

TE Texas Electronics

"Relied on Worldwide in the Most Extreme Conditions"

TDV-4 Wind Speed & Direction Sensor



Description

The Texas Electronics, Inc. TDV-4 Wind Speed & Direction Sensor is a mechanical style wind meter that measures both the horizontal wind azimuth and velocity of wind. This unit combines small physical size with superior bearings to meet the EPA's Prevention of Significant Deterioration (PSD) starting threshold requirements. The direction sensor consists of a vane and counterweight assembly, which is mechanically coupled to a potentiometer (variable resistor) and the velocity sensor consists of a lightweight 3-cup anemometer, which electromechanically converts wind speed into a measurable electronic signal. The output signal can be presented in 2 optional forms: a pulsed DC signal or a conditioned analog signal. As the vane rotates in the wind, the potentiometer changes resistance proportionally to the direction of wind.

Installation & Maintenance

The sensor is dynamically calibrated at the factory and due to the nature of its operation should not require field calibration. Calibration is a matter of proper orientation during installation. A magnetic compass is recommended for proper orientation. Field maintenance should include occasional cleaning of the vane assembly and inspection of the internal mechanism to make sure it is free from insects and debris. In some applications users may need to occasionally verify and document sensor accuracy with a calibration dial/vane. Possible bearing and potentiometer replacement every three to five years is recommended to maintain low starting threshold.

Features & Benefits

- Superior low starting threshold
- Long life potentiometer
- Metal construction for extremely long life
- Precision stainless steel bearings for stability and repeatability
- Cross arm included with purchase
- Easy installation and maintenance
- Components over 25 years in production
- Lightweight and rugged anodized aluminum exterior

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Wind Speed Specifications

Wind Speed Operating Range	0-100 MPH
Signal	Pulsed DC output - light chopper OR analog, 4-20 mA (please specify)
Pulsed DC out	20-slot disc
	Input Power: +5.0 VDC @ 5 mA (typical) 1 MPH = 520 pulses/ min. 100 MPH = 52000 pulses/min. (other voltages available upon request)
Analog 4-20 mA output:	4 mA = 0 MPH
	Input Power: 10-36 VDC 20 mA = 100 MPH
Performance:	
Accuracy:	+/- 2.0 MPH (0.89 m/s)
Distance Constant:	21.7' (6.6 m)
Starting Threshold:	0.6 MPH (0.27 m/s)

Direction Specifications

Direction Operating Range	0-360° mechanical
Signal Presentation	10000 ohm potentiometer
	0-357° electrical range
	3 VDC excitation minimum
Analog 4-20 mA output:	0-355° electrical
	10-30 VDC
Performance:	
Accuracy:	+/- 3.0°
Starting Threshold:	0.6MPH (0.27m/s)
Resolution:	1°
Potentiometer Linearity:	+/- 1.0%

Overall Specifications

Environmental:	
Operational Envelope:	0-135 MPH (0 to 60 m/s)
Speed Specifications	
	Operating Range 0-100 MPH
Product Specifications	
Temperature:	-40 to 160°F (-40 to 70°C)
Relative Humidity:	0-100%
Physical:	
Overall Length:	18" (45.72 cm)
Overall Height:	12" (30.48 cm)
Turning Radius:	6" (15.24 cm)
Bearings:	APEC 3 or better
Cable:	60', 22 Gauge 4 conductor
Warranty:	3 years

Ordering Information

Model#	Description
TDV-4	Wind Speed & Direction Sensor
TDV-4-A	Wind Speed & Direction Sensor, 4-20 mA

Optional Parts/Accessories