Ultrasonic Anemometer 2D

More than 35 different measurement values are available, for ex.:

• Orthogonal wind velocity

vectors (X- and Y-distance)

• Scalar wind velocity

• Wind direction

• Acoustic-virtual temperature

• Acoustic-virtual temperature of the orthogonal measurement distances (X- and Y-distance)

• Standard deviation of the vectorial wind velocity

(X and Y-distance)

• Standard deviation of the scalar wind velocity

• Standard deviation

of the wind direction

• Standard deviation of the acoustic-virtual temperature

• Wind velocity of the gust acc. to WMO

• Wind direction of the gust acc. to WMO

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

• Meteorology

• Climatology

• Regenerative energy, wind energy plant

• Traffic engineering, aviation and navigation

• Pollutant dispersal

• Wind alarm devices, building construction and building safety

• 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.
The measurement values can be transmitted 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 are automatically heated in case of critical ambient emperatures. The possibility of malfunction, caused by icing, is minimized.
Model no. 4.3820.3x.xxx, thanks to the additionally installed ultrasonic converter heating, is suitable even for the more difficult use

in locations where frequently icing is to be expected

Specification

Part number: 4.382x.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 rms (5 m/s) ±2 % rms (5 ... 85 m/s)

Wind direction

Measuring range	0 ... 360 °
Resolution	1 ° 1 ° (standard) 1 ° (user defined)
Accuracy	±1 ° @ WS 1 ... 60 m/s ±2 ° @ WS 60 ... 85 m/s

Virtual temp.

Measuring range	-50 ... +80 °C
Resolution	0.1 K
Accuracy	±0.5 K @ WS 35 m/s

Data output digital

Interface	RS485 / RS422
Baudrate	1200 ... 921600 Baud
Data values	instant. values, average values, standard deviation
Output rate	1 per 1 msec up to 1 per 60 sec
Status signals	heating, Meas section error, Temperature of meas section

Data output analog

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
Resolution	16bit

Operating voltage

Electronic	8 ... 78 V DC or 12 ... 55 V AC / 2.5 W
Heating	48 V AC/DC, typ 280 W

General

Bus operation	up to 98 sensors
Electr. connection	8 pol. connector
Mounting	on a mast tube 1,5``
Housing	stainless steel (V4A) AiSi316Ti
Protection	IP 67
Dimension	Ø 424 mm x 287 mm
Weight	2.5 kg

Versions

As per 4.382x.4x.xxx, but:

Product number 4.3820.40.300

Data output digital

Baudrate	9600 Baud
Duplex mode	Full duplex
Data telegram	no independent telegram output

Product number 4.3820.40.340

Data output digital

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

Product number 4.3820.41.300

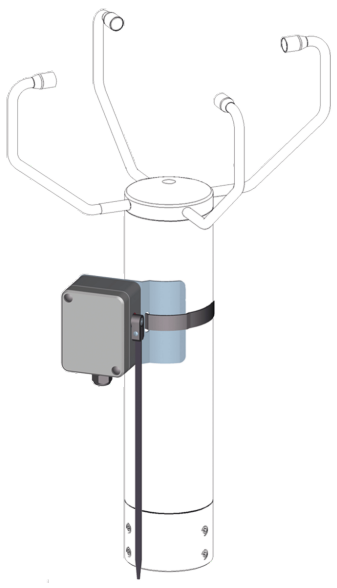
Data output digital

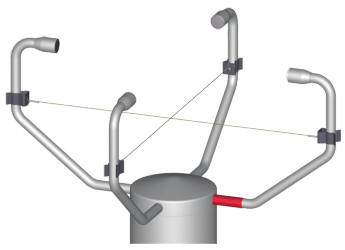
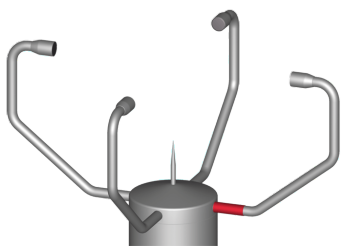
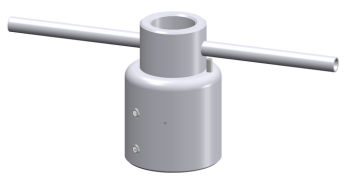
Baudrate	9600 Baud
Duplex mode	Half duplex
Data telegram	no independent data output
Data output analog	
Type	3 x 0 ... 20 mA

Product number 4.3820.42.300

Data output digital	
Baudrate	9600 Baud
Duplex mode	Half duplex
Data telegram	no independent data output
Data output analog	
Type	3 x 0 ... 10 V

Accessories

Product	Product name	Brief description
	Ultrasonic Bird delfector 4.3800.90.000	The Ultrasonic Bird Deflector protects the ultrasonic anemometer against measurement faults, which might be caused by different species of birds. **Data output digital** Switching output: max. 24 V AC/DC **Interface** Type: RS485 Data format: 8N1 Baud rate: 2400 ... 115200 Baud **General** Power supply: 12 ... 24V DC 24 V AC Electr. connection: cable gland Housing: Polycarbonate Protection: IP 65 Weight: 0.2 kg

	Device to refuse birds 507245	The device to refuse birds shall prevent smaller birds in the distance of the US transformer from sitting on the instrument, thus providing for an undisturbed operation.
	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
	Bird spike 508396	The bird spike prevents bigger birds from resting in the measurement path between the ultrasonic transducers, providing an undisturbed operation. **General** Material V4A (AiSi 316L)
	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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