TX6378
Data Sheet

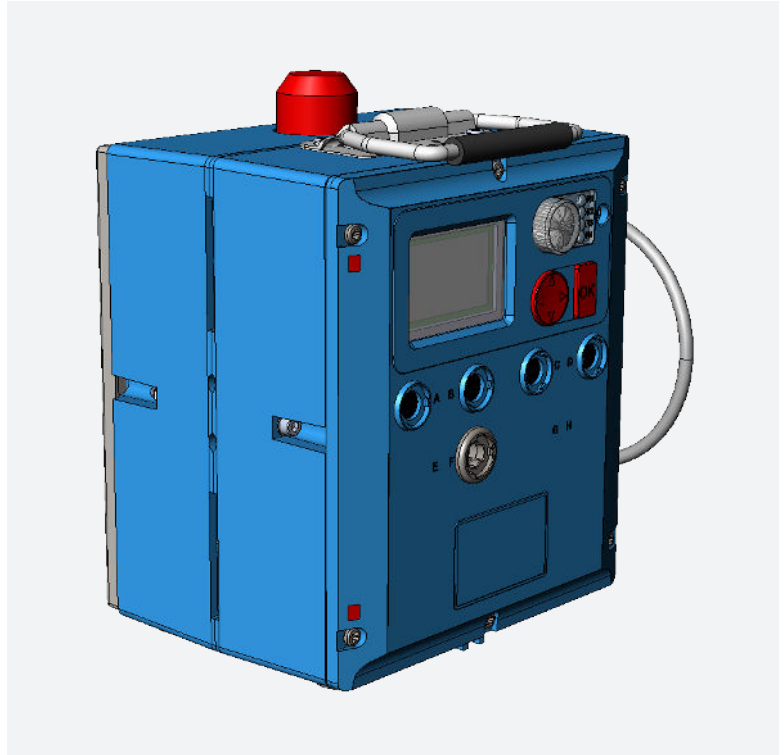## Sentro 8 Area Monitor
Portable Area Monitoring System

Environments: Tunnelling • Mining - non-hazardous areas • Confined spaces • Construction

Features

- Based on the proven Sentro 8, intelligent plug-in sensing modules are available for on-board gas detection (eModules) or remote sensor connections (rModules)

- Up to eight different gases, or a combination of eight remote sensors measuring temperature, pressure, level, vibration, speed, proximity or air velocity, can be monitored simultaneously without the need for complex system design

- Powered from an external ac supply or internal sealed lead acid battery pack in backup mode

- Up to 12 hours of operation from a 2 Ah sealed lead-acid battery pack when disconnected from ac supply and in backup mode

- All functions can be programmed externally using the heavy-duty waterproof keypad

- Programmable alarm setpoints configured to activate the integral audio alarm and flashing visual warning

- Wireless or RS485 output options available

- Security code to prevent tampering with system settings and configuration

Benefits

- The high-brightness backlit LCD screen provides clear information with direct on-screen instructions and diagnostic data

- Dual-wall housing gives maximum impact strength, is protected against dust and moisture to IP65, and is EMC protected (pending) for use in arduous operating environments

- Housing cover can be easily removed with power applied for module replacement and servicing

- Sentro eModules have output alarm signal for Warning alarm - default values are entered during manufacture

- Minimal maintenance, Sentro 8 Area Monitor only needs maintenance every 6 months

- Flexible maintenance - eModules can be easily replaced, calibrated in situ or calibrated out of the working area

Certification - pending

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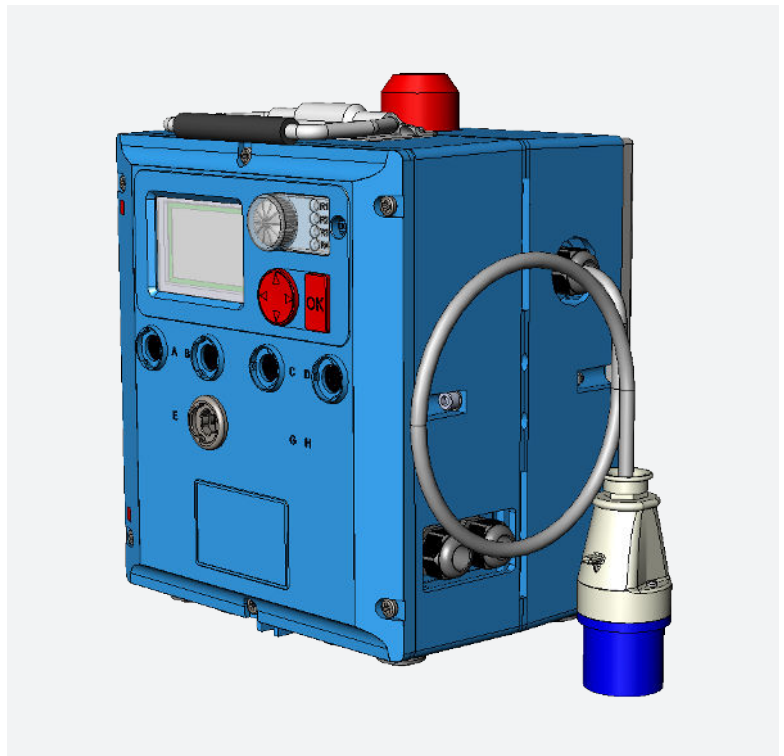
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Functional Overview

