VAISALA

Thunderstorm Local Lightning Sensor TSS928™

Features

- Meets ASOS requirements for lightning range and bearing
- Detects and reports range and bearing of cloud-to-ground lightning
- Detects and counts cloud lightning
- Data format supports direct interface with common communication systems
- Self-diagnostics features for checking sensor function status
- Sustained performance in extreme weather conditions
- Modular design allows easier field service and on-site maintenance

Vaisala TSS928™ is a local-area lightning detection sensor that can be integrated with automated surface weather observations.

Superior Performance in Local- area Lightning Tracking

Lightning-sensitive operations rely on Vaisala TSS928 sensors to provide critical local lightning information, both for meteorological applications as well as threat data, to facilitate advance warnings, initiate safety procedures, and isolate equipment with full confidence. The patented lightning algorithms of TSS928 provide the most precise ranging of any stand-alone lightning sensor available in the world today.

The optical coincident requirement eliminates reporting of non-lightning events. The Vaisala Automated Lightning Alert and Risk Management (ALARM) system software is used to visualize TSS928 sensor data.

TSS928 detects:

- Optical, magnetic, and electrostatic pulses from lightning events with zero false alarms
- Cloud and cloud-to-ground lightning within 30 nautical miles (56 km)
- Cloud-to-ground lightning classified into three range intervals:
  - 0 … 5 nmi (0 … 9 km)
  - 5 … 10 nmi (9 … 19 km)
  - 10 … 30 nmi (19 … 56 km)
- Cloud-to-ground lightning classified into directions: N, NE, E, SE, S, SW, W, and NW

TSS928 can be used to integrate lightning reports with automated weather observation programs such as METAR.

Vaisala TSS928™ accurately reports the range and direction of cloud-to-ground lightning and provides cloud lightning counts.

Technical Data

Measurement Performance

Detection range	30 nmi (56 km) radius from sensor location
Range resolution	Three range groups: 0 ... 5 nmi (0 ... 9 km) 5 ... 10 nmi (9 ... 19 km) 10 ... 30 nmi (19 ... 56 km)
Bearing resolution	One of eight compass octants (N, NE, E, SE, S, SW, W, NW)
Detection Efficiency	
Thunderstorm Detection	98% for thunderstorms within 10 nautical miles (12 mi, 19 km) with 3 or more cloud-to-ground discharges
Cloud-to-ground Flashes	Approximately 70% for flashes within 10 nautical miles

Operating Environment

Operating temperature	–40 °C to +60 °C (–40 °C to +140 °F)
Storage temperature	–40 °C to +60 °C (–40 °C to +140 °F)
Sustained wind speed, maximum	85 knots (157 km/hr) (standard mast mount)
Wind gust, maximum	125 knots (231 km/hr)
Relative humidity, operating	0 ... 100 %
Siting requirements	Flexible installation requirements Questions should be referred to your distributor or your Vaisala sales representative

Inputs and Outputs

DC power	11 ... 32 VDC
Power consumption	Nominal 6 W
Communications	
Serial ASCII format	
RS-232 and RS-422 serial at 9600 bps	
Interval of automatic weather message output	Configurable manually to polled, each flash, or one minute intervals or with ALARM software to 1, 5, 10, 15, or 30 min
Instantaneous broadcast of data as event occurs, or sensor can store and be polled by user	

Mechanical Specifications

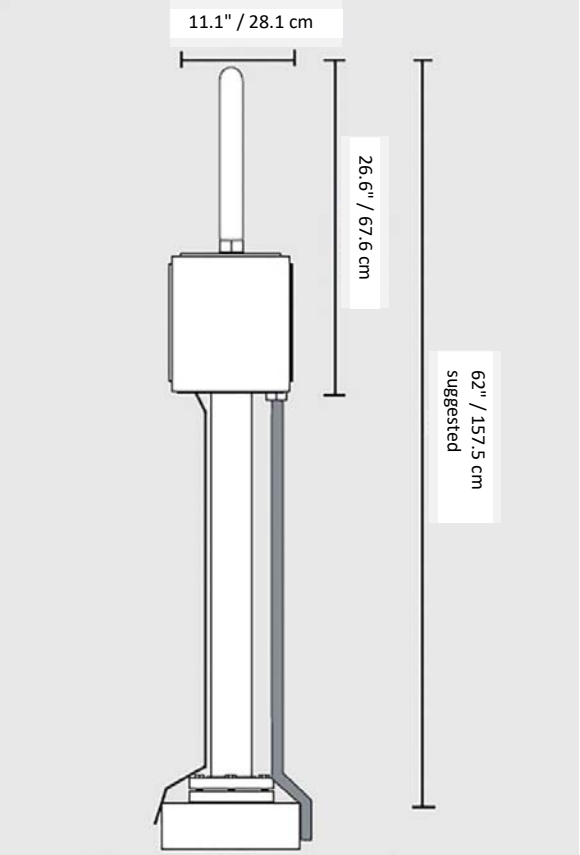
Compliance		
	UL	CE Mark
	CSA	FCC part 15, class A
Mounting Configuration		
Options	Ground mount option Roof mount option with tripod Frame mount for either roof or ground options	
Height	Max. 3 m (9 ft 10 in) recommended	
Weight (sensor only)	9.9 kg (22 lbs)	

Support Services

Vaisala TSS928™ is fully supported by our Customer Support Center, Technical Service Group, and Field Service Engineering Team. Maintain optimal performance by purchasing a service agreement customized to your unique system requirements.

Standard Warranty

Vaisala warrants all products manufactured by Vaisala to be free from defects in workmanship or material for 1 year from the date of delivery. Contact your Vaisala Sales Representative for specific product warranty and service warranty details.



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www.vaisala.com

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