

CHOOSING SURGE PROTECTION

2.1 RISK ASSESSMENT

Historically lightning protection was concerned only with the protection of buildings and structures. Since buildings were constructed of masonry and timber, they constituted a significant fire hazard. Traditional lightning protection comprising air terminals, downconductors and earthing systems were developed.

Today modern structures containing electrically conductive elements such as steel frames, metallic cladding and reinforced concrete are defined as self-protecting and the traditional approach is no longer applicable.

As electrical services were introduced into buildings little thought was given to protecting these services against the indirect effects of a lightning strike even though the effects of an indirect strike could often be more damaging than a direct strike to a modern building.

This situation is now recognised in most of the world's lightning protection standards. The IEC standard (IEC62305-2) presents a risk assessment procedure to assess the need for direct and/or indirect lightning protection. The Australian Standard AS1768 provides an Excel spreadsheet to simplify the risk assessment procedure. A typical cover page of this spreadsheet is shown in figure 1.

In this example the structure is all steel and therefore self-protecting. The risk assessment determines that only surge protection is required.

AS 1768 Risk Assessment for Lightning Protection

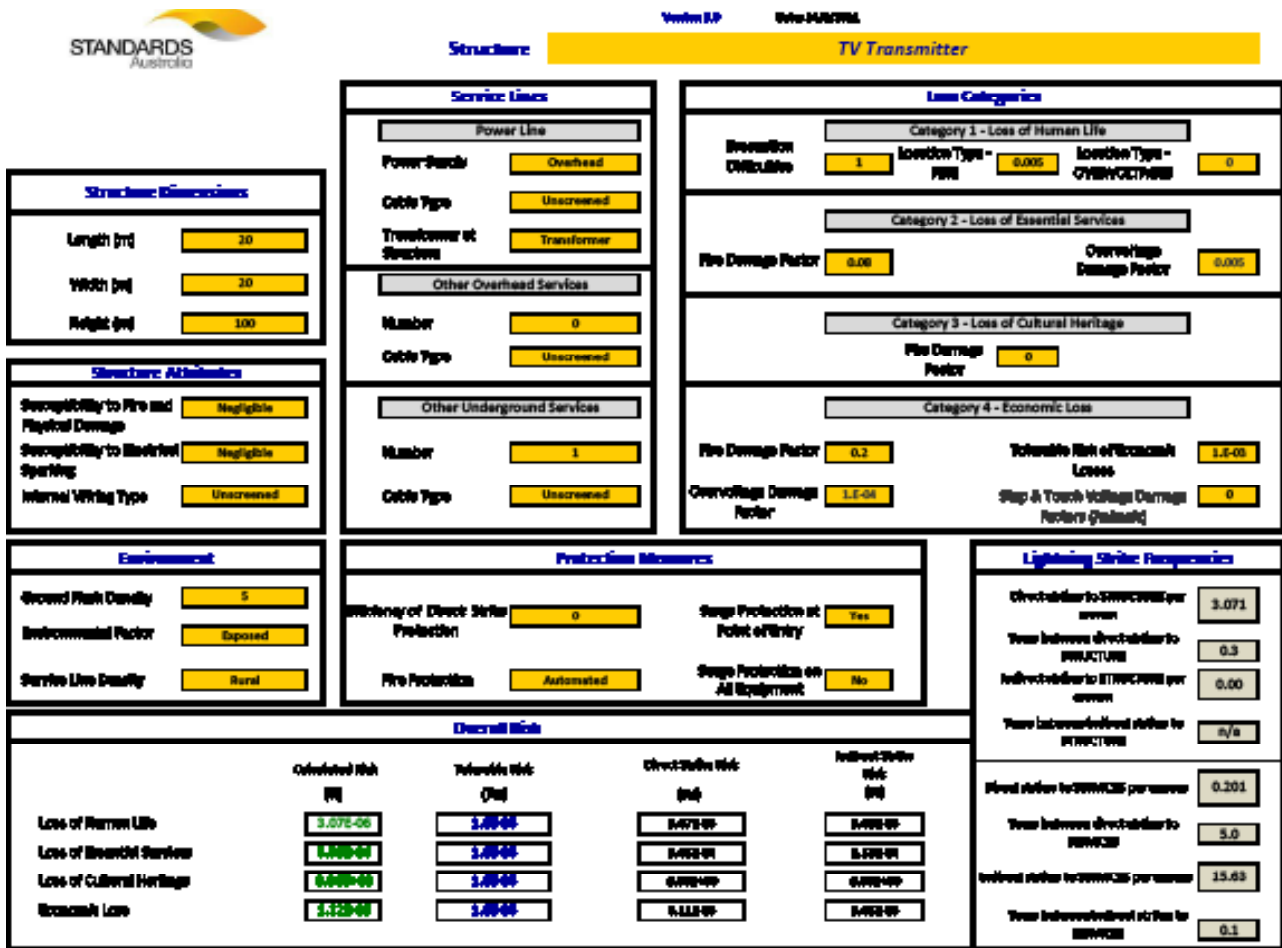


Figure 1. Risk Assessment from AS1768

2.2 SOURCES OF LIGHTNING DAMAGE

The risk assessment procedure takes into account four sources of lightning damage and the analysis presents the frequency of these events, shown in the bottom right table in figure 1. These four sources are:

- S1 Direct strike to the structure
- S2 Strike near the structure
- S3 Direct strike to a service
- S4 Strike near a service

This is summarised in figure 2 (from both IEC and AS standards)

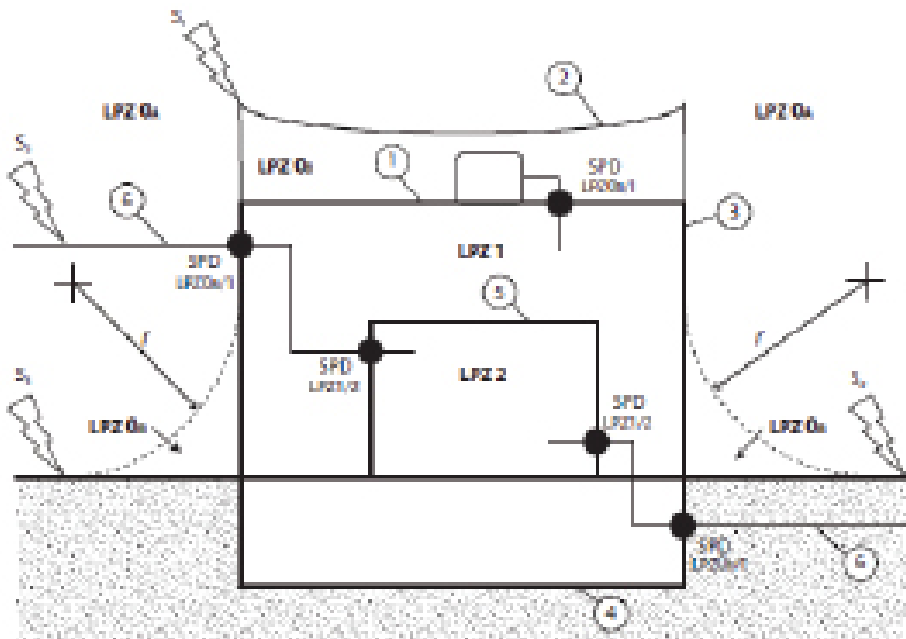


Figure 2. Sources of Lightning Damage

The risk assessment indicates the need for surge protection whether at the point of entry of services into the structure or further downstream at distribution boards and final circuits (for example equipment cabinets). The rating of surge protection devices (SPDs) depends upon their location in the distribution network. Type 1 SPDs are located at the boundary of lightning protection zone 0_A (LPZ0) and the internal distribution wiring in LPZ1, at the main switchboard. A direct strike to the service or an earth potential rise due to a direct strike to the structure can cause a proportion of the strike current to flow through the Type 1 SPD and along the service line.

2.3 RECOMMENDED SURGE RATINGS

Whilst the risk assessment can provide an indication of the rating of the various SPDs, if the structure is self-protecting this can prove difficult. Table 1 provides recommendations for SPD ratings at each lightning protection zone boundary.

Zone Boundary	SPD Location	I_{max} rating 8/20 μ s	I_n rating 8/20 μ s	I_{imp} rating 10/350 μ s
LPZ2/...n	Long final subcircuits, electricity supply outlets	10 kA	5 kA	-
LPZ1/2	Major submains, short final subcircuits and load centres	50 kA	20 kA	-
LPZ0g/1	Service entrance, underground, domestic	50 kA	20 kA	6.25 kA
LPZ0A/1	Service entrance, building fed by long overhead service lines, or is a large industrial or commercial structure	100 kA	40 kA	12.5 kA
LPZ0A/1	Service entrance, building in a high lightning area (N_g greater than 2.5), or fitted with an LPS	100 kA	40 kA	12.5 kA
LPZ0A/1	Service entrance, building in a highly exposed lightning area (N_g greater than 5), and fitted with an LPS eg mountain top site or tropical regions	200kA	80kA	25kA

Table 1. Recommended surge ratings – power from AS1768

Table 2 shows recommended surge ratings for SPDs protecting signal and data lines.

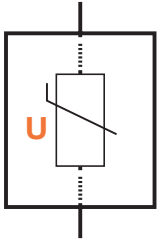
Zone Boundary	SPD Location	I_{max} rating 8/20 μ s	I_{imp} rating 10/350 μ s
LPZ2/...n	Internet marshalling cubicle or equipment cabinet	5 kA	-
LPZ0g/1	External signal cables shielded from direct lightning strike	10 kA	2.5 kA
LPZ0A/1	Point of entry, long overhead or underground signal cables	20 kA	5 kA
LPZ0A/1	Point of entry signal cables, building in a high lightning area (N_g greater than 2.5), or fitted with an LPD	20 kA	5 kA

Table 2. Recommended surge ratings – signal and data from AS1768

The IEC standards recognise that a direct lightning strike may be modelled by a current waveform with a rise time of 10 μ s and a decay of 350 μ s (10/350), hence Type 1 SPDs have a 10/350 μ s rating as well as an 8/20 μ s rating. After the LPZ0/1 boundary the subsequent current may be modelled by an 8/20 μ s waveform, hence Type 2 and Type 3 SPDs have an 8/20 μ s rating.

2.4 SURGE PROTECTION TECHNOLOGY

Selection of Surge Protection Devices

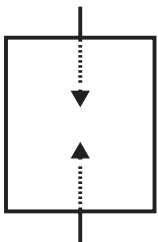


Surge Diverters, SD (Type 1/2/3)

Surge diverters are voltage limiting SPDs utilising MOVs. They can be used in main switchboards, distribution boards as well as for final circuit protection and are available with ratings of I_{max} up to 200kA (8/20 μ s) or limp up to 25kA (10/350 μ s).

