



## Wind Direction Sensor (WD45)

### Features

- Full 360 degree measurement
- Visual indication of wind direction
- Special machining to prevent entry of wind borne dust or moisture
- Magnetic Hall Effect sensing
- Low friction ceramic bearings
- Low starting torque
- Good dynamic characteristics
- Long operating life

### Applications

- Meeting Australian Standards
- EPA Reporting & Licensing
- Meteorology
- Wind Profiling
- Automation & Alarms
- Crop Studies
- Agronomy
- Pollution Tracking & Dispersion Monitoring

The WD42 wind direction sensor is a sensitive wind direction indicator that gives a variable pulse rate output and a visual indication of wind direction.

The aluminium wind vane is attached to an aluminium arm and adjustable brass pointer. The vane, arm and pointer turn the main spindle, which is supported by low friction shielded long life ceramic bearings.

A Hall Effect angular position sensor is used for accurate position measurement of the wind direction vane. This provides full 360 degree



detection and no loading of the wind vane typical of potentiometer based detection sensors.

Utilising Hall Effect detection technology makes the sensor more sensitive, accurate, with a higher resolution, while significantly enhancing the reliability and durability of the sensor.

A four groove labyrinth machined into the spindle housing prevents the entrance of wind-borne dust or moisture into the upper bearing.

The two part spindle cap allows easy alignment to North on-site with the aid of a sensor test box, or via Envirodata's EasiAccess software.

We recommend the use of Envirodata's WS45 series of Wind Speed sensors to provide you with the full suite of accurate wind movement sensors.

### Envirodata Weather Stations Pty Ltd

P.O. Box 395, WARWICK, Queensland, 4370, Australia

Phone: (07) 4661 4699

Fax: (07) 4661 2485

Int. Phone: + 61 7 4661 4699

Int. Fax: +61 7 4661 2485

Proudly Australian Owned

<http://www.envirodata.com.au>

e-mail: [sales@envirodata.com.au](mailto:sales@envirodata.com.au)



## Specifications

### Sensing Element:

- Vane driven Hall Effect position sensor

### Measurement Units:

- Degrees deviation from North

### Specifications:

- **Startup Threshold:** 0.35 m/s
- **Resolution:** 1°
- **Accuracy:** ±1°
- **Measurement Range:** 0° to 359°

### Bearings:

- Low-friction ceramic long life

### Special notes:

- Magnetic Hall Effect sensor has no gap over complete 360° range

### Calibration Method:

- Frequency range is adjusted in the factory.
- Not subject to drift
- Attachment of the vane sets actual direction in the field.

### Reliability:

- 5 years service life expected before bearing replacement recommended to maintain peak operating performance

### Housing:

- Clear Anodised Aluminium & Delrin

### Operating Conditions:

- Temperature -20°C to +70°C
- Humidity 0% to 100%

### Sensor mounting:

- Heights of two, three and ten metres above ground level are commonly used

### Supply Voltage:

- 5.5 to 15 Volts DC

### Current Drain:

- Average: < 6mA
- Peak: < 15mA

### Output:

- Frequency; +5V square wave pulse
- 0°-360° is equivalent to 0-90Hz in a linear scale
- 4-20mA Converters are available (FA12)
- Sensor Alarms are available (SA12)

### Cable:

- 3 Core Shielded UV Stabilised
- Cable Length: 2m Standard, extensions up to 200 metres available

### Dimensions:

