

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.



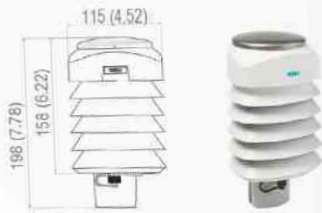
WXT530 Weather Transmitter Series



WXT534

MEASURES:

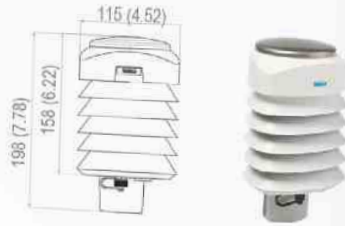
- Air Pressure
- Temperature
- Humidity



WXT535

MEASURES:

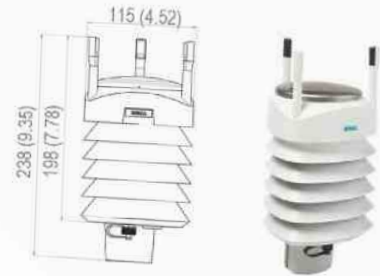
- Air Pressure
- Temperature
- Humidity
- Rainfall



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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