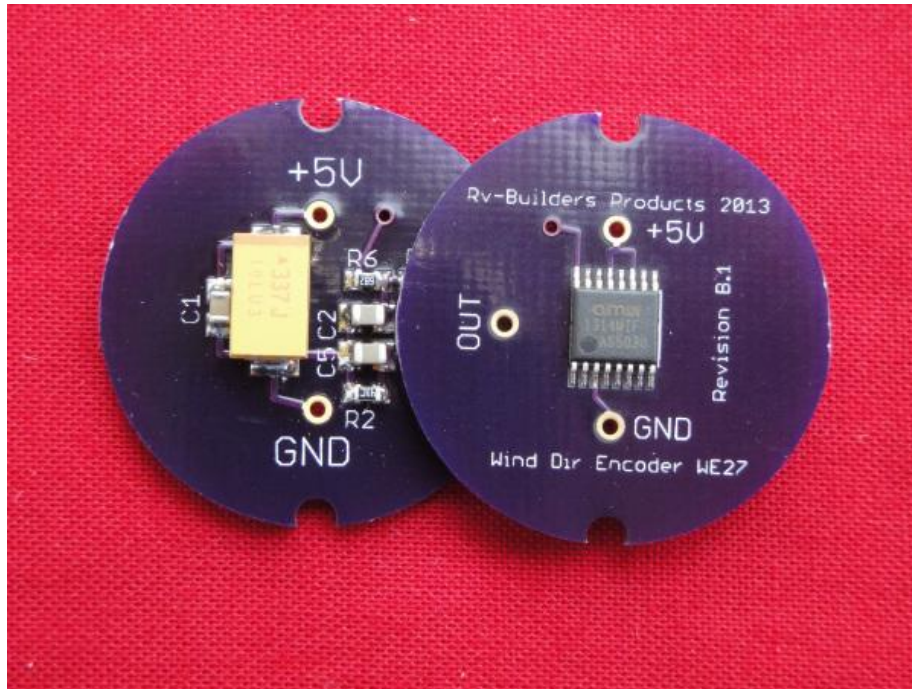


High Resolution Wind Direction Encoder



Description

Based on a quad Hall Effect sensor the device reads the direction of a magnetic field provided by a small diametrically polarized magnet rotating above it. The device provides a linear voltage between 0 and 3.3V coinciding with the absolute angle of the magnet and has no dead band in the full 360 degree swing. With a resolution of 1.4 degree, it provides a 1 degree digital hysteresis for stable readings in a no- wind situation. This is important at the changeover point between 360 and 0 degree to prevent false readings. The sensor, being completely solid state asserts no drag on the vane and has no mechanical parts to ever wear out.

Applications

- High definition/resolution wind direction monitoring & recording
- Maintenance free
- DIY and custom weather stations

Features

- Drag free
- Maintenance free, solid state
- No blind spots in full circle

- No false readings due to partially worn potentiometer.
- Interfaces direct to microcontroller ADC inputs
- Built in Hysteresis for jitter free output signal.

Electrical specifications

- Input voltage nominal 5V, maximum 5.5V
- Desired ADC input impedance > 100K
- DC output impedance ~ 10K
- Current consumption 18 mA @5V

Connections

Name	Symbol on PCB	Description	Condition
Ground	GND	Ground reference	--
Power	+5V	Regulated power input	5V +/- 5% , less than 50mv noise
Output Signal	OUT	~0V to ~3.3V coinciding with angle 0-360 degree	Low <0.1V, High <3.3>3V

Mechanical specifications

- PCB dimension: Round, 1" diameter
- Sensor to magnet distance 1.5mm +/- 10%

