



Ultrasonic Wind Sensor

- **Parameters measured**
Wind speed, wind direction, virtual temperature, barometric pressure
- **Measurement technology**
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 |
|------------|---|

| 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) | |
|----------------------------|-----------------------------------|
| Heater | 50 mA @ 12 VDC 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 |