



Overview

The 27106T Propeller Anemometer is a low threshold precision air velocity sensor that is especially suited for monitoring the vertical wind component. It connects directly to a Campbell Scientific datalogger, which measures the 27106T's signal and converts the signal to engineering units (mph, $m s^{-1}$, knots).

Benefits and Features

- › Especially suited for monitoring vertical wind, but can be mounted to monitor the wind in whatever direction is desired
- › Compatible with all Campbell Scientific dataloggers
- › Carbon-fiber thermoplastic (CFT) propeller provides greater range and durability than other propeller anemometers offered by R. M. Young.

Technical Description

The 27106T measures air velocity using a fast-response, four-blade helicoid propeller that drives a high quality tech-generator transducer. The transducer converts the propeller's rotation to a dc voltage that is linearly proportional to air velocity.

The 27106T should be oriented with the propeller facing the predominant flow of air being measured. Its propeller responds only to the component of the air flow, which is parallel to the axis of its rotation. Off-axis response closely approximates a cosine curve with appropriate polarity. With perpendicular air flow, the propeller does not rotate.

Mounting

The 27106T is shipped with a 3/4 inch IPS threaded pipe for mounting. The pipe can be attached to a CM202, CM202SS, CM203, CM204, CM204SS, or CM206 crossarm using a 1049 Nu-Rail fitting or CM220 Right Angle Mounting Bracket.

Ordering Information

Wind Speed Sensor

27106T-L R. M. Young Vertical Anemometer with CFT Propeller. Enter cable length, in feet, after L. Must choose a cable termination option (see below).

Cable Termination Options (choose one)

- PT** Cable terminates in stripped and tinned leads for direct connection to a datalogger's terminals.
- PW** Cable terminates in connector for attachment to a prewired enclosure.

Mounts

- 1049** ¾ inch by 1 inch Nu-Rail Fitting for attaching the 27106T to a crossarm, such as a CM202, CM204, or CM206.
- CM220** Right Angle Mounting Bracket for attaching the 27106T to a crossarm, such as a CM202, CM204, or CM206.

Specifications

- › Range
 - Axial Flow: 0 to 40 m s⁻¹ (0 to 90 mph)
 - All Angles: 0 to 35 m s⁻¹ (0 to 80 mph)
- › Threshold Sensitivity*: 0.4 m s⁻¹ (0.8 mph)
- › Distance Constant*: < 2.1 m (6.9 ft)
- › Pitch: 30.0 cm (11.8 in) air passage per revolution
- › Operating Temperature Range: -50° to +50°C
- › Signal Output: Analog dc voltage proportional to axial wind component. Polarity reverses with reverse rotation. 1800 rpm (500 mV) = 9.0 m s⁻¹ (20.1 mph)
- › Overall Length: 43 cm (17 in)
- › Propeller Diameter: 20 cm (8 in)
- › Housing Diameter: 2.5 cm (1 in)
- › Weight: 0.5 kg (1.2 lb)

*Threshold and distance constant values are for axial flow.

