WindObserver

Application Note

Marine - Dynamic Positioning Systems

WindObserver provides accuracy and environmental robustness for a precision system

Background

Many marine applications require the vessel or platform position to be consistently maintained to ensure efficient and safe operation. This can range from vessels such as oceanographic research vessels, cable laying ships and cruise ships to offshore drilling units.

A dynamic positioning system (DPS) actively compensates for the forces exerted on the vessel, automatically maintaining position and orientation. To achieve this, information from a series of on-board sensors, including wind sensors, directly informs the DPS allowing it to calculate the forces thrusters must produce to control the vessel's motion.



WindObserver anemometers are critical sensors within marine and offshore applications used on board vessels like the Bibby WaveMaster (pictured)

Challenge

Wind speed and direction can significantly affect ship or platform position and anemometers provide this key information to the DPS. The wind sensor measurements must be both accurate and totally reliable to ensure accurate control of the vessel. In addition, the anemometers themselves must be able to function reliably long term in some of the most hostile marine environments - enduring corrosive conditions as well as extremes of temperature. Loss of position resulting from poor sensor measurements or other factors can be a threat to safe operations and the environment as well as potentially causing damage to property and reputation.

Solution

Gill Instrument's WindObserver is used extensively in dynamic positioning systems worldwide. WindObserver's high measurement acquisition rate allows disturbed measurements to be disregarded without affecting normal data flows. In extreme circumstances where measurement is not possible, the instrument also provides status codes to alert the user, providing assurance that any data delivered can be trusted.

WindObserver is constructed from stainless steel ensuring effective, maintenance-free operation in marine environments over many years. WindObserver is also available with optional heating allowing measurements to continue in the most challenging environments.



WindObserver

Designed for use in arduous conditions: IP66, Lloyds Register approved, measures wind speeds up to 75m/s (168mph), high power heating option, NMEA.

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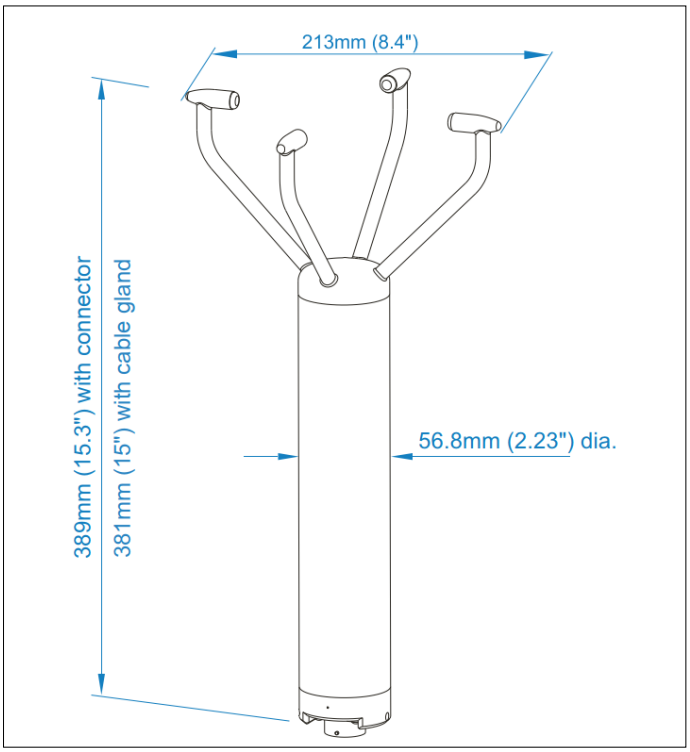
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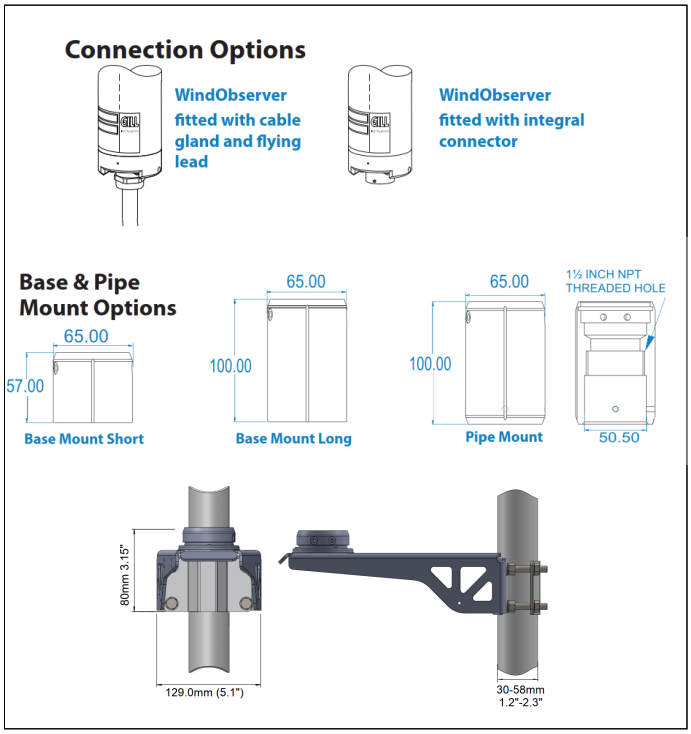
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KEY PARAMETERS (models vary)	
Wind speed	Options from 0-65m/s to 0-90m/s (0-145mph/234kph to 0-201mph/324kmph)
Wind speed accuracy	+/- 2% @ 12m/s
Wind speed resolution	0.01m/s
Wind direction	0-359°
Wind direction accuracy	2° @ 12m/s
Wind direction resolution	0.01°
Measurement Power Supply	9-30VDC, 30 mA @12VDC
Status code output	Confirms measurement data integrity
Heating Power Supply	Up to 7A@24VDC (model dependant)
Operating temperature	-55°C TO +70°C (heated option)
Operating humidity	0% - 100% RH
Protection class	IP66 (NEMA4X)
External construction	Stainless steel 316
Approvals / Acceptance (Model dependent)	Lloyds Register FAA / CAA CCS ATEX/IECEx

MODELS & OPTIONS	
Wind Speed	0-65m/s, 0-70m/s, 0-75m/s, 0-90m/s
Heating	Unheated, Standard heating, enhanced heating
Physical connection	Integrated cable (2m, 10m, 15m) or Connector
Individual Calibration	Available on request

ACCESSORIES	
Mounting options	Base mount short, Base mount long, Pipe mount
Bracket	
WindView software	Display/logging software
Connection cables	2m, 10m & 15m



For more information about WindObserver please contact Gill Instruments.

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