

TROLEX

RockMonitor XR

Highly accurate, mine-wide
remote strata monitoring system



Monitoring the integrity of rock structures in underground mining and tunnelling, ensuring the highest levels of worker safety, providing continuous data to allow optimisation of roof support planning

**RockMonitor XR:
In partnership with
Nome Services**

Established in 2006, Nome Services provides expert support to the global mining industry. Offering complete strata management solutions including real-time strata monitoring, geotechnical consultation, and world class technical support, Nome Services has been at the forefront of delivering enhanced safety in underground mining.

Working with all major international mining companies, Nome Services has a proven track record delivering complex projects in the most demanding applications. Supported by an experienced and diverse team of highly qualified specialists in a range of disciplines such as electrical, mechanical, and geotechnical engineering, Nome Services has installed ATEX / IECEx certified strata monitoring solutions in some of the world's largest mines.

www.nomeservices.com.au

TROLEXX

NOME
— SERVICES —



Improve safety and efficiency

Our telltale systems have been proven in some of the world's largest mines to dramatically improve safety and increase efficiency – independently assessed to reduce injury and incident reports by 65% and increase productivity by 40%.

- The RockMonitor XR tracks strata movement throughout the mine in real-time, providing information to central control areas and giving advance warning of excessive displacement.
- Respond early to prevent stoppages due to excessive strata movement, and in the worst case scenario where rockfall cannot be prevented, to facilitate the early evacuation of mine personnel and equipment.
- Automated notifications provide advance warning of excessive movement so that workers never have to take unnecessary risks.
- Significantly improve bolting strategies by analysing detailed rate-of-movement graphs to determine the optimum amount of protection. An independent study showed a 49% cost reduction in standing supports through increased spacing with the Trolex telltale system deployed.
- Increase the up-time on longwall operations, through efficient deployment of assets and by eliminating the need to stop production to take manual readings.

65%

reduction in injuries and incident reports

Flexible alarms

Alarms are fully configurable for any telltale and can be tailored for each specific measurement point. Monitor rate of movement or absolute movement, use system wide alarm setpoints or location specific configurations to suit the geological profile or bolting strategy.

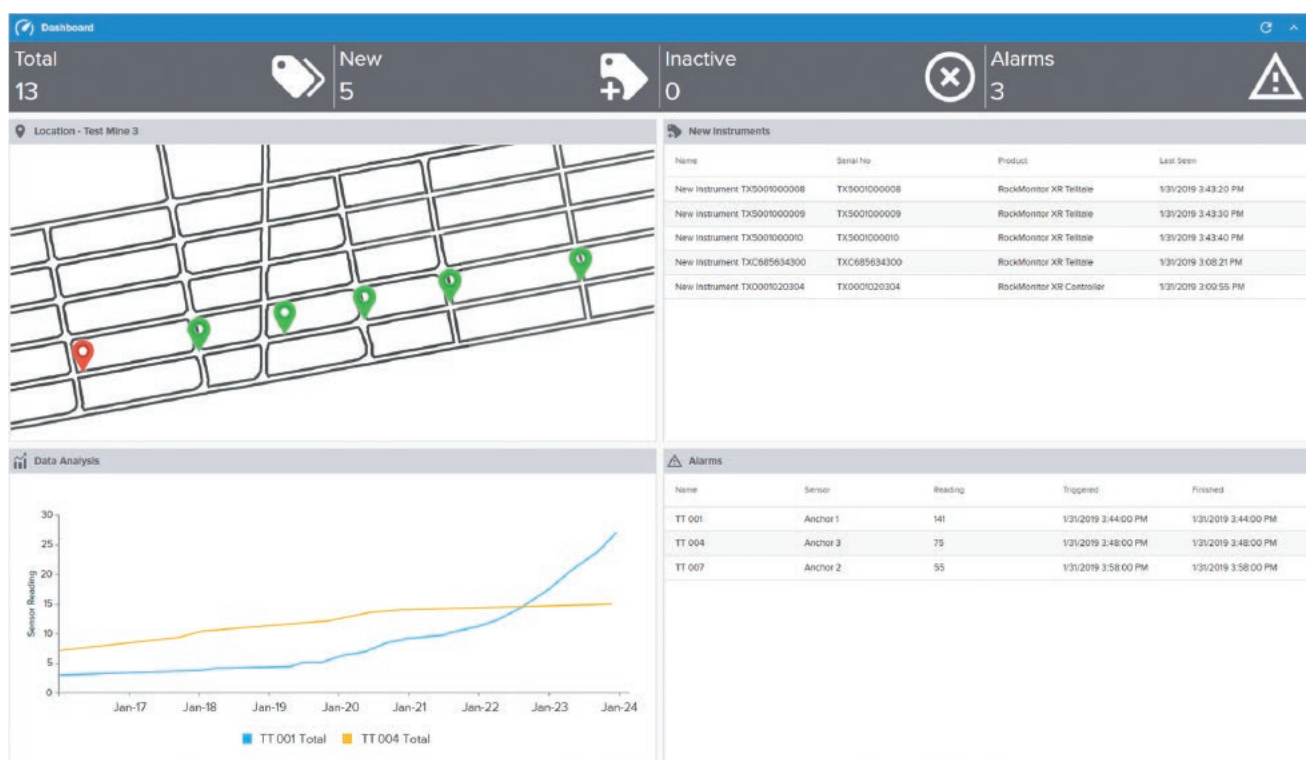
Configuration is quick and simple using the accompanying application software, which also provides continuous feedback on alarm status. Users can align alarm protocols with mine specific Trigger Action Response Plans (TARP) giving immediate notification of breaches and allowing close monitoring of potentially dangerous strata movements.

