Sentry™
Visibility Sensor

- - - Key features - - -

- 16 km (10 mile) visibility range
- Proven 42-degree forward scatter angle
- Compact, lightweight package
- Flexible output options
- Ice-resistant “look down” geometry
- Simple installation & maintenance

EnviroTech Sensors Inc.

www.envirotechsensors.com

Sentry™ 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 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 optional for protection in extreme environments. All power and signal lines to the 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 Sentry™. A flange located on the bottom of the sensor signal processing box mates with a user supplied 1-1/2 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 Signal Processing Box.

Calibration of the Sentry™ 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.

Specifications

Performance

Range: 30m to 16 km standard
10m to 10 km, optional

Accuracy: +/- 10% RMSE
Time Constant: 60 sec

Scatter Angle: 42 deg nominal
Source: 880 nm LED

Outputs: 0-10 VDC analog standard
0-5 VDC analog optional

Output Control Board optional with:
4-20 ma, 4-20 ma isolated, control relay, and/or diagnostic relay

Microprocessor Board optional with:
RS-232, RS-422, control relay, and/or diagnostic relay, 0-5 V analog

Power

AC Version: 100-240 VAC, 24 VA;
75 VA w/ Hood Heaters

DC Version: 10-36 VDC, 6 VA Nominal;
18 VA w/ Hood Heaters

Physical

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: Nominal 40 mm pipe, 48.3 mm OD max
(1-1/2" IPS pipe, 1.9 inch OD max)
(1" IPS pipe, 1.3 inch OD max optional)

Environmental

Operating Temperature: -40 to 60 C

Operating Humidity: 0-100%

Protection: IP66 (NEMA-4X)

CE

This equipment is in compliance with the essential requirements and other provisions of Low Voltage Directives 73/23/EEC and 89/336/EEC as amended by Directive 93/68/EEC.

Airport

Coastal/Maritime

- Applications for the Sentry™ Visibility Sensor -

Roads/Bridges

Met Stations

Ordering Information

Sentry™ Visibility Sensor Model SVS1-xx-y-z-H-P
Where "xx" = mains voltage (AC = 100-240 VAC, DC = 10-36 VDC)
"y" = analog output (1 = 0-10 VDC, 2 = 0-5 VDC)
"z" = output options (Blank = no, O = Output Option PCB, M = Microprocessor w/ RS-232 PCB)
"H" = hood heaters (Blank = no, H = yes)
"P" = mounting flange (Blank = 1-1/2", P = 1")

- See Option & Accessory Brochure and Price List for more information -

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