

**ONE LIFE.
PROTECT IT.**



SENTRO X»

**TECHNICAL
BROCHURE**

GENERAL PURPOSE · Ex ia I Ma





A TRUSTED NAME FOR OVER 65 YEARS.

Intrinsically safe gas detection built on solid reliability and innovative design with a focus on simplicity of application, convenient installation and practical hot-swapping of pre-calibrated toxic, oxygen or flammable gas sensing Blocs (gBloc).

With automatic detection of gBloc, the operational performance of the **SENTRO X** is advanced through the combination of high accuracy gas detection and a range of functional outputs to support all system requirements.

An additional Remote Sensor is available within the **SENTRO X Gas Detector** suite to pair with the main **SENTRO X Controller** to support sensing of hazardous gases in hard-to-reach General Purpose or Group I underground locations.

OUR MOST AMBITIOUS GAS DETECTOR TO DATE.

Modular plug-in gas sensing elements have been pioneered to provide end-users with simple maintenance and low costs.

We've introduced the world's first internal plug-and-play gas sensing modules with built-in functional intelligence, further improving accuracy and reliability, with the added benefit of sophisticated diagnostic capability.

SENTRO X is the culmination of decades of gas sensing application experience, delivering unmatched **performance**, **reliability**, and **efficiency** within a single gas detector, to employ the most advanced technology available that is supremely simple to use.





WHY SENTRO X?

SENTRO X combines the very best of our legacy gas detection range, integrating over 60 years of experience with unique state-of-the-art features.

SENTRO X has been designed with a choice of output signals, including RS485, 4 to 20 mA, and 0.4 V to 2 V as standard, an optional Dual Relay for high and low alarms, and an optional audio/visual (A/V) alarm with configurable alerts, enhancing your safety and giving you flexibility for various applications.

Its unit housing is rugged and shock-resistant, with an IP65 ingress protection rating, ensuring reliable operation in even the most challenging

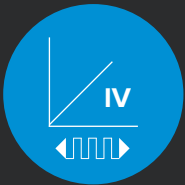
working environments.

Not only this, but **SENTRO X** is built to withstand high levels of vibration and impact, making it ideal for heavy-duty and underground applications. **SENTRO X** is certified as intrinsically safe for use in Group I M1 hazardous areas (ATEX, IECEx and NSW MDR), ensuring safe operation in potentially explosive environments.

Our latest gas detector in the **SENTRO** range advances the industry through a combination of the core of our legacy gas detection products, alongside groundbreaking features which are unique to **SENTRO X**.



Pre-calibrated, plug-in gBlocs for a range of toxic, oxygen and flammable options.



Selectable choice of RS485, 4 to 20 mA or 0.4 to 2 V output signals, included as standard.



Power-over-ethernet (PoE) for GP only option and combined with dual relays for high and low alarms and integral choice of 4 to 20 mA, 0.4 to 2 V or RS485 output signals.



Hot-swap for instant calibration and maintenance requirements.



OLED graphic display, visible and clear in both dark and bright environments.



Waterproof keypad for functional set-up and manual calibration.



SIMPLE INSTALLATION FOR YOUR GAS SENSING NEEDS.

The last thing you need to deal with when working in challenging underground environments are loose tools, screws and wires to get to the inside of your gas detector.

That's why we've designed the **SENTRO X** without any complex wiring, meaning you can remove the front cover to access your Relay and Ethernet cards without getting tangled in wires.

And installing the **SENTRO X Gas Detector** in-field couldn't be any simpler.

All you'll need is a set of fixing screws which can be fixed to the 2 x M8 fixing holes on either side of the **SENTRO X Controller** and 2 x M6 holes Remote Sensor giving you flexibility for your preferred mounting options in arduous and hard-to-reach locations where gas concentrations may be higher.

It's unistrut compatible, allowing for simple, yet reinforced installation in various underground, mining and tunnelling locations.

A LOW MAINTENANCE GAS DETECTOR.

If you've not already gathered, **SENTRO X** is our most simple, easy-to-use and durable gas detector yet.

An easy-to-navigate dynamic menu for maintenance, device functions and general settings are all accessible at the touch of just 3 navigational buttons.

An OLED **SENTRO X** display screen provides optimum contrast in poor lighting environments, along with reflective strips located down the side of the PCABS blend plastic housing unit, and optional A/V alarm which can be fitted on top of the **SENTRO X Controller** makes the entire unit both visible and audible no matter your occupational environment.

It's small and lightweight enough to be transported across entire underground areas, but strong and durable enough to withstand all hazardous and heavy-duty situations.

All in all, it's undeniably our most user-friendly gas detector to date.



THE **HEART** OF THE SENTRO X.

