



**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**

8370.2, 8370.1

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.

| 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                                                                                                       |
| Power supply               | 5 ... 11 VDC (electronics with limited precision of measurements)                                                   |
| Power supply               | 24 VDC +/- 10% (heater)                                                                                             |
| Power consumption          | 40 VA (heater)                                                                                                      |
| Frequency range            | 24.150 GHz – 24.250 GHz (Europe; Article no. 8370.2)<br>24.075 GHz – 24.175 GHz (North America; Article no. 8370.1) |
| Operating temperature      | -50...60 °C (with heater)                                                                                           |
| Operating rel. humidity    | 0...100 % RH                                                                                                        |
| Protection level housing   | IP66                                                                                                                |
| Standards/Regulations      | Compliant to IEC 61724-1:2021                                                                                       |
| 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 |
|------------|---------|

| 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        | 0.5 ... 200mm/h                           |
| Intensity resolution   | 0.01 mm/h                                 |
| Amount resolution      | 0.1 mm                                    |
| Accuracy               | 20 % under laboratory conditions          |
| Reproducibility        | Typical >90 % under laboratory conditions |