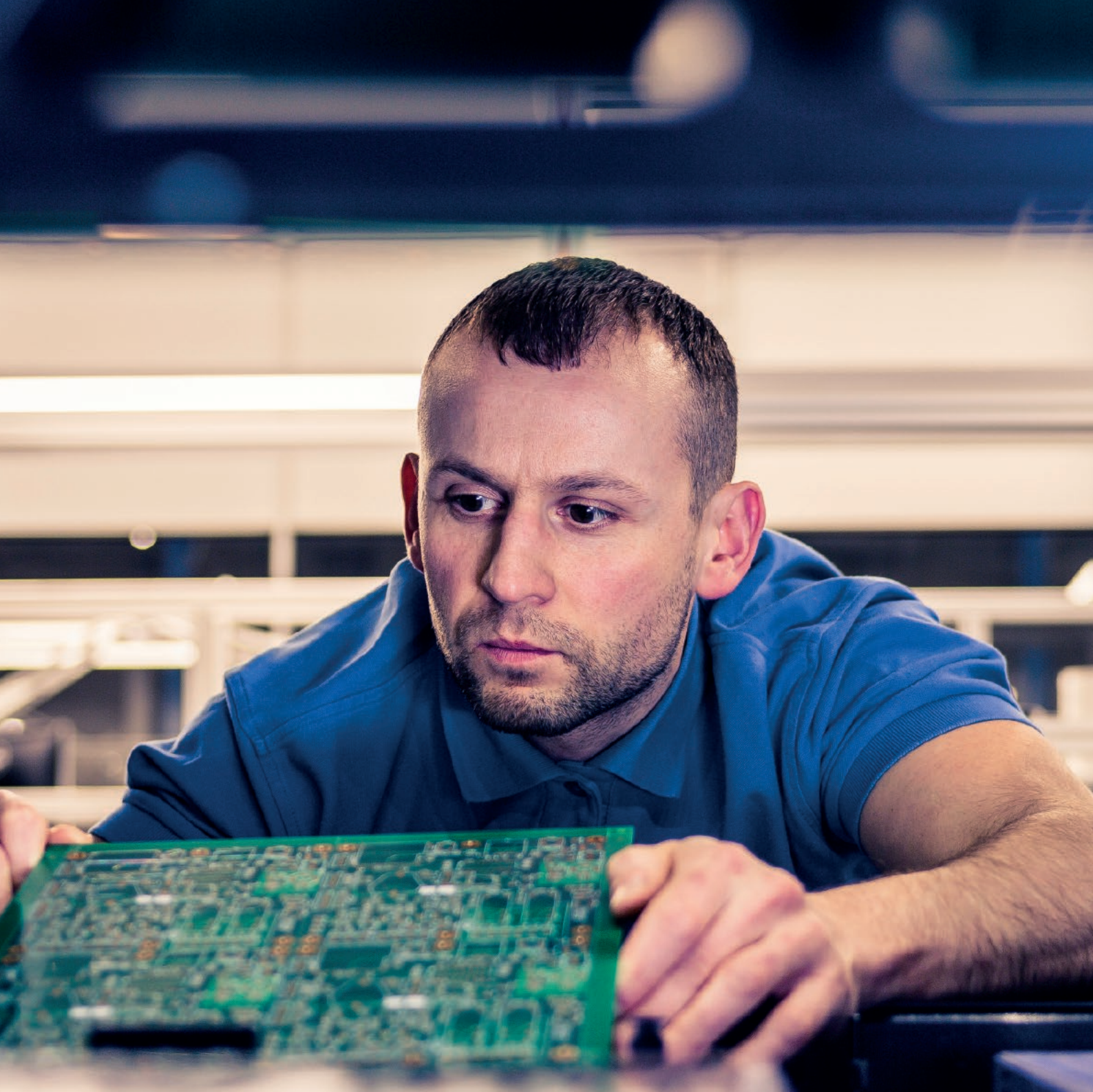
Monitoring, analysing and reporting

Collating, analysing and reporting data is essential for any mining operation. RockMonitor XR makes this fast and easy via powerful Trolex | Core application software.

View live readings or historic data and output detailed graphs to provide critical insight into strata movement and mine safety. Users can monitor multiple systems using detailed GIS mapping to give at-a-glance information on measurements and alarms.

Troxel | Core – Monitoring and analysis





Precision; simplicity; strength; ease-of-use and installation. We created RockMonitor to bring all of these qualities to the mining industry, and we're confident that this is a dramatically superior product to the alternatives available on the market.

