FT722-PM (PIPE MOUNT)

ACOUSTIC RESONANCE WIND SENSOR

FT TECHNOLOGIES

DESIGNED FOR TURBINE CONTROL

The FT722 Pipe Mount wind sensor is designed for installation on top of a pipe or post. The sensor cable is run inside the pipe giving added lightning and environmental protection. Factory alignment of the pipe mount adapter ensures that the sensor is automatically aligned with the central axis of the turbine without error.

Ideal for retrofit, it provides a single, compact solution to replacing an existing mechanical wind vane and anemometer wind measurement system. With no moving parts to wear out or degrade, turbine downtime is reduced, power output is increased and yaw control is more efficient. With updated software and improved accuracy, it is also a fit and function replacement for the FT702LT-PM sensor.

The sensor has additional heating capacity designed to heat the metal adapter and pipe. This prevents ice from building up on the adapter and blocking air flow through the measurement cavity. It has passed over 28 environmental tests to demonstrate its durability.

DIMENSIONS

A. Sensor height 161mm

B. Sensor width max 56mm

C. Adaptor mating surface (hidden) to cavity centre 90mm

D. Alignment notch width 5.1mm

E. I/0 connector width max 22mm

F. Mounting flange width 45mm

SPECIFICATIONS AT A GLANCE

WIND SPEED	WEIGHT	AVAILABILITY
0-50 m/s	350 g	> 99.9 %

THE WORLD'S TOUGHEST WIND SENSORS

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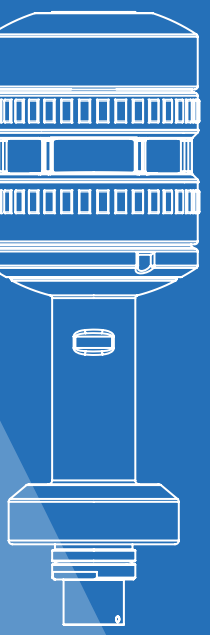

WIND SPEED

Range	0-50m/s
Resolution	0.1m/s
Accuracy	±0.3m/s (0-16m/s) ±2% (16-40m/s) ±4% (40-50m/s)

WIND DIRECTION

Range	0 to 360°
Resolution	1°
Accuracy (within ±10° datum)	2° RMS
Accuracy (outside ±10° datum)	4° RMS

SENSOR PERFORMANCE

Measurement principle	Acoustic Resonance (automatically compensates for variations in temperature, pressure & humidity).
Units of measure	Metres per second, kilometres per hour or knots
Altitude	0-4000m operating range
Temperature range	-40° to +85°C (operating and storage)
Humidity	0-100%
Ingress protection	IP66 and IP67, EN 60529
Heater settings	0° to 55°C. The heater set point can be configured

POWER REQUIREMENTS

Supply voltage	20V to 30V DC (24V DC nominal)
Supply current (heater off)	31mA typical
Supply current (heater on)	Limited to 4A (default), 6A (max) – configurable in software in 0.1A increments. Heater power consumption will depend on the energy required to keep the sensor's temperature at the user determined set point. The heater and sensor power consumption is limited by default to 99W.

PHYSICAL

I/O connector	5-way (RS485 option), 8-way (4-20mA option) multipole connector
Sensor weight	350g

DIGITAL SENSOR

Interface	RS485, galvanically isolated from power supply lines and case
Format	ASCII data, polled or continuous output modes, NMEA 0183
Data update rate	Maximum 10 measurements per second
Error handling	When the sensor detects an invalid reading a character is set in the wind velocity output message This error flag character is 1

ANALOGUE SENSOR

Interface	4-20mA, galvanically isolated from power supply lines and case
Format	One 4-20mA current loop for wind speed (different scaling factors are available). One 4-20mA current loop for wind direction (datum value configurable as 4mA or 12mA). Both analogue channels are updated ten times per second.
4-20mA configuration port	This port is for the user to change the internal settings of analogue sensors and to perform diagnostic testing. This interface is not intended for permanent connection to a data logger or other device.
Error handling	When the sensor detects an invalid reading then both speed and direction current loops will drop to a default value of 1.4mA (configurable up to 3.9mA).

EMC AND ENVIRONMENTAL TESTS

The FT7 Series have passed over 28 different environmental test certificates including Corrosion, Icing, De-Icing, Shock, Hail, Drop, ESD, short circuit, power interruption and EMC. Further test details and full test reports available on request or via our website.

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