The TX6378 Sentro 8 Area Monitor is a self-contained area monitoring system. The Sentro eModule and rModule are at the heart of the Sentro 8 Area Monitor. The Sentro eModule is an intelligent standardised gas sensing module that detects a range of toxic and flammable gases. Dynamic data is stored within the eModule, together with the condition of the gas sensing element and its service history. Sentro rModules are used for remote sensing devices.

You can easily service and calibrate the Sentro 8 Area Monitor, or change to a different gas, by simply changing the eModule, even with the power still applied.

The Sentro 8 Area Monitor is powered by mains supply or a rechargable sealed lead acid battery pack which is easily and quickly charged for fast maintenance. The Sentro 8 Area Monitor has a low maintenance requirement needing only a calibration and check every six months.

Sentro eModule

Technical Information

Electrical details:	General purpose
Power source:	External ac supply with internal battery backup
External supply voltage:	90 to 264 V ac @ 47 to 63 Hz
Internal supply voltage:	12 V dc from 2 Ah sealed lead-acid backup battery pack
Supply current:	200 mA maximum loading including one pellistor eModule
Output relays:	Four independent alarm relays each programmable to any alarm setpoint on any monitoring channel for preferred alarm priority grouping
Relay contacts:	One changeover contact on each relay
Maximum relay contact rating:	2 A at 230 V ac
Battery usage between charges:	12 hours (typical)
Outputs:	RS485 or wireless using CommTrac mesh network
Alarm output:	Built-in visual alarms can be selected to operate at two adjustable set-points Audible alarm, adjustable between 85 to 98 dB at 1 m
Operating temperature range:	-10 to 40°C
Humidity:	95%RH, non-condensing
Storage temperature limts:	-20 to 60°C
Housing materials:	Reinforced polymer EMC protected and proof against surface electrostatic charge Integral carrying handle
Protection classification:	Housing dust and waterproof to IP65 Gas port protected to IP54
Weight:	7 kg without external audio visual alarm option
Mounting:	Free-standing, fixed and transportable
Maintenance:	Every 6 months

Sentro Sensing Modules

A wide choice of interchangeable sensing modules are available, each with its own processor for intelligent data storage and signal conditioning circuits. They will detect most of the common toxic and flammable gases, or the same system architecture will measure any combination of remote sensors including flow, level, pressure, proximity, temperature, vibration and speed. Up to eight can be plugged into the Sentro 8 Area Monitor in any combination.

The modules are already calibrated so you can substitute them at any time with a replacement module in a matter of seconds. Each module contains its type identification and stores its full service history including gas identity, measuring range, data logging, predicted life span, calibration history, set points, failure modes and alarm setting. All the acquired data stays with the module throughout its functional life. Each eModule and rModule stores up to 4000 data logging points including time, date and alarm event report.

There is no danger of inserting the wrong module. You can configure up to twenty insert codes and Sentro 8 Area Monitor automatically identifies the module that is inserted. Security coding is used to ensure that the same type of Sentro eModule is always used.

There are two basic module formats, the eModule and the rModule:

eModule

rModule

Sentro eModules are used for environmental gas concentration monitoring. Three types of eModules are available (detailed on page 4): electrochemical cells to detect toxic gases, catalytic combustion sensors to monitor flammable gases and infrared sensors to monitor Carbon Dioxide or Methane in the environment.

Sentro rModules are used for remote sensing devices such as flow sensors, vibration sensors and temperature sensors, rModules are detailed on page 5.

Sentro eModules and rModules can be combined in almost any format and in any position. Sentro 8 Area Monitor will recognise the module when it is inserted and will quickly configure itself for immediate operation.

