

## 3-Axis Ultrasonic Anemometer

### Key Features

- Precision 3-axis sonic anemometer
- 20Hz output rate
- 0-50m/s wind speed
- 0-359° wind direction
- U, V, W vector outputs
- Sonic temperature output
- Aluminium/Carbon fibre construction
- Optional custom calibration

The Gill WindMaster is a precision anemometer offering three-axis wind measurement data. This instrument will monitor wind speeds of 0-50m/s and provides sonic temperature, speed of sound and U, V & W vector outputs at 20Hz (32Hz optional). This anemometer is of aluminium/carbon fibre construction and is ideal for the understanding of turbulent flows, surface energy balance and scalar fluxes. Each WindMaster can be calibrated with an optional Gill wind tunnel test to provide optimum performance.

This 3D sonic anemometer is ideally suited to the measurement of air turbulence around bridges, buildings, wind turbine sites, building ventilation control systems, meteorological and flux measurement sites.



#### WIND SPEED

|            |                          |
|------------|--------------------------|
| Range      | 0 - 50 m/s               |
| Resolution | 0.01 m/s                 |
| Accuracy*  | <1.5% RMS @12 m/s        |
| Accuracy*  | <1% RMS @12 m/s (Custom) |

#### DIRECTION

|            |                       |
|------------|-----------------------|
| Range      | 0 - 359°              |
| Resolution | 0.1°                  |
| Accuracy   | 2° @12 m/s            |
| Accuracy   | 0.5° @12 m/s (Custom) |

#### SONIC TEMPERATURE

|            |   |
|------------|---|
| Range      | -40°C to +70°C                                    |
| Resolution | 0.01°C  |
| Accuracy   | -20°C to +30°C within ±2°C of ambient temperature |

#### SPEED OF SOUND

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

#### MEASUREMENT

|                      |   |
|----------------------|---|
| Internal sample rate | 20 Hz or 32 Hz                          |
| Output Parameters    | 1, 2, 4, 8, 10, 16, 20 & 32 (Option) Hz |
| Units of Measure     | m/s, mph, kph, knots, ft/min            |
| Formats              | UVW or Polar                            |

#### DIGITAL OUTPUT

|               |                           |
|---------------|---------------------------|
| Communication | RS232, 422, 485, Binary   |
| Baud Rates    | 2400 - 57600 <sup>1</sup> |
| Format        | ASCII                     |

#### ANALOGUE OUTPUTS - OPTIONAL

|                               |                                       |
|-------------------------------|---------------------------------------|
| Resolution 12 bits or 14 bits | 4 channels available                  |
| Selectable Range              | User selectable full scale wind speed |
| Output type                   | 0-20mA, 4-20mA, 0-5V, ±2.5V, ±5V      |

#### ANALOGUE INPUTS - OPTIONAL

|                               |  |
|-------------------------------|--|
| Resolution 12 bits or 14 bits | Up to 4 single ended or 2 differential |
| Input Type                    | ±5V                                    |

#### POWER REQUIREMENT

|            |                          |
|------------|--------------------------|
| Anemometer | 9-30 VDC (55mA @ 12 VDC) |
|------------|--------------------------|

#### MECHANICAL

|        |               |
|--------|---------------|
| Weight | 1.0 kg        |
| Size   | 750mm x 240mm |

