

- Opto-electronic wind speed transmitter
- Classified according to: IEC Standards
- “Low Power”, high frequency output signal
- Range 0.2...75m/s
- Resolution < 0.5 m/s



In response to demand for a low power, pulse output only type, a new version of the well-known “Vector”-anemometer has been produced suitable for use with Ammonit data loggers. This sensor consumes 1 mA while operating from the logger’s battery supply.

Measurement principle

The low-inertia 3-cup rotor is set into rotation by the wind. The wheel is scanned optoelectronically and the measuring value is available at the output as a digital signal.

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.

Screw securely to mast top using a ¼” inch BSW screw directly into the base of the anemometer. The screw should not enter more than 0.38 inches; use of an excessively long screw may result in internal damage. After installation remove protection cup and lightly push rotor onto the spindle.

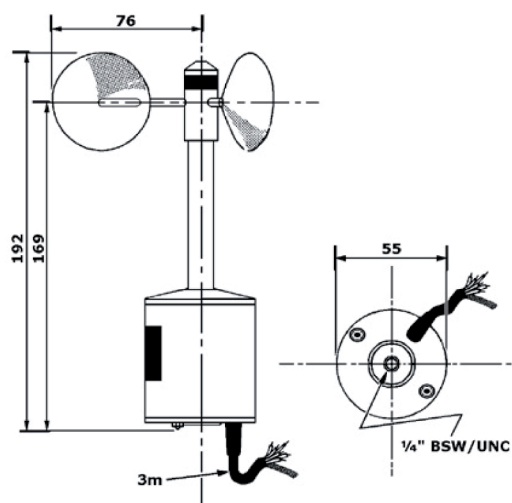
To remove rotor first unscrew the sensor from mast and invert instrument. Pressing the rotor hub releases the gravity sensitive catch and allows the rotor to slide off.

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.

Dimensional Drawing



Characteristic	Description / Value
Measurement range	0 ... 75 m/s
Accuracy	± 0.2 m/s (< 10 m/s); ± 2% of reading (> 10m/s)
Resolution	0.05 m/s
Non-Linearity	0.4% full-range output frequency (correction curve supplied)
Starting wind speed	0.2 m/s
Survival wind speed	max. 75 m/s
Distance constant	2.3 m ± 10%
Materials	Anodized aluminium, weather-resisting plastics
Ambient temperature	-30 ... +70 °C
Transducer	Interruption of optical beam
Operating supply	4.75..28V DC (max 1.3mA, average is typically less than 1mA)
Electrical output	0 ... 1500 Hz
Termination	cable length 3m
Weight Anemometer	0.5kg
Gross weight for shipping	1kg
Recalibration	recommended interval every 24 months
Manufacturer	Vector Instruments / UK (A100LM)

Calibration

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

$$\text{wind run [m]} = \text{pulses} \times 0.050 + 0.2 \text{ [m]}$$

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.