

WIND

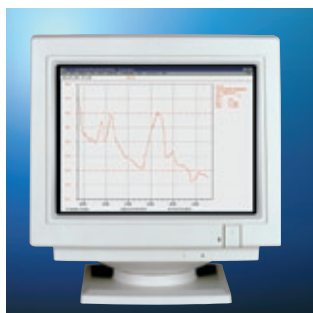
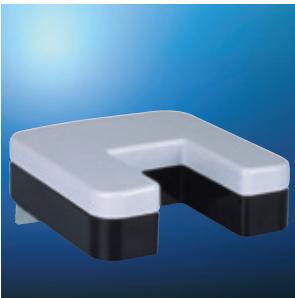
Thies  
CLIMA



T H E   W O R L D   O F   W E A T H E R   D A T A

# THE WORLD OF WEATHER DATA

## Measurement and Documentation: Thies' range of service for meteorology, environmental protection and industry



Today more than ever the measurement, processing and analysis of meteorological data requires a high degree of measurement instrument precision and an optimal adaptation of the data acquired to the task at hand.

For more than 60 years, we have been developing, producing and supplying practical instruments and systems for the analysis of weather data. Today, we are one of the world's largest suppliers of such equipment.

Our close cooperation with scientific institutions and governmental agencies in many countries guarantees a constant and up-to-date flow of information about all aspects of individual national problems and projects and the rapid implementation of state-of-the-art developments and measurement techniques.

Our instruments and systems fulfil in all respects both to the requirements of national weather services as well as those of the World Meteorological Organization in Geneva. Meteorological observations without computer-aided measurement and documentation systems are unthinkable today.

THIES develops complete ready-for-use-systems which include precision data transmitters, data loggers, power supply units and personal computers with adapted software.



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# Wind Glossar

<b>Damping coefficient</b>	The damping coefficient characterises the oscillations of the wind vane. It is an important characteristic quantity for the qualitative evaluation of the wind vane. The damping coefficient is determined from the amplitudes of two successive excursions and is calculated by means of an equation.																																								
<b>Damping ratio</b>	Measure for the damping of wind vanes. It represents the ratio between the consecutive damped deflection amplitudes (for example 3rd amplitude to 1st amplitude) in one direction.																																								
<b>Wind run</b>	The path covered by the wind for a certain period of time.																																								
<b>Delay distance</b>	The path covered by the wind which is reached when, after a sudden change in wind speed, the speed reaches 63% of its end value.																																								
<b>Stress</b>	Maximum allowable wind speed at which no damage occurs on the wind measuring instruments.																																								
<b>Wind force</b>	<p>”Beaufort“ (bft) classes for certain wind speed ranges.</p> <table border="0" style="margin-left: 40px;"> <thead> <tr> <th>bft</th> <th>m/s</th> <th>bft</th> <th>m/s</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0- 0.2</td> <td>9</td> <td>20.8 - 24.4</td> </tr> <tr> <td>1</td> <td>0.3- 1.5</td> <td>10</td> <td>24.5 - 28.4</td> </tr> <tr> <td>2</td> <td>1.6- 3.3</td> <td>11</td> <td>28.5 - 32.6</td> </tr> <tr> <td>3</td> <td>3.4- 5.4</td> <td>12</td> <td>32.7 - 36.9</td> </tr> <tr> <td>4</td> <td>5.5- 7.9</td> <td>13</td> <td>37.0 - 41.4</td> </tr> <tr> <td>5</td> <td>8.0- 10.7</td> <td>14</td> <td>41.5 - 46.1</td> </tr> <tr> <td>6</td> <td>10.8- 13.8</td> <td>15</td> <td>46.2 - 50.9</td> </tr> <tr> <td>7</td> <td>13.9- 17.1</td> <td>16</td> <td>51.0 - 56.0</td> </tr> <tr> <td>8</td> <td>17.2- 20.7</td> <td>17</td> <td>56.1 - 61.2</td> </tr> </tbody> </table>	bft	m/s	bft	m/s	0	0- 0.2	9	20.8 - 24.4	1	0.3- 1.5	10	24.5 - 28.4	2	1.6- 3.3	11	28.5 - 32.6	3	3.4- 5.4	12	32.7 - 36.9	4	5.5- 7.9	13	37.0 - 41.4	5	8.0- 10.7	14	41.5 - 46.1	6	10.8- 13.8	15	46.2 - 50.9	7	13.9- 17.1	16	51.0 - 56.0	8	17.2- 20.7	17	56.1 - 61.2
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8	17.2- 20.7	17	56.1 - 61.2																																						
<b>Wind speed</b>	<p>The most common units of measurement are:  <math>1 \text{ m/s} = 3.6 \text{ km/h} = 1.9455 \text{ knots}</math></p>																																								
<b>Wind direction</b>	Information on the direction from which the wind is coming. Information appears clockwise from North to East (90°), South (180°), West (270°) and North (360°).																																								
<b>Starting value</b>	The wind speed at which a cup anemometer respectively the wind vane starts to move.																																								
<b>Detection limit</b>	The lowest value of wind speed and wind direction at which a stable value sets in.																																								
<b>Variation</b>	The range within which wind direction has changed within the preceding 10 minutes (in accordance with ICAO).																																								
<b>Gliding mean value</b>	The mean value which is updated as the mean value time at short time intervals. (for example the 10 min.-mean value is updated once a second )																																								
<b>Arithmetic mean value</b>	The quotient from the sum of all the individual values and the number of values within the mean value time.																																								

<b>Vectorial mean value</b>	Method of calculation: The individual vectors, measured as wind speed and direction, are decomposed into rectangular components. The components are averaged arithmetically, these mean values are then composed into a vectorial mean value.
<b>Vectorial mean value with standard vectors</b>	Only used for wind direction. A constant wind speed is assumed for the individual vectors.
<b>Orthogonal Wind velocity vector</b>	A straight line standing vertically to another straight line. By arranging two measurement distances standing vertically on each others you achieve the amount and angle of the wind velocity vector in the form of rectangular components. After measurement of the rectangular wind velocity components the amount and angle of the wind velocity can be calculated.
<b>Scalar wind velocity</b>	Wind velocity amount without indication of direction
<b>Acoustic virtual temperature</b>	The acoustic virtual temperature is the air temperature referred to dry air without any portion of water vapour. It is acquired by propagation measurements of sonic pulses. After respective correction of the humidity influence the procedure exceeds the accuracy of the classic procedures of the temperature measurement in a weather and thermal radiation shield.
<b>Gray-code</b>	One-increment binary code, on the changeover of one value to the next one only one single data bit modifies each to the previous and the next value respectively. The Gray-code is used for the digital determination of distances, for ex. For the wind direction of a wind vane. The code can be set up by means of any number of digits, it depends only on the required accuracy of resolution.
<b>8-bit wind direction Gray-code</b>	The wind direction (0 ... 360°) is converted into an 8 bit Gray code (Thies special) and output. The resolution is 2,5°, 144 increments per revolution. Increment 0 = 0° = North and corresponds to the sector 0 ... 2.5° Increment 143 = 357.5° corresponds to the sector 357.5 ... 0°.
<b>Serial-synchron. output</b>	The serial-synchronous interface is a unidirectional two-wire-interface with Thies specifications. It allows the connection between Thies wind sensors with serial-synchronous output and respective periphery (for ex. display instruments)

# Your Notice

# Wind Ultrasonic

## System Example

The Ultrasonic Anemometer 2 D with acoustic measuring principle allows a high-precision measurement of running variable wind dimensions and an inertia-free peak value acquisition.

**Applications:**

- Meteorology
- Climatic Network
- Research
- Development



Ultrasonic Anemometer 2 D



Power supply unit connection box



Displays

- Visualisation
- Recording



PC-software "Meteo-Online"



Datalogger

- Controlling
- Data processing
- Recording

Standard outputs for ex. 0/4 ... 20 mA

THIES projects, configures, and supplies your individual system. Of course, your measurement tasks and the existing system pre-conditions will be in our focus.

Please do not hesitate to contact us for a detailed information

# 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

<b>Wind velocity</b>	
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)
<b>Direction</b>	
Meas. range	
Azimuth	0-360°
Elevation	-90° ... +90°
Resolution	1°
Accuracy	±2°
<b>Virtual temp.</b>	
Meas. range	-40 ... +70 °C
Resolution	0.1 K
Accuracy	±0.5 K
<b>Data output digital</b>	
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.
<b>Data output analogue</b>	
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
<b>or as:</b>	
data input	3 x 0-10 V
output	serial
dissolution	16 bit
<b>General</b>	
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



# Wind Ultrasonic



## Model Brief Description

### Anemometer Ultrasonic 2D

The Ultrasonic Anemometer 2D serves for the 2-dimensional acquisition of the horizontal components of the wind velocity, the wind direction as well as of the acoustic-virtual temperature.

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

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

## Order No.

4.3820.xx.xxx  
.0x.  
.3x.

## Technical Data

With heating	For sensor arms
With heating	For sensor arms and ultrasonic-sensors
<b>Velocity</b>	
Measuring range	0-75 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)
<b>Direction</b>	
Measuring range	0-360°
Resolution	1°
Accuracy	±1°
<b>Virtual temperature</b>	
Measuring range	-40 ... +70 °C
Resolution	0.1 K
Accuracy	±0.5 K
<b>Data output digital</b>	
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.
<b>Data output analogue</b>	
Electr. output for wv, wr, acoustic- virtual temperature	0-20 mA/0-10 V or 4-20 mA/2-10 V
Load	
Current output	max. 400 Ω
Voltage output	min. 4000 Ω
<b>or as:</b>	
Data input	3 x 0-10 V
Output	serial
Resolution	16 bit
<b>General</b>	
Bus operation	up to 99 instruments
Operat. voltage	8-24 V DC or 12-28 V AC/2.5 VA
Electronics with heating	24 V AC/DC, typ. 80 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	2.5 kg

# Wind Ultrasonic

## Model Brief Description

Continuation of page 8

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 suited even for the more difficult use in locations where frequently icing is to be expected.

## Accessories

### Device to Refuse Birds

The device protects the ultrasonic converter of the ultrasonic anemometer (4.3820.xx.xxx). The device shall prevent smaller birds from sitting on the instrument.

### Device to Refuse Birds

• consisting of:

- Pin and
- protective cap

A pin to be screwed onto the shaft, shall protect the instrument against bigger birds and prevent them from sitting on.

### Connecting Cable

Suited for 4.3820/30.....  
Shielded cable, ready for connection with plug on sensor and cable end sleeve on the other end.

### Software Meteo-Online

## Order No.

507245

508396  
212352

507751  
507752  
507753

9.1700.98.000

## Technical Data

Cable length	15 m
	20 m
	25 m

s. page 46



# Wind Ultrasonic



## Model Brief Description

### Ultrasonic Anemometer compact

The Ultrasonic Anemometer compact serves for the 2-dimensional acquisition of the horizontal components of the wind velocity, the wind direction and the acoustic-virtual temperature.

The following measuring values are available:

- Orthogonal wind velocity vectors (X- and Y-distance)
- Scalar / vectorial wind velocity wind direction
- Acoustic-virtual temperature
- NMEA data protocol
- ASCII THIES FORMAT
- Analogue data output \*

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

- Regenerative power generation, wind power plants
- Industrie automation
- Wind warning devices, building construction and building security
- Traffic engineering, aviation and navigation
- Meteorology
- Climatology

The measurement principle allows, compared to the classic anemometers, an inertia-free measurement of running variable dimensions with highest precision and accuracy.

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 as gliding mean value with selectable time frame.

If necessary, the instrument is automatically heated in case of critical ambient temperatures. Thus, the possibility of malfunction, caused by icing, is minimized. The sensor arms and the ultrasonic sensors are heated.

\* only in HD (half duplex) operation

## Order No.

4.3871.0x.xxx

## Technical Data

### Velocity

Measuring range	0-65 m/s
Resolution	0.1 m/s (standard) < 0.1 m/s (user-defined)
Accuracy	±0.2 m/s rms (@ < 5 m/s) ±2% rms (> 5 m/s)

### Direction

Measuring range	0-360°
Resolution	1° (standard) < 1° (user-defined)
Accuracy	±2° @v > 1m/s

### Virtual Temp.

Measuring range	-50 ... +70 °C
Resolution	0.1 K
Accuracy	±2 K

### Data output digital

Interface	RS 485 / 422
Baud rate	1200-921600
Output	Instantan. values, mean values
Output range	1 per 10 msec. up to 1 per 10 sec.
Status signal	Heating, distance error, distance temperature

### Data output analogue

Electr. output for WV, WD	0-20 mA / 0-10 V or 4-20 mA / 2-10 V
Load	
Current output	max. 300 Ω
Voltage output resolution	min. 2000 Ω 16 bit

### General

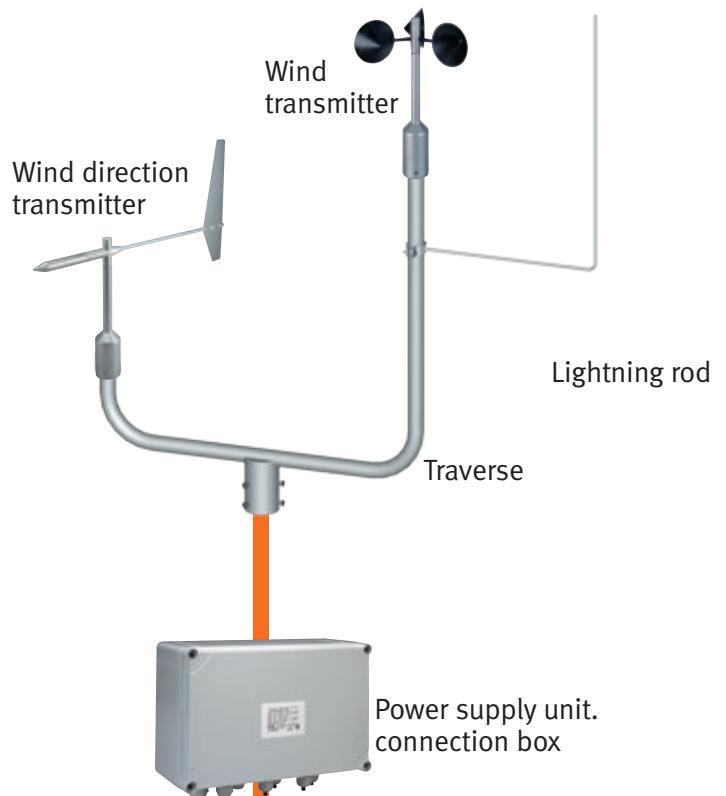
Bus operation	Up to 99 instruments
Operation voltage	
Electronic	8-36 V DC or 24 V AC/1.2 VA
with Heating	24 V AC/DC, max. 250 VA
Electr. connection	8 pol. Plug onto a mast tube 1½"
Mounting	
Fixing boring	Ø 50 x 40 mm
Housing	Alu, anodised
Protection	IP 65
Dimension	Ø 200 x 129 mm
Weight	approx. 2 kg

## System example

Wind transmitter and  
Wind direction sensor for  
the precise acquisition and  
evaluation of measurement  
data.

