All-in-one weather sensor with measurement of temperature, relative humidity, precipitation intensity, precipitation type, precipitation quantity, air pressure, wind direction, wind speed and radiation.

- **Parameters measured**
  Temperature, relative humidity, precipitation intensity, precipitation type, precipitation quantity, air pressure, wind direction, wind speed, radiation

- **Measurement technology**
  Ultrasonic/Wind, NTC/T, Capacitive/RH, MEMS capacitive/Pressure, Radar/Precipitation

- **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**
  8380.2, 8380.1

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, precipitation intensity, precipitation type, precipitation quantity, air pressure, wind direction, wind speed and radiation. One external temperature sensor is connectable.

KIPP & ZONEN   Lufft   SUTRON   OTT   ADCON   HYDROLAB   METEOSTAR

General

Dimensions	Ø approx. 150 mm, height approx. 317 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	40 VA (heater)
Frequency range	24.150 GHz – 24.250 GHz (Europe; (Article no. 8380.2)
	24.075 GHz – 24.175 GHz (North America; Article no. 8380.1)
Operating temperature	-50...60°C (with heater)
Operating rel. humidity	0...100% RH
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

Precipitation (liquid)	
Droplet size	0,3 ... 5 mm
Detection sensitivity	0,01 mm/h
Particle velocity	0.9 ... 15.5 m/s
Precipitation types	rain/ snow
Solid precipitation	5.1 ... ~30 mm
Intensity range	0...200mm/h
Intensity resolution	0.01 mm/h
Amount resolution	0.1 mm
Accuracy:	20 % under labory conditions
Reproducibility	Typical >90 % under labory conditions

Radiation	
Unit	W/m^2
Accuracy	5%
Response time (95%)	< 1 s
Spectral range	300 to 1100 nm
Measuring range	1400 W/m^2

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