

u[sonic]WS7 Modbus 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.

- No moving measuring elements, no wear
- Seven 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 to install, easy to maintain

APPLICATIONS

- Professional meteorological application
- On- and offshore wind turbines
- Building automation and environmental engineering
- Traffic and industrial meteorology
- Wind warning and event engineering
- Large-scale photovoltaic systems
- Alpine applications

Professional Line	u[sonic]WS7 Modbus
Id-No.	00.16480.001130
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 ² • global radiation within range of 285...3000 nm
Accuracy wind direction	2° (> 1 m/s) RMSE

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Professional Line	u[sonic]WS7 Modbus
Accuracy wind speed	$\pm 0.2 \text{ m/s RMSE (v 10 m/s)} \bullet \pm 2 \% \text{ RMSE (10 v 65 m/s)}$
Accuracy air temperature	$\pm 0.1 \text{ K (0...60 } ^\circ\text{C)} \bullet \pm 0.2 \text{ K (-40...0 } ^\circ\text{C)} > 2 \text{ m/s}$
Accuracy rel. humidity	typ. $\pm 1.5 \% \text{ (0...80 \%)} \bullet \pm 2 \% \text{ (> 80 \%)}$
Accuracy barometric pressure	$\pm 0.5 \text{ mbar}$
Resolution wind direction	0.1°
Resolution wind speed	0.1 m/s
Resolution air temperature	$0.1 \text{ } ^\circ\text{C}$
Resolution rel. humidity	0.1%
Resolution barometric pressure	0.1 mbar
Resolution global radiation	0.2 W/m^2
Non-linearity	$\pm 1 \% \text{ (100...1000 W/m}^2\text{)}$
Trigger threshold	0.1 m/s
Protocols	Modbus RTU
Interface	RS485
Measuring rate	$0.1 \dots 10 \text{ Hz}$
Operating conditions	$-40 \dots +70 \text{ } ^\circ\text{C (with heating: -50...+70)} \bullet 0 \dots 100 \% \text{ r. h.}$
Strongest wind impact velocity	100 m/s
Supply voltage	without heating: $6 \dots 60 \text{ VDC} \bullet$ with heating : $24 \text{ V AC/DC} \pm 20 \%$
Current consumption	sensor: typ. $50 \text{ mA at } 24 \text{ VDC} \bullet$ with heating : max. $10 \text{ A at } 24 \text{ V AC/DC}$
Meas. element global radiation	thermopile with high-quality thermo-electric cells
Meas. principle global radiation	thermoelectric
Heating data	60 W
Dimensions	$\varnothing 199 \text{ mm} \bullet$ height 284 mm
Housing	seawater resistant aluminium
Protection class	$\text{IP 66} \bullet \text{IP 67}$
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)	32.14567.060010 Sensor cable, 15 m, 4-pol. M12-plug

As of: 25.04.2024