



Wind Direction Transmitter >>First Class<<

The wind direction transmitter serves for the detection of the horizontal wind direction in the field of meteorology and the technology of environmental protection.

Special characteristics:

- **High level of measuring accuracy and resolution**
- **High damping ratio at a small delay distance**
- **Low starting threshold**
- **Magnetic drive, which is free of hysteresis and wear, situated between the axis of vane and potentiometer**
- **Electronic protective circuit for the limiting of current, and against erroneous connection**
- **Easy removal, and mounting when changing the ball bearing**



An electronically-regulated heating system has been installed for winter time use of the wind direction transmitter, in order to prevent the ballbearing and the external rotation parts from freezing. Power for the heating system could be provided for instance by our Power Supply Unit, order-no. 9.3388.00.000.

Mode of Operation

The dynamic characteristics of the wind vane is achieved by the aluminium light-weight construction. The co-action of wind vane and balance weight results in a high damping ratio with small delay distance as excellent characteristic of the complete vane. The axis of the wind vane is running in ball bearings, and is coupled, in contactless magnetic manner, with the axis of the integrated potentiometer. Thus, clearance and friction in the coupling are avoided, and an easy starting is guaranteed.

An AC- or DC-voltage of 24 V is intended for the separate supply of the optional heating. In all probability, the heating guarantees a trouble-free function of the Wind Direction Transmitter First Class even under extreme meteorological icing-conditions.

The outer parts of the instrument are made of corrosion-resistant anodised aluminium, and stainless steel. Highly effective labyrinth gaskets and O-rings protect the sensitive parts inside the instrument against humidity and dust.

Order- No.	4.3150.00.110	4.3150.10.110
	with Heating	without Heating

Technical Data:

Characteristic	Description
Measuring Range	0 ... 360 °
Measuring Accuracy	0,25% (1°)
Survival speed	85 m/s up to 0,5 h (without damages)
Permissible ambient conditions for operation	-50 ... +80°C all occurring situations of rel. humidity incl. dew moistening
Electrical output	Potentiometer 10k An electronic protective circuit avoids an overloading of the potentiometer in case of erroneous connection, and on transition from 0° to 360 °. The protective circuit represents a multiplier of 500 ohms, however it limits the short-circuit-current on transition from 0° to 360 ° (and vice versa) to < 2,5 mA.
Linearity	0,25% (1°)
Starting threshold	< 0,5 m/s at 10° amplitude
Delay distance	< 1 m (acc. to D 53666 – 96)
Damping ratio	D > 0,25 (acc. to ASTM D 53666 – 96) K > 1 $K = \frac{4 \cdot D \cdot \omega_0}{\rho \cdot u}$
Quality factor	D damping ratio, ω_0 angular frequency of undamped oscillation, ρ air density u wind speed
Heating	Surface temperature of housing neck > 0 °C at 20 m/s up to –10 °C air temperature, at 10 m/s up to –20 °C using the Thies icing standard 012002 on the housing neck heating regulated with temperature sensor
Electrical supply for Potentiometer	voltage: 4V DC to 42 V DC (galvanic isolation from the housing) Strom: < 2,5 mA on transition from 0 - 360° and 360 - 0° multiplier: 500 Ohm (representative)
Electrical supply for heating	voltage: 24 V AC/DC (galvanic isolation from the housing) Capacity: 25W
Connection	8-pole plug connection for shielded cable in the shaft
Montage	Mounting on mast 1“, for ex. DIN 2441 1½ “ with separate adaptor (option)
Weight	ca. 0,7 kg
Protection	IP 55 (DIN 40050)
EMC	EN 61000-6-2:2001 (immunity) EN 55022:2001, Class B (interfering transmission)



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