The future of gas detection is here.

Plug-in, pre-calibrated intrinsically safe gBlocs offer a range of toxic, oxygen and flammable options depending on what gas you need to detect for in your workplace.

Effortlessly hot-swap gBlocs in and out of your **SENTRO X** housing unit and in seconds be detecting for a range of gases in your occupational environment.

All gBlocs are intelligently standardised that are fully interchangeable offering a choice of high stability toxic, oxygen or flammable gas detection options, as well as instant calibration and maintenance requirements.

Gas ID data is stored within the gBloc which is used for automatic configuration purposes, default gas type settings and the logging of calibration data. gBlocs are pre-calibrated to allow the system to be refreshed and updated within a few seconds.

Additional on-device maintenance sequences have been implemented to support streamlined maintenance routines to meet on-going mine site requirements.



ENHANCED CONNECTIVITY: A GAME-CHANGER.

Designed to set new benchmarks in safety and efficiency for hazardous environments, streamlining data retrieval and analyse processes.

With the addition of Power-over-Ethernet (PoE) technology for the General Purpose option, **SENTRO X** combines cutting-edge innovation with practical solutions to meet the demanding needs of underground mining, tunnelling and quarry applications of underground mining, tunnelling and quarrying applications.

➤ Simplified installation.

PoE eliminates the need for separate power and data cables by delivering a single Ethernet connection, streamlining installation, reducing cabling costs, and minimising the time required to deploy your gas detection system. With faster implementation and lower labour costs, **SENTRO X** saves you time and money.

➤ MODBUS and IoT integration

High-speed ethernet capabilities, enabling seamless integration with IoT platforms, such as SCADA and similar systems through MODBUS communications, allowing real time and remote management of your gas detection system.

Our enhanced **SENTRO X** MODBUS register now gives end-users access to more data from the monitored by the **SENTRO X Gas Detector**, like never before:

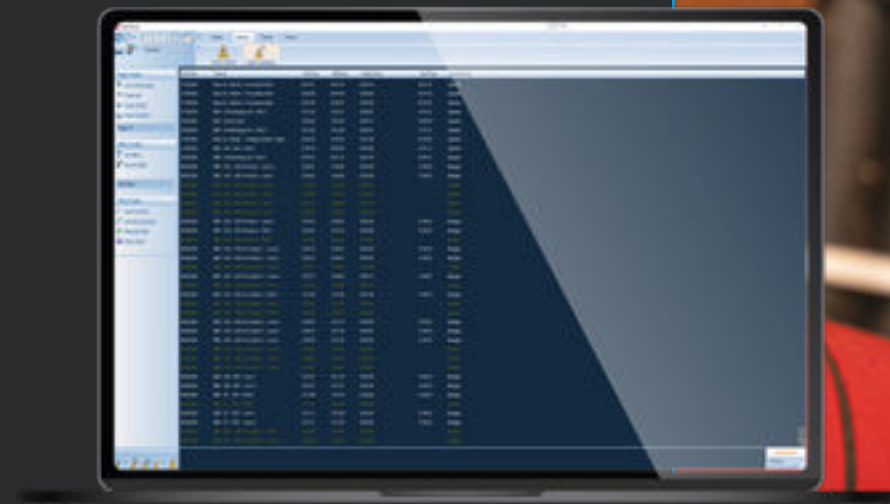
- Continually view gas levels in real-time on your SCADA or similar platforms through Modbus connectivity.
- Better support and user interface for setting and monitoring time-weighted averages (TWA) and short-term exposure limits (STEL) readings.
- Increased amount of MODBUS registers available for **SENTRO X** customers.

- Access to individual device information for all **SENTRO X** components, including TX numbers and product serial numbers.
- Remote connection to your **SENTRO X** device, meaning all relevant personnel can see valuable data no matter where they're located on site.
- Change settings, control all maintenance and monitor relays remotely.
- Constantly track the state and performance of **SENTRO X** unit remotely.
- Support the logging of maintenance and testing remotely.

Whilst our legacy gas detectors previously offered connection via MODBUS communication, the data available with **SENTRO X** is now more in-depth, offering a wider range of information, so you can make informed decisions to protect workers in all potentially hazardous areas of the workplace.

➤ Uninterrupted operation

In critical environments like underground mines, power disruptions can pose severe risks. The PoE-enabled **SENTRO X** can be powered from a centralised source with built-in backup systems to ensure continuous operation during localised power outages.



This reliability makes **SENTRO X** a dependable safety partner in any situation.

➤ Enhanced safety.

