



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

- **Parameters measured**
Temperature, relative humidity, precipitation intensity, precipitation type, precipitation quantity, air pressure, wind direction, wind speed, radiation
- **Measurement technology**
Ultrasonic/Wind, NTC/T, Capacitive/RH, MEMS capacitive/Pressure, 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**
8380.U01, 8380.U01-NA

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, wind speed and radiation. One external temperature sensor is connectable.

| General | |
|----------------------------|---|
| Dimensions | Ø approx. 150 mm, height approx. 317 mm |
| Weight | Approx. 1.5 kg |
| Interface | RS485, 2 - wire, half - duplex |
| Power supply | 11 ... 32 VDC |
| Power supply | 5 ... 11 VDC (electronics with limited precision of measurements) |
| Power supply | 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 Class C |
| 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 |

| Precipitation (liquid) | |
|------------------------|---|
| Droplet size | 0,3 ... 5 mm |
| Detection sensitivity | 0,01 mm/h |
| Particle velocity | 0.9 ... 15.5 m/s |
| Precipitation types | rain/ snow |
| Solid precipitation | 5.1 ... ~30 mm |
| Intensity range | 0...200mm/h |
| Intensity resolution | 0.01 mm/h |
| Amount resolution | 0.1 mm |
| Accuracy: | 20 % under laboratory conditions |
| Reproducibility | Typical >90 % under laboratory conditions |

| Radiation | |
|---------------------|-----------------------|
| Unit | W/m ² |
| Accuracy | 5% |
| Response time (95%) | < 1 s |
| Spectral range | 300 to 1100 nm |
| Measuring range | 1400 W/m ² |