A100R Contact Closure (Switching) Anemometer

The **A100R** is an anemometer designed for "run of wind" or **average wind speed** measurements when used with an electronic counter or a data logger.

The calibrated 3-cup R30 series rotor drives an actuator in a carefully balanced magnet system with the resulting varying field operating a reed switch (contact opens and closes once per rotor revolution). The reed switch is mercury-wetted which results in bounce-free operation.

Note: Also consider our A100AC for an alternative anemometer model which is lower-cost, requires no power to operate, produces 2 pulses/revolution and does not contain mercury.

No power is required for the A100R models other than that necessary to detect the reed-switch contact opening/closing making this instrument ideal for use at remote sites.

NEW: The **A100R/K** is a new variant of the A100R using the R30 Rotor from the A100L2/A100LK (The A100R/K "body" is exactly the same as the standard A100R). This ensures that the A100R/K cosine response is optimised for applications requiring "First Class" performance such as **Wind Assessment**. The A100R/K specification is the same as the standard A100R however it has a slightly different output calibration (approx 0.777Hz per m/s rather than 0.8Hz per m/s). In situations where the A100L2, A100LK or A100LM cannot be used (e.g. due to data logger input limitations) using the A100R/K will result in improved performance compared to the standard A100R.

Common questions about the A100R/K:
- What is the A100R/K variant and why/when should it be used?
- What is the "K" in A100R/K for?

Construction is from anodised aluminium alloys, stainless steels and weather resisting plastics for exposed parts. Precision corrosion resistant ball-races and a stainless steel shaft enable the R30 rotor response to produce a **highly sensitive yet robust instrument** suitable for continuous exposure to the weather.

Options for this anemometer include:
- /HE-4 Internal Anti-Icing Heater
- /HE-1 & /HE-2 External/Retrofit Anti-Icing Heaters
- /WR Marine Version
- /K Version with optimised cosine response (see above)

Note: /WR, /HE-1 and /HE-2 are not recommended for high precision applications.

The recommended mounting adaptors for use with this instrument are our type 405 and 405-1 series.

Mercury & RoHS2 (RoHS Directive 2011/65/EU): *The reed-switch in the A100R and A100R/K contains a very small amount of mercury which ensures that the contact is "bounce-free" for maximum reliability. The mercury content may prohibit the use of the A100R in some countries/states, however there is currently no issue with them in the EU. These professional/industrial A100R products will come into the scope of the updated EU RoHS Directive 2011/65/EU during 2017 which will mean that we will no longer be able to use mercury wetted reed switches in these products. We will soon be introducing upgraded/replacement A100R models which will use "dry" (non- mercury) reed-switches to make the A100R range RoHS compliant. Updated specifications will appear on this page when they become available. As the vast majority of dataloggers incorporate "debouncing" on the inputs used to connect reed-switch anemometers, this change should not affect operation, however users should ensure that their logger is indeed configured/specified to adequately debounce the input channel being used in order to prevent incorrect windspeed readings (due to contact/switch "bounce" being mis-interpreted as pulses from the anemometer).*

Alternatives to the A100R & A100R/K:
If you are not able to use the A100R models due to the mercury content, please consider our other anemometer models (which do not contain mercury) such as the new A100AC or the popular A100LK & A100LM.

Specification Highlights:

• Threshold:	0.2m/s (/WR version: 0.6m/s)
• Maximum Windspeed:	over 75m/s (146Kts)
• Temperature Range:	-30 to +70 °C operating (-50 to +70 °C storage - mercury in reed switch freezes at -38°C)
• Accuracy:	1% of reading between 10 and 55m/s, 2% above 55m/s. 0.1m/s for 0.3..10m/s (or 0.7..10m/s for /WR version)
• Distance Constant:	2.3m +/-10% (R30 rotor)
• Switching Voltage:	Rated 72V dc maximum, recommended operation: between 1V and 5V.
• Switching Current:	Rated 40mA maximum, recommended operation: 1mA or less. Note: switch life is not reduced by operation in dry (0mA) circuits.
• Switch Life:	Rated 25 x 10^9 operations minimum, equivalent to at least 20 years use.
• Duty Cycle:	50% +/- 5% up to 50m/s (+/-10% up to 75m/s)
• Impedance:	120 Ohm resistance in series with the switch, plus 10nF capacitor across line for interference suppression.
• Calibration:	0.8 rotor revolutions per metre, one contact closure per revolution = 1 contact closure per 1.25m of wind (or 0..60Hz = 0..75 m/s approx.)
• Rotor:	3-cup R30S (standard)
• Dimensions:	This instrument is constructed using our standard rotor and anemometer body design and dimensions.
• Wiring/Connections (Cable colours):	For wiring details click HERE
• Cable:	3m (9ft10in) permanently attached 4-conductor* cable with braided shield/screen as standard. Longer lengths are available to order (up to 115m). Spec: Def Stan 61-12 part 4, 0.22mm²(?24AWG). *Note: 2 conductors unused in non-/HE4 models.
• **MEASNET/IEC Calibration Certificate** (optional extra):	The **A100R/K Anemometer** is available with an IEC/MEASNET Calibration Certificate (for an additional charge)