

In response to demand for an anemometer with an analogue voltage output like the proven Porton Anemometer but with reduced current consumption, the Porton Anemometer was further developed to produce the A100L2, resulting in a low-power analogue output anemometer suitable for use with many dataloggers. The robust yet accurate First Class A100L2 anemometer has achieved a long track record in the field, being a popular choice for wind-assessment applications. This anemometer uses the same body-shell and 3-cup rotor as others in the A100 Series Anemometer range. The rotor is tested 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/certificates are available.
- ▶ A marine/severe environment version is available with enhanced sealing
- ▶ An anti-icing heater (HE-4) version is available.
- ▶ 405 Series Mounting Adaptors (required for First Class performance)
- ▶ A100L2/PC3 variant includes anti-surge protection

### 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.

### Specification Summary

#### Performance:

Threshold: 0.3Kts (starting speed: 0.4Kts, stopping speed: 0.2Kts)  
 Max. windspeed:  $\geq 150$ Kts (75m/s)  
 Standard Measuring range: 0 to 150 knots

#### Rotor:

Type: R30, 3-cup rotor Distance constant:  $2.3m \pm 10\%$   
 Accuracy: 1% of reading (20-110Kts), 2% of reading (110-150Kts), 0.2Kts (0.2-20Kts)  
 Non-linearity: typ.0.4% full range output frequency (correction curve supplied)  
 Rotor wind speed measurement: By interruption of optical beam

#### IEC 61400-12-1 Classification:

First Class (when used with 405 series mounts & IEC compliant booms/poles)

#### Pulse/Frequency Output:

Output range: 0 to 1500Hz for 0 to 150 Knots (10Hz per Knot, 150Kts=77.2m/s)  
 Resolution: 5.15cm  
 5V Pulse output: High:  $5V \pm 5\%$ , Low  $<0.2V$ , Minimum load resistance: 20K Ohms.  
 Rise/Fall time approx. 25 $\mu$ s, Duty Cycle :50% ( $\pm 25\%$ ), Output Resistance: 430ohms typ.

#### Analogue Output:

Nominal Factory Calibration: 0 to 2.50 VDC for 0 to 150 Kts (77.2m/s), single ended (16.67mV per Knot)  
 Output over-range:  $5V \pm 10\%$   
 Overall Non-Linearity: 0.9% full range output for 0 to 150Knots (correction curve supplied for rotor + ratemeter)  
 Temperature coefficient:  $\pm 2\%$  of output relative to 15°C value (-30 to +40°C)  
 Response time: 150ms first order lag typical (as Porton A100)  
 Effect of supply variation:  $\pm 0.2\%$  full range output over full supply range  
 Output Ripple: Typically 13mV peak to peak at pulse frequency.  
 Output resistance: Less than 500 Ohms.  
 Recommended load resistance: 1M Ohm for calibrated output, (otherwise minimum 5K Ohms)  
 Temperature coefficient\*:  $\pm 2\%$  of output relative to 15°C value (-30 to +40°C),

#### Mechanical:

Mounting: 0.25 inch BSW / UNC screw into base, standard tripod fitting (405 series mounts shown, available as options)  
 Dimensions/Weight (with 3m cable) packed: 330 x 160 x 80mm / 750g, Instrument+Rotor+Cable Weight: 500g

#### General:

Operating Temperature Range: -30 to +70°C Supply Voltage: 6 $\frac{1}{2}$ V to 28V DC, Power-up time: 5 sec  
 Current consumption: 2mA max, 1.6mA typical with no output load  
 Standard Cable: 3m long, 6-core screened 7/0.2mm, PVC insulated (other lengths to order), 8-core for heated models.

**Notes:**  
 The A100L2 calibration/parameters above are specified in Knots but can be easily converted to m/s: 1.0m/s= 1.9426Knots, so pulse /freq. output is nominally 19.426Hz per m/s  
 Analog/Voltage Output Signal\*: Use of the analog/voltage output signal for high accuracy applications is **not** recommended - use pulse/frequency output signal instead.  
 Connections: Red = Supply positive, Blue = Supply negative, Green = Analogue Output +, Yellow = Analogue Output -, White = Pulse output, Black = Base plate,  
 (Yellow is connected to Blue in the instrument permitting correction for zero offset caused by supply current in long cables. Cable screen not connected at anemometer)  
 Calibration: Calibration data for the anemometer and rotor are provided at one test speed to an accuracy of 1% at +15°C and +12V DC supply, & output load = 1 M Ohm)  
 Anti-surge options: The A100LPC3L2 variant has an extra surge protection module containing series resistance elements and clamping devices fitted to the base of the electronics module in the standard anemometers. Note that these protection elements slightly affect certain specification parameters.



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

