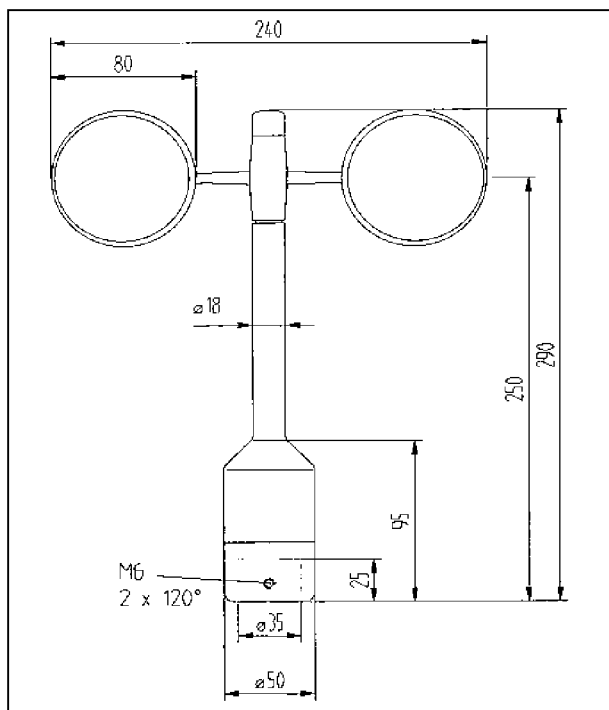


Anemometer „first class“

Order no. P 6100H - heatable

- Top Anemometer for wind energy applications
- Optoelectronic wind speed transmitter
- Very low current consumption
- Range 0,3 .. 75 m/s, Resolution 0,05 m/s



Dimensions: mm

Measurement principle

The low-inertia 3-cup rotor is set into rotation by the wind. The rotation is scanned optoelectronically, and is converted into a square wave signal. The frequency of this signal is proportional to the number of rotations.

The anemometer is optionally equipped with an electronically regulated heating system in order to prevent ice from the bearings. To use this heating the connection cable must have additional cores and you should provide a sufficient power supply (mains connection).

Mounting

The anemometer should ideally be mounted at the top of a mast to be open to the wind from all directions. Only a lightning protection rod mounted below may overtop the sensor. If an anemometer has to be mounted on a traverse the length must be at least 7 times the mast diameter.

Mount the transmitter onto a pipe socket of R1" (\varnothing 33,5 mm) and a length of at least 25 mm. The pipe socket must have an internal diameter of at least 25 mm. The wind transmitter will be connected electrically with a plug from below. After connection the wind transmitter is put onto the pipe socket, and is fixed at the mast or hanger by means of 2 threaded pins (female hexagon 3 mm).

To avoid damage due to lightning, a protection rod and proper grounding of all metal parts is to be recommended.

Maintenance

When mounted properly, the anemometer operates almost maintenance-free. Dust or dirt may clog the space between the rotating parts and the shaft. Therefore you should check for plausibility of measurement results at regular terms and clean the device if necessary.

In true long-term operation (years) the bearings may be subject to wear and tear showing delayed start-up behaviour or even stand-still of the anemometer. Should such a defect occur we would recommend that you return the instrument for repairs.

Technical Data

Type	P 6100H– Anemometer “first class”	
Measurement range	0,3...75 m/s	
Measuring instability (w/o calibration)	0,3...50 m/s	< 3% of reading or < 0,3 m/s
	50...75 m/s	< 6% of reading
Resolution	0,05 m/s	
Start-up wind speed	< 0,3 m/s	
Survival wind speed	85 m/s (max. 30 min)	
Delay distance	< 3 m (acc. to ASTM D 5096 – 96)	
Housing made of	Anodized aluminium, carbon-fibre-reinforced plastic	
Protection	IP 55 (DIN 40050)	
Ambient temperature	- 50...+ 80° C	
Heating	Optional, 24 V AC/DC, 25 W	
Transducer	Opto-electronic scanning	
operating supply	5 V DC (3,3 ... 42 V) - approx. 0,3 mA	
electrical output	Approx. 1000 Hz @ 50 m/s	
Connector	Male plug 8 pins Binder Series 423	
Mass	Anemometer: 0,5 kg / Gross weigh 1 kg	
Recalibration	Recommended interval every 24 months	
Manufacturer / type	Thies, 4.3350.10.000 (4.3350.00.000)	

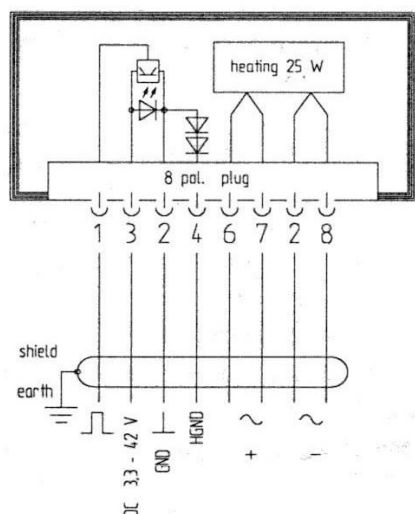
Characteristic curve / Calibration

Frequency output is determined by a linear function of the wind speed:

$$\text{Wind speed [m/s]} = \text{Frequency [1/s]} \cdot \text{Slope [m]} + \text{Offset [m/s]}.$$

manufacturers' instructions: Slope = 0,050m, Offset = 0,3m/s

- For measurement campaigns with extremely crucial requirements an individual calibration of each anemometer in a wind tunnel test may be worthwhile to achieve optimum accuracy and precision. ◀



Connection Anemometer		Connetion Data Logger		
	color of cores	„Wind“ 12-pin.	„Meteo“ 7-pin	3-pin. (*)
1 - Pulses	green	A, B or C	6	3
2 - Ground/GND	brown	M	-	1
3 - Supply	white	H	-	2
4 - nc (HGND)	-	-	-	-
5 / 8 - Heating 1	yellow, grey			
6 / 7 - Heating 2	pink, blue			

(*) former Wicom-EL

Connect the shield logger-sided to Ground (GND).

Cable type without heating cores: LiY(C)Y 3 x 0,25 mm²

Cable type with heating cores: LiY(C)Y 7 x 0,25 mm²

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