

WIND VANE

VECTOR W200P



ELECTRICAL OUTPUT	ELECTRICAL SUPPLY	HEATING SUPPLY	MODEL IN EOL MANAGER
Pot: 1 kΩ	1...5 VDC	No heating	VECTOR W200P

APPLICATION

The W200P wind vane has a “First Class” performance to meet the requirements of the IEC61400-12-1 standard.

The W200P Potentiometer Wind vane incorporates a precision wire-wound potentiometer as a shaft angle transducer, enabling wind direction sensed by the F20 fin to be accurately determined when connected to suitable measuring equipment, such as a data logger or PLC.

The potentiometer has the lowest possible torque consistent with long life and reliability, the small gap at north being filled with an insulating material to ensure smooth operation over the full 360°. The standard F20 vane-arm (fin) assembly is attached using the unique Porton™ gravity fastener allowing good alignment and rapid attachment and release.

CONSTRUCTION AND MODE OF OPERATION

Construction is from anodized aluminum alloys and stainless steels for exposed parts. Combined with a hard plastic (upper) bearing and precision ball-races, the result is an instrument suitable for continuous exposure to the weather, with a long service interval.

The low 1 kΩ resistance of the potentiometer is no barrier to low power operation as most applications where power is critical use data loggers which are capable of energizing the potentiometer only for a short interval during the actual measurement.

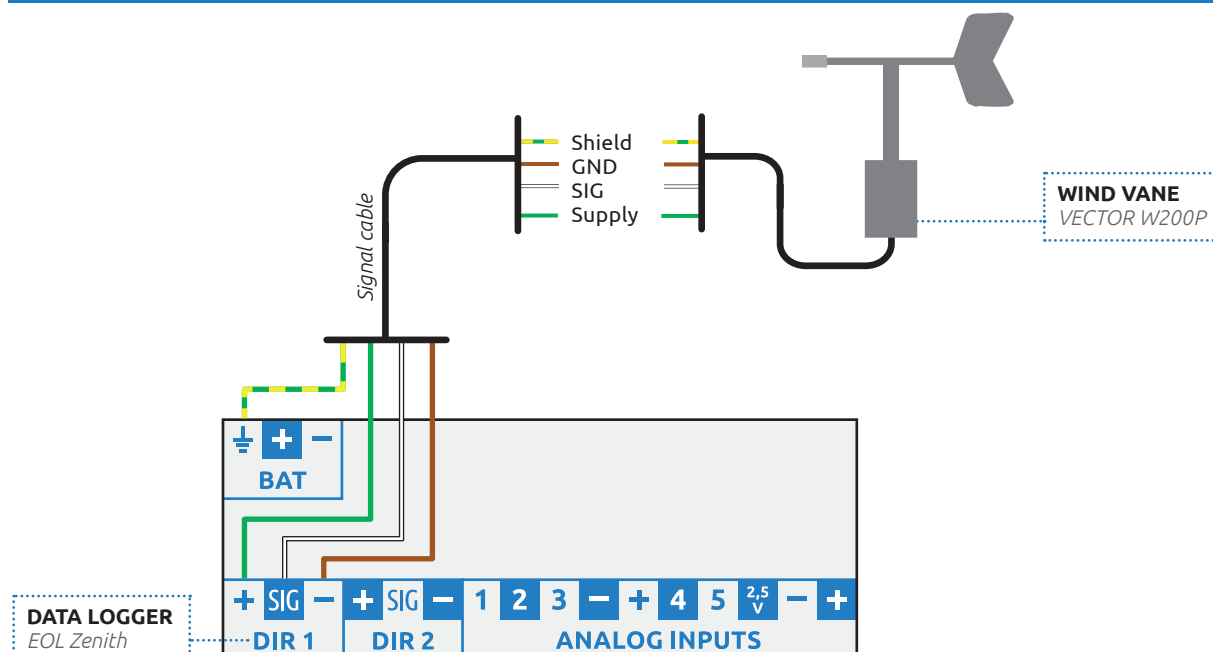
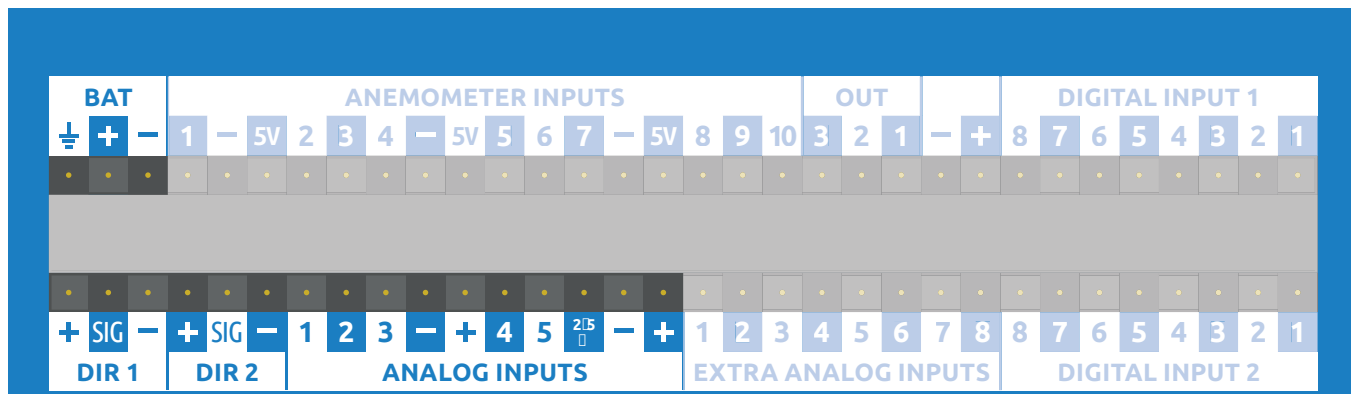
It is connected with 2-wires to each end of the track and one to the wiper enabling its use in a variety of bridge and potentiometric measurement configurations.

