

WindMaster Pro

3 Axis Ultrasonic Anemometer

WINDMASTER PRO



ALL WEATHER SENSING TECHNOLOGY

- *METEOROLOGICAL SYSTEMS*
- *FLUX SYSTEMS*
- *STRUCTURAL SAFETY*
- *WIND PROFILING*
- *MARINE RESEARCH*
- *WIND TURBINE SITE SURVEY*
- *MAINTENANCE FREE*
- *STAINLESS STEEL CONSTRUCTION*
- *U, V, W, SOS & SONIC TEMP OUTPUT*
- *32Hz DATA RATE*
- *ENHANCED W RESOLUTION*
- *OPTIONAL ANALOGUE INPUTS OR OUTPUTS*

WINDMASTER PRO - ULTRASONIC WIND SENSOR

The new WindMaster Pro three axis anemometer is a robust stainless steel instrument based on time of flight measurements and is essential in the understanding of turbulent flows, surface energy balance and scalar fluxes.

All these areas of research rely on accurate and precise measurements of mean and variance of (time averaged) wind velocities and Speed of Sound (SOS) derived temperature.

This is particularly true in determining scalar fluxes using the eddy covariance technique.

Gill employs the optimum mechanical configuration and electronic processing to minimise flow distortion and transducer shadow effects. Gill undertakes an individual calibration with a Gill wind tunnel test on each unit to provide the optimum performance.

The WindMasterPro has a maximum of 32 Hz data output rate and is available in marine grade stainless steel 316 construction. The WindMasterPro is fitted with field proven standard Gill transducers with the ability to measure a top wind speed of 65 m/s.

The elegant design has been developed to provide improved vertical (W) resolution, SOS accuracy and less distortion due to wind loading.

New design electronics has facilitated a reduction in power consumption to 30 mA at 12 V dc, a significant advantage when used on power sensitive sites.

U,V,W performance has been improved due to the reduction in flow distortion by the support structure.

A number of orderable options are available including: -

- 4 analogue output channels with the option of 14 bit resolution.
- 4 analogue input channels, with the option of 14 bit resolution, additional PRT input also available.
- A flange mounting arrangement is provided as standard, with option to order a different mounting.
- Wind tunnel calibration in accordance with ISO 16622 and traceable to national standards

OUTPUTS		SONIC TEMPERATURE	
Internal sample rate	32 or 40Hz	Range	-40°C TO +70 °C
Output rate	1, 2, 4, 8, 10, 16, 20, 32	Resolution	0.01°C
Units of measure	m/s, mph, KPH, knots, ft/min	ANALOGUE OUTPUTS (OPTIONAL)	
Format	UVW, Polar	Resolution 14 bits	4 channels available
Averaging	Flexible 0 - 3600 s	Selectable Range	User selectable full scale wind speed
WIND SPEED		Output Type	0-20mA, 4-20mA, 0-5V, ±2.5V, ±5V
Range	0 - 65 m/s	ANALOGUE INPUTS (OPTIONAL)	
Resolution	0.01 m/s	Resolution 14 bits	Up to 4 single ended or 2 differential plus PRT 100 input
Accuracy (12 m/s) Generic	1.5% RMS *	Input Type	±5V
Accuracy (12 m/s) Custom	1% RMS *	GENERAL	
DIRECTION		Weight	1.7 kg
Range	0-359°	Size	750mm x 240mm
Resolution	0.1° or 1°	Environmental	IP65
Accuracy (12 m/s) Generic	2°	Operating Temp	-40°C to + 70°C
Accuracy (12 m/s) Custom	0.5°	Humidity	<5% to 100%
SPEED OF SOUND		Precipitation	Operation to 300mm/hour
Range	300 - 370 m/s	EMC	Emissions BS EN 61000 - 6 - 3 Immunity BS EN 61000 - 6 - 2
Resolution	0.01 m/s	* Accuracy spec applies for wind speed, and for wind incidence up to ± 30° from the horizontal	
Accuracy	< ±0.5% @ 20°C		
POWER REQUIREMENT			
9 - 30 Vdc, 55 mA @ 12 Vdc			
DIGITAL OUTPUT			
RS232, 422, 485 network up to 8 anemometers			
Baud rates	2400-57600		
Format	ASCII		



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This range is in continuous development and therefore specifications may be subject to change without prior notice.

