Compact all-in-one weather sensor with measurement of temperature, relative humidity, precipitation intensity, precipitation type, precipitation quantity, air pressure, wind direction and wind speed.

- **Parameters measured**
  Temperature, relative humidity, precipitation intensity, precipitation type, precipitation quantity, air pressure, wind direction, wind speed

- **Measurement technology**
  Ultrasonic/Wind, NTC/T, Capacitive/RH, MEMS capacitive/Pressure, 24 GHz Doppler radar/Precipitation

- **Product highlights**
  Wind detection with birdproof construction. Compact all-in-one weather sensor, low power, heater, aspirated radiation shield, maintenance-free operation, open communication protocol.

- **Interfaces**
  RS485 with supported protocols UMB-Binary, UMB-ASCII, Modbus-RTU, Modbus-ASCII, XDR and SDI-12

- **Article number**
  8370.U01, 8370.U01-NA, 8370.U02

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications. Integrated design with ventilated radiation protection for measuring: Air temperature, relative humidity, precipitation intensity, precipitation type, precipitation quantity, air pressure, wind direction and wind speed. One external temperature sensor is connectable.
## Technical Data

**WS600-UMB Smart Weather Sensor**

### General
- **Dimensions**: Ø approx. 150 mm, height approx. 343 mm
- **Weight**: Approx. 1.5 kg
- **Interface**: RS485, 2 - wire, half - duplex
- **Power supply**:
  - 11 .... 32 VDC
  - 5 ... 11 VDC (electronics with limited precision of measurements)
  - 24 VDC +/- 10% (heater)
- **Power consumption**: 40 VA (heater)
- **Operating temperature**: -50...60 °C (with heater)
- **Operating rel. humidity**: 0...100 % RH
- **Cable length**: 10 m
- **Protection level housing**: IP66
- **Standards/Regulations**: Compliant to IEC 61724-1:2017
- **Mast mounting suitable for**: Mast diameter 60 - 76 mm

### Temperature
- **Principle**: NTC
- **Measuring range**: -50 … 60 °C
- **Unit**: °C
- **Accuracy**: ±0.2 °C (-20...50 °C), otherwise ±0.5 °C (>30 °C)

### Relative humidity
- **Principle**: Capacitive
- **Measuring range**: 0 ... 100 % RH
- **Unit**: % RH
- **Accuracy**: ±2 % RH

### Air pressure
- **Principle**: MEMS capacitive
- **Measuring range**: 300 ... 1200 hPa
- **Unit**: hPa
- **Accuracy**: ±0.5 hPa (0...40 °C)

### Wind direction
- **Principle**: Ultrasonic
- **Measuring range**: 0 ... 359.9 °
- **Unit**: °
- **Accuracy**: < 3 ° RMSE > 1.0 m/s
- **Resolution**: 0.1

### Wind speed
- **Principle**: Ultrasonic
- **Measuring range**: 0 ... 75 m/s
- **Unit**: m/s
- **Accuracy**: ±0.3 m/s or ±3 % (0...35 m/s) ±5 % (>35 m/s) RMS
- **Resolution**: 0.1 m/s
## Technical Data

WS600-UMB Smart Weather Sensor

### Precipitation (liquid)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Droplet size</td>
<td>0.3 ... 5 mm</td>
</tr>
<tr>
<td>Detection sensitivity</td>
<td>0.01 mm/h</td>
</tr>
<tr>
<td>Particle velocity</td>
<td>0.9 ... 15.5 m/s</td>
</tr>
<tr>
<td>Precipitation types</td>
<td>rain/ snow</td>
</tr>
<tr>
<td>Solid precipitation</td>
<td>5.1 ... ~30 mm</td>
</tr>
<tr>
<td>Intensity range</td>
<td>0.5 ... 200 mm/h</td>
</tr>
<tr>
<td>Intensity resolution</td>
<td>0.01 mm/h</td>
</tr>
<tr>
<td>Amount resolution</td>
<td>0.1 mm</td>
</tr>
<tr>
<td>Accuracy</td>
<td>20 % under laboratory conditions</td>
</tr>
<tr>
<td>Reproducibility</td>
<td>Typical &gt;90 % under laboratory conditions</td>
</tr>
</tbody>
</table>