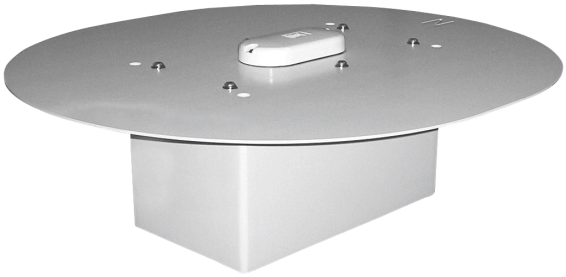
WEATHER

Lightning Sensor

Model 6500



Overview

The Model 6500 Thunderstorm/Lightning Detector detects electrical discharges associated with thunderstorms within a 200 nautical mile radius of the system. The 6500 is a passive sensor that listens for electromagnetic signals with a receiving antenna. There is no transmitter, and so no harmful transmissions.

Consisting of an antenna mounted to a 28" x 31" ground plane and a processor housed in a NEMA 4X enclosure, the entire package mounts simply to a 2½" pipe (2.875" O.D.) using two U-bolts. The 6500 is Federal Aviation Administration (FAA) certified, meeting the current regulatory requirements.

Features

- Accurate, dependable lightning detection
- No harmful transmissions
- Self-testing for reliability
- Timely information

Sensitivity

The 6500's antenna is a combined crossed-loop and sense antenna, which can correlate the electric and magnetic signatures of lightning strikes better than other systems because of its patented sense channel technology. The antenna has been designed to help filter out pulsed noise from sources other than atmospheric electrical discharges.

Processor

The 6500's processor houses the data acquisition circuitry, along with circuitry to process strike data and communicate with the AWOS Data Collection Platform (DCP). Communication with the DCP is via a serial RS-485 or Rs-232 link. The lightning detection processor digitizes, analyzes, and converts the discharge signal into range and bearing data, then stores the data in memory.

Dependability

The 6500's antenna detects the electrical and magnetic fields generated by cloud-to-ground electrical discharges that occur within a 200 nautical mile radius of the antenna, and sends the resulting 'discharge signals' to the processor. The processor digitizes, analyzes, and converts the discharge signals into range and bearing data, then stores the data in memory.

Ordering Information

Part Number	Description
6500-AC	Standalone with power supply and RS-422 serial interface — reports data every 2 seconds
6500-DC[1]	*Direct Connect* for use with Model 1192 DCP, RS-422 serial interface, powered from DCP — reports data every 2 seconds
6500-SA20	Emulates the SA20 StrikeAlert™·Thunderstorm sensor, powered from DC power supply
M105655-00	Deck mounting pole
M488606-00	Stainless steel mounting pole kit

1 standard for nonfederal AWOS

Lightning Sensor

Specifications

Parameter	Specification		
	6500-AC	6500-DC	6500-SA20
Measurement Range	0 – 200 nautical miles (0 – 370 km)		
Operating Temperature	-55 to +70°C (-67 to +158°F)		
Storage Temperature	-75 to +70°C (-103 to +158°F)		
Humidity	noncondensing up to 100%		
Serial Protocol	RS-422		RS-232
Baud Rate	9600 bps		1200 bps
Serial Parameter Setting	8-N-1 (8 data bits, no parity, 1 stop bit)		
Serial Connector	screw terminal block pins		
Supply Voltage	115/230 VAC 50/60 Hz	11–32 VDC	
Power Consumption	11 W		
Enclosure	NEMA 4X painted aluminum		
Mounting	mounts to 2.5" pipe (2.875" O.D.)		

Dimensions & Weights

Dimensions	70 cm × 79 cm × 23 cm (27.5" W × 30.9" L × 9.0" D)
Weight	16 kg (35 lb)
Shipping Weight	18 kg (40 lb)

Aviation Parameter	Specification
Displayed Range and Detection	0 – 10 NM from airport • At Airport • In The Vicinity • Distant Lightning 10 – 30 NM from airport • Reported in compass octants
Resolution	1 NM distance 1° azimuth
Accuracy	Within 10 NM: • Detection 90% of all strikes • Location: does not exceed 3 NM Between 10 and 30 NM: • Detection 80% of all strikes • Location: does not exceed 6 NM
False Reports	Not more than 2%
Detection Rate	Up to 40 strikes every 2 seconds
Reporting	AWOS information updated each minute