

## Sentrum Methane Recovery Monitoring System

**Environments:** Mining • Tunnelling

### Features

- Sentrum is fully customisable to your requirements
- Constant on-line monitoring of the sampling pump efficiency status and gas sample pipe blockage ensures maximum system reliability
- Sentrum's unique software algorithms can determine the precise levels of methane in the gas mixture, even in the presence of non-methane hydrocarbons and other compounds. Sentrum provides accurate information of captured gas quantities from volume and mass flow algorithms
- Continuous methane purity monitoring using infrared technology, with continuous non-methane hydrocarbon error correction
- Optional monitoring available: carbon dioxide, oxygen, carbon monoxide, hydrogen sulphide
- Sentrum can also monitor gas velocity, temperature and pressure, and includes temperature and pressure compensation
- Closed loop gas sampling down to 500 mbar (abs.)
- RS485 Modbus communication protocol allows live data to be transmitted to a control centre and integrated with SCADA system for continuous real time monitoring and data logging (programmable).
- Suitable for use pre or post-extraction pumps

### Benefits

- Sentrum provides accurate real time gas analysis in mining and other hazardous areas keeping sampled gas out of safe zones
- Remote configuration and set-up, with easy maintenance
- Automatic correction for the effects of non-methane hydrocarbons on infrared sensors when you enter the parameters from a gas chromatograph analysis into the control unit



ANZEx



The Trolex equipment contained within the TX6400 Sentrum system is certified for use in these countries

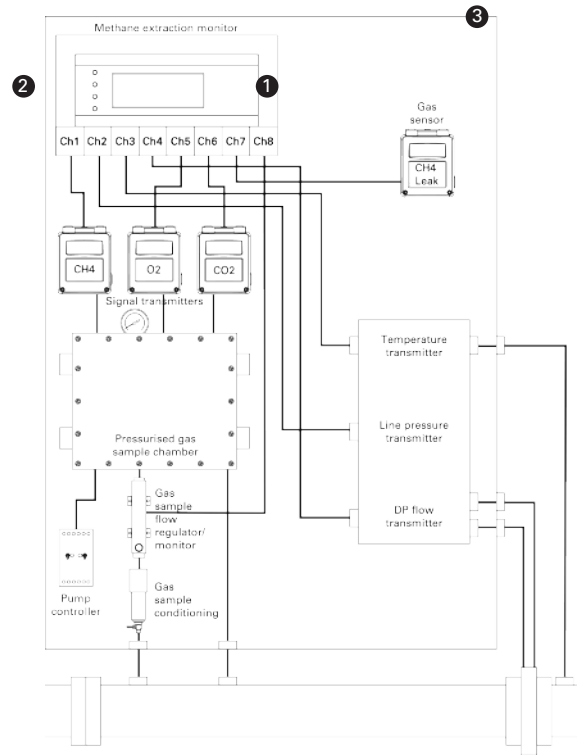
## Functional Overview (example system)

The Trolex TX6400 Sentrum Methane Recovery Monitoring System is designed to provide the complete solution for methane recovery monitoring applications.

Using proven technology, the TX6400 has been developed to measure methane at source and at strategic points throughout the methane pipe network.

Complex algorithms are used to correct the effects of non-methane hydrocarbon cross sensitivity together with mass flow calculations. The TX6400 provides all the required information in one package to monitor the efficiency of the methane recovery system allowing purity problems to be resolved quickly and thus improving safety and methane capture.

Simple plug-in connections for monitoring allow for easy installation and maintenance. RS485 Modbus communication protocol allows live data to be transmitted to the control room SCADA for continuous real time monitoring and data logging.



