

FT702LM OEM Air flow sensor...



...designed for integration

FT702LM

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](#)

OEM Applications Deployed

- ✓ *CBRNe detection systems*
- ✓ *Ballistic meteorology – fire control systems*
- ✓ *Naval engineering meteorological research*
- ✓ *Semiconductor factories with cleanrooms*

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).



Technical Specification¹

Sensor Performance

| | |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------|
| Measurement Principle | Acoustic Resonance (compensated against variations in temperature, pressure and humidity) |
| Wind Speed Measurement² | |
| Range | 0-50m/s |
| Accuracy | ±4% |
| Resolution | 0.1m/s |
| Zero Error | ±0.1m/s |
| Wind Direction Measurement | |
| Range | 0° to 360° |
| Accuracy | ±4° |
| Resolution | 1° |
| Compass Accuracy³ (FT702LM2 ONLY) | ≤ 5° RMS |

Data I/O

| | |
|-------------------------|-------------------------------------------------------------------------------------------------------------------|
| Interface Format | RS-422 or RS-485 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 dia. x height) |
| Weight | 233.5g (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) |

Standards⁴

| | |
|-----------------------------------------|---------------------------------------------------------------------------------|
| 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

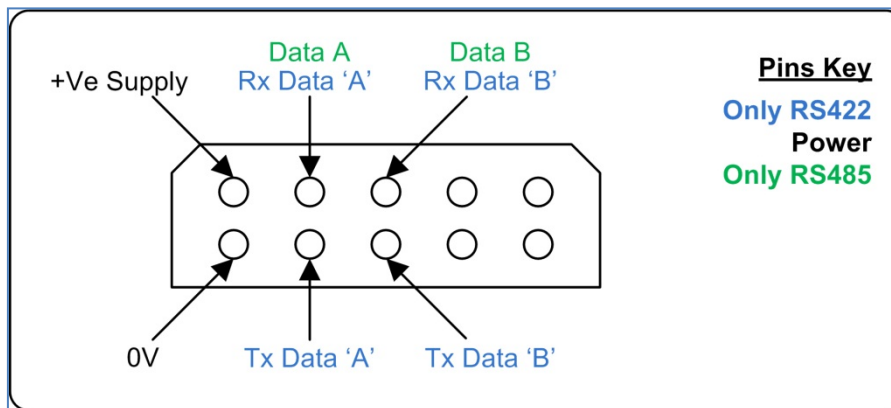
Part number:  Append required option

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

