

VAISALA

Vaisala Weather Transmitter WXT520

Access to Real Time Weather Data



The WXT520 has an automatic control circuit that switches the heating on at low temperatures.

Features/Benefits

- Measures 6 most essential weather parameters
- Accurate and stable
- Low power consumption – works also with solar panels
- Compact, light-weight
- Easy to install with one-bolt mounting method
- No moving parts
- Heating available
- Vaisala Configuration Tool for pc
- USB connection
- IP66 housing with mounting kit
- Applications: weather stations, dense networks, harbors, marinas

WXT520

The Vaisala Weather Transmitter WXT520 measures barometric pressure, humidity, precipitation, temperature, and wind speed and direction.

To measure wind speed and direction, the WXT520 has the Vaisala WINDCAP® Sensor that uses ultrasound to determine horizontal wind speed and direction.

The array of three equally spaced transducers on a horizontal plane is a Vaisala specific design. Barometric pressure, temperature, and humidity measurements are combined in the PTU module using capacitive measurement for each parameter. It is easy to change the module without any contact with the sensors.

The WXT520 is immune to flooding clogging, wetting, and evaporation losses in the rain measurement.

Measuring Acoustic Precipitation

The WXT520 precipitation measurement is based on the unique Vaisala RAINCAP® Sensor, which detects the impact of individual rain drops. The signals exerting from the impacts are proportional to the volume of the drops. Hence, the signal from each drop can be converted directly to the accumulated rainfall.

The WXT520 measures accumulated rainfall, rain intensity and duration of the rain — all in real time.

The Vaisala RAINCAP® Sensor is the only maintenance-free precipitation sensor on the market.

Technical Data

Wind

SPEED	
range	0 ... 60 m/s
response time	250 ms
accuracy	± 0.3 m/s or $\pm 3\%$, whichever is greater
0 ... 35 m/s	$\pm 5\%$
35 m/s ... 60 m/s	0.1 m/s, 0.1 km/h, 0.1 mph, 0.1 knots
DIRECTION	
azimuth	0 ... 360°
response time	250 ms
accuracy	$\pm 3^\circ$
output resolution and unit	1°

Liquid Precipitation

RAINFALL	cumulative accumulation after the latest automatic or manual reset
output resolutions and units	0.01 mm, 0.001 inches
accuracy	5%*
RAINFALL DURATION	counting each ten-second increment whenever water droplet is detected
output resolution and unit	10 s
RAIN INTENSITY	one-minute running average in ten-second steps
range	0 ... 200 mm/h (broader range with reduced accuracy)
output resolutions and units	0.1 mm/h, 0.01 inches/h
HAIL	cumulative amount of hits against the collecting surface
output resolutions and units	0.1 hits/cm ² , 0.01 hits/in ² , 1 hits
HAIL DURATION	counting each ten-second increment whenever hailstone is detected
output resolution and unit	10 s
HAIL INTENSITY	one-minute running average in ten-second steps
output resolutions and units	0.1 hits/cm ² h, 1 hits/in ² h, 1 hits/h

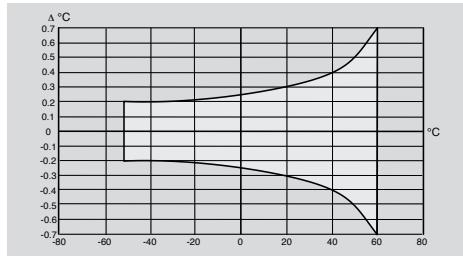
* Due to the nature of the phenomenon, deviations caused by spatial variations may exist in precipitation readings, especially in a short time scale. The accuracy specification does not include possible wind induced errors.

Air Temperature

Range $-52 \dots +60^\circ\text{C}$ ($-60 \dots +140^\circ\text{F}$)

Accuracy for sensor at $+20^\circ\text{C}$ $\pm 0.3^\circ\text{C}$ ($\pm 0.5^\circ\text{F}$)

Accuracy over temperature range (see graph below)



Output resolutions and units

$0.1^\circ\text{C}, 0.1^\circ\text{F}$

Barometric Pressure

Range $600 \dots 1100 \text{ hPa}$

Accuracy $\pm 0.5 \text{ hPa}$ at $0 \dots +30^\circ\text{C}$ ($+32 \dots +86^\circ\text{F}$)

$\pm 1 \text{ hPa}$ at $-52 \dots +60^\circ\text{C}$ ($-60 \dots +140^\circ\text{F}$)

Output resolutions and units $0.1 \text{ hPa}, 10 \text{ Pa}, 0.0001 \text{ bar}, 0.1 \text{ mmHg}, 0.01 \text{ inHg}$

Relative Humidity

Range $0 \dots 100 \text{ %RH}$

Accuracy $\pm 3 \text{ %RH}$ within $0 \dots 90 \text{ %RH}$

$\pm 5 \text{ %RH}$ within $90 \dots 100 \text{ %RH}$

Output resolution and unit 0.1 %RH

General

Operating temperature $-52 \dots +60^\circ\text{C}$ ($-60 \dots +140^\circ\text{F}$)

Storage temperature $-60 \dots +70^\circ\text{C}$ ($-76 \dots +158^\circ\text{F}$)

5 ... 32 VDC

Typical power consumption 3 mA at 12 VDC (with defaults)

5 ... 32 VDC / 5 ... 30 VAC_{RMS})

Serial data interface SDI-12, RS-232, RS-485, RS-422, USB connection,

650 g (1.43 lb)

Weight IP65

Housing IP66

Electromagnetic Compatibility

Complies with EMC standard EN61326-1; Industrial Environment IEC standards IEC 60945/61000-4-2 ... 61000-4-6

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