

# WS501-UMB – Temperature, Relative Humidity, Radiation, Air Pressure, Wind, Electronic Compass

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
- Solar Radiation

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

The world renowned technology of Kipp+Zonen CMP3 is integrated.

Ultrasonic sensor technology is used to take wind measurements.

Measurement output can be accessed by the following protocols:  
ASCII, UMB, SDI12, MODBUS

WS501-UMB Compact Weather Station			Order No.
WS501-UMB	EU, USA, Canada		8375.U01
Technical Data	Dimensions	Ø approx. 150mm, height 345mm	
	Weight	approx. 2.2 kg	
Temperature	Principle	NTC	
	Measuring range	-50 ... 60 °C	
	Accuracy	±0.2 °C (-20 °C ... +50 °C), otherwise ±0.5 °C (>-30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 ... 100 % RH	
	Accuracy	±2 % RH	
Radiation	Response time (95%)	18s	
	Non-stability (change/year)	±1 %	
	Non-linearity (0 to 1,000 W/m²)	±2.5 %	
	Directional error (at 80 ° with 1,000 W/m²)	±20 W/m²	
	Temperature dependence of sensitivity	±5 % (-10 to +40 °C)	
	Tilt error (at 1000 W/m²)	±3 %	
	Spectral range (50% points)	300 to 2,800 nm	
Air pressure	Typical signal output for atmospheric applications	0 ... 20 mV	
	Operating temperature	-40 ... 80 °C	
	Maximum irradiance	1,500 W/m²	
Wind direction	Principle	MEMS capacitive	
	Measuring range	300 ... 1200 hPa	
	Accuracy	±1.5 hPa	
Wind speed	Principle	Ultrasonic	
	Measuring range	0 ... 359.9 °	
	Accuracy	±3 °	
General Information	Principle	Ultrasonic	
	Measuring range	0 ... 60 m/s	
	Accuracy	± 0.3 m/s or ±3 % (0 ... 35 m/s)	
	Heating	40 VA at 24 VDC	
	Protection type housing	IP66	
Accessories	Interface	RS 485, 2-wire, half-duplex	
	Operating power consumption	24 VDC +/-10% <4VA (without heating)	
	Operating humidity range	0 ... 100 %	
	Operating temperature range	-50 ... 60 °C	
Accessories	Surge protection		8379.USP
	Power supply 24V/4A		8366.USV1
	UMB Interface converter ISOCON		8160.UISO
	Digital-analog-converter		8160.UDAC



- All in One
- Aspirated temperature/ humidity measurement
- Maintenance-free operation
- Open communication protocol:
  - ASCII
  - UMB
  - SDI12
  - MODBUS
- Analogue outputs in combination with 8160.UDAC