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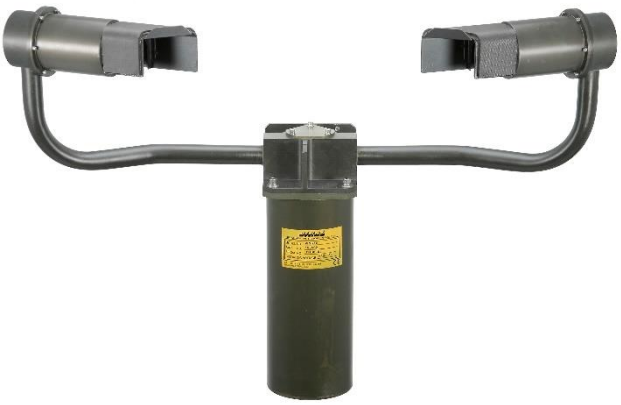
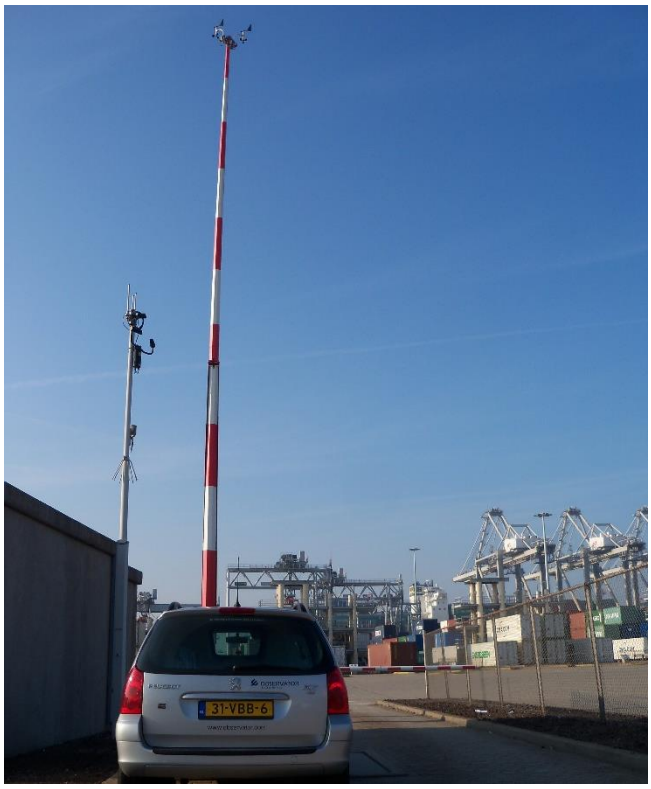


VPF-710 Visibility Sensor



VPF-710 on a container terminal

Datasheet

VPF-710 Visibility Sensor

The VPF-710 Visibility sensor provides high quality visibility measurement in a compact and highly robust package.

The open design of the sensor head allows the free passage of air ensuring the visibility measurement is as accurate as possible in all conditions.

Other features of the design ensure the correct response to all precipitation types as well as smoke and dust.

The VPF-710 is highly resistant to disturbance from nearby light sources such as aviation obstacle warning lights, both constant and flashing. Even the latest generation of IR obstacle lights are not a problem.

Features

- Measures visibility and fog density
- Proven reliable measurement in all weather conditions
- Highly corrosion resistant hard coat anodised finish
- Window contamination monitoring and compensation
- Unaffected by obstacle warning lights
- Mains or DC powered
- 10m to 75Km measurement range

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General

Measurement Principle

The VPF-710 sensor uses forward scatter meter technolo-gy to measure visibility in all weather conditions. The sen-sor calculates EXCO (the atmospheric EXtinction COeffi-cient) by measuring the amount of light scattered by small suspended particulates (ie fog, haze and smoke aerosols) and larger particles (ie rain, snow, ice pellets, drizzle and mist) passing through the sample volume. From this EXCO value the MOR (Meteorological Optical Range) and thus visibility is determined.

Data Output

The sensor is configured with RS-232C signal output as standard with RS-422 communications available as an option. The data is output in various ASCII data strings, such as a small compressed data string, expanded data string and monitoring data string amongst others. The unit can be set in either automatic or polled mode and data sent to a printer or to a PC for tagging, processing and archiving.

Maintenance, calibration, self test and monitoring

The sensor is fully calibrated at the time of manufacture. Routine maintenance, including a check on calibrations, can be performed easily by one person in a matter of a few minutes and a re-calibration (although this should never be required) takes only slightly longer. The sensor condition and performance can be monitored remotely using the self-test and monitoring system detailed overleaf.

Operation in temperature extremes

The sensor operates in temperatures ranging from -50°C to +60°C. For operation below - 30°C the heated version is recommended (please refer to the variants overleaf).

Specifications

• Measures	Visibility
• Output	Serial Data
• Range	10 m to 75 km (33 ft to 47miles)
• Accuracy	+/- 2%
• Light source	infra-red
• Light source wavelength	880 nm
• *FSM angle used	45º
• Measurement Geometry	horizontal
• Sample volume size (cm3)	400
• Power supply	mains, battery or solar
• Power requirements	Sensor head 2.0 W Window heaters 1.7 W
• Hood heating available	Yes (option)
• Hood heater power requirements	30 W
• Operating temp. range	- 50ºC to +60ºC (-58 to140ºF)
• Humidity	0 - 100%
• IP rating	IP66
• Weight	4.9kg DC / 6.1kg AC
• Output rate (seconds)	10 to 300 (selectable)
• Method of Construction	salt-dip brazing
• Materials	hard-anodized aluminium
• Reliability	> 8 years mean time before failure
• Undisturbed sample vol.	Yes

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