

Vaisala Weather Transmitter WXT530 Series



Benefits

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

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

Flexibility

The WXT530 is a series of weather instruments that provides six of the most important weather parameters, which are 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. There is a heated option available. Low power consumption enables solar panel applications. The Vaisala 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 the Weather Transmitter WXT530 into a small, cost effective weather parameter hub. Additional parameters include the solar radiation and external temperature sensor. Further, the analog mA output for wind speed and direction

enables wide variety of industrial applications. The WXT530 exceeds IEC60945 maritime standard.

Solid Performance

The WXT530 Series has a unique Vaisala solid state sensor technology. To measure wind the ultrasonic Vaisala WINDCAP 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.



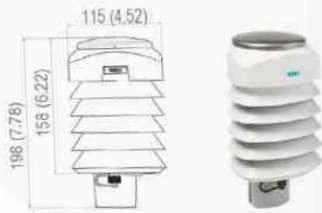
WXT530 Weather Transmitter Series



WXT534

MEASURES:

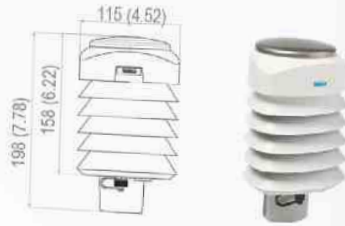
- Air Pressure
- Temperature
- Humidity



WXT535

MEASURES:

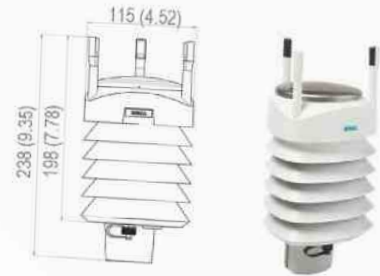
- Air Pressure
- Temperature
- Humidity
- Rainfall



WXT536

MEASURES:

- Air Pressure
- Temperature
- Humidity
- Rainfall
- Wind Speed
- Wind Direction



Analog Inputs



Technical Data

Wind

WIND SPEED	
Range	0 ... 60 m/s
Response time	0.25 s
Available variables	average, maximum, and minimum
Accuracy	±3 % at 10 m/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°

Precipitation

RAINFALL		Cumulative accumulation after the latest auto or manual reset
Collecting area		60 cm ²
Output resolution		0.01 mm (0.001 in)
Field accuracy for long-term accumulation		Better than 5 %, weather dependent
RAIN DURATION		Counting each 10-second increment whenever droplet detected
Output resolution		10 s
RAIN INTENSITY		Running 1-minute average in 10-second steps.
Range		0 ... 200 mm/h (broader range with reduced accuracy)
Output resolution		0.1mm/h, 0.01 inches/h
HAIL		counting each 10-second increment whenever hailstone is detected
Output resolution		0.1 hits/cm ² , 0.01 hits/in ² , 1 hits
HAIL DURATION		counting each 10-second increment whenever hailstone is detected
Output resolution		10 s
HAIL INTENSITY		1-minute running average in 10-second steps
Output resolution		0.1 hits/cm ² h, 1 hits/in ² h, 1 hits/h

Barometric Pressure

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

Range		-52 ... +60 °C (-60 ... +140 °F)
Accuracy (for sensor element) at +20 °C (+68 °F)		±0.3 °C (0.5 °F)
Output resolution		0.1 °C (0.1 °F)

Relative Humidity

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

Inputs and Outputs

Operating voltage		6 ... 24 VDC (-10% ... +30%)
Average current consumption		
Minimum		0.1 mA @ 12 VDC (SDI-12 standby)
Typical		3.5 mA at 12 VDC (with typically measuring intervals)
Maximum		15 mA @ 6 VDC (with constant measurement of all parameters)
Heating Options: DC, AC, full-wave rectified AC		
Typical voltage		12 ... 24 VDC / 12 ... 17 VACrms (-10% ... +30%)
Typical current		0.8 A @ 12 VDC : 0.4 A @ 24 VDC
Digital outputs		SDI-12, RS-232, RS-485, RS-422
Communication protocols		SDI-12 v1.3, ASCII automatic & polled, NMEA 0183 v3.0 with query option

Analog Input Options

Solar radiation		CMP3
Level measurement		IRU-9429
Tipping Bucket Rain Gauge		RG13
Temperature		PT1000

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

General Conditions

Housing protection class		IP65 (without mounting kit) IP66 (with mounting kit attached)
Storage temperature		-60 ... +70 °C (-76 ... 158°F)
Operating temperature		-52 ... +60 °C (-60 ... +140 °F)
Relative humidity		0 ... 100 %RH
Pressure		600 ... 1100 hPa
Wind		0 ... 60 m/s

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

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