



New class of Smart Weather Sensors with high-quality aluminum housing: WS3100 Climate Reference Sensor for Calibration / Verification of Air Temperature, Relative Humidity, Air Pressure and Solar Radiation

- **Parameters measured**
Temperature, relative humidity, air pressure (redundant pressure as option), global radiation
- **Measurement technology**
PT100/Temp, Capacitive/RH, MEMS Resonant Pressure transducer, Kipp&Zonen CMP10 / radiation
- **Product highlights**
Metal housing with ventilated radiation shield temperature/humidity measurements, Traceable accuracy, Modular architecture, Drift-free sensing technologies, Easy maintenance & calibration possibilities, CMP10 Secondary Standard Kipp & Zonen Pyranometer, WiFi module
- **Interfaces**
RS485, 2-wire, half-duplex/WiFi
- **Article number**
8391.U01

Relative humidity is measured by means of a heated capacitive sensor element; a precision PT100 measuring element is used to measure air temperature. A resonant pressure transducer is employed for precise pressure measurement. Due to the integrated Kipp &

Zonen CMP10 pyranometer, global radiation values are in a secondary standard quality.

Accuracy in detail:

- Temperature better than +/- 0.1°C
- Relative Humidity better than +/- 2%
- Air Pressure better than +/- 0.1 hPa
- Solar Radiation better than 5% W/m² (secondary standard)

Measurement output can be accessed by the following protocols: UMB-Binary, UMB-ASCII, UMB-ASCII 2.0, SDI-12 and NMEA.

General	
Dimensions	Ø ca. 250 mm, height approx. 470 mm
Weight	Approx. 5 kg
Interface	RS485, 2 - wire, half - duplex/WiFi
Power consumption	24 VDC/typical 4W
Operating temperature	-40...60 °C (optional -60 °C)
Operating rel. humidity	0...100 % RH
Protection level housing	IP66

Global radiation	
Principle	Pyranometer
Unit	W/m ²
Response time	< 5s
Zero offset A	< 7W/m ²
Zero offset B	< 2W/m ²
Neigungsfehler bei 1000 W/m ²	< 0.2%
Temperature sensivity dependence	< 1% (-10°C...40°C)
Spectral range (50% points)	285... 2.800nm
Measurement range	4000W/m ²

Temperature	
Principle	PT100
Measuring range	-40 ... 60 °C
Unit	°C
Accuracy	±0.1 °C
Resolution	0.01 °C

Relative humidity	
Principle	Capacitive
Measuring range	0 ... 100 % RH
Unit	% RH
Accuracy	±2 % RH

Technical Data

WS3100-UMB Reference Weather Sensor



Resolution	0.1 % RH
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Air pressure	
Principle	MEMS Resonant Pressure transducer
Measuring range	300 ... 1100 hPa
Unit	hPa
Accuracy	±0.1 hPa
Resolution	0.01 hPa