



- Direct Strike Protection
- Earthing Products & Solutions
- Surge & Transient Protection for Power, Data, Communications and RF Lines

LPI® Coaxial Surge Protector - RF Ranges

Features

- High impulse rating
- Wide operating frequency / Low insertion and return loss
- Easy installation

Product Description



LPI® RF ranges coaxial surge protectors are designed to protect radio transmitters, receivers, high frequency LANs and all high frequency cable systems against transient over voltages due to direct, indirect lightning strikes and earth potential rise caused by lightning.

The LPI® RF ranges of coaxial protectors consists of a fast acting gas filled arrester enclosed in an in-line mounting with coaxial connectors on either end. The device is configured to minimise circuit capacitance and present a 50 ohms characteristic impedance to assure performance up to 3 GHz. Standard models provide protection for receivers and transmitters up to 50W RF power level. Models for higher power levels are readily available.

Model	DC Clamp Voltage	Max. Impulse Clamp Voltage (1kV/μ sec)	Connector Type
RF-BNC-90	72 – 108 V	< 550 V	BNC Type M to F
RF-NMF-90	72 – 108 V	< 550 V	N Type M to F
RF-NB-90	72 – 108 V	< 550 V	N Type F to F (Bulkhead)
RF-BNC-230	220 – 320 V	< 550V	BNC Type M to F
RF-NMF-230	220 – 320 V	< 550V	N Type M to F
RF-NB-230	220 – 320 V	< 550V	N Type F to F (Bulkhead)
RF-BNC-350	280 – 420 V	< 600V	BNC Type M to F
RF-NMF-350	280 – 420 V	< 600V	N Type M to F
RF-NB-350	280 – 420 V	< 600V	N Type F to F (Bulkhead)
RF-BNC-600	480 – 720 V	< 1100 V	BNC Type M to F
RF-NMF-600	480 – 720 V	< 1100 V	N Type M to F
RF-NB-600	480 – 720 V	< 1100 V	N Type F to F (Bulkhead)

Description	Technical Specification
Max. Single impulse discharge current:	25 kA 8/20 μs
Max. Multiple impulse discharge current:	20 kA 8/20 μs
Nominal AC discharge current:	20A, 50Hz, 1 sec
Impulse life:	400 times @ 10/1000 μs
Characteristic impedance:	50 ohms
Insulation resistance:	10G ohms
Max. Capacitance:	1.5 pF
Insertion loss:	< 0.02 dB @ 3 GHz
Operating temperature:	65° C (max)

Installation

Transient over voltages appearing between the inner conductor of the coaxial cable and its screen could directly damage receiver and line driver chips of communications equipment connected via coaxial cables.

The LPI RF range of coaxial surge protectors contain fast response gas filled arrestors to provide low electrical voltage for fast rise time transients. The use of low capacitance gas filled arrestors ensures operation at high frequencies with low insertion loss.

Connect the protector in the RF line as close to the equipment to be protected as practical. The aim of these protectors is to provide electrical clamping between the inner and outer conductors of coaxial cables.

The earth lead provided should be connected to the unit by mounting the lug under any one of the 8 connector mounting screws, the other end should be terminated at the nearest convenient earthing point, using the shortest possible route.

The N bulkhead models are specifically designed for mounting at cable entry points. The bulkhead mount allows a secured earth connection to the cable entry plate and provides a convenient cable termination point. This is the preferred method of installation.

Important

Normal precautions such as earthing coaxial cable sheaths at building points of entry are still vitally important.

Note: To select the appropriate protection voltage use the following procedure:

Determine the transmitter power in Watts (P)

Determine the antenna VSWR, if unsure use 1.5 as the worst case

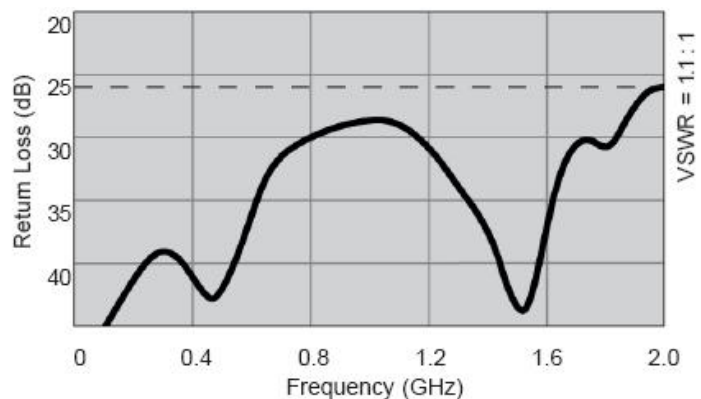
Calculate $V_{peak} = VSWR \times 1.4 \times \sqrt{50 \times P}$

Choose the model with DC clamping voltage above the calculated V_{peak}

Selection Chart

Power (W)	Arrester Voltage (V)
0-40	90
40-200	230
200-300	350
300-800	600

Typical RF Series Frequency Response for Type N Protector



LPI® has a policy of continuing product development. Therefore, the above specifications are subject to change without notice.

LPI® LIGHTNING PROTECTION INTERNATIONAL PTY LTD
ABN 11 099 190 897

16 Mertonvale Circuit, Kingston Tasmania, Australia 7050
 ■ Phone: +61 3 6227 1955 ■ Fax: +61 3 6229 1900
 ■ Email: info@lpi.com.au ■ Web: www.lpi.com.au