TELEDYNE
MONITOR LABS
Everywhereyoulook™

TES Thomson Environmental Systems

www.thomsongroup.com.au

ULTRAFLOW 150

ULTRASONIC GAS FLOW AND TEMPERATURE MONITOR

The state-of-the-art-signal processing and innovative modularity offers customers incomparable performance, accuracy, flexibility and a maintenance-free solution amongst all flow technologies.

Advantages

Reduced Maintenance

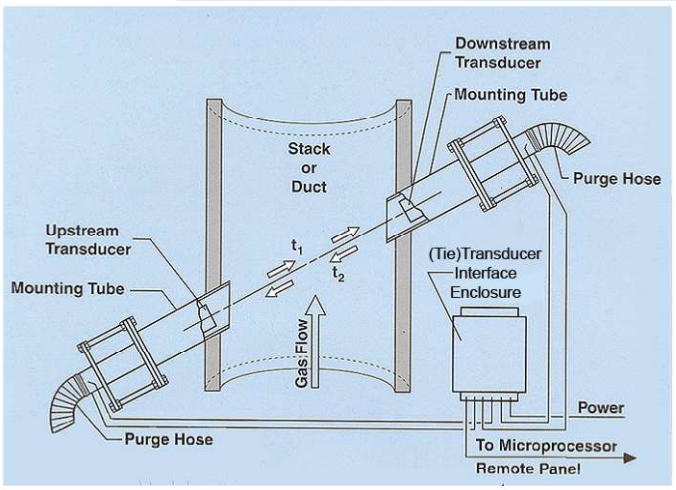
The transducers are non-intrusively mounted in teflon housing and are protected from flue gas and particulate by continuous purge air. This non-contacting method mitigates maintenance and ensures long term operation, unlike intrusive pitot, thermal systems, optical scintillation and reflective ultrasonic technology.

Response Time

This unit utilizes a Field Programmable Gate Array (FPGA) to determine the time of flight based on a proprietary peak finding algorithm. This enables response times of down to 5 seconds.

Easy to Use

The remote display features easy-to-use menu structures that make configuration of the flow monitor simple and easy without the need of a laptop.



The System

Transducer Assemblies

Electrical signals corresponding to the acoustic transmit and receive signals that are conveyed via the cables between the transducers and the transducer interface enclosure (TIE). The TIE houses the preamp/driver boards that amplify the received signals and transmit pulses while the two transducers alternately act as the transmitter and a receiver.

Enhanced Remote Panel

Provides ready access to all information needed for full use of the system.

Purge Air System

Keeps the transducer assemblies dry and clean with purge air.

Quad Probe Handling

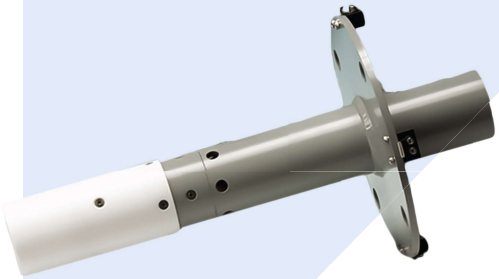
The quad-probe design rejects all pitch angle flow while signal processing improvements enable quicker response time and better accuracy. This probe design, along with the improved resolution and faster response time, makes it ideally suited for both small and large stacks.

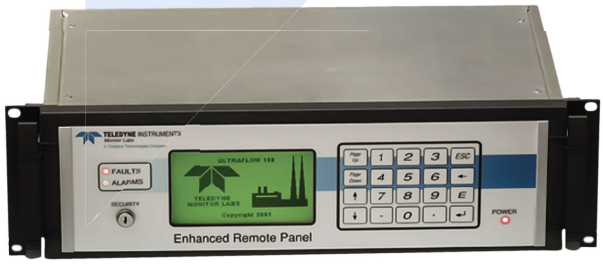
The "X" Pattern

The Ultraflow has the capability of measuring flow through either a single or dual set of transducers. A dual set is typically referred to as an "X" pattern and eliminates any adverse affects due to applications that exhibit a pitch flow. It enables nearly 100% availability and may institute redundancy.

How it Works

The UltraFlow 150 is a non-contacting gas flow and temperature monitor that makes a drift-free measurement across the center of the stack and calculates an average reading without contacting the gas stream. The system accurately measures the transit time of a tone burst through the gas stream in each direction to determine both the flow and temperature. Based on the cross-sectional area of the stack/duct, the flow velocity is converted to volumetric flow, which is measured independently from the temperature, density, viscosity, and particulate or condensate concentrations.





SPECIFICATIONS

Range	0-200 ft/sec (0-61 m/sec)	
Resolution	0-0.1 ft/sec (0.03 m/sec)	
Repeatability	± 0.3 ft/sec (±0.1 m/sec)	
Pressure	-30 to 20 inches of H_2O	
Power	TIE: Enhanced Remote Panel:	85-245 VAC, 47-63Hz, Single Phase, 40VA Max 1.25 Amp Time Delay, 250V, TR5 85-245 VAC, 47-63Hz, Single Phase, 30VA Max 2 Amp Time Delay, 250V 5x20mm
Temperature	TIE: Enhanced Remote Panel:	-40° to +140°F (-40° to 66°C) +32° to 104°F (0° to +40°C)
Relative Humidity	TIE: Enhanced Remote Panel:	5% to 100% humidity, condensing 0 to 95% non-condensing
Characteristics	Analog Outputs: Digital Inputs: Relay Outputs:	Number: 2 Output Type: 4-20mA with live 4mA zero, or 0-20mA w/o live zero Isolation Type: Optical & capacitive barriers; channel to channel, channel to circuit common and earth Number: 2 Modes: Isolated (5VDC-24VDC user supplied) and Non-isolated (dry contact) Number & Type: 2 SPST, N.O. or N.C. (Single Pole Single Throw, Normally Open or Normally Closed [jumper selectable]

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