## Technical Information

① <b>Output:</b>	RS485 Modbus
<b>Electrical details:</b>	Varies according to system configuration
② <b>Supply voltage:</b>	12 V dc from intrinsically safe supply
<b>Supply current:</b>	<1.0 A
<b>Output relays:</b>	TX9042 has 4 relay outputs all user assigned
<b>Relay contacts:</b>	Volt free contacts
<b>Operating temperature range:</b>	-20 to 40°C
<b>Humidity:</b>	95%RH, non-condensing
<b>Storage temperature limits:</b>	-20 to 60°C
③ <b>Housing materials:</b>	Stainless steel equipment enclosure
<b>Protection classification:</b>	Dust and waterproof to IP65
<b>Weight:</b>	Varies according to system configuration
<b>Mounting:</b>	Varies according to system requirements

## System Overview (example system - other ranges are available)

<b>Methane monitoring:</b>	0 to 100% v/v
<b>Oxygen monitoring:</b>	0 to 25% v/v
<b>Carbon Dioxide monitoring:</b>	0 to 100% v/v
<b>Carbon Monoxide monitoring:</b>	0 to 500 ppm
<b>Hydrogen Sulphide monitoring:</b>	0 to 50 ppm
<b>Process temperature range for flow monitoring:</b>	0 to 120°C
<b>Process temperature range for gas monitoring:</b>	0 to 40°C
<b>Process pressure range:</b>	50 kPa to 120 kPa (abs.)
<b>Process gas velocity:</b>	0.5 to 40 ms <sup>-1</sup>
<b>Gas sample rate:</b>	0.5 to 3 lpm
<b>Low sample gas indication:</b>	< 0.5 lpm
<b>Internal Methane leak detector trip:</b>	User selectable 0.1% to 5% v/v
<b>Gas monitoring connections (typical):</b>	2 x ¼" BSP welded boss
<b>Flow monitoring connections (typical):</b>	1 x 1½" BSP welded boss

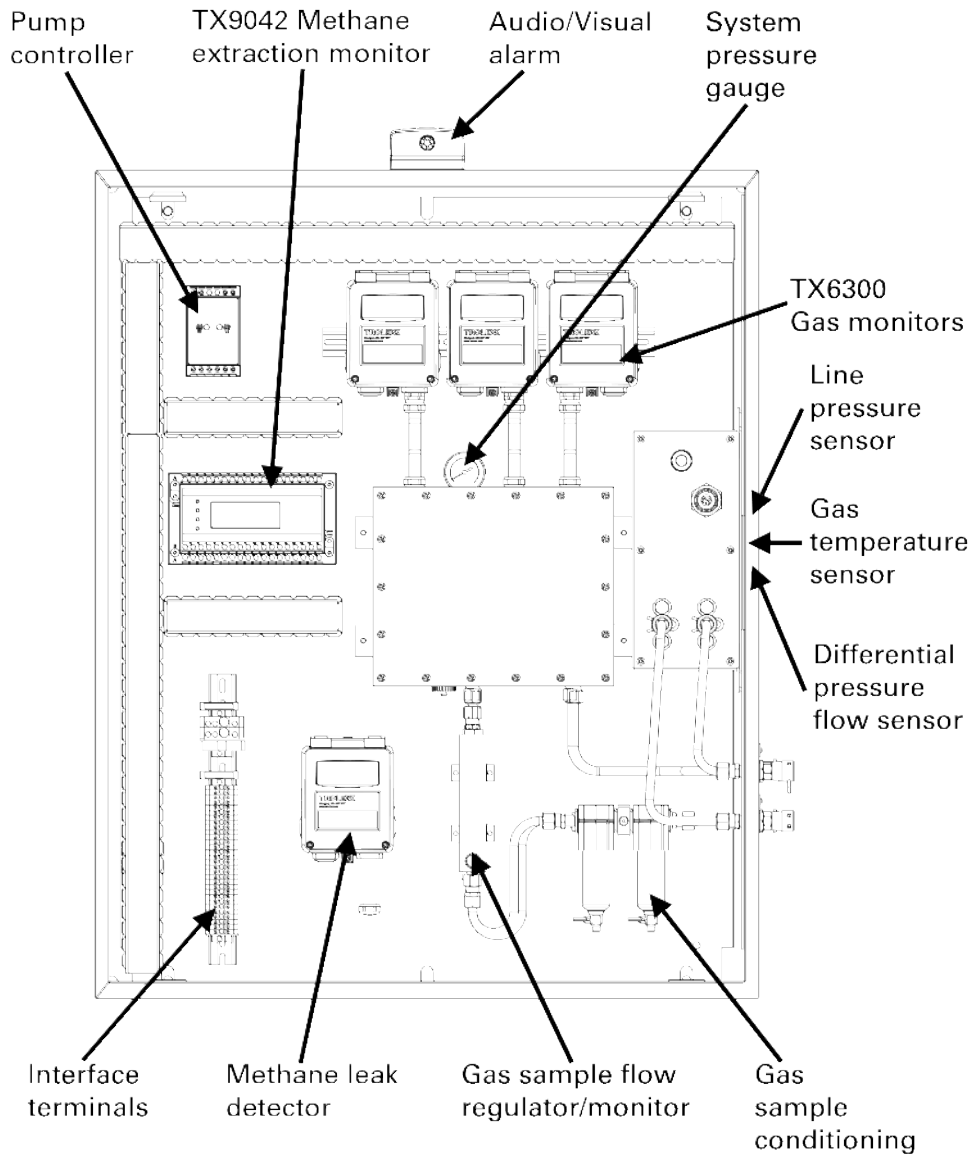
## Specification (where fitted)

