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Thies CLIMA

Instruction for use

020856/10/07

Wind Transmitter

- with analogue output

4.3303.22.xxx

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1 Models

Order no.	Measuring range	Electrical output	Model
4.3303.22.040	0...50 m/s	0...20 mA (Load resistor: ≤ 500 Ω)	Standard
4.3303.22.041	0...50 m/s	4...20 mA (Load resistor: ≤ 500 Ω)	Standard
4.3303.22.060	0...50 m/s	0….1 V (Load resistor: ≥ 1000 Ω)	Standard
4.3303.22.061	0...50 m/s	0...10 V (Load resistor: ≥ 1000 Ω)	Standard
4.3303.22.073	0...50 m/s	0…. 5 V (Load resistor: ≥ 1000 Ω)	Standard
4.3303.22.640	0…60 m/s	0...20 mA (Load resistor: ≤ 500 Ω)	Standard
4.3303.22.641	0…60 m/s	4...20 mA (Load resistor: ≤ 500 Ω)	Standard
4.3303.22.660	0…60 m/s	0… 1 V (Load resistor: ≥ 1000 Ω)	Standard
4.3303.22.661	0…60 m/s	0...10 V (Load resistor: ≥ 1000 Ω)	Standard
4.3303.22.673	0…60 m/s	0…. 5 V (Load resistor: ≥ 1000 Ω)	Standard
4.3303.22.841	0…60 m/s	4...20 mA (Load resistor: ≤ 500 Ω)	“Ship version” * - reinforced cup star - special ball bearing

* Wind transmitters for heavy mechanical load, for ex. on ships, wind power plants or the like.

2 Application

The wind transmitter is used for the registration of the horizontal component of the wind velocity. The measuring value will be placed at the output as analogue signal. The signal can be given to display instruments, recording instruments, datalogger as well as process wise systems. The wind transmitter is equipped with an electronically regulated heating system in order to prevent ice and frost from the ball bearings and the outer rotation parts.

Power supply unit, Order no. 9.3388.00.000 provides the transmitter and the heating system with current. It is advisable to attach Lightning rod, Order no. 4.3100.99.000 in areas with considerable lightning activity.

3 Set-up of the instrument

A low-inertia light metallic cup star is set into rotation by the wind. Through the opto-electronic rotating frequency-scanning the resulting pulse frequency is converted through an integrated measuring transducer into an analogue signal. The measuring transducer is normally provided with voltage from the heating system. The instrument can also be used without the heating system. In this case the measuring transducer has to be provided with a separate voltage supply. Input and outputs have to be protected from overload by Transzorb diodes.

The outer parts of the instrument are made of corrosion-resistant anodised aluminium. The sensitive parts inside of the instrument are protected from precipitation through labyrinth seals and o-rings. The instrument is designed to be mounted to a mast, the electrical connection is located in the stem of the transmitter.

It consists of the following parts:
1 Case
1 Cup star
1 Connection plug

4 Recommendation Site Selection / Standard Installation

According to international regulations, the surface wind should be measured at a height of 10 m above flat, open terrain, in order to achieve comparable values. An open terrain is defined as terrain where the distance between the wind-measuring instrument and the next obstacle is at least ten times the height of this obstacle (see VDI 3786, Part 2). If the regulation cannot be adhered to, the measuring instrument should be installed at a height at which the measurement values are not influenced by any local obstacles. In any case, the measuring instruments are to be installed at a height of 6 to 10 m above the mean height of the buildings or trees in the vicinity. If it is necessary to install the instrument on a roof, it should be installed in the centre of the roof in order to avoid any preferential directions.

5 Installation

Attention:

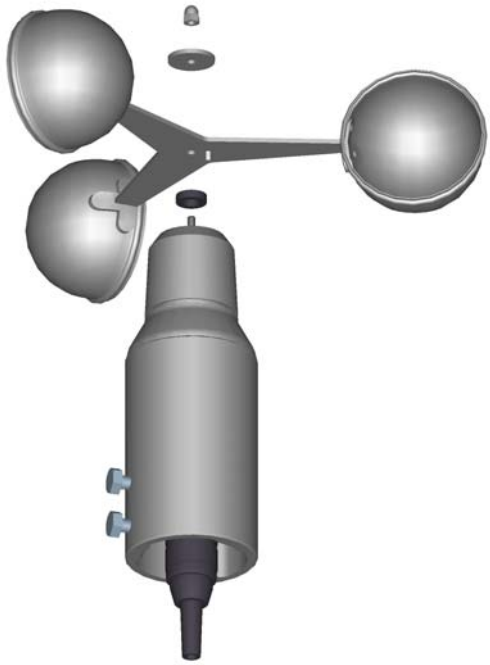
Storing, mounting and operation under weather conditions is permissible only in vertical position, as otherwise water can get into the instrument.

