

Wind Ultrasonic



Model Brief Description

Ultrasonic Anemometer 3D

The Ultrasonic Anemometer 3D serves for the 3-dimensional acquisition of the horizontal and vertical components of the wind velocity, the wind direction as well as of the acoustic-virtual temperature.

More than 70 different measurement values are available, for ex.:

- Wind velocity in X/Y/Z-direction
- Total wind velocity
- Wind velocity azimuth
- Wind direction azimuth
- Wind velocity elevation
- Wind direction elevation
- Acoustic-virtual temperature
- Standard deviation of the wind velocity in X/Y/Z-direction
- Standard deviation of the total wind velocity
- Standard deviation of the wind velocity azimuth
- Standard deviation of the wind direction azimuth
- Standard deviation of the wind direction elevation
- Standard deviation of the acoustic-virtual temperature
- Statistic functions such as variance, co-variance, turbulence intensity
- Wind velocity X/Y/Z of the gust acc. to WMO
- Wind direction of the gust (elevation) acc. to WMO

The instrument is especially suited for the use in the fields of

- Meteorology
- Climatology
- Traffic engineering, aviation and navigation
- Indoor flow measurement
- And in alpine field of application

The ultrasonic measurement principle allows, compared to the classic anemometers, an inertia-free measurement of running variable dimensions with highest precision and accuracy. It is especially suited for the measurement of gust- and peak values.

Order No.

4.3830.2x.xxx

Technical Data

Wind velocity	
Meas. range	0-65 m/s
Resolution	0.1 m/s (standard) 0.01 (user-defined)
Accuracy	±0.1 m/s rms (0-5 m/s) ±2% rms (< 5 m/s)
Direction	
Meas. range	
Azimuth	0-360°
Elevation	-90° ... +90°
Resolution	1°
Accuracy	±2°
Virtual temp.	
Meas. range	-40 ... +70 °C
Resolution	0.1 K
Accuracy	±0.5 K
Data output digital	
Interface	RS 485/422
Baud rate	1200 - 921600
Output	instantan. values, mean values, standard deviations, etc.
Output rate	1 per 1 msec. up to 1 per 60 sec.
Status signal	heating distance error, distance temperat.
Data output analogue	
Electr. output (for wind vectors XYZ or vv (azimuth), wd (azimuth) and acoustic-virtual temp. Load	0-20 mA/0-10 V or 4-20 mA/2-10 V
Current output	max. 400 Ω
Voltage output	min. 4000 Ω
or as:	
data input	3 x 0-10 V
output	serial
dissolution	16 bit
General	
Bus operation	up to 98 instruments
Operat. voltage	8-24 V DC or
Electronics with heating	12-28 V AC/2.5 VA 24 V AC/DC, typ 150 VA
Electr. connection	8 pole plug
Mounting	onto a mast tube 1½"
Fixing boring	Ø 50 x 40 mm
Housing material	aluminium and stainless steel (V4A)
Protection	IP 65
Dimensions	600 x 300 mm
Weight	1.5 kg

Wind Ultrasonic

Model Brief Description

Continuation of page 6

The measurement values can be output digitally and/or in analogue form.

The serial or analogue output of the data is carried out alternatively as instantaneous value or with selectable time frame.

If necessary, the sensor arms and the middle rod are automatically heated in case of critical ambient temperatures. Thanks to the additionally installed ultrasonic converter heating the instrument is suited even for the difficult application in locations where frequently icing is to be expected.

Order No.

Technical Data

