

Liquid Flow/Pressure Monitoring System

Precision monitoring of both flow and pressure on heavy mining machinery

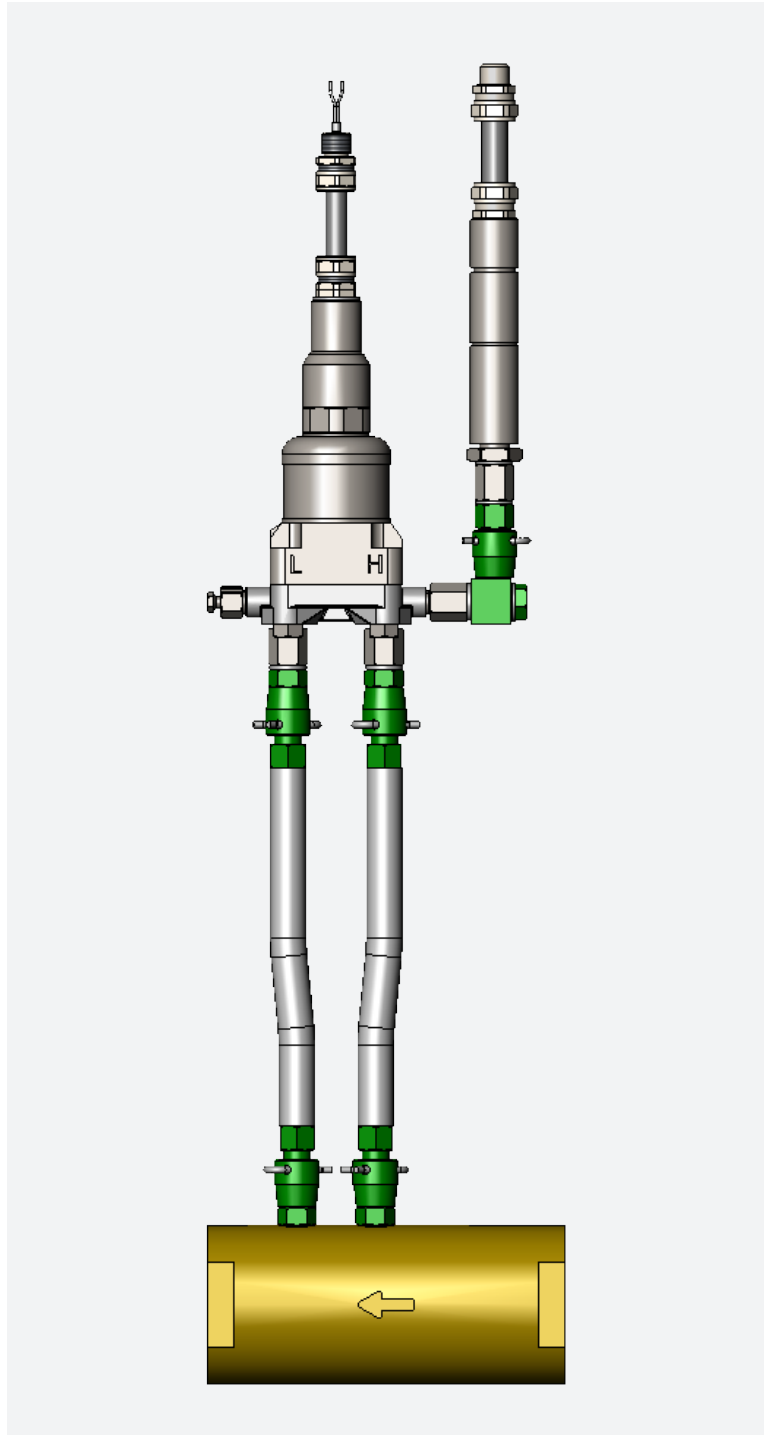
Environments: Mining • Quarries • Tunnelling

Features

- Versatile - high flow capability at high static pressure for use with water and oil
- Protected to IP66 standards
- Robust corrosion resistant pressure capsule for accurate analogue pressure monitoring gives high overpressure capability and superior long term stability
- Can be connected to a TX9042 Programmable Sensor Controller or TX9131 Programmable Trip Amplifier
- Can be used on:
 - Cutters
 - Shearers
 - Hydraulic power packs
 - Road headers
 - Loaders
 - Pumps
 - Compressors
 - Material handling machines
 - Hydraulic couplings
 - Spraying and cooling installations
 - Lubricating systems

Benefits

- Low maintenance - clear bore hole path with no invasive components – no springs, no levers and no mechanical shuttles
- Simple in function with low cost maintenance and unsurpassed reliability in the most extreme working environments
- Cost effective remote monitoring of line pressure and differential pressure to improve integrity on heavy duty machinery
- The flow and pressure signals can be used to control the state of up to 4 output relays



Functional Overview

The flow and pressure output signals from the TX6023/4 Liquid Flow/Pressure Monitoring System sensors can be connected to a TX9042 Programmable Sensor Controller or TX9131 Programmable Trip Amplifier.

