

Wind Direction Transmitter

Instruction for use 4.3125.32.040 / .041 / .060 / .061 / .073



1. Range of application

The wind direction transmitter is designed for the acquisition of the horizontal component of the wind direction. The measuring value is available at the output as analogue signal. The signal can be transmitted to display instruments, recording instruments, dataloggers as well as process control systems.

For winter operation the instrument is equipped with an electronically regulated heating, in order to prevent the ball bearings and outer rotation parts from icing-up. For the current supply of the transmitter we would recommend the **power supply unit** order-no. **9.3388.00.000**.

In areas with considerable lightning activity it is advisable to mount a **lightning rod** order no. **4.3100.99.000**

2. Construction and Mode of Operation

The ball-bearing wind vane, made of light-metal, is directed by the wind. The opto-electronic scanning of the direction forms a coded signal, which is converted by an integrated measuring transducer into an analogue signal. In general, the measuring transducer is supplied from the heating voltage. However, the instrument can also be operated without heating. In this case, please connect a separate supply voltage for the measuring transducer. Data output and inputs are protected against overvoltage by transzorb diodes.

The outer parts of the instrument are made of corrosion-resistant materials, and are protected through a varnish coat. Labyrinth gaskets and o-rings protect the sensitive parts inside the instrument against precipitation. The instrument is mounted onto a mast tube; the electrical plug-connection is located in the transmitter shaft.

The wind direction transmitter is delivered in semi-mounted state.

The following parts are included in delivery:

