

Lufft 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:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

One external temperature or rain sensor is connectable.

Lufft WS501-UMB Smart Weather Sensor			Order No.
WS501-UMB			8375.U01
Technical Data	Dimensions	Ø approx. 150 mm, height 332 mm	
	Weight	Approx. 1.5 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)	< 1%	
	Directional error (at 80° with 1,000 W/m²)	< 20 W/m²	
	Temperature dependence of sensitivity	< 5 % (-10 ... +40 °C)	
	Tilt error (at 1000 W/m²)	< 1%	
	Spectral range	300 to 2,800 nm	
Air pressure	Measuring range	1400 W/m²	
	Principle	MEMS capacitive	
	Accuracy	± 0.5 hPa (0 ... +40 °C)	
Wind direction	Measuring range	300 ... 1200 hPa	
	Principle	Ultrasonic	
	Accuracy	± 0.5 hPa (0 ... +40 °C)	
Wind speed	Measuring range	0 ... 359.9°	
	Principle	Ultrasonic	
	Accuracy	< 3° RMSE > 1.0 m/s	
General Information	Heating	0 ... 75 m/s	
	Protection type housing	± 0.3 m/s or 3% (0 ... 35 m/s) RMS of reading, whichever is greater, ± 5% (> 35 m/s) RMS	
	Interface	20 VA at 24 VDC	
	Operating power consumption	IP66	
	Operating humidity range	RS485, 2-wire, half-duplex	
	Operating temperature range	4 ... 32 VDC	
Accessories	Surge protection	0 ... 100%	8379.USP
	Power supply 24V/4A	-50 ... 60 °C	8366.USV1
	UMB Interface converter ISOCON-UMB		8160.UI50
	Digital-analog-converter DACON8-UMB		8160.UDAC
	Temperature Sensor WT1		8160.WT1
	Road Surface Temperature Sensor WST1		8160.WST1
	Connection cable, 20m		8370.UKAB20
Rain Sensor WTB100		8353.10	



All in One

Aspirated temperature/humidity measurement

Open communication protocol:

- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analogue outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1mm, 0.2mm, 0.5mm, 1mm heated and unheated.