### Applications

- Meteorology
- Environmental Technology
- Site selection



Displays



PC-software  
"Meteo-Online"



Datalogger

Standard  
outputs for ex.  
0/4 ... 20 mA

- Visualisation
- Recording

- Controlling
- Data processing
- Recording

THIES projects, configures,  
and supplies your individual  
system.  
Of course, your measurement  
tasks and the existing system  
pre-conditions will be in our  
focus.

Please do not hesitate to  
contact us for a detailed  
information

# Wind First Class



## Model Brief Description

### Wind Velocity Transmitter

#### Wind Transmitter "First Class" Advanced

- Low Power Instrument
- Digital output

The wind transmitter is designed for the acquisition of the horizontal component of the wind velocity in the field of meteorology and environmental measuring technology, evaluation of location, and measurement of capacity characteristics of wind power systems. In the plain country the wind transmitter meets all requirements of IEC 61400-12-1 for an Instrument of the accuracy class 0.5.

Special characters are a defined and optimised, dynamic behaviour also at high turbulence intensity, minimal over-speeding, and a low starting value.

The measuring value is available at the output as digital signal. It can be transmitted to display instruments, recording instruments, data loggers as well as to process control systems.

For winter operation the instrument (4-3351.00.000) is equipped with an electronically regulated heating, which guarantees a smooth running of the ball bearings, and prevents the shaft and slot from icing-up.

#### Wind Transmitter "First Class" Advanced

- Analog output and
- Digital output

The wind transmitter is designed for the acquisition of the horizontal component of the wind speed in the field of meteorology and environmental measuring technology, evaluation of location, and measurement of capacity characteristics of wind power systems. In the plain country the wind transmitter meets all requirements of IEC 61400-12-1 for an accuracy class 0.5 instrument.



## Order No.

4.3351.00.000  
.10.

4.3351.00.xxx  
.10.xxx

.x0.140

.x0.141

.x0.161

## Technical Data

With heating W/o heating	
Measuring range	0.3 ... 75 m/s
Accuracy	< 2% of meas. value or < 0.2 m/s r > 0.999 95 (4 ... 20 m/s)
Linearity	
Inclined flow	
- mean deviation from the cosinus line	< 0.1% (in the range ±20°)
- Turbulence effect	< 1% (in the range up to 30% turbulence intensity)
Electr. output	1080 Hz @ 50 m/s
Delay distance	< 3 m
Survival speed	80 m/s (max. 30 minutes)
Operating voltage	3.3 ... 42 V DC
Electronics	0.3 mA with 3.3 V < 0,5 mA with 5 V 24 V AC/DC; 25 W
Heating	
Ambient temp.	-50 ... +80 °C
Electr. connection	8-pole plug connection onto mast tube R 1"
Mounting	
Fixing boring	Ø 35 x 25 mm
Dimensions	290 x 240 mm
Protection	IP 55
Weight	0.5 kg
Material	
Housing	alu, anodised
Cup star	carbon-fibre- reinforced plastic
With heating W/o heating	
Electr. output	
Analogue	0-20 mA (0.3-75 m/s)
Digital	1000 Hz at 50 m/s
Sink output	1 max 250 mA
Source output	1 max 100 mA
Electr. output	
Analogue	4-20 mA (0.3-75 m/s)
Digital	1000 Hz at 50 m/s
Sink output	1 max 250 mA
Source output	1 max 100 mA
Electr. output	
Analogue	0-10 VDC (0.3-75 m/s)
Digital	1000 Hz @ 50 m/s
Sink output	1 max 250 mA
Source output	1 max 100 mA

## Model Brief Description

Continuation of page 12

Special characters are a defined and optimised, dynamic behaviour also at high turbulence intensity, minimal over-speeding, and a low starting value.

The measuring value is available at the output as **analogue signal** and as rectangular digital signal.

For winter operation the instrument (4.3351.00.xxx) is equipped with an electronically regulated heating, which guarantees a smooth running of the ball bearings, and prevents the shaft and slot from icing-up.

## Wind Direction Transmitter

### Wind Direction Transmitter "First Class"

- Low Power Instrument With digital output (Thies serial-synchronous)

The wind transmitter is designed for the acquisition of the horizontal component of the wind direction in the field of meteorology and environmental measuring technology, evaluation of location, and measurement of capacity characteristics of wind power systems.

Special characters are a defined and optimised, dynamic behaviour as well as:

- High measurement accuracy and resolution
- High damping with small distance constant
- Low starting value
- Low power consumption
- Simple mounting

The measuring value is available at the output as **digital signal**. The output signal can be transmitted to display instruments, recording instruments, data loggers as well as to process control systems.

For winter operation the instrument (4.3150.00.xxx) is equipped with an electronically regulated heating.

## Order No.

4.3150.00.00x  
.10.00x

.x0.000

.x0.001

## Technical Data

### General

Measuring range	0.3-75 m/s
Accuracy	< 2% of meas. range Or < 0.2 m/s
0.3-50 m/s	> 0.99995 (4-20 m/s)
Linearity	85 m/s
Survival speed	(min. 30 minutes)
Distance constant	< 3 m
Operating voltage	
Electronics	15-24 V DC
Heating	24 V AC/DC; 25 W
Ambient temperature	-50 ... +80 °C
Electr. connection	8-pole plug connection
Mounting	Onto mast tube R 1"
Fixing boring	Ø 35 x 25 mm
Weight	0.5 kg
Material	
Housing	Alu, anodised
Cup star	carbon-fibre-reinforced plastic

With heating  
W/o heating

Measuring range 0-360°  
Accuracy 1° (0.5°)

Electr. output 8 bit serial-synchron  
Resolution 2.5°

Electr. output 10 bit serial-synchron  
Resolution 0.35°

Operating voltage

Electronics	3.3-42 V DC
Current consumption	1.4 mA. standby
Heating	24 V AC/DC; 25 W
Ambient temp.	-50 ... +80 °C
Starting value	< 0.5 m/s at 10°
Distance constant	< 1 m (acc. to ASTM D 5366-96)

Damping ratio D > 0.25  
Electr. connection 8-pole plug connection

Mounting Onto mast tube R 1"  
Fixing boring Ø 35 x 25 mm  
Dimensions 390 x 240 mm  
Protection IP 55  
Weight 0.7 kg  
Material Alu, anodised



# Wind First Class



## Model Brief Description

### Wind Direction Transmitter "First Class"

- Digital output RS 485

The wind transmitter is designed for the acquisition of the horizontal component of the wind direction in the field of meteorology and environmental measuring technology, evaluation of location, and measurement of capacity characteristics of wind power systems. Special characters are a defined and optimised, dynamic behaviour as well as:

- High measurement accuracy and resolution
- High damping with small distance constant
- Low starting value
- Low power consumption
- Simple mounting

The measuring value is available at the output as **digital signal**. The output signal can be transmitted to display instruments, recording instruments, data loggers as well as to process control systems.

For winter operation the instrument (4.3150.00.xxx) is equipped with an electronically regulated heating.



### Wind Direction Transmitter "First Class"

- Analogue output

The wind transmitter is designed for the acquisition of the horizontal component of the wind direction in the field of meteorology and environmental measuring technology, evaluation of location, and measurement of capacity characteristics of wind power systems. Special characters are a defined and optimised, dynamic behaviour as well as:

- High measurement accuracy and resolution
- High damping with small distance constant
- Low starting value
- Low power consumption
- Simple mounting

The measuring value is available at the output as **analogue signal**. The output signal can be transmitted to display instruments, recording instruments, data loggers as well as to process control systems. For winter operation the instrument (4.3150.00.xxx) is equipped with an electronically regulated heating.

## Order No.

4.3150.00.400  
.10.400

## Technical Data

With heating	
W/o heating	
Measuring range	0-360°
Accuracy	1°
Resolution	0.01° @ 12 bit serial data flow
Electr. output Interface	RS 485
Baud rate	1200-57600 baud
Output telegram	xxx.xx for ex. 075.36°
Operating voltage Electronic	3.3-42 V DC
Current consumption	approx. 6 mA
Heating	24 V AC/DC; 25 W
Ambient temperature	-50 ... +80 °C
Starting value	< 0.5 m/s at 10°
Distance constant	< 1 m (acc. to ASTM D 5366-96)
Damping ratio	D ≥ 0.25
Electr. connection	8-pole plug connection onto a mast tube R 1"
Mounting	onto a mast tube R 1"
Fixing boring	Ø 35 x 25 mm
Dimensions	390 x 240 mm
Protection	IP 55
Weight	0.7 kg
Material	Alu, anodised

4.3150.00.xxx  
.10.xxx

With heating  
W/o heating

Measuring range	0-360°
Accuracy	1°
Resolution	0.35°
Electr. output	0-20 mA
Operating voltage Electronics	15-24 V DC
Current consumption	approx. 4.5 mA + Iout
Electr. output	4-20 mA
Operating voltage Electronics	15-24 V DC
Current consumption	approx. 4.5 mA + Iout
Electr. output	0-10 V
Operating voltage Electronics	15-24 V DC
Current consumption	approx. 4.5 mA
Heating	24 V AC/DC; 25 W
Ambient temperature	-50 ... +80 °C
Starting value	< 0.5 m/s at 10°
Distance constant	< 1 m (acc. to ASTM D 5366-96)
Damping degree	D > 0.25
Electr. connection	8-pole plug connection onto a mast tube R 1"
Mounting	onto a mast tube R 1"
Fixing boring	Ø 35 x 25 mm
Dimensions	390 x 240 mm
Protection	IP 55
Weight	0.7 kg
Material	Alu, anodised

.x0.140

.x0.141

.x0.161



# Wind First Class

## Model Brief Description

### Wind Direction Transmitter "First Class"

- Potentiometer output with protective circuit

The wind transmitter is designed for the acquisition of the horizontal component of the wind direction in the field of meteorology and environmental measuring technology, evaluation of location, and measurement of capacity characteristics of wind power systems. Special characters are a defined and optimised, dynamic behaviour as well as:

- High measurement accuracy and resolution
- High damping with small distance constant
- Low starting value
- Hysteresis-free and non-wearing magnetic coupling between vane- and potentiometer-axis
- Electronic protective circuit for current limiting and against erroneous connection
- Simple mounting

The measuring value is available at the output as **analogue signal**. The output signal can be transmitted to display instruments, recording instruments, data loggers as well as to process control systems.

The electronic protective circuit prevents the potentiometer from overloading in case of erroneous connection and on transition from 0° to 360°. The protective circuit represents a multiplier of 50 Ω, however limits the short cut current on transition from 0° to 360° (and vice-versa) to ≤ 1 mA at 10 k Ω Potentiometer and ≤ 2 mA with a 2 k Ω potentiometer.

For winter operation the instrument (4.3150.00.xxx) is equipped with an electronically regulated heating.

## Order No.

4.3150.00.x1x  
.10.x1x

.x0.110

.x0.012

## Technical Data

With heating W/o heating	
Measuring range	0-360°
Accuracy	< 1.5°
Electr. output Multiplier	Potentiometer 10 KΩ 50 Ω
Operating voltage Potent./electronics Current consumption	4-42 V DC ≤ Us / 10 kΩ
Electr. output Operating voltage Potent./electronics Current consumption	Potentiometer 2 KΩ 4-42 V DC ≤ Us / 2 kΩ
Heating Ambient temp. Starting value Distance constant	24 V AC/DC; 25 W -50 ... +80 °C < 0.5 m/s at 10° < 1 m (acc. to ASTM D 5366-96)
Damping ratio Electr. connection	D > 0.25 8-pole plug connection
Mounting Fixing boring Dimensions Protection Weight Material	onto a mast tube R 1" Ø 35 x 25 mm 390 x 240 mm IP 55 0.7 kg Alu, anodised



# Wind First Class



## Model Brief Description

### Wind Direction Transmitter "First Class"

- Potentiometer output

The wind transmitter is designed for the acquisition of the horizontal component of the wind direction in the field of meteorology and environmental measuring technology, evaluation of location, and measurement of capacity characteristics of wind power systems.

Special characters are a defined and optimised, dynamic behaviour as well as:

- High measurement accuracy and resolution
- High damping with small distance constant
- Low starting value
- Hysteresis-free and non-wearing magnetic coupling between vane- and potentiometer-axis
- Electronic protective circuit for current limiting and against erroneous connection
- Simple mounting

The measuring value is available at the output as analogue signal. The output signal can be transmitted to display instruments, recording instruments, data loggers as well as to process control systems.

For winter operation the instrument (4.3150.00.xxx) is equipped with an electronically regulated heating.

