

Wind Direction Transmitter

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



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1. Range of application

The wind direction transmitter is used for the registration of the horizontal component of the wind direction. The measuring value will be placed at the output as analog signal. The signal can be given to display instruments, recording instruments, datalogger as well as process wise systems.

The wind direction 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 (please refer to instrument models).

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.

2. Set up and mode of operation

A code disk is attached to a low-inertia light-metallic wind vane. This code disk has been provided with a Gray code which is scanned opto-electronically. An 8-bit signal corresponding to the wind direction dependent position of the vane is formed and convert into an analog output signal. Normally the analog converter is supplied by the heating power supply but it is also possible to supply by a separate power supply when a system without heating is used. The data outputs are protected from overload by transzorb diodes.

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

The wind direction transmitter is shipped in a semi-mounted state in order to avoid transport damage and to keep the package small.

It consists of the following parts:

- 1 Wind direction transmitter
- 1 Wind vane
- 1 Connection plug

3. Models available

Order no.:	electrical output:
4.3125.xx.040	0...20 mA (max. 500 Ohm)
4.3125.xx.041	4...20 mA (max. 500 Ohm)
4.3125.xx.061	0...10 V (Ri = 100 Ohm)
4.3125.xx.073	0... 5 V (Ri = 100 Ohm)
.10.	without heating
.32.	with heating

4. Technical data

Measuring range	: 0...360°
Max. wind loading	: 60 m/s
Electrical output	: see connection diagram
Sensitivity of response	: 0,5 m/s at 30° indicator deflection
Accuracy	: 2,5°
Resolution	: 2,5°
Damping constant	: $\hat{U}= 0,2$
Ambient temperature	: -35...+80°C
Heating (for type .32...)	: 24 V DC/AC, ca. 20 W, regulated electronically
Wind load at 35 m/s	: approx. 10 N
Mounting	: onto a mast tube 1 _“, approx. DIN 2441
Connection	: 5-pole plug
Weight	: 1,8 kg

5. Preparation for use

5.1 Selecting the measuring site

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. If this condition cannot be guaranteed, then the wind measuring instrument should be set up at such a height where the measured values are, to the greatest extent possible, not influenced by local obstructions (approx. 6 - 10 m above the obstruction).

The wind measuring instrument should be installed in the centre of flat roofs - not at the edge - in order to avoid a possible influence in one direction or the other.

5.2 Mounting the wind vane

Unscrew the cap nut (SW 8) from the case of the direction transmitter. Keep the rubber sealing ring in the protective cap. Insert the wind vane in such a manner that the dowel pin counterbalances with the nut in the protective cap. Then replace the nut. When doing so, please make sure that you hold the transmitter by the protective cap and not by the wind indicator.

5.3 Mounting the wind direction transmitter

The transmitter can be mounted onto a tube of R 1 1/2" (outer diameter \varnothing 48,3 mm), 50 mm long. The internal diameter of the pipe must be at least 36 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 0,5 mm² onto the enclosed plug (see connection diagram).

Following the electrical connection, set the wind transmitter onto the tube and align it by means of the marking on the case to North. Fasten the instrument onto the shaft with the aid of the 2 hexagonal screws (electrical connection to a display instrument or to a recording instrument should be carried out according to the circuit diagram enclosed with complete system).

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 responses on the part of the wind vane. Should such a defect occur, we recommend that you return the instrument to the factory for repair.

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