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

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





Technical Data

Barometric Pressure

Range	600 1100 hPa
Accuracy (for	±0.5 hPa at 0 +30 °C (+32 +86 °F)
sensor element)	±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)	±0.3 °C (0.17 °F)
at +20 °C (+68 °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
PTU Measuring interval	1 3600 s (= 60 min),
	at one second steps

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Precipitation	
RAINFALL	Cumulative accumulation after
	the latest auto or manual reset
Collecting area	$60~\mathrm{cm^2}$
Output resolution	0.01 mm (0.001 in)
Field accuracy for long-	Better than 5 %, weather dependent
term accumulation	
RAIN DURATION	Counting each 10-second increment
	whenever droplet detected
Output resolution	10 s
RAIN INTENSITY	Running one minute average
	in 10 second steps.
Range	0 200 mm/h (broader range
	with reduced accuracy)

Inputs and Outputs

inputs and Outputs			
Operating voltage	624 VDC (-10% +30%)		
Average current con	nsumption		
Minimum	0.1 mA @ 12 VDC (SDI-12 standby)		
Typical	3 mA @ 12 VDC (w/default 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 / 1217 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	SDI-12 v1.3, ASCII automatic & polled,		
protocols	NMEA 0183 v3.0 with query option		

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°

MEASUREMENT FRAME

Averaging time $1 \dots 3600 \text{ s} (= 60 \text{ min})$, at 1 s steps, on the basis of samples taken at 4, 2 or 1 Hz rate (configurable) Update interval $1 \dots 3600 \text{ s} (= 60 \text{ min})$, at 1 s steps

Analog Input Options

Parameter	Element	Range	Input	Excitation	Resolution
Temperature PT1000	Resistor	800 1330 Ω	2 wire 4 wire	2,5 V	16 bits
Solar Radiation K&Z CMP3	Thermopile	0 25 mV	4 ΜΩ	-	12 bits
Level measurement IRU-9429S	Voltage	0 2,5 V 0 5 V 0 10 V	>10 kΩ	-	12 bits
Tipping Bucket RG13	Frequency	0 100 Hz	18 kΩ	3.5 V	-

Analog mA Output Options

Wind speed	0 20 mA or 4 20 mA
Wind direction	0 20 mA or 4 20 mA
Load impedance	$200~\Omega$ max

General Conditions

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

Additional technical information can be found in the user guide and on www.vaisala.com



Please contact us at www.vaisala.com/requestinfo



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