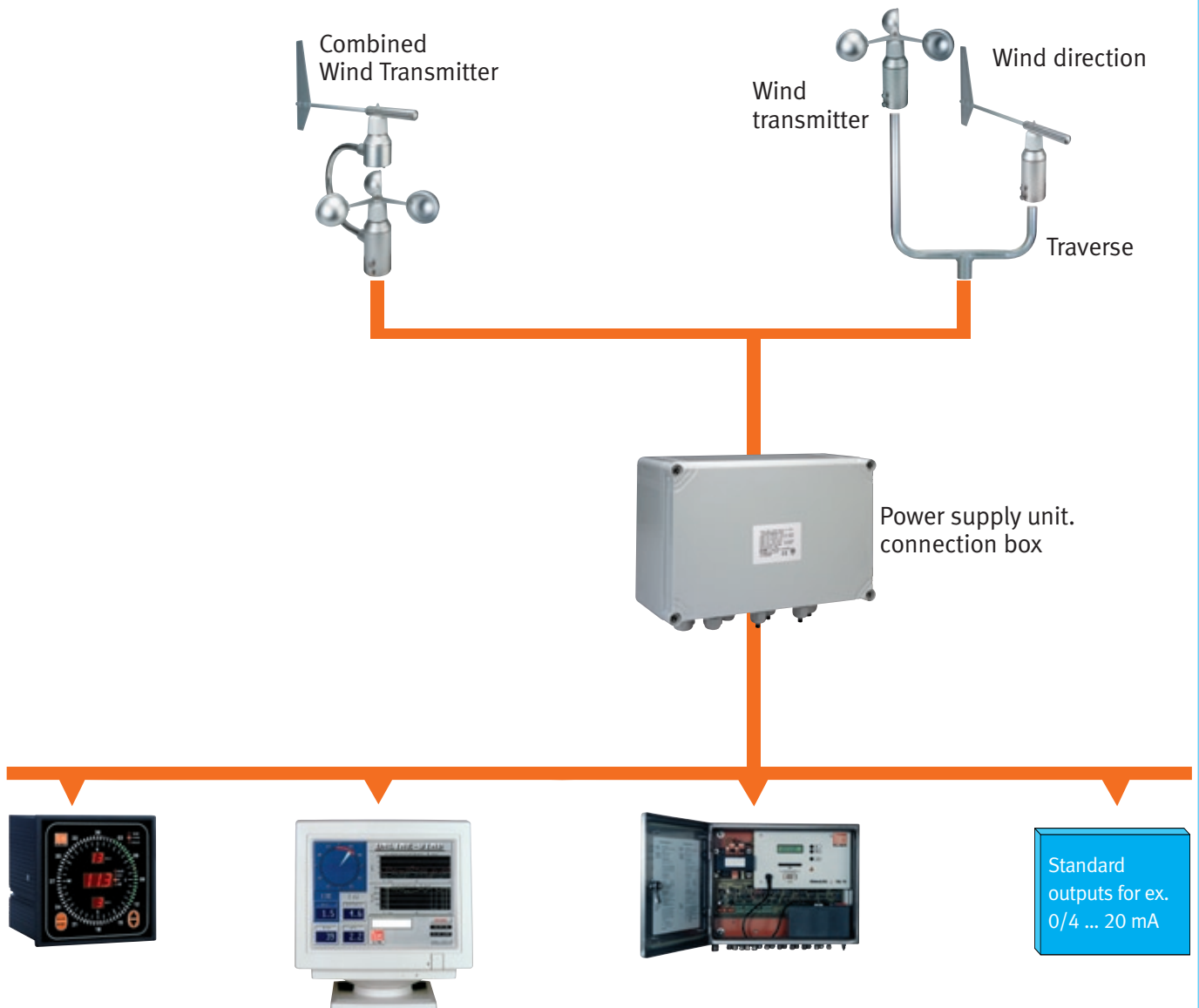
## Order No.

4.3150.00.212  
.10.212

## Technical Data

With heating W/o heating	
Measuring range Accuracy	0-360° < 1.5°
Electr. output Operating voltage Potent./electronics Current consumption	Potentiometer 2 KΩ 0-30 V DC ≤ Us / 2 kΩ
Heating Ambient temp. Starting value Distance constant	24 V AC/DC; 25 W -50 ... +80 °C < 0.5 m/s at 10° < 1 m (acc. to ASTM D 5366-96)
Damping ratio Electr. connection	D > 0.25 8-pole plug connection
Mounting Fixing boring Dimensions Protection Weight Material	onto a mast tube R 1" Ø 35 x 25 mm 390 x 240 mm IP 55 0.7 kg Alu, anodised

## System example



Displays

PC-Software  
"Meteo-Online"

Datalogger

- Visualisation
- Recording

- Recording
- Controlling
- Data processing

THIES projects, configures, and supplies your individual system. Of course, your measurement tasks and the existing system pre-conditions will be in our focus.

Please do not hesitate to contact us for a detailed information.

# Wind Classic

## Model Brief Description

### Wind Velocity Transmitter



#### Wind Transmitter

The wind transmitters is designed for the direction-independent measurement of the horizontal air-flow.

The wind transmitter is equipped with a contact-free opto-electronic scanner, which causes an extremely low starting speed. At the output the measuring value is available as digital signal.

The heating is electronically controlled. A plug-connection is situated in the shaft of the instrument. The instrument is mounted preferably onto a mast or traverse. All essential parts are made of anodised Aluminium.



#### Wind Transmitter

This wind transmitter is designed for high wind velocities.

The instrument is equipped with a reinforced cup star.



#### Wind Transmitter

The wind transmitter is equipped with a contact-free opto-electronic scanner. A connected electronics converts the speed-dependent frequency into an analogue output signal.



#### Wind Transmitter

This wind transmitter is equipped with a DC-generator which produces a d.c-voltage with the rotation of the cup star. It is able to operate a respective display instrument directly (without current supply).

## Order No.

4.3303.22.xxx  
.000  
.007

4.3303.22.0xx  
008  
018

4.3303.22.xxx  
.0xx  
.6xx  
.x40  
.x41  
.x60  
.x61  
.x73

4.3105.22.000

## Technical Data

Meas. range 0.3-50 m/s  
Electr. output 3-1042 Hz (live zero)  
3-1042 Hz (no live zero)  
Load max. 60 m/s  
Distance constant 5 m  
Accuracy  $\pm 0.3$  m/s/ $\pm 2\%$  of m.v.

Operating voltage  
Electronics 3.3 ... 47 V DC  
Heating 24 V AC/DC; 20 W

### General

Ambient temp. -35 ... +80 °C  
Electr. connection  
with x.xxxx.xx.000 5-pole plug connection  
with x.xxxx.xx.007 7-pole plug connection

Mounting onto mast tube 1 1/2"  
Fixing boring  $\varnothing$  50 x 50 mm  
Dimensions  $\varnothing$  315 x 230 mm  
Protection IP 55  
Weight 1 kg

Meas. range 0.5-75 m/s  
Electr. output 0-754 Hz (live zero)  
0-754 Hz (no live zero)  
Accuracy  $\pm 0.5$  m/s /  $\pm 2\%$  of m.v.

Operating voltage  
Electronics 3.3 ... 47 V DC  
Heating 24 V AC/DC; 20 W  
Electr. connection 5-pole plug connection

Measuring range 0.3-50 m/s  
0.3-60 m/s  
Electr. output 0-20 mA  
4-20 mA  
0-1 V  
0-10 V  
0-5 V  
Accuracy  $\pm 0.4$  m/s /  $\pm 2.5\%$  of m.v.

Operating voltage  
Electronics 15-24 V DC  
Heating 24 V AC/DC; 20 W  
Electr. connection 5-pole plug connection

Measuring range 0.5-35 m/s  
Electr. output 0-4.67 mA DC.  
linear. Ra = 400 W  
Load max. 60 m/s  
Accuracy  $\pm 0.5$  m/s /  $\pm 2\%$  of m.v.  
Heating 24 V AC/DC; 20 W  
Electr. connection 5-pole plug connection

## Model Brief Description

### Wind Direction Transmitters

#### Wind Direction Transmitter

Measuring value transmitter for measuring the direction of the horizontal air flow.

Potentiometer-wind-direction-transmitters are equipped with a sliding potentiometer which offers a theoretically unlimited resolution.

The heating is electronically controlled. A plug-connection is situated in the shaft of the instrument. The instrument is mounted preferably onto a mast or traverse. All main parts are made of anodised aluminium.

#### Wind Direction Transmitter

Measuring value transmitter for measuring the direction of the horizontal air flow.

The wind direction transmitter is equipped with a contact-free scanning system which causes an extremely low starting speed, and operates in wear-resistant manner. The digital measuring signals are transformed by an internal measuring transformer.

The output is available as analogue current- or voltage signal.

#### Wind Direction Transmitter

Measuring value transmitter for measuring the direction of the horizontal air flow.

The position of the wind vane is detected opto-electronically by a code disc, which causes an extremely low starting speed, and operates in wear-resistant manner.

The output is available as serial or as parallel digital signal.

## Order No.

4.3120.22.xxx  
.012  
.018

4.3125.32.xxx  
.040  
.041  
.060  
.061  
.073

4.3121.32.000  
4.3125.32.100

## Technical Data

<b>Potentiometer</b>	<b>Measuring range</b>
0-2000 $\Omega$	360° ( $\pm 2^\circ$ )
0-400 $\Omega$	358° ( $\pm 3^\circ$ )
	5-lead circuit
Measuring range	0-360°
Resolution	1°
Accuracy	$\pm 1.5^\circ$
Operating voltage	
Potentiometer	12 V DC, max 1.5 W
Heating	24 V AC/DC, max. 20 W
Load	max. 60 m/s
Starting value	0.5 m/s at 90°
Damping coefficient	0.2-0.3
Ambient temperature	-35 ... +80 °C
Electr. connection	8-pole plug connection
Mounting	onto mast tube 1 1/2"
Dimensions	415 mm high
Protection	IP 55
Weight	1.8 kg

<b>Analogue output</b>	0-20 mA
	4-20 mA
	0-1 V
	0-10 V
	0-5 V
Measuring range	0-360°
Resolution	2.5°
Accuracy	$\pm 1.5^\circ$
Load	max. 60 m/s
Starting value	< 0.6 m/s at 90°
Damping coefficient	0.2-0.3
Operating voltage	15-24 V DC
Heating	24 V AC/DC, max. 20 W
Ambient temperature	-35 ... +80 °C
Electr. connection	5-pole plug connection
Mounting	onto mast tube 1 1/2"
Dimensions	415 mm high
Protection	IP 55
Weight	1.8 kg

<b>Digital output</b>	8-bit parallel
	8-bit serial-syn.
Measuring range	0-360°
Resolution	2.5°
Accuracy	$\pm 1.5^\circ$
Load	max. 60 m/s
Starting value	< 0.6 m/s at 90°
Damping coefficient	0.2-0.3
Operating voltage	
Electronics	5 / 3.5-18 V DC
Heating	24 V AC/DC, max. 20 W
Ambient temperature	-35 ... +80 °C
Electr. connection	
with xx.xxxx.000	19-pole plug connection
with xx.xxxx.100	7-pole plug connection
Mounting	onto mast tube 1 1/2"
Dimensions	415 mm high
Protection	IP 55
Weight	1.8 kg



# Wind Classic



## Model Brief Description

### Combined Wind Transmitters

#### Combined Wind Transmitter

Measuring value transmitter for the measurement of the wind speed and wind direction of the horizontal air flow.

The cup star revolution is scanned opto-electronically in contact-free and wear-resistant manner. It has an extremely low starting speed.

The position of the wind vane is detected opto-electronically by a code disc.

The digital measuring signals are transformed by an internal measuring transformer.

The output signals are available as current or voltage signals.

The heating is controlled electronically. A plug connection is situated in the shaft of the instrument. The instrument is mounted preferably onto a mast. All main parts are made of anodised aluminium.

## Order No.

4.3324.31.xxx  
.0xx  
.6xx  
.x40  
.x41  
.x61  
.x73

## Technical Data

Meas. range WV	0.3-50 m/s 0.3-60 m/s
Electr. output	0-20 mA 4-20 mA 0-10 V 0-5 V
Meas. range WD	0-360°
Accuracy	±0.5 m/s or ±2.0% of meas. value ±1.5°
Load	max. 60 m/s
Delay distance	5 m
Responsiveness	< 0.6 m/s at 90°
Damping coefficient	0.2-0.3
Operating voltage	15-24 V DC or 24 V AC/DC, w. heating
Heating	max. 40 W
Ambient temp.	-35 ... +80°C
Electr. connection	multi-pole plug
Fixing boring	Ø 50 x 50 mm
Mounting	onto mast tube 1 1/2"
Total height	620 mm
Protection	IP 55
Weight	2.8 kg



#### Combined Wind Transmitter

Measuring value transmitter for the measurement of the wind speed and wind direction of the horizontal air flow.

The cup star revolution is scanned opto-electronically in contact-free and wear-resistant manner.

It has an extremely low starting speed.

The position of the wind vane is detected opto-electronically by a code disc.

The output signals are available as frequency for wind speed, and as 8-bit-Gray-code (parallel) for wind direction.

4.3324.31.000  
.001

Model	Standard land version Ship version
Measuring range	0.3-50 m/s 0-360°
Electr. output	3-1042 Hz 8-bit-Gray-Code (parallel)
Resolution	0.05 m; 2.5°
Accuracy	±0.3 m/s or ±2% of meas. value ±1.5°
Operating voltage	15 V DC (5-18 V) or 24 AC/DC, w. heating
Load	max. 60 m/s
Delay distance	5 m
Responsiveness	< 0.6 m/s at 90°
Damping coefficient	0.2-0.3
Heating	max. 40 W
Ambient temp.	-35 ... +80 °C
Electr. connection	multi-pole plug
Fixing boring	Ø 50 x 50 mm
Mounting	onto mast tube 1 1/2"
Total height	620 mm
Protection	IP 55
Weight	2.8 kg



The ship-version is equipped with a strengthened cup star and a smaller wind vane.

# Wind Classic

## Model Brief Description

### Combined Wind Transmitter

Measuring value transmitter for the measurement of the wind speed and wind direction of the horizontal air flow.

The cup star revolution is scanned opto-electronically in contact-free and wear-resistant manner.

It has an extremely low starting speed.

The position of the wind vane is detected opto-electronically by a code disc.

The output signals are available as frequency for the wind speed and as serial-synchronous 8-bit for wind direction.

The ship-version is equipped with a strengthened cup star and a smaller wind vane.

## Order No.

4.3336.21.000  
4.3336.31.000  
.001

## Technical Data

Model	for Datalogger Standard land version Ship version
Meas. range wv	0.3-50 m/s
Meas. range wd	0-360°
Electr. output wv	3-1042 Hz
Electr. output wd	8-bit serial-synchronous
Resolution	0.05 m; 2.5°
Accuracy	±0.3 m/s oder ±2% of meas. value ±1.5°
Load	max. 60 m/s
Delay distance	5 m
Starting value	< 0.6 m/s at 90°
Damping coefficient	0.2-0.3
Operating voltage	4-18 V DC
Heating	40 W, 24 V AC/DC
Ambient temp.	-35 ... +80 °C
Electr. connection	multi-pole plug
Fixing boring	Ø 50 x 50 mm
Mounting	onto mast tube 1 1/2"
Total height	620 mm
Protection	IP 55
Weight	2.8 kg



## Your Notice



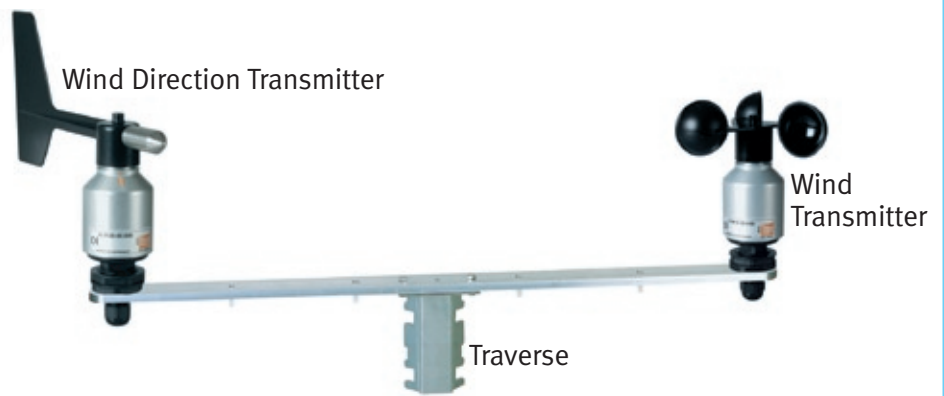
# Wind Compact

## System example

Wind transmitter and Wind direction transmitter for qualified control-technical requirements

Applications:

- Building services engineering
- Industry
- Wind power plants
- Environmental technology
- Warning systems



Displays



PC-Software "Meteo-Online"



Datalogger

Standard outputs for ex. 0/4 ... 20 mA

- Visualisation
- Recording

- Recording
- Controlling
- Data processing

THIES projects, configures, and supplies your individual system. Of course, your measurement tasks and the existing system pre-conditions will be in our focus.

