

IMPORTANT: Please read these instructions carefully. Whilst straightforward, the installation of these devices is critical to their performance.

1. Introduction

1.1 These installation instructions apply to the Novaris Technologies DINsafe range of Power Filters.

Cat No. : SF ^{Load current rating (A)} **x** ^{Alarm indication = 'A' for models with alarms} **xx** DIN ^{Working Voltage} **-xx/x-xxx**

^{Number of phases} **x** ^{Surge rating = '40' for 40kA models} **xxx**

Examples: SF110DIN, SF320DIN-40/A

1.2 These products are low current surge filters, generally installed as secondary protection for sensitive electronic equipment (primary protection is usually provided by a surge diverter at the main switchboard or distribution board).

In the event of a surge, Novaris surge filters clamp the voltage with an exceptionally low let-through voltage that presents the greatest possible chance of avoiding damage to sensitive electronic equipment.

1.3 Installation must be performed by a suitably qualified person in accordance with applicable wiring standards.



Figure 1: SF105DIN/A & SF110DIN/A

2. Before Installation

2.1 Ensure that the supply voltage* is within the working range of the unit e.g. $V_L = 240V$:

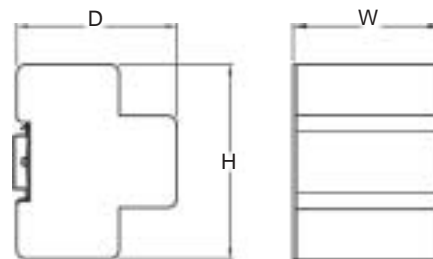
Single phase: 200 → 280 V_{AC RMS} line-to-neutral

Three phase: 346 → 485 V_{AC RMS} line-to-line

* - Rated voltage is indicated on the label located on the left hand side of the enclosure.

2.2 Ensure that the voltage between neutral and earth is less than 10 volts. If it is not, the installation may be unsafe.

2.3 Ensure power to the circuit that will be worked on is isolated prior to beginning the installation.



Cat. No.	Height	Width	Depth
SF105DIN	95	27	78
SF105DIN/A	95	53	78
SF110DIN	95	53	78
SF110DIN/A	95	118	78
SF120DIN	95	118	78
SF120DIN/A	95	118	78
SF310DIN/A	95	180	78
SF320DIN/A	95	180	78

Figure 2: Dimension Table

3. Installation

3.1 Wiring: Surge filters are connected in series (Figure 3).

Both neutral and earth must be connected.

All connections must be made to the correct terminals. For example, if the neutral line is not connected in a three phase installation the surge filter will be damaged.

3.2 Point of Connection: The unit should be connected on the load side of the incoming isolator and protected by a suitably rated circuit breaker or fuse as detailed in section 3.4.

Wherever possible units should be installed on the **line side of earth leakage circuit breakers**. Failure to do so may encourage nuisance tripping.

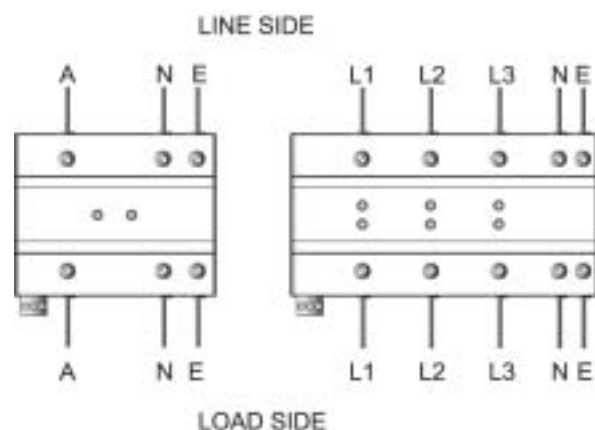


Figure 3: Wiring for single phase & three phase installations

3.3 Mounting: When installing a Novaris surge filter it is vital to ensure the expected source of the transient is connected to the terminals marked 'LINE' (usually the incoming mains). The 'LOAD' side is then considered to be protected / clean and should be connected to the circuit being protected. Note, 'LOAD' conductors should not be run in the same conduit as 'LINE' or unprotected conductors as the level of protection will be compromised.

