



Wind Transmitter



>>first class<<

for evaluation of location, and measurement of capacity characteristics of wind power systems.

Fulfills all specifications according the latest requirements (MEASNET, CLASSCUP, IEC 61400-121-CD)

• optimized dynamic action also with high turbulence-intensity

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- minimal over speeding
- low starting values
- high accuracy
- Certified by <u>DEW</u> and <u>WindGuard</u>
- high survival speed (Certified by <u>DNW</u>)
- excellent cost -performance ratio



1. Range of Application

The wind transmitter is designed for the acquisition of the horizontal component of the wind speed in the field of meteorology and environmental measuring technology. The measuring value is available as digital signal at the output. It can be transmitted to display instruments, recording instruments, data loggers as well as to process control systems. For winter operation the instrument is equipped with an electronically regulated heating, which guarantees a smooth running of the ball bearings, and prevents the shaft and slot from icing-up.

2. Construction and Mode of Operation

A low-inertia cup star with 3 cups, made of carbon-fibre-reinforced plastic, is set into rotation by the wind. The rotation is scanned opto-electronically, and is converted into a rectangular signal. The frequency of this signal is proportional to the number or rotations. Depending on the connection, the output signal ranges between maximal output voltage and ground or a potential (life-zero), lifted by approx. 1,2 v. The supply of the electronics can be effected by dc-voltage of 3,3 v up to 42 v at a very low current consumption. 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 Transmitter First Class even under extreme meteorological icing-conditions.

The outer parts of the instrument are made of corrosion-resistant anodized aluminum. Highly effective labyrinth gaskets and o-rings protect the sensitive parts inside the instrument against humidity and dust. The instrument is mounted onto a mast tube; the electrical plug-connection is located in the transmitter shaft.

Order-No. 4.3350.00.000 4.3350.10.000

with heating w/o heating

Technical Data:

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Characteristic	Description
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Measuring range

0,3...75 m/s

Measuring

instability(w/o calibration)

0.3...50 m/s < 3% of meas. value or < 0.3 m/s

Survival speed 85 m/s (max. 30 min.)

Permissible **Ambient** conditions

- 50...+ 80°C, all occurring situations of relative humidity (incl. dew

moistening)

Form rectangle

Frequency 1000 Hz @ 50 m/s

Output signal

Amplitude is supply voltage, max. 15 V

R > 1 K Ohm (Push-pull output with 220 Ohm in series) Load

C < 200 nF (corresp. to length typical cable < 1km)

Linearity

Correlation factor r between frequency and wind speed, r > 0.999 95

(4...20 m/s)

Starting velocity

< 0.3 m/s

Resolution 0,05 m wind run

Distance constant

< 3 m (acc. to ASTM D 5096 - 96)

Measuring value deviation Delta v compared with stationary

horizontal flow: Delta v < 1 %

Wind speed

v = 8 m/s

Voltage: 3,3...42 V DC (galvanic isolation from housing)current: 0,3 ma @ 3,3 V typical (w/o external load) < 0.5 ma @ 5 V (w/oexternal load) Voltage: 24 V AC/DC (galvanic isolation

Inclined flow

from housing)Idling conditions:

voltage: max. 30 V AC, t <= 20%

max. 42 V DC Capacity: 25 W 8-pole plug-connection for shielded cable in the shaft(see connecting diagram below) Mounting on mast R 1", for ex. DIN 244111/2 " with separate adapter (option) See

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dimension diagram

Mounting on mast R 1", for ex. DIN 244111/2 " with separate adapter (option) 0,5 kg IP 55 (DIN 40050) EN 61000-6-2:2001

(immunity)EN 55022:2001,

class B (interfering transmission)

Turbulence structure r <= 0.8d

(rough country)

Average deviation from the

horizontal flow

deviation Delta v turbulent compared with stationary horizontal flow

Turbulent flow -0.5% < Delta v < +2%

frequency < 2 Hz

Wind load at 75 m/s

ca. 100 N

Surface temperature of housing neck > 0 °C, at 20 m/s up to -10 °C

air temperature, at 10 m/s up to -20 °

Heating Cusing the THIES icing standard 012002 on the housing

neck. Heating regulated by temperature sensor.

Electrical

supply for

Voltage: 3,3...42 V DC (galvanic isolation from housing)

opto-electronic

scanning

0,3 mA @ 3,3 V typical (w/o external load) < 0,5 mA @ current:

5 V (w/o external load)

Voltage: 24 V AC/DC (galvanic isolation from housing)

Electrical

supply for heating

Idling voltage:

max. 30 V AC, max. 42 V DC

Capacity: 25 W

Connection 8-pole plug-connection for shielded cable in the shaft

Mounting on mast R 1", for ex. DIN 244111/2" with separate adapter Mounting

(option)

Weight approx. 0,5 kg

Protection IP 55 (DIN 40050)

EN 61000-6-2:2001 (immunity) **EMV**

EN 55022:2001, class B (interfering transmission)



