



## *LP-STRL-N Series*

- *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 for Durability and Long Life*



**100% PIM  
Tested**

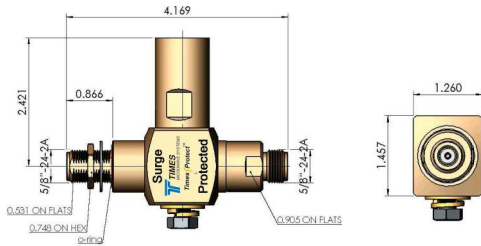
## *Lightning and Surge Protection for The 21st Century™*

The **Times Protect™** LP-STRL-N high performance series is an exceptional DC blocked design for outstanding surge performance, capable of withstanding multiple lightning strikes. The operating band width of 680MHz-2200MHz makes the LP-STRL-N series suitable for a broad range of applications. This design covers the 700MHz Band for Public Safety Services as well as LTE (Long Term Evolution) applications. With its excellent passive intermodulation performance, outstanding RF performance over the entire operating band and superior power handling capability, the LP-STRL-N product family is unequalled. Its fully weatherized housing meeting IP67 standard allows for outdoor as well as indoor installation.

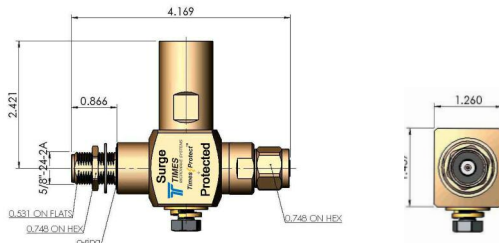
### LP-STRL-N Series:

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

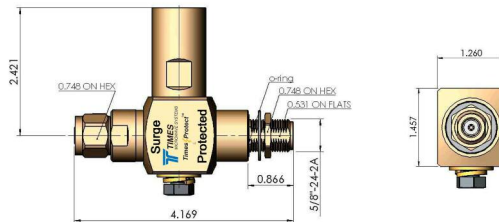
# Times-Protect™



- LP-STRL-NFF  
680-2200MHz DC Blocked N Type F/F



- LP-STRL-NMP  
680-2200MHz DC Blocked N Type M on Protected



- LP-STRL-NMS  
680-2200MHz DC Blocked N Type M on Surge

\*All dimensions shown in inches

## Electrical Specifications

Impedance	50 $\Omega$
Frequency Range	680-2200 MHz
VSWR/Return Loss	< 1.13:1 / <-24dB (680-700MHz) < 1.1:1 / <-26dB (700-2200MHz)
Insertion Loss	< 0.1dB
Average Power	500 Watts
PIM	<-160dBc
Maximum Surge Current	50kA (8x20 $\mu$ s wave-form)
Residual Pulse Voltage	< 100V (50kA 8x20 $\mu$ s wave-form)
Residual Pulse Voltage	< 1V (4kV/2kA 1.2x50/8x20 $\mu$ s wave-form)
Energy Throughput Rating	< 1nJ (4kV/2kA 1.2x50/8x20 $\mu$ s wave-form)
Protection Circuit	DC Blocked

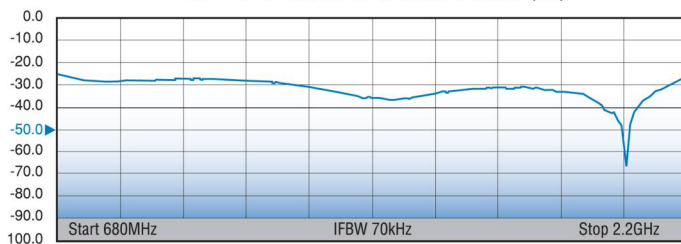
## Mechanical / Environmental Specifications

Temp Range Storage/Operating	-40°C - +85°C
Weatherization	IEC 60068 55/155/56 & IP67
Thermal Shock	US MIL-STD 202, Meth.107,Cond.B
Vibration	US MIL-STD 202, Meth.204,Cond.B
Shock	US MIL-STD 202, Meth.213,Cond.I
RoHS Compliant	Yes
Wear/Mating Cycles	500 minimum
Recommended Coupling Nut Torque	7 to 10 in-lb
Unit Weight	0.53kg/pc / 1.17lb

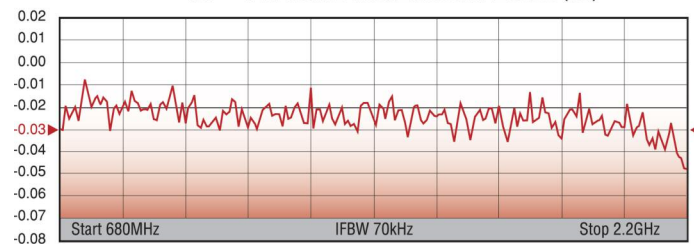
## Material Specifications

Component	Material	Plating
Body	Brass	White Bronze
Inner Conductor Male	Brass	Silver
Inner Conductor Female	Phosphor Bronze	Silver
Coupling Nut	Brass	White Bronze
Insulator	PTFE	--
O-Ring	Silicone Rubber	--

