Comb.Wind Transmitter

Instruction for use 4.3323.31.967

1. Range of application

The combined wind transmitter is used for the registration of the horizontal component of the wind velocity and the wind direction. The measuring values will be placed at the output as analog signals.

The combined 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.

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 low-inertia light metallic cup star is set into rotation by the wind. Through the optoelectronical-rotating-frequency-scanning the resulting pulse frequency is converted through an integrated measuring transducer into an analog signal.

A light-metal wind vane which also runs in ball bearings is deflected by the wind. The measurement system consists of a potentiometer. The potentiometer value is depending of the wind direction.

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 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 combined wind 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 Combined wind transmitter
1 Cup star
1 Wind vane
1 Connection plug

4. Technical data

Wind velocity

Measuring range	: 0 … 55,56 m/s
Electr. Output	: 0 … 2 V (Ri = 100 Ω)
Starting velocity	: 0,3 m/s
Accuracy	: 0,5 m/s or 2 % from measuring range
Distance constant	: 5 m

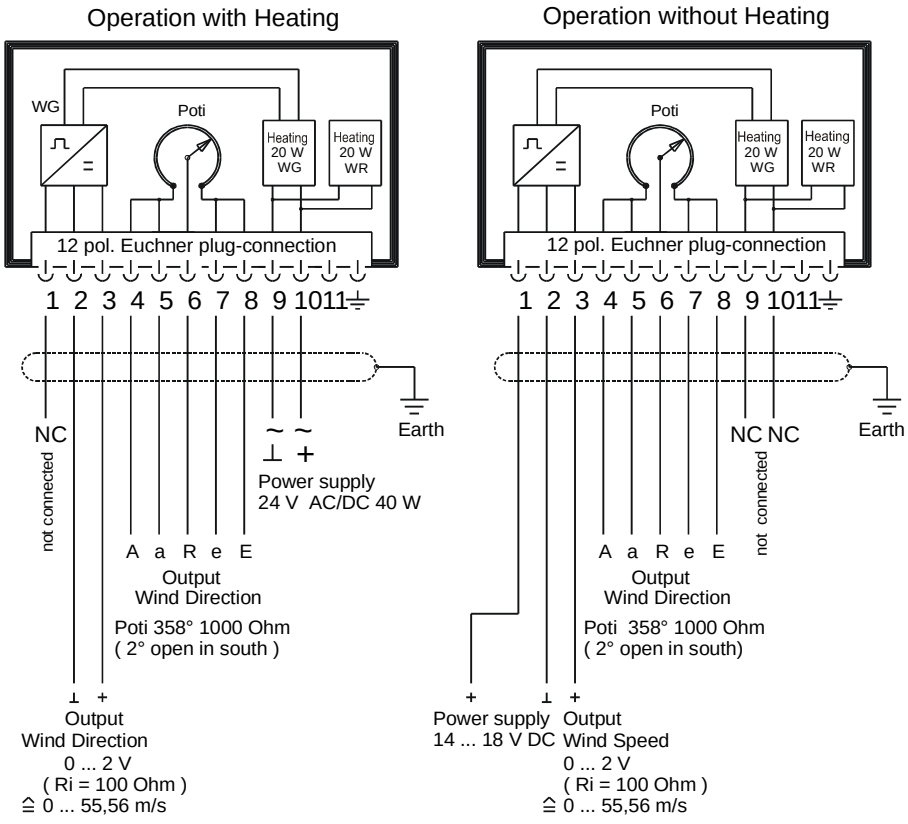
Wind direction

Measuring range	: 0...358°
Sensitivity of response	: 0,5 m/s at 30° indicator deflection
Damping constant	: ≤= 0,2
Accuracy	: +/- 4°

General

Max. wind loading	: 60 m/s
Ambient temperature	: -35...+80°C
Heating	: 24 V DC/AC, approx. 40 W, regulated electronically
Wind load at 35 m/s	: approx. 50 N
Mounting	: onto a mast tube 1 ½“, DIN 2441
Connection	: 12-pole plug in the shaft
Weight	: 3 kg

Connection Diagram



ATTENTION :
When using 24 V DC, ground of power supply has to be galvanically separated from the signal ground.

NC = Cable isolating - no connecting

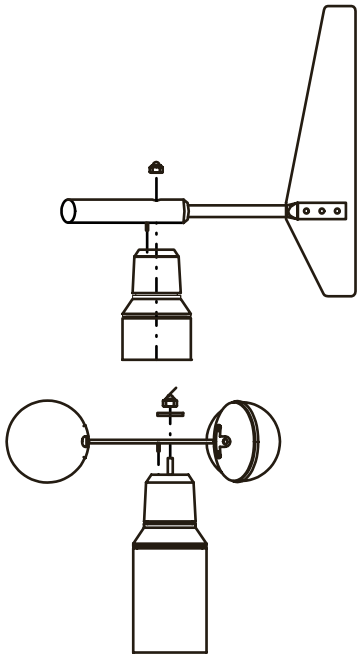
5. Preparation for use

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 float roofs - not at the edge - in order to avoid a possible influence in one direction or the other.

5.2 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 rescrew the cap nut. Hold the transmitter on the protective cap not on the cup.



5.3 Mounting of the wind vane

The wind vane has to be mounted in the same way as the cup start (s. 5.2), bud only without the disk.

5.4 Mounting the wind transmitter

The transmitter can be mounted onto a tube of R 1 1/2" (outer diameter ∅ 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 mm^2 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. The bow of the case should also point North. Fasten the instrument onto the shaft with the aid of the 2 hexagonal screws.

6. Maintenance

If the instrument has been properly mounted, no maintenance is required. Heavy pollution could cause the slits between the rotating and stationary parts of the instrument to clog up. Thus it is recommendable to remove dirt deposits from the transmitter from time to time. Naturally, the bearings of the generators and the ball-bearings are subject to a certain degree of wear and tear. After years of use, this could lead to a higher starting torque or to the fact that the cup anemometer no longer rotates. Should such a defect occur, we would recommend that you return the instrument for repairs.

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