SWS-050

Visibility Sensor

The SWS-050 is optimized for use in applications where accurate and reliable visibility measurements are required.

- 10 m to 40 km measurement range
- Hood heating for use in extreme environments
- Easy integration of ALS-2 ambient light sensor
- Comprehensive self-test and maintenance data

The forward scatter measurement principle and unique design ensure the output is both accurate and reliable in all weather conditions and will not be influenced by local lights sources, even those that flash.

With a measurement range of 10 m to 40 km the sensor is suitable for use in road and aviation applications as well as meteorological observation networks.

Constructed from robust aluminium and finished with a high quality powder coat, the sensor will provide years of reliable service.

Heating of the optical window sand sensor hoods is provided as standard allowing use in the harshest of conditions. Both optical windows are monitored for contamination and the visibility output is automatically compensated to reduce maintenance requirements.

Easy integration of the ALS-2 ambient light sensor makes the SWS-050 perfect for use in aviation applications where both RVR and METAR data is needed.

Visibility measurement

Measures	visibility (MOR & EXCO)
Output	serial data
Range (visibility)	10 m to 40 km
Measurement error	≤4.5 % at 600 m ≤5.0 % at 1,500 m ≤5.1 % at 2 km ≤12.5 % at 15 km ≤20 % at 30 km
Measurement resolution	1 m or 10 m (default)
Measurement principle	forward scatter meter with 39° to 51° angle, centered at 45°

Outputs and reports

Output rate (seconds)	10 to 300 (selectable)
Serial outputs	RS-232, RS-422 and RS-485

Power requirements

Sensor power	9 to 36 V DC
Hood heating power	24 V AC or DC
Basic sensor **Window heaters** **Hood heaters**	3.5 W 1.7 W 24 W

Additional features

Hood heaters	fitted as standard
Window contamination monitoring	fitted as standard to both sensor head windows

Environmental

Operating temperature	–40 °C to +60 °C
Operating humidity	0 to 100 %RH
Protection rating	IP 66 / IP 67

Certification & compliance

CE Certified
EMC compliance with EN61326-1997, 1998, 2001
RoHS and WEEE compliant

Physical

Material	powder paint coated aluminum
Weight (including mounting kit)	4.3 kg
Length	811 mm
Warranty	3 years
Lifetime	> 10 years

Maintenance

Self-test capability	as standard
User confidence check	6 months (recommended)
Window cleaning	automatic compensation and warnings
Field calibration	with optional calibration kit

Included with sensor

The sensor is delivered in sturdy recyclable foam filled packaging with:

- Pole mounting kit (2 x U-bolt)
- User manual and calibration certificates

Accessories – optional

00.SWS.CABLE-D	SWS series data cable per meter
00.SWS.CABLE-P	SWS series power cable per meter
SWS.CAL	SWS series calibration kit
SWS.CASE	SWS series transit case
SWS.SK.100	SWS series spares kit
SWS.WTY100	1 year extended warranty
PW.MAINS	Mains power adaptor