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

**Flexibility**
WXT530 is a series of weather instruments that provides six of the most important weather parameters: 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. A heated option is available. Low power consumption enables solar panel applications. 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 WXT530 into a small, cost-effective weather parameter hub.

Additional parameters include solar radiation and external temperature sensor. Further, the analog mA output for wind speed and wind direction enables a wide variety of industrial applications. WXT530 exceeds IEC60945 maritime standard.

**Solid Performance**
WXT530 Series has a unique Vaisala solid state sensor technology. To measure wind, Vaisala WINDCAP® ultrasonic wind 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.

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**Features**
- 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
## Technical Data

### Available options

<table>
<thead>
<tr>
<th>Wind speed, Wind direction</th>
<th>Pressure, Temperature, Relative Humidity</th>
<th>Analog inputs</th>
<th>2 × mA outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>WXT531 ✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WXT532 ✔</td>
<td></td>
<td>✔</td>
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<tr>
<td>WXT533 ✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>WXT534 ✔</td>
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<tr>
<td>WXT535 ✔</td>
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<td>✔</td>
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</tr>
<tr>
<td>WXT536 ✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>

### Barometric Pressure Measurement Performance

<table>
<thead>
<tr>
<th>Observation range</th>
<th>Accuracy (for sensor element)</th>
<th>Output resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 ... 1100 hPa</td>
<td>±0.5 hPa at 0 ... +30 °C (+32 ... +86 °F)</td>
<td>0.1 hPa / 10 Pa / 0.001 bar / 0.1 mmHg / 0.01 inHg</td>
</tr>
<tr>
<td></td>
<td>±1 hPa at -52 ... +60 °C (-60 ... +140 °F)</td>
<td></td>
</tr>
</tbody>
</table>

### Air Temperature Measurement Performance

<table>
<thead>
<tr>
<th>Observation range</th>
<th>Accuracy (for sensor element)</th>
<th>Output resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>-52 ... +60 °C (-60 ... +140 °F)</td>
<td>±0.3 °C (±0.5 °F)</td>
<td>0.1 °C (0.1 °F)</td>
</tr>
</tbody>
</table>

### Relative Humidity Measurement Performance

<table>
<thead>
<tr>
<th>Observation range</th>
<th>Accuracy (for sensor element)</th>
<th>Output resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 ... 100 %RH</td>
<td>±3 %RH at 0 ... 90 %RH ±5 %RH at 90 ... 100 %RH</td>
<td>0.1 %RH</td>
</tr>
</tbody>
</table>

### Wind Measurement Performance

#### Wind Speed

<table>
<thead>
<tr>
<th>Observation range</th>
<th>Response time</th>
<th>Available variables</th>
<th>Accuracy</th>
<th>Output resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 ... 60 m/s (134 mph)</td>
<td>0.25 s</td>
<td>Average, maximum, and minimum</td>
<td>±3 % at 10 m/s (22 mph)</td>
<td>0.1 m/s (km/h, mph, knots)</td>
</tr>
</tbody>
</table>

#### Wind Direction

<table>
<thead>
<tr>
<th>Azimuth</th>
<th>Response time</th>
<th>Available variables</th>
<th>Accuracy</th>
<th>Output resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 ... 360°</td>
<td>0.25 s</td>
<td>Average, maximum, and minimum</td>
<td>±3.0° at 10 m/s (22 mph)</td>
<td>1°</td>
</tr>
</tbody>
</table>

### Precipitation Measurement Performance

#### Rainfall

- **Collecting area**: 60 cm² (9.3 in²)
- **Output resolution**: 0.01 mm (0.001 in)
- **Field accuracy for daily accumulation**: Better than 5 %, weather-dependent

#### Duration

- **Counting each 10-second increment whenever droplet detected**
- **Duration output resolution**: 10 s

#### Intensity

- **Running 1-minute average in 10-second steps**
- **Intensity observation range**: 0 ... 200 mm/h (0 ... 7.87 in/h) (broader range with reduced accuracy)
- **Intensity output resolution**: 0.1 mm/h (0.01 in/h)

#### Hail

- **Cumulative amount of hits against collecting surface**
- **Duration**: Counting each 10-second increment whenever hailstone detected
- **Output resolution**: 0.1 hits/cm² (1 hits/in²), 1 hit

#### Field accuracy for daily accumulation

- **Better than 5 %, weather-dependent**

### Inputs and Outputs

#### Operating voltage

- **6 ... 24 VDC (-10 ... +30 %)**

#### Average power consumption

- **Minimum**: 0.1 mA at 12 VDC (SDI-12 standby)
- **Typical**: 3.5 mA at 12 VDC with typical measuring intervals
- **Maximum**: 15 mA at 6 VDC (with constant measurement of all parameters)

#### Heating voltage

- **Options**: DC, AC, full-wave rectified
  - AC 12 ... 24 VDC (-10 ... +30 %)
  - 12 ... 17 VACrms (-10 ... +30 %)
- **Typical heating current**: 12 VDC: 0.8 A
  - 24 VDC: 0.4 A

#### Digital outputs

- **SDI-12, RS-232, RS-485, RS-422**

#### Communication protocols

- **SDI-12 v1.3**
- **ASCII automatic and polled**
- **NMEA 0183 v3.0 with query option**

### Analog Input Options

- **Solar radiation**: Kipp & Zonen CMP3
- **Level measurement**: IRU-9429
- **Tipping bucket rain gauge**: Vaisala 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**: Max. 200 Ω
## Operating Environment

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>-52 °C to +60 °C (-60 °F to +140 °F)</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-60 °C to +70 °C (-76 °F to +158 °F)</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>0% to 100% RH</td>
</tr>
<tr>
<td>Pressure</td>
<td>600 ... 1100 hPa</td>
</tr>
<tr>
<td>Wind</td>
<td>0 ... 60 m/s (0 ... 134 mph)</td>
</tr>
<tr>
<td>IP rating</td>
<td>Without mounting kit: IP65, With mounting kit: IP66</td>
</tr>
</tbody>
</table>

## Compliance

### EMC compliance
- IEC 61326-1
- IEC 60945
- IEC 55022:2010 Class B

### Environmental
- IEC 60068-2-1, 2, 6, 14, 30, 31, 52, 78
- IEC 60529
- VDA 621-415

### Maritime
- DNVGL-CG-0339
- IEC 60945