



Ultrasonic Wind Sensor

- Parameters measured**
 Wind speed, wind direction, virtual temperature, barometric pressure
- Measurement range**
 Ultrasonic
- Product highlights**
 Maintenance-free measurement, suitable for extreme ambient conditions, ice-free operation, vibration and seawater resistant, compatible interfaces
- Interface**
 SDI-12, RS-485, various RS-485-protocols, analogue output

The accurate wind sensor uses the run-time differential method for determining the wind speed and wind direction. It provides output for instantaneous values, vector and scalar means, the maximum gust of wind and wind direction, the maximum/minimum values and the virtual temperature. Data output through serial or analogue interfaces provides compatibility of the Lufft Ventus for commercially available hydrometeorological dataloggers and PLC systems. An automatic heater ensures reliable operation even in the lowest temperature.

Data	
Measured	wind speed, wind direction, virtual air temperature, barometric pressure

Calculated	instantaneous values in intervals from 1 to 10 seconds, vector and scalar means in intervals from 1 to 10 minutes max/min values of the wind direction sectors maximum gust of wind and wind direction, virtual temperature
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Wind speed	
Measuring method	4 x 10 Hz ultrasonic sensors
Measuring range	0 ... 75 m/s
Resolution	0.1 m/s
Accuracy	± 0.2 m/s or ± 2 % RMS
Threshold	0.1 m/s

Wind direction	
Measuring method	4 x 10 Hz ultrasonic sensors
Measuring range	0 ... 359,9°
Resolution	0.1°
Accuracy	$< 2^\circ$ (> 1 m/s) RMSE
Threshold	0.1 m/s

Virtual air temperature	
Measuring method	ultrasonic technology
Measuring range	-50 ... +70 °C
Resolution	0.1 °C
Accuracy	± 2 K (no heating, no solar irradiation, or wind speed above 4 m/s)

Barometric pressure	
Measuring method	MEMS-Sensor, capacitive
Measuring range	300 ... 1200 hPa
Resolution	0.1 hPa
Accuracy	± 1.5 hPa

Electrical data

Interfaces selectable using the Lufft-Config tool (PC-SW for Windows OS)	
SDI-12	release 1.3 (factory setting)
RS-485	galvanically isolation, half-duplex, baud rates 1200 ... 19200
RS-485 protocols	binary, ASCII, TLS2002FG3, MODBUS, NMEA-WIMWV
Analog output	4 ... 20 mA or 2 ... 10 VDC, 16 bits

Power supply	
Input voltage	10,5 ... 28 VDC

Power consumption (sensor)	50 mA @ 12 VDC
Heater	24 VDC/240 Watt

Ambient	
Operating temperature range	-40 °C ... +60 °C (with heater), -20 °C ... +60 °C (without heater)
Storage temperature	-55 °C ... +80 °C
Relative humidity	0 ... 100 % R.H.
Mechanical data	
Dimensions (H x Ø)	170 mm x 150 mm
Weight	1.7 kg
Material	seawater resistant AlMg3Si aluminium alloy
Color	gray
Fastener (Ø)	50 mm
Protection and standards	
Type of protection	IP66
Standard	
EMC directive	2004/108/EG
Emitted interference	EN 55011:2009, EN 61000-6-3
Immunity	EN 61000-6-6 and EN 61000-4-2/3/4/5/6/8
Vibration	IEC 60068-2-6/IEC 60945
Salt spray	MIL-Std 810, 509.3
Ice	MIL-Std 810F, 521.2