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# 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
- Applications: weather stations, dense networks, harbors, marinas
- 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

## 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.

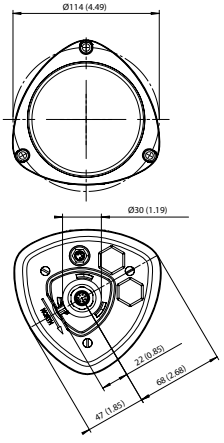
Hence, the signal from each drop can be converted directly to the accumulated rainfall.

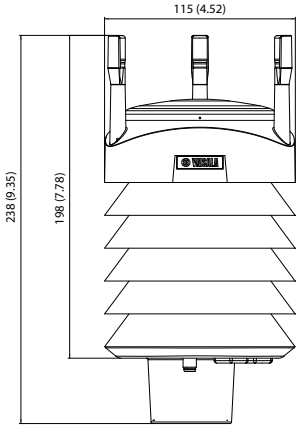
The WXT520 measures accumulated rainfall, rain intensity and duration of the rain – all in real time.

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

## Dimensions

Dimensions in mm (inches)



# Technical Data

## Wind

| | |
|---|---|
| SPEED | |
| range | 0 ... 60 m/s |
| response time | 250 ms |
| accuracy | ±3% at 10m/s |
| output resolutions and units | 0.1 m/s, 0.1km/h, 0.1 mph, 0.1 knots |
| DIRECTION | |
| azimuth | 0 ... 360° |
| response time | 250 ms |
| accuracy | ±3° |
| output resolution and unit | 1° |

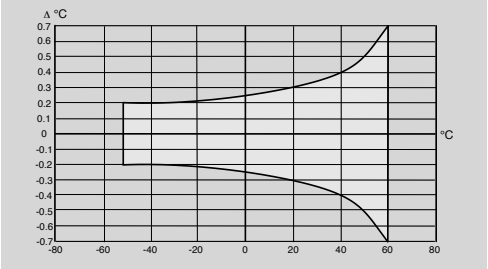
## Liquid Precipitation

| | |
|---|---|
| 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 ... +60 °C (-60 ... +140 °F) |
| Accuracy for sensor at +20 °C | ±0.3 °C (±0.5 °F) |
| Accuracy over temperature range (see graph below) | |




| | |
|---|---|
| Output resolutions and units | 0.1 °C, 0.1 °F |

## Barometric Pressure

| | |
|---|---|
| Range | 600 ... 1100 hPa |
| Accuracy | ±0.5 hPa at 0 ... +30 °C (+32 ... +86 °F)<br>±1 hPa at -52 ... +60 °C (-60 ... +140 °F) |
| Output resolutions and units | 0.1 hPa, 10 Pa, 0.0001 bar, 0.1 mmHg, 0.01 inHg |

## Relative Humidity

| | |
|---|---|
| Range | 0 ... 100 %RH |
| Accuracy | ±3 %RH within 0 ... 90 %RH<br>±5 %RH within 90 ... 100 %RH |
| Output resolution and unit | 0.1 %RH |

## General

| | |
|---|---|
| Operating temperature | -52 ... +60 °C (-60 ... +140 °F) |
| Storage temperature | -60 ... +70 °C (-76 ... +158 °F) |
| Operating voltage | 5 ... 32 VDC |
| Typical power consumption | 3 mA at 12 VDC (with defaults) |
| Heating voltage | 5 ... 32 VDC / 5 ... 30 $VAC_{RMS}$) |
| Serial data interface | SDI-12, RS-232, RS-485, RS-422, USB connection, |
| Weight | 650 g (1.43 lb) |
| Housing | IP65 |
| Housing with mounting kit | 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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