



# FT702IS

## Intrinsically Safe Airflow Measurement System

with patented *Acoustic Resonance* sensing technology

### Features

- Intrinsically safe EEx ia IIC T5 certified airflow speed and direction sensing system
- Certified for gas and dust hazards:  
Gas: ATEX Group II, Category 1G, T5  
Dust: ATEX Group II, Category 1D, T90°C
- Airflow sensitivity of 0.1m/s or 0.01m/s
- Maintains specified performance over time
- No periodic maintenance or replacement of parts required
- Stainless steel sensor housing - certified for indoor and outdoor hazardous areas
- Straightforward installation – isolation included within the safety interface module
- Simple 2-wire data/power connection between sensor and safety interface
- No safety earth connection required
- Choice of output formats:  
2 x 4-20mA current loops  
RS422 Serial
- Continuous self-diagnostic test function
- Compact, unobtrusive solid-state design with no moving parts
- ISO9001 designed and manufactured

### Applications

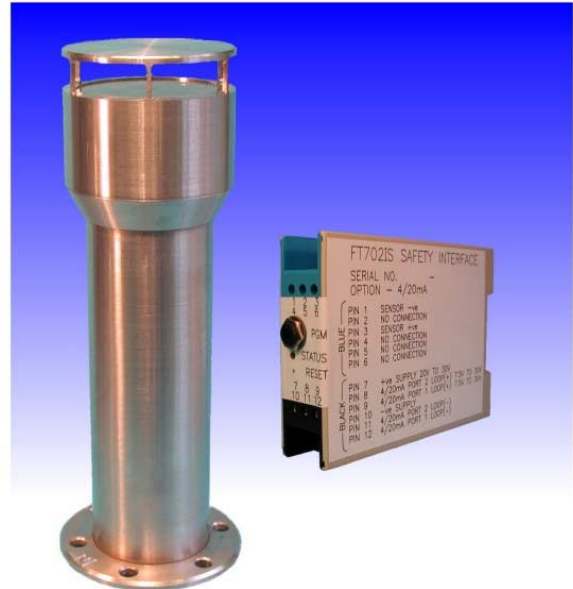
- Hazardous Area airflow and wind monitoring:-  
*industrial stack emissions*  
*tunnels and mines*  
*manufacturing process control*  
*paint spray booths*  
*offshore platforms, docks*  
*chemical dispersion monitoring*

### Description

The FT702IS Intrinsically Safe Airflow Measurement System is a self-contained solution for measuring airflow speed and direction in hazardous areas.

The system comprises a compact ultrasonic airflow sensor and a DIN rail mounting safety interface module for signal and power interconnection between the safe and hazardous areas.

Communication between the sensor and the safety interface module requires only a 2-wire connection with no safety earth necessary. The same 2 wires are used to supply power to the sensor which can be mounted up



to 1000 metres from the safety interface module. **No other items are required** to obtain either 4-20mA current loop or RS422 data outputs.

The FT702IS uses the latest patented ultrasonic airflow sensing technology to measure flow rates in the range 0.01m/s to 70m/s. Flow direction is simultaneously measured in the range 0°-360° with a resolution of 1°.

The cost of ownership of the FT702IS is low because maintenance down-time is significantly reduced as there are no moving parts to degrade or wear-out.

To maintain measurement integrity, the FT702IS performs continuous self-diagnostic tests during normal operation. System status information is signalled via an LED on the safety interface module as well as over the output data lines to the Users system.

Housed in a IP66 stainless steel enclosure the FT702IS sensor can be used in a wide range of operating environments and is able to withstand being cleaned with common solvents (contact the Factory for further information on suitable solvents).

The FT702IS airflow sensor is certified for use in both indoor and outdoor hazardous areas making the system suitable for industrial process control and monitoring applications as well as meteorological wind sensing.

Information furnished by FT Technologies Ltd is believed to be accurate and reliable. However no responsibility is assumed by FT Technologies Ltd for its use; nor for any infringements of patents or other rights of third parties which may result from its use. No licence is granted by implication or otherwise under any patent rights of FT Technologies Ltd.

# FT702IS Specification



## AIRFLOW SENSOR

MEASUREMENT PRINCIPLE	Acoustic Resonance (compensated against variations in temperature, pressure and humidity)
SPEED MEASUREMENT <sup>1</sup> (OPTION S)	RANGE: 0-70m/s, ACCURACY: ±4% +0.1m/s, RESOLUTION: 0.1m/s
(OPTION H)	RANGE: 0-70m/s, ACCURACY: ±4% +0.01m/s, RESOLUTION: 0.01m/s
DIRECTION MEASUREMENT <sup>1</sup>	RANGE: 0° to 360°, ACCURACY: ±3°, RESOLUTION: 1°
MEASUREMENT RATE	Up to 4 measurements per second
PHYSICAL	SIZE: 60mm x 162mm (dia. x height), WEIGHT: 500g, MATERIAL: Stainless steel
	MOUNTING METHOD: Flange, CONNECTOR: Multipole connector (p/n 62GB-57A12-10PN)
ENVIRONMENTAL	TEMPERATURE RANGE: -40° to +80° C, HUMIDITY: 0-100%,

## SAFETY INTERFACE

INTERFACE OPTIONS	RS422 serial (option A), Dual 4-20mA current loops (option D)
POWER SUPPLY	24V dc (20-30V allowable) @ 40mA
PHYSICAL	SIZE: 100mm x 20mm x 75mm (l x w x h), WEIGHT: 150g
	MOUNTING METHOD: DIN Rail, CONNECTION METHOD: Screw Terminals
FRONT PANEL FUNCTIONS	System Status LED, System RESET switch
USER PROGRAMMING PORT	TYPE: RS232 serial interface, CONNECTION METHOD: 3.5mm jack socket
ENVIRONMENTAL	TEMPERATURE RANGE: -40° to +80° C, HUMIDITY: 0-100%,

## CERTIFICATION

	CENELEC	FACTORY MUTUAL
SENSOR	EEx ia IIC T5  II 1G(T5) II 1D(T90°C)	Intrinsically safe circuit for: Class I, Zone 0, 1 & 2, AEx ia IIC T5 Class II, Division 1, Groups E, F & G For Outdoor NEMA 4X Hazardous & Indoor Hazardous (Classified) Locations
SAFETY INTERFACE MODULE	[EEx ia] IIC  II (1)GD	Intrinsically safe circuit for: Class I, Zone 0, 1 & 2 [AEx ia] IIC Class II, Division 1, Groups E, F & G For Indoor Non-Classified Locations

### NOTES:

1. Rectangular (vector) format airflow readings also available. Polar/rectangular format is selected via User Programming Port
2. All specifications subject to change without notice

## Ordering Information

