Ribble Enviro

…everything gas detection

Data Sheet

TX6351 TX6352
Sentro 1
Universal Gas Detector

⟫ TX6351 TX6352 Data Sheet

Sentro 1 Universal Gas Detector
Safety monitoring of toxic and flammable gases in heavy-duty applications.

Environments: Mining • Tunnelling

Features

❯ High accuracy gas detector with calibrated input sensing modules to detect a range of Toxic and Flammable gases

❯ eModule can be changed out in seconds for easy calibration and maintenance

❯ Choice of output signals:
 - 0.4 to 2 V analogue/2 to 10V analogue
 - 4 to 20 mA 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.

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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.

High accuracy sensing technology
Sentro eModules

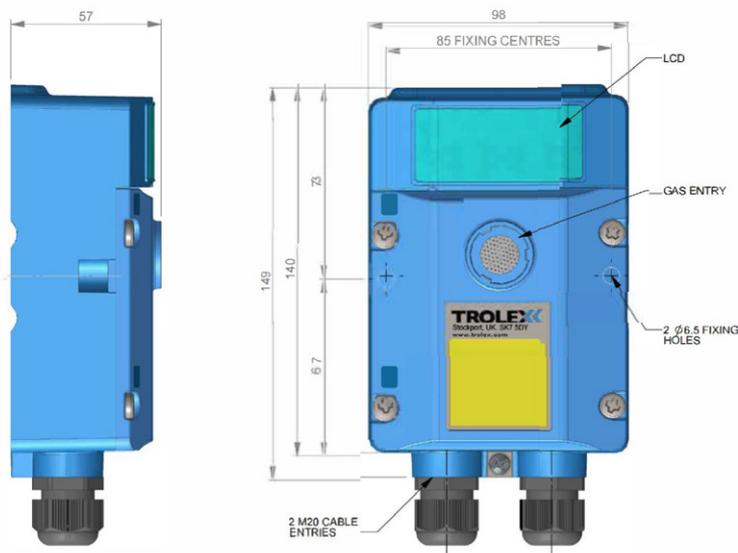Electrochemical cells for toxic gas & oxygen detection

Poison resistant catalytic combustion cells for most flammable gases

Infrared technology provides long-term stability

Dimensions

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

Coal Mining • Tunnelling

Output Signal Options

TX6351.01i.12	Remote powered • 4 to 20 mA analogue output		
Supply voltage:	18 to 28 V		
Max. line load:	220 Ω maximum at 12 V dc		
Type of sensor:	Toxic	Flammable	Infrared
Supply current @ 12 V:	48 mA	70 mA	91 mA

TX6351.01i.14/17	Remote powered • Dual output contacts NC/NO		
Supply voltage:	10 to 14 V		
Type of sensor:	Toxic	Flammable	Infrared
Supply current @ 12 V:	60 mA	85 mA	105 mA

TX6351.01i.15	Remote powered • RS485 datacomms output		
Supply voltage:	10 to 14 V		
Line:	Modbus protocal		
Type of sensor:	Toxic	Flammable	Infrared
Supply current @ 12 V:	25 mA	60 mA	80 mA

TX6351.01i.11	Remote powered • 0.4 to 2 V analogue output		
Supply voltage:	10 to 14 V		
Min. line load:	10 KΩ		
Type of sensor:	Toxic	Flammable	Infrared
Supply current @ 12 V:	20 mA	60 mA	80 mA

TX6352.01i.12	Line powered • 4 to 20 mA analogue output		
Supply voltage:	10 to 14 V		
Max. line load:	90 Ω		
Type of sensor:	Toxic only		

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General Purpose • Non-hazardous Areas

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

Output Signal Options

TX6351.03.12	Remote powered • 4 to 20 mA analogue output		
Supply voltage:	18 to 28 V		
Max. line load:	500 Ω at 24 V		
Type of sensor:	Toxic	Flammable	Infrared
Supply current @ 24 V:	40 mA	40 mA	60 mA

TX6351.03.14/17	Remote powered • Dual output contacts NC/NO		
Supply voltage:	20 to 28 V		
Type of sensor:	Toxic	Flammable	Infrared
Supply current @ 24 V:	35 mA	45 mA	60 mA

TX6351.03.15	Remote powered • RS485 datacomms output		
Supply voltage:	14 to 28 V		
Line:	Modbus protocal		
Type of sensor:	Toxic	Flammable	Infrared
Supply current @ 24 V:	40 mA	40 mA	60 mA

TX6351.03.16	Remote powered • 2 to 10 V analogue output		
Supply voltage:	14 to 28 V		
Min. line load:	10 KΩ		
Type of sensor:	Toxic	Flammable	Infrared
Supply current @ 24 V:	20 mA	60 mA	80 mA