HRC fusing, or preferably Novaris SPD disconnectors devices, must be used to limit current during a fault. During installation, lead length should be minimised as it can adversely affect the protection level. For this reason, additional secondary protection should be installed on distribution boards and final circuits.

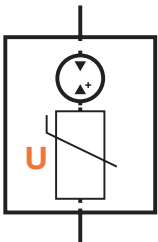
Diverters are not recommended for installations where significant sustained overvoltage may be present. Hybrid or voltage switching devices should be used in these situations.



Spark Gaps, SG (Type 1)

Spark gaps have high surge ratings and are suitable for point of entry protection in installations with highly exposed overhead LV power lines with no local transformer in high lightning areas. They are available with surge ratings (limp) of up to 110kA (10/350 μ s).

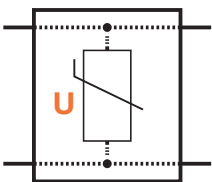
Spark gaps have a crowbar effect and effectively place a short circuit across the line once fired. High levels of AC follow on current may then flow, causing nuisance tripping of circuit breakers and extreme voltage disturbances. It is therefore critical to fuse the device to match the AC fault current of the supply and utilise secondary protection downstream from the device.



Hybrid Spark Gaps, HSG (Type 1)

Hybrid spark gaps combine the advantages of voltage switching and voltage limiting components. They are suitable for high exposure installations and meet IEC61643-12 in relation to surge ratings with I_{max} of 200kA (8/20 μ s) and limp of 25kA (10/350 μ s). A high energy GDT with an accurate firing voltage is employed to obtain protection levels very close to that of the SD products.

The hybrid combination eliminates AC follow on current and provides excellent protection whilst tolerating excessive temporary overvoltages (TOV), making it an ideal alternative to SD products where supply conditions can be unstable.



Series Surge Protector, SSP (Type 1/2/3)

Single port SPDs are compromised by the presence of their interconnecting leads. Typically voltage drops of 500V per meter of connecting lead can be expected. Such lead lengths are often unavoidable in physically large main switchboards.

For circuits that are more sensitive the SSP provides a means of eliminating the shunt connected leads and places the SPD directly across the line. Such applications might include UPS inputs, rectifiers, VSDs and motors.

SSPs are series connected and must have a current rating I_L equal to or greater than the protected circuit.

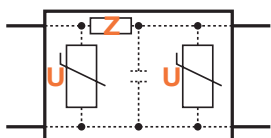
Surge Filters, SF (Type 1/2/3)

The surge filter is a true two port SPD offering an extremely low let through voltage capable of protecting highly sensitive electronic circuits. An extensive range is available, from 6A DIN mount, to pluggable GPO endpoint, to 2000A per phase filters; with surge ratings up to 200kA (8/20 μ s). Hybrid types are also available (HSF) for installations that must tolerate TOV.

SF products provide primary and secondary protection in a monolithic package, ensuring the highest possible protection level. This makes them ideal for cellular base stations, process plant control rooms and data centres.

Surge filters are series connected and must have a current rating I_L equal to or greater than the protected circuit.

Custom filters are available and can integrate special options including under/over voltage contactors.



SINGLE PHASE MSB SURGE DIVERTERS FOR LPZ0A/1

For industrial and commercial main switchboards

Novaris single phase MULTIMOV surge diverters are smart SPDs with a digital display providing details of surge capacity and performance. Upon switch on the display shows the product name and surge rating; after a few seconds it shows the surge capacity in percent. A segment failure will drop the percentage and activate the external alarm. Additionally, an over temperature will flash the display 000 indicating time for replacement.

- Type 1/2 ratings
- Segmented redundancy
- Percentage active digital display
- Over temperature sensing
- All mode protection (-N model)
- Active remote alarm connections



SPECIFICATIONS		SD1-100-275	SD1-100-275-N	SD1-150-275	SD1-150-275-N	SD1-200-275	SD1-200-275-N
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz					
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz					
L-N Maximum discharge current (8/20 μ s)	I_{max}	100 kA	100 kA	150 kA	150 kA	200 kA	200 kA
L-N Impulse current (10/350 μ s)	I_{imp}	12.5 kA	12.5 kA	19 kA	19 kA	25 kA	25 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	40 kA	40 kA	60 kA	60 kA	80 kA	80 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 800 V	< 800 V	< 750 V	< 750 V	< 700 V	< 700 V
N-PE Impulse current (10/350 μ s)	I_{imp}	-	50 kA	-	75 kA	-	100 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	-	50 kA	-	100 kA	-	100 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	-	< 700 V	-	< 1200 V	-	< 1200 V
Dimensions		W 54mm X H 141mm X D 69mm					
Weight		470g	480g	505g	525g	545g	565g

SD1 | novaris.com.au

THREE PHASE MSB SURGE DIVERTERS FOR LPZ0A/1

For industrial and commercial main switchboards

Novaris three phase MULTIMOV surge diverters are smart SPDs with a digital display providing details of surge capacity and performance. Upon switch on the display shows the product name and surge rating; after a few seconds it shows the surge capacity in percent. A segment failure will drop the percentage and activate the external alarm. Additionally, an over temperature will flash the display 000 indicating time for replacement.

- Type 1/2 ratings
- Segmented redundancy
- Percentage active digital display
- Over temperature sensing
- All mode protection (-N model) for TT systems
- Active remote alarm connections



SPECIFICATIONS		SD3-100-275	SD3-100-275-N	SD3-150-275	SD3-150-275-N	SD3-200-275	SD3-200-275-N
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz					
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz					
L-N Maximum discharge current (8/20 μ s)	I_{max}	100 kA	100 kA	150 kA	150 kA	200 kA	200 kA
L-N Impulse current (10/350 μ s)	I_{imp}	12.5 kA	12.5 kA	19 kA	19 kA	25 kA	25 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	40 kA	40 kA	60 kA	60 kA	80 kA	80 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 800 V	< 800 V	< 750 V	< 750 V	< 700 V	< 700 V
N-PE Impulse current (10/350 μ s)	I_{imp}	-	50 kA	-	75 kA	-	100 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	-	50 kA	-	100 kA	-	100 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	-	< 700 V	-	< 1200 V	-	< 1200 V
Dimensions		W 200mm X H 200mm X D 80mm					
Weight		2kg	2kg	2.1kg	2.1kg	2.2kg	2.2kg

SD3 | novaris.com.au

THREE PHASE MSB ALL MODE SURGE DIVERTERS FOR LPZ0A/1

For industrial and commercial main switchboards

Novaris SDN Surge Diverters provide all mode protection in a single metal enclosure with LED status displays. All SDN models are suitable for industrial and commercial main switchboards for both MEN (TN-C-S) and non-MEN installations, such as TT, TN-C, TN-S systems.

- Type 1/2 ratings
- Segmented redundancy
- LED display for each surge element
- All mode protection
- Active remote alarm connections



SPECIFICATIONS		SDN3-100-275	SDN3-150-275	SDN3-200-275
Nominal voltage	U_o		230 V / 50 Hz - 60 Hz	
Maximum continuous voltage AC	U_c		275 V / 50 Hz - 60 Hz	
L-N Maximum discharge current (8/20 μ s)	I_{max}	100 kA	150 kA	200 kA
L-N Impulse current (10/350 μ s)	I_{imp}	12.5 kA	19 kA	25 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	40 kA	60 kA	80 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 800 V	< 750 V	< 700 V
N-PE Impulse current (10/350 μ s)	I_{imp}	50 kA	75 kA	100 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	50 kA	100 kA	100 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V
Dimensions		W 80mm X H 141mm X D 69mm		
Weight		730g	870g	980g

SDN3 | novaris.com.au

THREE PHASE DELTA SURGE DIVERTER FOR LPZ0A/1

For three phase delta main switchboards

The Novaris IDE3 range is designed for protecting delta connected 3-wire power systems, such as IT systems, and is suitable for installing in main switchboards. The design utilises redundant metal oxide varistors (MOVs) between phases and a gas discharge tube (GDT) to earth, making phase to earth protection a hybrid configuration. The surge protection elements have redundant elements and each is indicated by a separate LED.

- Type 1/2 ratings
- Segmented redundancy
- LED display for each surge element
- All mode protection
- Active remote alarm connections



SPECIFICATIONS		IDE3-100-D480	IDE3-150-D480	IDE3-200-D480
Nominal voltage	U_o		400 V / 50 Hz - 60 Hz	
Maximum continuous voltage AC	U_c		480 V / 50 Hz - 60 Hz	
L-PE Maximum discharge current (8/20 μ s)	I_{max}	100 kA	150 kA	200 kA
L-PE Impulse current (10/350 μ s)	I_{imp}	12.5 kA	19 kA	25 kA
L-PE Nominal discharge current (15 x 8/20 μ s)	I_n	40 kA	60 kA	80 kA
L-PE Voltage protection level @ 1kV/ μ s	U_p	< 800 V	< 800 V	< 800 V
Dimensions		W 80mm X H 141mm X D 69mm		
Weight		720g	840g	960g

IDE3 | novaris.com.au

SINGLE PHASE SPARK GAP DIVERTERS FOR LPZ0A/1

For highly exposed LV transmission lines

Novaris single phase spark gap surge diverters offer a high level of protection against direct strike surges. They are recommended for point of entry in highly exposed locations where protection against direct strikes is necessary, typically where there may be long runs of highly exposed LV transmission line.

- Type 1 rating
- Health status indicator
- Fully encapsulated
- Passive alarm with remote alarm connections

SPECIFICATIONS		SG1-50-275	SG1-50-275-N	SG1-100-255
Nominal voltage	U_o		230 V / 50 Hz - 60 Hz	
Maximum continuous voltage AC	U_c		275 V / 50 Hz - 60 Hz	
L-N Maximum discharge current (8/20 μ s)	I_{max}	150 kA	150 kA	-
L-N Impulse current (10/350 μ s)	I_{imp}	50 kA	50 kA	-
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	50 kA	50 kA	-
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 1300 V	< 1300 V	-
N-PE Impulse current (10/350 μ s)	I_{imp}	-	100 kA	100 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	-	100 kA	100 kA
N-PE Voltage protection level @ I_n	U_p	-	< 1500 V	< 1500 V
Dimensions		W 36mm X H 67mm X D 91mm	W 72mm X H 67mm X D 91mm	W 36mm X H 67mm X D 91mm
Weight		230g	500g	230g

SG1 | novaris.com.au

THREE PHASE SPARK GAP DIVERTERS TYPE 1

For highly exposed LV transmission lines

Novaris three phase spark gap surge diverters offer a high level of protection against direct strike surges. They are recommended for point of entry in highly exposed locations where protection against direct strikes is necessary, typically where there may be long runs of highly exposed LV transmission line.

