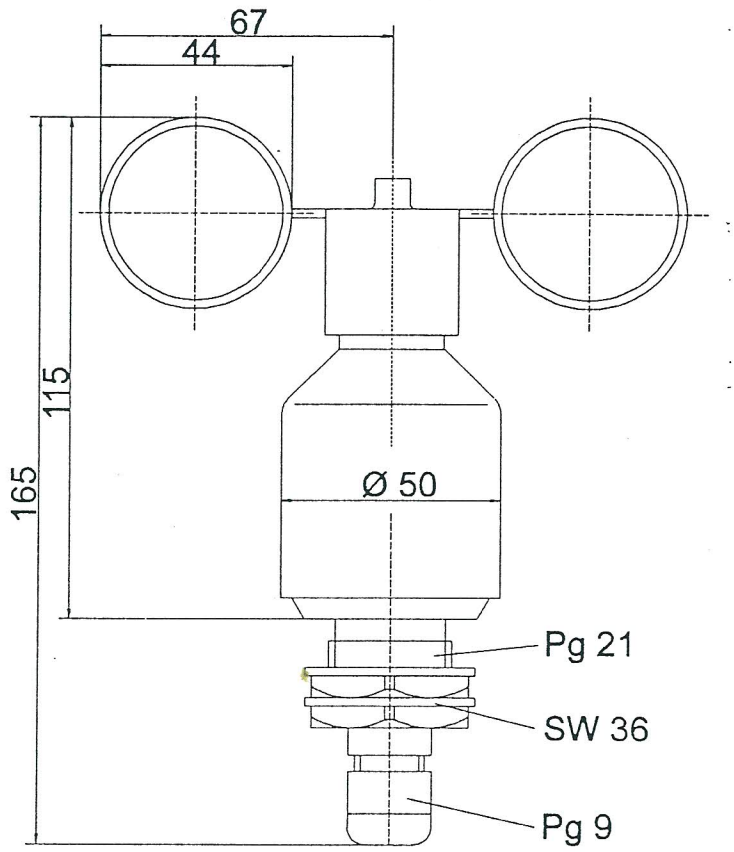
Wind Transmitter - compact

Instruction for Use

4.3518.00.000	***Frequency Output***
4.3519.00.000	***Low power with Frequency Output***
4.3519.00.xxx	***Analog Output***
4.3520.xx.000	***Frequency Output***



Dimensional Drawing

Range of application

The wind sensor measures and transmits the horizontal wind velocity. The measured values are available at the output as digital signal to control for instance wind power plant. However, with the resp. design, it can be used as input signal for dataloggers, display instruments, recording instruments or alike.

The instrument could be used in the range of 0,5...50 m/s wind velocity.

An electronically-regulated heating system has been installed for wintertime use, .in order to prevent the ball bearing 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**.

When using fastening adapters (angle, traverses etc.) please notice that turbulences could possibly influence the characterisitc curve

tructure and mode of operation

Wind velocity is recorded by means of a low-inertia plastic cupstar the ball-bearing axis of which is rected to a slotted disk or cup wheel. The slotted disc/cup wheel is scanned opto-electronically and pplies 10 resp. 11 pulses with every rotation (see Technical Data).

The built-in electronic forms pulses

.....	the frequency of which is proportional to the wind velocity	order-no.:	**4.3518.00.000 / 4.3520.xx.000**
.....	which is used for digital data processing	order-no.:	**4.3519.00.000**
.....	the frequency of which is transformed into the analog signal by means of the integrated measuring transducer. Normally, the measuring transducer is fed from the heating voltage. However, the instrument can be operated also without heating. In this case, a separate supply voltage is to be applied for the measuring transducer.	order-no.:	**4.3519.00.xxx**

The external parts of the instruments are made of corrosion-restistance material (plastic) resp. the minium housing is additionally protected by means of an anodic coat.
Labyrinth sealing protect sensitive parts inside the instrument against humidity.

Selecting a site

In general wind measurement instruments should be able to detect the wind conditions of a large area. In order to obtain comparable values when determining the surface wind, measurements should be taken at a height of 10 meters over an even area with no obstacles. An area with no obstacles means that the distance between the wind transmitter and an obstacle should be at least 10 times the height of the obstacle. If it is not possible to fulfil this condition, then the wind transmitter should be set up a height where local obstacles do not influence the measured values to any significant extent (approx. 6-10 m above the obstacle).
The wind transmitter should be set up in the centre of flat roofs not on the avoid bias in the direction (privileged directions).

