

Wind Transmitter

Instruction for use 4.3105.... / 4.3303.... / 4.3712....



1. Range of Application

The wind transmitter is designed to detect wind velocity and to convert these velocities into electrical signals. The signals can be given directly to display instruments or – via measuring transducer – to recording instruments. The wind transmitter can be used in a velocity ranging as shown in the technical data. The wind transmitter is equipped with an electronically regulated heating system in order to prevent ice and frost from forming during wintertime operation.

Power supply unit, Order No. 9.3386.00.000 provides the heating system with current. It is advisable to attach Lightning rod, Order No. 4.3100.99.000 in areas with considerable lightning activity.

Instrument type:

Order-No.	4.3105.xx.000	DC-Generator
	4.3303.xx.000	opto electronical revolution scanning
	4.3712.xx.000	magnetical revolution scanning (1 Reed contact)
	4.3712.xx.001	magnetical revolution scanning (2 Reed contacts)
	..10....	without heating
	..22....	with heating

2. Set-up of the complete Instrument

The 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 Case
	1 Cup star
	1 Connecting plug

3. Technical Data

Max. load	: 60 m/s
Wind load at 35 m/s	: approx. 10 N
Distance constant	: 5m
Ambient temperature	: -40...+80°C
Heating (for type. 22...)	: approx. 20 W; 24 V AC/DC; electronically controlled
Connection	: 5-pole plug
Mounting	: onto a mast tube 1 1/2", for example DIN 2441
Weight	: 1 kg

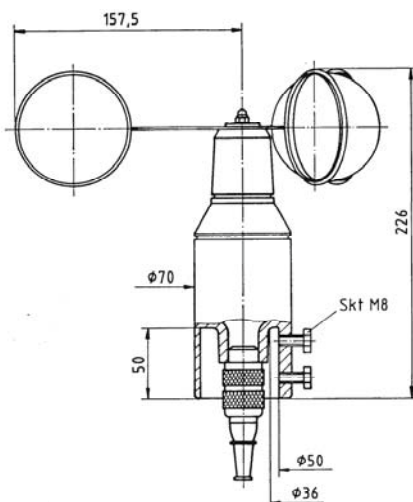
Analog Model

Order No.	4.3105.xx.000
Measuring range	0,5...35 m/s
Electrical output	0...4,67 mA DC, linear ; Ra = 400 Ω

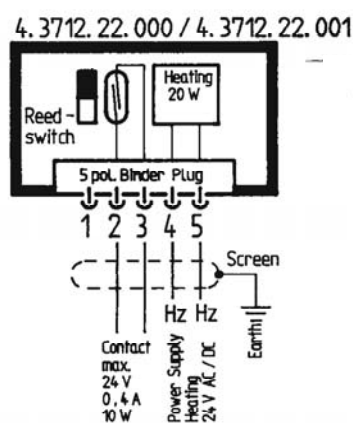
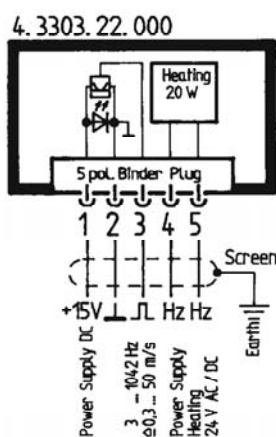
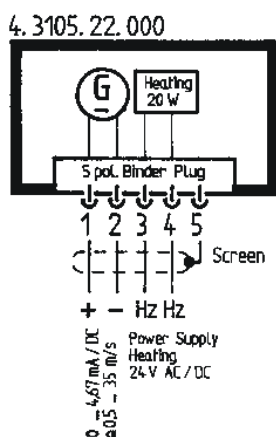
Digital Models

Order No.	4.3303.xx.000	4.3712.xx.000	4.3712.xx.001
Measuring range	0,3...50 m/s	0,5...50 m/s	0,5...50 m/s
Accuracy	± 0,3 m/s or ± 3 % of m. v.	± 0,3 m/s or ± 3 % of m. v.	± 0,3 m/s or ± 3 % of m. v.
Resolution	0,05 m wind run	2,2 m wind run	1,1 m wind run
Scanning	light barrier	Reed contact	Reed contact
Electr. output	3...1042 Hz, 15 V	0...23,7 Hz	0...47,4 Hz
Contact rating	_____	24 V; 0,4A	24 V; 0,4A
Operating voltage	15 V DC (4...18 V) ca. 0,3 mA unloaded		

4. Dimensions



Connection Diagram



Without heating, Pin 4 and 5 not connected !