TECHNICAL DATA

CHARACTERISTIC	DESCRIPTION / VALUE
Threshold	0.6 m/s (standard), 0.75 m/s (*WR), 0.5 m/s (*LV)
Distance constant	2.3 m (standard), 2.4 m (*LV)
Damping ratio	0.2 m (standard), 0.24 m (*LV)
Recovery distance	0.51 m (standard), 0.54 m (*LV)
Damped natural wavelength	3.4 m (standard), 3.6 m (*LV)
Repeatability	+/- 0.5 ° if vane removed and replaced Note: no measurable backlash movement during use
Accuracy	+/-3° in steady winds over 5 m/s (6 m/s (*WR), 3.5 m/s (*LV)), with +/-2° obtainable following calibration
Maximum wind speed	over 75 m/s (standard), over 60 m/s (*LV)
Range	360° mechanical angle, continuous rotation allowed
Temperature range	-50...+70 °C
Pot resistance	1 kΩ (+/- 10%)
Wiper current	50 µA recommended (20 mA absolute maximum)
Voltage	1...5 V (recommended), 20 V absolute maximum
Continuity angle	357.7 +/- 1.5° (2.3° gap at north)
Variation angle	356.5 +/-1.5° (3.5° dead-band)
Resolution	+/-0.2°
Independent non-linearity	+/-0.25° (unloaded)
Dimensions	This instrument is constructed using Vector standard fin and wind vane body design and dimensions

