

Sentro 1 Universal Gas Detector

Safety monitoring of toxic and flammable gases, in heavy-duty applications

Environments: Mining • Tunnelling • Storage Areas • Process Plants • Utilities • Oil & Gas

Features

- High accuracy gas detector with calibrated input sensing modules to detect a range of Toxic and Flammable gases
- Module can be changed out in seconds for easy calibration and maintenance
- Choice of output signals:
 - 0.4 to 2 V analogue
 - 4 to 20 mA analogue
 - 5 to 15 Hz analogue
 - Dual relay contacts
 - RS485 addressable Modbus datacomms
- Large backlit LCD readout provides clear sensor information and diagnostic data
- Auto ZERO and SPAN calibration with simple display instructions
- Two programmable setpoints for inbuilt visual alarms
- High strength, dual wall moulded housing for maximum impact protection
- Easy access terminal chamber with large, vibration secure, terminals for connecting heavy plant cables
- Dust and waterproof to IP65 with full EMC conformity
- Automatic calculation of STEL and TWA limits
- Certified for use in hazardous areas



Sentro eModule

Pre-calibrated plug-in sensing modules can be changed for rapid calibration and servicing - even with the power applied.

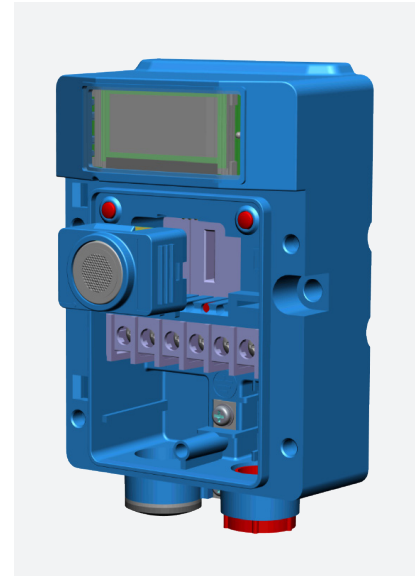
Universal Sensing

The heart of the Sentro 1 is the Sentro eModule - an intelligent standardised gas sensing module that detects a choice of environmental safety conditions. Dynamic data is stored within the eModule, together with the condition of the gas sensing element and its service history.

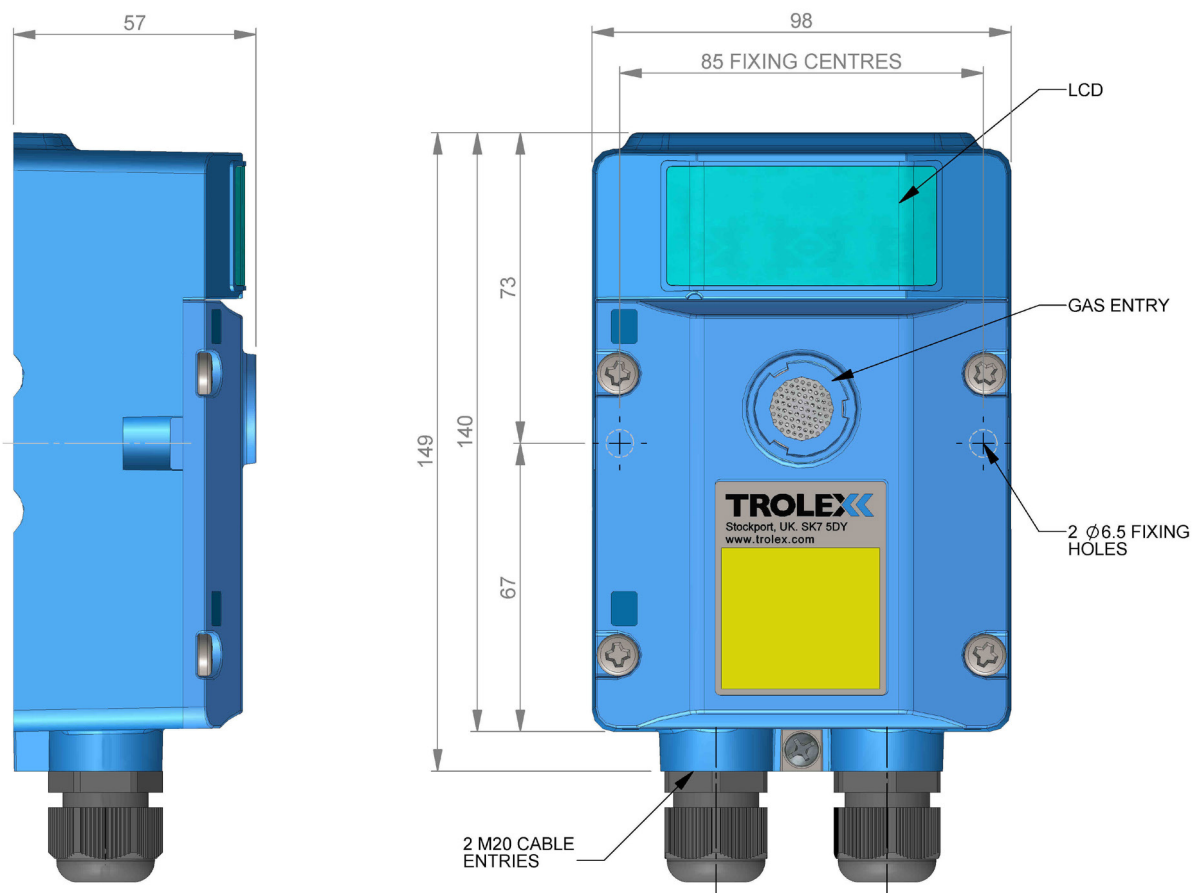
The modules are already calibrated so they can be substituted at any time with a replacement module. Each eModule retains its calibration data and is automatically recognised by Sentro when the eModule is inserted. This significantly simplifies calibration and maintenance and the module can be changed, even with the power applied. Up to 20 insert codes can be configured when it is necessary to ensure that the same type of Sentro eModule is always used.

