

**HS-50™**

## 3-Axis Horizontal-Head Research Anemometer

**GILL**

### Key Features

- Precision 3-Axis Sonic Anemometer
- Horizontal Head for Minimal Flow Disturbance
- 0-45m/s wind speed
- U, V, W Vector Outputs
- Stainless Steel Construction
- 50Hz Output Rate
- 0-359° wind direction

The HS-50 has been designed for scientific research applications requiring accurate 3-axis wind speed and direction information.

This instrument utilises advanced ultrasonic measurement technology, with a unique horizontal head design that allows for more accurate measurement of vertical flows with minimal interruption from the anemometer geometry. The head features a built-in inclinometer for simple positioning of the instrument on a tower or mast. A separate electronic unit allows easy access to the PRT and 6 analogue inputs.

HS-50 will monitor wind speeds of 0-45m/s, with a fast sampling rate of 50 Hz. The instrument can be positioned close to the ground or to crop and tree canopies for accurate measurement of surface turbulence.



#### WIND SPEED

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

#### DIRECTION

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

#### ULTRASONIC MEASUREMENT

Ultrasonic sampling rate	50 Hz
Parameters	UVW, Speed of Sound

#### SPEED OF SOUND

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

#### DIGITAL OUTPUT

Communication	RS422 full duplex, 8 data bits, 1 stop bit, no parity
Baud rates	2400 - 115200
Output parameters	Selectable 0.4 - 50 Hz

#### ANALOGUE INPUTS

Quantity	6 differential inputs
Sampling rate	50 Hz
Input range/resolution	±5V, 14 bits
Accuracy	<0.1% of FSR

\*Accuracy specification applies for wind speeds <32m/s and for wind incidence <±150° in the horizontal plane and up to ±50° from the horizontal

#### ANALOGUE OUTPUTS (VIA SUPPLIED PCIA)

Quantity	7 (U, V, W, SoS, PRT+2 analogue outputs)
Scale	±10, ±20, ±30, ±60m/s
Update rate	0.4 to 50 Hz
Range and resolution	±2.5V, 14 bits
Accuracy	<0.25% of FSR

#### PRT INPUT (PRT100 NOT INCLUDED)

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

#### INCLINOMETER

Range and resolution	±20°, 0.01°
Null repeatability	±0.15°
Accuracy	±0.3° (from -10° to +10° of inclination)

#### POWER REQUIREMENT

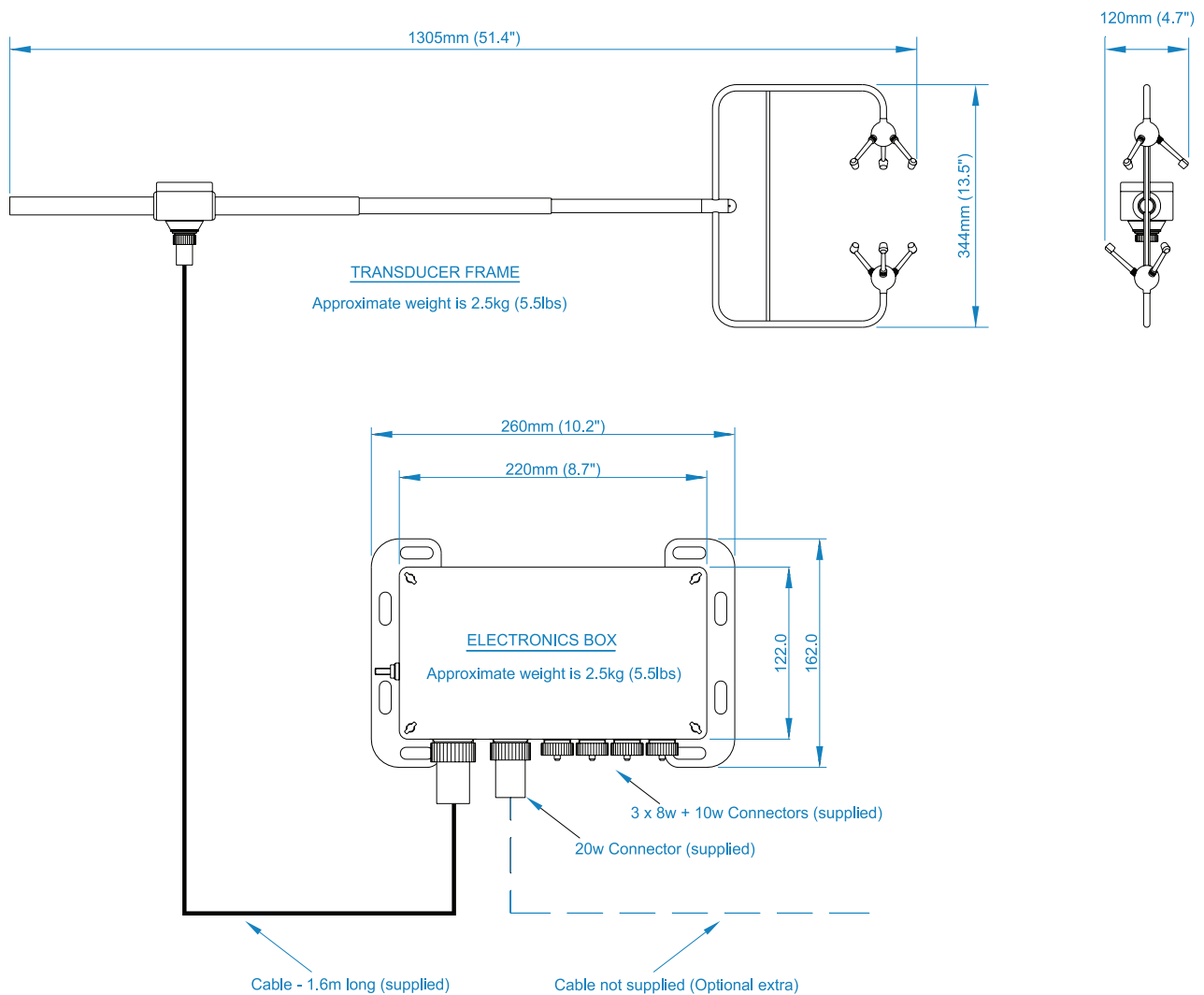
Anemometer	9-30VDC (<150mA @ 24VDC or 300mA @ 12VDC)
------------	---

#### ENVIRONMENTAL

Operating temperature	-40°C to +60°C
Protection class	IP65
Precipitation	300mm/hr
EMC	EN 50081-1: 1992 (Emissions) EN 50082-1: 1992 (Immunity)
Suitable for exposure to a marine environment.	

## Typical Applications

- Wind Turbulence Measurement
- Component Wind Velocity UVW
- Wind Profiling
- Remote Research facilities
- Off-shore installations
- Test Sites



Specifications may be subject to change without prior notice.

# GILL

### Gill Instruments Limited

Saltmarsh Park, 67 Gosport Street  
Lymington, Hampshire SO41 9EG  
United Kingdom

Tel: +44 (0) 1590 613 500  
Fax: +44 (0) 1590 613 501

1199-0033 - Iss 2

Copyright © Gill Instruments 2019

Gill Instruments Ltd, Reg No. 2281574  
Registered Office: Towngate House, 2-8 Parkstone Road, Poole, BH15 2PW