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Vaisala WINDCAP® Ultrasonic Wind Sensor WXT532



The Vaisala WINDCAP® Ultrasonic Wind Sensor WXT532.

Features/Benefits

- 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

Proven Vaisala Performance

The Vaisala WINDCAP® Ultrasonic Wind Sensor WXT532 incorporates decades of Vaisala experience in wind measurement using ultrasound to determine horizontal wind speed and direction.

With no moving parts, the WXT532 has high sensitivity as the measurement time constant and starting threshold are virtually zero. This makes it superior to the conventional mechanical wind sensors.

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

Applications

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

Easy to Install

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

The WXT532 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 the WXT532 assists measurements in the freezing or snowy weather conditions and humid environment.

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

Low Power Consumption

The WXT532 has very low power consumption; during the idle mode the device typically consumes about 2 ... 3 mW.

DNV GL TYPE EXAMINATION
CERTIFICATE No. TAA00000VF

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Technical Data

Wind

WIND SPEED	
Range	0 ... 60 m/s
Response time	0.25 s
Available variables	average, maximum, and minimum
Accuracy	±3% at 10m/s
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
Output resolution	1°
MEASUREMENT FRAME	
Averaging time	1 ... 3600 s (=60 min), at one second steps on the basis of samples taken at 4, 2 or 1 Hz rate (configurable)
Update interval	1 ... 3600 s (=60 min), at one second steps

Analog mA Output Options

Wind speed	0 … 20 mA or 4 … 20 mA
Wind direction	0 … 20 mA or 4 … 20 mA
Load impedance	200 Ω max
Update interval	4 Hz max

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

General

Self-diagnostics	separate supervision message, unit/status fields to validate measurement quality
Start-up	automatic, <10 s from power on to the first valid output
Serial data interface	SDI-12, RS-232, RS-485, RS-422, USB connection
Communication protocols	SDI-12 v1.3, ASCII automatic & polled, NMEA 0183 v. 3.0 with query option
Baud rate	1200 ... 115 200
Operating temperature	-52 ... +60 °C (-60 ... +140 °F)
Storage temperature	-60 ... +70 °C (-76 ... +158 °F)
Dimensions	
height	141 mm (5.48")
diameter	114 mm (4.49")
weight	510 g (1.12 lb)
Housing	IP65
Housing with mounting kit	IP66

Inputs and Outputs

Power Supply	
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)
Heating voltage	
Options:	DC, AC, full-wave rectified AC 12... 24 VDC (-10 % ... + 30 %) 12 ... 17 VACrms (-10 % ... +30 %)

Accessories

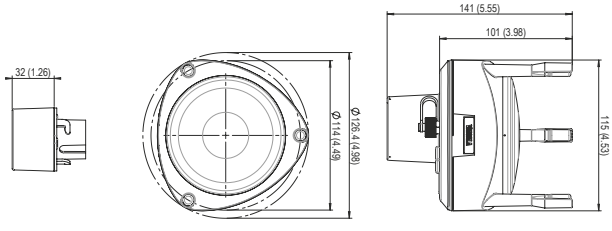
Bird kit	212793
Mounting kit	212792
Mounting accessory between Mounting kit and 60 mm tube	WMSFIX60
Cable USB RS-232/RS-485 1.4 m USB M12 SP	220782
USB service cable delivered with the Vaisala Configuration Tool	220614
Cable 2 m shielded 8-pin M12 SP	222287
Cable 10 m shielded 8-pin M12 SP	222288
Cable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

Test Standards

EMC	IEC61326-1:2013; IEC60945:2008; IEC55022:2010 Class B
Environmental	IEC60068-2-1,2,6,14,30,31,52,78; IEC60529; VDA 621-415
Maritime	DNVGL-CG-0339; IEC60945

Dimensions

Dimensions in mm (inches)



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DNV GL TYPE EXAMINATION CERTIFICATE No. TAA00000VF

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