TWA and STEL

Selected toxic gas sensing modules are equipped with automatic Time Weighted Average (TWA) and Short Term Exposure Limit (STEL) calculation, in accordance with COSHH recommendations.







Dimensions



Toxic and Flammable Gas Sensing

A Choice of High Accuracy Sensing Technologies

 	Electrochemical cells for toxic gas detection Selected models are equipped with TWA and STEL capability	Carbon Monoxide	CO	0 to 50 ppm 0 to 250 ppm 0 to 500 ppm 0 to 1000 ppm	TWA/STEL	TX6350.xx.250.50 TX6350.xx.250.250 TX6350.xx.250.500 TX6350.xx.250.1000
		Hydrogen Sulphide	H ₂ S	0 to 50 ppm	TWA/STEL	TX6350.xx.251
		Sulphur Dioxide	SO ₂	0 to 20 ppm	TWA/STEL	TX6350.xx.252
		Nitrogen Dioxide	NO ₂	0 to 20 ppm	TWA/STEL	TX6350.xx.254
		Oxygen	O ₂	0 to 25% v/v	-	TX6350.xx.257
		Nitric Oxide	NO	0 to 50 ppm	TWA/STEL	TX6350.xx.259
		Hydrogen	H ₂	0 to 1000 ppm	-	TX6350.xx.261
	Poison resistant catalytic combustion cells for most flammable gases	Methane	CH ₄	0 to 100% LEL	-	TX6350.xx.240
		Methane	CH ₄	0 to 5% v/v	-	TX6350.xx.244
		Methane	CH ₄	0 to 4% v/v	-	TX6350.xx.246
	Infrared technology provides long-term stability, minimising calibration and maintenance	Methane	CH ₄	0 to 100% LEL	-	TX6350.xx.245
		Methane	CH ₄	0 to 5% v/v	-	TX6350.xx.243
		Methane	CH ₄	0 to 100% v/v	-	TX6350.xx.242
		Carbon Dioxide	CO ₂	0 to 2% v/v	-	TX6350.xx.253
		Carbon Dioxide	CO ₂	0 to 5% v/v	-	TX6350.xx.278
		Carbon Dioxide	CO ₂	0 to 100% v/v	-	TX6350.xx.279

Other gases and ranges are available. Please contact Trolex for further information.

NB. Replace xx with 01 for Group 1 Modules and with 03 for General Purpose Modules.

TX6351 • TX6352 Data Sheet







Universal Application

The unique design of Sentro 1 means that there is a solution for practically every field of application. Equipped with a choice of output signal formats, so ensuring convenient compatibility with most system requirements in differing industry sectors.