5. Sit-up and mode of operation

A low-inertia light metallic cup anemometer is set into rotation by the wind.

Wind Transmitter No. 4.3105...: The axis of the cup star is coupled with a measuring generator. A certain current is delivered according to the wind velocity.

Wind Transmitter No. 4.3712...: Magnetic scanning of number of revolutions (reed contact).

Wind Transmitter No. 4.3303...: A pulse frequency corresponding to the number f revolutions result. This frequency is used for digital data processing.

The inputs and outputs are protected from overload by transzorb diodes.

The instrument is made of aluminium, the surface were anodized and then varnished.

The instrument is designed to be mounted to a mast, the electrical connection is located in the stem of the transmitter, the lead wire runs through the mast.

6. Preparation for use

6.1 Selecting the site

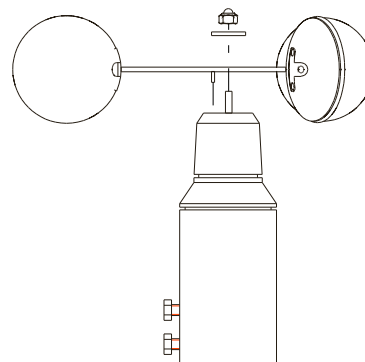
According to international regulations, the surface wind should be measured at a height of 10 m above flat, open terrain, in order to achieve comparable values. An open terrain is defined as terrain where the distance between the wind-measuring instrument and the next obstacle is at least ten times the height of this obstacle. If the regulation cannot be adhered to, the measuring instrument should be installed at a height at which the measurement values are not influenced by any local obstacles.

In any case, the measuring instruments are to be installed at a height of 6 to 10 m above the mean height of the buildings or trees in the vicinity.

If it is necessary to install the instrument on a roof, it should be installed in the centre of the roof in order to avoid any preferential directions.

6.2 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 re-screw the cap nut. Hold the transmitter on the protective cap not on the cup.



6.3 Mounting the wind transmitter

Mount the transmitter to a short piece of pipe of $r 1\frac{1}{2}$ " ($\varnothing 48$ mm) and a length of 50 mm. The short piece of pipe must have an internal diameter of at least 36 mm as the wind transmitter must be connected electrically with a plug from below.

Solder a flexible lead wire LIYCY with the appropriate number of cores of $0,75$ mm² each to the enclosed plug (see circuit diagram).

Once the electrical connection has been carried out, set the wind transmitter onto the short piece and fasten it to the shaft with the two hexagonal screws.

7. Maintenance

If the instrument has been properly mounted, no maintenance is required. However, 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.

8. Characteristics

Wind velocity	Electrical output			
	4.3105....	4.3303...	4.3712.xx.000	4.3712.xx.001
m/s	mA DC	Hz	Hz	Hz
0,3	----	3	----	----
0,5	0	7	0,2	0,3
1,0	0,13	17	0,4	0,8
5,0	0,67	101	2,3	4,6
10,0	1,33	205	4,7	9,3
15,0	2,00	310	7,0	14,1
20,0	2,67	415	9,4	18,8
25,0	3,33	519	11,8	23,6
30,0	4,00	624	14,2	28,3
35,0	4,67	728	16,6	33,1
40,0	----	833	18,9	37,9
45,0	----	937	21,3	42,6
50,0	----	1042	23,7	47,4

9. Accessories available

	Order No.	Remark		
		Length	Rigging	Part length
Teleskopic mast	4.3179.00.000	4 m	3-fach	1,5 m
Teleskopic mast	4.3180.00.000	6 m	3-fach	1,5 m
Teleskopic mast	4.3181.00.000	10 m	6-fach	1,5 m
Lightning rod	4.3100.99.000	Lightning protection for wind transmitter		
Grounding set	4.3186.00.000	Lightning draw off over the mast to ground		
Power supply unit	9.3388.00.000	Power supply for wind transmitter		

Displays, Measuring transducer and Recorders on request.



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