- Type 1 rating
- Health status indicator
- Fully encapsulated
- Passive alarm with remote alarm connections

SPECIFICATIONS		SG3-50-275	SG3-50-275-N
Nominal voltage	U_o		230 V / 50 Hz - 60 Hz
Maximum continuous voltage AC	U_c		275 V / 50 Hz - 60 Hz
L-N Maximum discharge current (8/20 μ s)	I_{max}	150 kA	150 kA
L-N Impulse current (10/350 μ s)	I_{imp}	50 kA	50 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	50 kA	50 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 1300 V	< 1300 V
N-PE Impulse current (10/350 μ s)	I_{imp}	-	100 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	-	100 kA
N-PE Voltage protection level @ I_n	U_p	-	< 1500 V
Dimensions		W 108mm X H 67mm X D 91mm	W 144mm X H 67mm X D 91mm
Weight		700g	1kg

SG3 | novaris.com.au

SINGLE PHASE HYBRID SPARK GAP DIVERTERS FOR LPZ0A/1

For main switchboards where voltage regulation is poor

Novaris single phase HSG diverters are designed for point of entry protection in highly exposed locations where temporary over voltages are common. They combine the advantages of voltage switching and voltage clamping components to achieve this. The hybrid technology mitigates AC follow on current and is ideal for applications where mains voltages fluctuations are significant.

- Type 1/2 ratings
- High surge handling capability
- Overvoltage tolerant
- LED health status indicator
- Active alarm with remote alarm connections

SPECIFICATIONS		HSG1-200-480	HSG1-200-480-N
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz	
Maximum continuous voltage AC	U_c	480 V / 50 Hz - 60 Hz	
L-N Maximum discharge current (8/20 μ s)	I_{max}	200 kA	200 kA
L-N Impulse current (10/350 μ s)	I_{imp}	25 kA	25 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	80 kA	80 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 1000 V	< 1000 V
N-PE Impulse current (10/350 μ s)	I_{imp}	-	100 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	-	100 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	-	< 1200 V
Dimensions		W 53mm X H 69mm X D 141mm	
Weight		530g	

HSG1 | novaris.com.au

THREE PHASE HYBRID SPARK GAP DIVERTERS FOR LPZ0A/1

For main switchboards where voltage regulation is poor

Novaris three phase HSG diverters are designed for point of entry protection in highly exposed locations where temporary over voltages are common. They combine the advantages of voltage switching and voltage clamping components to achieve this. The hybrid technology mitigates AC follow on current and is ideal for applications where mains voltages fluctuations are significant.

- Type 1/2 ratings
- High surge handling capability
- Overvoltage tolerant
- Redundant surge elements
- LED health status indicator for each redundant element
- Active alarm with remote alarm connections

SPECIFICATIONS		HSG3-200-480	HSG3-200-480-N
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz	
Maximum continuous voltage AC	U_c	480 V / 50 Hz - 60 Hz	
L-N Maximum discharge current (8/20 μ s)	I_{max}	200 kA	200 kA
L-N Impulse current (10/350 μ s)	I_{imp}	25 kA	25 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	80 kA	80 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 1000 V	< 1000 V
N-PE Impulse current (10/350 μ s)	I_{imp}	-	100 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	-	100 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	-	< 1200 V
Dimensions		W 200mm X H 80mm X D 200mm	
Weight		2.2kg	

HSG3 | novaris.com.au

THREE PHASE SURGE FILTERS 160A - 400A FOR LPZ0A/1

For critical installations, sensitive electronics and computer equipment

Novaris SFH3 three phase high current surge filters provide excellent main switchboard and sub switchboard protection for critical equipment up to 400A per phase. The internal configuration has three stages of protection to ensure the lowest let-through voltage.

- Type 1/2/3 ratings
- LED power and health status indicators for each phase
- Three stage protection configured for highly sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections

SPECIFICATIONS		SFH3-160-200-275	SFH3-250-200-275	SFH3-400-200-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz		
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz		
Maximum load current	I_L	160 A	250 A	400 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	200kA	200kA	200kA
L-N Impulse current (10/350 μ s)	I_{imp}	25 kA	25 kA	25 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	80 kA	80 kA	80 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 360 V	< 360 V	< 360 V
N-PE Impulse current (10/350 μ s)	I_{imp}	100 kA	100 kA	100 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	100 kA	100 kA	100 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V
Dimensions		W 544mm X H 530mm X D 227mm	W 640mm X H 658mm X D 256mm	
Weight		60kg	80kg	90kg

SFH3 | novaris.com.au

THREE PHASE SURGE FILTERS 630A - 2000A FOR LPZ0A/1

For critical installations, sensitive electronics and computer equipment

Novaris SFH3 three phase high current surge filters provide excellent main switchboard and sub switchboard protection for critical equipment up to 2000A per phase. The internal configuration has three stages of protection to ensure the lowest let-through voltage.

- Type 1/2/3 ratings
- LED power and health status indicators for each phase
- Three stage protection configured for highly sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections

SPECIFICATIONS		SFH3-630-200-275	SFH3-800-200-275	SFH3-1200-200-275	SFH3-1600-200-275	SFH3-2000-200-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz				
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz				
Maximum load current	I_L	630 A	800 A	1200 A	1600 A	2000 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	200 kA	200 kA	200 kA	200 kA	200 kA
L-N Impulse current (10/350 μ s)	I_{imp}	25 kA	25 kA	25 kA	25 kA	25 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	80 kA	80 kA	80 kA	80 kA	80 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 360 V	< 360 V	< 360 V	< 360 V	< 360 V
N-PE Impulse current (10/350 μ s)	I_{imp}	100 kA	100 kA	100 kA	100 kA	100 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	100 kA	100 kA	100 kA	100 kA	100 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V	< 1000 V	< 1000 V
Dimensions		W 200mm X H 200mm X D 80mm				
Weight		130kg	150kg	200kg	250kg	250kg

SFH3 | novaris.com.au

SINGLE PHASE SURGE FILTERS 40 - 125A FOR LPZ0A/1

For critical installations, sensitive electronics and computer equipment

Novaris SFM single phase medium current surge filters provide excellent and effective MSB and DB protection for critical equipment up to 125A. The internal configuration has three stages of protection to ensure the lowest level of let-through voltage.

- Type 1/2/3 ratings
- LED power and health status indicators
- Three stage protection configured for highly sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections

SPECIFICATIONS		SFM1-40-200-275	SFM1-63-200-275	SFM1-125-200-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz		
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz		
Maximum load current	I_L	40 A	63 A	125 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	200 kA	200 kA	200 kA
L-N Impulse current (10/350 μ s)	I_{imp}	25 kA	25 kA	25 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	80 kA	80 kA	80 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 360 V	< 360 V	< 360 V
N-PE Impulse current (10/350 μ s)	I_{imp}	100 kA	100 kA	100 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	100 kA	100 kA	100 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V
Dimensions		W 284mm X H 344mm X D 110mm		
Weight		6kg		8kg

SFM1 | novaris.com.au

THREE PHASE SURGE FILTERS 40 - 125A FOR LPZ0A/1

For critical installations, sensitive electronics and computer equipment

Novaris SFM3 three phase medium current surge filters provide excellent and effective MSB and DB protection for critical equipment up to 125A per phase. The internal configuration has three stages of protection to ensure the lowest level of let-through voltage.

- Type 1/2/3 ratings
- LED power and health status indicators for each phase
- Three stage protection configured for highly sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections

SPECIFICATIONS		SFM3-40-200-275	SFM3-63-200-275	SFM3-125-200-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz		
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz		
Maximum load current	I_L			
L-N Maximum discharge current (8/20 μ s)	I_{max}	200 kA	200 kA	200 kA
L-N Impulse current (10/350 μ s)	I_{imp}			
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	80 kA	80 kA	80 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p			
N-PE Impulse current (10/350 μ s)	I_{imp}	100 kA	100 kA	100 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n			
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V
Dimensions				
Weight		20kg		24kg

SFM3 | novaris.com.au

SINGLE PHASE HYBRID SURGE FILTERS FOR LPZ0A/1

For critical installations, sensitive electronics and computer equipment where voltage regulation is poor

Novaris HSF single phase hybrid surge filters provide a high level of protection for critical and essential equipment in locations where temporary over voltages are common. These combine the advantages of voltage switching and voltage clamping components to achieve this. The internal configuration has three stages of protection to ensure the lowest let through voltage.

- Type 1/2/3 ratings
- Overvoltage tolerance
- LED power and health status indicator
- Three stage protection configured for sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections

SPECIFICATIONS		HSF1-40-100-275	HSF1-63-100-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz	
Maximum continuous voltage AC	U_c	480 V / 50 Hz - 60 Hz	
Maximum load current	I_L	40 A	63 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	100 kA	100 kA
L-N Impulse current (10/350 μ s)	I_{imp}	12.5 kA	12.5 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	40 kA	40 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 650 V	< 650 V
N-PE Impulse current (10/350 μ s)	I_{imp}	15 kA	15 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	50 kA	50 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 700 V	< 700 V
Dimensions		W 90mm X H 141mm X D 69mm	
Weight		950g	

HSF1 | novaris.com.au

THREE PHASE HYBRID SURGE FILTERS FOR LPZ0A/1

For critical installations, sensitive electronics and computer equipment where voltage regulation is poor

Novaris HSF single phase hybrid surge filters provide a high level of protection for critical and essential equipment in locations where temporary over voltages are common. The advantages of voltage switching and voltage clamping components to achieve this. The internal configuration has three stages of protection to ensure the lowest let through voltage.

- Type 1/2/3 ratings
- Overvoltage tolerance
- LED power and health status indicator for each phase
- Three stage protection configured for sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections

SPECIFICATIONS		HSF3-40-100-275	HSF3-63-100-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz	
Maximum continuous voltage AC	U_c	480 V / 50 Hz - 60 Hz	
Maximum load current	I_L	40 A	63 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	100 kA	100 kA
L-N Impulse current (10/350 μ s)	I_{imp}	12.5 kA	12.5 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	40 kA	40 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 650 V	< 650 V
N-PE Impulse current (10/350 μ s)	I_{imp}	15 kA	15 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	50 kA	50 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 700 V	< 700 V
Dimensions		W 172mm X H 141mm X D 69mm	
Weight		2kg	

HSF3 | novaris.com.au

SINGLE PHASE DB SURGE DIVERTERS FOR LPZ0B/1 AND LPZ1/2

For applications requiring robust metal enclosures and active alarm monitoring

Novaris single phase SDD1 DIN compliant surge diverters offer protection for industrial DBs and domestic MSBs. SDD diverters are housed in safe metal enclosures with active electronic displays.