Mounting

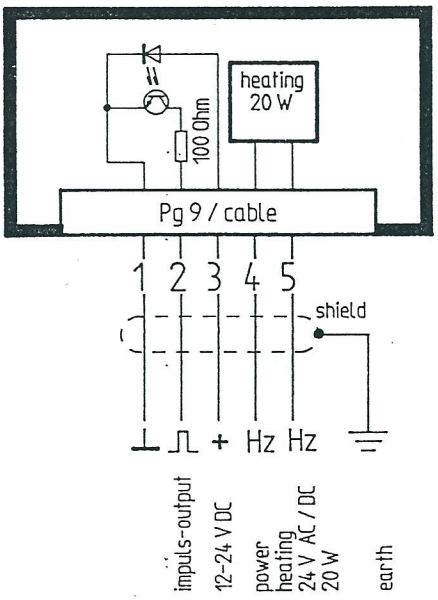
The mounting of the transmitter could be done for example onto a central mast tube with a boring thread Pg 21 or on hangers with a boring of 29 mm ∅.
When using fastening adapters (angle, traverses etc.) please notice that turbulences could possibly influence the characteristic curve
After flexible connection cable is passed through the boring, wind transmitter could be fixed with hexagonal nut (WO 36). For electrical connection please refer to the connection diagram.

Maintenance

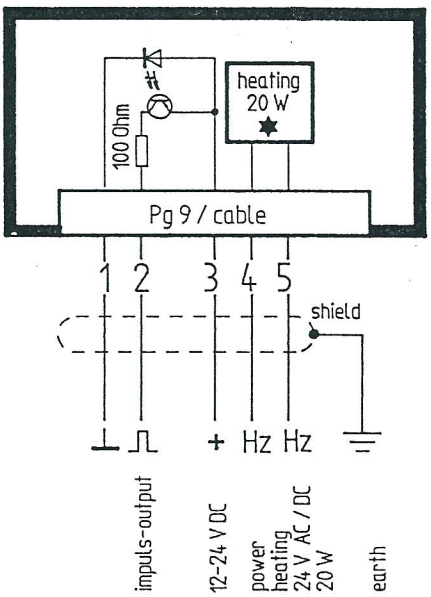
After proper mounting the instruments works maintenance free.
Heavy pollution can clog up the slit between the rotating and the stationary parts of the wind transmitter. This slit must be kept clean.

Connecting Diagrams

Order-No.: 4.3518.00.000



Order-No.: 4.3520.00.000



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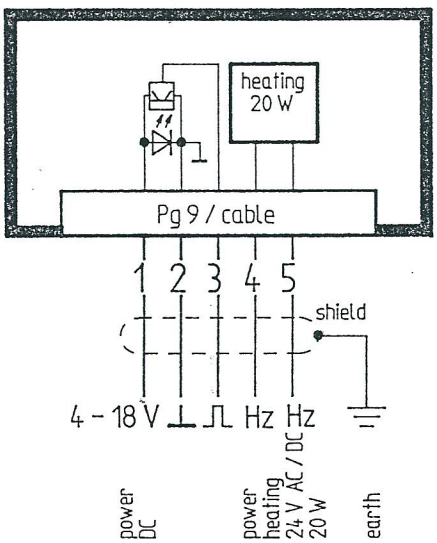

Order-No.: 4.3520.10.000

✱ without Heating

Pin 4 and Pin 5 not connected

Cable colour code

Cable no.	colour
1	white
2	brown
3	green
4	yellow
5	grey
6	pink

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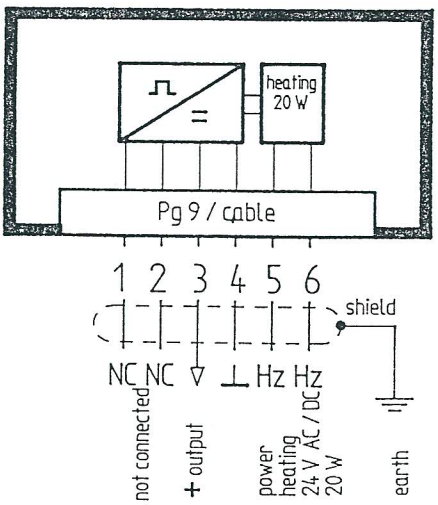
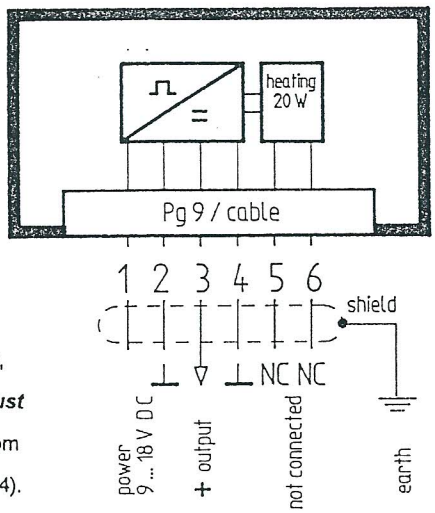
Operation with Heating



