

# CODEL

A Forbes Marshall Company

## Product Brochure

### TunnelTech 102



The TunnelTech Cold Smoke Monitor detects smoke from a fire to rapidly warn the operator of the hazard.

ISO 9001:2015

Quality Certification

ISO 14001:2015

Environmental Certification

Monitoring Solutions



[www.codel.co.uk](http://www.codel.co.uk)

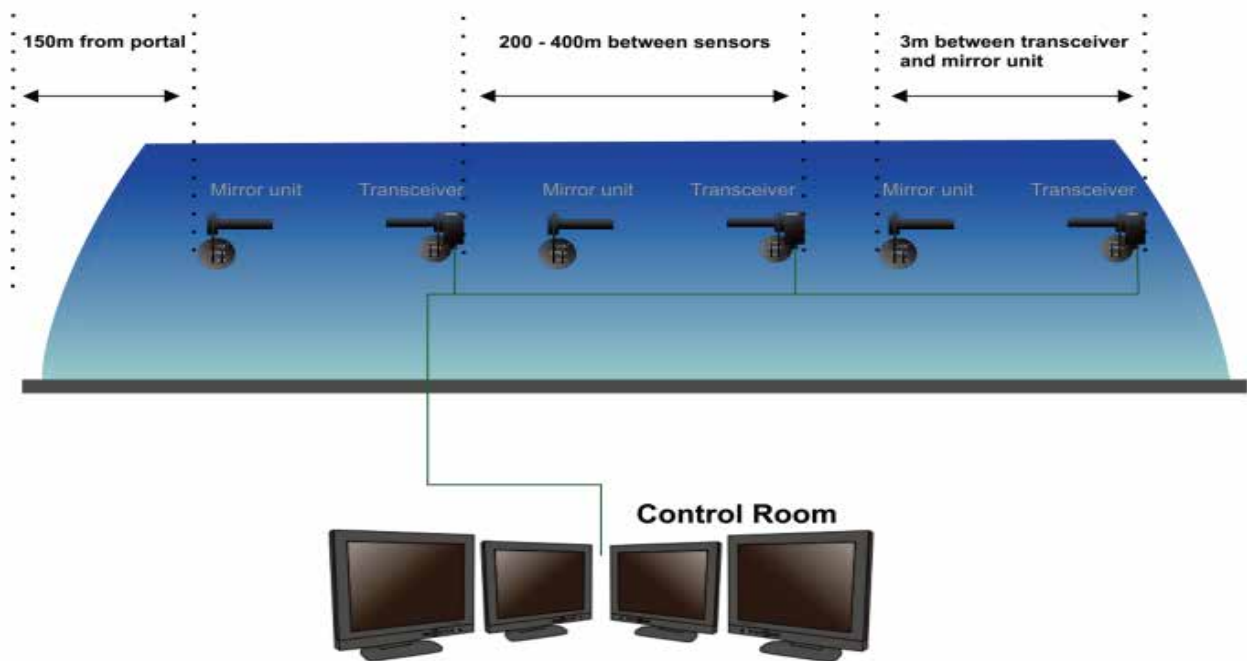
The TunnelTech 102 Cold Smoke Monitor (CSM), is an essential part of any road (or rail) tunnel safety system, the CODEL CSM detects smoke from a fire to rapidly warn the operator of the hazard.

Secondly, used in combination with other TunnelTech 101 VIS monitors, the operator can quickly detect the focus of the fire if it is also equipped with the optional PT 101 temperature sensor to accurately measure ambient air temperature in a range of -15 to 105°C.

Fully configurable analogue and alarm outputs are exportable to the tunnel data acquisition system to provide real-time cold smoke data.

This data is also exported via the RS485 serial port along with the temperature data. This link delivers MODBUS RTU encoded data to a SCADA system located in the tunnel control centre and/or a local display module. In addition, the IP65 rated enclosure is constructed of a stainless steel and titanium alloy to resist attack from aggressive gases and road salt and to resist the effects of extreme heat.

In areas where extremely low temperatures may be experienced, optional transmitter and receiver insulation jackets are available to reduce the effect. Another option is a local display, driven from the RS485 output which enables operators to view output data, diagnostics and alarm setpoints.



- ▶ No moving components providing maintenance free operation
- ▶ PC based software for commissioning and maintenance
- ▶ Analogue 420mA output

- ▶ Stainless steel enclosures to resist attack from aggressive atmosphere
- ▶ Optional, integral ambient temperature measurement for the location of fires
- ▶ Optional Modbus RTU serial outputs

## Technical Specification

### Sensor Unit

Measurement	Visibility
Units	K factor(M-1) or meters
Measurement Technique	Transmissometry (de Beer Lambert Law)
Measurement Range (Typical)	0.020 - 0.070m-1
Accuracy	+/- 0.0002 m-1
Resolution	+/- 0.0001 m-1
Averaging Time	From 10 seconds to 2 minutes
Ambient Temperature Range	-20°C to +50°C
Temperature Sensor (Optional)	PT100, -15°C to +105°C
Power Supply	24V DC
Construction	Stainless Steel 316 (Optional 316 Ti)
Power Requirements	24V DC

### Compliances

EMC	EN61326-1:2006 & EN50270:2006 directive compliant
Low Voltage	73/23/EEC directive compliant
Protection Class	IP65
Tunnel Regulations	RABT 2006, RVS 09.02.22 2007

### Communications & Outputs

Analogue outputs	1 x 4-20mA isolated current output, 500Ω maximum load, fully configurable through TunnelMaster software.
Relay Outputs	1 x volt-free SPCO contacts, 50V, 1A max, configurable as alarm contacts
Communications Port	RS485 - Modbus RTU

### Optional Items

Power Supply	110/220VAC, 50Hz +/-10%, 60W @ 24V
Optical Density Filter	For manual calibrations
Insulated Sensor Jacket	For low temperature applications

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