GILL
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Three Axis Wind Speed and Direction Sensors

Solent
Range

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Gill Instruments

Gill has more than twenty years experience in the field of ultrasonic gas flow measurement and offers the most extensive range of ultrasonic wind speed and direction sensors on the market today. Rugged construction and the elimination of moving parts removes the need for routine maintenance, making our sensors ideal for operation in all environmental conditions.

All Gill ultrasonic products have the same basic operation:
The anemometer measures the time taken for an ultrasonic pulse to travel from one transducer to the opposite transducer and then compares it with the time taken for another pulse to travel in the opposite direction. Likewise, differences are measured between other pairs of transducers allowing calculation of both wind speed and direction.

Typical Applications

Structural Safety: *Operating safety procedures on bridges, cranes and tall buildings*

Marine & Oceanology: *Harbours, ports & shipping, safe landing/take-off on oil rigs, storm prediction on ocean buoys*

Power & Energy: *Wind farm turbine direction, power line efficiency reporting, forcasting and safety*

Agricultural and Forest Meteorology - *Monitoring ecosystems, including eddy covariance*

The Solent three axis anemometers are robust instruments essential for understanding turbulent flows, surface energy balance and scalar fluxes using ultrasonically derived wind speed and Speed of Sound data. As these research areas rely on precise measurements of mean variance in wind velocity and SOS derived temperature (particularly when determining scalar fluxes using eddy covariance), Gill employs optimum mechanical configuration and electronic processing, thus ensuring minimum flow distortion and transducer shadow effects.

R3 & HS Research Range

The R3 and HS Research range have been designed for researchers who need to determine fluxes using eddy covariance. The range provides U, V, W and SOS (sonic temperature) outputs, which may be logged using the free Gill WindCom software. All units are served with common electronics and software. Power supply and analogue outputs are provided via accessories including cables and the Power and Communications Interface (PCIA). Analogue inputs are standard on HS units and optional on R3 units via the Sensor Input Unit (SIU).

The horizontal head configurations allow more accurate assessment of vertical (W) and directional flows, with minimum interruption from the anemometer geometry and can easily be positioned close to the ground or at crop and tree level canopies for accurate measurement of SOS derived surface temperature. Inclinometer and analogue sensor inputs are applied as standard in HS configurations.

WindMaster Range

The WindMaster range is ideal for measuring turbulence on bridges, buildings, wind turbines, ventilation control systems and meteorological and flux measurement sites. Digital outputs for U, V and W vectors are available on both units as are outputs for Speed of Sound and Sonic Temperature.

The Windmaster, constructed from aluminium and carbon fibre, is available with data outputs of either up to 20Hz (standard) or 32Hz (optional). Analogue inputs and outputs with either 12 or 14 bit resolution are optional.

The WindMaster Pro, constructed from stainless steel, has a max wind speed of 65m/s and a fast data output rate of up to 32Hz. Improved vertical (W) resolution and SOS accuracy with less distortion due to wind loading means this instrument is ideal where three axis data is required. Optional analogue inputs (plus a PRT) and outputs have 14 bit resolution.