Note that eModules and rModules have separate order numbers and must be ordered as well as the required Sentro 8 Area Monitor model.

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Sentro eModules

Electrochemical Cells for Toxic Gas Detection

Electromechanical cells monitor the concentration of toxic gases present in the environment. These cells combine good sensitivity at low gas concentration with high-range capability and excellent stability.

Carbon Monoxide (CO):	0 to 50 ppm*	TX6350.03.250.50
	0 to 250 ppm*	TX6350.03.250.250
	0 to 300 ppm*	TX6350.03.250.300
	0 to 500 ppm*	TX6350.03.250.500
	0 to 1000 ppm*	TX6350.03.250.1000
Chlorine (CL_2):	0 to 10 ppm	TX6350.03.255
Hydrogen (H_2):	0 to 1000 ppm	TX6350.03.261
Hydrogen Sulphide (H_2S):	0 to 50 ppm*	TX6350.03.251
Nitric Oxide (NO):	0 to 50 ppm*	TX6350.03.259
Nitrogen Dioxide (NO_2):	0 to 10 ppm*	TX6350.03.254.10
Nitrogen Dioxide (NO_2):	0 to 20 ppm*	TX6350.03.254
Oxygen (O_2):	0 to 25% v/v	TX6350.03.257
Sulphur Dioxide (SO_2):	0 to 20 ppm*	TX6350.03.252

* selected eModules have STEL and TWA calculation capability

Poison-resistant Catalytic Sensor for Flammable Gas Detection

This sensor uses a poison-resistant catalytic combustion sensor to monitor flammable gases present in the atmosphere. The sensor responds to most flammable gases and vapours to varying degrees. It is normally calibrated to Methane in terms of % LEL or % volume, although calibration for other gases can be supplied (contact Trolex).

Methane (CH_4):	0 to 100% LEL	TX6350.03.240
Methane (CH_4):	0 to 4% v/v	TX6350.03.246
Methane (CH_4):	0 to 5% v/v	TX6350.03.244

Infrared Sensor for Carbon Dioxide / Methane Gas Detection

This infrared sensor monitors environmental concentrations of either Carbon Dioxide or Methane. It is highly specific to the selected gas and exhibits consistent sensing accuracy with superior long term stability, minimising calibration and maintenance.

Carbon Dioxide (CO_2):	0 to 2% v/v	TX6350.03.253
Carbon Dioxide (CO_2):	0 to 5% v/v	TX6350.03.278
Carbon Dioxide (CO_2):	0 to 100% v/v	TX6350.03.279
Methane (CH_4):	0 to 100% LEL	TX6350.03.245
Methane (CH_4):	0 to 5% v/v	TX6350.03.243
Methane (CH_4):	0 to 100% v/v	TX6350.03.242

For details of the full range of gas sensors contact contact the Trolex Sales Team: sales@trolex.com

Sentro rModules

Any remotely connected auxiliary sensors can be connected into the Sentro 8 Area Monitor, in any combination, as part of an integrated monitoring system. The Sentro rModule also provides power to drive the remote sensor.

Remotely Connected Sensors

The list below details the remotely connected sensors that can be connected to different rModules:

0.4 to 2.0 V:	Voltage input signals, analogue sensor input, 2 and 3-wire connections.	TX9160.03.303
4 to 20 mA:	Industrial standard analogue sensor input, 2 and 3-wire connections.	TX9160.03.301
On/Off:	NAMUR proximity switch with line fault monitoring. Examples include conventional contacts, pressure switches, limit switches, etc.	TX9160.03.501
On/Off & Diode:	On/Off switch inputs with diode line protection.	TX9160.03.502
PT100:	Standard PT100 temperature monitoring input with line compensation.	TX9160.03.306