Operation without Heating



In case of power supply for heating at pin 5 and 6, power supply voltage ***must be*** galvanic separated from signal voltage (pin 3 and 4).

nical Data

neral

Measuring Range	: 0,5 ... 50 m/s
Meas. Accuracy	: ± 3% of measuring value
Heating	: 24 V AC/DC max. 20 W
Ambient Temperature	: - 30 °C ... + 70 °C
Mounting	: onto masttube (boring thread Pg 21) or onto traverse, boring ∅ 29 mm

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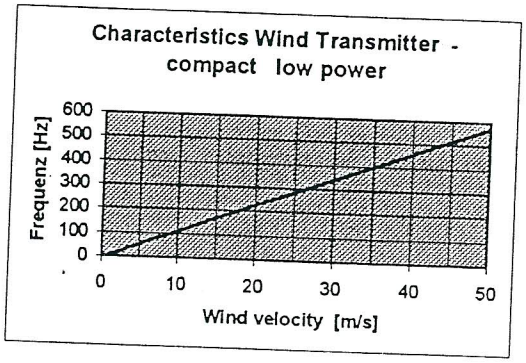
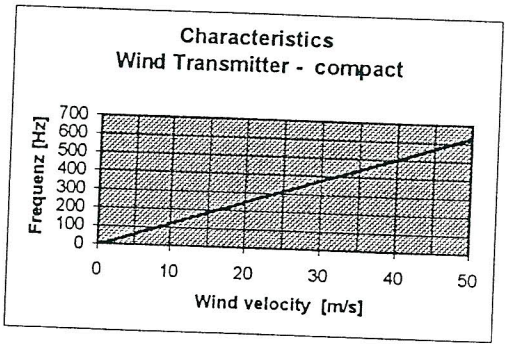
Resolution	: 10 pulses / Revolution
Characteristics	0,5 m/s ≙ 2 Hz ; 50 m/s = 573 Hz V [m/s] = 0,08669 • f [Hz] + 0,32
Operating voltage V_{cc}	: 12 - 24 V DC
Current input	: 20 mA
Signal output	: Puls (amplitude ≙ V_{cc})
Output	: 4.3518.00.000 | 4.3520.xx.000
	open collector sink | open collector sorce
Load	: max. 30 mA
Scanning	: Light barrier - slotted disc
Supply cable	: LiYCY 5 x 0,25 mm² , 5 m long
Weight	: 0,40 kg



Order-No.: 4.3519.00.000

Resolution	: 11 pulses / Rotation
Characteristics	0,5 m/s ≙ 2 Hz ; 50 m/s = 630 Hz V [m/s] = 0,07881 • f [Hz] + 0,32
Operating voltage V_{cc}	: 4 - 18 V DC
Current input	: < 1 mA
Signal output	: Puls (amplitude ≙ V_{cc})
Scanning	: Lightbarrier - cup wheel
Supply cable	: LiYCY 5 x 0,25 mm², 12 m long
Weight	: 0,75 kg



Order-No.: 4.3519.00.xxx

Resolution	: < 0,1 m/s
Electr. Output	
Ord.-No. **4.3519.00.040**	: 0 - 20 mA Load max. 500Ω (> 13 V DC Operating voltage)
4.3519.00.041	: 4 - 20 mA Load max. 500Ω (> 13 V DC Operating voltage)
4.3519.00.061	: 0 - 10 V Load resistance min. 1 kΩ
4.3519.00.067	: 0 - 2 V Load resistance min. 1 kΩ
4.3519.00.073	: 0 - 5 V Load resistance min. 1 kΩ
Operating voltage	: 9 - 18 V DC or 24 V AC/DC (13 - 18 V DC for 0 - 10 V Output) see Connecting diagrams
Current input	: approx. 10 mA
Scanning	: Light barrier - slotted disc
Supply cable	: LiYCY 6 x 0,25 mm², 12 m long
Weight	: 0,75 kg