Mining and Tunnelling • Intrinsically Safe • Ex ia M1 • TX6351.01 • TX6352.01

Coal Mining • Tunnelling • Water Utilities • Telecommunications

Output Signal Options





TX6351	3/4 wire. Remote powered - 4 to 20 mA	
Supply voltage:	10 to 14 V	
Max. line load:	220 R maximum @ 12 V dc	
Type of sensor:	Toxic Flammable Infrared	
Supply current @ 12 V:	48 mA 70 mA 91 mA	
TX6351	3/4 wire. Remote powered - Dual output contacts	
Supply voltage:	10 to 14 V	
Type of sensor:	Toxic Flammable Infrared	
Supply current @ 12 V:	60 mA 85 mA 105 mA	
TX6351	3/4 wire. Remote powered - RS485 datacomms output	
Supply voltage:	10 to 14 V	
Line:	Modbus protocol	
Type of sensor:	Toxic Flammable Infrared	
Supply current @ 12 V:	25 mA 60 mA 80 mA	
TX6351	3/4 wire. Remote powered - 0.4 to 2 V analogue output	
Supply voltage:	10 to 14 V	
Min. line load:	10 KR	
Type of sensor:	Toxic Flammable Infrared	
Supply current @ 12 V:	20 mA 60 mA 80 mA	
TX6351	3/4 wire. Remote powered - 5 to 15 Hz output	
Supply voltage:	10 to 14 V	
Max. line load:	Opto isolated to 2 mA maximum	
Type of sensor:	Toxic Flammable Infrared	
Supply current @ 12 V:	20 mA 60 mA 80 mA	
TX6352	2 wire. Remote powered - 4 to 20 mA analogue output	
Supply voltage:	10 to 14 V	
Max. line load:	90 R	
Type of sensor:	Toxic only	

TX6351 • TX6352 Data Sheet

General Purpose • Non-hazardous Areas • TX6351.03 • TX6352.03

Storage Areas • Process Plants • Water & Power Utilities • Car Parks

Output Signal Options

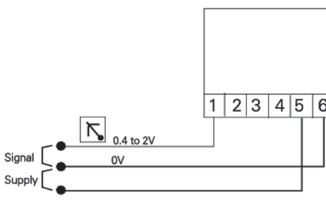
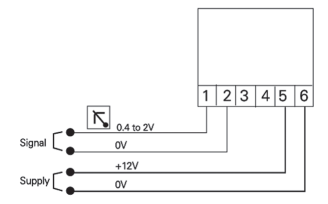
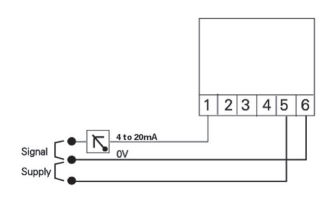
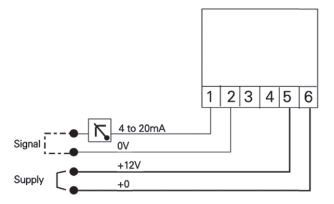
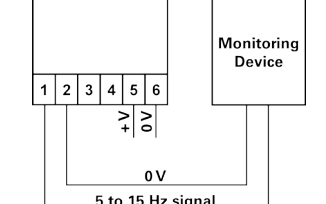
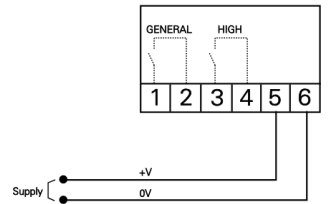
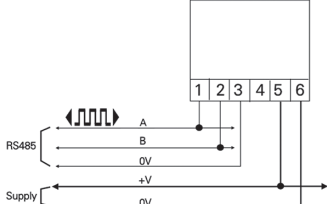
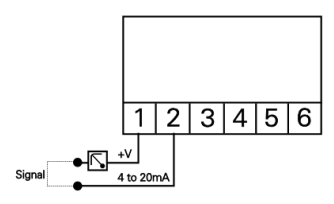
TX6351	3/4 wire. Remote powered - 4 to 20 mA analogue output			
Supply voltage:	18 to 28 V			
Max. line load:	500 R at 24 V			
Type of sensor:	Toxic	Flammable	Infrared	
Supply current:	40 mA	40 mA	60 mA	
TX6351	3/4 wire. Remote powered - Dual output contacts			
Supply voltage:	20 to 28 V			
Type of sensor:	Toxic	Flammable	Infrared	
Supply current:	35 mA	45 mA	60 mA	
TX6351	3/4 wire. Remote powered - RS485 datacomms output			
Supply voltage:	14 to 28 V			
Line:	Modbus protocol			
Type of sensor:	Toxic	Flammable	Infrared	
Supply current:	40 mA	40 mA	60 mA	
TX6352	2 wire. Line powered - 4 to 20 mA analogue output			
Supply voltage:	18 to 28 V			
Max. Line Load:	300 R			
Type of Sensor:	Toxic only			