Remark:

When using fastening adapters (angle, traverses, etc.) please take a possible effect by turbulences into consideration.

5.1 Mounting of the cup star

Unscrew the cap nut (SW 8) from the wind velocity sensor case and remove the disk. Keep the rubber sealing washer in the protection cap. Set the cup star into position in such a way that the dowel pin in the cup star catches in the nut of the protective cap. Replace the disk and re-screw the cap nut. Hold the transmitter on the protective cap not on the cup.



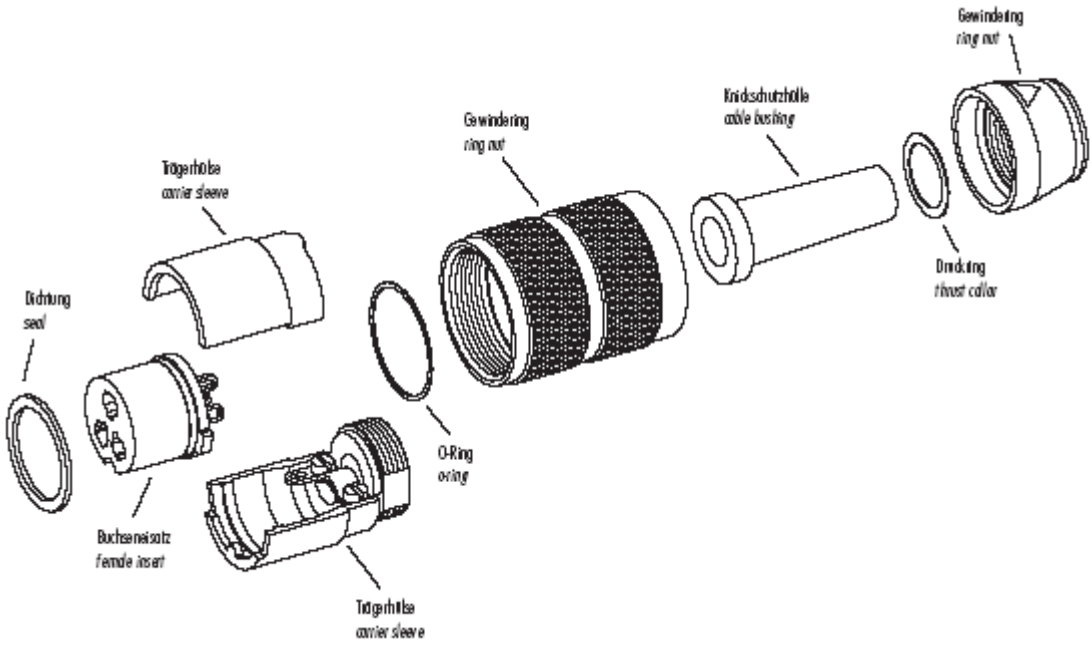
5.2 Electrical Mounting

A shielded cable with a diameter of 5..8 mm and a core section of 0,5…0,75 mm² must be soldered on to the enclosed plug.

- The number of required cores, and the PIN assignment is stated in the connection diagram (chapter 7).

Cable recommendation	
Type/ No. of cores /Diameter	Cable diameter
LIYCY 3 x 0,5 mm² LIYCY 5 x 0,5 mm²	ca. 5 mm ca. 7 mm

Coupling socket 201041 (5-pol), Type Binder, Series 691



1. Removing Coupling socket
2. Stringing coupling socket on cable
3. Stripping cable sheath 20 mm
4. Putting uncovered shield backwards onto the cable sheath
5. Stripping uncovered cable cores 5 mm
6. Pushing shrink hose over cable cores
7. Soldering stripped cable cores onto the solder filament of the bush insert, pushing shrink hose over the soldering afterwards, and shrinking it.
8. Fastening cable and shield in the carrier sleeve by means of the clamp.
9. Mount coupling socket

5.3 Mounting of the Wind Transmitter

Mount the transmitter to a short piece of pipe of R 1½“ (Ø 48 mm) and a length of 50 mm. The short piece of pipe must have an internal diameter of at least 36 mm as the wind transmitter must be connected electrically with a plug from below. Once the electrical connection has been carried out, set the wind transmitter onto the short piece and fasten it to the shaft with the two hexagonal screws.