Please do not hesitate to contact us for a detailed information.

# Wind Compact

## Model Brief Description

### Wind Velocity Transmitters

#### Wind Transmitter Compact

- Frequency output

Measuring transmitter for the wind velocity with frequency output (open collector). The cup-star consists of plastic, the housing is made of anodised aluminium and plastic. The instrument has a threaded pin PG 21 with 2 nuts for mounting.



#### Wind Transmitter Compact

- Low Power Instrument with frequency output

Measuring transmitter for the measurement of the horizontal wind velocity with frequency output (active signal). Suitable for data loggers. The cup-star consists of plastic, the housing is made of anodised aluminium and plastic. The instrument has a threaded pin PG 21 with 2 nuts for mounting.



#### Wind Transmitter Compact

- Analogue output

Measuring transmitter for the measurement of the horizontal wind speed with analogue output signals. The cup-star consists of plastic, the housing is made of anodised aluminium and plastic. The instrument has a threaded pin PG 21 with 2 nuts for mounting.



## Order No.

4.3518.00.000  
4.3520.00.000  
4.3520.10.000

4.3519.00.000

4.3519.00.xxx

.140

.141

.161

.167

.173

## Technical Data

With heating	open collector sink
With heating	open collector source
W/o heating	open collector source
Measuring range	0.5-50 m/s
Accuracy	±3% of meas. value or ±0.5 m/s
Resolution	< 0.1 m/s
Electr. output	2-573 Hz
Operating voltage	10-28 V DC
Current supply	20 mA
Heating	max. 20 W; 24 V AC/DC
Ambient temp.	-40 ... +70 °C
Connection	5 m cable, LiYCY 5 x 0.25 mm <sup>2</sup>
Dimensions	Ø 135 x 165 mm
Protection	IP 55
Weight	0.4 kg

Measuring range	0.5-50 m/s
Accuracy	±3% of meas. value or ±0.5 m/s
Resolution	< 0.1 m/s
Electr. output	2-630 Hz
Operating voltage	3.3-42 V DC
Current consumpt.	< 1 mA
Heating	max. 20 W; 24 V AC/DC
Ambient temp.	-40 ... +70 °C
Connection	12 m cable, LiYCY 5 x 0.25 mm <sup>2</sup>
Dimensions	Ø 135 x 165 mm
Protection	IP 55
Weight	0.75 kg

Electr. output	Load (at with operat. volt.)
0-20 mA	max. 500 Ω ; (> 13 V DC)
4-20 mA	max. 500 Ω ; (> 13 V DC)
0-10 V	min. 1 kΩ
0-2 V	min. 1 kΩ
0-5 V	min. 1 kΩ
Measuring range	0.5-50 m/s
Accuracy	±3% of meas. value or ±0.5 m/s
Resolution	< 0.1 m/s
Operating voltage	9-30 V DC or 24 V AC for 0-10 V output.
Current consumption	50 mA
Heating	max. 20 W; 24 V AC/DC
Ambient temp.	-40 ... +70 °C
Connection	12 m cable, LiYCY 6 x 0.25 mm <sup>2</sup>
Dimensions	Ø 135 x 165 mm
Protection	IP 55
Weight	0.75 kg

# Wind Compact

## Model Brief Description

### Wind Transmitter Compact

- Model with plug connection

Model like 4.3518.00.000 and 4.3519.00.000/1xx however with implemented plug instead of connected cable.

### Wind Direction Transmitters

#### Wind Direction Transmitters Compact

- Digital Parallel Output

Measuring transmitter for the measurement of the horizontal wind direction with digital output signal (Gray-code).

The wind vane consists of plastic, the housing is made of anodised aluminium and plastic. The instrument has a threaded pin PG 21 with 2 nuts for mounting.

#### Wind Direction Transmitters Compact

- Digital Serial Output

Measuring transmitter for the measurement of the horizontal wind direction with digital output signal (Gray-code).

The wind vane consists of plastic, the housing is made of anodised aluminium and plastic. The instrument has a threaded pin PG 21 with 2 nuts for mounting.

## Order No.

4.3518.00.700  
4.3519.00.700  
4.3519.00.740  
4.3519.00.741  
4.3519.00.761

4.3128.xx.000  
.00....  
.10....

4.3129.00.000

## Technical Data

Connection	7-pole plug
Dimensions	
Height (with plug)	225 mm
Cup star	Ø 135 mm
Housing	Ø 50 mm
Weight	0.4 kg

With heating	
Without heating	

Measuring range	0-360°
Accuracy	±5°
Resolution	90°; 45°; 22.5°
Output	2; 3; 4-bit Gray-Code
Electr. output	Open collector (source)
Operating voltage	10-28 V DC
Heating	max. 20 W; 24 V AC/DC
Ambient temperat.	-30 ... +70 °C
Connection	5 m cable LiYCY 6 x 0.25 mm <sup>2</sup>

Dimensions	
Height	220 mm
Wind vane	215 mm
Housing	Ø 50 mm
Protection	IP 55
Weight	0.6 kg

Measuring range	0-360°
Accuracy	±5°
Resolution	11.25°
Electr. output	5-bit serial-synchronous
Operating voltage	5-30 V DC
Current consumption	
standby	< 15 µA (5V)
active	< 200 µA (5V)
Heating	max. 20 W; 24 V AC/DC
Ambient temp.	-50 ... +70 °C
Connection	12 m cable, LiYCY 6 x 0.25 mm <sup>2</sup>

Dimensions	
Height	220 mm
Wind vane	215 mm
Housing	Ø 50 mm
Protection	IP 55
Weight	1.1 kg



# Wind Compact



## Model Brief Description

### Wind Direction Transmitter Compact

- Digital Serial Output
- GMR-Sensor for high resolution

Measuring transmitter for the measurement of the horizontal wind direction with digital output signal (Gray-code).

The wind vane consists of plastic, the housing is made of anodised aluminium and plastic. The instrument has a threaded pin PG 21 with 2 nuts for mounting.

## Order No.

4.3129.60.000

## Technical Data

Measuring range	0-360°
Accuracy	±5°
Resolution	2.5°
Electr. output	8-bit serial-synchronous
Operating voltage	3.3-30 V DC or 24 V AC
Current consumption	< 1 mA (5V)
Heating	max. 20 W; 24 V AC/DC
Ambient temp.	-30 ... +70 °C
Connection	12 m cable, LiYCY 6 x 0.25 mm <sup>2</sup>
Dimensions	
Height	220 mm
Wind vane	215 mm
Housing	Ø 50 mm
Protection	IP 55
Weight	1.1 kg



### Wind Direction Transmitter Compact

- Analogue Output

Measuring transmitter for the measurement of the horizontal wind direction with analogue output signals.

The wind vane consists of plastic, the housing is made of anodised aluminium and plastic. The instrument has a threaded pin PG 21 with 2 nuts for mounting.

4.3129.00.xxx

- .140
- .141
- .161
- .167
- .173

Electr. output	Load operating voltage
0-20 mA	@ 500 Ω; (> 15 V DC)
4-20 mA	@ 500 Ω; (> 15 V DC)
0-10 V	@ 1 k Ω; (> 15 V DC)
0-2 V	@ 1 k Ω
0-5 V	@ 1 k Ω
Measuring range	0-360°
Resolution	11.25°
Accuracy	±5°
Operating voltage	8-30 V DC or 24 V AC
for 0-10 V-output	15-30 V DC or 24 V AC
Heating	max. 20 W; 24 V AC/DC
Ambient temp.	-40 ... +70 °C
Connecton	12 m cable, LiYCY 6 x 0.25 mm <sup>2</sup>
Dimensions	
Height	210 mm
Wind vane	215 mm
Housing	Ø 50 mm
Protection	IP 55
Weight	1.1 kg



### Wind Direction Transmitter Compact

- Model with plug connection

Model like 4.3129.00.000/ 1xx however with implemented plug instead of connected cable.

4.3129.00.700

- .740
- .741
- .761

Connection	7-pole plug
Dimensions	
Height (with plug)	270 mm
Wind vane	215 mm
Housing	Ø 50 mm
Weight	0.4 kg

# Wind Compact

## Model Brief Description

### Wind Direction Transmitter Compact

- Analogue Output
- GMR-Sensor for high resolution

Measuring transmitter for the measurement of the horizontal wind direction with analogue output signals.

The wind vane consists of plastic, the housing is made of anodised aluminium and plastic.

The instrument has a threaded pin PG 21 with 2 nuts for mounting.

### Wind Direction Transmitter Compact

- Model with plug connection

Model like 4.3129.00.000/1xx however with implemented plug instead of connected cable.

## Order No.

4.3129.60.xxx  
 .140  
 .141  
 .161  
 .167  
 .173

4.3129.60.xxx  
 .740  
 .741  
 .761  
 .767  
 .773

## Technical Data

Electr. output	Load operating voltage
0-20 mA	@ 500 Ω; (> 12 V DC)
4-20 mA	@ 500 Ω; (> 12 V DC)
0-10 V	@ 1 k Ω; (> 12 V DC)
0-2 V	@ 1 k Ω
0-5 V	@ 1 k Ω
Measuring range	0-360°
Resolution	0.4°
Accuracy	±2°
Operating voltage	8-30 V DC or 24 V AC
for 0-10 V-output	15-30 V DC or 24 V AC
Heating	max. 20 W; 24 V AC/DC
Ambient temp.	-30 ... +70 °C
Connecton	12 m cable, LiYCY 6 x 0.25 mm <sup>2</sup>
Dimensions	
Height	210 mm
Wind vane	215 mm
Housing	Ø 50 mm
Protection	IP 55
Weight	1.1 kg

Connection	7-pole plug
Dimensions	
Height (with plug)	270 mm
Wind vane	215 mm
Housing	Ø 50 mm
Weight	0.4 kg



## Your Notice

# Wind Small Wind Transmitters

Small Wind Transmitters are ideal measuring transmitters with best price/performance-ratio for standard requirements.

Applications:

- Control technique
- Building control system

Model Brief Description	Order No.	Technical Data	
<b>Wind Velocity Transmitters</b>			
<p><b>Small Wind Transmitter</b> Measuring instrument for the direction-independent measurement of the horizontal air flow in the open. The sensor is a small construction with a DC-generator, which is moved by the revolution of the cup-star. The transmitter is made of synthetic material.</p>	4.3400.30.000	<p>Measuring range Accuracy Electr. output Load Fixing boring Mounting Ambient temp. Cable</p> <p>Dimensions Protection Weight</p>	<p>0.5-35 m/s ±0.5 m/s or ±5% of meas. value 0-1 mA DC Ra = 800 Ω max. 60 m/s Ø 35 x 35 mm onto a mast tube 1" -25 ... +60 °C, ice-free 20 m; LiYY 2 x 0.25 mm<sup>2</sup> Ø 134 x 175 mm IP 54 0.3 kg</p>
<p><b>Small Wind Transmitter</b> Measuring instrument for the direction-independent measurement of the horizontal air flow in the open. The sensor is a small construction with a Reed-contact, which is activated by the revolution of the cup-star. The transmitter is made of synthetic material.</p>	4.3515.30.000	<p>Measuring range Accuracy Electr. output Resolution Load Contact Contact load RV Fixing boring Mounting Ambient temp. Cable</p> <p>Dimensions Protection Weight</p>	<p>0.5-40 m/s ±0.5 m/s or ±5% of meas. value 50 Hz at 40 m/s 0.8 m wind run max. 60 m/s Reed-contact max. 24V DC 0.5W; 100 Ω Ø 35 x 35 mm onto a mast tube 1" -25 ... +60 °C, ice-free 20 m; LiYY 2 x 0.25 mm<sup>2</sup> Ø 134 x 175 mm IP 54 0.3 kg</p>
<p><b>Small Wind Transmitter</b> Measuring instrument for the direction-independent measurement of the horizontal air flow in the open. The sensor is a small construction with a Reed-contact, which is activated by the revolution of the cup-star. The housing is made of synthetic material.</p>	4.3515.xx.xxx .50.xxx .51.xxx .0xx .1xx .x00 .x61	<p>With heating Without heating Instrument colour Electr. output Measuring range Accuracy Resolution Load Contact load Fixing boring Mounting Ambient temp. Cable</p> <p>Dimension Protection Weight</p>	<p>max. 24 V DC; 24 W white black 0-100 Hz 0-10 V 0.8-40 m/s ±0.5 m/s or ±5% of meas. range 0.4 m wind run (.x00) max. 60 m/s 10 VA, max. 42 VDC max. 0.4 A Ø 35 x 35 mm on mounting angle -25 ... +60 °C 3 m; LiYY 4 x 0.5 mm<sup>2</sup> resp. 2 x 0.5 mm<sup>2</sup> Ø 134 x 160 mm IP 54 0.3 kg</p>



# Wind

## Small Wind Transmitters

### Model Brief Description

#### Wind Direction Transmitters



#### Wind Direction Transmitter

Measuring sensor for the measurement of the horizontal wind direction in the open. The instrument is a small construction with a potentiometer or Reed-contact, which are activated in correspondence to the position of the wind vane. The instrument is made of synthetic material.

### Order No.

4.3124.30.018

4.3127.40.000

### Technical Data

Electr. output Resolution	0-400 Ω (358°) 0.5°, 5-lead circuit
Electr. output Resolution Accuracy	8 Reed contacts 22.5° ±4°
Measuring range Potentiometer load	0-358°/0-360° max. 100 mA, 24 V, 2.5 W
Contact load Load	0.5 W, max. 60 V DC max. 60 m/s
Ambient temp. Cable	-25 ... +60 °C, ice-free 20 m, LiYCY 5 x 0.25 mm <sup>2</sup> or 9 x 0.14 mm <sup>2</sup>
Mounting Dimension Protection Weight	onto a mast tube 1" 210 mm high IP 54 0.55 kg



#### Wind Direction Transmitter

Measuring transmitter for the measurement of the horizontal wind direction. The measuring values are output as ohmic resistance-signals. The wind direction is detected by a wind vane, and is then transmitted to a potentiometer. The outer parts of the instrument are made of corrosion-resistant materials (plastic). Labyrinth gaskets protect the parts inside the instrument.