- Type 1/2 ratings
- LED health indicator
- Active remote alarm connections (-A model)
- All mode protection
- Compact housing



SPECIFICATIONS		SDD1-20-275	SDD1-50-275	SDD1-50-275-A	SDD1-100-275	SDD1-100-275-A
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz				
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz				
L-N Maximum discharge current (8/20 μ s)	I_{max}	20 kA	50 kA	50 kA	100 kA	100 kA
L-N Impulse current (10/350 μ s)	I_{imp}	-	6.25 kA	6.25 kA	12.5 kA	12.5 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	10 kA	20 kA	20 kA	40 kA	40 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 800 V	< 800 V	< 800 V	< 800 V	< 800 V
N-PE Impulse current (10/350 μ s)	I_{imp}	-	10 kA	50 kA	50 kA	50 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	10 kA	10 kA	50 kA	50 kA	50 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V	< 1000 V	< 1000 V
Dimensions		W 18mm X H 70mm X D 95mm		W 18mm X H 70mm X D 95mm		
Weight		135g	165g	260g	280g	295g

SDD1 | novaris.com.au

THREE PHASE DB SURGE DIVERTERS FOR LPZ0B/1 AND LPZ1/2

For applications requiring robust metal enclosures and active alarm monitoring

Novaris three phase SDD3 DIN compliant surge diverters offer protection for industrial DBs and domestic MSBs. SDD diverters are housed in safe metal enclosures with active electronic displays.

- Type 1/2 ratings
- LED health indicator for each phase
- Active remote alarm connections (-A model)
- All mode protection
- Compact housing



SPECIFICATIONS		SDD3-20-275	SDD3-50-275	SDD3-50-275-A	SDD3-100-275	SDD3-100-275-A	SDD3-150-275-A
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz					
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz					
L-N Maximum discharge current (8/20 μ s)	I_{max}	20 kA	50 kA	50 kA	100 kA	100 kA	150 kA
L-N Impulse current (10/350 μ s)	I_{imp}	-	6.25 kA	6.25 kA	12.5 kA	12.5 kA	12.5 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	10 kA	20 kA	20 kA	40 kA	40 kA	40 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 800 V	< 800 V	< 800 V	< 800 V	< 800 V	< 800 V
N-PE Impulse current (10/350 μ s)	I_{imp}	-	10 kA	10kA	50 kA	50 kA	50 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	10 kA	10 kA	10 kA	50 kA	50 kA	100 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V	< 1000 V	< 1000 V	< 1000 V
Dimensions		W 54mm X H 70mm X D 95mm		W 72mm X H 70mm X D 95mm		W 90mm X H 95mm X D 70mm	
Weight		305g	390g	410g	570g	600g	790g

SDD3 | novaris.com.au

THREE PHASE DELTA SURGE DIVERTER FOR LPZ0b/1 AND LPZ1/2

For delta connected three wire power systems requiring SPDs with zero earth leakage

The Novaris IDD3 range is designed for delta connected 3-wire power systems, such as the IT system, and is suitable for installation in distribution switchboards. The design utilises redundant metal oxide varistors (MOVs) between phases and a gas discharge tube (GDT) to earth, making phase to earth protection a hybrid configuration. Each phase has its health indicated by a single LED. All IDD3 models are housed metallic DIN compliant enclosures.

- Type 1/2 ratings
- Segmented redundancy
- LED power and health status indicator for each phase
- All mode protection
- Compact DIN metallic housing



SPECIFICATIONS		IDD3-50-D220	IDD3-50-D480	IDD3-50-D480	IDD3-100-D220	IDD3-100-D480	IDD3-100-D480
Nominal voltage	U_o	220 V AC	400 V AC	400 V AC	220 V AC	400 V AC	400 V AC
Maximum continuous voltage AC	U_c	300 V	480 V	480 V	300 V	480 V	480 V
Maximum continuous voltage DC	U_c	420 V	670 V	670 V	420 V	670 V	670 V
L-PE Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	100 kA	100 kA	100 kA
L-PE Impulse current (10/350 μ s)	I_{imp}	4 kA	6.25 kA	6.25 kA	8 kA	12.5 kA	12.5 kA
L-PE Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA	40 kA	40 kA	40 kA
L-PE Voltage protection level @ 1kV/ μ s	U_p	900 V	800 V	800 V	900 V	800 V	800V
Dimensions		W 54mm x H 95mm x D 70mm			W 72mm x H 95mm x D 70mm		
Weight		320g	375g	400g	500g	550g	570g

IDD3 | novaris.com.au

TWO WIRE ELV SURGE DIVERTERS FOR LPZ1/2 AND LPZ2/3

For balanced ELV AC and DC supplies requiring SPDs with zero earth leakage

Novaris IDD2 Isolated Surge Diverters provide surge protection for two phase, balanced AC power feeds and for DC supplies that may not necessarily have one pole earthed. The IDD2 provides both common and transverse mode protection with zero earth leakage during normal operation. All IDD2 models are housed metallic DIN compliant enclosures.

- Type 2 rating
- AC or DC power supplies
- LED health indicator
- Can be used with earth leakage detection systems
- All mode protection
- Compact DIN compliant metal housing



SPECIFICATIONS		IDD2-12-14	IDD2-12-30	IDD2-40-50	IDD2-40-130
Nominal voltage	U_o	12 V AC / DC	24 V AC / DC	48 V AC / DC	110 V AC / DC
Maximum continuous voltage AC	U_c	14 V	30 V	50 V	130 V
Maximum continuous voltage DC	U_c	18 V	36 V	70 V	155 V
L-L Maximum discharge current (8/20 μ s)	I_{max}	12 kA	12 kA	40 kA	40 kA
L-L Nominal discharge current (15 x 8/20 μ s)	I_n	6 kA	6 kA	20 kA	20 kA
L-L Voltage protection level @ 3kA (8/20 μ s)	U_p	< 110 V	< 165 V	< 200 V	< 370 V
L-PE Total nominal discharge current (15 x 8/20 μ s)	I_n	3 kA	3 kA	10 kA	10 kA
L-PE Voltage protection level @ 1kV/ μ s	U_p	< 90 V	< 130 V	< 155V	< 360 V
Dimensions		W 54mm x H 95mm x D 70mm			
Weight		225g	230g	215g	220g

IDD2 | novaris.com.au

TWO WIRE LV SURGE DIVERTERS FOR LPZ0B/1 AND LPZ1/2

For balanced AC and DC supplies requiring SPDs with zero earth leakage

The Novaris IDD2 range is designed for isolated (floating) AC and DC 2 wire power systems. They are suitable for use on systems where earth leakage detection is deployed; the IDD2 will not affect its operation. The IDD2 incorporates an LED indicator indicating the status of the protection elements.

- Segmented redundancy
- LED power and health status indicator
- All mode protection
- Compact DIN compliant metallic housing



SPECIFICATIONS		IDD2-50-220	IDD2-50-220-A	IDD2-100-220	IDD2-100-220-A
Nominal voltage	U_o	220 V / 50 Hz - 60 Hz			
Maximum continuous voltage AC	U_c	320 V / 50 Hz - 60 Hz			
L-L Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	100 kA	100 kA
L-L Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	40 kA	40 kA
L-L Voltage protection level @ 3kA (8/20 μ s)	U_p	< 920 V	< 920 V	< 920 V	< 920 V
L-PE Maximum discharge current (8/20 μ s)	I_{max}	60 kA	60 kA	100 kA	100 kA
L-PE Nominal discharge current (15 x 8/20 μ s)	I_n	50 kA	50 kA	80 kA	80 kA
L-PE Voltage protection level @ 1kV/ μ s	U_p	< 1300 V	< 1300 V	< 1300 V	< 1300 V
Dimensions		W 72mm x H 95mm x D 70mm			
Weight		300g			

SINGLE PHASE SURGE DIVERTER FOR LPZ1/2

For small industrial and domestic switchboards requiring active alarm monitoring

The Novaris NXP1 range of surge diverters provide protection for single phase electrical sub-distribution boards and point of entry protection for small industrial and domestic switchboards where cost is an important factor. The NXP is a type 2 SPD that provides all mode protection with a single LED indicating its health.

- Type 2 SPD
- LED power and health status indicator for each phase
- All mode protection
- Compact DIN compliant metallic housing

SPECIFICATIONS		NXP1-40-320-N
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz
Maximum continuous voltage AC	U_c	320 V / 50 Hz - 60 Hz
L-N Maximum discharge current (8/20 μ s)	I_{max}	40 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 850 V
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V
Dimensions		W 36mm x H 95mm x D 70mm
Weight		190g



 **NXP1** |  novaris.com.au



THREE PHASE SURGE DIVERTER FOR LPZ1/2

For small three phase industrial and domestic switchboards requiring active alarm monitoring

The Novaris NXP3 range of surge diverters provide protection for three phase electrical sub-distribution boards and point of entry protection for small industrial and domestic switchboards where cost is an important factor. The NXP is a type 2 SPD that provides all mode protection with an LED indicating the health of each phase.

- Type 2 SPD
- LED power and health status indicator for each phase
- All mode protection
- Compact DIN compliant metallic housing

SPECIFICATIONS		NXP3-40-320-N
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz
Maximum continuous voltage AC	U_c	320V / 50 Hz - 60 Hz
L-N Maximum discharge current (8/20 μ s)	I_{max}	40 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 850 V
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V
Dimensions		W 54mm x H 95mm x D 70mm
Weight		300g

 **NXP3** |  novaris.com.au

SINGLE PHASE SURGE DIVERter PLASTIC HOUSING FOR LPZ0/1 AND LPZ1/2

For small industrial and domestic switchboards requiring pluggable modules

The Novaris NSP1 range of Surge Diverters is a type 2 SPD and is designed for low AC voltage power supply systems where an economical solution is called for. They are available in versions to suit both TT and TN-C-S connections. They have passive alarms with remote alarm contacts.

