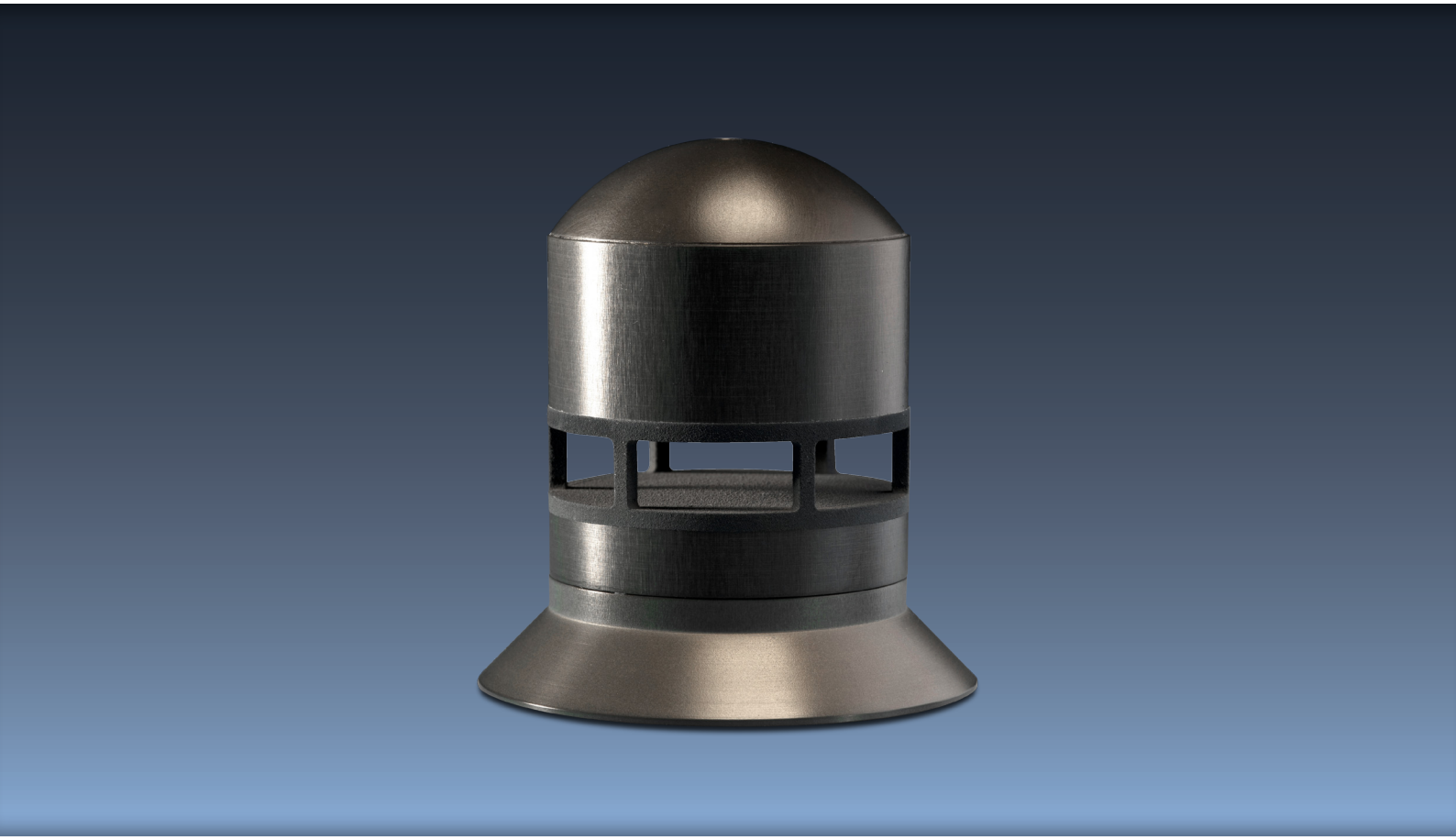
FT TECHNOLOGIES

FT702LM OEM Air flow sensor...