4.3140.51.010

Measuring range	10°-350° (20° dead-zone in the north)
Electr. output	Potentiometer 0-1 KΩ (±3%)
Responsiveness Potentiometer load	1 m/s max. 1.5 W
Ambient temperature	-25 ... +60 °C, ice-free
Electr. connection	3 m cable
Dimensions Protection Weight	210 mm high IP 54 0.3 kg



#### Combined Transmitter

Measuring transmitter for the measurement of wind velocity, wind direction and air temperature. Compact wind transmitter construction for simple instrument mounting.

Wind vane, cup star and housing consist partially of fibre-reinforced plastic, housing brackets and mast boring of stainless steel and alu.

4.3329.00.510

Wind velocity Measuring range	1 ... 40 m/s 1 Reed contact / 2 magnets
Output Resolution Contact load	Potential-free pulses typ. 2.3 Hz / ms <sup>-1</sup> max. 10 VA, 0.5 A, 42 VDC
Wind direction Measuring range	2.5 ... 357.5°
Sensor Output	Potentiometer 0 ... 1 KΩ, 5° dead-zone in the North
Temperature Sensor Ambient. temperature	NTC, 10 KΩ -25 ... +60 °C (ice-free)
Connection	15 m cable, LiYCY 6 x 0.25 mm <sup>2</sup>
Dimensions Height Housing Mast boring	418 mm Ø 50 mm Ø 31 mm 26 mm depth
Protection Weight	IP 54 1 kg



# Wind Transmitters for Air Flow

Wind

Measuring Transmitters for directional air flow

Applications:

- Air Channel Shafts
- Climatic Ducts
- Street- and Railway Tunnels

Model Brief Description

## Ultrasonic Anemometer 1D

The Ultrasonic Anemometer 1 D serves for the measurement of the horizontal air flow of a fixed flow direction and the acoustic-virtual temperature.

Different measuring values are available, among others:

- Flow vector
- Scalar flow velocity
- Acoustic-virtual temperature
- Standard deviation of the wind velocity
- Standard deviation of the scalar air flow
- Standard deviation of the acoustic-virtual temperature
- Flow velocity of the gust

The instrument is especially suited for the use

- In the traffic engineering
- Indoor flow measurement
- In tunnels
- In tubes

The 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.

The measuring 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 as gliding mean value with selectable time frame.

If necessary, the sensor arms are automatically heated with critical ambient temperatures.

Order No.

4.3865.0x.xxx

4.3866.0x.xxx

Technical Data

### Flow velocity

Measuring range 0-65 m/s  
 Resolution 0.1 m/s  
 Accuracy  $\pm 0.1$  m/s rms (0-5 m/s)  
 $\pm 2\%$  rms ( $> 5$  m/s)

### Flow direction

Measuring range  $1^\circ$  or  $181^\circ$

### Virtual temperature

Measuring range -50 ... +70 °C  
 Resolution 0.1 K  
 Accuracy  $\pm 0.5$  K

### Data output digital

Interface RS 485 / 422  
 Baud rate 1200-921600  
 Output Instantaneous values, Mean values, Standard deviations etc.  
 Output rate 1 per 1 msec. up to 1 per 60 sec.  
 Status signal Heating, Distance error, Distance temperature

### Data output analogue

Electr. output for flow, direction and virtual temperature 0-20 mA / 0-10 V or 4-20 mA / 2-10 V  
 Resolution 16 bit  
 Load Current output max. 400  $\Omega$   
 Voltage output min. 4000  $\Omega$

### General

Bus operation up to 99 instruments  
 Operating voltage Electronics 8-42 V DC oder 12-28 V AC/2,5 VA  
 With heating 24 V AC/DC, typ. 40 VA  
 Electr. connection 5 m cable  
 Mounting Flange plate with borings  
 Housing material Stainless steel (v 4 A)  
 Protection IP 65  
 Dimensions 424 x 278 mm  
 Weight 2.5 kg

as mentioned above, however, electrical connection, 8 pole plug connector



# Wind

## Wind Transmitters for Air Flow

### Model Brief Description



#### Wind Transmitter for tunnel application

For the measurement of directional air flows especially in tunnels. Instrument sends frequency signals, depending on speed and related to the flow direction.

Instrument is equipped with a mounting bar.

Suitable for connection to the Measuring Transducer TW, order-no. 4.3348.xx.xxx

### Order No.

4.3308.10.000

### Technical Data

Measuring range	0.3-20 m/s
Resolution	approx. 0.05 m wind run
Delay distance	3.3 m
Electr. output	0-410 or 418 Hz
Propeller type	4-blade, polypropylene
Dimension	180 mm
Operating voltage	15 V DC
Current supply	(10-16 V DC) approx. 15 mA
Ambient temp.	-20 ... +70 °C, ice-free
Cable	3 m, LiYCY 4 x 0.25 mm <sup>2</sup>
Dimensions	Ø 200 x 350 mm
Weight	5 kg



#### Wind Transmitter for duct application

A fan wheel to determine the directional air flow in ducts. Mounting on a mast tube.

The fan wheel revolutions are scanned opto-electronically by a reflective light barrier in a contact-free manner, thus causing a low starting speed.

See also :  
Measuring Transducer WG,  
order-no.. 4.3339.xx.xxx

4.3311.30.000  
4.3311.32.000

Operating voltage	15 V DC / approx. 0.3 mA, 24 V DC
Measuring range	< 0.25-20 m/s
Resolution	0.083 m wind run
Electr. output	0-240 Hz
Fan wheel type	8-blade aluminium
dimensions	Ø 100 mm
Ambient temp.	-20 ... +80 °C, ice-free
Cable	1 m
Fixing boring	Ø 37 x 20 mm
Dimensions	108 x 148 x 65 mm
Weight	0.9 kg

## Hand Instruments, Mech. Anemometer, Wind Measuring Systems

Autarkic measuring instruments are especially suited for portable use, where no power supply is available. Small wind measuring systems and Climatic Sensors are systems with best price/performance-ratio, applicable for measuring value display or control functions.

### Applications:

- Agriculture
- Meteorology
- Environmental measurements
- Control technique
- Building control system

### Model Brief Description

#### Cup-Anemometer

A measuring instrument designed for hand use to take direct wind velocity readings. Made of plastic.

#### Instrument case

(not depicted)  
Transport and storage case for the above-mentioned anemometer.

#### Digital Anemometer

The portable instrument serves for the display of wind velocities

The system consists of a wind transmitter with connected cable, a display instrument and a transport case. Wind transmitter and display instrument are made of corrosion-free materials (alu, plastic). The control key is installed in a way that the instrument can be easily operated. A 9 V battery for the power supply of the system is situated in a compartment on the back side of the instrument.

### Order No.

4.3008.01.000

4.3008.01.005

4.3406.00.000

Wind transmitter

Display Instrument

Transport case

### Technical Data

Measuring range	0-120 km/h 0-12 Beaufort 0-35 m/s, 0-70 kn
Dimensions	Ø 100 x 205 mm
Weight	0.32 kg
Material	wood
Dimensions	155 x 245 x 135 mm
Weight	1.15 kg
Measuring range	0.5 ... 50 m/s
Accuracy	±3% of meas. value or ±0.5 m/s
Cable length	0.5 ... 1.5 m (helix cable)
Dimensions	Ø 135 x 270
Weight	250 g
Ambient temperat.	-30 ... +70 °C (ice-free)
Protection	IP 54
Accuracy	1 digit
Resolution	0.1 m/s
Measuring value	Wind velocity as instantan. value or 10 s gliding mean value:
Display	LCD-display 3-digits, 7-segment, 11.5 mm high
General	µC-technology, Compensation of starting value, battery control
power supply	9 V-, alkali- manganese battery
Connection	5-pole-plug
Ambient temperat.	0 ... 60 °C
Dimensions	145 x 80 x 35 (l x w x h)
Weight	190 g
Protection	IP 50
Material	Plastic
Dimensions	420 x 330 x 130
Weight	2 kg



# Wind

## Hand Instruments, Mech. Anemometer, Wind Measuring Systems

### Model Brief Description

#### Telescope

- suitable for Digital Anemometer 4.3406.00.000

Serves as extended handhold of the wind transmitter for carrying out measurements at places which are difficult to reach.

### Order No.

4.3405.50.007

### Technical Data

Length 0.45-1.45 m  
Weight 0.5 Kg



#### Wind Run Meter

Mechanical measuring instrument for direction-independent measurement of the horizontal air flow and display of the wind run. The display count cumulatively the wind run.

Instrument is mounted on the top of a mast. All main parts are made of anodised or varnished aluminium.

4.3018.10.000

Counting range 0-999 999.9 km  
Resolution 100 m wind run  
Digit height 7 mm  
Inclination of counter 50°  
Operating range 0.5-60 m/s  
Load max. 60 m/s  
Delay distance 5 m  
Ambient temp. -35 ... +80 °C  
Mounting onto a mast tube 1 1/2"  
Fixing boring acc. to DIN 2441  
Dimensions Ø 50 x 50 mm  
318 x 260 mm  
Weight 1.3 kg



#### Mechanical Wind Recorder

A mechanical instrument designed to measure and record wind run and direction. A reading rule to determine both instantaneous and mean wind speed values is included in the shipment.

The paper transport is carried out by a band mechanism with spring wound drive.

4.3900.20.000

Measuring range 0-10 km wind run  
0-360°  
Scale division 1 km; 30°  
Recording width ww 50 mm = 10 km  
wd 36 mm = 360°  
Period of registration 31 days  
Paper advance 10 mm/h.  
Operating range 0.5-60 m/s  
Ambient temp. -35 ... +45 °C  
Mounting onto a mast tube, Ø 48 mm  
Dimensions 155 x 200 x 725 mm  
Weight 10.5 kg

#### Recording Roll

(not depicted.)  
Wax coated paper for above-mentioned wind recorder.

205242

Paper length sufficient for 31 days  
Width of roll 120 mm

#### Instrument Case

(not depicted.)  
For a safe transport of the above instrument to varying measuring places.

4.3905.20.000

Material wood, unvarnished  
Dimension 710 x 320 x 290 mm  
Weight 12.5 kg

# Wind

## Hand Instruments, Mech. Anemometer, Wind Measuring Systems

### Model Brief Description

#### Wind Direction Measuring Instrument

Simple portable instrument, consisting of a mechanical wind vane, and a telescopic tripod stand.  
There is a built-in compass to align the instrument to "North".  
Supplied in a carrying case.

### Order No.

4.3019.21.000

### Technical Data

Measuring range	0-360°
Division	10° and N-NW-W-N
Alignment	by compass
Stand, telescopic	28 to 115 cm
Dim. of case	395 x 285 x 120 mm
Weight	1 kg



#### METEO comp

Complete measuring instrument, ready for connection, consisting of the following components:

### Measuring value

wind direction  
wind velocity  
temperature  
wind-chill  
min.- and max.-values of the past 24 h.



#### Comb. Wind Transmitter

Small combined measuring transmitter for acquisition of the wind speed and wind direction as well as of the ambient temperature.

4.3329.00.000

Operating voltage	from display unit
Ambient temp.	-30 ... +60 °C
Cable	20 m long, with plug on pin Ø 30 mm
Mounting	200 x 450 mm
Weight	1 kg

from display unit  
-30 ... +60 °C  
20 m long, with plug on pin Ø 30 mm  
200 x 450 mm  
1 kg

#### Display Instrument

Digital LED-indicator inclusive power supply unit, with plug for the display of the above-mentioned measuring values. The changing-over to the single values is carried out via keypad.  
Plug-connection of wind sensor, power supply unit and serial data output.  
Housing is suited for wall mounting.

9.3229.00.000

Display ws	m/s; km/h; Bft
Resolution	0.1 m/s; 1 km/h; 1 Bft
Display wd	0 ... 360°
Resolution	22.5°
Display temp.	-30 ... +60 °C -22 ... +140 °F
Resolution	0.1 K; 0.1 °F
Electr. output	RS 232/V.24, serial
Operating voltage	9 V DC / max. 500 mA
Ambient temp.	-30 ... +60 °C, ice-free
Dimensions	
Display	95 x 155 x 35 mm
Power supply unit	65 x 100 x 55 mm
Weight	0.23 kg; 0.51 kg



#### Software Meteo-Online

9.1700.98.000

See page 44

# Wind

## Hand Instruments, Mech. Anemometer, Wind Measuring Systems



Model Brief Description

### Clima Sensors D

**Clima Sensor D, WTF**

**Clima Sensor D, W**

**Clima Sensor D, TF**

**Clima Sensor D**

The Clima Sensor D serves for the measurement of environmental data. These are available as

- Serial RS 485/422 telegram and as
- Analogue outputs for further processing

The CLIMA Sensor D has an internal DCF77 receiver, which takes the time signal of an atomic clock, and integrates it into the data telegram.

Ranges of application are:

- Building control systems
- Control technique
- Green house technique
- Processing of the acquired data to recording or display instruments

Depending on the model, the following data can be measured by the Clima Sensor D:

- Wind velocity
- Precipitation (yes/no)
- Brightness in Eastern, Southern and Western direction
- Twilight
- Temperature
- Rel. humidity

The respective holder serves for the mounting at masts or plane surfaces, depending on the range of application.

Instrument with internal condensation shield

Order No.

Technical Data

	Wind	Precipitation Brightness Twilight	Temperature Air humidity
<b>Clima Sensor D, WTF</b>	X	X	X
<b>Clima Sensor D, W</b>	X	X	
<b>Clima Sensor D, TF</b>		X	X
<b>Clima Sensor D</b>		X	
<b>Wind</b>	Measuring range Accuracy	1 ... 40 m/s ±0.5 m/s or ±5% of meas. range	
<b>Precipitation</b>	Measuring range Sensitivity Switch-off-delay	Precipitation yes/no Fine drizzle Approx. 2 minutes	
<b>Brightness for South East, West</b>	Measuring range Spectral range Accuracy	0 ... 100 k Lux 700 ... 1050 nm ±10% of meas. value	
<b>Twilight</b>	Measuring range Spectral range Accuracy	0 ... 250 Lux 700 ... 1050 nm ±10% of meas. value	
<b>Temperature</b>	Measuring range Measuring element Accuracy	-20 ... +60 °C Pt100 1/3 DIN ±0.5 k at > 1 m/s	
<b>Air humidity</b>	Measuring range Accuracy	0 ... 100% rel. humidity ±3% in the range 10 ... 90% rel. humidity	
<b>Output serial</b>	Type Output	RS 422 / 485 1200-19200 baud 8N1, full-duplex/ halve-duplex-operation	Environmental data, housing, temperature, date, time, sensor status, checksum
<b>analogue</b>	Signal 0 ... 10 V 0V/10V	Depending on parameter With precipitation yes/no	
	Load resistance	≥ 10 kW (≥ 100 kW with precipitation)	
<b>General</b>	Operating voltage Current consumption	16-28 VDC or 24 V AC ≤ 150 mA w/o conden- sation shield, approx. 600 mA with condensation shield	
	Ambient temperature Connection	-40 °C ... +60 °C 10 m calbe; LiYCY 16 x 0.14 mm <sup>2</sup> , UV-resistant	
	Mounting	retaining clamp, stainless steel	
	Weight	Max. 1.5 kg	
<b>Dimensions</b>	4.9110.00.061 4.9100.00.061 4.9111.00.061 4.9101.00.061	Ø 130 x 430 mm Ø 130 x 335 mm Ø 130 x 310 mm Ø 130 x 215 mm	

# Wind Measuring Transformers

Measuring transformers serve for the transforming and preparing of wind transmitter signals; the outputs operate recording- and display instruments, or control contactor units.