6 Maintenance

After proper mounting the instrument works maintenance free.

Heavy pollution can clog up the slit between the rotating and the stationary parts of the wind transmitter. This slit must be kept clean.

Remark:

Please use only original packing for transporting the instrument.

7 Connecting Diagram

Order- no.

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4.3303.22.060
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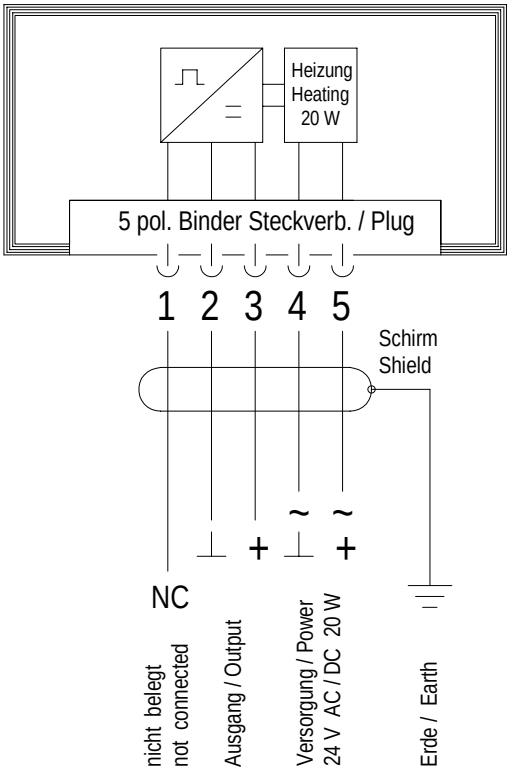
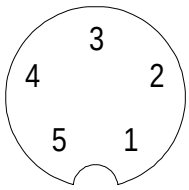
4.3303.22.841

Wind Transmitter: Operation **with** Heating



View on the soldered side of the coupling socket



Attention:
In case of 24 DC-power the power ground must be galvanically isolated from the signal ground

Order no.

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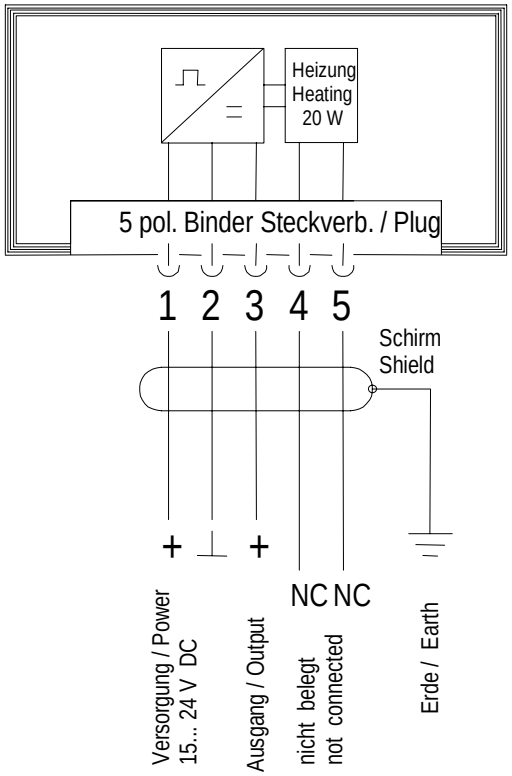
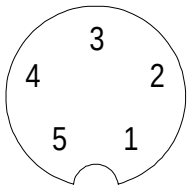
4.3303.22.661
4.3303.22.673
4.3303.22.841

