

CODEL

A Forbes Marshall Company

TunnelTech 500 Series - CO, NO & NO₂ Air Quality Monitor

A cost-effective precision road & rail tunnel monitor using well-proven technology providing accurate and rapid results.

The TunnelTech 500 is an advanced technology analyser which gives complete flexibility in the choice of measurement options whilst delivering superb accuracy and reliability at a very competitive price.



- ✓ Measure CO, NO & NO₂ in one compact sensor
- ✓ Advanced electrochemical cell technology
- ✓ Integrated display and keypad, no external computer required
- ✓ Class leading NO₂ Measurement
- ✓ Minimal maintenance requirements
- ✓ Easy to calibrate

ISO 9001:2015

Quality Certification

ISO 14001:2015

Environmental Certification

Monitoring Solutions

**TunnelTech**

www.codel.co.uk

Designed exclusively for road and rail tunnel applications building on years of experience and proven technology.

Uses the latest Electrochemical Cell Technology for the measurement of CO, NO and NO₂.



CO, NO & NO₂ in one compact tunnel sensor

Class leading accuracy, repeatability and resolution using advanced electrochemical cell technology

Integrated display allows for full setup and configuration of parameters without the use of a computer

Easy to calibrate and requires minimal maintenance

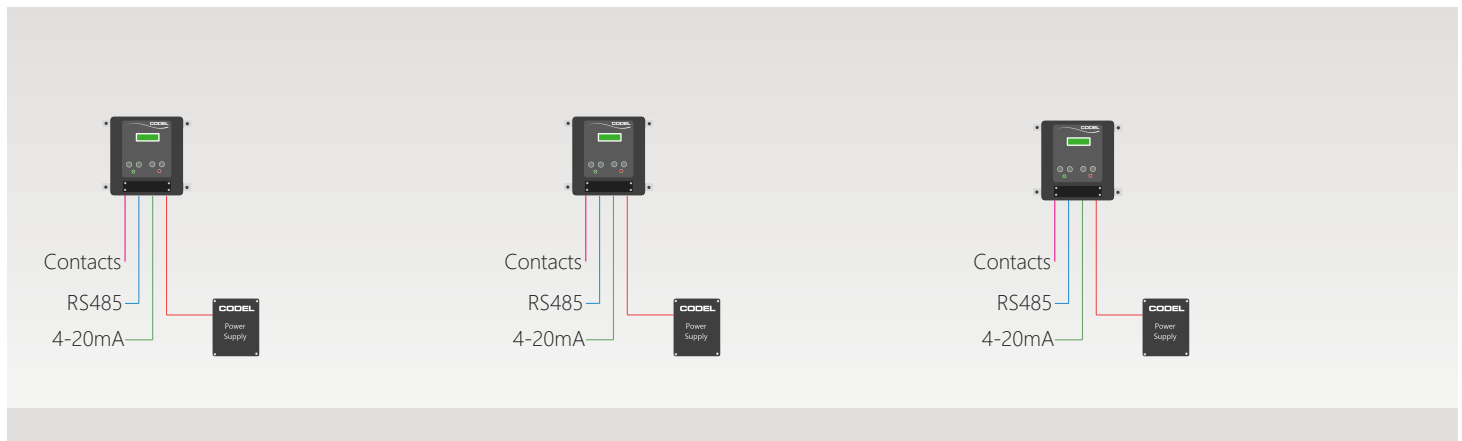
The TunnelTech 500 Air Quality Monitor, is an essential part of any road or rail tunnel safety system. Firstly, it monitors the atmosphere within the tunnel and ensures that the tunnel ventilation system provides sufficient clean air to protect tunnel users health and for drivers to clearly see the road ahead.

The TunnelTech 500 analyser electrochemical cell technology determines CO, NO & NO₂ concentrations. As there are no moving parts, reliability levels are very high and maintenance requirements are low.

Optional 4-20mA and contact outputs are available to be mounted either directly in the sensor heads or in the TunnelTech remote display panel providing flexibility of installation and reduced cabling costs.

In addition, IP65 rated enclosures are constructed to resist attack from aggressive gases, road salt and the effects of heat.

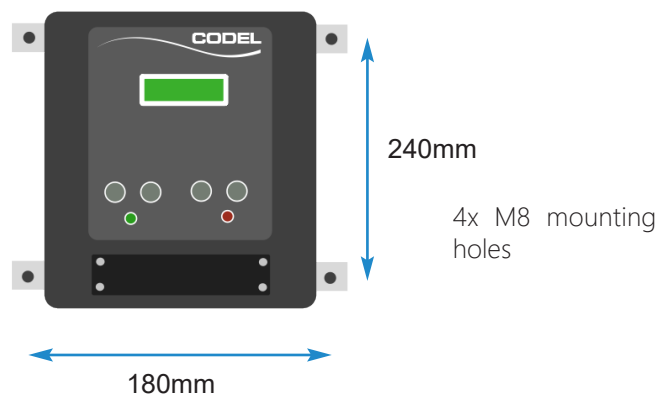
System Layout - Stand-alone systems



The TunnelTech 500 Series consist of varying configurations such as:

- TunnelTech 501 : CO · NO · NO₂
- TunnelTech 502 : CO · NO
- TunnelTech 503 : CO
- TunnelTech 504 : NO
- TunnelTech 505 : NO₂
- TunnelTech 506 : CO · NO₂
- TunnelTech 507 : NO · NO₂

Easy mounting arrangement for a simple installation



Technical Specification

Sensor Unit

Gas Species Options	Single or multi-gas measurements available: CO, NO ₂ & NO		
Measuring units	ppm for CO & NO, PPb for NO ₂		
Calibration	Manual zero and span check		
Measurement	Carbon Monoxide (CO)	Nitric Oxide (NO)	Nitric Dioxide (NO₂)
Measurement Technique	Electrochemical Cell	Electrochemical Cell	Electrochemical Cell
Measurement Range (typical)	0 - 300ppm	0 - 30ppm	0 - 5/10ppm
Accuracy	1ppm	1ppm	< 100ppb
Resolution	< 0.1ppm	< 0.1ppm	1ppb
Response Time	< 1 Minute	< 1 Minute	< 1 Minute
Detection Limit	< 2ppm	< 2ppm	10ppb
Zero Drift	< 1ppm per month	< 1ppm per month	< 0.05ppm per month
Measurement Drift	< 5% per year	< 5% per year	< 5% per year
Calibration Flowrate	0.5 l/mn		
Power Supply	24V DC, 30 VA from separate power supply.		
Ambient Conditions	-20°C to +55°C		

Compliances

EMC	EN61326-1:2006 & EN50270:2006 directive compliant
Low Voltage	73/23/EEC directive compliant
IK Code	IK07 to EN62262
Enclosure IP	Corrosion resistant epoxy coated aluminium housing sealed to IP66 (EN60529). S/S version available in 316L (1.4404) or Ti (1.4571) to IP6K9K (EN60529).

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
Analogue Outputs	2 or 4 x 4-20mA current outputs as standard, isolated, 500Ω load max, fully configurable
Relay Outputs	2 or 4 x volt-free SPCO contacts, 50V, 1A max, configurable as alarm contacts
Span Check	NO, NO ₂ , CO span check using bottled audit gases

CODEL International LTD
Unit 4
Station Road
Bakewell, Derbyshire
DE45 1GE

Tel : +44 (0)1629 814351
Fax : +44 (0)1629 566307
Web : www.codel.co.uk
email : Sales@codel.co.uk



Distributor