4500-LSS

LIGHTNING SENSOR

Applications

- **Airports, Terminal Areas and Ports.**
- **Refuelling facilities.**
- **Military Bases**
- **Networked Systems [GPS Timestamp]**

Features

- **Highly reliable operation.**
- **Easy installation and maintenance.**
- **Very long MTBF (calc. 10 year).**
- **Range 360km / 360 degrees**
- **Low weight and low power consumption.**
- **Fixed or portable design.**

Description

The 4500-LSS is based on a proven avionics lightning detection processor and was designed to meet the critical need for integrated thunderstorm detection at airports and terminal areas in safety critical operations such as refueling. It provides cost-effective and reliable single-point omni-directional thunderstorm detection. The 4500 LSS Long Range lightning sensor allows monitoring thunderstorm cell development, assessing severity, and forecasting storm path and intensity.

The 4500-LSS Strike Processor correlates the electric and magnetic signatures of lightning strikes to provide range and azimuth information. The omni-directional range characteristics provide for discharges out to 200 nautical miles. The thunderstorm sensor will interface with most common communications interfaces and protocols. It has low power consumption, allowing its use in limited power applications. The electronics are housed in a double skinned weatherproof enclosure.

The sensor automatically performs complete self-testing to give an indication of sensor status on a routine basis. Its modular design allows for easy preventative and field maintenance, system check, and problem isolation and resolution.

Data Presentation

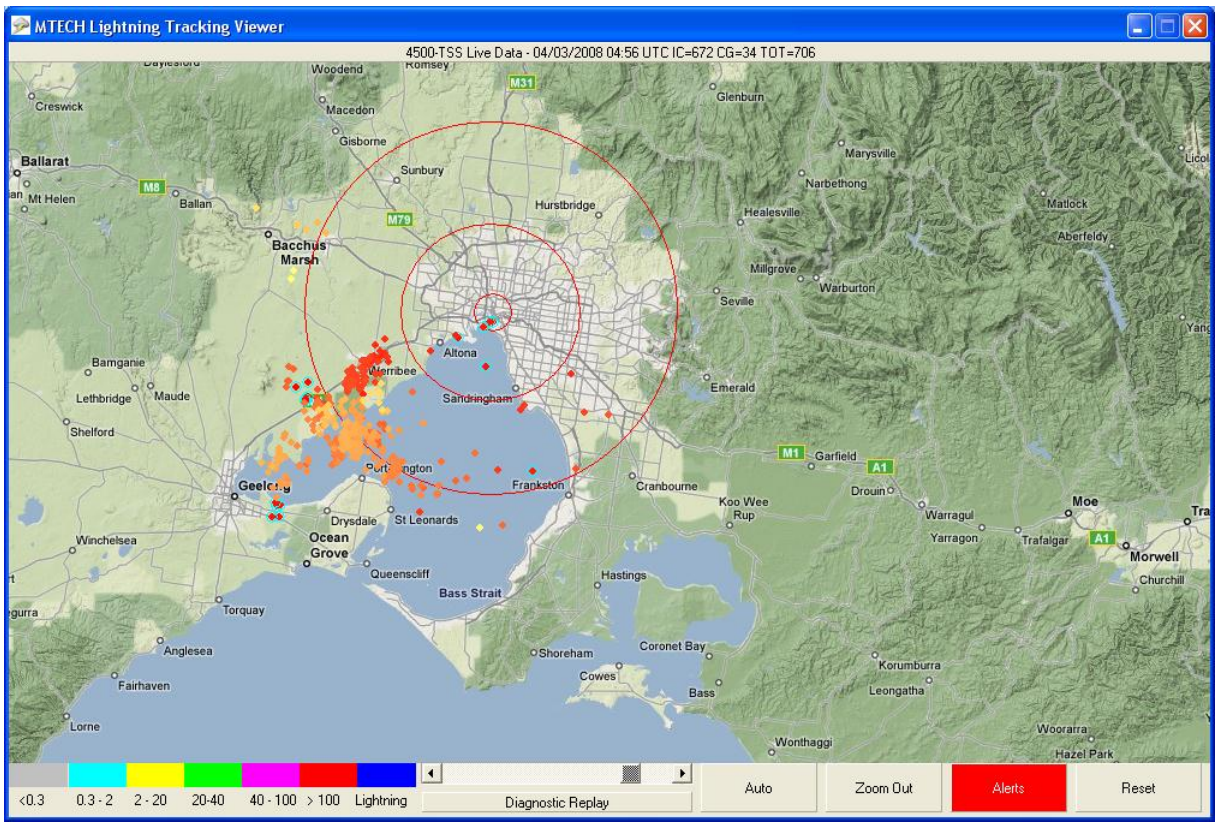
The 4500-LSS has outputs for different types of display and recording units. Strike data is transmitted to enable graphical display to the end user using 3rd party programmes. An RS-232C interface supports local control, test and data acquisition, an RS422 output is provided for longer distance data transmission. DIN rail based Wireless radio, microwave, conventional or DSL modems can be installed in the enclosure as options to deliver data from the sensor.

Maintenance

A Built-In Test system indicates failures in the event of a malfunction. The electronics are located in an easily replaceable subunit within the pole mounted enclosure .

Lightning Tracker Software

The MTECH MITAS application suite of software has the ability to display lightning strike data in textual and graphical forms. Lightning data is stored in an SQL database and can be retrieved for analysis at a later stage. Lightning displays are updated from the most recent data every minute. Depending on the size of your hard disk in your computer lighting strike data can be typically stored from 1 – 5 years. The software is based on the cross platform Java language and can be run on a range of operating systems including Linux, Solaris, or Windows



Lightning Tracker Viewer Program

The user configurable graphical display has a range of advanced capabilities including:

- MITAS Lightning display module can form part of airport AWOS display.
- Display of stroke or flash data in real time on maps
- Selectable range graticule and geographic feature overlays.
- Display of strike data in popup window.
- Color coded strike age.
- Query Individual strikes.
- View sequences of recorded strike data in Sequence Replay mode.
- Auto time lapse or scroll bar controlled Sequence Replay
- Overlay on real time weather radar images where available.
- Zoom using mouse
- Area selection

The MITAS Lightning Tracking software application is optional with each 4500-LSS.

Specifications

Technical Data	
Range	360 km 360 degrees
Update Rate	1 second
Detected Strike Types	Intra Cloud, Cloud to Cloud, Cloud to Ground
Data Format	Range and Azimuth
Azimuth	+/- 1°
Time Synchronisation	GPS
Communications	Radio, Copper or fiber data links Serial ASCII format, 300 to 9600 baud RS-232 at 9600 bps Automatic message or polled
Enclosure	Dual skin IP67
Operating Temp	-40 to +70C
Heating	Thermostatic Enclosure Heater for low temperature sites
Wind Load	0 to 120 knots
Humidity	0 to 100%
Power supply	11-13.8VDC 0.9 Amps or 230VAC 50/60 Hz 20VA
Colour	Olive Drab, White or Aviation Red / White.
Message Formats	TSS928 Mode H1 and H2 , Time Stamped Flash reports
MTBF	45000 hours ground benign
Standards Compliance	CE, TSOc110a RTCA/DO191 [engine only]
Options	Software for lightning display (4500-EXPLORER)
	Mobile version. (Including military specification case) (4500-TACTICAL)
	Bird Spike Kit (4500-BIRDSPIKE)
	Internal backup battery (4500-BATTERY)

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