



Applications

- Meteorological Observation
- Hydro-Meteorological Monitoring
- Solar Energy
- Wind Energy
- Road Weather Monitoring
- Aviation Weather Monitoring
- Railway Weather Monitoring
- Building Automation

Compact all-in-one weather sensor

Automatic weather station

Intelligent measurement transducers with digital interface for environmental applications

Designed to measure: Air temperature/pressure, relative humidity, and wind direction/speed

One external temperature or rain sensor is connectable

Maintenance-free operation – no moving parts that can wear out

Open communication protocol

All-in-one station

All-in-one housing concept of a compact weather sensor combining 5 measurement parameters in one housing with only one cable connection. Built-in data pre-processing, universal interfaces and selectable output protocols.

Ideal addition for existing pyranometer setup

The WS500 adds all necessary parameters to an existing pyranometer setup. It measures air temperature and pressure, relative humidity, and wind direction and speed. Where precipitation plays a role, rain sensors can be connected easily.

Compliant with ISO/IEC 61724-1

Ventilated temperature and humidity measurement according to international standards for solar monitoring on PV plants. Integrated heater can be switched on in risk of frost.

Protocols and interfaces

Easy integration into any SCADA system. Communicates via RS-485 interface in Modbus and various other protocols. Compatible with many commercially available dataloggers and PLS systems.

Technical Specifications

WS500-UMB	
Article number	8373.U01
Dimensions	Ø approx. 150 mm, height approx. 287 mm
Weight	Approx. 1.2 kg
Interface	RS485, 2 - wire, half - duplex
Power supply	11 ... 32 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	-50 ... 60 °C (with heater)
Operating relative humidity	0 ... 100 % RH
Protection level housing	IP66
Mast mounting suitable for	Mast diameter 60 - 76 mm
Cable length	10 m

Temperature

Principle	NTC
Measuring range	-50 ... 60 °C
Unit	°C
Accuracy	±0.2 °C (-20 ... 50 °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 (0 ... 40 °C)

Wind direction

Principle	Ultrasonic
Measuring range	0 ... 359.9 °
Unit	°
Accuracy	< 3° RMSE > 1.0 m/s

Wind speed

Principle	Ultrasonic
Measuring range	0 ... 75 m/s
Unit	m/s
Accuracy	±0.3 m/s or 3 % (0 ... 35 m/s) ±5 % (> 35 m/s) RMS
Resolution	0.1 m/s