INSTRUCTIONS

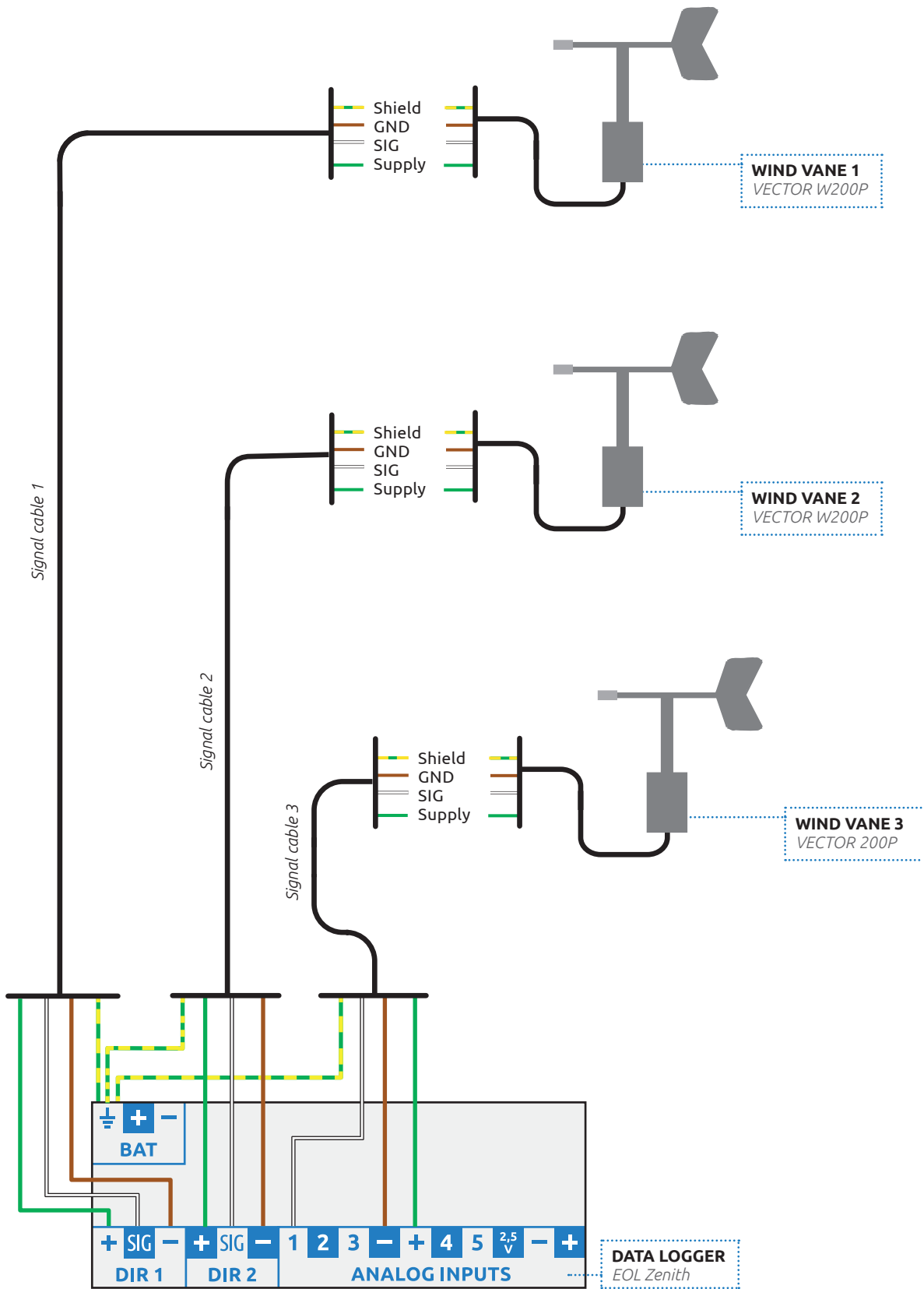
Use the following input channels on the logger to connect this sensor. See highlighted input channels marked here below. The wire colors used in the connection diagram below only applies in case the cable is supplied by Kintech Engineering.
For additional wiring & shielding information see the chapter "IMPORTANT" at the end of this dataheet.



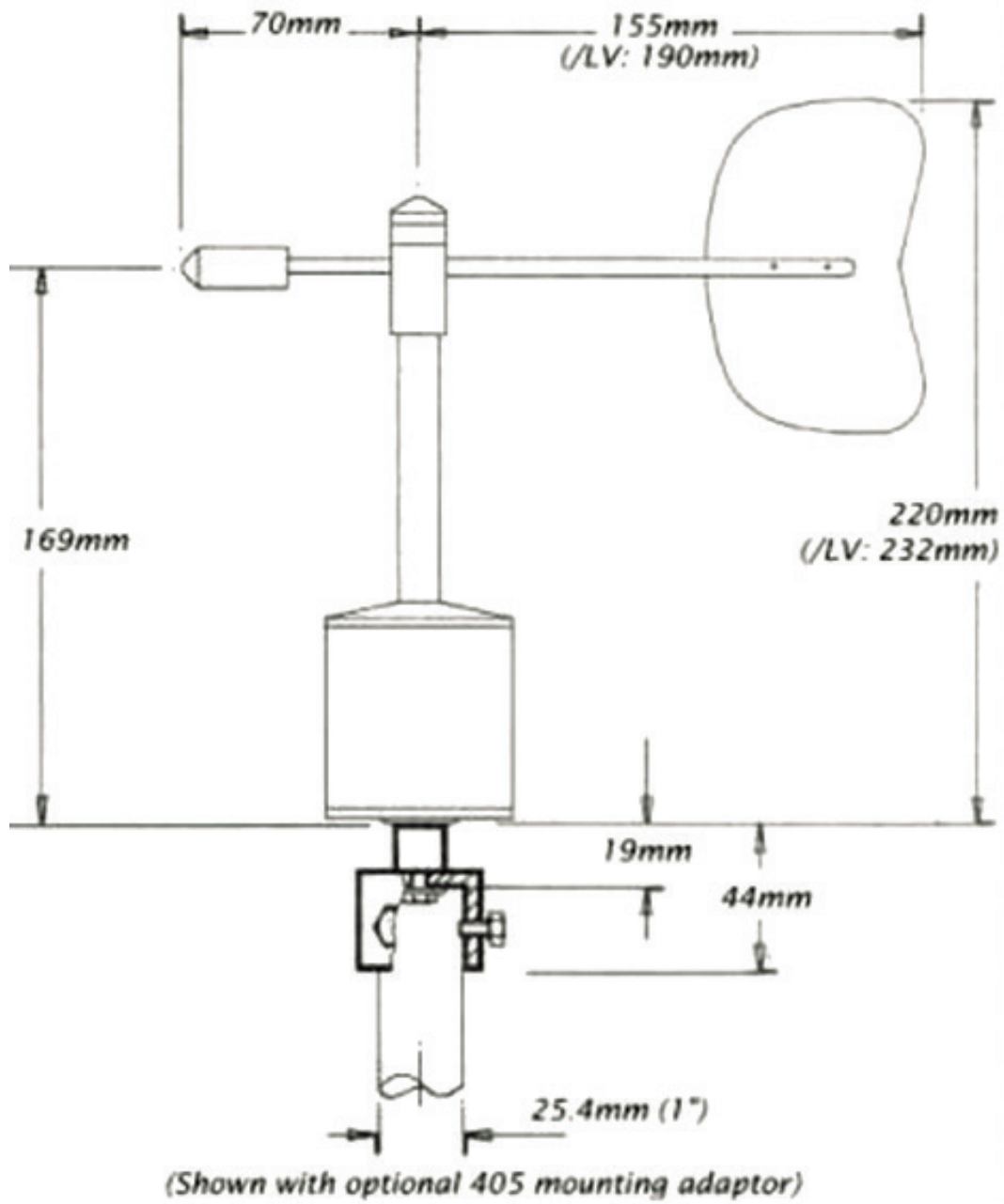
SENSOR PIN DESCRIPTION		DATA LOGGER INPUT CHANNEL	
Us(+)	Supply (+)	DIR 1	(+)
Out(+)	Output (+)	DIR 1	(+)
Us(-)	Supply (-)	DIR 1	(-)
Out(-)	Output (-)	DIR 1	(-)
SIG	Signal	DIR 1	SIG
-	Shield	BAT	GND

