



**Compact all-in-one weather sensor from the WS-Series. Measurement of temperature, relative humidity, air pressure, wind direction, wind speed and radiation.**

- **Parameters measured**

Temperature, relative humidity, air pressure, wind direction, wind speed, radiation

- **Measurement technology**

Ultrasonic/Wind, NTC/T, Capacitive/RH, MEMS capacitive/Pressure, Tiltable Pyranometer Kipp&Zonen/Radiation

- **Product highlights**

Wind detection with birdproof construction. Compact all-in-one weather sensor, tiltable pyranometer, 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**

8375.U11

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, air pressure, wind direction, wind speed and radiation. One external temperature or rain sensor is connectable.

**IMPORTANT: WS503-UMB Smart Weather Sensor is discontinued**

# Technical Data

WS503-UMB Smart Weather Sensor - discontinued



## General

Dimensions	Ø approx. 150mm, height approx. 392mm
Weight	Approx. 1.5kg
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	20 VA (heater)
Operating temperature	-50...60°C (with heater)
Operating rel. humidity	0...100% RH
Cable length	10m
Protection level housing	IP66
Standards/Regulations	Compliant to IEC 61724-1:2017 Class C
Mast mounting suitable for	mast diameter 60 - 76mm

## Radiation

Response time (95%)	< 18 s
Non-stability (change/year)	< 1 %
Non-linearity (0 to 1,000W/m <sup>2</sup> )	< 1 %
Directional error (at 80° with 1,000W/m <sup>2</sup> )	< 20 W/m <sup>2</sup>
Temperature dependence of sensitivity	< 5 % (10... +40 °C)
Tilt error (at 1000W/m <sup>2</sup> )	< 1 %
Spectral range	300...2800 nm
Measuring range	2000 W/m <sup>2</sup>
Altitude	0...60 °

## Compass

Measurement range	0 ... 359°
Resolution	1.0°
Accuracy	+/-10°
Sampling rate	5 minutes

## 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

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Technical modifications and errors excepted - Created 06/02/2026  
OTT HydroMet Fellbach GmbH, Deutschland

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## 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 > 1.0m/s
Resolution	0.1

## Wind speed

Principle	Ultrasonic
Measuring range	0 ... 75 m/s
Unit	m/s
Accuracy	±0.3m/s or ±3% (0...35m/s) ±5% (>35m/s) RMS
Resolution	0.1 m/s