WS700-UMB Smart Weather Sensor



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

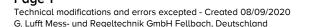
Interfaces

RS485 with supported protocols UMB-Binary, UMB-ASCII, Modbus-RTU, Modbus-ASCII, XDR and SDI-12

Article number

8380.U01, 8380.U01-NA

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.











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)
Operating temperature	-5060°C (with heater)
Operating rel. humidity	0100% 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	-5060 °C
Unit	°C
Accuracy	±0.2°C (-2050 °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 (040 °C)

Wind direction	
Principle	Ultrasonic
Measuring range	0 359.9 °
Unit	0
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 % (035 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	0200mm/h
Intensity resolution	0.01 mm/h
Amount resolution	0.1 mm
Accuracy:	20 % under laborary conditions
Reproducibility	Typical >90 % under laborary conditions

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