...designed for integration

FT702LM

POWERED BY acu res TECHNOLOGY

FT702 LM Series
Designed for Integration

Key Features

- **Designed for integration into OEM equipment**
- **Ultra-compact (70mm x 78mm)**
- **Low power consumption (66mW)**
- **Light weight (234g), rugged and portable**
- **Built in self-regulating anti-icing heaters**
- **Sealed to IP67**
- **Solid state design with no moving parts**
- **Corrosion resistant surface finish**
- **Optional integrated compass FT702LM2**
- **Wind speed in knots & km/h now available in NMEA 0183 mode**

OEM Applications Deployed

- ✓ ***CBRNe detection systems***
- ✓ ***Ballistic meteorology – fire control systems***
- ✓ ***Naval engineering meteorological research***
- ✓ ***Cleanroom flow control***

Technology

The **FT702LM** series is an ultra-compact wind speed and direction sensor. It uses our patented ***Acu-Res®*** airflow sensing technology to measure accurately both wind speed and direction. Acu-Res Technology is made up of three components:

- ❖ ***Acoustic Resonance measurement principle***
- ❖ ***Acu-Res® Software***
- ❖ ***Environmental Protection System (EPS)***

- The *Acoustic Resonance measurement principle* sets FT sensors apart from mechanical and other ultrasonic sensing techniques. It is a patented solid-state technology that generates a strong ultrasonic signal by resonating ultrasound inside a small cavity. This provides a compact and rugged solution.

- The *Acu-Res® software* manages the complex wind data calculations and provides a digital serial output of up to 5 readings per second via an RS422 or RS485 interface.
- The **FT702LM** series is fitted with heaters to prevent icing. The *Acu-Res® software* controls these heaters and ensures that the sensor is maintained at the set temperature. This set point is user configurable or alternatively the heaters can be disabled entirely.
- The *EPS* has been designed to perform under the most severe climatic and environmental conditions. This ensures that the sensor functions reliably without maintenance.
- A hard anodised protective coating provides an easily cleaned and highly durable surface finish. When mounted on a suitable enclosure, the **FT702LM** is environmentally sealed to IP67 allowing it to be used in a wide range of demanding applications.
- The **FT702LM** series is ideal for battery powered applications and is able to operate at supply voltages as low as 4.4V (at 15mA typical current drain).

Website: FT702LM profile

3A4216EN, May2013

Technical Specification[1]

Sensor Performance

Measurement Principle	Acoustic Resonance (compensated against variations in temperature, pressure and humidity)		
Wind Speed Measurement[2]			
	m/s	**km/h**	**knots**
Range	0-50m/s	0-180km/h	0-97.2knots
Resolution	0.1m/s	0.1km/h	0.1knots
Accuracy	±0.5m/s (0-15m/s) ±4% (>15m/s)	±1.8km/h (0-54km/h) ±4% (>54km/h)	±1knot (0-29knots) ±4% (>29knots)
Wind Direction Measurement			
Range	0° to 360°		
Accuracy	±4°		
Resolution	1°		
Compass Accuracy[3] (FT702LM2 ONLY)	≤ 5° RMS		

Data I/O

Interface	RS-422 or RS-485
Format	Full range of user programmable functions. NMEA 0183 (MWV sentence) ASCII data output format.
Data Update Rate	5 measurements per second

Power Requirements

Anemometer	
FT702LM1	4.4V to 30V dc @15mA (typical – exclude data o/p drive current)
FT702LM2	4.4V to 30V dc @16mA (typical – exclude data o/p drive current)
Heater	10V to 30V dc @ 2.5A (max)

Physical

Dimensions	70mm x 78mm (nominal diameter x height)
Weight	234g (sensor stand alone) 250g (with accessories: gasket)
Material	Aluminium alloy, hard anodised.
I/O Connector	10 way connector (p/n Harwin M80-867 1022). Mating connector (p/n Harwin M80-8891005)
Mounting Method	Threaded holes (M4) x6 in base

Environmental

Operating Temperature Range	-40° to +85°C
Storage Temperature	-40° to +85°C
Humidity	0-100%
Dust and Immersion	Sealed to IP67 (when correctly installed with supplied gasket)

Standards[4]