## Applications:

- Control technique
- Building control system
- Meteorology
- Wind energy

## Model Brief Description

### Measuring Transformers

#### Measuring Transformer WV

Instantaneous value

The speed-dependent frequency generated by the wind transmitters is converted into a current or voltage signal. This allows the control of connected recording, display or switching devices.

Suitable for wind transmitters

4.331.3x.000  
4.3303.22.000 / 007  
4.3303.22.008 / 018

#### Measuring Transformer WSM

Mean value

The speed-dependent frequency generated by the wind transmitters is totalled up over the selected integration time and, as a mean value, converted into a current or voltage signal. This allows the control of connected recording, display or switching devices.

Suitable for the wind transmitters of the classic-line with frequency output

4.3303.22.000 / 007  
4.3303.22.008 / 018

## Order No.

4.3339.xx.xxx  
4.3340.xx.xxx  
.00...  
.10...  
.040  
.041  
.060  
.061  
.080  
.081  
.100  
.101

4.3341.xx.xxx  
.00...  
.10...  
.040

.041  
.060  
.061  
.080  
.081  
.100  
.101

## Technical Data

Electr. output	Measuring range
0 ... 240 Hz, 15V	0-20 m/s
3 ... 1042 Hz, 15V	0-40/50/75 m/s
Model	wall mounting case
	pc-board
Electr. output	0-20 mA (max. 600 Ω)
	4-20 mA (max. 600 Ω)
	0- 1 V (max. 10 mA)
	0-10 V (max. 10 mA)
	0-20 mA / 0- 1 V
	0-20 mA / 0-10 V
	4-20 mA / 0- 1 V
	4-20 mA / 0-10 V
Measuring value	instantaneous value
Operating voltage	230 V / 50 Hz
Ambient temp.	0 ... +40 °C
Protection	IP 65
	(wall mounting case)
Dimensions	
Wall mount. case	200 x 120 x 75 mm
PC-board	170 x 100 x 30 mm
Weight	
Wall mount. case	0.65 kg
PC-board	0.25 kg

Model	wall mounting case
	PC-board
Electr. output	0-20 mA
	(max. 600 Ω)
	4-20 mA
	(max. 600 Ω)
	0- 1 V (max. 10 mA)
	0-10 V (max. 10 mA)
	0-20 mA / 0- 1 V
	0-20 mA / 0-10 V
	4-20 mA / 0- 1 V
	4-20 mA / 0-10 V
Electr. input	0-1042 Hz (50 m/s)
Measuring value	mean value
Measuring range	selectable in 5 m/s-
	steps up to 50 m/s
Time of integration	2.5 / 5 / 10 / 15 /
	30 / 60 / 120 min.
	selectable
Operating voltage	230 V / 50 Hz
Ambient temp.	0 ... +40 °C
Protection	IP 65 (wall mounting
	case)
Dimensions	
Wall mount. case	200 x 120 x 75 mm
PC-board	170 x 100 x 30 mm
Weight	
Wall mount. case	0.7 kg
PC-board	0.3 kg



# Wind Measuring Transformers



## Model Brief Description

### Measuring Transformer TW

mean value

The pulses from wind sensor 4.3308.10.000 are converted by the measuring transducer into standardized analogue output signals.

These output signals are available

1. as direction-dependent or
2. as direction-independent value.

Moreover, the following settings can be effected through the coding switch:

- Measuring range adaptation
- Delays for the slowing-down of analogue signals
- Relay-output delay for dampening of switching processes in case of short-time flow-turbulence.



### Wind Interface

Suitable Wind transmitters: 4.3519.x0.x00 / 4.3129.0x.x00

The wind interface transforms the digital signals of the wind speed- and wind direction transmitters into serial data telegrams. The interface allows the connection to different instruments, thanks to the interface variants available and the possibilities of forming the data telegram.

The voltage supply of the wind transmitter is effected via the wind interface. The housing is made of aluminium, and is suited for outside mounting.

For wind transmitters: 4.3518.0x.x00 / 4.3128.xx.xx0

For wind transmitters: 4.3303.22.000 / 4.3125.32.100

### Mounting Set compact

Mounting clamp with straps to mount the wind interface onto masts

## Order No.

4.3348.xx.xxx  
 .00.  
 .10.  
 .040  
 .041  
 .060  
 .061

4.4070.01.00x  
 4.4070.01.70x  
 x

4.4071.01.xxx

4.4072.01.xxx

506614

## Technical Data

Model	wall mounting case PC-board
Electr. output	0-20 mA (max. 600 Ω) 4-20 mA (max. 600 Ω) 0-1 V (max. 10 mA) 0-10 V (max. 10 mA)

Measuring value	mean value
Measuring range codable	6 values up to 50 m/s 5; 10; 20; 30; 40; 50 m/s

Time of integration codable	24; 48; 120; 240 s
Relays-delay	codable, 1.5-45s
Relay-load	max. 200 W / 220 V / 8 A

Electr. input	2 x 15 V pulse
Operating voltage	230 V / 50 Hz
Ambient temp.	0 ... +40 °C
Protection	IP 65 (wall mounting case)

Dimensions	
Wall mounting case	200 x 120 x 75 mm
PC-board	170 x 100 x 30 mm

Weight	
Wall mounting case	0.65 kg
PC-board	0.25 kg

Electr. output	Fibre-optic-interface RS 422
Telegram variant	On request

Input WV WD	0-713 Hz (50 m/s) 5-bit serial synchronous
----------------	--

Measuring value	1 s instantaneous value for WS and WD
-----------------	--

Operating voltage	24 V AC/DC ±15%
Protection	IP 65
Dimensions	84 x 179 x 67 mm
Weight	0.85 kg

Input WS WD	0-648 Hz (50 m/s) 4-bit serial parallel
----------------	--

Input WS WR	0-1042 Hz (50 m/s) 8-bit serial synchronous
----------------	---

Clamping range	Ø 48-102 mm
Material	stainless steel
Weight	0.18 kg



# Wind Indicators, Recorders, Software

Display instruments serve for the visualization of wind data. Depending on the system, they prepare data for further processing or storing

Applications:

- Meteorology
- Navigation

- Traffic engineering
- Airport technology

Model Brief Description

Order No.

Technical Data

## Display Instruments WV

### Digital Indicator WV

Flat-section indicator for the display of wind velocity values. The background of the indicator is black to facilitate reading of the red digits. Preferably switch panel or front panel mounting

4.1044.00.xxx  
.040  
.041  
.061

Electr. input 0-20 mA  
4-20 mA  
0 ... +10 V  
0-40.0 m/s, or depending on sensor type

Display range

Resolution ±1 digit

Display LED. red. 13 mm high

Operating voltage 230 V AC, 48 ... 62 Hz  
or  
115 V AC, 48 ... 62 Hz  
or 24 V DC

Model Switch panel mounting

Protection IP 20

Dimensions 96 x 48 x 104 mm

Weight 0.3 kg



### Digital Indicator WV

with 2 adjustable limit contacts

Flat-section indicator for the display of wind velocity values. Two setting knobs on the front panel serve for setting the two potential-free relay-contacts. LED-digits show the switching functions. The background of the indicator is black to facilitate reading of the red digits. Preferably switch panel or front panel mounting.

4.1045.00.xxx  
.040  
.041  
.061

Electr. input 0-20 mA  
4-20 mA  
0 ... +10 V  
0-40.0 m/s, or depending on sensor type

Display range

Resolution ±1 digit

Display LED. red. 13 mm high

Contact throw-over-switch

Operating voltage 230 V AC, 48 ... 62 Hz  
or  
115 V AC, 48 ... 62 Hz  
or 24 V DC

Model switch panel mounting

Protection IP 20

Dimensions 96 x 48 x 104 mm

Weight 0.3 kg



### Digital Indicator WV

- with frequency input
- with 2 limit contacts

For the connection of wind transmitter with frequency output.

4.1044.00.000

Electr. input Frequency (adjustable)

Display range acc. wind transmitter-type

Resolution 1 digit

Display LED, red, 13 mm high

Limit contact potential-free

Quantity 2

Load 250 V AC, max. 8 A

Operating voltage 100 ... 264 V AC

Model 47... 63 Hz, 7 VA

Protection or  
24 VDC, max. 350 mA

Dimensions Switch panel mounting

Weight IP 20  
96 x 48 x 135 mm  
0.320 kg



# Wind Indicators, Recorders, Software

## Model Brief Description



### Indicator

Analogue indicator for the direct connection to the Wind Transmitter (small model), order-no. 4.3400.30.000

## Display Instruments WD

### Digital Indicator WD

Flat-section indicator for display of wind direction values. The background of the indicator is black to facilitate reading of the red digits. Preferably switch panel or front panel installation.



## Combined Indicators WV/WD

### Combined Indicator

Digital indicator which indicates wind direction in a circle of red LED's and wind speed in digits in the centre of the circle. Yellow scale inscription on black background.

Suitable measuring transmitters of the Small Wind Transmitters-Line:  
Small Wind Transmitter 4.3515.30.000  
Wind Direction Transmitter 4.3127.40.000



### Combined Indicator

Digital indicator which indicates wind direction in a circle of red LED's and wind speed in digits in the centre of the circle. Yellow scale inscription on black background.

Suitable measuring transmitters of the compact-line :  
Wind Transmitter 4.3518.00.000  
Wind Direction Transmitter 4.3128.00.000



## Order No.

4.3421.00.000

4.1044.10.xxx  
.040  
.041  
.061

4.3228.30.000

4.3228.40.000

## Technical Data

Display range	0-35 m/s 0-65 kn 0-12 Beaufort
Division	2 m/s 5 kn
Electr. input	0-1 mA DC
Model	Wall mounting case
Protection	IP 65
Class	2
Dimensions	122 x 120 x 85 mm
Weight	0.55 kg
Display range	0-360°
Electr. input	0-20 mA 4-20 mA 0 ... +10 V
Resolution	±1 digit
Display	LED, red, 13 mm high
Operating voltage	230 V AC, 48 ... 62 Hz or 115 V AC, 48 ... 62 Hz or 24 V DC
Model	switch panel mounting
Protection	IP 20
Dimensions	96 x 48 x 104 mm
Weight	0.3 kg
Display range	0-99.9 m/s, or 0-99.9 kn 0-360°
Resolution	0.1 m/s resp. kn 22.5°
Display	3-digits LED 7 segment red, 8 mm high 16 LED bars, red
Operating voltage	230 V / 50 Hz or 12-24 V DC
Model	Switch panel mounting
Protection	IP 42
Dimension	96 x 96 x 110 mm
Weight	0.6 kg
Display range	0-99.9 m/s, or 0-99.9 kn 0-360°
Resolution	0.1 m/s resp. kn 22.5°
Display	3-digits LED 7 segment red, 8 mm high 16 LED bars, red
Operating voltage	230 V / 50 Hz or 12-24 V DC
Model	Switch panel mounting
Protection	IP 42
Dimensions	96 x 96 x 110 mm
Weight	0.6 kg

# Wind Indicators, Recorders, Software



## Model Brief Description

### Wind Display LED

Digital indicator for the display of wind speed and wind direction.

Indicates the wind direction in a circle of 72 LED luminous bars, and the speed by 7-segment-LEDs.

In addition, the minimum and maximum wind speed values can be indicated by two other digit displays.

Display options of the WS:

- instantaneous value
- or
- 2 min. mean value and maximum value
- or
- 10 min. mean value and maximum value

Display options of the WD:

- instantaneous value
- or
- 2 min. mean value and variation
- or
- 10 min. mean value and variation

The calculation of the mean values and maximum values is carried out according to the ICAO.

A built-in RS-422-interface facilitates the connection of other wind indicators LED:

Suitable wind transmitters:

4.3303.22.000 / 008  
 4.3125.32.100  
 4.3336.31.000  
 4.3351.00(10).000  
 4.3150.00(10).000  
 4.3820.xx.xxx  
 4.3519.00.000  
 4.3129.00.000  
 4.3129.60.000

### Wind Display LED

For the connection of wind transmitter pairs with analogue output values

Further description please refer to 4.3250.0x.000

## Order No.

4.3250.xx.000

.00...

.01...

4.3250.0x.1xx

.00.1xx

.01.1xx

.140

.141

.161

## Technical Data

Operating voltage 230 V / 50 Hz; 24 V AC  
 12 V-35 V DC  
 115 V / 50 Hz; 24 V AC  
 12 V-35 V DC

Display range  
 Wind velocity 0-99.9 / 0-999  
 m/s / kt / km/h / Bft  
 Direction 0-360°

Resolution  
 Wind velocity 0.1 / 1  
 Wind direction 5°

Wind transmitter input  
 WS 0-1600 Hz  
 WD Thies-serial-synchronous  
 or  
 WD + WV serial data telegram via RS 422

Interface RS 422

Connection Screw terminal  
 Ambient temp. -10 ... +50 °C  
 Model Switch panel mounting

Protection IP 23  
 Dimensions 144 x 144 x 135 mm  
 Weight 1.5 kg

Operating voltage 230 V / 50 Hz  
 24 V AC  
 12 V-35 V DC

Measuring value input 115 V / 50 Hz  
 24 V AC  
 12 V-35 V DC  
 0 ... 20 mA  
 4 ... 20 mA  
 0 ... 10 V

# Wind Indicators, Recorders, Software



## Model Brief Description

### Wind Display LED

- Ship version -

Digital display instrument which indicates the wind speed and wind direction. Indicates the wind direction in a circle of 72 LED luminous bars, and the speed by 7-segment-LEDs.

Ship version with direction circle divided in red and green LED's according to port side and starboard.

Display of WS:

- instantaneous value

Display options of the WD:

- instantaneous value or delayed
- or
- instantaneous value and variation
- or
- delayed and variation

When using a suitable sensor electronics the display of the "true" wind values is possible.

A built-in RS-422-interface facilitates the connection of other wind indicators LED.

