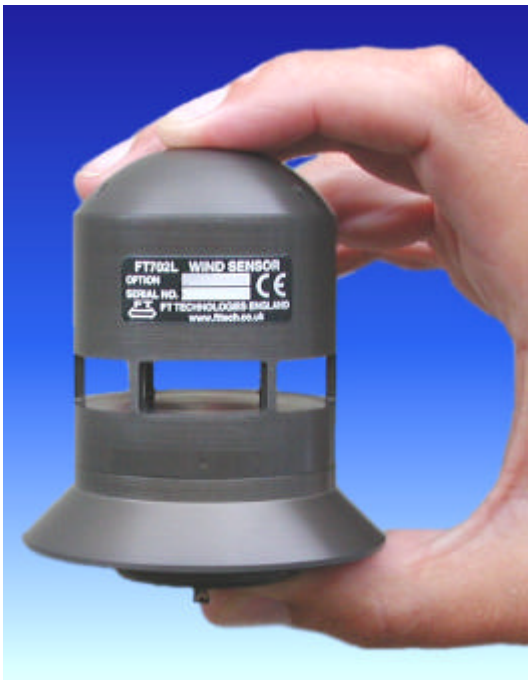
FT702LM Wind Sensor

with patented *Acoustic Resonance* sensing technology

Features

- **Ultra-compact wind speed and wind direction sensor**
- **Designed for direct integration into OEM equipment**
- **Solid-state design eliminates problems associated with mechanical wind sensors**
- **Optional electronic compass for automatic direction alignment**
- **Wide voltage supply range (3.5V to 30V)**
- **Low current operation (12mA)**
- **RS422 serial interface**
- **Simple flange mounting**
- **Advanced surface protection finish (PTFE)**
- **Specified performance maintained over time**
- **Built-in anti-icing heater**
- **Continuous self-diagnostic test function**
- **ISO9001 designed and manufactured**



Applications

- **OEM wind speed and wind direction capability for:**
  - *Portable meteorological stations*
  - *Fixed and mobile NBC detection equipment*
  - *Vehicle-based systems*
  - *COTS military equipment*
  - *Pollution monitoring equipment*

Description

The FT702LM is a solid-state wind sensor which uses a patented Acoustic Resonance airflow sensing technique to measure accurately both wind speed and direction.

The acoustic resonance sensing technique coupled with state-of-the-art signal processing gives the anemometer a wind speed range of 0 to 50m/s with a resolution of 0.1m/s.

Comprehensive measurement data (up to 5 readings per second) is available via a serial RS422 interface featuring full-duplex operation.

The highly compact and symmetrical arrangement of the acoustic resonant cavity results in a physically small (50mm x 78mm), lightweight (250g) and robust anemometer.

A hard anodised PTFE impregnated protection coating offers an easily cleaned and highly durable surface finish. When mounted on a suitable enclosure the FT702LM is environmentally sealed to IP66 allowing it to be used in a wide range of demanding applications.

The FT702LM is ideal for battery powered applications and is able to operate at supply voltages as low as 3.5V (@ 12mA typical current drain).

The FT702LM is available with an optional electronic compass module so that the wind direction output can be obtained relative either to magnetic North or, by using the declination angle function, to true North.

There is an integral heater to prevent icing. It can either be switched on and off as required or it can be automatically controlled by the sensor.

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FT702LM Specification[1]

Sensor Performance[2]

Measurement Principle	Acoustic Resonance (compensated against variations in temperature, pressure and humidity)
Wind speed Measurement	
Range	0-50m/s
Accuracy	±4% of reading
Resolution	0.1m/s
Zero Error	±0.1m/s
Wind Direction Measurement	
Range	0 to 360° [3]
Accuracy (FT702LM1)	±2° RMS
Accuracy (FT702LM2)	±5° RMS (with compass)
Resolution	1°

Data I/O

Interface	RS422 full duplex
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	3.5V to 30V dc @12mA (typical excluding data output drive current)
Heater	10V to 30V dc @ 2.5A (max)

Physical

Dimensions	50mm x 78mm (dia. x height)
Weight	250g
Material	Aluminium alloy, hard anodised & impregnated with PTFE
I/O Connector	10 way connector (p/n Harwin M80-8671022). 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 Range	-40° to +85°C
Humidity	0-100%
Water Ingress	Sealed to IP66 (when panel mounted using supplied gasket)
ESD Discharge Protection	
Supply Lines	200V (10/700µs waveform, 40? source)
I/O Lines	25kV (Mil Std 883C – Method 3015-6) 16kV (IEC 61000-4-2 Air) 9kV (IEC 61000-4-2 Contact)

Notes:

1. All specifications subject to change without notice
2. Performance measured with sensor mounted on extended horizontal surface
3. With integral compass module (FT702LM2) wind direction output is relative to North. Without compass module (FT702LM1) wind direction is relative to sensor datum

Ordering Information

Part number: **Append required option**

FT702LM_

1 = Compass not fitted

2 = Compass fitted

FT702LM Outline Drawing