Wind Transmitter: Operation **without** Heating



View on the soldered side of the coupling socket



Attention:
NC: Cable isolating – no connecting

8 Technical Data

Measuring range	see models available
Starting speed	0,3 m/s
Max. load	60 m/s
Electrical output	see models available
Accuracy	± 0,4 m/s resp. 2,5 % of meas. value
Resolution	0,05 m wind run
Wind load at 35 m/s	approx. 10N
Distance constant	5 m
Ambient temperature	-35...+80°C
Operating voltage	
With Heating	24 V AC/DC ca. 20 W; electronically controlled
Without Heating	15 ... 24 V DC
Connecting	5-pole plug
Mounting	onto mast tube 1 ½" , DIN 2441
Weight	1 kg

9 Dimension diagram

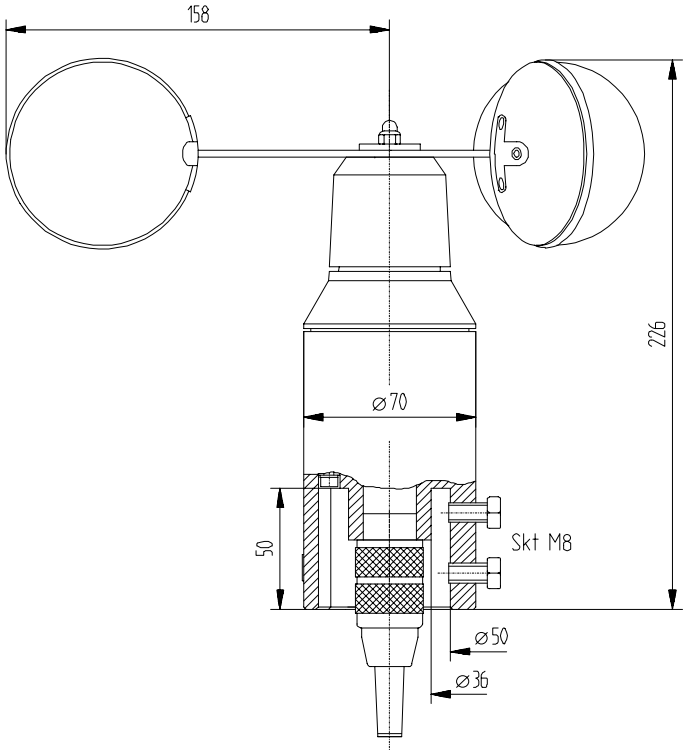


Figure 1: Dimension diagram

10 EC-Declaration of Conformity

Document-No.: **000434** Month: 06 Year: 08

Manufacturer: **A D O L F T H I E S G m b H & C o. K G**

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Description of Product: **Wind Transmitter, Wind Direction Transmitter, Combined Wind Transmitter**

Article No.

4.3125.32.040	**4.3125.32.041**	**4.3125.32.060**	**4.3125.32.061**
4.3125.32.073	**4.3125.32.841**		
4.3303.22.040	**4.3303.22.041**	**4.3303.22.060**	**4.3303.22.061**
4.3303.22.073	**4.3303.22.640**	**4.3303.22.641**	**4.3303.22.660**
4.3303.22.661	**4.3303.22.673**	**4.3303.22.841**	
4.3324.31.040	**4.3324.31.041**	**4.3324.31.061**	**4.3324.31.073**
4.3324.31.640	**4.3324.31.641**	**4.3324.31.661**	**4.3324.31.673**
4.3324.31.941			

specified technical data in the docume **020853/10/07; 020854/11/07; 020848/10/07**

The indicated products correspond to the essential requirement of the following European Directives and Regulations:

2004/108/EC DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC

2006/95/EC DIRECTIVE 2006/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

552/2004/EC Regulation (EC) No 552/2004 of the European Parliament and the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation)

The indicated products comply with the regulations of the directives. This is proved by the compliance with the following standards:

Reference number	Specification
IEC 61000-6-2: 2005	Electromagnetic compatibility Immunity for industrial environment
IEC 61000-6-3: 2006	Electromagnetic compatibility Emission standard for residential, commercial and light industrial environments
IEC 61010-1: 2001	Safety requirements for electrical equipment for measurement, control and laboratory use. Part 1: General requirements

Place: Göttingen Date: 30.06.2008

Legally binding signature: issuer:

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Wolfgang Behrens, General Manager

.....
Joachim Beinhorn, Development Manager

This declaration certificates the compliance with the mentioned directives, however does not include any warranty of characteristics.
Please pay attention to the security advises of the provided instructions for use.

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