



# MODEL 27106 PROPELLER ANEMOMETER MODEL 27005 GILL UVW ANEMOMETER

The Propeller Anemometer is a precision air speed measuring instrument.

The four blade helicoid propeller drives a miniature tach-generator.

Output voltage is directly proportional to the axial component of the wind speed.

Signal polarity indicates direction of propeller rotation. The Propeller Anemometer is also available with single or dual direction photo-chopper transducer.



The Propeller Anemometer is especially suited for measuring the vertical wind component. Since normal wind direction seldom exceeds  $\pm 30^\circ$  from horizontal, propeller response can be calibrated to follow the cosine law within 3% over this range.

The Gill UVW Anemometer measures the three orthogonal vectors of the wind: along wind component "U", across wind component "V", and vertical wind component "W".



The three Propeller Anemometer sensors are mounted at right angles on a common mast. Each sensor measures the wind component parallel with its axis of rotation. Propeller response as a function of wind angle approximates the cosine law, allowing true wind velocity and direction to be calculated.

The UVW Anemometer is designed for maximum sensitivity at lower wind speeds. Optional carbon fiber thermoplastic (CFT) propellers are available for applications requiring greater range and durability. Rain and dust are excluded from the precision bearings by a continuous duty air blower that keeps the instrument under a slight positive pressure.

## Ordering information

## Model

### PROPELLER ANEMOMETER w/08274 EPS propeller

With standard tach-generator transducer.....	27106
With optional single-direction photochopper.....	ADD SUFFIX "D"
With optional two-direction photochopper.....	ADD SUFFIX "F"
Optional 08254 CFT propeller.....	ADD SUFFIX "T"

### UVW ANEMOMETER w/08274 EPS propellers

Optional 08254 CFT propellers.....	27005
Optional 12 VDC blower (500 mA).....	ADD SUFFIX "T"
	ADD SUFFIX "J"

### SPARE PROPELLERS

22 cm dia. Expanded Polystyrene Propeller (EPS).....	08274
20 cm dia. Carbon Fiber Thermoplastic Propeller (CFT).....	08254

## SPECIFICATIONS:

### 08274 Expanded Polystyrene Propeller (EPS):

Diameter: 22 cm  
Pitch: 29.4 cm wind passage per revolution  
Range: 0-25 m/s (55 mph)  
Threshold\*: 0.3 m/s (0.6 mph)  
Distance constant\*: 1.0 m (3.2 ft)

### 08254 Carbon Fiber Thermoplastic Propeller (CFT):

Diameter: 20 cm  
Pitch: 30.0 cm wind passage per revolution  
Range: 0-35 m/s (80 mph)  
Threshold\*: 0.4 m/s (0.8 mph)  
Distance constant\*: 2.1 m (6.9 ft)

## Signal output:

Standard tach-generator transducer - analog DC voltage proportional to wind component. Polarity indicates rotation direction.

1800 RPM (500 mV) + 8.8 m/s (19.7 mph).

Optional photochopper transducer - Voltage pulse with frequency proportional to wind component. 10 pulses per revolution. 1800 RPM (300 Hz) = 8.8 m/s (19.7 mph)

## Power Requirement:

24 VAC/1.2 W for blower motor in UVW Anemometer (separate 11.5/230V transformer supplied). Propeller Anemometer with tachgenerator is self-powered. Optional photochopper transducer requires 5-15 VDC at 11 mA.

## Dimensions:

**UVW Anemometer:** overall height - 107 cm (42 in), each sensor projects 41 cm (16 in), base diameter 16 cm (6.2 in), mounting 34 mm (1.34 in) diameter (standard 1 in pipe).

**Propeller Anemometer:** overall length with mounting 43 cm (17 in), housing diameter 2.5 cm (1 in), mounts on standard 3/4 in pipe.

## Weight:

**UVW Anemometer:** 3.6 kg (7.9 lbs), shipping weight 8.2 kg (18 lbs)

**Propeller Anemometer:** 0.5 kg (1.2 lbs)

\*Nominal values determined in accordance with ASTM standard procedures.

Specifications subject to change without notice.