Marcin Rubaj
SMT Machine Production Operative

Two or four measurement anchors

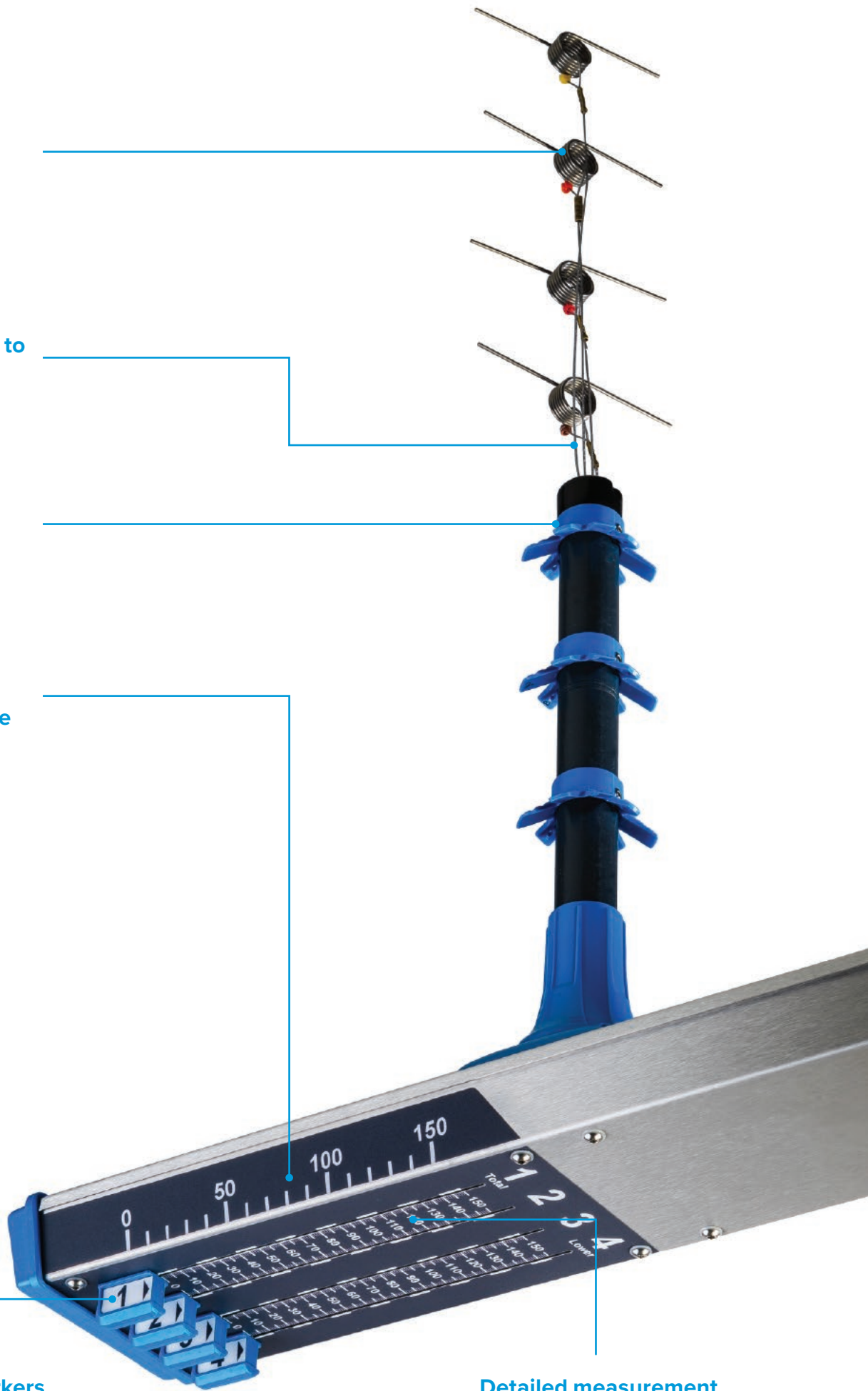
Nylon coated wire to prevent corrosion

Water diverting features to prevent ingress

Highly visible measurement scale to aid reading from a distance

Displacement markers with pull handle for rapid installation and reset

Detailed measurement markers for in-situ displacement readings



Technical Information

System

Operating range	Up to 6 km
Number of telltales	Up to 150 per controller
Ambient temperature	0°C to +50°C
Humidity	10 to 98% (non-condensing)
Certification	IECEX Ex ia I, (Ta = -20°C to +50°C)

Note: a system typically comprises a controller and a number of telltale devices. The portable reader is designed for use during installation and maintenance and is not considered part of a system.

TX5001 Telltale

Ambient temperature	0°C to +50°C
Storage temperature	0°C to +50°C
Humidity	10 to 98% (non-condensing)
Ingress protection	Dust and waterproof to IP54
Housing materials	SS316, PC/ABS
Net weight	2.1kg
Measurement points	2 or 4
Borehole diameter	35 to 45 mm
Measurement range	0 to 150 mm (without reset)
Accuracy	<1.0mm
Repeatability	<0.1mm
Certification	IECEX Ex ia I, (Ta = -20°C to +50°C)

