

FT742-SM (SURFACE MOUNT)



ACOUSTIC RESONANCE WIND SENSOR

DESIGNED FOR INTEGRATION

The FT742 Surface Mount wind sensor is designed for OEM integration and has a compass and heater. The sensor has been integrated into UAVs, military vehicles, autonomous robots, handheld weather stations, CBRN detection units, drifter buoys, vehicle-mounted and ship-based meteorological systems.

The hard anodised aluminium body is highly resistant to electromagnetic interference, corrosion, sand, dust, solar radiation and bird attack. With no moving parts to degrade or damage, it is also able to withstand significant shock and vibration. It is sealed to IP66 and IP67 standard.

The sensor can be installed to ensure alignment with a standard reference, typically Magnetic North, or the integrated compass can calculate this automatically.



DIMENSIONS

A. Sensor height.....	71.2mm
B. Sensor width max.....	56mm
C. Mounting surface to cavity centre.....	32.9mm
D. Recommended mounting surface hole.....	24mm

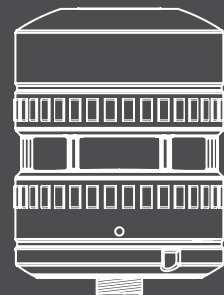
SPECIFICATIONS AT A GLANCE

WIND SPEED
0-75 m/s

WEIGHT
252 g

AVAILABILITY
> **99.9** %

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WIND SPEED⁴

Range.....	0-75m/s.....	0-270km/h.....	0-145knots
Resolution.....	0.1m/s.....	0.36km/h.....	0.19knots
Accuracy.....	±0.3m/s (0-16m/s).....	±1.08km/h (0-57km/h).....	±0.58knots (0-31knots)
	±2% (16-40m/s).....	±2% (57-144km/h).....	±2% (31-78knots)
	±4% (40-75m/s).....	±4% (144-270km/h).....	±4% (75-145knots)

WIND DIRECTION

Range.....	0 to 360°
Resolution.....	1°
Accuracy.....	4° RMS
Compass accuracy.....	5° 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, IP67, EN 60529 - when correctly installed with supplied O-ring
Heater settings.....	0° to 55°C (factory and user configurable)

POWER REQUIREMENTS

Supply voltage.....	6V to 30V DC (24V DC nominal). Supports battery operation with reduced heater capacity (≥6V DC, up to 30V DC). ³
Supply current (heater off).....	25mA typical (29mA with compass enabled)
Supply current (heater on).....	Up to 2A ^{1,2}
Power consumption with heater disabled (for battery use):	

Battery Supply Voltage.....	Compass Disabled.....	Compass Enabled
24V.....	600mW.....	696mW
12V.....	300mW.....	348mW
9V.....	225mW.....	261mW
6V.....	150mW.....	174mW

PHYSICAL

I/O connector.....	Universal M12 8-pole circular connector
Sensor weight.....	252g

DIGITAL SENSOR

Interface.....	RS422 (full-duplex). RS485 (half-duplex)
Format.....	ASCII data, polled or continuous output modes, NMEA 0183
Data update rate.....	10Hz
Error handling.....	When the sensor detects an invalid reading an error flag is included in the wind velocity output message (see user manual for further details).
Overspeed Warning.....	The sensor has an optional overspeed warning scheme. This scheme is disabled by default but can be enabled at the factory if requested. With the scheme enabled, if the sensor detects a wind speed greater than 75m/s a character is set in the wind velocity output message (see user manual for further details).

¹ This is the default heater current limit, if higher currents are required, please contact FT Technologies.

² Heater control is achieved through a closed loop system, therefore the power consumption of the heater is a function of the applied cooling load on the sensor and the user temperature set point. Maximum heating power is 60 W at 30 V.

³ EN 61000-4-29 only applicable when the sensor power supply is between 20V to 30V DC.

⁴ km/h & knots only available when operating the sensor in NMEA 0183 mode.