

Ultrasonic Anemometer 2D

Part number: 4.382x.3x.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 temperatures. 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.3x.xxx

Wind speed

Measuring range	0 ... 85 m/s
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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 Baud ... 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 mA
Wind direction	0 ... 20 mA 4 ... 20 mA 0 ... 10 V 2 ... 10 V
Voltage output	min. 4000 mA
Resolution	16 bit
Data input analog (alternative)	
Channels	3
Resolution	16bit

Operating voltage

Electronic	8 ... 78 V DC or 12 ... 55 V AC / 2.5 W
Heating	24 V AC/DC, typ 80 W

Heating

Heated components	Sensor arms Silicon caps of ultrasonic sensors
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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.3x.xxx, but:

Product number 4.3820.30.340

Data output digital

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

Product number 4.3820.31.300

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
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Product number 4.3820.32.300

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
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Product number 4.3820.32.301
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
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Product number 4.3820.34.398
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 60sec
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)

Channels	3
Resolution	16bit
Operating voltage	
Electronic	8 ... 60V DC or 12 ... 42 V AC / 2.5 W
Heating	24 V AC/DC, typ 240 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 65
Dimension	Ø 424 mm x 287 mm
Weight	2.5 kg

Product number 4.3826.30.340

Data output digital

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

General

Special feature	For upside down use
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Product number 4.3820.34.318

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
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Product number 4.3820.34.397

Data output digital

Interface	RS485 / RS422
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Baudrate	1200 ... 921600 Baud
Data values	instant. values, average values, standard deviation
Output range	1 per 10 msec up to 1 per 60sec
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)

Channels	3
Resolution	16bit

Operating voltage

Electronic	8 ... 60V DC or 12 ... 42 V AC / 2.5 W
Heating	24 V AC/DC, typ 240 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 65
Dimension	Ø 424 mm x 287 mm
Weight	2.5 kg

Product number 4.3820.31.401

Wind speed

Measuring range	0 ... 75 m/s
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Accuracy	±0.1 m/s (5 m/s) ±2 % rms (>5 m/s)
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Wind direction

Measuring range	0 ... 360 °
Accuracy	±1°

Data output digital

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

Product number 4.3820.34.319

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
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Product number 4.3820.34.315

Data output digital

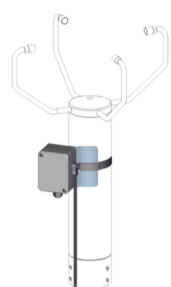
Baudrate	9600 Baud
Duplex mode	Half duplex
Data telegram	no independent data output

Data output analog

Type	3 x 0 ... 10 V
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Accessories

Product	Product name	Brief description
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Ultrasonic Bird deflector
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

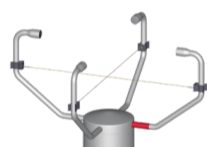
Switching output	max. 24 V AC/DC
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Interface

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.

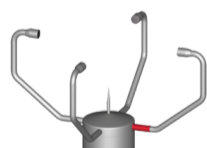
Connecting cable
50775x

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 mm ²



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)
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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