

Cup Anemometer *first class*



Description

Rugged and very precise sensor for the measurement of the horizontal component of the wind speed.

Driven by the flow, the cups are set into rotation. A light barrier scans an optical disc in the interior of the sensor and provides a frequency linearly dependent on the wind speed.

A built-in electronical heating prevents the bearings and the rotating part of the sensor from being blocked by icing.

The sensor meets the latest requirements of MEASNET and IEC for the assessment of wind resources and wind turbine power characteristics.

Technical Data

Sensor

Sensing element.....	Cup rotor
Transducer.....	Optoelectronic transmitter with frequency output
Output signal	0..50 m/s = 0..1000 Hz
Pulse level	LO = < 0.5 V HI = V_{Supply} (max. 15 V)
Resolution	0.05 m wind run
Accuracy.....	0..15 m/s ± 0.3 m/s > 15 m/s $\pm 2\%$ of reading
IEC 61400-121-CD classification	The anemometer meets in flat terrain all aspects of the requirements for a Class 1 anemometer.
Starting threshold	0.3 m/s

Rotor

Type	3 conical cups
Material.....	Plastic
Outside diameter	ø240 mm
Distance constant	< 3 m (for 63% recovery)
Bearings	Stainless steel ball bearings

Power Supply

Operating voltage	3.3..42 VDC
Current consumption	0.5 mA typical at 5 V, unloaded
Power-up time	50 ms

Heating

Heating power 25 W, electronically controlled
 Supply voltage 24 VAC/DC

Casing

Material..... Anodized aluminium
 Protection class IP 55
 Dimensions $\varnothing 50 \times 290$ mm
 Weight 0.5 kg (cable exclusive)
 Mounting The sensor mounts on a standard one inches pipe with $\varnothing 34$ mm outside diameter and $> \varnothing 25$ mm inside diameter
 Wind drag Approx. 100 N at 75 m/s

Electrical connection

Connector (at the sensor)..... 8 pin circular connector
 Connector (to data logger **wilog303/306**, opt.) 6 pin circular connector DIN 45322
 Cable 10 x 0.25 mm², optionally shielded

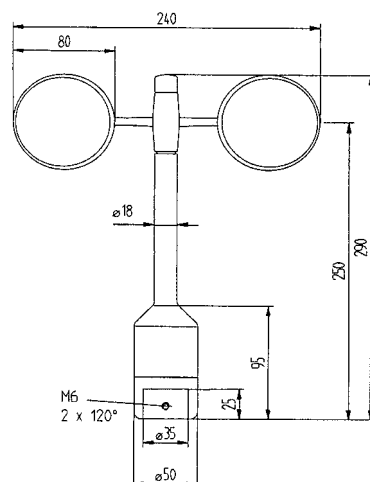
Wiring

8 Pin Connector	6 Pin Connector	Wire	Function
3	2	white	(+) power supply
2	6	brown	ground
1	3	green	output signal
6 + 7	5	red (1 mm ²)	(+) heating
5 + 8	4	blue (1 mm ²)	(-) heating
casing	casing	yellow/green and shield	cable shield

Environmental Conditions

Operating temperature -50..+80 °C
 Relative humidity 0..100%
 Maximum wind speed..... 85 m/s

Dimensions



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