

Vaisala Visibility Sensor PWD50

Dependable operation of automated observation networks is a must today. Maritime observing systems need to work in inhospitable environments and also meteorological institutes face tough productivity and performance prerequisites. The Vaisala Visibility Sensor PWD50 answers these needs with a mixture of robustness, dependability, versatility and reliability. The PWD50 measures visibility from 10 m up to 35 km.



Features/Benefits

- Accurate, traceable measurement of prevailing visibility
- Upgradable
- Versatile and easy to install; easy to integrate
- Robust and dependable
- Weather-proof design reduces need for maintenance

Accurate Visibility Measurement

Calibrated with reference to a highly accurate transmissometer, the PWD50 uses the proven forward-scatter measurement principle to measure Meteorological Optical Range (MOR). The sensor optics are well-protected against contamination: the optical components point downwards and hoods protect the lenses against precipitation, spray and dust. This weather-proof

design helps sustaining accurate measurement results.

Versatility

The PWD50 architecture allows for easy integration to existing or newly designed systems in a cost efficient manner. The sensor can be mounted in many ways on existing masts. The electrical interfaces are in a single cable. Versatility is further enhanced with various options, such as pole masts, a selection of mounting

adapters, power supply cabinets, and a modem for long distance communication.

The PWD50 can also be upgraded with present weather sensing capabilities to PWD52. The upgrade enables a wide range of valuable outputs including present weather, precipitation type, precipitation rate and accumulation. These complement the versatile use of the sensor.

Robust and Dependable

The downward-facing sensor hoods protect the optical surfaces from contamination, resulting in low maintenance needs and costs. The optional hood heaters prevent the buildup of ice and/or snow in the optical path.

Solid Track Record

Thousands of PWD series sensors have been installed all around the world. They have undergone rigorous test programs. In the field, PWD sensors have demonstrated very low failure rates. They have proved their robustness in the harshest climates and most demanding conditions, ranging from offshore to desert and from airport to roadside.



PWD50 reports reliably meteorological visibility from 10 meters to 35 kilometers.

Technical Data

Visibility measurement

Operating principle	Forward scatter measurement
Measurement range (MOR)	10 ... 35000 m
Accuracy	±10 %, range 10 m ... 10000 m ±20 %, range 10 km ... 35 km

Electrical

Power supply	12 - 50 VDC (electronics) 24 VAC or 24 VDC for hood heater option
Power consumption	3 W
Options	
luminance sensor	2 W (24 V)
hood heaters	65 W (24 V)
Outputs	RS-232 or RS-485 (2-wire) Three programmable relay controls (open collector), visibility alarm thresholds and delays configurable, fault alarm relay 0 ... 1 mA, 4 ... 20 mA analog current

Mechanical

Dimensions	199 mm (h) x 695 mm (w) x 404 mm (d) (7.83" (h) x 27.36" (w) x 15.91" (d))
Weight	3 kg (6.61 lb.)

Environmental

Operating temperature	-40 ... +60 °C (-40 ... +140 °F)
Operating humidity	0 ... 100 %RH
Protection class	IP66

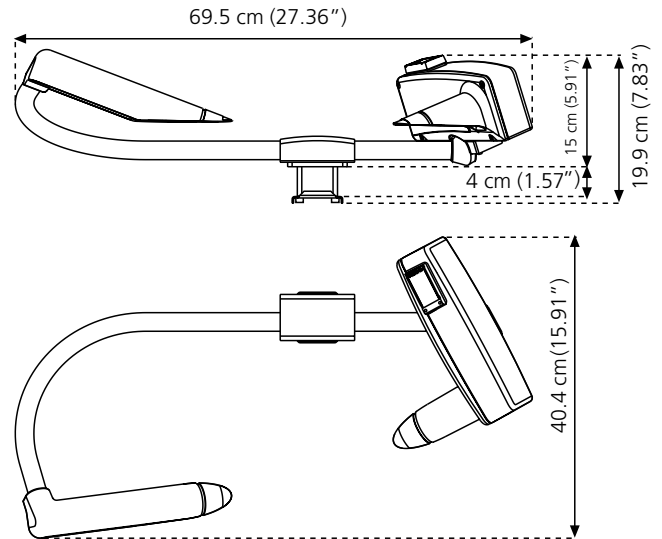
Electromagnetic compatibility

CE-compliant

Compliance has been verified according to the following EMC directives

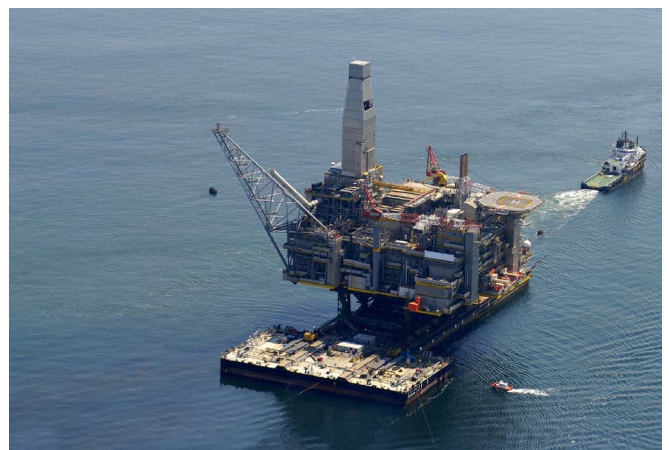
Verification subject	Standard
Radiated emissions	CISPR 16-1,16-2
Radiated susceptibility	IEC 61000-4-3,10 V/m
Conducted emissions	CISPR 16-1,16-2
Conducted susceptibility	IEC 61000-4-6
EFT immunity	IEC 61000-4-4
ESD immunity	IEC 61000-4-2
Surge	IEC 61000-4-5

Dimensions



Accessories/options

Interface unit with power supplies	115/230VAC
Pole mast	
Hood heaters for winter conditions	
Support arm for mast installations	
Pole clamp kit for mast top installations	
Luminance sensor PWL111	
Calibration set PWA12	
Maintenance cable 16385ZZ	



In addition to meteorological observation networks, PWD50 also suits well for use in offshore operations.

VAISALA

For more information, visit
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