

# TW170



## TW170 Coaxial GNSS RF Surge Protector

Frequency Coverage: Full GNSS Spectrum

The Calian TW170 is a professional-grade coaxial GNSS full-band surge protector, or lightning arrestor, that interfaces a GNSS antenna to its corresponding receiver, while protecting the receiver from high-voltage strikes. The product supports GPS/QZSS-L1/L2/L5, QZSS-L6, GLONASS-G1/G2/G3, BeiDou-B1/B2/B2a/B3, Galileo-E1/E5a/E5b/E6, NavIC-L5, and L-Band correction services.

Using a highly tuned design based on a gas discharge tube (GDT), the TW170 can handle a surge current of up to 20 kA, effectively isolating the receiver from damaging electrical currents as a result of lightning strikes or static discharge on the GNSS antenna.

The TW170 offers the best in-class performance for connectivity, input and output VSWR, and low transmission losses. In addition, it is packaged in a robust, compact, lightweight, and water-proof (IP67) corrosion-protected stainless-steel housing.

The TW170 also provides a continuous DC power path, from output to input, to feed outdoor electronic circuits like GNSS antennas, etc.



### Applications

- GNSS signal distribution
- GNSS receiver protection
- High-availability applications
- Network and infrastructure timing

### Features

- Surge current protection up to 20 kA
- Maximum power handling of 300 W
- Wide frequency range (full GNSS spectrum)
- DC Pass, low insertion-loss, low VSWR
- Clear input and output markings
- Mounting and grounding straps included
- IP67-compliant rugged military-grade enclosure

### Benefits

- Fits in-line within the GNSS system
- Robust package
- Ideal for harsh environments
- Gas discharge tube can be replaced after a strike

**About Calian:** With global headquarters and manufacturing in Ottawa, Canada, Calian is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Calian's mission is to support the needs of a new generation of positioning systems by delivering unprecedented antenna precision at competitive prices. Learn more at [www.calian.com/gnss](http://www.calian.com/gnss)

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## Electrical Specifications

Parameter	Conditions / Description	Minimum	Typical	Maximum	Units
Frequency Range	Bandwidth supported	1100	-	1700	MHz
Insertion Loss	Measured within range: -40 °C to 85 °C	0.3	0.4	0.5	dB
Impedance	Measured within range: -40 °C to 85 °C	-	50	-	$\Omega$
VSWR	All Ports	-	1.1:1   1.1:1	1.4:1   1.4:1	ratio
Operating Voltage	Applied on Output Port	-	-	12.5	V
Surge Current	IEC 61000-4-5 8/20us waveform, single use	-	-	20	kA
Throughput Energy	for 3 kA, 8/20 $\mu$ s waveform	-	-	175	$\mu$ J
Turn-on Voltage	Defined by TVS Threshold	-	14	-	V

## Mechanicals

Size	113.3 mm (L) x 34.0 mm (d.)
Weight	270 g (TNC connectors)
Connectors	2x TNC (female) or 2x type-N (female)
Enclosure	military-grade corrosion-protected stainless steel

## Environmental

Operating Temperature	-40 °C to 85 °C
Storage Temperature	-50 °C to 95 °C
Vibration	-
Shock	-
Salt Fog	-
IP Rating	IP67
Compliance	RoHS, REACH and WEEE

## Warranty

Parts and Labour	3-year standard warranty
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## Ordering Information

**Part Number** **32-0170-xx**

where xx = connector: 14 = type-N (female), 01 = TNC (female)

Please refer to our **Ordering Guide** to review available radomes and connectors at:  
<https://at.calian.com/gnss/information-support/part-number-ordering-guide/>

## Mechanical Diagram - Units in 'mm'

