

# SWITCHING ANEMOMETER - A100R-01/A100R-02 (A100R)

## A100R (A100R-01/-02) SWITCHING/PULSE ANEMOMETER

The A100R is a member of the well-proven Vector A100 Series high-quality/accuracy Cup Anemometer line-up, and uses the same high-performance/durable body-shell, precision bearings and 3-cup rotor as other models in the A100 Series. A magnetic actuator inside the A100R-01 anemometer causes a reed switch to make and break contact once per revolution of the rotor (twice for A100R-02 variant). This volt-free contact allows easy connection to data-loggers and no power is required apart from that necessary to detect contact closure, making it ideal for battery/solar operated remote installations. Every rotor is tested at a single wind speed by comparison with a set of reference rotors which are themselves traceable to national standards and an individual calibration figure is provided.

### OPTIONS:

- ▶ MEASNET/IEC calibration certificate is available.
- ▶ /SE marine/severe environment version is available with enhanced sealing
- ▶ /HE4 anti-icing heater version is available.
- ▶ 405 Series Mounting Adaptors, and 415 Universal Mounting Arm
- ▶ A100R/K option for "First Class" rotor (calibration differs from standard A100R)
- ▶ A100R/K/PRO option - as above but with MEASNET Cal/Certificate & 405 mount.

### INTENDED PRODUCT APPLICATIONS/USE

This instrument is intended for use in various meteorological wind measurement applications, mounted on a mast or pole and connected to a data-logger, signal conditioner or similar measuring equipment.

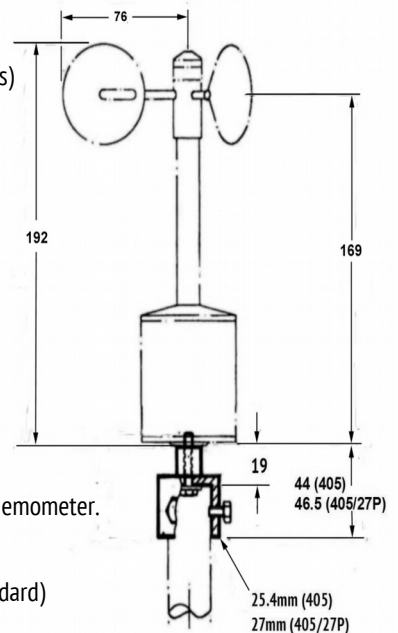
**Note:** The A100R-01 and A100R-02 anemometers **contain no mercury** and are an updated version of the original A100R anemometer model which has a long track-record of reliable operation in the field. The A100R-01 can replace the original A100R in almost all applications. Modern Data-loggers & measuring equipments are capable of handling the "contact bounce" of a non-mercury (dry) reed switch, however the (0.05mS typical) contact bounce is normally largely suppressed/filtered sufficiently by the internal circuit and cable where an A100R-01 replaces an original A100R. The absence of mercury allows operation down to a lower temperature compared to the original A100R model.

### Specification Summary

Performance:	Threshold:	0.2m/s typ.
	Maximum windspeed:	≥ 75m/s
	Standard Measuring range:	0 to 75m/s
Rotor:	Type:	R30, 3-cup rotor (R30/S for A100R, R30/K for A100R/K)
	Distance constant:	2.3m ± 10%
Output Signal:	Rotor wind speed measurement:	reed switch closed by magnetic actuator, 1 pulse per rotor revolution (2 pulses for A100R-02 variant)
	Accuracy:	±1% of reading (10..55m/s) ±2% of reading (55m/s-75m/s) ±0.1m/s (0.3..10m/s)
Calibration:	A100R-01: 0.8 revs/metre nominal = 1 pulse per 1.25m = 0.8Hz per m/s (=typ. 60Hz at 75m/s)	
	A100R-02: 0.8 revs/metre nominal = 1 pulse per 0.625m = 1.6Hz per m/s (=typ. 120Hz at 75m/s)	
	(A100R-01/K: 0.777 revs/metre nom. = 1 pulse per 1.29m = 0.78Hz per m/s typ.)	
	(A100R-02/K: 0.777 revs/metre nom. = 1 pulse per 0.645m = 1.55Hz per m/s typ.)	
	Non-linearity:	typ. 0.4% full range output frequency (correction curve supplied)
Electrical:	Switching voltage:	Rated 72VDC max., recommended : 1 to 5 V
	Switching current:	Rated 40mA max., recommended : 1mA max.
	Switch life:	Rated >10 <sup>9</sup> operations (@ 0.1mA) - equivalent to at least 10 years of normal operation.
	Duty Cycle:	50% ± 25%
	Impedance:	120Ω ±20% series resistor plus 10nF ±20%capacitor across line for interference/bounce suppression.
General:	Operating temperature range:	-40 to +70°C
	Standard cable:	3m long 4 core braided shield, 7/0.2mm cores, PVC outer sheath (other lengths ≤115m to order)
Connections:	Green = reed switch terminal 1, Yellow = reed switch terminal 2, Screen = not connected at anemometer. (Red, Blue, unused in standard version but used for heater in /HE4 & /SE versions)	
Mechanical:	Mounting:	0.25 inch BSW / UNC screw into base (standard tripod fitting) (optional 405 series mounts are shown in photo/diagram, not included as standard)
Dimensions/Weight (with 3m cable) packed:		330 x 160 x 80mm / 750g, Instrument+Rotor+Cable Weight: 500g



DIMENSIONS IN MM (Shown with optional 405 & 405/27P mount )



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All dimensions/weights are approximate.

Specification and Prices subject to change at any time without notice, contact our sales office for latest pricing and availability details.

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