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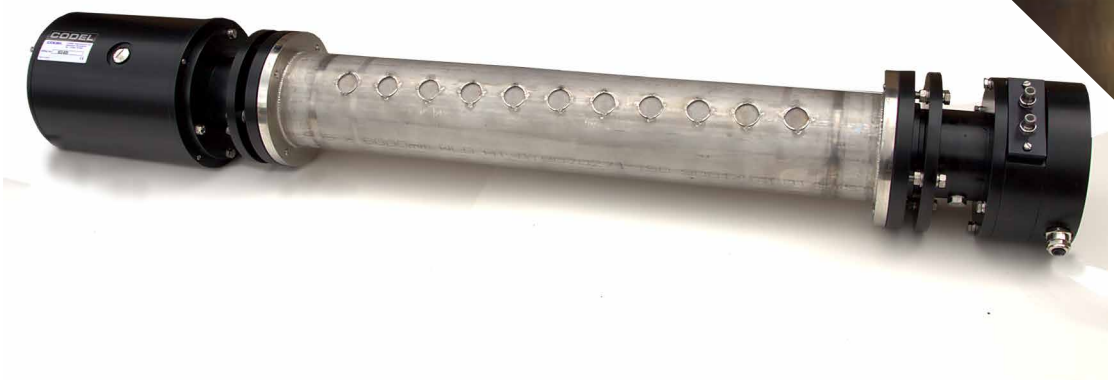
Product Brochure

TunnelTech 205



Continuous measurement of NO2 in road tunnels

ISO 9001:2015
Quality Certification

ISO 14001:2015
Environmental Certification

Monitoring Solutions

TunnelTech

www.codel.co.uk

NO2 is produced naturally by the combustion processes within the internal combustion engine and is emitted from the exhausts of all types of vehicles. NO2 is also particularly toxic and prolonged exposure to levels as low as a few hundred parts per billion will have a detrimental effect on human health. There is a growing international requirement to measure and limit the levels of NO2 within road tunnels to reduce the exposure of tunnel users to this toxic gas.

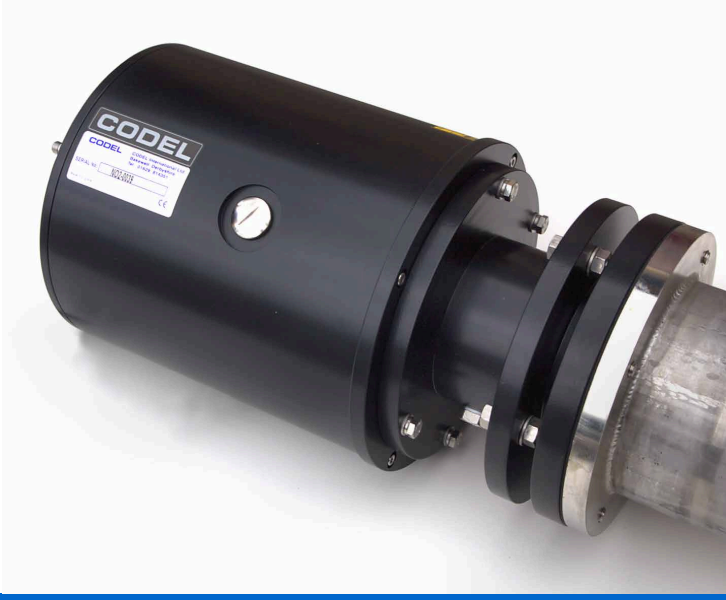
The TunnelTech 205 NO2 Air Quality Monitor utilises a very accurate measurement technique as UV and blue light are highly absorbed by NO2 . TheTunnelTech 205 is a precision transmissometer which measures the attenuation of UV and blue light by NO2 in the tunnel atmosphere. The light source is a near infrared LED where the interfering effects of particulate in the atmosphere are eliminated by making the measurement within a metre long diffusion cell into which the atmospheric gases, but not the particulate, can freely diffuse.

The result is a very accurate and stable sensor having no moving components and requiring no maintenance throughout its lifetime. Even the optic surfaces remain clean because they are contained within the diffusion cell which process exerts no forces on particulate to force them into the filter pores.

Fully configurable analogue and alarm outputs are generated inside the Station Control Unit (SCU) which are fully configurable via the supplied CODEL TunnelTech Software. In addition there is a choice of either RS232 or RS485 outputs which can be utilised to deliver MODBUS protocol to a SCADA system located in the tunnel control centre. CODEL's tunnel sensor range is further extended by additional sensors for the measurement of NO2 and tunnel airflow.

The TunnelTech 205

- **Easy installation and set-up**
- **Will operate on any Winows 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**



- High accuracy down to low ppb levels
- Minimal maintenance requirements, low cost of ownership
- Rugged, corrosion resistant construction
- PC based software for commissioning & maintenance

Technical Specification

Sensor Unit

Measurement	NO2 - Nitrogen Dioxide
Units	ppb (Parts Per Billion)
Measurement Principle	Specific absorption of blue light
Light Source	Blue LED
Measurement Path	1m Chamber (2m folded beam)
Measurement range	0 - 1ppm standard, configurable up to 0m - 5ppm
Accuracy	+/- 0.04ppm
Detection Limit	+/- 0.01ppm
Linearity	Fully linear
Drift	No drift as there is a zero calibration every 24 hours
Response Time	Less than 200 seconds
Data Refresh	1 second
Ambient Temperature	-20 to +50o
Power Supply	48V DC, 50VA from Station Control Unit (SCU)
Construction	Measurement Chamber - 316L Stainless Steel, Sensor - Epoxy coated aluminium

Compliances

IP Rating	IP67
EMC	89/336/EEC directive compliant
Low Voltage	73/23/EEC diective compliant

Communications & Outputs

Analogue Outputs	12V DC @1.5A
Logic	2 x volt-free contacts SPCO, 0.25A @ 125V AC, 1A @30V DC, 0.25A @ 100V DC
Communications Port	Via CODEL serial digital data bus
Power	Mains 110/230 VAC single phase 50/60 hz
Flow Through Check Cell	NO2 span check using bottled audit gases
Tunnel Display Unit	Tunnel Display Unit
Serial Data	RS485 Modbus Protocol

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