

# u[sonic]WS7 WEATHER SENSOR

-  AI  
METAL MATERIAL
-  COMBINED HUMIDITY  
TEMPERATURE
-  GLOBAL  
RADIATION
-  AIR  
PRESSURE
-  NMEA  
DATA  
PROTOCOL
-  SEAWATER  
RESISTANT
-  NO MOVING  
PARTS
-  WEATHER  
SENSOR



The user-friendly all-in-one solution...

The u[sonic]WS is the newest, most compact and system-capable addition to the Lambrecht meteo weather sensor series.

Wind direction and speed are measured by ultrasound sensors, beyond the wind parameters the air temperature, humidity and pressure values are also determined; the dew point is calculated. The lamella shelter of the humidity and temperature sensor protects the sensor from the deteriorating effects of the climate and ensures improved and more accurate measurements.

A wide variety of interfaces and protocols are available. There are no limits for the u[sonic]WS7 when it comes to its applications.

- without moving measuring elements
- 7 weather parameters: wind direction and speed, air temperature, rel. humidity, barometric pressure, global radiation, dew point
- intelligent heating depending on wind speed and wind direction
- lamella shelter for accurate measurements of the temperature-humidity sensor
- easy installation, easy to maintain

## APPLICATIONS

- professional meteorological application
- wind turbines on- and off-shore
- building automation and environmental engineering
- traffic and industrial meteorology
- wind warning and event engineering
- photovoltaic large-scale plants
- alpine applications

Professional Line	u[sonic]WS7 Weather sensor
Id-No.	00.16480.001000
Meas. range wind direction	0...359.9°
Meas. range wind speed	0...65 m/s
Meas. range air temperature	-40...+70 °C
Meas. range rel. humidity	0...100 %
Meas. range barometric pressure	300...1100 mbar
Meas. range global radiation	0...2000 W/m <sup>2</sup> • global radiation within range of 285...3000 nm
Accuracy wind direction	< 2° (> 1 m/s) RMSE
Accuracy wind speed	± 0.2 m/s RMSE (v < 10 m/s) • ± 2 % RMSE (10 < v < 65 m/s)
Accuracy air temperature	± 0.1K (0...60 °C) • ± 0.2K (-40...0 °C) > 2 m/s

Continued on page 2

Professional Line	u[sonic]WS7 Weather sensor
Accuracy rel. humidity	typ. $\pm 1.5\%$ (0...80 %) • $\pm 2\%$ (> 80 %)
Accuracy barometric pressure	$\pm 0.5$ mbar
Resolution wind direction	0.1°
Resolution wind speed	0.1 m/s
Resolution air temperature	0.1 °C
Resolution rel. humidity	0.1 %
Resolution barometric pressure	0.1 mbar
Resolution global radiation	0.2 W/m <sup>2</sup>
Non-linearity	< $\pm 1\%$ (100...1000 W/m <sup>2</sup> )
Trigger threshold	0.1 m/s
Protocols	NMEA 0183 • Modbus RTU • SDI-12 (optional)
Interface	RS485 / 422 • SDI-12 (optional)
Measuring rate	0.1...10 Hz
Operating conditions	-40...+70 °C (with heating: -50...+70) • 0...100 % r. h.
Strongest wind impact velocity	100 m/s
Supply voltage	without heating: 6...60 VDC • with heating : 24 V AC/DC $\pm 20\%$
Current consumption	sensor: typ. 50 mA at 24 VDC • with heating : max. 10 A at 24 V AC/DC
Meas. element global radiation	thermopile with high-quality thermo-electric cells
Meas. principle global radiation	thermoelectric
Heating data	factory configurable: 60 W / 120 W / 200 W (standard)
Dimensions	Ø 199 mm • height 284 mm
Housing	seawater resistant aluminium
Protection class	IP 66 • IP 67
Weight	approx. 3.4 kg
Standards	Salt fog: EN 60945 • Low voltage guide line: 72/23 EWG
EMC standards / Electrical safety	DIN EN 60945 • DIN EN 61000-4-2, 3, 4, 6, 11
Accessories (order separately)	32.16470.060000 sensor cable, 15 m, 8-pol. M16-plug

As of: 18.02.2020