

## Lightning and Surge Protection For The 21st Century™

### *LP-BTR Series*

- DC blocked for maximum surge protection
- Multi strike capability
- Broadband performance from 20 MHz up to 1000 MHz
- Exceptional RF characteristics
- Ten year warranty

Universal grounding bracket for flange or bulkhead installations

- Can be rotated in any direction
- Captivated screws
- Mounting hardware included

Solid brass construction for durability and long life

Laser engraved print legend

White bronze plating for environmental durability

Included weatherization gaskets for bulkhead mounting

### Connector Configurations Available

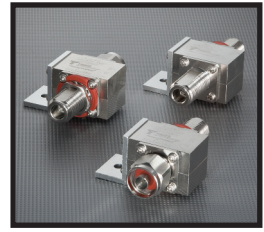
- LP-BTR-NFF  
N Female connectors on surge and protected sides
- LP-BTR-NMP  
N Male connector on protected side with N female connector on surge side
- LP-BTR-NMS  
N male connector on surge side with N female connector on protected side

Electrical Specifications	
Impedance	50 $\Omega$
Frequency Range	20-1000 MHz
VSWR/Return Loss	<1.1:1 / <-26dB
Insertion Loss	< 0.1dB
Impulse Discharge Current	10KA multiple (8x20 $\mu$ s wave-form)
Turn-on Voltage	600V $\pm$ 20%
Turn-on Time	2.5ns for 2kV/ns
Energy Throughput Rating	<200 $\mu$ J (4kV/2kA 1.2x50/8x20 $\mu$ s wave-form)
Power Handling at Frequency	375W (20-220MHz) 125W (220-700MHz) 50W (700-1000MHz)
Protection Circuit	DC Blocked

Applications: SCADA, LMR, Utilities, Public Safety, Oil, Gas and others in the 20-1000 MHz spectrum

### **LP-BTR-N Series (20 MHz TO 1000 MHz)**

- DC blocked for maximum surge performance
- Multi-Strike capability
- Broadband performance from 20MHz up to 1000MHz
- Exceptional RF characteristics
- Solid brass construction
- Universal grounding bracket for flange or bulkhead installations



### **LP-BTRW-N Series (20 MHz TO 1000 MHz) IP67 Weatherized**

- DC blocked for maximum surge performance
- Multi-Strike capability
- Broadband performance from 20MHz up to 1000MHz
- Exceptional RF characteristics
- Solid brass construction
- Mounting/grounding bracket & hardware included



### **LP-GTR-N Series (DC to 3000 MHz) & LP-GTR-D (DC to 2500 MHz)**

- DC pass multi-strike design
- Replaceable gas tube
- Broadband bidirectional design
- Excellent IL/RL performance over the entire operating frequency band
- Fully weatherized housing
- Solid brass construction
- Includes universal right angle bracket adaptor



### **LP-STRL-N & LP-STRL-D Series (680 MHz to 2200 MHz)**

- Long term evolution (LTE) and 700 MHz public safety applications
- Excellent PIM performance
- Outstanding IL/RL characteristics
- DC blocked for superior surge performance
- High surge current/power rated
- Broadband multi-strike design
- Fully weatherized housing
- Solid brass construction



### **LP-WBX-N Series (2000 MHz to 6000 MHz)**

- Filter based protection circuit
- Broadband outstanding IL/RL
- DC blocked for superior surge performance
- Fully weatherized housing



### **LP-GPX-05 Series (1000 MHz to 2000 MHz)**

- Bidirectional filter based design
- Outstanding IL/RL characteristics
- DC Blocked RF path for superior performance
- Solid state DC path protection circuit
- Fully weatherized housing
- SMA, N & TNC type connectors
- GPS protection



### **LP-GTV-N Series (DC - 7000 MHz)**

- DC pass multi-strike design
- Broadband bidirectional design
- Excellent IL/RL performance over the entire operating frequency band
- Solid state DC path protection circuit
- Fully weatherized housing



### **LP-HBX-N Series (100 MHz to 700 MHz)**

- DC blocked for maximum surge protection
- Exceptional RF characteristics
- Multi-strike capability
- High power design for single and multi channel applications
- Fully weatherized housing



### **LP-18-400-N, LP-18-240-N & LP-18-195-N Connector Protector Series (DC - 6000 MHz)**

- Eliminates the need for separate cable connector
- Attaches directly to LMR® - 400 & 195 cable
- Uses EZ-400-X, EZ-240-X and 195-X (no braid trim) connector interface
- DC pass multi-strike broadband bidirectional design
- Fully weatherized housing



### **LP-BFDN-CW**

- Universal bulkhead-flange mounting and grounding adaptor
- One unit accommodates both DIN and N connectors
- Copper construction
- White Bronze plated
- Stainless Steel hardware included







- Innovative entrance panel design
- Bulkhead-mounted RF protectors
- True single point ground
- Low inductance ground plate for control of ground potential rise
- **NO OUTSIDE EXPOSED COPPER - ADDRESSES THEFT ISSUES**
- Eliminates external coaxial grounding kits
- Eliminates internal lightning protector trapeze
- Can accommodate EWG-data-DC-fiber entry ports



## LP-SPT

- Measures the voltage protection level of the lightning protection device
- Field portable, lightweight design - weighs only 16 ounces
- Inherently safe circuitry protects personnel
- Can also be used to test MOV's, diodes and gas tubes
- Includes alligator clip adaptor (LP-NF-AC), rugged nylon case, batteries and operating instructions



## LP-DOE, POE & PAE - Data Line Over Voltage Protection

- Tested to RFC2544 extended methods
- Meets network equipment building system (NEBS) level 3
- Excellent data integrity
- Lowest surge and energy throughput
- Lowest error rate
- Shielded enclosure
- IP67 weatherized version available



## LP-DCX-W-48V-27A-40 - DC Over Voltage Protection

- Multi-stage design for lowest surge voltage and energy throughput
- Polycarbonate enclosure
- IP68 weatherized housing
- Multi-strike capability
- Best protection for cell site remote radio heads
- Hinged cover for easy access
- Patent pending design