KINTECH COLOR CODES		MANUFACTURER COLOR CODES	
● Green	Green	● Red	Red
		● Blue	Blue
● Brown	Brown	● Green	Green
		○ White	White
○ White	White	● Yellow	Yellow
● Yellow - Green	Yellow - Green	● Black	Black

HOW TO CONNECT MORE THAN ONE OF THIS SENSOR (EXAMPLE)



SENSOR DIMENSIONS



HOW TO CONFIGURE THIS SENSOR IN EOL MANAGER

Open EOL Manager and go to the data logger you are working on. Open the “inputs” tab and select the following type and model:

- ▀ **Section:** Wind Vanes
- ▀ **Type:** Windvane
- ▀ **Model:** VECTOR W200P

Offset value: Tick the “Std Cal” if the north marking on the wind vane is aligned exactly towards North (in this case the offset is zero (0)). Otherwise the angle (in degrees) must be typed in the offset.

find Vanes

Ignore	Channel	Type	Model	Units	Serial Number	Height	Username	Std Cal	Slope	Offset	Std Dev	Max	Min
<input type="checkbox"/>	D1	Windvane	VECTOR W200P			0	Windvane1	<input checked="" type="checkbox"/>	1.000000	0.000000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	D2	Windvane	-----			0	Windvane2	<input type="checkbox"/>	1.000000	0.000000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SENSOR SELECTION

MODEL SELECTION

DATASHEET DOWNLOAD

STANDARD CALIBRATION

IMPORTANT

- ▀ After configuring the sensor in EOL Manager make sure to upload the configuration file to your EOL Zenith data logger. See the “Quick User Guide” how to upload configuration files to the data logger.
- ▀ All sensor wire shields must be connected to the data logger GND terminal.
- ▀ The data logger should always be connected to a separated ground rod. **Not** to the lightning rod of the tower.
- ▀ There are two exclusive inputs in the logger for the wind vanes (DIR1 & DIR2). Connecting the 3rd – 7th wind vane use “ANALOG INPUTS” of the logger.
- ▀ Wind vanes connected to the “ANALOG INPUTS” of the logger must be connected to exclusive (+) and (-) terminals. The terminals (+) and (-) can consequently **not** be shared between wind vanes.
- ▀ Wind vanes **cannot** be connected to the “EXTRA ANALOG” channels of the logger.
- ▀ To store data such as Std Dev, Max and Min you should tick the corresponding boxes next to each anemometer channel when setting up your site file. Otherwise these parameters will not be stored.
- ▀ Cable recommendation (up to 100 m cable):

Sensor no heating	Signal cable 3x0.5 mm ²
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KINTECH ENGINEERING

www.kintech-engineering.com

support@kintech-engineering.com

Tel. +34 976 221 789