

Novaris[®]

PART OF THE POWERCOM GROUP

Coaxial Surge Protectors

Installation Instructions



IMPORTANT: Please read these instructions carefully. Whilst straightforward, the installation of these devices is critical to their performance. Installation should only be carried out by a suitably qualified person in accordance with all relevant standards.

1. Introduction

1.1 These installation instructions apply to Novaris RF coaxial surge protectors with the following catalogue numbers:

Gas Tube Type

Cat No: **Cx-yy-zz-f-o**

Tuned STUB Type

Cat No: **CSTUB-x-yy-t**

- x Connection type.
- y Connector Gender, M=male, F=female.
- z Maximum continuous operating voltage.
- f Maximum frequency, f_c (GHz).
- t Tuned frequency (MHz).
- o Options.

1.2 Novaris Cx series gas discharge surge protectors are capable of passing RF signals to 3 GHz (limited by connector type).

1.3 Novaris tuned stub protectors employ quarter-wavelength short circuit stub technology. Suitable for narrow bandwidth applications where no DC voltage is injected. RF power and surge rating are limited by the cables and connectors only.



Figure 1: RF Coaxial Cable Protectors Range

2. Before Installation

2.1 For **Gas Tube Type**:

Ensure that the maximum continuous operating voltage of the Novaris RF coaxial protector is suitable for the RF power of the system:

Clamping voltage (V)	RF power (W)
90	0 - 50
230	50 - 125
350	125 - 300
600	300 - 500
1000	500 - 1000

2.2 For **Tuned STUB Types**:

Maximum power is limited by connectors and cable only.

Dimensions	Width	Min Length	Max Length
Cx-y-z-2	28	57	72
Cx-y-z-3	30	64	72
CSTUB-x-y-t	28	56	56

Dimensions shown in millimeters (mm)

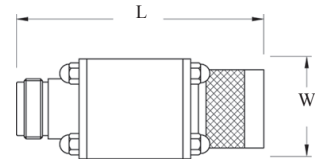


Figure 2: Cx-y-z-2 Dimensions

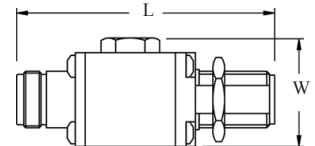


Figure 3: Cx-y-z-3 Dimensions

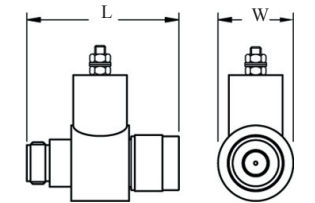


Figure 4: CSTUB-x-y-t Dimensions

3. Installation

3.1 A Novaris RF coaxial surge protector should be installed at the termination points on *each end* of the cable run.

The ideal installation comprises a bulkhead protector (e.g. CN-FF-90-2) installed at the cable entry panel, figure 5a, if this is not possible, install a protector between the main feeder and flexible tail, alternatively at the equipment antenna receptacle.

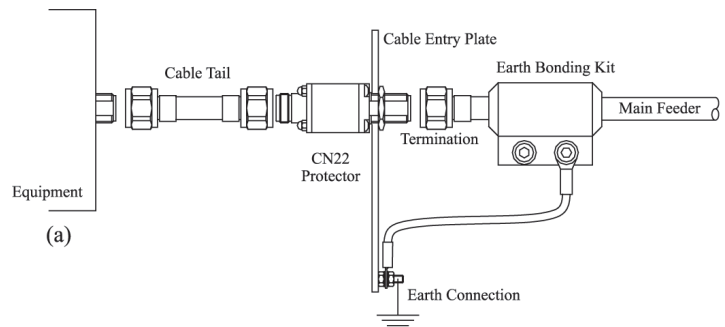


Figure 5a: Connection of Novaris RF Coaxial Bulkhead Protectors

The outer conductor of the coaxial cable must be bonded to earth. This is best achieved by installing Novaris cable earth bonding kits. Recommended connection points for cable earth bonding kits are (Figure 6):

1. At the highest point of the vertical cable run to the tower
2. At the lowest point of the vertical cable run to the tower
3. At the entry point into the equipment hut to the cable entry panel or equipment earth bar

3.2 All outdoor installations should be made weatherproof using butyl rubber, cold shrink, vinyl mastic tape or suitable equivalent material over all connections and the protector itself.