Suitable wind transmitters:

4.3303.22.000 / 008  
4.3125.32.100  
4.3336.31.001  
4.3351.00(10).000  
4.3150.00.000  
4.3820.xx.xxx

### Wind Display LED

-Ship version-

For the connection of wind transmitter pairs with analogue output values

Further description please refer to 4.3251.0x.000

## Order No.

4.3251.xx.000  
.00...

.01...

4.3251.0x.1xx  
.00.1xx

.01.1xx

.140

.141

.161

## Technical Data

Operating voltage	230 V / 50 Hz; 24 V AC 12 V-35 V DC 115 V / 50 Hz; 24 V AC 12 V-35 V DC
Display range	
Wind velocity	0-99.9 / 0-999 m/s / kn / km/h / Bft
Direction	0°-180°-0° (0-360°)
Resolution	
Wind speed	0.1 / 1
Wind direction	5°
Wind transmitter input	
WS	0-1600 Hz
WD	Thies-serial- synchronous
or	
WD + WS	Serial data telegram via RS 422
Interface	1 x RS 422
Data telegram	LED-standard ultrasonic NMEA 0, NMEA 1
Connection	Screw terminal
Ambient temp.	-10 ... +50 °C
Model	Switch panel mounting
Protection	IP 23
Dimensions	144 x 144 x 135 mm
Weight	1.5 kg

Operating voltage	230 V / 50 Hz 24 V AC 12 V-35 V DC
	115 V / 50 Hz 24 V AC 12 V-35 V DC

Measuring value input	0 ... 20 mA 4 ... 20 mA 0 ... 10 V
-----------------------	--

# Wind Indicators, Recorders, Software

## Model Brief Description

### Wind Display LED

- Ship version -

Data processing measuring- and display instrument for the display and serial output of the wind direction and wind velocity as "true" or "rel." value.

"True wind" is the real wind or seeming wind, depending on the selected reference of the wind.

"Rel. Wind" are the absolute Wind transmitter measuring values.

Data from the wind transmitter and data, according to NMEA 0183, coming from a compass system (ship heading "Gyro") and the ship speed (LOG), are used to calculate the "true" wind-values via a built-in RS422 interface.

The selection for displaying the "true" or "relative" wind values is done through the mode-key on the front side.

### Wind Display LED

- Ship Version -

Compared with instrument 4.3251.xx.001 this instrument is equipped with an additional **analogue-interface** and a **baro transmitter**. This allows the connection of additional measuring value transmitters for **rel. humidity** and **temperature**. The measuring values of the temperature, rel. humidity, and air pressure are output serially. The parameters are not displayed.

## Order No.

4.3251.xx.001  
.00...

.01...

4.3251.xx.002

## Technical Data

Operating voltage 230 V / 50 Hz;  
24 V AC;  
12 V-35 V DC  
115 V / 50 Hz;  
24 V AC;  
12-35 V DC

Equipment 1 x wind interface  
6 x RS 422 in- and  
output interface

For other technical  
data please refer to  
4.3251.xx.000

Equipment 1 x wind interface  
6 x RS422 in- and  
output interface  
1 x (for temperature/  
rel. humidity  
analogue interface

For other technical  
data please refer to  
4.3251.xx.001



# Wind Indicators, Recorders, Software



## Model Brief Description

### Recorders

#### Continuous Line Recorder

Designed for the continuous recording and the direct reading of wind measuring values.

Instrument as switch-panel-installation housing. Identification of individual channels by different colour pens.

## Order No.

9.3392.10.040  
9.3393.10.040  
9.3395.10.040

## Technical Data

Number of channels	1 2 3
Electr. input	0-20 mA / 0-10 V
Accuracy	class 0.5
Print colour	blue, red, green
Recording width	100 mm
Paper advance	20, 60, 120, 240 mm/h
Model	switch panel mounting
Operating voltage	230 V / 50 Hz
Ambient temp.	0 ... +50 °C
Type of protection	IP 54 or IP 20
Dimensions	144 x 144 x 295 mm
Weight	6.2 kg

#### Recorder Roll

Recording chart in roll format for the above line recorder.

205434

Roll length	32 m
-------------	------

#### Felt Pen

Spare pens for identification of the different channels for above line recorder.

205433  
205432  
205431

Colour	blue (1. channel) red (2. channel) green (3. channel)
--------	---

### Software

#### Meteo-Online

The software Meteo-Online is a WINDOWS Program, compatible to WINDOWS 98/2000/XP/2003. It serves for the visualisation and documentation of meteorological measuring values.

The visualisation is carried out alternatively in graphical form as diagram and/or with text. The user has the possibility to place the display-elements free on the screen.

The documentation can be recorded in hour's- or day's files with selectable averaging periods for the respective parameters. The documentation files are ASCII-files, and can be imported, for example, directly into EXCEL. All THIES-instruments with serial data output can be connected via the serial interface of a PC.

According to the number of serial interfaces it is possible to administrate several instruments at the same time. The Client Server Concept offers the possibility of documenting data in the background without active visualisation

9.1700.98.000

Connectable Thies instruments

Wind Interface	4.4070.01.706
Wind Display	4.3250.xx.000
Datalogger	9.1740.xx.x1x

US-Anemometer	4.3820.xx.xxx
---------------	---------------

Meteo comp	4.3329.00.000 with 9.3229.00.000
------------	-------------------------------------

Illustration	numerals diagram wind rose time date
--------------	--

Wind direction	instantaneous value variation mean value, gliding
----------------	---

Wind speed	instantan. value 1 s mean value, gliding min. and max. value
------------	--

Time intervals	1, 2, 10, 30, 60 min. for mean values
----------------	--

9.1700.98.100

Description and data same as above, however with data monitor for checking the incoming measuring values additionally on threshold values or alarm parameters.



# Wind Wind Alarm

Wind alarm units in combination with wind transmitters trigger preventive measures to protect wind-endangered objects

## Applications:

- Cranes
  - Masts
  - Louvers and shutters
  - Stages etc.
- Bridges
  - Greenhouses
  - Awnings

## Model Brief Description

### Wind Alarm Unit 2

Triggers a threshold value contact for a set velocity value. There are two LEDs on the front plate which indicate the operational control and the switching status of the alarm threshold.

The delay times, the switching point and the measuring intervals can be set by means of the rotary switch on the front panel.

There is a code switch to set the following wind transmitter models:

- 4.3303.22.000
- 4.3515.30.000
- 4.3515.50.000
- 4.3518.00.000
- 4.3519.00.000
- 4.3520.00.000

### Wind Alarm Unit 3

For the display of the current wind speed values and for triggering a threshold value contact.

Switches on the front plate for setting the switching point and the switch-on/switch-off-delays.

Suitable wind transmitter:  
Best.-Nr. 4.3303.22.000

### Wind Alarm Unit 4

For digital display of the current wind speed value. Triggers two threshold value contacts, for example early warning and main alarm. Switches on the front plate for setting the switching points and the switch-on/switch-off-delays.

Instrument with integrated power supply unit for the supply of the wind transmitter heating.

Suitable wind transmitter:  
Best.-Nr. 4.3303.22.000

## Order No.

- 4.3241.00.000
- .00.001
- .02.000
- .02.001
- .03.000

## 4.3242.01.000

## 4.3242.02.000

## Technical Data

Operating voltage  
230 V / 50 Hz  
230 V / 50 Hz  
24 V AC/DC  
24 V AC/DC  
12 V AC/DC

incl. supply for heating  
w/o supply for heating  
incl. supply for heating  
w/o supply for heating  
w/o supply for heating

Alarm range  
Resolution  
Electr. input  
Switching point  
Switch-on-delay.  
Switch-off-delay.

1-39 m/s  
0.1 m/s  
see models  
selectable in 1 m/s  
1-9 s resp. 2-18 s  
1-9 resp. 2-18 min.  
depends on time intervals

Measuring interval  
Relay output

1 s or 2 s selectable  
change-over switch,  
one-pole

Contact load

200 W / 24 V DC  
100 W / 250 V DC  
1000 VA, max. 8 A

Ambient temp.  
Operating voltage  
Protection  
Dimensions  
Weight

-25 ... +55 °C  
230 V / 50 Hz  
IP 65  
200 x 120 x 75 mm  
1 kg

Measuring range  
Electr. input  
Display  
Contact load

0-50 m/s  
0-1042 Hz  
00.0-99.9 m/s  
200 W / 24 V DC  
100 W / 250 V DC  
2000 VA, max. 8 A

Switching point  
Switch-on delay  
Switch-off delay.  
Operating voltage  
Protection

0-50 m/s, selectable  
0-18 s, in 9 steps  
0-18 min., in 9 steps  
230 V / 50 Hz  
IP 65

Dimensions  
Weight

200 x 120 x 75 mm  
1 kg

Measuring range  
Electr. input  
Display  
Contact load

0-50 m/s  
0-1042 Hz  
00.0-99.9 m/s  
200 W / 24 V DC  
100 W / 250 V DC  
2000 VA, max. 8 A

Switching point  
Switch-on delay.  
Switch-off delay.

2 x 0-50 m/s,  
selectable  
2 x 0-18 s,  
in 9 steps  
2 x 0-18 min.  
in 9 steps

Operating voltage  
Protection  
Dimensions  
Weight

230 V / 50 Hz  
IP 65  
230 x 300 x 85 mm  
2.6 kg



## Your Notice



### System example

Mounting options of wind transmitters and wind direction transmitters for professional requirements.



Displays

- Visualisation
- Recording



PC-Software  
"Meteo-Online"



Datalogger

- Recording
- Controlling
- Data processing

Standard outputs for ex. 0/4 ... 20 mA

THIES projects, configures, and supplies your individual system. Of course, your measurement tasks and the existing system pre-conditions will be in our focus.

Please do not hesitate to contact us for a detailed information.

# Wind Masts and mechanical Accessories

## Model Brief Description

## Order No.

## Technical Data

### Instrument Holders



**Instrument Holder**  
For field installation of meteorological measuring instruments.  
Consisting of mast tube, mounting cross, earth pins for ground installation or dowel pins for fundament as well as a staying and earth clamp.

4.3187.11.000

Length 2.5 m  
Diameter of tube 48 mm  
Material Steel, galvanised  
Weight approx. 12 kg



**Instrument Holder**  
For the mounting of meteorological measuring instruments in buildings.  
For wall mounting consists of mast tube, 2 wall clamps and an earth clamp.

4.3187.11.048  
4.3187.11.060

Diameter of tube 48 mm  
60 / 48 mm  
Length 4 m  
Tube Steel, galvanised  
Wall clamp Aluminium  
Earth clamp Aluminium  
Weight approx. 10 kg



**Instrument Holder**  
For the mounting of meteorological measuring instruments in buildings.  
For wall mounting consists of mast tube, 1 wall clamp (above), 1 tilting joint (below) and an earth clamp.

4.3187.13.060

Diameter of tube 60 / 48 mm  
Length 4 m  
Material Steel, galvanised  
Tube Steel, galvanised  
Wall clamp Aluminium  
Tilting joint Steel, galvanised  
Earth clamp Aluminium  
Weight approx. 10 kg

### Telescopic Mast for Field Installation



**Telescopic Mast**  
For the field installation of meteorological measuring instruments. Mast with staying, base plate and adaptor.  
The base plate has a tilting mast receptacle.

4.3179.00.000  
4.3180.00.000  
4.3181.00.000

Length 4 m 21 kg  
6 m 29 kg  
10 m 44 kg  
Material Aluminium, sea-water-proof  
Top of mast Ø 49 mm  
Inserted length approx. 1.5 m  
Staying three-fold (4 m, 6 m) six-fold (10 m)  
Wind stress max. 60 m/s



**Grounding Set**  
To ground the preceding telescope masts. Consists of a mast ground clamp, a cross-bar, 2m long, and a CU wire Ø 5 mm, 1 m long.

4.3186.00.000  
4.3186.00.001  
4.3186.00.002

Suitable for 4 m mast 60 mm  
6 m mast 80 mm  
10 m mast 90 mm  
Weight 4.5 kg

# Wind Masts and mechanical Accessories

## Model Brief Description

### Telescopic Mast without Staying

#### Telescopic Mast

For the mounting of meteorological measuring instruments. This telescopic mast can be used at a wall or in the open country, in combination with a respective tilting device, without staying.

### Tilting Devices

#### Tilting Device

For field mounting on fundament

The tilting device serves as stand for a telescopic mast. Telescopic mast and tilting device are free-standing, and do not need any staying. For maintenance purpose the telescopic mast can be tilted by means of a rope winch (optional accessory).

#### Tilting Device

For wall mounting

The tilting device serves as wall mounting device for a telescopic mast. For maintenance purpose the telescopic mast can be tilted by means of a rope winch (optional accessory).

#### Mast Mounting Clamp

Type: LMB 80/90/116/132

For wall mounting of the telescopic mast.

#### Mast Ground Clamp LE

Clamp to be mounted at the mast foot for grounding the mast by means of a wire with diameter up to 9 mm.

## Order No.

4.3179.30.080  
4.3180.30.090  
4.3181.30.116

4.3181.30.132

4.3181.03.080  
.090  
.116  
.132

4.3181.13.080  
4.3181.13.090  
4.3181.13.116  
4.3181.13.132

210363  
210364  
211278  
210368

210457  
210458  
211279  
210460

## Technical Data

Length / Weight  
4 m 15 kg  
6 m 16 kg  
10 m 43 kg

12 m 67 kg

Top of mast  
Material

Diameter of tube  
80 / 71 mm  
90 / 80 / 71 mm  
116 / 102 / 90 /  
80 / 71 mm  
132 / 116 / 102 /  
90 / 80 / 71 mm  
Ø 71 mm  
Aluminium (AlMgSi1)

Suitable for  
4.3179.30.080  
4.3180.30.090  
4.3181.30.116  
4.3181.30.132

Height  
Material  
Weight

1580 mm  
Steel, galvanised  
60 kg

Suitable for  
4.3179.30.080  
4.3180.30.090  
4.3181.30.116  
4.3181.30.132

Material  
Weight

Steel, galvanised  
32 kg

Suitable for  
4.3179.30.080  
4.3180.30.090  
4.3181.30.116  
4.3181.30.132  
Diameter

Material  
Weight

80 / 90 / 116 /  
132 mm  
Aluminium  
0.5 / 0.7 / 1.3 /  
1.5 kg

Suitable for  
4.3179.30.080  
4.3180.30.090  
4.3181.30.116  
4.3181.30.132

Material  
Weight

Gripping diameter  
80 mm  
90 mm  
116 mm  
132 mm

Aluminium  
approx. 0.13 kg



# Wind Masts and mechanical Accessories

## Model Brief Description

## Order No.

## Technical Data

### Traverses



#### Traverse for Classic Wind Transmitters

For mounting the wind speed transmitter and wind direction transmitter jointly onto a mast. The traverse is connected with plug according to the transmitter combinations.