<b>Gas monitoring:</b>	Methane:	TX6363	Technology:	Infrared
			Range:	0 to 100% v/v
			Resolution:	0.1%
			Accuracy:	0.5%
	Oxygen:	TX6373	Error Correction:	C <sub>2</sub> H <sub>6</sub> , C <sub>3</sub> H <sub>8</sub> , C <sub>4</sub> H <sub>10</sub>
			Technology:	Electrochemical
			Range:	0 to 25% v/v
			Resolution:	0.01%
			Accuracy:	0.5%
Carbon Dioxide:	TX6363	Technology:	Infrared	
		Range:	0 to 100% v/v	
		Resolution:	0.01%	
		Accuracy:	1.0%	
<b>Flow monitoring:</b>	Gas Velocity:	TX6024	Technology:	Differential pressure
			Range:	0 to 40 ms <sup>-1</sup>
			Resolution:	0.1%
			Accuracy:	2.0%
	Gas Temperature:	TX2070	Technology:	PT100
			Range:	-50 to 200°C
			Resolution:	1.0%
			Accuracy:	0.1%
	Pressure:	TX6114	Range:	0 to 200 kPa (abs.)
			Resolution:	0.1 kPa
			Accuracy:	1.0%



# TX6400 Data Sheet

## Layout (example system)



---

## Order Reference

- TX6400.01 Sentrum Methane Recovery Monitoring System - Group 1  
TX6400.02 Sentrum Methane Recovery Monitoring System - Group 2  
TX6400.03 Sentrum Methane Recovery Monitoring System - General Purpose

As each Sentrum is fully customised depending upon your system requirements, contact the Trolex Sales Team to discuss your requirements in detail:

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

---

## Certification

The Trolex equipment contained within the TX6400 Sentrum system is certified for use in the following countries:



Europe (ATEX)



**ANZEx** Australia (ANZEx)



South Africa (MASC)



Russia (GOST-R)

Contact Trolex for further detailed information

---

## Copyright and Trademarks

© 2014 Trolex® Limited.

Trolex is a registered trademark of Trolex Limited. The use of all trademarks in this document is acknowledged.

<b>Document history:</b>	Issue 01	22 July 2013	Original publication of this document
	Issue 02	12 June 2014	Second publication of this document

### Trolex Limited

Newby Road, Hazel Grove, Stockport, Cheshire SK7 5DY, United Kingdom  
+44 (0)161 483 1435 sales@trolex.com www.trolex.com