#### ENVIRONMENTAL

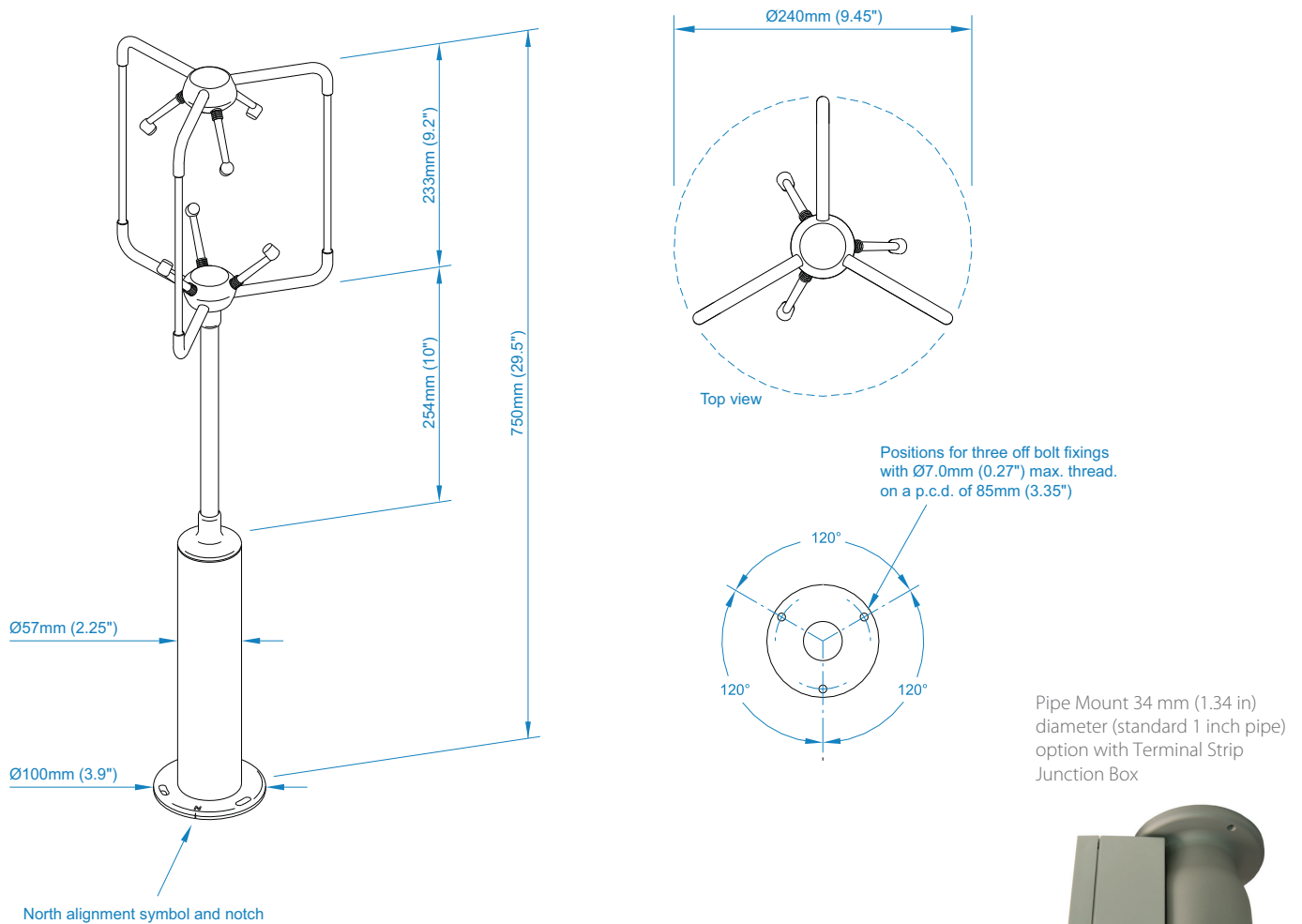
|                  |   |
|------------------|---|
| Protection Class | IP65  |
| Operating Temp   | -40°C to +70°C  |
| Humidity         | < 5% to 100% RH   |
| Precipitation    | 300mm/hr  |
| EMC              | BS EN 61000 - 6 - 3 (Emissions)<br>BS EN 61000 - 6 - 2 (Immunity) |

\*Accuracy spec applies for wind speed, and for wind incidence up to ±30° from the horizontal

<sup>1</sup>Optional Power & Communications Interface (PCI) Baud rate to 115200

## Typical Applications

- Power Lines
- Bridges
- Viaducts
- Building ventilation control systems
- Measurement Masts
- Skyscrapers
- Wind Turbine Test Sites
- Meteorological & Flux measurement sites



This product is in continuous development and therefore specifications may be subject to change without prior notice.



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