TX5002 Controller

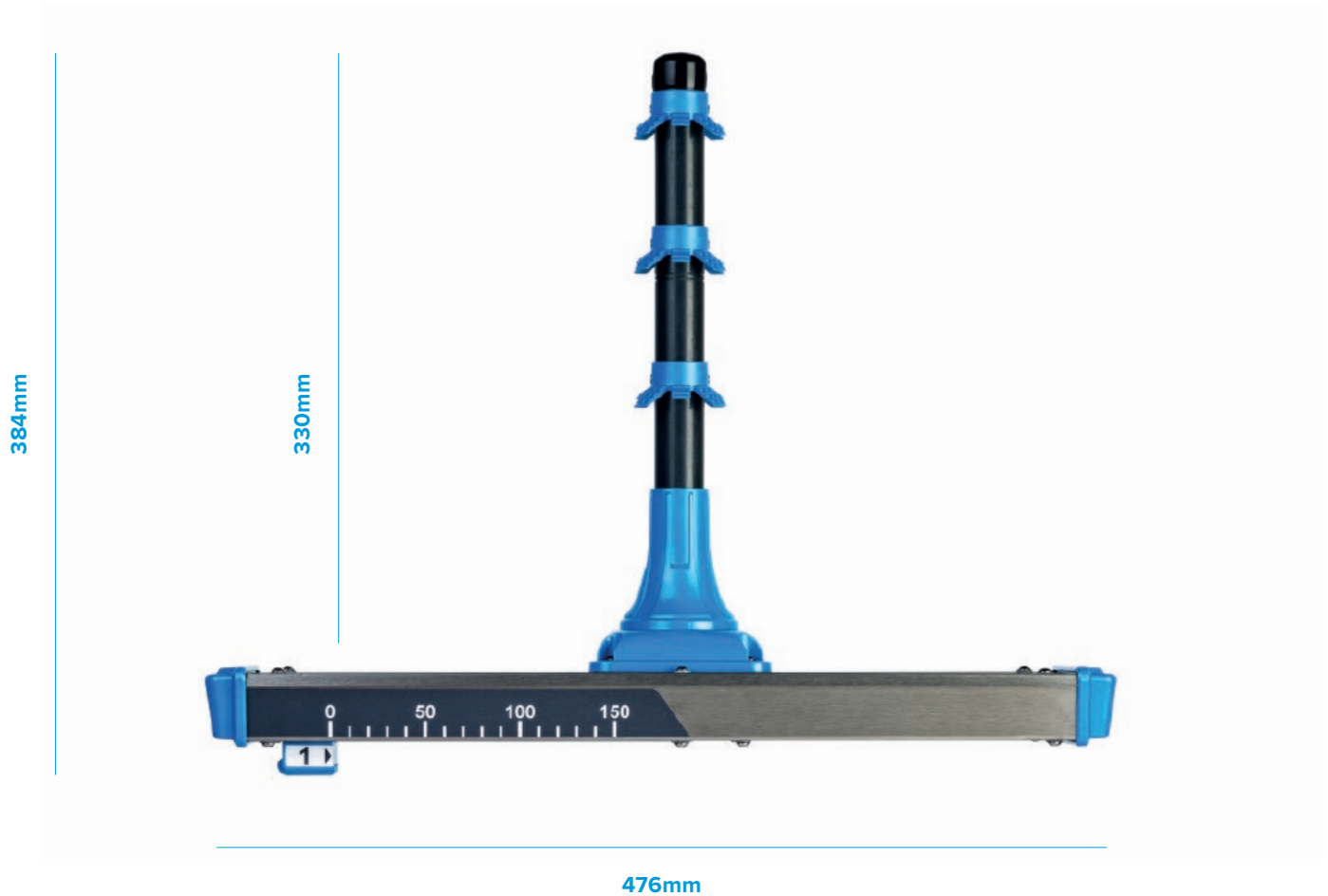
Ambient temperature	0°C to +50°C
Storage temperature	0°C to +50°C
Humidity	10 to 98% (non-condensing)
Ingress protection	Dust and waterproof to IP66
Housing materials	Coated steel
Net weight	6.8kg
Power	14.4V
Display	128 x 64 pixels LCD with backlight illumination
Communications	RS485 data output or Ethernet
System data refresh	3-10 minutes (dynamic depending on system size)
Certification	IECEX Ex ia I, (Ta = -20°C to +50°C)

TX5003 Reader

Ambient temperature	0°C to +50°C
Storage temperature	0°C to +50°C
Humidity	10 to 98% (non-condensing)
Ingress protection	Dust and waterproof to IP54
Housing materials	SS316, Acetyl, (contained in a leather pouch)
Net weight	1.1kg no pouch, 1.4kg with pouch
Battery	NiMH
Battery run time	Up to 12 hours
Battery charge time	6 hours
Display	128 x 64 pixels LCD with backlight illumination
Certification	IECEX Ex ia I, (Ta = -20°C to +50°C)