Underground environments are inherently dangerous with risks of tripping hazards and cable damage from excessive wiring. PoE reduces cable clutter and vulnerability to physical damage or damage to equipment to create a safer workspace. This makes **SENTRO X** not just a gas detector, but a safety-enhancing system built for your workplace.

With **SENTRO X**, operators can monitor, control, and diagnose the entire gas detection network from a single point, whilst improving efficiency, reducing downtime, and enhancing decision-making to align with industry 4.0 standards.

➤ Reduce maintenance costs

Fewer cables and connectors mean fewer potential failure points. A PoE-enabled **SENTRO X** reduces maintenance requirements and associated costs. Its streamlined power delivery system also ensures a lower total cost of ownership, making it a cost-effective investment for your business.

Adding or relocating a **SENTRO X** unit is as easy as plugging it into a PoE-enabled network, but without the hassle of sourcing local power supplies.

This flexibility ensures **SENTRO X** adapts effortlessly to the dynamic needs of mining environments.

It's the future of underground safety.

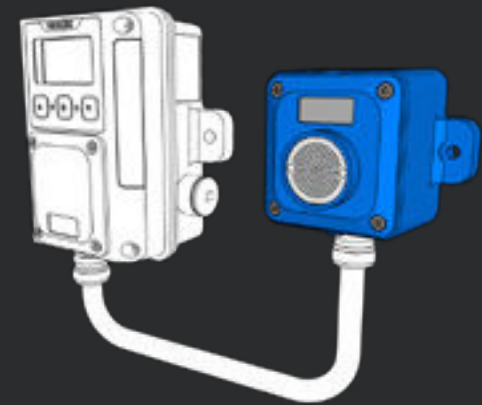
OPTIONAL EXTRAS.



A/V alarm

Combination of high intensity LEDs and a Piezo Audible alarm, sweeping across a band of frequencies for maximum penetration in noisy environments.

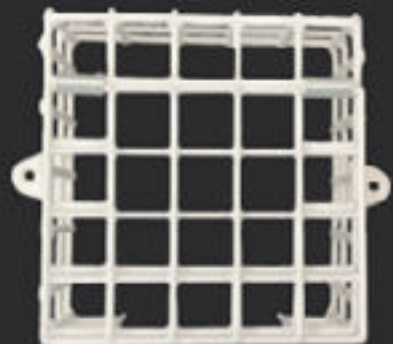
Also dust and waterproof to IP65.



Remote Sensor

Constructed to the same ruggedised standards as the **SENTRO X Controller**.

Remote housing can be equipped with any standard gBloc in the range and uses the identical gas inlet cover with the same stainless-steel grille and moisture resistant membrane.



Remote Sensor cage

Our rugged remote head has been IP65, shock, vibration and impact tested to over 7 joules, inline with Group I underground mining standards.

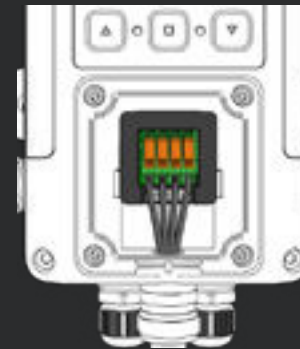
However, if your application requires increased protection a quick fit safety cage is available for the harshest of environments.



Test gas hood

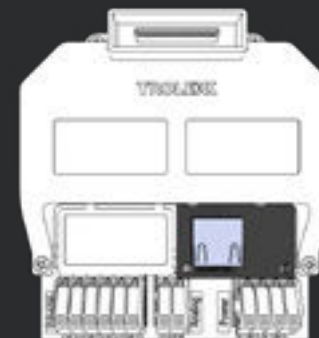
Push fit onto the gas inlet port of the **SENTRO X** for gas application test routines.

Accepts standard flexible 6 mm OD plastic flexible tubing and is vented to atmosphere.



rBloc

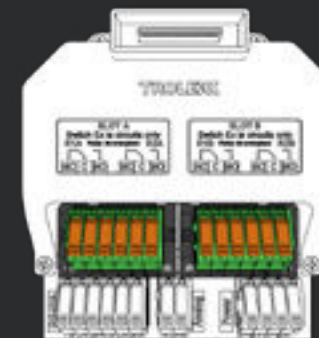
Equip the Controller with an rBloc to receive the incoming RS485 data from the remote gBloc when the Controller is mounted in a more accessible location.



Ethernet card

For direct communications with approved SCADA systems.

The card carries a dedicated ethernet connector and is capable of operating with POE systems where the source emanates from a safe area or an Ex enclosure equipped with appropriate safety barriers.



Dual Relay Card

SENTRO X Controller can be fitted with a dual relay output card with each relay having encapsulated electrically isolated output contacts for controlling external approved intrinsically safe devices.

2 x Relay Cards can be fitted giving the option of 4 x relay outputs.

