

Compact all-in-one weather sensor with measurement of temperature, relative humidity, air pressure, wind direction, wind speed and radiation.

- **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 Pyranometer/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.U01

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

Dimensions	Ø approx. 150 mm, height approx. 332 mm
Weight	Approx. 1.5 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 rel. humidity	0...100 % RH
Cable length	10 m
Protection level housing	IP66
Standards/Regulations	Compliant to IEC 61724-1:2017 Class C
Mast mounting suitable for	Mast diameter 60 - 76 mm

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
Resolution	0.1

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

Radiation	
Response time (95%)	< 18 s
Non-stability (change/year)	< 1 %
Non-linearity (0 to 1,000W/m^2)	< 1 %
Directional error (at 80° with 1,000W/m^2)	< 20 W/m^2
Temperature dependence of sensitivity	< 5 % (10... +40 °C)
Tilt error (at 1000W/m^2)	< 1 %
Spectral range	300...2800 nm
Measuring range	2000 W/m^2

Compass	
Measurement range	0 ... 359°
Resolution	1.0°
Accuracy	+/-10°
Sampling rate	5 minutes