Dimensions

TX5001 RockMonitor XR Telltale



TX5002 RockMonitor XR Controller



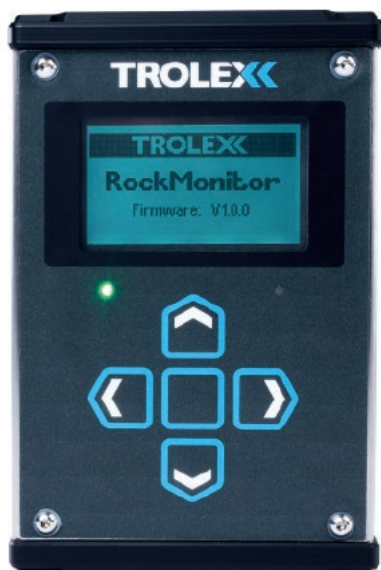
300mm



300mm

151mm

TX5003 RockMonitor XR Reader



121mm



191mm

54mm

Order Reference

RockMonitor XR Telltale

Product options:

*For custom values please fill in separate sheet on next page

TX5001									
Certification		# of Anchors		Anchor Heights		Topology		Cable Length	
IECEX Group I	06	Two Height	02	Standard (15m)	01	Spur	01	Standard (10m)	01
		Four Height	04	Custom*	xx	Daisy Chain	02	Custom*	xx

RockMonitor XR Controller

Product options:

TX5002					
Certification		Communications			
IECEX Group I	06	Ethernet	01		
		RS485	02		

RockMonitor XR Reader

Product options:

TX5003			
Certification			
IECEX Group I	06		

Order Reference – Custom Requirements

RockMonitor XR Telltale

Product options:

Anchor Heights

Anchor 1	<input type="text"/> <input type="text"/>	.	<input type="text"/>	m	(Min. 1.0 m ; Max.* 16.0 m ; Default 15.0 m)
Anchor 2	<input type="text"/> <input type="text"/>	.	<input type="text"/>	m	(Min. 1.0 m ; Max.* 16.0 m ; Default 15.0 m)
Anchor 3	<input type="text"/> <input type="text"/>	.	<input type="text"/>	m	(Min. 1.0 m ; Max.* 16.0 m ; Default 15.0 m)
Anchor 4	<input type="text"/> <input type="text"/>	.	<input type="text"/>	m	(Min. 1.0 m ; Max.* 16.0 m ; Default 15.0 m)

* For anchor heights >16m please contact Trolex via sales@trolex.com

Cable Length

Input cable	<input type="text"/> <input type="text"/>	.	<input type="text"/>	m	(Min. 1.0 m ; Max.* 25.0 m ; Default 10.0 m)
Output cable	<input type="text"/> <input type="text"/>	.	<input type="text"/>	m	(Min. 1.0 m ; Max.* 25.0 m ; Default 10.0 m)

* Maximum combined input and output cable length limited to 25m due to certification requirements

Additional Information

Anchors

The measurement anchors secure the nylon coated steel anchor wires into the borehole. Displacement is measured between the anchor point within the borehole and the tunnel roof. Telltale instruments are configured to provide either two or four measurement points.

Topology

The system has been designed to provide full flexibility in how the network of telltales is configured. Telltales can be connected in a continuous daisy-chain or spurred from an existing cable installation, allowing the system to be easily expanded.

Anchor Heights

Measurement can be adjusted to any length of borehole. Select custom lengths to avoid unnecessary anchor wire wastage.

Cable Lengths

If a daisy-chain topology is selected then the telltale instrument will have two cables (one input and one output) to allow connection to the network. If the spur topology is selected then only a single cable is required to connect the telltale to the system.

Note: for further information on the above features, please refer to the user manual.





The benefits associated with this product series are outstanding - a 65% reduction in injury and incident reports, 40% increase in productivity, 49% reduction in standing support costs - all independently accredited. Every mine in the world should have one of these systems installed and it's our mission at Trolex to ensure that they do.

Dawn Anderson
International Sales Manager

Trolex is a progressive technology group which aims to become the leading name in safety technology, wherever and whenever workers operate in challenging environments. We bring to market products that are dramatically superior to our competition, providing outstanding real-world benefits to our customers.

For more information on Trolex or if you'd like to find out more about the RockMonitor XR please contact us at:

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