The TunnelTech 700 is a low cost precision road & rail tunnel monitor using well proven technology providing accurate and rapid results.

The TunnelTech 700 Air Quality Monitor is an essential part of any road or rail tunnel safety system. Firstly, it monitors the atmosphere within the tunnel and ensures that the tunnel ventilation system provides sufficient clean air to protect tunnel user’s health and for drivers to clearly see the road ahead.

The TunnelTech 700 analyzer uses electrochemical cell technology to determine CO, NO & NO₂ concentrations, and optical attenuation to measure visibility levels. As there are no moving parts, reliability levels are very high and maintenance requirements are low. Visibility sight tubes are utilized to ensure that airborne dust and contaminants do not reach the optical windows and cause drift.

Features
- Measure CO, NO, NO₂ & Visibility in one compact sensor
- Advanced electrochemical cell technology
- High resolution measurement
- Minimal maintenance requirements
- Available in 316 Stainless Steel

Applications:
- Rail Road Tunnels
- Road 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
TUNNELTECH 700 Series

TUNNELTECH SOFTWARE

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 (using a CODEL sealed Check Cell or Flow Through Check Cell) 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
> User friendly alignment Mode to aid initial set-up and optical alignment
> Allows sensor configuration settings to be adjusted
> Fault diagnostic logging for sensor troubleshooting
### Sensor Unit

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Carbon Monoxide (CO) TunnelTech 701, 702, 703, 706, 707</th>
<th>Nitric Oxide (NO) TunnelTech 701, 702, 704, 707</th>
<th>Nitric Dioxide (NO₂) TunnelTech 701, 705, 706, 707</th>
<th>Visibility TunnelTech 700 Series - all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement Technique</td>
<td>Electrochemical Cell</td>
<td>LED Transmittivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement range (typical)</td>
<td>0 – 300 ppm</td>
<td>0 – 5/10 ppm</td>
<td>0 - 0.015 m⁻¹</td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>+/- 2 ppm or 2% span</td>
<td>+/- 2 ppm or 2% span</td>
<td>100 ppb</td>
<td>+/- 0.002 m⁻¹</td>
</tr>
<tr>
<td>Resolution</td>
<td>+/- 1 ppm</td>
<td>1 ppm</td>
<td>50 ppb</td>
<td>+/- 0.001 m⁻¹</td>
</tr>
<tr>
<td>Response Time</td>
<td>30 Seconds</td>
<td>30 Seconds</td>
<td>30 Seconds</td>
<td>10s - 2min Selectable</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>-4°F to 122°F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>24V DC, 30 VA from separate power supply</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>- Corrosion resistant epoxy coated aluminum housing sealed to IP66</td>
<td>- Optional 316 Stainless Steel and 316 Stainless Steel TI for heads &amp; Brackets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calibration</td>
<td>Automatic zero calibration - manual span check</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Path Length</td>
<td>3m (6m folded beam)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring units</td>
<td>ppm for CO &amp; NO, m⁻³ or m for visibility, ppb for NO₂</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas Species Options</td>
<td>Single or multi-gas measurements available: CO, NO₂, NO &amp; Visibility</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Customer Interface

- **Serial Data**: Bi-directional RS485 MODBUS Protocol
- **Display**: 32 Character alpha-numeric back-lit LCD
- **Keypad**: 4-key soft-touch entry

### Optional Items

- **Power Supply**: 90/264V AC, 47-63Hz, (24V DC @ 2.5A)
- **Tunnel Display Unit**: For local display of sensors outputs
- **Analog Outputs**: 2 or 4 x 4-20mA current outputs as standard, isolated, 5000 load max, fully configurable
- **Relay Outputs**: 2 or 4 volt-free SPCO contacts, 50V, 1A max, configurable as alarm contacts
- **Check Filter**: Visibility span check optical cell available in different values
- **Span Check**: NO, NO₂, CO span check using bottled audit gases

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**CONTACT**

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