

3-Axis Horizontal-Head Research Anemometer



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

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)
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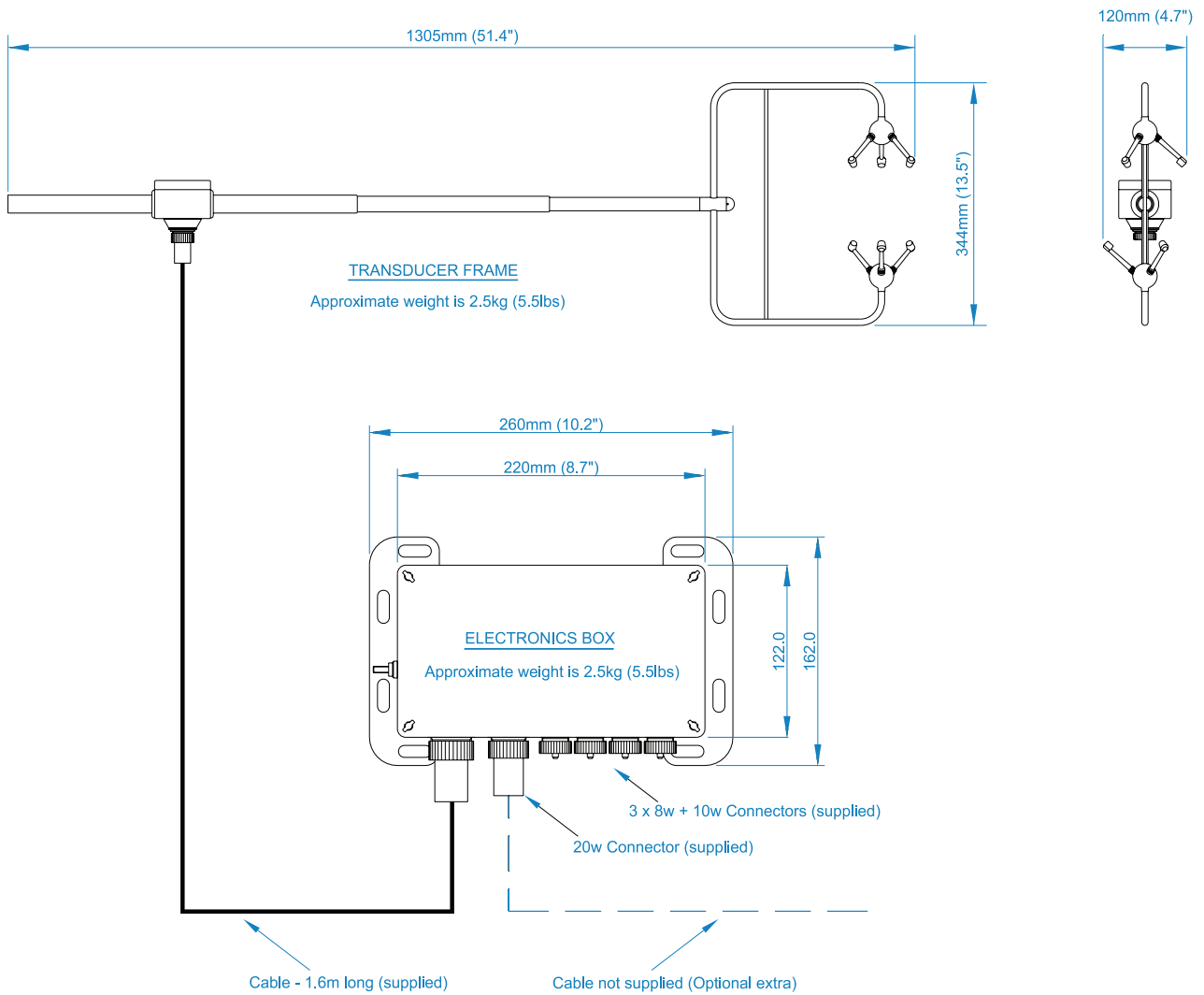
Environmental

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.	

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

Typical Applications

- Wind Turbulence Measurement
 - Component Wind Velocity U/V/W
 - Wind Profiling
- Remote Research facilities
 - Off-shore installations
 - Test Sites



Specifications may be subject to change without prior notice.



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 D803 - Iss 3

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