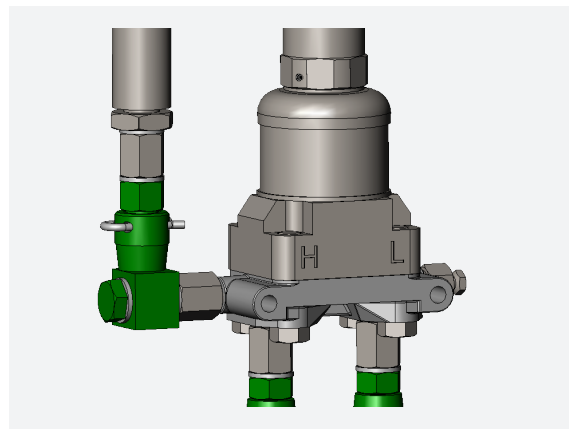
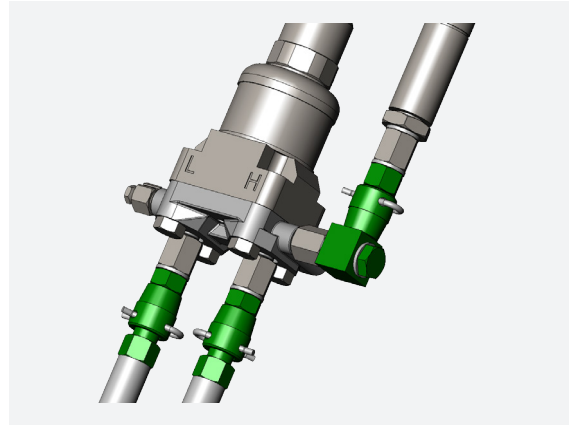
When used in conjunction with a TX9042 or TX9131 the values of flow velocity and line pressure indicate minute changes in flow delivery to spray heads or hydraulic systems on cutting and shearing machines, road headers, continuous miners, dust suppression systems, etc.

Monitoring line pressure together with volumetric flow means that precise flow rates can be determined where there are fluctuations in line pressure.

The flow sensor combines a high accuracy differential pressure sensor and a stainless steel diaphragm pressure sensor with a high precision venturi, for mounting into small bore fluid lines.

The system can be connected directly into oil or water circuits on heavy mining machinery, providing a flow path for the fluid with no mechanical intrusions. In combination with the venturi, the differential pressure sensor gives an output proportional to flow.

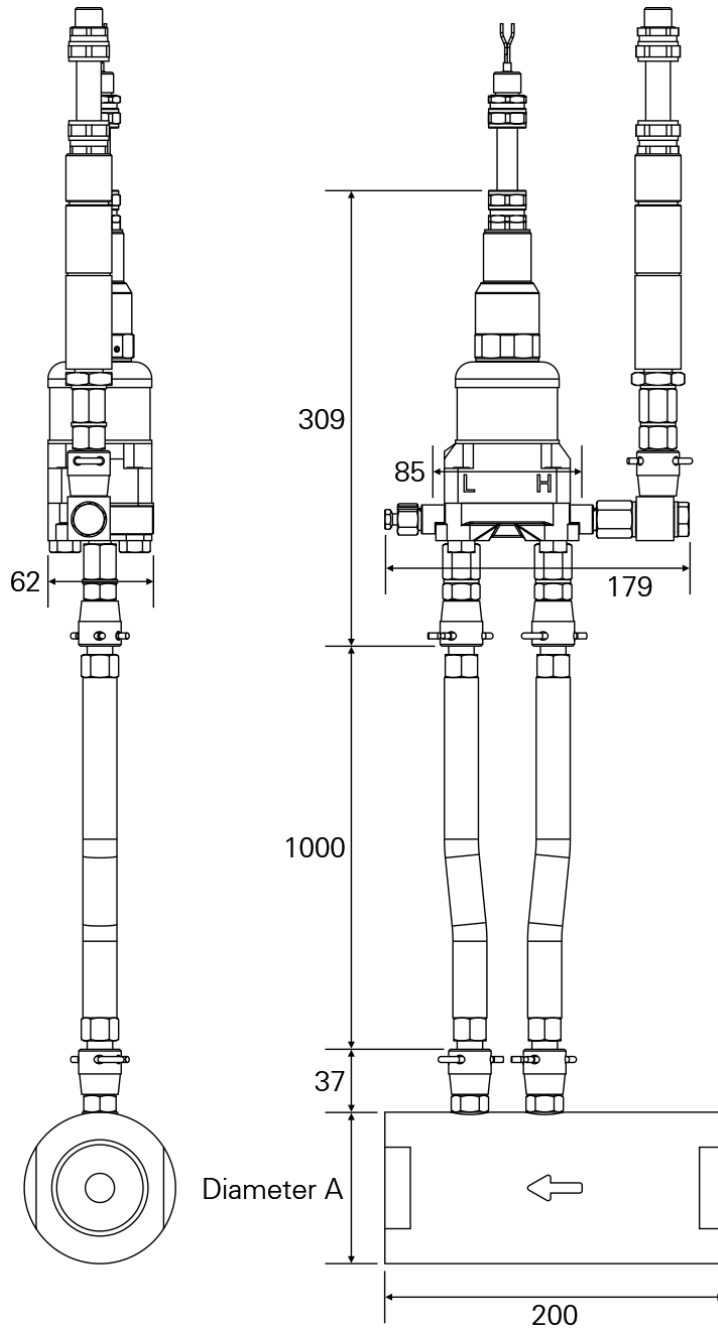
When connected to the TX9042 Programmable Sensor Controller, a linearised, compensated display of flow is shown. The line pressure is also displayed. The flow and pressure signals can be used to control the state of up to 4 output relays.



