Ultrasonic Anemometer 3D for Cold Climate

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 suitable 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 suitable for the measurement of gust- and peak values.

Specification

Part number: 4.383x.4x.xxx

Wind speed

Measuring range	0 ... 85 m/s

Resolution	0.1 m/s (standard) 0.01 m/s (user defined)
Accuracy	±(0.1 m/s +1 %) rms (0 ... 35 m/s) ±2 % rms (35 ... 65 m/s) ±3 % rms (65 ... 85 m/s)
Wind direction	
Measuring range	0 ... 360 ° / 540 ° / 720 °
Resolution	1 ° (standard) 1 ° (user defined)
Accuracy	±1 ° (1 ... 35 m/s) ±2 ° (35 ... 65 m/s) ±4 ° (65 ... 85 m/s)
Virtual temp.	
Measuring range	-50 ... +80 °C
Resolution	0.1K or 0.01K (depending on the selected telegram)
Accuracy	±0.5 K
Data output digital	
Interface	RS485 / RS422
Baudrate	1200 ... 921600 Baud
Data values	instant. values, average values, standard deviation
Output rate	1 per 10 msec up to 1 per 60 sec
Status signals	heating, Meas section error, Temperature of meas section
Data output analog	
Measured values	WS - Vectors VxVyVz WS - Azimut, WD - Azimut, WS Elevation
Wind speed	0 ... 20 mA 4 ... 20 mA 0 ... 10 V 2 ... 10 V
Stromausgang	max. 400 ê
Wind direction	0 ... 20 mA 4 ... 20 mA 0 ... 10 V 2 ... 10 V
Voltage output	min. 4000 ê
Resolution	16 bit
Data input analog (alternative)	
Chanels	3 x 0 ... 10 V
Resolution	16bit

Operating voltage	
Electronic	8 ... 78 V DC or 12 ... 55 V AC / 2.5 W
Heating	48 V AC/DC, typ 360 W
Heating	
Heated compontents	sensor arms ultrasonic transducers housing
General	
Bus operation	up to 98 sensors
Electr. connection	8 pol. connector
Mounting	on mast tube 1,5``
Housing	stainless steel (V4A) AiSi316Ti
Protection	IP 67
Dimension	600 mm x 300 mm
Weight	3.4 kg

Versions

As per 4.383x.4x.xxx, but:

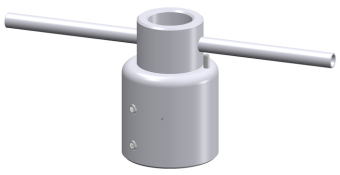
Product number 4.3830.40.340

Data output digital	
Baudrate	9600 Baud
Duplex mode	Full duplex
Data telegram	VDT-Telegram (Telegram2)
Output rate	10 per 1 sec

Product number 4.3830.41.300

Data output digital	
Baudrate	9600 Baud
Duplex mode	Half duplex
Data telegram	no independent data output
Data output analog	
Type	3 x 0 ... 20 mA

Accessories

Product	Product name	Brief description
	Connecting cable 50775x	Suitable cable for 4.3820/30/75/80/81 • length: see versions **General** Cable length — see versions Cable — PUR 4 x 0,75 +2x2x0,14 mm²
	Northring for Ultrasonic anemometer 508696	The adapter is used for the north alignment of a Ultrasonic anemometer. **General** Length — 90 mm Material — Alluminum anodized (AlMgSi1) Weight — 0.4 kg Mounting — for mast Ø 50 mm for sensor Ø 50 mm

Meteo-Online
9.1700.98.x01

Meteo-Online is a software for detecting, filing, and displaying data of meteorological measuring instruments. The display of the data is carried out graphically as diagram and/or as text The user has the possibility to place the display-elements free on the screen, and to save them.

Data display

Monitor - display	- Values - Diagrams - Tables - Windrose - Time - Date

Compatibility

Connectable instruments	- US-Anemometer - Datalogger - Clima Sensor - Weather station WSC11 - Wind display - etc.
System requirements	PC mit - Prozessor > 1 GHz - RAM > 1 GB
Operating system	- Windows 2003 SP2 - Windows Server 2008 - Windows 7 - Windows Server 2008 R2 - Windows 7 SP1 - Windows Server 2008 R2 SP1 - Windows 8 - Windows 10

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