



Combined wind speed and wind direction sensor with elliptical cups

General Description

Combined anemometer and direction vane. Will meet WMO accuracy requirements for up to 5 years in most climates. Its best in class performance ratings and optimal dynamic performance exceed most top of the line stand-alone anemometers and wind vanes.

- High accuracy
- Small distance constant
- Minimum over-speeding
- Robust all metal body and oversize ball bearings
- High survival wind speed >80m/s (288kph / 179mph)
- Low power consumption
- Robust & simple digital RS485 MODBUS RTU & ASCII output
- Highest lightning protection with Class A result for surge, EFT/burst, ESD per EN 61000-4-2, EN 61000-4-4, EN 61000-4-5

Patented elliptical cup design is a result of dynamic and aerodynamic optimization from our extensive experience in the aerospace industry. It introduces a new level of performance to cup anemometers thanks to its high area-to-inertia ratio rotor. Its optimized labyrinth bearing holder requires very low maintenance.

The sensor is designed to measure horizontal wind velocity in the fields of meteorology, wind energy assessment and climate research. For winter operation this anemometer and wind vane can be equipped with a 25W automatic heater to significantly reduce icing & minimize power consumption.

Advanced Features

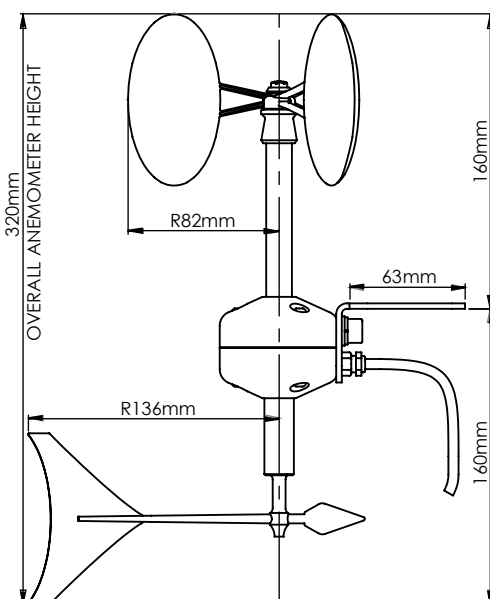
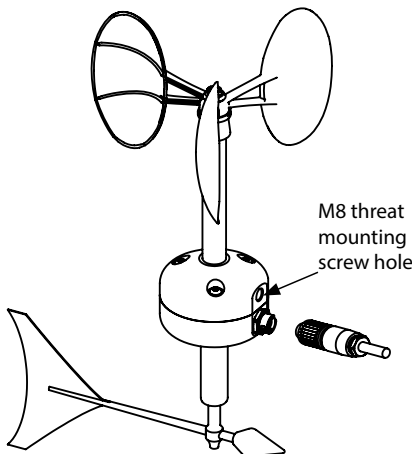
- Elliptical cups for superb linearity and accuracy
- Low inertia rotor for low start speed and minimal over-speeding
- Cup shape minimizes snow & ice buildup in winter
- 5...15VDC operation with reverse polarity protection
- Universal bayonet connector for easy installation and maintenance featuring silicone rubber o-rings for reliable operation from -40°C to 80°C
- Simple setup, integration & calibration featuring unified RS-485 MODBUS (ASCII & RTU) communication protocol common to all BARANI sensors
- Single screw universal mounting bracket

Calibrated sensors

All sensors come standard with factory calibration. An independent laboratory calibrated version with certificate per ISO/IEC 17025:2005 is available per request. Calibration provides individual slope and offset values to configure the anemometer or your data logger.

Additional information

Sensor connection recommendations & MODBUS communication protocol: see MODBUS guide.





Measurement standards			
	Range	Resolution	Accuracy
Wind speed	0-80 m/s	0.01m/s	MeteoWind: < ±0.3m/s (0-38m/s)
Wind direction	0-359° (no dead-spot)	1°	2°
Starting wind speed	<0.3m/s		
Default linearity constants	m/s = 0.4206*freq(hz) + 0.4351 (3 pulses / revolution)		
Distance constant	<3.5m		
Electrical			
Output signal	RS-485 Modbus RTU & ASCII		
Supply Voltage	5...15VDC with reverse polarity protection		
Power consumption	5mA @12V		
Lightning & surge protection	IEC EN 61000-4-5 on both data & power lines		
Environmental Rating			
Operating temperature	-40°C to +80°C		
Operating humidity range	0% to 100% RH		
Survival wind speed	90m/s (324kph, 200mph) continuous		
Connection	Bayonet connector with NBR o-ring (-40°C to 80°C)		
IP – Protection rating	IP53W (DIN 40050)		
General			
Weight	Anemometer = aprox. 250g (without mount)		
Dimensions	Anemometer = Ø164mm Wind Vane = R136mm Total height = 320mm		
Patented	OHIM 002153882-0001, 002153882-0002, 002153882-0003		
Mounting	one M8 screw with mounting bracket		