EN 61000-6-3 (2007 inc. A1:2011)	Emission standard for residential, commercial and light-industrial environments
EN 61000-6-2 (2005)	Generic Standard - Immunity for Industrial Environments
EN 61000-4-2 (2009)	Electrostatic discharge immunity test
EN 61000-4-3 (2010)	Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-8 (2010)	Power frequency magnetic field immunity test
EN 61000-4-9 (2009)	Pulse magnetic field immunity test
EN 61000-4-10 (1994; A1:2001)	Damped oscillatory magnetic field immunity test

Notes: ***1)*** *All specifications subject to change without notice*

2) *Performance measured mounted on extended horizontal surface*

3) Sensor Performance - Compass Accuracy: *Typical urban environment without system installation for hard-iron calibration*

4) Standards: *EMC certifications: The unit has to be grounded correctly and cables kept in a screened box to prevent radiation*

Ordering Information

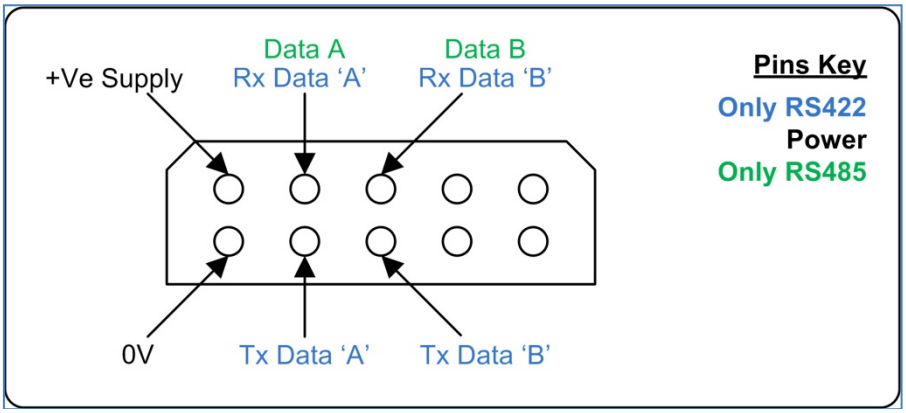
Part number: **Append required option**

FT702LM

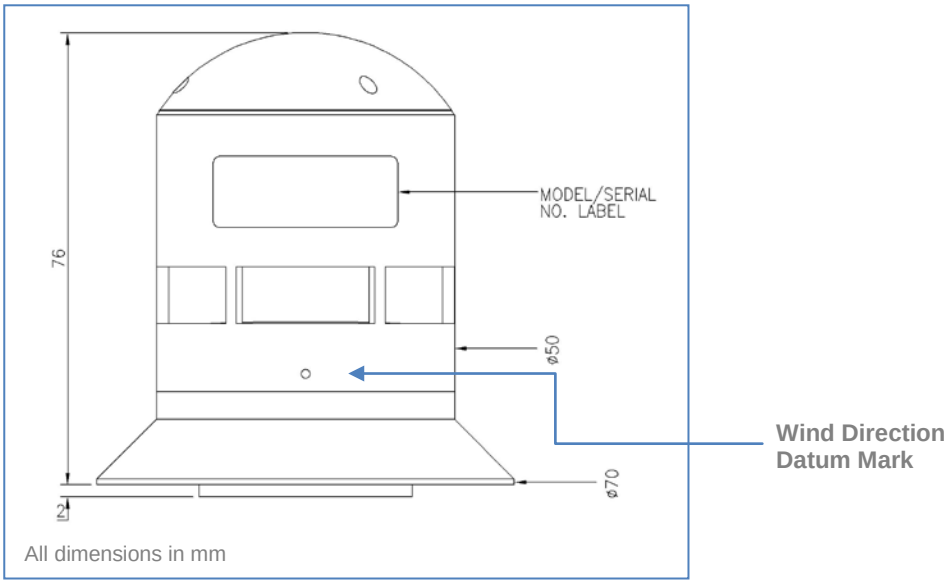
- **1** = RS-422 Output, Compass Module Not Fitted
- **2** = RS-422 Output, Compass Module Fitted

Note: RS485 output is also available

Connector Pins Detail



FT702LM Outline Drawing



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