Dimensions
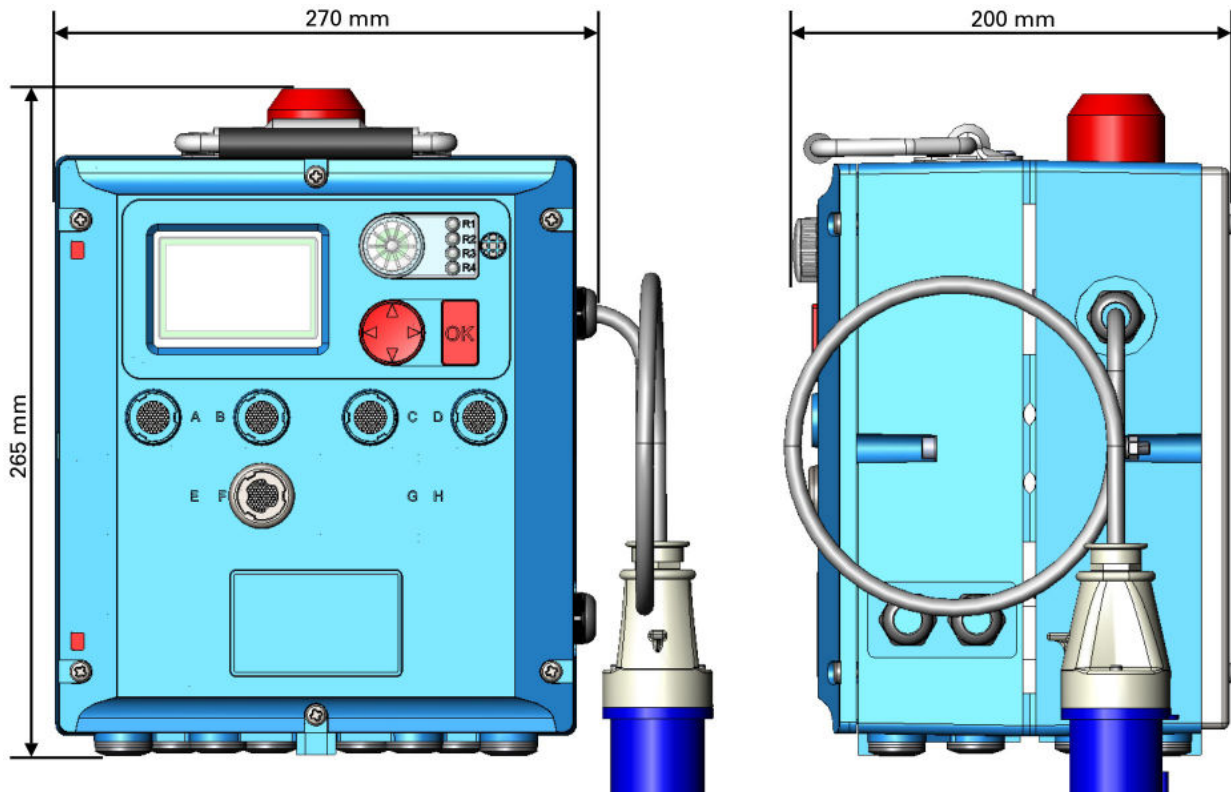
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Connections
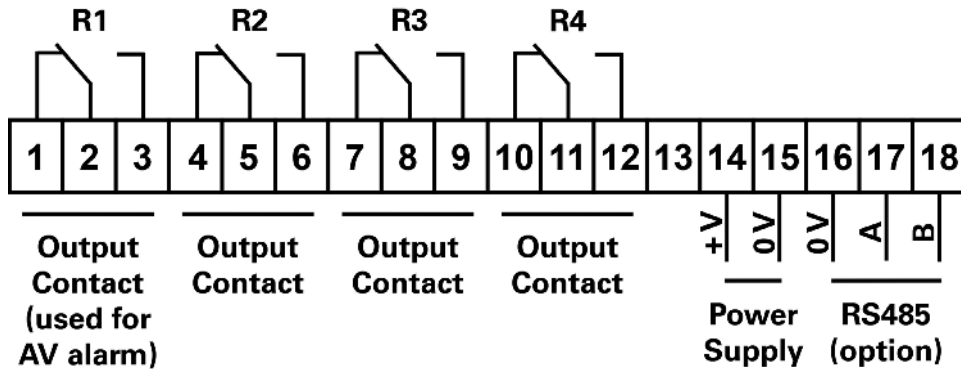
Order Reference

|	
TX6378.01.01	Sentro 8 Area Monitor with RS485 output and 110 V input
TX6378.01.02	Sentro 8 Area Monitor with RS485 output and 230 V input
TX6378.02.01	Sentro 8 Area Monitor with Wireless output and 110 V input
TX6378.02.02	Sentro 8 Area Monitor with Wireless output and 230 V input

Please contact the Trolex Sales Team for further information and advice:

+44 (0)161 483 1435
sales@trolex.com
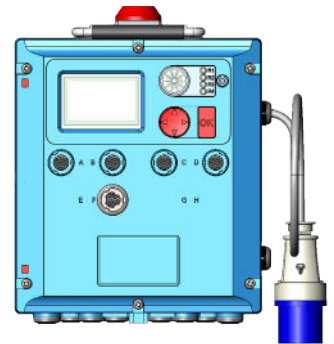
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