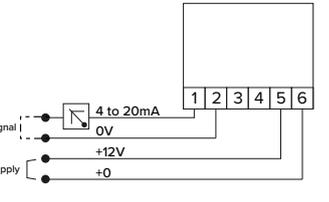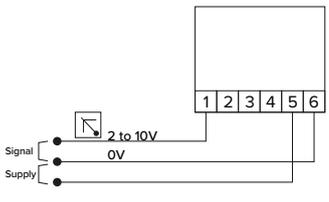| TX6352.03.12	Line powered • 4 to 20 mA analogue output		
Supply voltage:	18 to 28 V		
Max. line load:	300 Ω		
Type of sensor:	Toxic only		

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Technical Data

Operating Temperature Range:	-20°C to 40°C
Humidity:	90% RH non-condensing
Storage Temperature Limits:	-20°C to 60°C
Housing Materials:	Reinforced polymer EMC protected and proof against surface electrostatic discharge
Protection Classification:	Dust and waterproof to IP65. Gas port: IP54
Housing Material:	Electrically dissipative polymer
Weight:	550g
Mounting:	Two 6.5mm diameter fixing holes (Unistrut 6946 compatible)
Visual Alarm:	Optional built-in visual alarms can be setup to operate at two adjustable setpoints
Information Display:	Graphic LCD display with backlight
Housing Impact limit:	20 Joules
Signal Fix:	Output signal is fixed during calibration
Over Range:	Auto signal clamping and sensor protection above 5% v/v CH4
Certification:	ATEX, IECEx, UKEX, EAC, MASC, Ukraine (for full details refer to User Manual).

Connections

TX6351... 11
0.4 to 2 V • 3 wire

TX6351... 11
0.4 to 2 V • 4 wire

A standard 0.4 to 2 V output signal, operating with a 12 V dc power source
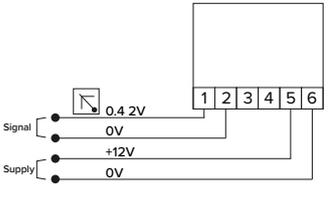
TX6351... 12
4 to 20 mA • 3 wire
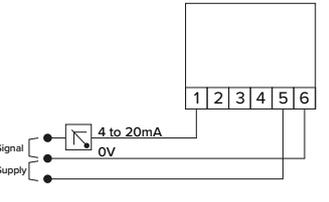
TX6351... 12
4 to 20 mA • 4 wire

A standard 4 to 20 mA output signal, operating with a 12 or 24 V dc power source

TX6351... 16
2 to 10 V • 3 wire

2 to 10 V Output signal, operating with a 24V dc power source. Can also be used in the 4 wire connection mode for greater operating distance

TX6351... 14/17
Contacts

Dual independent output contects for remote signalling and control.

Contacts can be NC or NO to specification
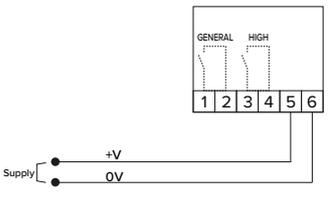
TX6351... 15
RS485 Modbus Datacomms

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.
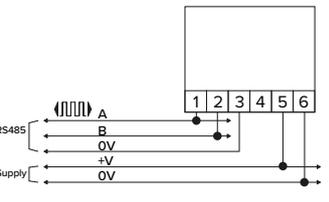
TX6352... 12
4 to 20 mA • Line Powered

A standard 2-wire 4 to 20 mA output signal.

For use with Toxic Gas Sentro eModules only.

Trolex Limited   **www.trolex.com**

TROLEX

Order Reference

Sentro 1 • Group I • Remote Powered

TX6351.01i . [   ] . [   ]

Output	
0.4 to 2V	11
4 to 20mA	12
Dual Relay NC	14
RS-485	15
Dual Relay NO	17

Certification	
ATEX/IECEx/UKEX Group I	35.19
MASC/IECEx Group I	35.05
IECEx (AUS) Group I	06
EAC Group I	14
Ukraine Group I	24

Sentro 1 • Group I • Line Powered

TX6352.01i . [   ] . [   ]

Output	
4 to 20 mA	12

Certification	
ATEX/IECEx/UKEX Group I	35.19
MASC/IECEx Group I	35.05
IECEx (AUS) Group I	06
EAC Group I	14
Ukraine Group I	24

Please order eModules separately (page 10)

Trolex Limited   **www.trolex.com**

TROLEX

Order Reference

Sentro 1 • General Purpose • Remote Powered

TX6351.03.00 . [   ] . [   ]

Output	
4 to 20mA	12
Dual Relay NC	14
RS-485	15
2 - 10 V	16
Dual Relay NO	17

Pushbuttons	
Internal	01
External	02

Sentro 1 • General Purpose • Line Powered

TX6352.03.00.12. [   ]

Pushbuttons	
Internal	01
External	02

Please order eModules separately (page 10)

TX6351 Data Sheet

Ordering Service Replacement Modules

Service replacement modules can be specified using the appropriate gas type code from the eModule order reference table on page 10.

The order reference is also marked on the back of the eModules.