PRODUCT SPECIFICATION.

Operating temperature	-20 °C to +40 °C
Storage temperature limits	-20 °C to +60 °C
Humidity	90% RH non-condensing
Housing materials	Reinforced PC/ABS polymer EMC protected and proof against surface electrostatic discharge
Ingress protection	TX6310 SENTRO X Controller : IP65 TX6320 Remote Sensor: IP65 A/V alarm: IP65
Net weight	TX6310 SENTRO X Controller : 775 g (maximum weight) TX6320 Remote Sensor: 215 g
Mounting	TX6310 SENTRO X Controller : 2 x M8 fixing holes (unistrut compatible) TX6320 Remote sensor: 2 x M6 fixing holes
Connections	TX6310 SENTRO X Controller : 4 x threaded M20 cable entries provided with 2 x PVC cable glands and 2 x blanking plugs 1 x threaded M16 cable entry (for Remote Sensor) TX6320 Remote Sensor: - M16 cable entry provided with stainless steel cable gland (for connection to SENTRO X Controller)
Information display	Graphic OLED
Supply voltage	9.5 V to 16 V DC from an approved intrinsically safe source
Certification	ATEX Grp I CAT. M1 and IECEx Grp I, EPL Ma

See **section 8 Certification and Conformity** user manual (TX6310-UM-EN · P5600.1600) for full certification details.

ELECTRICAL DETAILS.

Electrical connections	5 mm pitch lever lock terminals
Conductors	Max. 2 per terminal
Conductor size	Nominal 2.5 mm ² , 14 AWG (4 mm ² maximum)
Supply voltage	Maximum: 16 V Minimum: 9.5 V
4 mA to 20 mA max. line load at 9.5 V	Maximum: 214 Ohms
0.4 V to 2 V min. line load	Minimum: 4 K Ohms

Component list	Input voltage	Typical current draw
SENTRO X Controller	Minimum 9.5 V	30 mA
SENTRO X with Remote Sensor	Minimum 9.5 V	75 mA

Additional		
A/V alarm (active)	Minimum 9.5 V	+55 mA
1 x Relay card (2 x Relays energised)	Minimum 9.5 V	+45 mA
Ethernet card (10 Mbs)	Minimum 9.5 V	+40 mA

gBlocs (Gas)		
Electrochemical	Minimum 9.5 V	+25 mA
Pellistor	Minimum 9.5 V	+45 mA
Infrared	Minimum 9.5 V	+65 mA

See user manual (TX6310-UM-EN · P5600.1600) for full details.

TROLEX GAS DETECTION
PRODUCT COMPARISON.

FIND OUT MORE
trolex.com/sentro-x



PRODUCT	REMOTE HEAD	9 V to 16 V (36) V	4 mA to 20 mA	0.4 V to 2.0 V	DUAL RELAY	RS485	ETHERNET	POE	A/V ALARM	TOXIC GASES	FLAMMABLE GASES	INTERCHANGEABLE DETECTION	MOUNTING SYSTEM
STX3241	OPTIONAL	✓	OPTIONAL	OPTIONAL	-	-	-	-	OPTIONAL	✓	-	-	INTERNAL
STX3261	OPTIONAL	✓	OPTIONAL	OPTIONAL	-	-	-	-	OPTIONAL	-	✓	-	INTERNAL
TX6351	-	✓	✓	✓	✓	✓	-	-	OPTIONAL	✓	✓	✓	INTERNAL
TX6352	-	✓	OPTIONAL	-	-	-	-	-	OPTIONAL	✓	-	-	INTERNAL
TX6355	-	✓	-	-	-	-	-	-	-	✓	✓	✓	INTERNAL
TX6363	OPTIONAL	✓	OPTIONAL	OPTIONAL	-	-	-	-	OPTIONAL	✓	✓	-	INTERNAL
TX6373	OPTIONAL	✓	OPTIONAL	OPTIONAL	-	-	-	-	OPTIONAL	✓	-	-	INTERNAL
TX6383	OPTIONAL	✓	OPTIONAL	OPTIONAL	-	-	-	-	OPTIONAL	-	✓	-	INTERNAL
SENTRO X	OPTIONAL	✓	✓	✓	OPTIONAL	✓	OPTIONAL	OPTIONAL	OPTIONAL (INTEGRATED)	✓	✓	✓	EXTERNAL

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.

For more information about Trolex, please contact us at:

Website

www.trolex.com

Enquiries

sales@trolex.com

Telephone

+44 (0) 161 483 1435

@TrolexUK



Trolex Ltd

Newby Road, Hazel Grove
Stockport, Cheshire
SK7 5DY, United Kingdom