S11 TYPICAL RETURN LOSS (dB)



S21 TYPICAL INSERTION LOSS (dB)



World Headquarters: 358 Hall Avenue, Wallingford, CT 06492 • Tel: 203-949-8400, 1-800-867-2629 • Fax: 203-949-8423

International Sales: 4 School Brae, Dysart, Kirkcaldy, Fife, Scotland KY1 2XB UK • Tel: +44(0)1592655428

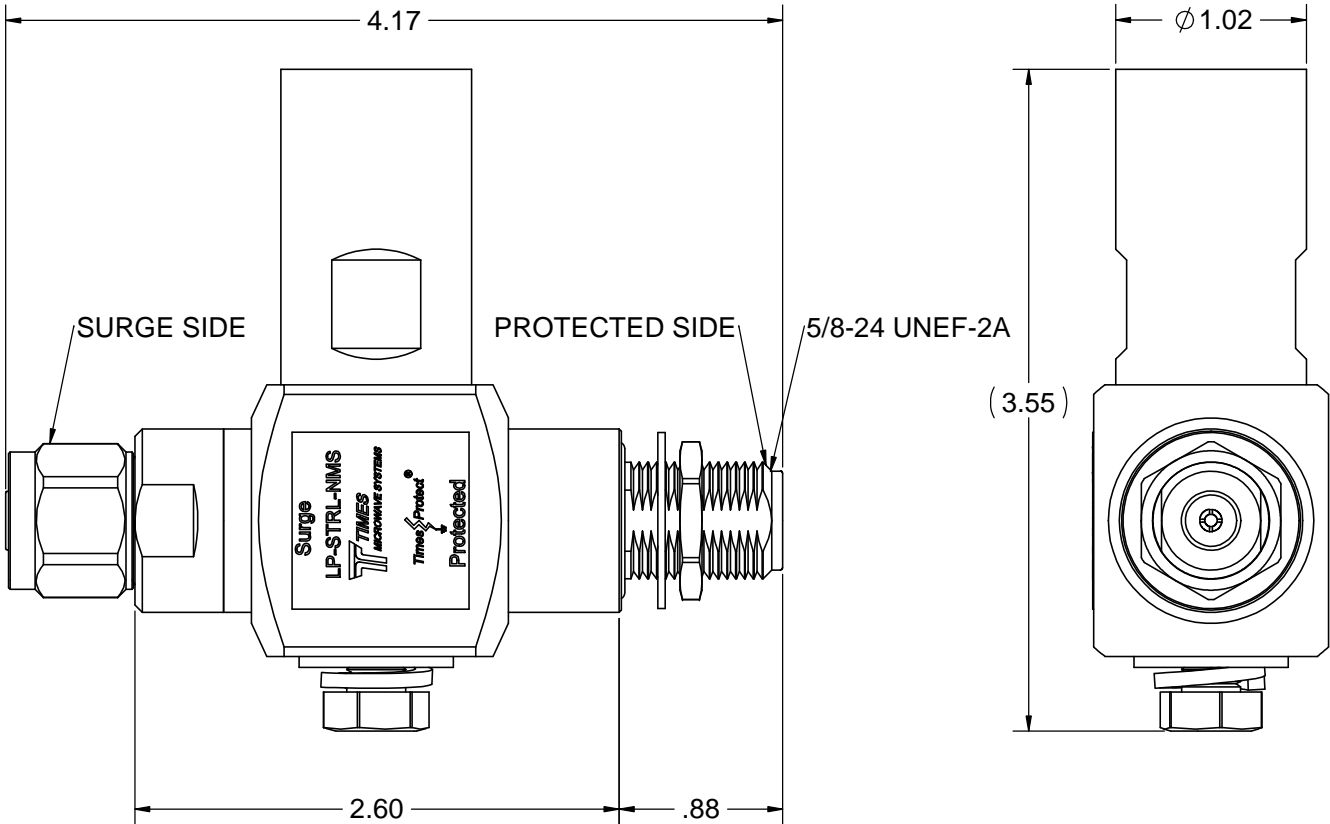
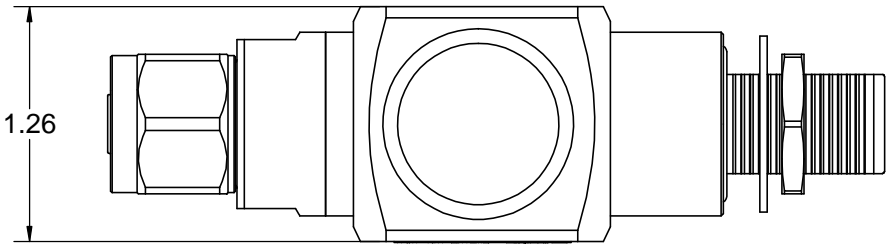
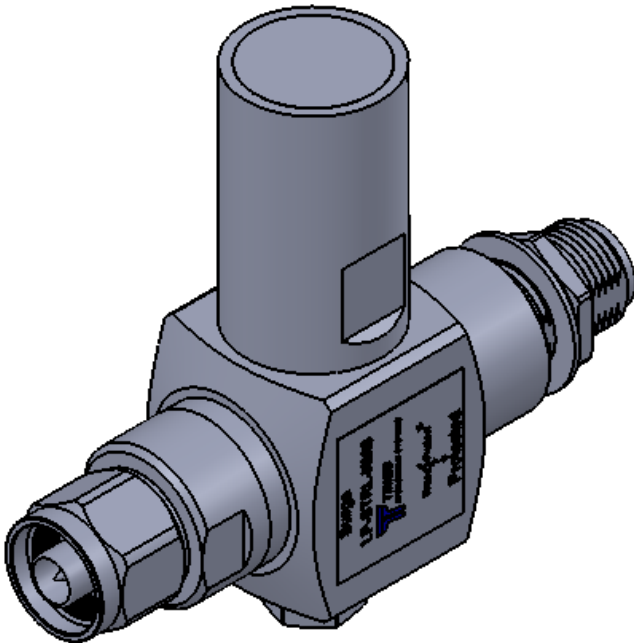
China Sales: No. 318 Yuan Shan Road, Shanghai 201108 China • Tel: 86-21-51761234 • Fax: 86-21-64424098

