WIND

Ultrasonic Anemometer 2D

Part number: 4.382x.4x.xxx
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 range	1 per 10 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
Wind direction	0 ... 20 mA 4 ... 20 mA 0 ... 10 V 2 ... 10 V
Voltage output	min. 4000
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 range	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

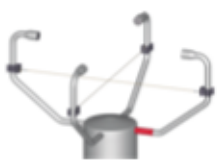
Accessories

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

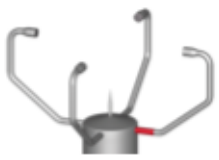
The device to refuse birds shall prevent smaller birds in the distance of the US transformer from sitting on the instrument, thus providing for an undisturbed operation.

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
Fixing boring	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

Thies CLIMA