- 1 wind direction transmitter
- 1 wind vane
- 1 connecting plug

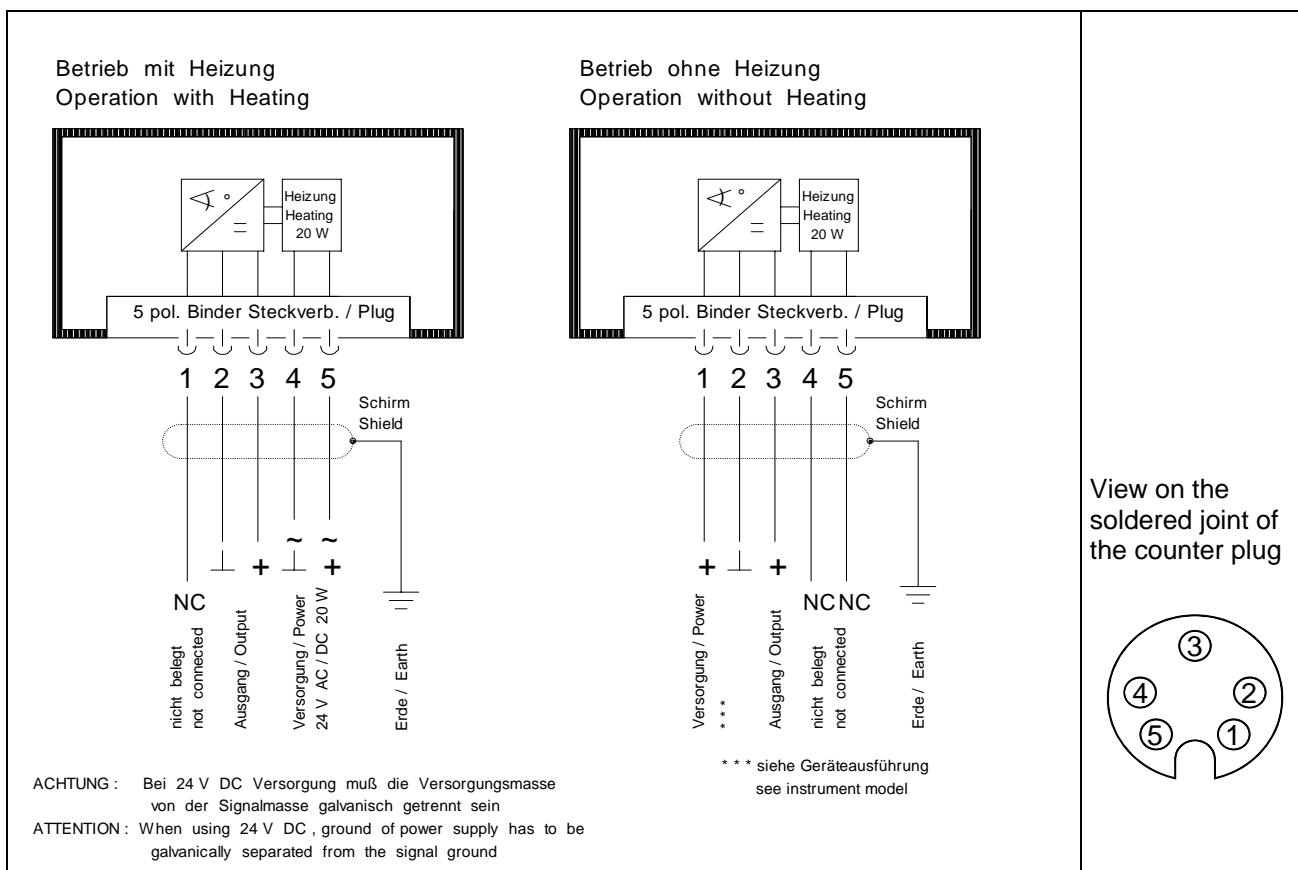
3. Instrument Models

Order – No.	Electric Output	Supply voltage with heating	Supply voltage without Heizung
4.3125.32.040	0...20 mA	24 V DC/AC, ca. 20 W	14...18 V DC
4.3125.32.041	4...20 mA	24 V DC/AC, ca. 20 W	14...18 V DC
4.3125.32.060	0....1 V	24 V DC/AC, ca. 20 W	8...18 V DC
4.3125.32.061	0...10 V	24 V DC/AC, ca. 20 W	14...18 V DC
4.3125.32.073	0... ..5 V	24 V DC/AC, ca. 20 W	8...18 V DC

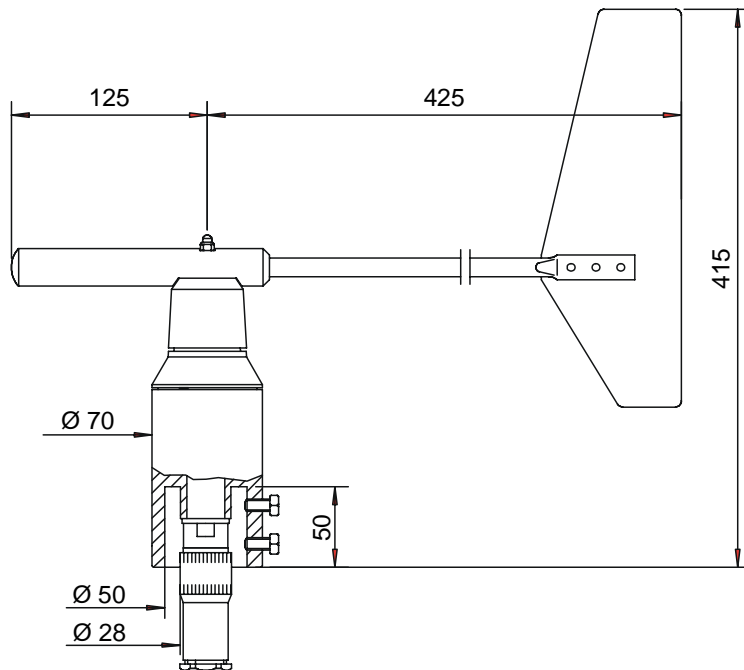
4. Technical Data

Measuring range:	0...360°
Resolution:	2,5°
Accuracy	± 2,5°
Damping ratio	0,2...0,3
Electric output:	see instrument models
Resist. for current output:	max. 500 ohm
Response sensitivity	0,5 m/s at 30° vane deflection
Max. wind load	60 m/s
Ambient temperature:	-35... +80°C
Supply voltage with heating:	24 V DC/AC, ca. 20 W
Supply voltage without heating	see instrument model
Heating:	24 V dc/ac, ca. 20 w, electronically regulated
Connection:	5 pole plug connector in the shaft
Dimensions:	550 mm wide, 415 mm high
Mounting:	onto a mast tube 1 1/2", for ex. DIN 2441
Weight:	1,8 kg