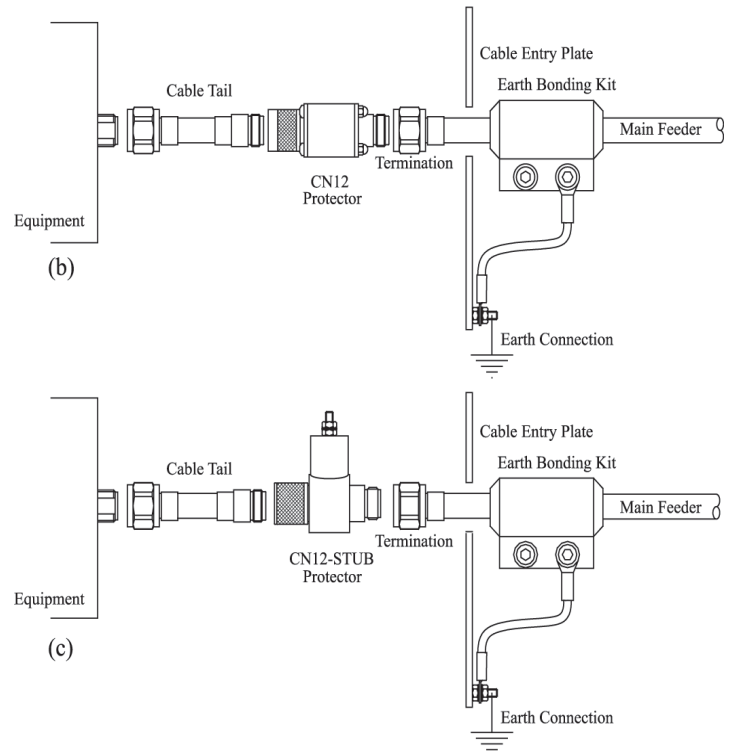


Figure 5 b,c: Connection of Novaris RF Coaxial Inline Protectors

4. After Installation

4.1 The integrity of the installation should be verified by measuring the return loss and/or VSWR of the completed cable run.

Novaris RF coaxial surge protectors are extremely robust. Provided installation is performed correctly, Novaris coaxial cable protectors are virtually maintenance free. Periodic inspection of connections and weatherproofing is recommended.

A protector fault may be indicated by excessive VSWR / return loss, low resistance between the inner and outer conductors or intermittent degradation of system operation.

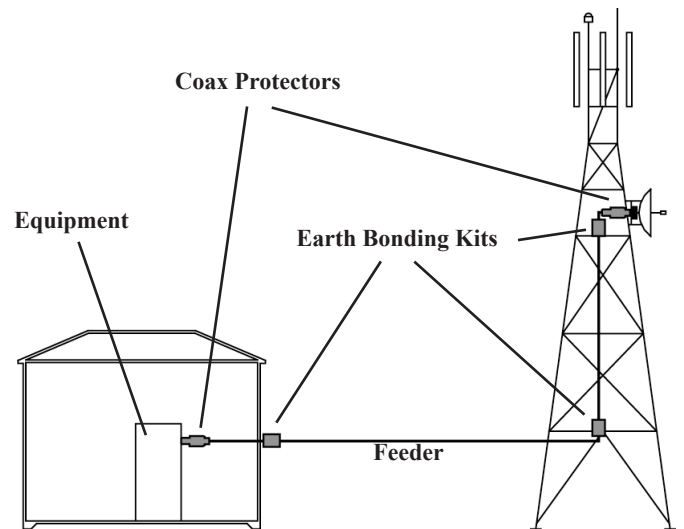


Figure 6: Typical Installation



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