- Type 2/3 protector
- Economic DIN compliant plastic housing
- Passive alarm
- Remote alarm contacts



SPECIFICATIONS

		NSP1-40-320	NSP1-40-320N	NSP1-50-275	NSP1-50-275-N	NSP1-100-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz				
Maximum continuous voltage AC	U_c	320 V / 50 Hz - 60 Hz		275 V / 50 Hz - 60 Hz		
L-N Maximum discharge current (8/20 μ s)	I_{max}	40 kA	40 kA	50 kA	50 kA	100 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA	40 kA
L-N Voltage protection level @ In (8/20 μ s)	U_p	< 1500 V	< 1500 V	< 1200 V	< 1200 V	< 1600 V
N-PE Maximum discharge current (8/20 μ s)	I_{max}	-	40 kA	-	50 kA	-
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	-	20 kA	-	20 kA	-
N-PE Voltage protection level @ 1kV/ μ s	U_p	-	< 1500 V	-	< 1500 V	-
Dimensions		W 18mm X H 98mm X D 65mm	W 36mm X H 98mm X D 65mm	W 18mm X H 90mm X D 67mm	W 36mm X H 90mm X D 67mm	W 18mm X H 87mm X D 89mm
Weight		135g	210g	140g	210g	220g

NSP1 | novaris.com.au

THREE PHASE SURGE DIVERter FOR LPZ0B/1 AND LPZ1/2

For small three phase industrial and domestic switchboards requiring pluggable modules

The Novaris NSP3 range of Surge Diverters is a type 2 SPD and is designed for low voltage three phase power supply systems where an economical solution is called for. They are available in versions to suit both TT and TN-C-S connections. They have passive alarms with remote alarm contacts.

- Type 2/3 protector
- Economic DIN compliant plastic housing
- Passive alarm
- Remote alarm contacts



SPECIFICATIONS

		NSP3-40-320	NSP3-40-320N	NSP3-50-275	NSP3-50-275-N	NSP3-100-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz				
Maximum continuous voltage AC	U_c	320 V / 50 Hz - 60 Hz		275 V / 50 Hz - 60 Hz		
L-N Maximum discharge current (8/20 μ s)	I_{max}	40 kA	40 kA	50 kA	50 kA	100 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA	40 kA
L-N Voltage protection level @ In (8/20 μ s)	U_p	< 1500 V	< 1500 V	< 1200 V	< 1200 V	< 1600 V
N-PE Maximum discharge current (8/20 μ s)	I_{max}	-	40 kA	-	50 kA	-
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	-	20 kA	-	20 kA	-
N-PE Voltage protection level @ 1kV/ μ s	U_p	-	< 1500 V	-	< 1500 V	-
Dimensions		W 54mm X H 98mm X D 65mm	W 72mm X H 98mm X D 65mm	W 54mm X H 90mm X D 69mm	W 72mm X H 90mm X D 67mm	W 54mm X H 87mm X D 89mm
Weight		360g	425g	360g	450g	450g



NSP3 | novaris.com.au

SINGLE PHASE SURGE FILTERS 40 - 125A FOR LPZ1/2

For critical installations, sensitive electronics and computer equipment

Novaris SFM1 single phase medium current surge filters provide excellent and effective protection for critical equipment up to 125A. The internal configuration has three stages of protection to ensure the lowest level of let-through voltage.

- Type 1/2/3 ratings
- LED power and health status indicators
- Three stage protection configured for sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections

SPECIFICATIONS		SFM1-40-50-275	SFM1-63-50-275	SFM1-125-50-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz		
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz		
Maximum load current	I_L	40 A	63 A	125 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA
L-N Impulse current (10/350 μ s)	I_{imp}	6.25 kA	6.25 kA	6.25 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 360 V	< 360 V	< 360 V
N-PE Combined impulse current (10/350 μ s)	I_{imp}	50 kA	50 kA	50 kA
N-PE Combined nominal discharge current (15 x 8/20 μ s)	I_n	50 kA	50 kA	50 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V
Dimensions		W 284mm X H 344mm X D 110mm		
Weight		15kg		



 **SFM1** |  novaris.com.au

THREE PHASE SURGE FILTERS 40 - 125A FOR LPZ1/2

For critical installations, sensitive electronics and computer equipment

Novaris SFM3 three phase medium current surge filters provide excellent and effective protection for critical equipment up to 125A per phase. The internal configuration has three stages of protection to ensure the lowest level of let-through voltage.

- Type 1/2/3 ratings
- LED power and health status indicators for each phase
- Three stage protection configured for sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections

SPECIFICATIONS		SFM3-40-50-275	SFM3-63-50-275	SFM3-125-50-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz		
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz		
Maximum load current	I_L	40 A	63 A	125 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA
L-N Impulse current (10/350 μ s)	I_{imp}	6.25 kA	6.25 kA	6.25 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 360 V	< 360 V	< 360 V
N-PE Impulse current (10/350 μ s)	I_{imp}	50 kA	50 kA	50 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	50 kA	50 kA	50 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V
Dimensions		W 390mm X H 450mm X D 190mm		
Weight		24kg		

 **SFM3** |  novaris.com.au

SINGLE PHASE SERIES SURGE PROTECTORS FOR LPZ1/2

For applications requiring a basic 2 port SPD

Novaris SSP Series Surge Protectors are suitable for installation in single phase AC power circuits up to 20A. They use the 2-port series configuration, without filtering to deliver installation independent let-through voltage with all mode protection.

- Type 2/3 ratings
- Installation independent performance
- All mode protection
- LED health status indicator
- Compact DIN compliant metallic housing



SPECIFICATIONS		SSP1-16-15-275	SSP1-20-50-275	SSP1-20-100-275
Nominal voltage	U_o		230 V / 50 Hz - 60 Hz	
Maximum continuous voltage AC	U_c		275 V / 50 Hz - 60Hz	
Maximum load current	I_L	16 A	20 A	20 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	15 kA	50 kA	100 kA
L-N Impulse current (10/350 μ s)	I_{imp}	-	6.25 kA	12.5 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	5 kA	20 kA	40 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 800 V	< 800 V	< 800 V
N-PE Impulse current (10/350 μ s)	I_{imp}	-	50 kA	50 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	10 kA	50 kA	50 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V
Alarm included		-	Active	
Dimensions		W 18mm X H 69mm X D 115mm	W 54mm X H 69mm X D 95mm	W 72mm X H 69mm X D 95mm
Weight		150g	340g	375g

SSP1 | novaris.com.au

THREE PHASE SERIES SURGE PROTECTORS FOR LPZ1/2

For applications requiring a basic 2 port SPD

Novaris SSP3 Series Surge Protectors are suitable for installation in 3-phase AC power circuits up to 20A. They use the 2-port series configuration to deliver installation independent let-through voltage with all mode protection.

- Type 2/3 ratings
- Installation independent performance
- All mode protection
- LED health status indicator for each phase
- Compact DIN compliant metallic housing



SPECIFICATIONS		SSP3-10-10-275-A	SSP3-20-50-275-A	SSP3-20-100-275-A
Nominal voltage	U_o		230 V / 50 Hz - 60 Hz	
Maximum continuous voltage AC	U_c		275 V / 50 Hz - 60Hz	
Maximum load current	I_L	10 A	20 A	20 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	10 kA	50 kA	100 kA
L-N Impulse current (10/350 μ s)	I_{imp}	-	6.25 kA	12.5 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	5kA	20 kA	40 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 1000 V	< 800 V	< 800 V
N-PE Impulse current (10/350 μ s)	I_{imp}	10kA	50 kA	50 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	10kA	50 kA	50 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V
Alarm included		Passive	Active	
Dimensions		W 53mm X H 69mm X D 95mm	W 126mm X H 69mm X D 95mm	
Weight		650g	725g	830g



SSP3 | novaris.com.au

TWO LINE SERIES PROTECTORS FOR LPZ2/3

For balanced AC and DC applications requiring a basic 2 port SPD

Novaris ISP2 Series Protectors are designed for protecting AC and DC circuits up to 16A. They use the 2-port series configuration to deliver installation independent let-through voltage. They are suitable for both balanced and un-balanced 2-wire circuits. Their compact design makes them an ideal choice for space restricted applications.

- Type 2/3 ratings
- All mode protection
- Compact DIN compliant metallic housing
- Installation independent performance
- LED health status indicator

SPECIFICATIONS		ISP2-16-3-30	ISP2-16-10-50	ISP2-16-15-130	ISP2-16-15-275
Maximum continuous voltage (AC)	U_c	30 V	50 V	130 V	275 V
Maximum continuous voltage (DC)	U_c	40 V	70 V	180 V	380 V
L-L Maximum discharge current (8/20 μ s)	I_{max}	3 kA	10 kA	15 kA	15 kA
L-L Nominal discharge current (15 x 8/20 μ s)	I_n	1 kA	5 kA	6 kA	6 kA
L-L Voltage protection level @ 3kA (8/20 μ s)	U_p	< 160 V	< 200 V	< 350 V	< 800 V
L-PE Nominal discharge current (15 x 8/20 μ s)	I_n	1 kA	5 kA	6 kA	6 kA
L-PE Voltage protection level @ 1kV/ μ s	U_p	< 160 V	< 200 V	< 350 V	< 800 V
Dimensions		W 18mm X H 69mm X D 115mm			
Weight		150g			

SINGLE PHASE SURGE FILTERS FOR LPZ1/2/3

For critical installations, sensitive electronics and computer equipment with single phase loads up to 32A

Novaris SFD Single Phase Surge Filters provide the highest level of protection for critical and essential equipment. The internal configuration has three stages of protection to ensure the lowest level of let-through voltage possible, making them the ideal choice for sensitive electronics and computer equipment. They are available for circuits from 6A up to 32A.

All SFD1 models are available with external alarms. To order the alarm option add the suffix -A after the model number.

- Type 1/2/3 ratings
- LED power and health status indicator
- Three stage protection configured for sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections (-A model)
- Compact DIN compliant metallic housing



SPECIFICATIONS		SFD1-6-10-275	SFD1-10-50-275	SFD1-20-50-275	SFD1-20-100-275	SFD1-32-50-275	SFD1-32-100-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz					
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz					
Maximum load current	I_L	6 A	10 A	20 A	20 A	32 A	32 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	10 kA	50 kA	50 kA	100 kA	50 kA	100 kA
L-N Impulse current (10/350 μ s)	I_{imp}	-	6.25 kA	6.25 kA	12.5 kA	6.25 kA	12.5 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	4 kA	20 kA	20 kA	40 kA	20 kA	40 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 700 V	< 600 V	< 600 V	< 600 V	< 600 V	< 600 V
N-PE Impulse current (10/350 μ s)	I_{imp}	-	2 kA	15 kA	15 kA	15 kA	15 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	4 kA	10 kA	50 kA	50 kA	50 kA	50 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	-	< 1200 V	< 1200 V	< 1200 V	< 1200 V	< 1200 V
Dimensions		W 18mm X H 69mm X D 115mm	W 54mm X H 69mm X D 95mm	W 72mm X H 69mm X D 95mm	W 108mm X H 69mm X D 95mm		
Weight		145g	475g	630g	670g	760g	785g

SFD1 | novaris.com.au

THREE PHASE SURGE FILTERS FOR LPZ1/2/3

For critical installations, sensitive electronics and computer equipment with three phase loads up to 32A

Novaris SFD3 3-phase Surge Filters provide the highest level of protection for critical and essential equipment used in star connected 4-wire power systems. The internal configuration has three stages of protection to ensure the lowest level of let-through voltage possible, making them the ideal choice for sensitive electronics and computer equipment. They are available for circuits from 10A up to 32A.