4.3170.00.xxx  
....000  
....001  
....003

Wind Transmitt.	Wind Direc. Transm.
4.3303.22.000	4.3120.22.018
4.3303.22.000	4.3121.32.000
4.3105.22.000	4.3120.22.018

Material	Steel, galvanised
Tube dimensions	1 1/2" acc. to DIN 2448 (Ø 48.3 x 2.6 mm)

Fixing boring	Ø 50 x 74 mm
Horizontal	
Sensor distance	0.6 m
Vertical	
Sensor distance	0.2 m
Total height	0.71 m
Weight	6.8 kg



#### Traverse for Classic Wind Transmitters

For mounting the wind speed transmitter and wind direction transmitter jointly onto a mast.

4.3173.01.000  
4.3173.01.001

Fixing boring	Ø 50 x 74 mm
Fixing boring	Ø 71 x 74 mm

Tube dimensions	1 1/2" n. DIN 2448 (Ø 48.3 x 2.6 mm)
Material	Aluminium, anodised (AlMgSi0,5)

Horizontal	
Sensor distance	0.6 m
Vertical	
Sensor distance	0.2 m
Total height	0.8 m
Weight	3 kg



#### Traverse for Wind Transmitters "First Class"

For mounting the wind speed transmitter and wind direction transmitter jointly onto a mast.

4.3174.00.000

Material	Aluminium, anodised (AlMgSi0,5)
----------	------------------------------------

Tube dimensions	Ø 34 x 4 mm
Fixing boring	Ø 50 mm
Horizontal	
Sensor distance	0.6 m
Vertical	
Sensor distance	0.2 m
Total height	0.76 m
Weight	3 kg



#### Traverse for Classic Wind Transmitters

For mounting the wind speed transmitter and wind direction transmitter jointly onto a mast.

4.3172.00.000

Sensor distance	0.6 m
Vertic. Sensor distance	approx. 400 mm
Total height	650 mm
Mast clamp	Ø 40-Ø 80 mm
Material	Aluminium (AlMg3)
Weight	2.8 kg



#### Traverse For Small Wind Transmitters

For mounting the wind transmitter and wind direction transmitter jointly onto a mast.

4.3171.20.000

Clamping range	Ø 30-Ø 50 mm
Sensor distance	0.5 m

Material	Aluminium, anodised (AlMgSi0,5)
Traverse	

Gripping clamp	stainless steel
Weight	0.35 kg

# Wind Masts and mechanical Accessories

## Wind

### Model Brief Description

#### Traverse

for Wind Transmitters Compact

For mounting the wind speed transmitter and wind direction transmitter jointly onto a mast.

#### Traverse, short

For Wind Transmitters Compact

For mounting the wind speed transmitter and wind direction transmitter jointly onto a mast.

### Lightning Rod / Hangers / Holders / Adaptors

#### Lightning Rod

To be mounted additionally at the telescopic mast, tube or traverse. Protects the wind transmitter against damages caused by lightning strokes.

Suitable for:

Traverse: 4.3174.00.000  
Mast or tube with Ø 48-50 mm  
Mast or tube with Ø 48-50 mm  
Mast or tube with Ø 71 mm  
Traverse: 4.3173.01.001  
Traverse: 4.3171.30/31/40/41...

#### Hanger 1 m

The hanger is used for the lateral mounting of a wind transmitter, Classic type or Ultrasonic-Anemometer, onto a mast.

#### Hanger-First Class-1 m

The hanger is used for the lateral mounting of a wind transmitter, First Class type, onto a mast.

#### Holder compact

The holder serves for the mounting of a wind transmitter, Compact-type, onto an instrument carrier or mast.

### Order No.

4.3171.30.000  
.31.

4.3171.40.000  
.41.

4.3100.98.000  
4.3100.99.000  
4.3100.99.150  
4.3100.99.170  
4.3100.99.001  
506351

4.3185.xx.003  
...00....  
...01....  
...02....

4.3184.01.000

506347

### Technical Data

Clamping range Ø 48-Ø 102 mm  
Ø 116-Ø 200 mm  
Sensor distance 0.8 m  
Material Traverse Aluminium (AlMgSi0,5)  
Mounting set stainless steel (V2A)  
Weight 0.30 kg

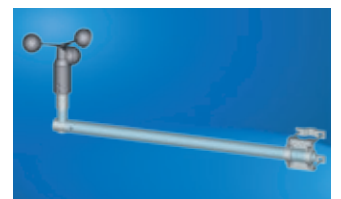
Clamping range Ø 48-Ø 102 mm  
Ø 116-Ø 200 mm  
Sensor distance 0.4 m vom Mast  
Material Traverse Aluminium (AlMgSi0,5)  
Mounting set Stainless steel (V2A)  
Weight 0.30 kg

Length	Height	Material	Weight
500 mm	1050 mm	Aluminium	1.5kg
560 mm	800 mm	Steel, galvanised	2.4kg
560 mm	1500 mm	Steel, galvanised	4 kg
560 mm	1500 mm	Steel, galvanised	4 kg
400 mm	1500 mm	Aluminium	2 kg
----	560 mm	Stainless steel	0.34 kg

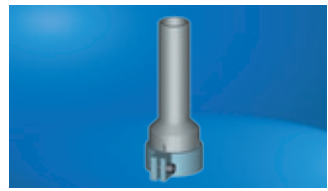




Clamp range For mast diameter 60-132 mm  
40-80 mm  
48-50 mm  
Length 1 m  
Tube diameter 34 mm  
Material Aluminium (AlMgSi0,5)  
Weight approx. 1.5 kg

Clamp range For mast diameter 40-80 mm  
Length 1 m  
Tube diameter 34 mm  
Material Aluminium (AlMgSi0,5)  
Weight approx. 1.5 kg

Clamp range Ø 35-50 mm  
Dimensions 80 x 150 mm  
Tube diameter 34 mm  
Material stainless steel (V2A)  
Weight 0.35 kg



# Wind Masts and mechanical Accessories

	Model Brief Description	Order No.	Technical Data	
	<p><b>Adaptor</b> Serves for reducing the diameter of the mast end tube from 71 mm to 50 mm so that Classic wind transmitters or US-anemometers can be mounted directly onto the mast top.</p>	211545	Material Weight	Aluminium 1 kg
	<p><b>Adaptor</b> Serves for reducing the mast diameter to 50 mm diameter for mounting wind transmitters of the classic types or ultrasonic anemometers onto a mast top. The POM (plastic)-model insulates the measuring instrument with the mast.</p>	507936 508077 507555	Mast diameter  Diameter Material Weight	71 mm 60 mm 50 mm  145 mm high Ø 110 / 95 / 70 mm POM 0.9 / 0.7 / 0.4 kg
	<p><b>Adaptor 1"</b> Serves for reducing a traverse tube diameter from 50 to 34 mm in order to mount a wind transmitter of the first class types.</p>	507620	Material Weight	Aluminium (AlMgSi1) 0.8 kg
	<p><b>Adaptor 1"</b> The adaptor is used to mount wind measuring instruments of the compact-series onto a 1"- tube.</p>	506283	Material Weight	Aluminium (AlMgSi1) 0.5 kg
	<p><b>Mounting Set compact</b> Mounting holder with straps for mounting of power supply units, connection boxes compact, and wind interfaces onto masts or tubes.</p>	506614 506971	Clamp range  Material Weight	Ø 48-102 mm Ø 116-200 mm Stainless steel (V2A) 0.18 kg

Please contact us for other accessories, such as cables and cable connections as well as for additional constructions of masts or systems.

# Wind Power Supply

Power supply units, terminal boxes serve for the power supply of wind transmitters, wind direction transmitters or combined instruments and other measuring value transmitters

## Applications:

- Wind measuring systems
- Weather stations

## Model Brief Description

## Order No.

## Technical Data

### Power Supply

#### Power Supply Unit

For the power supply of wind speed transmitters, wind directions transmitters or combined instruments. The in- and outputs are each protected by fuses. The housing is made of plastic fibre.

Suitable for:

Wind transmitter type:

- Compact
- Classic
- First Class
- Ultrasonic 2 D, 1D

#### Power Supply Unit

For the power supply of wind speed transmitters or wind directions transmitters

The in- and outputs are each protected by fuses. The housing is made of plastic fibre.

Suitable for:

Wind transmitter type:

- Compact
- Classic

#### Power Supply Unit

For the power supply of wind speed transmitters, wind direction transmitters or combined instruments.

With integrated terminal strip for the connection and distribution of the cables.

The in- and outputs are each protected by fuses.

The housing is made of plastic fibre.

Suitable for:

Wind transmitter type:

- Compact
- Classic
- First Class
- Ultrasonic 2 D, 1D

9.3388.00.000

Primary  
Secondary

230 V / 50 Hz / 0.48 A  
26 V AC / 3.46 A  
24 V AC / 0.5 A  
12 V DC / 0.3 A  
IP 65  
125 x 150 x 125 mm  
2.5 kg

Protection  
Dimensions  
Weight



9.3388.00.002  
9.3388.00.112

Primary  
Primary  
Secondary  
Protection  
Dimensions  
Weight

230 V/50 Hz / 0.091 A  
115 V/60 Hz / 0.21 A  
24 V AC / 0.83 A  
IP 65  
125 x 150 x 100 mm  
1.2 kg



9.3389.10.000  
9.3389.10.010

Primary voltage  
Primary voltage  
Secondary voltage

230 V / 50Hz / 0.63 A  
115 V / 60Hz / 1.3 A  
2 x 24 V AC / 27.5 VA  
1 x 24 V AC / 100 VA  
1 x 24 V AC / 5 VA  
1 x 24 V DC / 2 W

Terminal strip  
Housing  
Protection housing  
Dimensions  
Weight

20-pole  
plastic fibre  
IP 65  
300 x 230 x 132 mm  
4.2 kg



# Wind Power Supply



## Model Brief Description

### Connection Box compact 1

For the power supply of wind transmitters, wind direction transmitters or combined instruments.

With integrated over-voltage-protection (varistors) and terminal strip for the connection and distribution of the cables.

Suitable for:  
wind transmitter type

- Compact
- Classic
- First Class
- Ultrasonic 1D

Measuring value transmitter

- Clima Sensor



### Connection Box compact

For the power supply of wind transmitters, wind direction transmitters or combined instruments.

With integrated over-voltage-protection (varistors) and terminal strip for the connection and distribution of the cables.

Suitable for:  
Wind transmitter type

- Compact
- Classic
- First Class
- Ultrasonic 3D, 2D, 1D, 2D compact

Measuring value transmitter

- Clima Sensor

## Order No.

9.3199.01.100  
9.3199.01.110

9.3199.03.100

## Technical Data

Primary voltage	230 V / 50 Hz
Primary voltage	115 V / 50 Hz
Secondary voltage	2 x 24 V AC / 27.5 VA
	1 x 24 V AC / 75 VA
	1 x 24 V DC / 5 W
	1 x 24 V DC / 1.5 W
	1 x 12 V DC / 2.5 W
Terminal strip	For 16 measurement lines
Over-voltage-protection	All connections
Housing	Aluminium
Protection housing	IP 65
Dimensions	260 x 160 x 90 mm (B x H x T)
Weight	4.5 kg

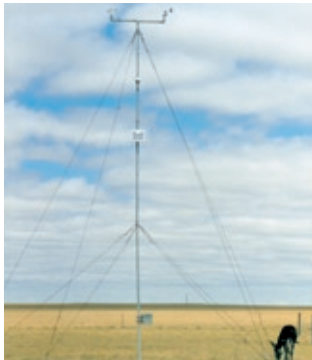
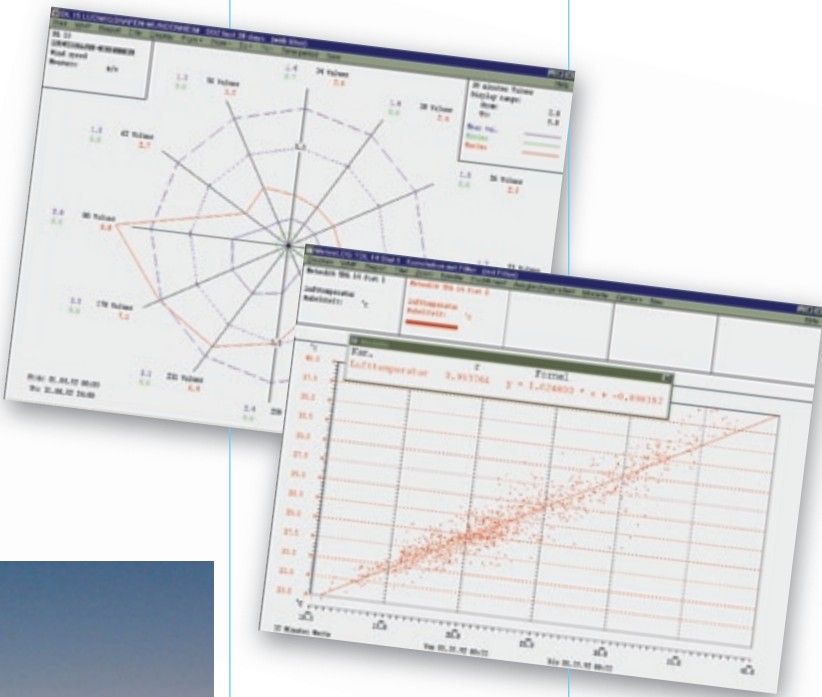
Primary voltage	230 V / 50 Hz
Secondary voltage	1 x 24 V AC / 170 VA
	1 x 24 V AC / 20 VA
	1 x 24 V AC / 10 VA
	1 x 24 V DC / 5 W
	1 x 24 V DC / 1.5 W
	1 x 12 V DC / 2.5 W
Terminal strip	For 16 measurement lines
Over-voltage-protection	All connections
Housing	Aluminium
Protection housing	IP 65
Dimensions	202 x 232 x 111 mm (B x H x T)
Weight	4.5 kg





## Your Notice

**THIES –**  
as versatile as the international  
tasks require



## THIES-CLIMA – Worldwide

### Weather and Environmental monitoring technology needs a competent partner

Climatic measurement and intelligent analysis are international tasks. They do not only demand a worldwide cooperation of the responsible authorities, but also a comprehensive network of sensors and analytical systems.

We have developed a smoothly functioning system of partners and subsidiaries throughout the world to provide expert advice there where you need it.

THIES assumes complete supervision of the tasks at hand, from project planning to the installation of the system, from staff training to the processing of the measurement results.

Should you want to contact one of our foreign partners, please write or call us first in Göttingen. We will provide you with the exact address.



Information is everything. Please ask for our complete catalogue and product descriptions concerning all questions of weather data acquisition – or attend our internet page: [www.thiesclima.com](http://www.thiesclima.com)



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