



The Solent Research R3-50 is a cost effective solution for projects requiring the benefit of Gill's proven experience in the production of ultrasonic anemometers for all weather applications. Robust and easy to use, the R3-50 employs the same software as the popular R3 range of sensors but with a data rate of 50 Hz.

If required the unit can be supplied with the optional Sensor Input Unit (for analogue inputs) and Power Supply (including analogue outputs).

Based on the highly successful range of Solent Research Anemometers, the R3-50 is ideal for users undertaking research with eddies at high mast levels. Having identical output formats to the R3, the R3-50 is particularly suited to applications where a complete wind profile is required, with an R3 or HS positioned near the ground and the R3-50 positioned at a higher level.

Gill research grade units are individually custom calibrated and supplied with a certificate of calibration. All of our test equipment has been designed specifically to test and calibrate our range of ultrasonic sensors and is traceable to national standards. A number of orderable options are available including:

- Power supply (PCIA)
- Travelling case
- Analogue and PRT inputs via Signal Interface Unit (SIU)

Analogue Outputs (requires PCIA unit)

Quantity	7 (U, V, W, SoS, PRT plus 2 analogue inputs)
Scale	±10, ±20, ±30, ±60 m/s
Update rate	0.4 to 50s ⁻¹
Range and resolution	±2.5V, 14 bits
Accuracy	<0.1% of FSR

Analogue Inputs (requires SIU)

Quantity	6 differential inputs
Sampling rate	50s ⁻¹
Range and resolution	±5V, 14 bits
Accuracy	<0.1% of FSR

Power Requirement

Anemometer	9-30V dc (<150mA @ 24V DC or 300mA @ 12V dc)
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Mechanical

Material	Aluminium/Carbon Fibre
Size	750mm x 240mm
Weight	1.0 kg

Environmental

Protection Class	IP65
Operating Temp	-40°C to +60°C
Precipitation	Operation to 300 mm per hour
EMC	BS EN 50081-1: 1992 (Emissions) BS EN 50082-1: 1997 (Immunity)
Suitable for exposure to a marine environment	

Key Features

- Maintenance Free
- Robust Construction
- 50Hz Data Rate
- Speed of Sound and Sonic Temp Outputs
- Custom Calibrated
- Analogue Outputs

Specification

Wind Speed

Range	0 - 45 m/s
Resolution	0.01 m/s
Accuracy	<1% RMS

Direction

Range	0 - 359°
Resolution	1°
Accuracy*	<±1° RMS

Speed of Sound

Range	300-370 m/s
Resolution	0.01 m/s
Accuracy	< ±0.5% @ 20°C

Measurement

Ultrasonic output rate	50 Hz
Parameters	UVW, Speed of Sound

Digital Output

Communication	RS422 full duplex, 8 data bits, 1 stop bit, no parity
Baud rates	2400 - 115200
Output rate	Selectable 0.4 to 50s ⁻¹

PRT Input

Input resolution	0.01°C
Input accuracy	<0.01°C (0 to 50°C) < 0.15°C (-40°C to +60°C)

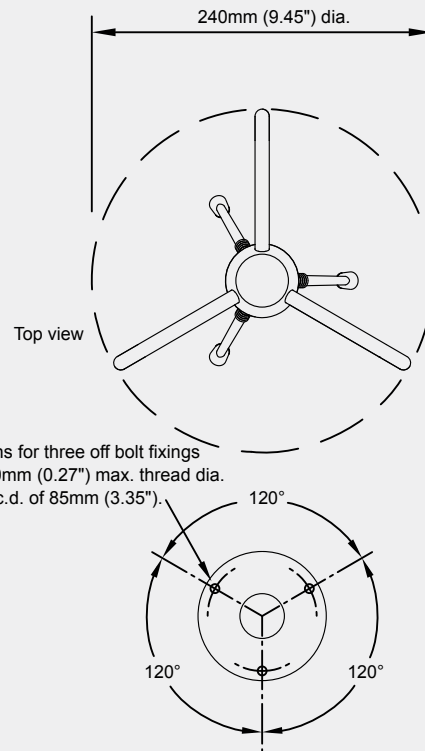
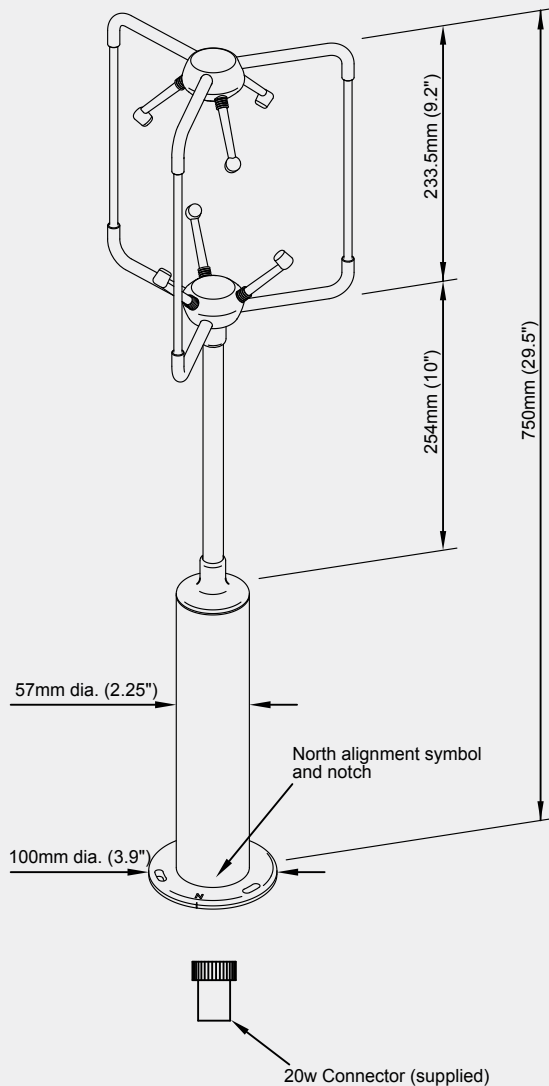
*Accuracy spec applies for wind speed <32 m/s and for wind incidence up to ±20° from the horizontal

Typical Applications

- Wind Turbulence Measurement
- Component Wind Velocity U/V/W
- Wind Profiling



Dimensions



The R3-50 is part of the Solent range of ultrasonic anemometers. The range is in continuous development and therefore specifications may be subject to change without prior notice.