- Type 1/2/3 ratings
- LED power and health status indicator for each phase
- Three stage protection configured for sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections (-A model)
- Compact DIN compliant metallic housing



SPECIFICATIONS		SFD3-10-50-275-A	SFD3-20-50-275-A	SFD3-32-50-275-A
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz		
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz		
Maximum load current	I_L	10 A	20 A	32 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA
L-N Impulse current (10/350 μ s)	I_{imp}	6.25 kA	6.25 kA	6.25 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 600 V	< 600 V	< 600 V
N-PE Impulse current (10/350 μ s)	I_{imp}	50 kA	50 kA	50 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	50 kA	50 kA	50 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 1000 V	< 1000 V	< 1000 V
Dimensions		W 180mm X H 95mm X D 69mm		
Weight		1.4kg	1.53kg	1.54kg

SFD3 | novaris.com.au

TWO LINE ISOLATED SURGE FILTERS FOR LPZ1/2/3

For critical installations, sensitive electronics and computer equipment with a two wire balanced supply up to 32A

Novaris IFD Single Phase Surge Filters provide the highest level of protection for critical and essential equipment in balanced networks such as IT and DC systems. The internal configuration has three stages of protection to ensure the lowest level of let-through voltage possible, making them the ideal choice for sensitive electronics and computer equipment. They are available for circuits from 6A up to 32A.

- Type 1/2 ratings
- LED power and health status indicator
- Three stage protection configured for sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections (-A model)
- Compact DIN compliant metallic housing



SPECIFICATIONS		IFD2-6-10-275	IFD2-10-50-275	IFD2-20-50-275	IFD2-32-50-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz			
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60Hz			
Maximum load current	I_L	6 A	10 A	20 A	32 A
L-L Maximum discharge current (8/20 μ s)	I_{max}	10 kA	50 kA	50 kA	50 kA
L-L Impulse current (10/350 μ s)	I_{imp}	-	6.25 kA	6.25 kA	6.25 kA
L-L Nominal discharge current (15 x 8/20 μ s)	I_n	6 kA	20 kA	20 kA	20 kA
L-L Voltage protection level @ 3kA (8/20 μ s)	U_p	< 700 V	< 700 V	< 700 V	< 700 V
L-PE Combined impulse current (10/350 μ s)	I_{imp}	-	-	-	-
L-PE Combined nominal discharge current (15 x 8/20 μ s)	I_n	40 kA	40 kA	40 kA	40 kA
L-PE Voltage protection level @ 1kV/ μ s	U_p	<700 V	<700 V	<700 V	<700 V
Alarm included		-		Active	
Dimensions		W 18mm X H 69mm X D 115mm		W 119mm X H 95mm X D 69mm	
Weight		150g		950g	



SPECIFICATIONS		IFD2-10-100-275	IFD2-20-100-275	IFD2-32-100-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz		
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60Hz		
Maximum load current	I_L	10 A	20 A	32 A
L-L Maximum discharge current (8/20 μ s)	I_{max}	100 kA	100 kA	100 kA
L-L Impulse current (10/350 μ s)	I_{imp}	12.5 kA	12.5 kA	12.5 kA
L-L Nominal discharge current (15 x 8/20 μ s)	I_n	40 kA	40 kA	40 kA
L-L Voltage protection level @ 3kA (8/20 μ s)	U_p	< 700 V	< 700 V	< 700 V
L-PE Combined impulse current (10/350 μ s)	I_{imp}	-	-	-
L-PE Combined nominal discharge current (15 x 8/20 μ s)	I_n	40 kA	40 kA	40 kA
L-PE Voltage protection level @ 1kV/ μ s	U_p	<700 V	<700 V	<700 V
Alarm included		-		Active
Dimensions		W 119mm X H 95mm X D 69mm		
Weight		950g		

THREE PHASE ISOLATED SURGE FILTERS FOR LPZ1/2

For critical installations, sensitive electronics and computer equipment with a three wire delta supply up to 32A

Novaris IFD3 3-phase Surge Filters provide the highest level of protection for critical and essential equipment used in delta connected 3-wire power systems. The internal configuration has three stages of protection to ensure the lowest level of let-through voltage possible, making them the ideal choice for sensitive electronics and computer equipment. They are available for circuits from 10A up to 32A.

- Type 2/3 ratings
- LED power and health status indicator
- Three stage protection configured for sensitive loads
- Common and transverse mode filtering and protection
- Active alarm with remote alarm connections (-A model)
- Compact DIN compliant metallic housing

SPECIFICATIONS		IFD3-10-50-D480	IFD3-20-50-D480	IFD3-32-50-D480
Nominal voltage	U_o		400 V AC	
Maximum continuous voltage AC	U_c		480 V AC	
Maximum load current	I_L	10 A	20 A	32 A
Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA
Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA
Voltage protection level @ 1kV/ μ s	U_p	< 600 V	< 600 V	< 600 V
Dimensions		W 180mm X H 95mm X D 69mm		
Weight		1.5kg		

IFD3 | novaris.com.au



POWER | DISTRIBUTION BOARDS, GREATER THAN 230/400V

THREE PHASE SURGE DIVERTER FOR LPZ0/1

For applications requiring robust metal enclosures and active alarm monitoring for 400/690V supplies

The Novaris SDD3-XX-D400 range is designed for 3 phase Star connected 4-wire power systems that operate at higher voltages than the normal SDD3 range can accommodate. Each phase has its health indicated by a separate LED. Products are available to suit TT, TN-C and TN-C-S power systems.

- Type 2/3 ratings
- Extended voltage range
- LED power and health status indicator for each phase
- All mode protection
- Compact DIN compliant metallic housing

SPECIFICATIONS		SDD3-100-400-A
Nominal voltage	U_o	400 V / 50 Hz - 60 Hz
Maximum continuous voltage AC	U_c	460 V / 50 Hz - 60 Hz
L-N Maximum discharge current (8/20 μ s)	I_{max}	100 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 1400 V
N-PE Impulse current (10/350 μ s)	I_{max}	60 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	50 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 700 V
Dimensions		W 90mm X H 95mm X D 70mm
Weight		600g

SDD3 | novaris.com.au

THREE PHASE ISOLATED SURGE DIVERTER FOR HIGH LV TYPE 2/3



For applications requiring robust metal enclosures and active alarm monitoring for 690 V delta supplies

The Novaris IDD3-XX-D750 range is designed for 3 phase Delta connected 3-wire power systems that operate at higher voltages than the normal IDD3 range can accommodate. Each phase has its health indicated by a separate LED. Products are available to suit IT power system configuration.

- Extended voltage range
- LED power and health status indicator for each phase
- All mode protection
- Compact DIN compliant metallic housing
- Zero earth leakage

SPECIFICATIONS

IDD3-100-D750-A

Nominal voltage phase - phase	U_o	690 V / 50 Hz - 60 Hz
Maximum continuous voltage AC phase - phase	U_c	750 V / 50 Hz - 60 Hz
L-N Maximum discharge current (8/20µs)	I_{max}	100 kA
L-N Nominal discharge current (15 x 8/20µs)	I_n	40kA
L-N Voltage protection level @ 3kA (8/20µs)	U_p	< 1400 V
Dimensions		W 90mm x H 95mm x D 70mm
Weight		600g

 **IDD3** |  novaris.com.au

SOLAR PV SURGE DIVERTERS

For PV systems up to 1500V DC



Novaris SDPV Solar Protectors provide DC side protection against the damage from surges caused by lightning or over voltages for photovoltaic systems. They protect both the PV arrays as well as the DC input connections to inverters. They are available for DC system voltages up to 1500V.


- Type 1/2 ratings
- Integrated thermal disconnectors
- Replaceable pluggable modules
- Passive visual alarm
- Remote alarm contacts
- DIN compliant housing

SPECIFICATIONS

SDPV-50-1000

SDPV-50-1500

Nominal voltage open circuit	U_o	1000 V DC	1500 V DC
Maximum continuous voltage DC	U_c	1000 V DC	1500 V DC
L-L Maximum discharge current (8/20µs)	I_{max}	50 kA	50 kA
L-L Impulse current (10/350µs)	I_{imp}	6.25 kA	6.25 kA
L-L Nominal discharge current (15 x 8/20µs)	I_n	20 kA	20 kA
L-L Voltage protection level @ 3kA (8/20µs)	U_p	< 3000 V	< 4000 V
L-PE Nominal discharge current (15 x 8/20µs)	I_n	20 kA	20 kA
L-PE Voltage protection level @ 1kV/µs	U_p	< 3000 V	< 4000 V
Dimensions		W 54mm x H 100mm x D 66mm	
Weight		500g	

 **SDPV** |  novaris.com.au

SPD DISCONNECTORS

For the protection of MOV based SPDs against over current

Novaris SPD Disconnectors are purpose designed Over Current Protection Devices (OCPD) for surge diverters. They protect one port diverters from excessive surge and AC currents, minimising potential damage. The SCB replaces standard CB or fuse protection of diverters in both main and distribution switchboards.

- Trips at 3A 50/60Hz allowing effective upstream OCPD co-ordination
- Protects one port SPD from temporary overvoltage
- Provides low impedance surge path
- Monitoring with Novaris active alarms



SPECIFICATIONS		SCB1-3-80	SCB1-3-25
Nominal voltage	U_o	230V / 50 Hz - 60 Hz	
Rated insulation voltage		400 V AC	
Maximum discharge current (8/20 μ s)	I_{max}	80 kA	-
Impulse current (10/350 μ s)	I_{imp}	-	25 kA
Load current	I_L	3 A	3 A
Short circuit breaking capacity	I_{cs}	20 kA	50 kA
Dimensions		W 17mm x H 85mm x D 72mm	W 35mm x H 85mm x D 72mm
Weight		118g	204g

AS/NZ PLUG-IN SURGE FILTERS FOR LPZ1/2/3

For the protection of final circuit plug in appliances with AS/NZ power outlets

Novaris Plug-in Surge Filters plug into a standard mains GPO wall outlet socket using an IEC lead. They provide excellent surge protection with additional filtering for sensitive or critical electronic equipment. The AS/NZ filter range provides multiple AS/NZS 3112 outlets all protected by an inbuilt 10A re-settable MCB.

