



# First and only Smart Weather Sensor with integrated Kipp & Zonen CMP10 Pyranometer (secondary standard)

#### Parameters measured

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

## Measurement technology

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

## 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

8375.5

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.

### General









# WS510-UMB Smart Weather Sensor



Dimensions	Ø approx. 150 mm, height approx. 332 mm
Weight	Approx. 1.5 kg
Interface	RS485, 2 - wire, half - duplex
Power supply	1132 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	-5060 °C (with heater)
Operating rel. humidity	0100 % RH
Protection level housing	IP66
Mast mounting suitable for	Mast diameter 60 - 76 mm

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 > 1.0 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 % (035 m/s) ±5 % (>35 m/s) RMS
Resolution	0.1 m/s

Radiation	
Response time	< 5 s











# **Technical Data**

WS510-UMB Smart Weather Sensor



Zero offset A	< 7 W/m <sup>2</sup>
Zero offset B	< 2 W/m <sup>2</sup>
Directional error (at 1000 W/m²)	< 0.2 %
Temperature dependence of	< 1 % (-10 °C40 °C)
sensitivity	
Spectral range	285 to 2,800 nm
Measuring range	4000 W/m <sup>2</sup>







