FOG SENTRY VISIBILITY SENSOR

FEATURES

- **16 km (10 mile) range**
- **Flexible Power and Output Options**
- **Field Repairable with Test Points and Indicators**
- **EMI and Surge Protection on Power and Signal Lines**
- **Easy Installation and Field Calibration**

The Fog Sentry™ is an infrared, forward scatter sensor that builds on the findings of years of visibility sensor testing by the National Weather Service and Federal Aviation Administration. Technical papers published by these organizations state the need for a 42 degree scatter angle for optimal performance in fog and snow as well as downward looking heads to reduce lens blockage by blowing snow. The Fog Sentry™ has both of these design elements!

The Fog Sentry™ 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, sigma) using Koschmeider's formula, MOR (Km) = 3/sigma. Performance in all weather conditions was a design prerequisite for the Fog Sentry™. 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 offered for protection in extreme environments. All power and signal lines to the Fog Sentry™ 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 Fog Sentry™. A flange located on the bottom of the sensor signal processing box mates with a user supplied 1-1/2 inch IPS pipe. Power and signal connections are made through waterproof cable glands to terminal boards in the Signal Processing Box.

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

SPECIFICATIONS

PERFORMANCE

Range	30 m to 16 km (other ranges available)
Accuracy	±10%
Time Constant	60 sec
Scatter Angle	42° nominal
Source	880 nm LED
Outputs	0-10 VDC standard 0-5 VDC optional Optional: 4-20 ma, 4-20 ma isolated, control relay, diagnostic relay, RS-232C, RS-422, RS-485

ELECTRICAL SPECIFICATIONS

Power Requirements	AC Version:	100-240 VAC, 24 VA; 75 VA w/ Hood Heaters
	DC Version:	9-18 VDC, 6 VA; 18 VA w/ Hood Heaters

PHYSICAL SPECIFICATIONS

Weight	8 kg (18 lb)
Dimensions	889 mm W x 292 mm H x 305 mm D (35 in x 11.5 in x 12 in)
Mounting	See Table Below

ENVIRONMENTAL SPECIFICATIONS

Temperature	-40° to +60°C (-40°F to +140°F)
Humidity	0 – 100%
Physical Protection	IP66 (NEMA-4X)

ORDERING INFORMATION

Fog Sentry™ Visibility Sensor Model P/N SVS1-xx-y-H-P where:

"xx" = mains voltage	AC = 100-240 VAC, 50/60 Hz DC = 10-36 VDC
"y" = analog output	1 = 0-10 VDC 2 = 0-5 VDC A = 4-20 ma single-ended B = 4-20 ma isolated C = Control relay #1 D = Diagnostic relay E = Control relay #2
"y" = serial output	MA = RS-232 serial data MB = RS-422 serial data MF = RS-485 serial data
"H" = hood heaters	H = yes [blank] = none
"P" = pipe mounting flange	[blank] = standard 1-1/2" size P = 1" pipe flange

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