- Type 1/2/3 ratings
- Common and transverse mode filtering and protection
- LED power and health status indications
- Three stage protection configured for sensitive loads
- Robust and compact metallic enclosure
- Standard IEC power connector



SPECIFICATIONS		PP10A2-50	PP10A4-50	PP10A6-50	PP10A8-50
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz			
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz			
Maximum load current	I_L	10 A	10 A	10 A	10 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA
L-N Impulse current (10/350 μ s)	I_{imp}	6.25kA	6.25kA	6.25kA	6.25kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 700 V	< 700 V	< 700 V	< 700 V
N-PE Nominal discharge current (15 x 8/20 μ s)	I_{imp}	20 kA	20 kA	20 kA	20 kA
N-PE Voltage protection level @ 1kV/ μ s	I_n	< 800 V	< 800 V	< 800 V	< 800 V
Number of outlets		2	4	6	8
Dimensions		W 155mm X H 60mm X D 137mm	W 205mm X H 60mm X D 137mm	W 255mm X H 60mm X D 137mm	W 305mm X H 60mm X D 137mm
Weight		1.3kg	1.5kg	1.8kg	2kg

PP10A | novaris.com.au

EUROPEAN PLUG-IN SURGE FILTERS FOR LPZ1/2/3

For the protection of final circuit plug in appliances with European power outlets

Novaris Plug-in Surge Filters plug into a wall outlet socket using an IEC lead. They provide excellent surge protection with additional filtering for sensitive or critical electronic equipment. This filter range provides multiple European outlets all protected by an inbuilt 10A re-settable MCB.

- Type 1/2/3 ratings
- Common and transverse mode filtering and protection
- LED power and health status indications
- Three stage protection configured for sensitive loads
- Robust and compact metallic enclosure
- Standard IEC power connector input



SPECIFICATIONS		PP10E2-50	PP10E4-50	PP10E6-50	PP10E8-50
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz			
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz			
Maximum load current	I_L	10 A	10 A	10 A	10 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA
L-N Impulse current (10/350 μ s)	I_{imp}	6.25kA	6.25kA	6.25kA	6.25kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 700 V	< 700 V	< 700 V	< 700 V
N-PE Nominal discharge current (15 x 8/20 μ s)	I_{imp}	20 kA	20 kA	20 kA	20 kA
N-PE Voltage protection level @ 1kV/ μ s	I_n	< 800 V	< 800 V	< 800 V	< 800 V
Number of outlets		2	4	6	8
Dimensions		W 155mm X H 60mm X D 137mm	W 205mm X H 60mm X D 137mm	W 255mm X H 60mm X D 137mm	W 305mm X H 60mm X D 137mm
Weight		1.3kg	1.5kg	1.8kg	2kg

PP10E | novaris.com.au

UNIVERSAL PLUG-IN SURGE FILTERS FOR LPZ1/2/3

For the protection of final circuit plug in appliances with universal power outlets

Novaris Plug-in Surge Filters provide excellent surge protection with additional filtering for sensitive or critical electronic equipment. The universal filter range provides multiple universal socket outlets all protected by an inbuilt 10A re-settable MCB.

- Type 1/2/3 ratings
- Common and transverse mode filtering and protection
- LED power and health status indications
- Three stage protection configured for sensitive loads
- Robust and compact metallic enclosure
- Standard IEC power connector



SPECIFICATIONS		PP10U2-50	PP10U4-50	PP10U6-50	PP10U8-50
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz			
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz			
Maximum load current	I_L	10 A	10 A	10 A	10 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA
L-N Impulse current (10/350 μ s)	I_{imp}	6.25kA	6.25kA	6.25kA	6.25kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 700 V	< 700 V	< 700 V	< 700 V
N-PE Nominal discharge current (15 x 8/20 μ s)	I_{imp}	20 kA	20 kA	20 kA	20 kA
N-PE Voltage protection level @ 1kV/ μ s	I_n	< 800 V	< 800 V	< 800 V	< 800 V
Number of outlets		2	4	6	8
Dimensions		W 155mm X H 60mm X D 137mm	W 205mm X H 60mm X D 137mm	W 255mm X H 60mm X D 137mm	W 305mm X H 60mm X D 137mm
Weight		1.3kg	1.5kg	1.8kg	2kg

PP10U | novaris.com.au

BRITISH PLUG-IN SURGE FILTERS FOR LPZ1/2/3

For the protection of final circuit plug in appliances with British power outlets

Novaris Plug-in Surge Filters provide excellent surge protection with additional filtering for sensitive or critical electronic equipment. Novaris British style Plug-in Surge Filters plug into a standard BS1363 wall outlet socket using the IEC lead supplied. The British filter range provides multiple BS1363 socket outlets.

- Type 1/2/3 ratings
- Common and transverse mode filtering and protection
- LED power and health status indications
- Three stage protection configured for sensitive loads
- Robust and compact metallic enclosure
- Standard IEC power connector



SPECIFICATIONS		PP13B2-50	PP13B4-50	PP13B6-50	PP13B8-50
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz			
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz			
Maximum load current	I_L	13 A	13 A	13 A	13 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA
L-N Impulse current (10/350 μ s)	I_{imp}	6.25kA	6.25kA	6.25kA	6.25kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 700 V	< 700 V	< 700 V	< 700 V
N-PE Nominal discharge current (15 x 8/20 μ s)	I_{imp}	20 kA	20 kA	20 kA	20 kA
N-PE Voltage protection level @ 1kV/ μ s	I_n	< 800 V	< 800 V	< 800 V	< 800 V
Number of outlets		2	4	6	8
Dimensions		W 155mm X H 60mm X D 137mm	W 205mm X H 60mm X D 137mm	W 255mm X H 60mm X D 137mm	W 305mm X H 60mm X D 137mm
Weight		1.5kg	1.8kg	2kg	2.3kg

PP13B | novaris.com.au

USA 10A PLUG-IN SURGE FILTERS FOR LPZ1/2/3




For the protection of final circuit plug in appliances with US power outlets

Novaris Plug-in Surge Filters provide excellent surge protection with additional filtering for sensitive or critical electronic equipment. USA style 10A Plug-in Surge Filters plug into a standard USA type B wall outlet socket using the IEC lead supplied. The USA filter range provides multiple 3 pin type B socket outlets.

- Type 2/3 ratings
- Common and transverse mode filtering and protection
- LED power and health status indications
- Three stage protection configured for sensitive loads
- Internal 10 amp resettable MCB
- Robust and compact metallic enclosure

SPECIFICATIONS

PP2-10-50-B130 PP4-10-50-B130 PP6-10-50-B130 PP8-10-50-B130

Nominal voltage	U_o	110 V / 50 Hz - 60 Hz			
Maximum continuous voltage AC	U_c	130 V / 50 Hz - 60 Hz			
Maximum load current	I_L	10 A	10 A	10 A	10 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA
L-N Impulse current (10/350 μ s)	I_{imp}	-	-	-	-
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 260 V	< 260 V	< 260 V	< 260 V
N-PE Nominal discharge current (15 x 8/20 μ s)	I_{imp}	20 kA	20 kA	20 kA	20 kA
N-PE Voltage protection level @ 1kV/ μ s	I_n	< 630 V	< 630 V	< 630 V	< 630 V
Number of outlets		2	4	6	8
Dimensions		W 155mm X H 60mm X D 137mm	W 205mm X H 60mm X D 137mm	W 255mm X H 60mm X D 137mm	W 305mm X H 60mm X D 137mm
Weight		1.3kg	1.5kg	1.8kg	2kg

PP2 | novaris.com.au

USA 15A PLUG-IN SURGE FILTERS FOR LPZ1/2/3




For the protection of final circuit plug in appliances with US power outlets up to 15A

Novaris Plug-in Surge Filters provide excellent surge protection with additional filtering for sensitive or critical electronic equipment. USA style 15A Plug-in Surge Filters plug into a standard USA type B wall outlet socket using the IEC lead supplied. The USA filter range provides multiple 3 pin type B socket outlets.

- Type 2/3 ratings
- Common and transverse mode filtering and protection
- LED power and health status indications
- Three stage protection configuration for sensitive loads
- Internal 15 amp resettable MCB
- Robust and compact metallic enclosure

SPECIFICATIONS

PP2-15-50-B130 PP4-15-50-B130 PP6-15-50-B130 PP8-15-50-B130

Nominal voltage	U_o	110 V / 50 Hz - 60 Hz			
Maximum continuous voltage AC	U_c	130 V / 50 Hz - 60 Hz			
Maximum load current	I_L	15 A	15 A	15 A	15 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA
L-N Impulse current (10/350 μ s)	I_{imp}	-	-	-	-
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 260 V	< 260 V	< 260 V	< 260 V
N-PE Nominal discharge current (15 x 8/20 μ s)	I_{imp}	20 kA	20 kA	20 kA	20 kA
N-PE Voltage protection level @ 1kV/ μ s	I_n	< 630 V	< 630 V	< 630 V	< 630 V
Number of outlets		2	4	6	8
Dimensions		W 155mm X H 60mm X D 137mm	W 205mm X H 60mm X D 137mm	W 255mm X H 60mm X D 137mm	W 305mm X H 60mm X D 137mm
Weight		1.3kg	1.5kg	1.7kg	2kg

PP2 | novaris.com.au

AS/NZ 15A PLUG-IN SURGE FILTER FOR LPZ1/2/3

For the protection of final circuit plug in appliances with AS/NZ 15A power outlets

Novaris AS/NZ 15A Plug-in Surge Filters plug into the Australian and New Zealand 15A type AU2-15P AS/NZS 3112 wall outlets. It provides the same clean and filtered power as the standard 10A plug-in units but with a full 15A continuous current rating. A single 15A AU2-15P outlet socket is provided to connect the equipment to be protected.