The order reference may vary for some eModules dependent upon the year of manufacture of the base unit:

eModules for Base Units with Yellow Certification Label		
ATEX/IECEx Group I	TX6350.01.	Gas Type
MASC Group I	TX6350.05.	Gas Type
IECEx (AUS) Group I	TX6350.06.	Gas Type
EAC Group I	TX6350.14.	Gas Type
Ukraine Group I	TX6350.24.	Gas Type

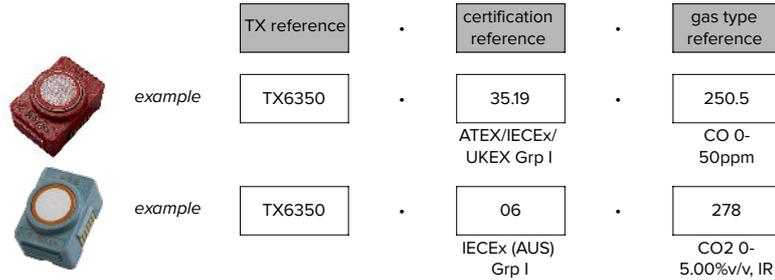| eModules for Base Units with Red Certification Label		
ATEX/IECEx/UKEX Group I	TX6350.35.19.	Gas Type
MASC/IECEx Group I	TX6350.35.05.	Gas Type

Sentro eModules

Order Reference

TX reference	·	certification reference	·	gas type reference
example	TX6350	·	35.19	·	250.5
			ATEX/IECEx/ UKEX Grp I		CO 0-50ppm
example	TX6350	·	06	·	278
			IECEx (AUS) Grp I		CO2 0-5.00%v/v, IR

Certification

	ATEX/IECEx/ UKEX Grp I 35.19 MASC/IECEx Grp I 35.05	EAC Grp I 14 Ukraine Grp I 24	IECEx (AUS) Grp I 06	General Purpose 00
Electrochemical Gas Sensors				
CO 0-1000ppm	250.1000	250.1000	250.1000	250.1000
CO 0-2000ppm				250.2000
CO 0-250ppm	250.250	250.250	250.250	250.250
CO 0-250ppm Low X H2				
CO 0-300ppm	250.300	250.300		250.300
CO 0-50.0ppm				250.50.DP
CO 0-500ppm	250.500	250.500	250.500	250.500
CO 0-500ppm Low X H2				250.500.H2
CO 0-50ppm	250.50	250.50	250.50	250.50
CO 0-50ppm Low X H2				250.50.H2
H2S 0-100ppm	251.100	251.100		251.100
H2S 0-300ppm				251.300
H2S 0-50.0ppm				251.DP
H2S 0-50ppm	251	251	251	251
NO2 0-10.0ppm	254.10	254.10	254.10	254.10
NO2 0-100ppm				254.100
NO2 0-20.0ppm	254	254	254	254
O2 0-25%v/v	257	257	257	257
SO2 0-20.0ppm	252	252	252	252
SO2 0-50.0ppm	252.50	252.50		252.50
CL2 0-10.0ppm	255	255	255	255
NO 0-50.0ppm				259.DP
NO 0-50ppm	259	259	259	259
NH3 0-10.0ppm	260	260	260	260
NH3 0-200ppm				260.200
NH3 0-500ppm				260.500
H2 0-1.00% v/v			261.1	
H2 0-1000ppm	261	261	261	261

Certification

	ATEX/IECEx/ UKEX Grp I 35.19 MASC/IECEx Grp I 35.05	EAC Grp I 14 Ukraine Grp I 24	IECEx (AUS) Grp I 06	General Purpose 00
Catalytic Gas Sensors				
C2H2 0-100% LEL				303
C3H8 0-100% LEL				282
CH4 0-100% LEL (5.0%)	241	241		
CH4 0-100% LEL(4.4%)	240	240		240
CH4 0-4.00%v/v	246	246	246	246
CH4 0-5.00% v/v	244	244	244	
Infrared Gas Sensors				
CH4 0-10% v/v IR	294	294		
CH4 0-100.0% v/v, IR	242.HR	242.HR		
CH4 0-100% LEL, IR (4.4%)	245	245		245
CH4 0-100% v/v, IR	242	242		242
CH4 0-20% v/v IR	304	304		
CH4 0-4.00% v/v IR	300	300		
CH4 0-5.00% v/v, IR	243	243	243	243
CO2 0-1.00% v/v, IR	278.1	278.1		
CO2 0-1.50%v/v, LED IR				301
CO2 0-100% v/v, IR	279	279		279
CO2 0-2.00% v/v, IR	278.2	278.2		
CO2 0-5.00% v/v, IR	278	278	278	278

At Trolex, we save lives.

We believe that no person should risk
their life to earn a living.

Our aim is to become the world's leading name
in health and safety technology, through
pioneering products that provide real-world
benefits to our customers, whenever workers
operate in hazardous environments.

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