

Anemometer



Rotors: D2 (above), **D3** (top right), **metal**.
D3 rotor introduced in February, 2020

General

The anemometer is a 3-cup spinning type anemometer that produces one pulse per rotation.

The conversion from pulses to speed is as follows:

For D2 & D3 rotors: $V(\text{mph}) = 2.7 f$

For metal cup rotors: $V(\text{mph}) = 2.45 f$

...where f is the frequency in Hz (pulses per second). This will produce an error of less than 3% between 8 and 33 mph (wind tunnel tested December 2019).

Specifications

The chip is an Allegro Model A1126LLHLT-T.

Supply voltage range (Vdd)	3-24 VDC
Supply current	4 mA
Output type	Open drain
Output "off" leakage current	10 uA
Output on voltage	four 20mA: 185-500mV
Minimum total pull-up resistance	(Vdd*1000) ohms

Installation & Operation

PLEASE TEST IT BEFORE YOU INSTALL IT ☺

Connect the display and spin the rotor to make sure everything is working FIRST THING.

Mount as high up as possible to get it into clean air.

Maintenance

- In the rare event that cleaning is required (slow rotation, audible friction...), proceed as follows:
- Cut the zip ties that hold the wire to the bracket
- Loosen the screw that holds the body to the bracket and tip the body to the side so as to access the screws that hold the cap to the base
- Remove the two screws that hold the cap under the anemometer body
- Carefully remove (pry off) the circlip on the bottom of the shaft (caution! It can be hard to find if dropped!)
- Pull upwards on the rotor to pull the rotor and shaft out of the magnet holder and the body.
- Clean thoroughly – do not oil – graphite (dry) lube only.

Reassemble in reverse order:

- Put the rotor and shaft back in the body
- Press the magnet holder onto the shaft
- Put the circlip back on (tricky!)
- Pull up to seat the magnet holder on the circlip
- Replace the PCB and anemometer base (careful not to overtighten the 2 screws)

Thank you and enjoy!

Electrical Connections