- Type 1/2/3 ratings
- Common and transverse mode filtering and protection
- LED power and health status indications
- Three stage protection configured for sensitive loads
- Robust and compact metallic enclosure
- Full 15A continuous rating

SPECIFICATIONS

PP15A1-50

Nominal voltage	U_o	230 V / 50 Hz - 60 Hz
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz
Maximum load current	I_L	15 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA
L-N Impulse current (10/350 μ s)	I_{imp}	6.25kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 700 V
N-PE Nominal discharge current (15 x 8/20 μ s)	I_{imp}	20kA
N-PE Voltage protection level @ 1kV/ μ s	I_n	< 800 V
Number of outlets		1
Dimensions		W 155mm x H 60mm x D 137mm
Weight		1.5kg

PP15A1 | novaris.com.au

PP10 1RU SURGE FILTER FOR LPZ1/2/3

For rack mount applications with 8 AS/NZ power outlets

Novaris Plug-in 1RU Surge Filters plug into a standard mains AS/NZ GPO outlet socket using the inbuilt rear mains lead. It provides surge protection with filtering for sensitive or critical electronic rack mounted equipment. The 1RU AS/NZ filter provides 8 AS/NZS 3112 outlets in a 1RU height 19inch euro rack format unit all protected by an inbuilt 10A re-settable MCB on the front panel.

- Type 2/3 ratings
- 1RU 19-inch format, with 8 front outlets
- Common and transverse mode filtering and protection
- LED power and health status indications
- Three stage protection configured for sensitive loads

SPECIFICATIONS

PP10A8-50-1RU

Nominal voltage	U_o	230 V / 50 Hz - 60 Hz
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz
Maximum load current	I_L	10 A
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_{imp}	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	I_n	< 600 V
N-PE Nominal discharge current (15 x 8/20 μ s)	U_p	20 kA
N-PE Voltage protection level @ 1kV/ μ s	I_{imp}	< 800 V
Number of outlets	I_n	8
Dimensions		W 484mm x H 44mm x D 220mm
Weight		2.5kg

PP10A8 | novaris.com.au

SINGLE PHASE SURGE DIVERTER APPLIANCE FOR LP22/3



A hard wired SPD for the protection of final circuits installed at the power outlet


The Novaris Hybrid Surge Diverter (HSD) range is designed to protect appliance circuits up to 20A in an economical package. It utilises a hybrid configuration to tolerate temporary over-voltages. It is supplied in a compact housing with flying lead connections making them an ideal choice for space restricted applications like LED lights.

- Type 2/3 ratings
- All mode protection
- Hybrid configuration
- Low cost compact housing
- Flying leads for direct site termination

SPECIFICATIONS

HSD1-10-390

Nominal voltage	U_o	230 V / 50 Hz - 60 Hz
Maximum continuous voltage AC	U_c	390V / 50 Hz - 60 Hz
N-PE Maximum discharge current (8/20 μ s)	I_{max}	10 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	5 kA
N-PE Voltage protection level @ I_n (8/20 μ s)	U_p	< 1100 V
Dimensions		W 38mm x H 81mm x D 14mm
Weight		60g

 **HSD1** |  novaris.com.au

AC POWERLINE NOISE FILTERS



For protection of sensitive electronics from conducted and induced noise

Novaris DIN mount NFD noise filters are suitable for installation in power distribution systems where conducted electrical noise is causing problems. The NFD range offers high level of attenuation of electrical noise in both transverse and common modes and are suitable for electrically noisy environments such as railways and industrial facilities where the conducted disturbances are affecting sensitive connected equipment.

- High levels of noise attenuation
- Low 3dB points in all modes
- Surge protection included
- DIN compliant metallic housing

SPECIFICATIONS

NFD2-4-10-275

Nominal voltage	U_o	230 V AC
Maximum continuous voltage AC	U_c	275 V AC
Maximum load current	I_L	4 A
L-L Maximum discharge current (8/20 μ s)	I_{max}	10 kA
L-L Impulse current (10/350 μ s)	I_{imp}	-
L-L Nominal discharge current (15 x 8/20 μ s)	I_n	4 kA
L-L Voltage protection level @ 3kA (8/20 μ s)	U_p	<700 V
L-PE Impulse current (10/350 μ s)	I_{imp}	-
L-PE Nominal discharge current (15 x 8/20 μ s)	I_n	4 kA
L-PE Voltage protection level @ 3kA (8/20 μ s)	U_p	< 700V
Dimensions		W 36mm X H 141mm X D 69mm
Weight		325g

 **NFD2** |  novaris.com.au

POWER LINE SURGE FILTER HIGH PERFORMANCE FOR LPZ1/2/3

A high performance surge and noise filter for the protection of hifi and other consumer electronics

The Novaris Excalibur is a high-performance power line filter and surge protection unit designed for consumer applications such as high-fidelity sound and audio-video systems. It is housed in a shelf mounted 19-inch standard enclosure with an LCD panel indicating key electrical parameters, such as load current, power factor etc. On the rear are 8 sockets where equipment can be connected to receive clean filtered and protected power.

- Type 2/3 ratings
- Top tier filtering performance with very low 3dB points
- Filtering for both common and transverse modes
- High energy surge protection
- Power condition LCD display
- Heavy duty direct wired outlet sockets

SPECIFICATIONS		EX20U8-50	EX20B8-50
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz	
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz	
L-N Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 400 V	< 400 V
N-PE Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA
N-PE Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA	20 kA
N-PE Voltage protection level @ 1kV/ μ s	U_p	< 600 V	< 600 V
Number of outlets		8	8
Dimensions		W 330mm x H 147mm x D 330mm	W 330mm x H 147mm x D 330mm
Weight		11kg	11kg

HIGH VOLTAGE SURGE DIVERTERS

A high energy pluggable SPD for the protection of airport runway lighting circuits

Novaris SDH High Voltage Surge Diverters have been engineered for system voltages up to 2000VRMS. Typical applications include primary loop aviation runway lighting, mining, industrial and railway industries.

- Type 1/2 ratings
- High surge energy ratings
- RSL63 type base
- Various mounting base options
- Replaceable modules
- Optional alarm (-A)

SPECIFICATIONS		SDH-100-550	SDH-200-1000	SDH-100-1500	SDH-100-2000
Maximum continuous voltage AC	U_c	550 V	1000 V	1500 V	2000 V
L-N Maximum discharge current (8/20 μ s)	I_{max}	100 kA	200 kA	100 kA	100 kA
L-N Impulse current (10/350 μ s)	I_{imp}	12.5kA	25kA	12.5kA	12.5kA
L-N Nominal discharge current (15 x 8/20 μ s)	I_n	40kA	80kA	40kA	40kA
L-N Voltage protection level @ 3kA (8/20 μ s)	U_p	< 1600 V	< 2400 V	< 3800 V	< 4800 V
Dimensions		W 57mm x H 215mm x D 162mm			
Weight		2kg			
BASE OPTIONS		RSL63H	RSL63PH	RSL63P	
Connection		Front	Front / Rear Stud	Rear Stud	
Terminal capacity		25mm ²	25mm ² / M8	M8	
Dimensions		W 41mm x H 162mm x D 79mm			
Weight		500g			

SDH | novaris.com.au

SURGE DIVERTER 2-WIRE HIGH VOLTAGE

A medium energy pluggable SPD for the protection of airport runway lighting circuits and other systems up to 2400V AC and DC

The Novaris SDH2 range is designed to protect higher voltage systems of 2 wire configuration. They are available for system voltages up to 2400VAC and are commonly used for airport runway primary circuit and commercial solar inverter DC side protection. They are provided with internal thermal safety disconnects, visual health indications and remote alarm contacts for condition monitoring.

- Type 2/3 ratings
- High energy capacity
- High voltage protection
- Passive health alarm
- Remote alarm connections

SPECIFICATIONS		SDH2-40-2400
Nominal voltage	U_o	Up to 2400 V AC
Maximum continuous voltage AC	U_c	2400 V / 50 Hz - 60 Hz
L-PE Maximum discharge current (8/20 μ s)	I_{max}	40 kA
L-PE Nominal discharge current (15 x 8/20 μ s)	I_n	15kA
L-PE Voltage protection level @ I_n (8/20 μ s)	U_p	< 4500 V
Dimensions		W 108mm x H 91mm x D 68mm
Weight		500g



SDH2 | novaris.com.au

RLP PRIMARY WINDING RUNWAY LIGHTING SPD

For the protection of runway primary transformer windings

Novaris RLP Primary Transformer Winding Airfield Lighting Surge Protectors are designed to protect the primary high voltage windings of current regulated runway lighting systems. RLP protectors are designed to be installed in series with the primary winding conductors.

- Type 1/2 ratings
- Series protector for regulated current loop circuits
- System voltages up to 2400 V
- FAA standard single pole connectors
- IP65 enclosure

SPECIFICATIONS		RLP-50-3000	RLP-50-760	RLP-50-450	RLP-50-260
Maximum continuous voltage AC	U_c	3000 V / 50 Hz - 60 Hz	760V / 50 Hz - 60 Hz	450V / 50 Hz - 60 Hz	260V / 50 Hz - 60 Hz
L-PE Maximum discharge current (8/20 μ s)	I_{max}	50 kA	50 kA	50kA	50 kA
L-PE Impulse current (10/350 μ s)	I_{imp}	4 kA	4 kA	4 kA	4 kA
L-PE Nominal discharge current (15 x 8/20 μ s)	I_L	20 kA	20 kA	20 kA	20 kA
L-PE Voltage protection level @ 3kA (8/20 μ s)	U_p	< 7.5 kV	< 3 kV	< 1.5 kV	< 1 kV
Connector Type		Single conductor			
Dimensions		W 90mm x H 115mm x D 55mm			
Weight		1.4kg			



 RLP |  novaris.com.au

RLS SEC WINDING RUNWAY LIGHTING SPD

For the protection of runway secondary transformer windings

Novaris Secondary Transformer Winding Airfield Lighting Series Surge Protectors are engineered to protect the secondary low voltage windings of runway lighting systems. RLS protectors are designed to be installed in series with the secondary winding conductors and provide protection for both LED and conventional lamps.

- Type 1/2 ratings
- Easy insertion to any secondary light circuit
- All mode protection
- FAA standard 2 pole connectors
- IP67 Enclosure

SPECIFICATIONS		RLS-10-50-275
Nominal voltage	U_o	230 V / 50 Hz - 60 Hz
Maximum continuous voltage AC	U_c	275 V / 50 Hz - 60 Hz
L-L Maximum discharge current (8/20 μ s)	I_{max}	50 kA
L-L Impulse current (10/350 μ s)	I_{imp}	6.25 kA
L-L Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA
L-L Voltage protection level @ 3kA (8/20 μ s)	U_p	< 750 V
L-PE Nominal discharge current (15 x 8/20 μ s)	I_n	20 kA
L-PE Voltage protection level @ 3kA (8/20 μ s)	U_p	< 750 V
Connector Type		Dual conductor
Dimensions		W 90mm x H 115mm x D 55mm
Weight		860g

 RLS |  novaris.com.au