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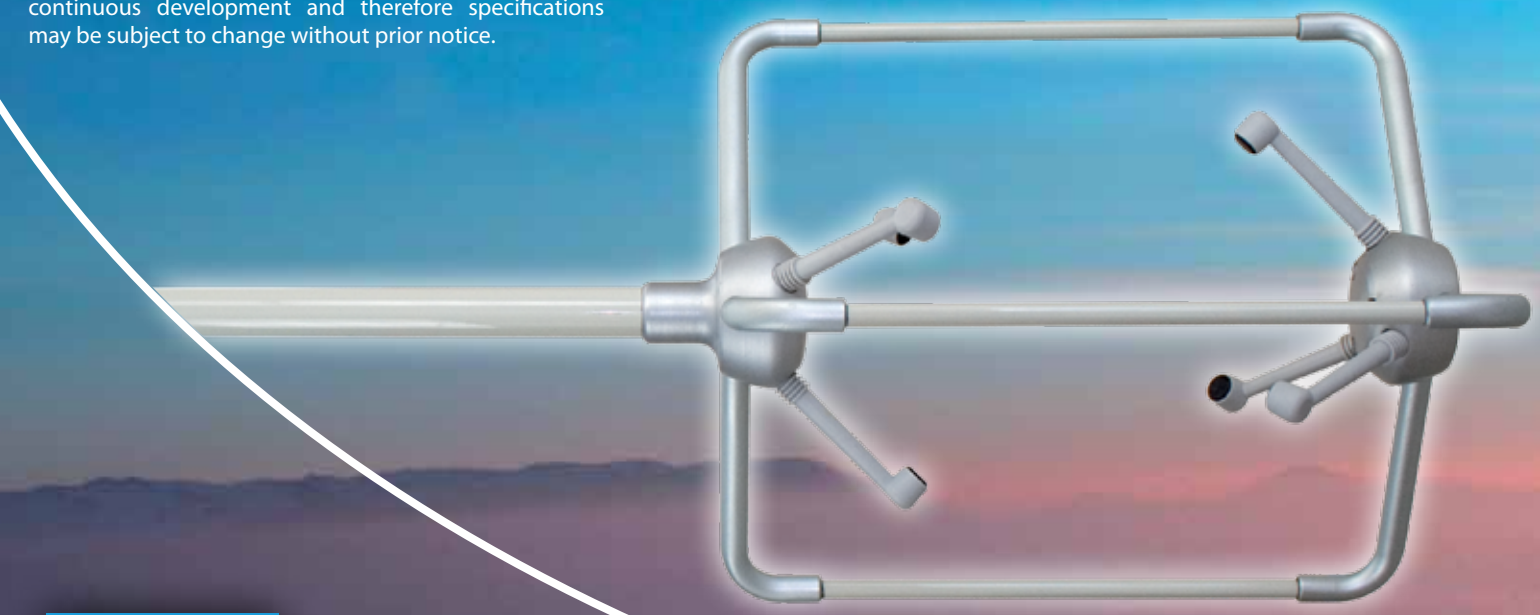
Product Finder

SPECIFICATIONS	WindMaster	Windmaster Pro	R3-50	HS-50	Research R3 / R3A	Research HS
Ultrasonic Output Rate	<20 Hz (optional 32Hz)	<32 Hz	<50 Hz	<50 Hz	<100 Hz	<100 Hz
Wind Speed Range	0-45 m/s	0-65 m/s	0-45 m/s	0-45 m/s	0-45 m/s	0-45 m/s
Wind Direction Range	0-359 no dead band	0-359 no dead band	0-359 no dead band	0-359 no dead band	0-359 no dead band	0-359 no dead band
Operating Temp Range	-40ºC to +60ºC	-40ºC to +60ºC	-40ºC to +60ºC	-40ºC to +60ºC	-40ºC to +60ºC	-40ºC to +60ºC
Moisture Protection	IP65	IP65	IP65	IP65	IP65	IP65
External Construction	Aluminium & Carbon fibre	Stainless Steel	Aluminium & Carbon Fibre	Stainless Steel	Aluminium & Carbon Fibre	Stainless Steel
Digital Output Options	RS232 / 422 / 485	RS232 / 422 / 485	RS422 (RS232 Optional)	RS422 (RS232 Optional)	RS422 & RS232	RS422 & RS232
NMEA Output Options	N/A	N/A	N/A	N/A	N/A	N/A
Analogue Outputs	Optional 4	Optional 4	7 (via optional PCIA)	7 (via optional PCIA)	7 (via PCIA)	7 (via PCIA)
Analogue O/P Resolution	12bit or 14bit	14bit	14bit	14bit	14bit	14bit
Analogue Inputs	Optional 4 (2 diff)	Optional 4 (2 diff)	6 (via optional SIU)	6	6 (via optional SIU)	6
PRT Input	N/A	Optional	Via optional SIU	Yes	Via optional SIU	Yes
Analogue I/P Resolution	12bit or 14bit	14bit	14bit	14bit	14bit	14bit
Speed of Sound O/P	Yes	Yes	Yes	Yes	Yes	Yes
Sonic Temp Output	Yes	Yes	Yes	Yes	Yes	Yes
Inclinometer	N/A	N/A	N/A	Fitted	Option	Fitted
Head Symmetry	Symmetrical	Symmetrical	Symmetrical	Horizontal	Symmetrical/Asymmetric	Horizontal
Calibration	Generic/Custom Option	Generic/Custom Option	Custom	Custom	Custom	Custom
Transit Case	Optional	Optional	Optional	Supplied	Supplied	Supplied

The Solent range of ultrasonic anemometers is in continuous development and therefore specifications may be subject to change without prior notice.



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