



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

General	
Dimensions	Ø approx. 150mm, height approx. 392mm
Weight	Approx. 1.5kg
Interface	RS485, 2-wire, half-duplex
Power supply	1132 VDC
Power supply	511 VDC (electronics with limited precision of measurements)
Power supply	24 VDC +/- 10% (heater)
Power consumption	20 VA (heater)
Operating temperature	-5060°C (with heater)
Operating rel. humidity	0100% 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 ²)	<1%
Directional error (at 80° with	< 20 W/m ²
1,000W/m²)	
Temperature dependence of	< 5 % ([]10 +40 °C)
sensitivity	
Tilt error (at 1000W/m²)	<1%
Spectral range	3002800 nm
Measuring range	2000 W/m ²
Altitude	060 °

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 (-2050°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 (040°C)

Wind direction	
Principle	Ultrasonic
Measuring range	0 359.9 °
Unit	0
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% (035m/s) ±5% (>35m/s) RMS
Resolution	0.1 m/s