Visibility Sensor

GMU – (General Marine Use) Sensor Offers Great Control

The GMU visibility sensor measures atmospheric visibility (meteorological optical range) by determining the amount of light scattered by particles (smoke, dust, haze, fog, rain, & snow) in the air that passes through the sample volume. A 42-degree forward scatter angle is used to ensure performance over a wide range of particle sizes. MOR is calculated by the user by converting the received signal strength (extinction coefficient, σ) using Koschmeider's formula, MOR (Km) = 3/σ.

PERFORMANCE

- In all weather conditions was a design prerequisite for the Visibility Sensor. An integrated, one-piece housing design keeps all cabling internal to the sensor for the ultimate protection against the elements. The sensor housing is made from anodized aluminum and the enclosures are rugged, UV-resistant fiberglass rated to IP66. Based on the proven experience of the NWS and FAA, the sensor uses a "look down" geometry to reduce window contamination and clogging from blowing snow.
- The windows use continuous duty anti-dew heaters and thermostatically controlled external hood heaters are optional for protection in extreme environments. All power and signal lines to the Visibility Sensor are protected with surge and EMI filtering to help guarantee uninterrupted service for the life of the sensor.

INSTALLATION AND MAINTENANCE

- Effort is minimal for the Visibility Sensor. A mounting flange located on the bottom of the Main Electronics Box mates with a user supplied 1-1/inch IPS pipe. A 1-inch IPS pipe mounting flange is also available. Power and signal connections are made through waterproof cable glands to terminal boards in the Main Electronics Box.

CALIBRATION

- Calibration of the fog detector in the field is as simple as attaching a factory supplied calibration fixture and following a procedure that takes less than 30 minutes. Semiannual calibration is recommended.

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Technical Details	
Visibility Range	30m to 16km standard – 10m to 10km optional
Extinction Range	100 – 0.1863km-1 standard -300 -0.30km-1 option
Accuracy	+/-10% RMSE
Time Constant	60 sec.
Scatter Angle	42 deg nominal
Source	880NM LED
Output Standard	0-10VDC
Output Options	0-5V DC analog, 4-20mA, Serial RS-232, RS-422 or RS-485, Control Relay
AC Version	100-240 VAC, 24 VA; 75 VA w/ Hood Heaters
DC Input	10-36 VDC, 6 VA Nominal; 18 VA w/ Hood Heaters
Size	889mm W x 292mm H x 305mm D
Weight	8kg
Operating Temperature	-40 C to 60 C
Protection	IP66 (NEMA 4X)
Operating Humidity	0-100%
Standards	CE

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