



# WINDCAP® Ultrasonic Wind Sensor WXT532



## Features

- Triangular design ensures excellent data availability
- Maintenance-free with no moving parts
- Optional heating available
- Compact, durable, and robust
- Low power consumption
- IP66 housing with mounting kit
- mA output suitable for industrial applications
- Cost-effective
- Optional accredited wind calibration (MEASNET) available
- DNV GL Type Examination

Vaisala WINDCAP® Ultrasonic Wind Sensor WXT532 is designed for demanding applications where stable and inexpensive wind measurements are required.

### Proven Vaisala Performance

WXT532 incorporates decades of Vaisala experience in wind measurement using ultrasound to determine horizontal wind speed and direction. With no moving parts, the sensor has high sensitivity as the measurement time constant and starting threshold are virtually zero. This makes it superior to conventional mechanical wind sensors.

WXT532 is designed to operate without periodic field calibration and maintenance.

### Applications

WXT532 is ideal for use in marine applications as the housing with the mounting kit is water resistant. The sensor is also suitable for environmental monitoring, for example, for measuring wind speed and direction in automatic weather stations.

### Easy to Install

WXT532 is delivered fully assembled and configured from the factory. With Vaisala Configuration Software Tool you can change the settings, such as averaging times, output mode, update intervals, measured variables, and message contents.

The sensor can be mounted either on top of a pole mast or on a cross arm. When using the optional mounting kit, the north alignment needs to be performed only once.

### Heating

The optional heating available in WXT532 assists measurements in freezing or snowy weather conditions and in humid environments.

Since the heating circuit is independent of the operational power, separate power supplies can be used. Heating is switched on automatically at low temperatures, well before the freezing point.

### Low Power Consumption

WXT532 has very low power consumption: in idle mode the device typically consumes about 2 ... 3 mW.



DNV GL TYPE EXAMINATION CERTIFICATE No.  
TAA00000VF

# Technical Data

## Wind Measurement Performance

### Wind Speed

Observation range	0 ... 60 m/s (134 mph)
Response time	0.25 s
Available variables	Average, maximum, and minimum
Accuracy	±3 % at 10 m/s (22 mph)
Output resolution	0.1 m/s (km/h, mph, knots)

### Wind Direction

Azimuth	0 ... 360°
Response time	0.25 s
Available variables	Average, maximum, and minimum
Accuracy	±3.0° at 10 m/s (22 mph)
Output resolution	1°

### Wind Measurement Frame

Averaging time	1 ... 3600 s (= 60 min), at 1 s steps, on the basis of samples taken at 4, 2, or 1 Hz rate (configurable)
Update interval	1 ... 3600 s (= 60 min), at 1 s steps

## Inputs and Outputs

Operating voltage	6 ... 24 VDC (-10 ... +30 %)
Average power consumption	Minimum: 0.1 mA at 12 VDC (SDI-12 standby) Typical: 3.5 mA at 12 VDC with typical measuring intervals Maximum: 15 mA at 6 VDC (with constant measurement of all parameters)
Heating voltage	Options: DC, AC, full-wave rectified AC 12 ... 24 VDC (-10 ... +30 %) 12 ... 17 VACrms (-10 ... +30 %)
Digital outputs	SDI-12, RS-232, RS-485, RS-422
Communication protocols	SDI-12 v1.3 ASCII automatic and polled NMEA 0183 v3.0 with query option
Self-diagnostic	Separate supervisor message, unit/status fields to validate measurement stability
Start-up	Automatic, < 5 seconds from power on to the first valid output
Serial data interface	SDI-12, RS-232, RS-485, RS-422, USB connection
Baud rate	1200 ... 115 200

## Analog mA Output Options

When the analog output option is applied, digital communication is not available.

Wind speed	0 ... 20 mA or 4 ... 20 mA
Wind direction	0 ... 20 mA or 4 ... 20 mA
Load impedance	Max. 200 Ω
Update interval	Max. 4 Hz

## Options and Accessories

Vaisala Configuration Tool and USB service cable SP	220614
Cable USB RS-232/RS-485 1.4 m USB M12 SP	220782
Cable 2 m shielded 8-pin M12 SP	222287
Cable 10 m shielded 8-pin M12 SP	222288
Cable 10 m shielded 8-pin M12, connectors on both ends SP	215952
Cable 40 m shielded 12-pin, open end wires SP	217020
Bushing and grounding accessory kit	222109
Mounting kit	212792
Mounting accessory between Mounting kit and 60 mm tube	WMSFIX60
Bird Kit	212793

## Operating Environment

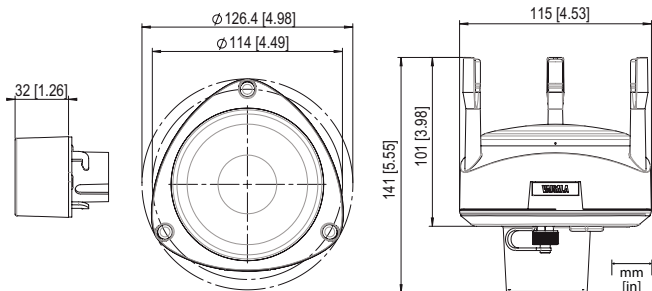
Operating temperature	-52 ... +60 °C (-60 ... +140 °F)
Storage temperature	-60 ... +70 °C (-76 ... +158 °F)
IP rating	Without mounting kit: IP65 With mounting kit: IP66

## Mechanical Specifications

Dimensions (H × Ø)	141 × 114 mm (5.48 × 4.49 in)
Weight	510 g (1.12 lb)

## Compliance

EMC compliance	IEC 61326-1 IEC 60945 IEC 55022:2010 Class B
Environmental	IEC 60068-2-1, 2, 6, 14, 30, 31, 52, 78 IEC60529 VDA 621-415
Maritime	DNVGL-CG-0339 IEC 60945



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