

Key Features

- Precision 3-axis sonic anemometer
- 50Hz Output Rate
- 0-45m/s wind speed
- 0-359° wind direction
- U, V, W Vector Outputs
- Horizontal Head for Minimal Flow Disturbance
- Stainless steel construction

The HS-50 horizontal-head anemometer 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 | ±2.5 V, 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 | 9-30 VDC (<150mA @ 24 VDC or 300mA @ 12 VDC) |
|------------|--|

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. | |

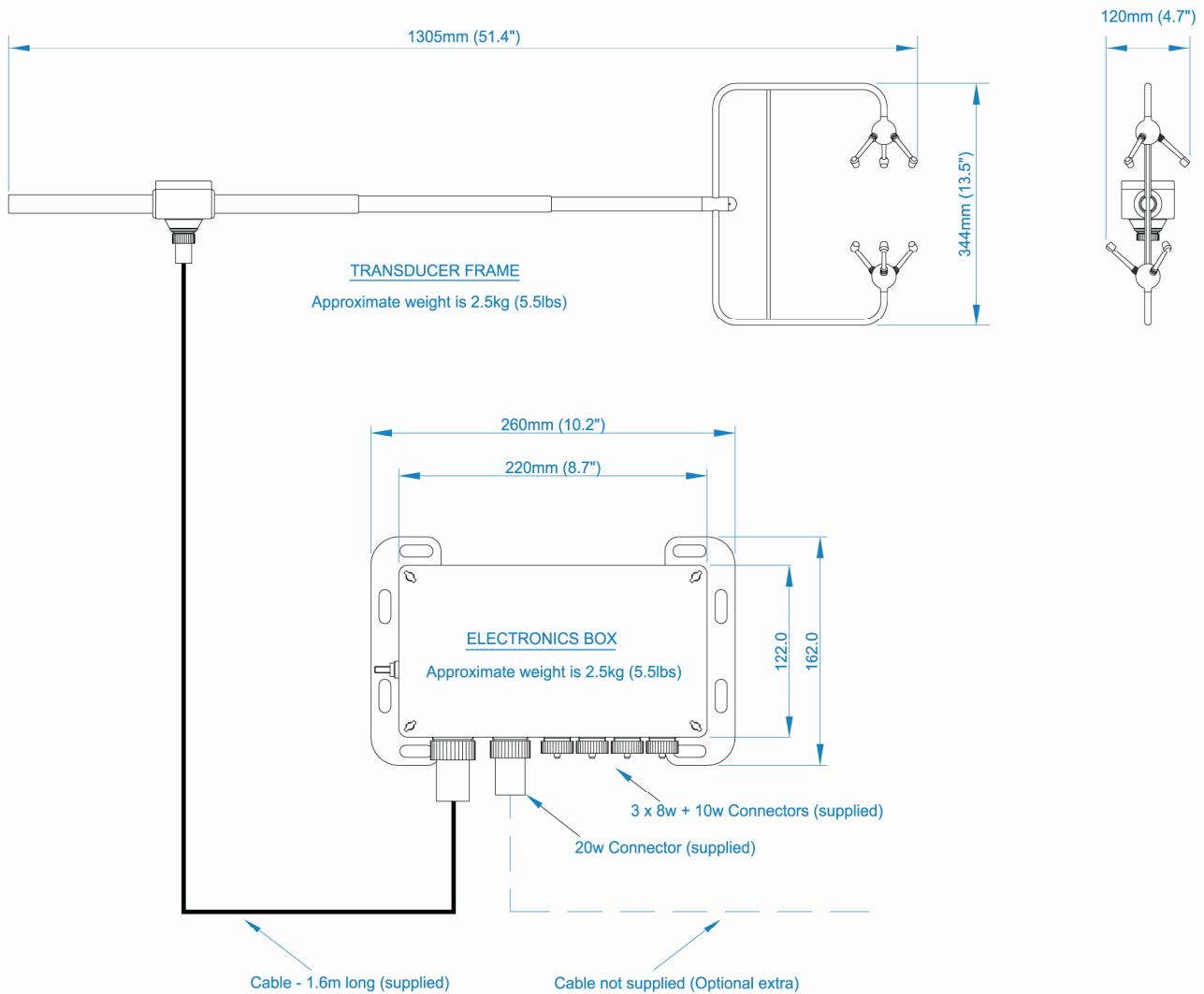
*Accuracy specification applies for wind speeds <32m/s and for wind incidence <±150° in the horizontal plane and up to ±50° from the horizontal

HS-50™

3-Axis Horizontal-Head Research Anemometer

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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