Connecting Diagram



Dimension Diagram



5. Preparation for Use

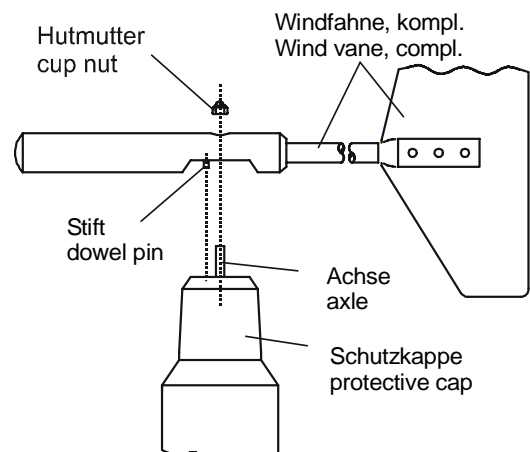
5.1 Selecting the measuring location

In general, wind measuring instruments are supposed to record wind conditions over a large area. In order to obtain comparable values for the determination of surface wind, measurements should be made at a height of 10 m above open, level terrain. Open, level terrain is defined as an area where the distance between the wind measuring instrument and an obstruction amounts to at least 10 times the height of the obstruction (see VDI 3786). If this instruction cannot be observed, the wind measuring instrument should be set up at a height where the measured values are possibly not affected by local obstructions (approx. 6 - 10 m above the obstruction level).

On flat roofs, the wind direction transmitter should be installed in the centre, and not at the edge, in order to avoid possible privileged directions.

5.2 Mounting the Wind Vane

Unscrew the cap nut (SW 8) from the direction transmitter housing, and remove the disc. The rubber sealing ring remains in the protective cap. Insert the wind vane in such a manner that the dowel pin counterbalances with the nut in the protective cap. After attaching the disc the cap nut is screwed on. When doing so, please make sure that you hold the transmitter by the protective cap and not by the wind vane.



5.3 Mounting the Wind Direction Transmitter

The transmitter can be mounted onto a pipe socket of R 1 1/2" (outer diameter 48,3 mm), 50 mm long. The internal diameter of the pipe must be at least 40 mm since the transmitter will be plugged into an electrical system at its base. Solder a flexible control line LiYCY with the required number of leads of each 0,5 mm² onto the enclosed plug. After connection the wind direction transmitter is put onto a pipe socket.

Attention

Use the anemometer in vertical position.

Please make sure that no precipitation gets into the shaft or plug when storing, mounting, de-mounting, transporting, or maintaining the anemometer.

Rotate the case markings on the shaft and on the protective cap until they are aligned. Then select an obvious point in a northerly direction in the surroundings (a tree, a building etc.) with the aid of a compass. Take a bearing on this point over the metal deflector and rod of the wind vane and when these coincide fix the transmitter with the hexagon nuts at the shaft.

6. Maintenance

If properly installed, the instrument requires no maintenance. Heavy pollution can lead to blockage of the slots between the rotating and the stable parts of the transmitter. Thus it is advisable to remove the accumulated dirt from the instrument periodically.

Certain symptoms of wear and tear can appear on the ball bearings after years of use. These symptoms are expressed in a lowered sensitivity of response or standstill of the wind vane. Should such a defect occur, we recommend that you return the instrument to the factory for repair.

	ADOLF THIES GmbH & Co. KG			
	Hauptstraße 76	37083 Göttingen Germany		
	P.O. Box 3536 + 3541	37025 Göttingen		
	Phone ++551 79001-0	Fax ++551 79001-65		
	www.thiesclima.com	info@thiesclima.com		

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