



Features

- Right parameter combination
- Easy to use and integrate
- Weather parameter hub
- Analog sensors can be added
- Compact, lightweight
- Low power consumption
- mA output suitable for industrial applications
- Cost-effective
- DNV GL Type Examination

Vaisala Weather Transmitter WXT530 is a unique series of sensors with parameter combinations that allow you to choose what is right for your application. WXT530 is a flexible, integrated building block for weather applications. WXT530 series improves your grip on weather.

Flexibility

WXT530 is a series of weather instruments that provides 6 of the most important weather parameters: air pressure, temperature, humidity, rainfall, wind speed and direction through various combinations. You can select the transmitter with the needed parameter(s) into your weather application, with a large variety of digital communication modes and wide range of voltages. A heated option is available. Low power consumption enables solar panel applications. WXT530 Series focuses on maintenance-free operations in a cost-effective manner.

Integration

The series offers analog input options for additional third-party analog sensors. With the help of the built-in analog-to-digital converters, you can turn WXT530 into a small, cost-effective weather parameter hub.

Additional parameters include solar radiation and external temperature sensor. Further, the analog mA output for wind speed and wind direction enables a wide variety of industrial applications. WXT530 exceeds IEC60945 maritime standard.

Solid performance

WXT530 Series has a unique Vaisala solid state sensor technology. To measure wind, Vaisala WINDCAP® ultrasonic wind sensors are applied to determine horizontal wind speed and direction. Barometric pressure, temperature, and humidity measurements are combined in the PTU module using capacitive measurement for each parameter. This module is easy to change without any contact with the sensors. The precipitation measurement is based on the unique acoustic Vaisala RAINCAP® Sensor without flooding, clogging, wetting, and evaporation losses.

Option	Rain	Wind	PTU ¹⁾
WXT531	✓		
WXT532		✓	
WXT533	✓	✓	
WXT534			✓
WXT535	✓		✓
WXT536	✓	✓	✓

¹⁾ PTU is a compact changeable module. Vaisala recommends changing it every 2 years.



DNV GL TYPE EXAMINATION
CERTIFICATE No. TAA00000VF

Technical data

Barometric pressure measurement performance

Observation range	600 ... 1100 hPa
Accuracy (for sensor element)	±0.5 hPa at 0 ... +30 °C (+32 ... +86 °F) ±1 hPa at -52 ... +60 °C (-60 ... +140 °F)
Output resolution	0.1 hPa / 10 Pa / 0.001 bar / 0.1 mmHg / 0.01 inHg

Air temperature measurement performance

Observation range	-52 ... +60 °C (-60 ... +140 °F)
Accuracy (for sensor element) at +20 °C (+68 °F)	±0.3 °C (±0.54 °F)
Output resolution	0.1 °C (0.1 °F)

Relative humidity

Observation range	0 ... 100 %RH
Accuracy (for sensor element)	±3 %RH at 0 ... 90 %RH ±5 %RH at 90 ... 100 %RH
Output resolution	0.1 %RH

Wind

Wind speed

Observation range	0 ... 60 m/s (134 mph)
Reporting range	0 ... 75 m/s (168 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°
Averaging time	1 ... 3600 s, sample rate 1, 2, or 4 Hz (configurable)

Mechanical specifications

IP rating	IP65, with mounting kit: IP66
-----------	-------------------------------

Weight

WXT534, WXT535, WXT536	0.7 kg (1.54 lbs)
WXT531, WXT532, WXT533	0.5 kg (1.1 lbs)

Operating environment

Operating temperature	-52 ... +60 °C (-60 ... +140 °F)
Storage temperature	-60 ... +70 °C (-76 ... +158 °F)
Relative humidity	0 ... 100 %RH
Pressure	600 ... 1100 hPa
Wind ¹⁾	0 ... 60 m/s (0 ... 134 mph)

¹⁾ Due to the measurement frequency used in the sonic transducers, RF interference in the 200 ... 400 kHz range can disturb wind measurement.

Precipitation

Collecting area	60 cm ² (9.3 in ²)
Rainfall	Cumulative accumulation after the latest automatic or manual reset
Output resolution	0.01 mm (0.001 in)
Field accuracy for daily accumulation	Better than 5 %, weather-dependent
Duration	Counting each 10-second increment whenever droplet detected
Duration output resolution	10 s
Intensity	Running 1-minute average, 10 s steps
Intensity observation range	0 ... 200 mm/h (0 ... 7.87 in/h) (broader with reduced accuracy)
Intensity output resolution	0.1 mm/h (0.01 in/h)
Hail	Cumulative amount of hits against collecting surface
Output resolution	0.1 hits/cm ² (1 hits/in ²), 1 hit
Intensity output resolution	0.1 hits/cm ² h (1 hits/in ² h), 1 hit/h

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 (typical measuring intervals) Maximum: 15 mA at 6 VDC (constant measurement of all parameters)
Heating voltage	DC, AC, or full-wave rectified AC 12 ... 24 VDC (-10 ... +30 %) 12 ... 17 VACrms (-10 ... +30 %)
Typical heating current	12 VDC: 800 mA, 24 VDC: 400 mA
Digital outputs	SDI-12, RS-232, RS-485, RS-422
Communication protocols	SDI-12 v1.3, Modbus RTU, ASCII automatic and polled NMEA 0183 v3.0 with query option

WXT536 analog input options

Solar radiation	0 ... 25 mV
Voltage input	0 ... 2.5 V, 0 ... 5 V, 0 ... 10 V
Tipping bucket rain gauge	0 ... 100 Hz
Temperature (Pt1000)	800 ... 1330 Ω

WXT532 analog mA output options

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

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

