0227

Cup Anemometer *First Class Advanced*

Description

Rugged and 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.

The sensor meets the latest requirements of MEASNET and IEC 61400-12 for the assessment of wind resources and wind turbine power characterics.

Technical Data

Sensor

Sensing element	Cup rotor
Transducer	Optoelectronical 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

Type..no heating

Casing

Material ....anodized aluminium

Protection class..IP 55 in upright position

Dimensions ....ø50 x 290 mm

Weight ....0.5 kg (cable exclusive)

Mounting..the sensor mounts on a standard one inches pipe with ø34 mm outside diameter and >ø25 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 ....3 x 0.5 mm², 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	not connected	-
5 + 8	4	not connected	-
casing	casing	yellow/green and shield	cable shield

Connection to Data Logger blueberry COMPACT
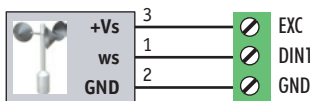
Output Signal
0..50 m/s = 0..1000 Hz

Standard Setup
Input: **DIN1**
Functions: **vThiFc1 (m/s) = Frequency TTL * 0.046 + 0.2**
(replace slope and offset by individual data from calibration sheet)

Environmental Conditions

Operating temperature..−50..+80 °C

Relative humidity..0..100%

Maximum wind speed...85 m/s

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