**CODEL**
Monitoring Solutions

# TUNNELTECH 305 Series
Air Flow Monitor

**The TunnelTech 305 is an advanced technology air flow monitor developed to provide superb accuracy and reliability at a very competitive price.**

The **TunnelTech 305 Air Flow Monitor** is an essential part of any road or rail tunnel safety system. It monitors both the air flow and the direction of air flow inside a tunnel.  It also ensures that a tunnel ventilation system can provide sufficient clean air to protect tunnel users' health and allows for drivers to clearly see the road ahead.

The **TunnelTech 305** uses dual path ultrasonic technology to ensure high accuracy.  It has no moving parts which insures high reliability and minimal maintenance. The sensor is constructed using stainless steel for ultimate protection against the harsh environments found in tunnels.

Fully configurable 4-20mA analog outputs are provided along with digital alarm outputs.  A RS485 output is also available allowing data delivery via MODBUS protocol to a SCADA system located in a tunnel control center.



**Features**

> Single point ultrasonic measurement technology

> Uninterrupted by traffic flow and sound reflections

> Maintenance free operation with no moving parts

> Stainless steel construction

> Integral temperature measurement

**Applications**

> Road Tunnels
> Rail Tunnels

**MONITORING SOLUTIONS**
Complete source for all your Continuous Emissions Monitoring (CEMS) needs:

> Both Dilution and Extraction   CEMS systems

> Data Acquisition Systems (DAS)

> Flow Monitoring

> Opacity Monitoring

> Oxygen Monitoring Systems

> Particulate (PM) Monitoring

> Process Monitoring Systems

**Airflow Principle**: To measure airflow the TunnelTech 305 uses a pair of transceivers sensors.

A signal is sent simultaneously from both sensor positions TX1 and TX2, which due to the angle of the sensors is reflected off the underside of the bridge back to the opposite side receivers RX1 and RX2. When air flow is present across the device, the time of flight for the signal is either increased or decreased, depending upon the direction of the flow Vs. the direction of the traveling signal. This change of the time of flight is due to the airflow moving the air molecule in which the signal is traveling through, providing assistance or resistance. By measuring the time of flight of both the signals, then comparing the results, the velocity of the airflow can be calculated.



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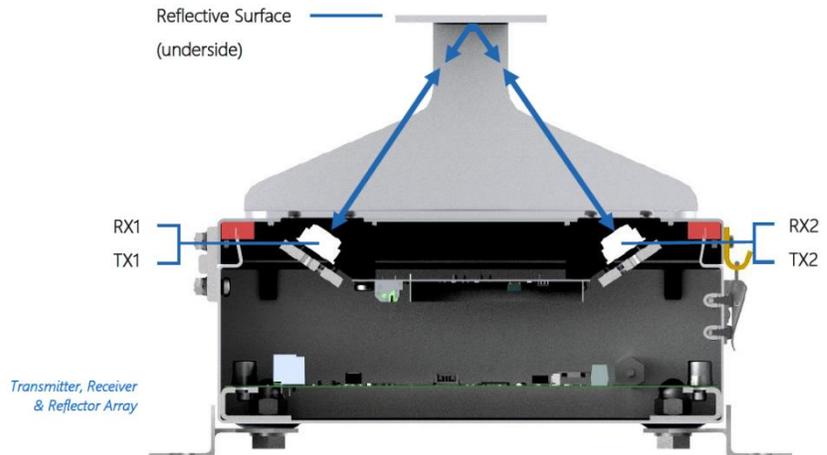
*TunnelTech Software* **is supplied with all CODEL Tunnel Sensor's as standard for the purpose of commissioning and maintenance of the sensors. With simple installation and set-up routine to any Windows based laptop PC, the program takes only minutes to load and configure and comes with a comprehensive on-board help feature.**

**Description**

**TunnelTech Software** enables the sensor's complete data and control functions to be accessed via a laptop from the Station Control unit (SCU) using an RS485 cable supplied with the sensor.

Zero calibrations and span checking can be initiated via the software after commissioning or a maintenance period.  Altering the initial factory-set current and relay output configuration can be carried out with ease.

For maintenance, the software includes short-term logging and trending of diagnostic data for fault analysis.

**Features**

> Easy installation and set-up
> Will operate on any windows-based operating system
> Allows sensor configuration settings to be adjusted
> Fault diagnostic logging for sensor troubleshooting

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# TUNNELTECH 305
## Technical Specifications

## Sensor Unit

| Measurement | Flow | Temperature |
|---|---|---|
| Flow Units | m/s (Meters per Second) | °C (Degrees Celsius) |
| Measurement Principle | Ultrasonic Time of Flight | PT100 |
| Measurement range (typical*) | -40 to +40 m/s | -20°C to +65°C |
| Accuracy | +/- 0.1m/sec @ 20m/s, 0.2m/s @ 20-40m/s | 0.5 °C |
| Response Time | Minimum of 1 second | Minimum of 1 second |
| Resolution | ±0.01 m/s | ±0.01 °C |
| Operating Temperature | -20°C to +65°C | |
| Power supply requirement | 9 to 36V DC, 1% pk-pk, 20 MHz bandwidth (3VA Max) from separate power supply | |
| Construction | Stainless Steel 316 to IP66 | |

## Compliances

| EMC | Designed to EN61326-1:2006 & EN50270:2006 |
|---|---|
| Low Voltage | Designed to 73/23/EEC directive compliant |

## Customer Interface

| Flow Analog output | 1 x 4-20mA current output, 500Ω max load, configurable range |
|---|---|
| Temperature Analog output | 1 x 4-20mA current output, 500Ω max load, configurable range |
| Relay Outputs | 2 x volt-free SP contacts, 60V 500mA max, for flow direction and alarm |
| Communications Port | RS485 for local communication with laptop or MODBUS RTU protocol |

## Optional Items

| Power Supply | 90/264V AC, 47-63Hz, 60W 12V DC @5A (or 24V DC @ 2.5A) |
|---|---|
| Serial Data | RS485 MODBUS Protocol |

**Austin, TX | Indianapolis, IN | Pittsburgh, PA | Pensacola, FL | Casper, WY**

### Contact Us
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