If the unit is to be positioned external to the switchboard it should be mounted in an enclosure. Suitable polycarbonate enclosures are available from Novaris.

DINsafe surge filters are most easily and effectively mounted on DIN rail using their integral clips. The unit may alternatively be panel mounted using brackets that are available by contacting Novaris.

3.4 Isolation: The unit must be isolated by a suitably rated circuit breaker or HRC fuse in accordance with AS3000-2000. This should be rated at the lowest value of either;

1. the current rating of the filter or
2. current rating of the conductor being used.

3.5 Connecting Leads: The terminals of the surge filters have a capacity of;

1. 2.5mm² for SF105DIN
2. 4mm² for SF105DIN/A and SF110DIN
3. 16mm² for SF110DIN/A, SF120DIN, SF120DIN/A, SF310DIN/A, and SF320DIN/A.

3.6 External Alarm: All models in the DINsafe surge filter range (except SF105DIN and SF105DIN/A) have an option for an external alarm (voltage free changeover contact) for remote monitoring of unit status. The terminals have a capacity of 2.5mm² and are configured as follows (refer to Figure 5):

NC = Normally Closed: Closed under fault conditions or when power is off, otherwise open

NO = Normally Open: Open under fault conditions or when power is off, otherwise closed

C = Common

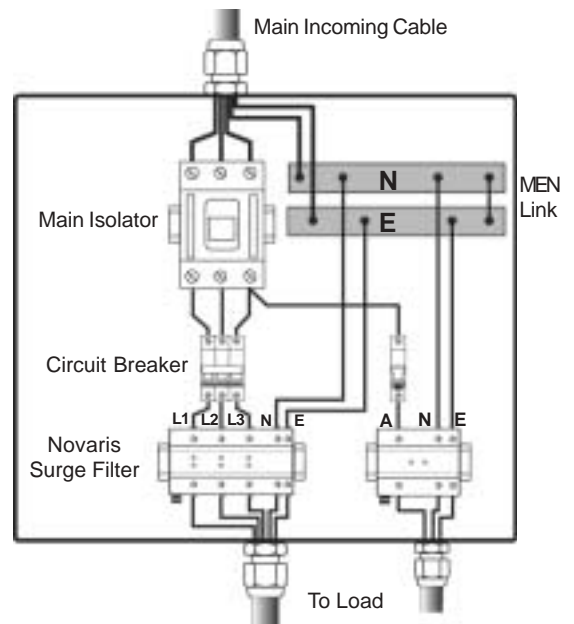


Figure 4 Installation at a Main Switch Board

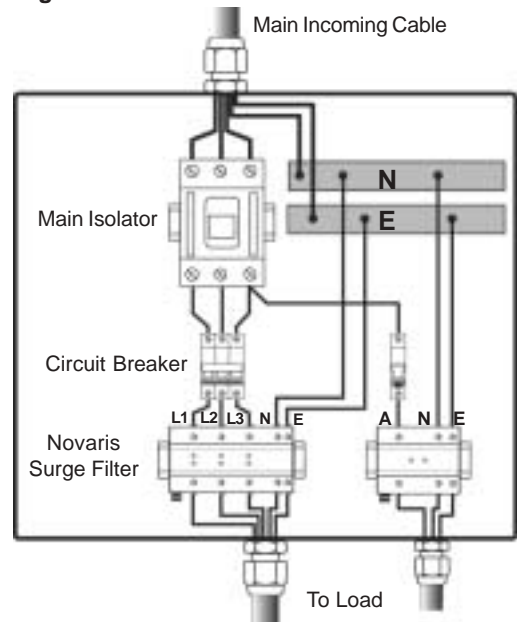


Figure 4a Installation at a Distribution Board



Figure 5 Alarm contacts:

(a) when power is on and unit is okay

(b) under fault conditions OR when power is off

4. After Installation

4.1 Check the installation by switching the power on and observing the indicating LEDs on the unit. If all LEDs are lit then the installation has been successful.