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REV.	REVISION DESCRIPTION	DFM	DATE	APPD	DATE
A	RELEASED FOR PRODUCTION	M.E.	03/24/14	M.E.	03/24/14



NOTES:

1. ELECTRICAL PERFORMANCE

IMPEDANCE: 50 OHMS  
OPERATING FREQUENCY: 680-2200 MHz  
VSWR/RETURN LOSS: < 1.13:1 / < -24 dB (680-700 MHz)  
< 1.1:1 / < -26 dB (700-2200 MHz)  
INSERTION LOSS: < 0.1 dB  
AVERAGE POWER: 500 W  
PIM: < -160 dBc  
MAX SURGE CURRENT: 50 kA (8/20 us WAVE-FORM)  
RESIDUAL PULSE VOLTAGE: < 100 V (50kA 8/20 us WAVE-FORM)  
RESIDUAL PULSE VOLATGE: < 1 V (4kV/2kA 1.2X50/8X20 us WAVE-FORM)  
ENERGY THROUGHPUT RATING: < 1 nJ (4kV/2kA 1.2X50/8X20 us WAVE-FORM)  
PROTECTION CIRCUIT: DC BLOCKED

2. ENVIRONMENTAL CHARACTERISTICS

STORAGE/OPERATING TEMPERATURE: -40C TO +85C  
WEATHERIZATION: IP67  
VIBRATION: MIL-STD 202, METHOD 204, CONDITION B  
WEIGHT: 1.17 lb / 0.53 kg  
RoHS COMPLIANT

3. MATERIAL AND FINISH

INNER CONNECTOR MALE: BRASS, SILVER PLATE  
INNER CONNECTOR FEMALE: PHOSPHOR BRONZE, SILVER PLATE  
BODY: BRASS, WHITE BRONZE PLATE  
COUPLING NUT: BRASS, WHITE BRONZE PLATE  
INSULATOR: PTFE  
O-RING: SILICONE RUBBER

MATERIAL:



USED ON ASSY.

DRAFTSMAN	M. ELLIS	03/24/14
CHECKER	M. ELLIS	03/24/14
APPROVED	M. ELLIS	03/24/14

UNLESS OTHERWISE SPECIFIED		
ALL DIMENSIONS ARE IN INCHES		
MACHINED SURFACES FINISH 32 RMS MAX.		
REMOVE ALL BURRS .005 MAX. BREAK		
MACHINE CORNERS .005 MAX. FILLET R.		
TOLERANCES ON DECIMALS		
.XX ± .01	.XXX ± .005	
ANGLES ± 1°	FRACTIONS ± 1/32	
DO NOT SCALE DRAWING		

TIMES MICROWAVE SYSTEMS		
TITLE: SURGE PROTECTOR N MALE TO N FEMALE 680-2200 MHz		
DWG. NO. C	DRWG. NO. LP-STRL-NMS	REV. A
CODE IDENT. 68999	SCALE: 1.5:1	SHEET 1 OF 1