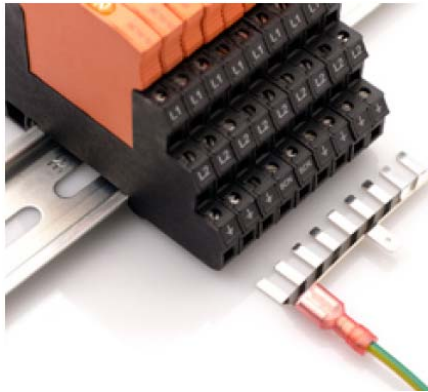
Accessories



SL Test Plug

SL-TEST

Novaris SL Test Plug provides access to field and equipment terminals plus earth via mini banana sockets mounted in the top face of the test plug. It provides a convenient way to connect to these lines for testing. This is defined as a simple apparatus.



SL Earth Comb

SL-COMB

The Novaris SL Earth Comb provides a convenient means of connecting the common points of SL series surge protectors. The earth comb contains nine contacts, allowing banks of 8 SL protectors to be commoned together with one overlapping contact. The earth comb can be cut to provide a lesser number of points. The earth comb contains two 6.3mm spade terminals.

Typical application

Intrinsically Safe Instrument Protectors



IS-SLT1 Intrinsically Safe Instrument Protector

The IS-SLT1 range provides protection for most single twisted pair signalling schemes. The units are shunt connected to the terminals and hence do not interrupt or interfere with the signal. Therefore, the IS-SLT1 range can be adapted to most instruments. Typical applications are analogue and digital instrument transmitters.

		IS-SLT1-7V5	IS-SLT1-18	IS-SLT1-36
Electrical Specifications				
Maximum continuous voltage (DC)	U_0	7V	16V	34V
Maximum continuous voltage (AC)	U_c	5V	11V	24V
Primary GDT rating 8/20 μ s		10kA		
Signal Type		Novaris Product		
0-5V analogue		IS-SLT1-7V5		
0-10V analogue		IS-SLT1-18		
5V digital		IS-SLT1-7V5		
12V digital		IS-SLT1-18		
24V digital		IS-SLT1-36		
0-20mA analogue		IS-SLT1-36		
4-20mA analogue		IS-SLT1-36		



INTRINSICALLY SAFE SURGE & LIGHTNING PROTECTION

Intrinsically Safe Instrument Protectors



IS-SLT3 Intrinsically Safe Instrument Protector

The IS-SLT3 range provides protection to most three-wire signalling schemes. The units are shunt connected to the terminals and hence do not interrupt or interfere with the signal. Therefore, the IS-SLT3 range can be adapted to most instruments. Applications may include instruments which are field powered with a single wire control signal.

In addition, the IS-SLT4-RTD is specifically designed for resistive temperature detectors (RTD) such as PT100 types. This unit caters for all two, three and four wire RTD systems.

		IS-SLT3-7V5	IS-SLT3-18	IS-SLT3-36	IS-SLT4-RTD
Electrical Specifications					
Maximum continuous voltage (DC)	U_0	7V	16V	34V	7V
Maximum continuous voltage (AC)	U_c	5V	11V	24V	5V
Primary GDT rating		8/20 μ s			

SLT-Y Adapter

Where a field instrument has no free cable entry Novaris can supply a Y-piece adapter to accommodate the threaded instrument protector and cable gland. The SLT-Y is available in the same thread types as the threaded instrument protectors.

Thread Type	Adapter Type
M20 x 1.5	SLT-Y-M20
1/2" NPT	SLT-Y-N12
3/4" NPT	SLT-Y-N34

IS-LCP Intrinsically Safe Load Cell Protector

The IS-LCP provides protection for both 4-wire and 6-wire loadcells as well as the measuring instrument. The LCP is contained within an IP65 enclosure, or alternatively it may be supplied as an assembled PCB. As well as having IS certification the IS-LCP is certified for installation into a loadcell circuit without affecting calibration.

		IS-LCP-18	IS-LCP-36	IS-LCP-18-PCB	IS-LCP-36-PCB
Electrical Specifications					
Maximum continuous voltage (DC)	U_0	18V	36V	18V	36V
Maximum discharge current	I_{max}	250A			
Lines protected		4 or 6			

