

ANEMOMETER MODEL 107

THE EXPERIENCE GAINED BY THE WIND ENERGY SECTOR OVER RECENT YEARS IS EXPRESSED IN THE NEW ORNYTION 107

- ✓ *excellent accuracy and reliability*
- ✓ *robust and durable*
- ✓ *cosine law in vertical wind*

Thanks to the boom in the wind energy sector, today there is an increased awareness of the significance of high-quality measurement. Large investments require project finance accepted by auditors specialised in wind energy measurements.

The new model of Ornytion, the **107**, has been designed over a number of years, following the latest recommendations from well-known European organisations, such as those mentioned in *IEA 11 "Wind Speed Measurement and use of Cup Anemometry"*. After exhaustive testing of commercial anemometers, scientific literature has been published which explains in detail how mechanical design affects aerodynamic response, and how this in turn can modify the results of a measurement study in various ways, such as inadequate acceleration in vertical currents at steep sites, loss of original calibration, or turbulence.

The **107** is a sleek anemometer, made from anodised aluminium to support marine environments, with cups made from polycarbonate Lexan®, a highly resistant material. It incorporates a double stainless-steel bearing with low-viscosity synthetic lubricant, which is completely sealed. The result is a robust and durable sensor, especially suited to extreme meteorological conditions or areas with high turbulence.

Ornytion, despite having their own wind tunnel, have carried out all the testing on their new product in ENAC, an independent laboratory with certification from Measnet. The results speak for themselves: series repetition, cosine law, distance constant, linearity, offset, etc.

All the anemometers undergo rigorous quality control tests at the factory, and are pre-calibrated after being spun for 72 hours. This guarantees that the in-situ behaviour will accurately respond to the calibration certificate obtained.

If a bolt of lightning destroys the anemometer generator, it can very easily be replaced in situ, in such a way that it is not necessary to recalibrate the rotor.

IT IS NO LONGER NECESSARY TO CHOOSE BETWEEN A SECOND-RATE WIND GAUGE AND A VERY EXPENSIVE WIND GAUGE:

AT LAST, A TOP OF THE RANGE WIND GAUGE IS AVAILABLE AT A REASONABLE PRICE!

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1. DESCRIPTION

The 107 Wind Speed Sensor is a three-cup anemometer with an AC sine wave generator, with zero consumption. The output frequency is proportional to wind speed, for use with digital-input data loggers.

This sensor is used in conjunction with the quick connector boom adaptor P/N 8100.

Shielded cable lengths and booms are supplied on request.

These aluminium booms are designed under the IEA recommendations.

2. APPLICATIONS

Wind power curve, wind resource assessment, wind turbine control, engineering and meteorological studies.

3. SPECIFICATIONS



General

Transfer Function:	$v(m/s) = 0.14 + 0.62 \times f (Hz)$
Operation Range:	< 0...60 m/s
Temperature Range:	-25...+60°C
Distance Constant (63% recovery):	1.7 m
Threshold:	0.30 m/s
Precision (Standard Deviation):	0.03 m/s
Regression Coefficient:	0.99999
Non linearity:	< 0.05 m/s

Electrical

Output Signal Amplitude:	Sinusoidal wave AC	$2 V_{pp}$ at 50 Hz
Output Signal Frequency:	50 Hz =	31.14 m/s
Impedance:	950 Ω max.	

Physical

Weight:	(Without quick-connection adaptor)	0.173 kg
Height:		207 mm
Case Diameter:		39.5 mm
Rotor Diameter:		156 mm
Mounting:	Boom Adaptor P/N 8100	
Materials:	Body:	Anodised Aluminium
	Bearings, shafts and fasteners:	Stainless Steel
	Cups:	Polycarbonate Lexan®