ITO NAVAIDS Dutch Marine Navigation Aids

SWS-100 Visibility Sensor

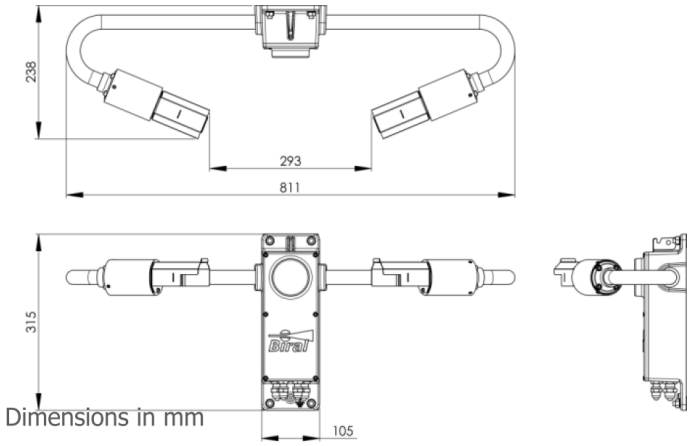
(SWS-100LW-MW Rev.1.3)

.

FEATURES

- 3.5W Power consumption basic sensor.
- Weight 4.3 kg.
- Selectable measurement resolution of 1m or 10m (default).
- Limited WMO 4680 present weather codes.
- Digital outputs.
- Compatible with ALS-2 Ambient Light Sensor.
- Comprehensive self-tested and maintenance data
- Visibility Sensor (Navi scope) is equipped with a Universal mounting bracket.

DIMENSIONS IN mm



VISIBILITY MEASUREMENT

Measures	Visibility (MOR)
Output	Digital, RS232
Range (visibility) (*Fixed, select at time of order*)	Default 10m to 2km Selectable 10m to 10km, 10m to 20km, 10m to 32km, 10m to 50km or 10m to 75km
Measurement Error	≤4.5% at 600m, ≤5.0% at 1,500m, ≤5.1% at 2km, ≤12.5% at 15km, ≤20% at 30km
Measurement resolution	1m or 10m (default)
Measurement principle	Forward scatter meter with 39° to 51° angle, centred at 45°

CERTIFICATION & COMPLIANCE

CE Certified
EMC compliance with EN1326-1997,1998,2001
RoHS and WEEEcompliant

SPECIFICATIONS

OUTPUTS & REPORTS	
Outputs rate (seconds)	10 to 300 (selectable)
Serial outputs	RS232
Present Weather Output	Selected WMO Table 4680 cordes
POWER REQUIREMENTS	
Sensor Power	9-36Vdc (Mains power adaptor available)
Basic sensor Window heaters	3.5W 1.7W
PHYSICAL	
Material	Powder paint coated aluminium
Weight (incl. Mounting kit)	4.3Kg
Length	811mm
Warranty	3 years
Lifetime	> 10 years
MAINTENANCE	
Self-test capability	Fitted as standard
User confidence check	6 months recommended
Window Cleaning	Automatic compensation and warnings
Field calbiration	With optional calibraition kit
ENVIRONMENAL	
Operating temperature	-40˚C to +60˚C
Operating humidity	0 – 100% RH
Protextion rating	IP66
ADDITIONAL FEATURES	
Window heaters	Fitted as standard to both sensor head windows. Use controlled by sensor settings; Always on, Always off, Window misting controlled.
Window contamination monitoring	Fitted as standard to both sensor head windows.

ITO NAVAIDS Dutch Marine Navigation Aids

SENSOR CONFIGURATION INFORMATION

For a detailed explanation of the configuration options please refer to the table below.

SWS-100 Sensor

Housing:
- **10** – Powder paint coated aluminium (standard)
- **10A** – Hard coat anodized, powder coated

Hood Heating:
- **HV** – With heating
- **NH** – Without heating

Data Output:
- **J** – Standard outputs
- **K** – 0-20 mA as well as standard output
- **L** – 4-20 mA as well as standard output

Self-Test and Monitoring:
- **S** – Standard self-test and monitoring
- **A** – Advanced self-test and monitoring

Cable Glands:
- **PG** – Standard plastic cable glands
- **MG** – Single metal cable glands

Ambient Light Sensor Interface (ALS-2):
- **NA** – Without ALS-2 Interface
- **WA** – With ALS-2 Interface

Configuration:
- **RC** – Regular configuration
- **SC** – Special configuration

Example: *10A.HV.J.A.PG.NA.RC* (Please use this code when ordering your sensor).

Default visibility range: 10m to 2km. *If a different range is required please order a 'special configuration' (SC) and state the required range on your order from the options below:*

10m to 10km ☐ 10m to 20km ☐ 10m to 32km ☐ 10m to 50km ☐ 10m to 99.99km ☐

Configuration Options Explained

Option	Description
Housing Options	The sensor enclosure is aluminium, it is corrosion protected using either a chemical conversion coat with a powder coat paint finish or hard coat anodizing and a powder coat paint finish. The hard coat anodized with paint finish is recommended for offshore and marine environments. Option **10**: Powder coated aluminium (standard) Option **10A**: Hard coat anodized, powder coated
Heating Options	Heated hoods are available to stop snow from accumulating around the optical window. The hood heating option is only required in regions where snow is experienced. Option **HV**: Hood heating included Option **NH**: No hood heating
Data Output	The sensor has RS232, RS422 and RS485 serial output capabilities as well as a 0-10V analogue output representing visibility (MOR) in the standard configuration. A current output is available as an option. Option **J**: Standard outputs Option **K**: Standard outputs plus 0-20mA Option **L**: Standard outputs plus 4-20mA
Self-Test & Monitoring	The sensor may be configured for either Standard or Advanced Self-Test. The standard self-test option provides monitoring of all the essential sensor functions and contamination of the transmitter window. The advanced self-test option adds receiver window contamination monitoring and receiver sensitivity monitoring. Monitoring of receiver contamination is useful in applications where different levels of contamination may occur on the sensor windows, for example where strong or gusty winds are experienced. Option **S**: Standard Self-Test Option **A**: Advanced Self-Test
Cable Glands	The sensor may be supplied with either four plastic cable glands or a single metal cable gland for user cable entry. The plastic glands accommodate cables from 3.5 to 10mm Ø. The metal gland is suitable for cables 9mm to 16mm Ø. Option **PG**: Four plastic cable glands Option **MG**: Single metal cable gland
ALS-2 Interface	The sensor may be configured to allow direct connection of the ALS-2 Ambient Light Sensor. The Ambient Light Sensor is typically used in airport applications where Runway Visual Range (RVR) must be calculated. Option **NA**: Without Ambient Light Sensor Interface Option **WA**: With Ambient Light Sensor Interface
Configuration	Reserved for customer specific configurations. Option **RC**: No customer specific configuration Option **SC**: Special customer specific configuration

ITO NAVAIDS Dutch Marine Navigation Aids

MOUNTED ON BRACKET