TX6351 • TX6352 Data Sheet

Technical Data

Operating Temperature Range:	-20 to +40°C
Humidity:	90% RH, non-condensing
Storage Temperature Limits:	-20 to +60°C
Housing Materials:	Reinforced polymer EMC protected and proof against surface electrostatic charge
Protection Classification:	Dust and waterproof to IP65. Gas port: IP54
Weight:	550 g
Mounting:	Two 6.5 mm diameter fixing holes (Unistrut 6946 compatible)
Visual Alarm:	Optional built-in visual alarms can be setup to operate at two adjustable setpoints

Connections

<p>TX6351...11 0.4 to 2 V • 3 wire</p> 	<p>TX6351...11 0.4 to 2 V • 4 wire</p> 	<p>TX6351...12 4 to 20 mA • 3 wire</p> 	<p>TX6351...12 4 to 20 mA • 4 wire</p> 
<p>A standard 0.4 to 2 V output signal, operating with a 12 V dc power source</p>		<p>A standard 4 to 20 mA output signal, operating with a 12 or 24 V dc power source</p>	
<p>TX6351...13 5 to 15 Hz • 3/4 wire</p> 	<p>TX6351...14 Contacts</p> 	<p>TX6351...15 RS485 Modbus Datacomms</p> 	<p>TX6352...12 4 to 20 mA • Line Powered</p> 
<p>5 to 15 Hz output - a pull up resistor may be required at the monitoring device</p>	<p>Dual independent output contacts for remote signalling and control.</p>	<p>RS485 serial data output with analogue signal intelligence and addressable data. Use in conjunction with a PC for data display and setpoint alarm warnings. Up to 32 sensors can communicate with the master unit on a single data cable.</p>	<p>A standard 2-wire 4 to 20 mA output signal. For use with Toxic Gas Sentro eModules only.</p>



TX6351 • TX6352

Data Sheet

Order Reference

Sentro 1 Universal Gas Detector

4-wire connection	Mining - Ex		General Purpose	
	Toxic	Flammable	Toxic	Flammable
0.4 to 2 V output	TX6351.01.11.301	TX6351.01.11.201	-	-
4 to 20 mA output	TX6351.01.12.301	TX6351.01.12.201	TX6351.03.12.301	TX6351.03.12.201
5 to 15 Hz output	TX6351.01.13.301	TX6351.01.13.201	-	-
Dual relay contact output	TX6351.01.14.301	TX6351.01.14.201	TX6351.03.14.301	TX6351.03.14.201
RS485 output	TX6351.01.15.301	TX6351.01.15.201	TX6351.03.15.301	TX6351.03.15.201

Please specify Normally Open (.NO) or Normally Closed (.NC) when ordering the Dual relay contact output variant

2-wire, line powered <i>For use with Toxic Gas Sentro eModules only</i>	Mining - Ex	General Purpose
4 to 20 mA output	TX6352.01.12	TX6352.03.12

Please order Sentro eModules separately (see pages 2 & 3) - TX6350.XXX



TX6351 • TX6352 Data Sheet

Certification



Europe:

Certified intrinsically safe for use in M1 hazardous areas:

TX635x.01.xx

Ex Certificate Number: SIRA 09ATEX2352X

I M1 Ex ia I Ma



ATEX directive 94/9/EC

EMC directive 2004/108/EC



International (IECEX):

Certified intrinsically safe for use in Ma hazardous areas:

TX635x.01.xx

Ex Certificate number: IECEX SIR 09.0147X

Ex ia I Ma



Russia (GOST-R):

TX6351/2.01

Ex Certificate number: POCC GB.ME92. B02587

PO Ex ia I X



South Africa (MASC):

TX6351/2.01

Ex Certificate number: MASC M/11-419

Ex ia I Ma

Performance Requirements detectors for flammable gases

TX6350.01.240 Methane 0 to 100 % LEL and TX6350.01.246

EN60079-29-1

Methane 0 to 5 %v/v, when mounted in the suitable Sentro Gas Detector.

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