Technical Information

Flow measuring options	20, 30, 50, 120, 200 and 300 litres/minute - venturi dependent
Pressure range options	0 to 50, 0 to 100 and 0 to 200 bar Higher pressure ranges are available by special order, please contact the Trolex Sales Team for further information and advice
Maximum pressure drop	0.9 to 2.0 bar
Accuracy	+/- 2% of full scale
Repeatability	+/- 1% of full scale
Ambient temperature range	-20°C to +60°C
Supply voltage	12 V dc nominal
Output signals	Flow - 4 to 20 mA Pressure - 4 to 20 mA
Protection classification	IP66

Dimensions



Venturi Diameter A and Flow Rate

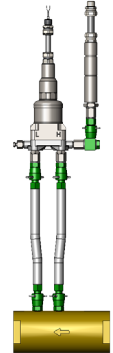
Venturi Diameter A	Flow Rate
63.5 mm	0 to 20 l/min
63.5 mm	0 to 30 l/min
63.5 mm	0 to 50 l/min
63.5 mm	0 to 120 l/min
89 mm	0 to 200 l/min
89 mm	0 to 300 l/min

TX6023 • TX6024 Data Sheet

Order Reference

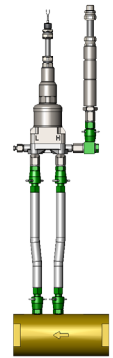
TX6023 Liquid Flow/Pressure Monitoring System for use with TX9042 Programmable Sensor Controller or P5438.91 Programmable Trip Amplifier

Flow Range	0 to 50 bar	0 to 100 bar	0 to 200 bar
0 to 20 l/min	TX6023.76.81	TX6023.77.81	TX6023.78.81
0 to 30 l/min	TX6023.76.82	TX6023.77.82	TX6023.78.82
0 to 50 l/min	TX6023.76.83	TX6023.77.83	TX6023.78.83
0 to 120 l/min	TX6023.76.84	TX6023.77.84	TX6023.78.84
0 to 200 l/min	TX6023.76.85	TX6023.77.85	TX6023.78.85
0 to 300 l/min	TX6023.76.86	TX6023.77.86	TX6023.78.86



TX6024 Liquid Flow/Pressure Monitoring System with Pre-conditioned Flow Sensor Output

Flow Range	0 to 50 bar	0 to 100 bar	0 to 200 bar
0 to 20 l/min	TX6024.76.81	TX6024.77.81	TX6024.78.81
0 to 30 l/min	TX6024.76.82	TX6024.77.82	TX6024.78.82
0 to 50 l/min	TX6024.76.83	TX6024.77.83	TX6024.78.83
0 to 120 l/min	TX6024.76.84	TX6024.77.84	TX6024.78.84
0 to 200 l/min	TX6024.76.85	TX6024.77.85	TX6024.78.85
0 to 300 l/min	TX6024.76.86	TX6024.77.86	TX6024.78.86



Higher pressure ranges are available by special order

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

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Certifications



Europe (ATEX)

Ex Certificate number: Baseefa 05ATEX0193U
Ex Certification code: I M1 Ex ia I (-60°C ≤ Ta ≤ +70°C)
Ex Certificate number: Baseefa 03ATEX0021X
Ex Certification code: I M1 Ex ia I Ma (-20°C ≤ Ta ≤ +60°C)



ATEX Directive (94/9/EC)
EMC Directive (2004/108/EC)

JAS-ANZ



Australia (ANZEx)

Ex Certificate number: AUSEx 02.1519X
Ex Certification Code: Ex ia I (-60°C ≤ Ta ≤ +70°C)
Ex Certificate number: ANZEx 12.3024X
Ex Certification Code: Ex ia I (-20°C ≤ Ta ≤ +60°C)



South Africa

Ex certificate number: MASC M/13-575U
Ex certification codes: Ex ia I (-60°C ≤ Ta ≤ +70°C)
Ex certificate number: MASC M/11-421X
Ex certification codes: Ex ia I (-20°C ≤ Ta ≤ +60°C)



Russia (GOST-R)

Ex certificate number: POCC GB. ГБ05.B03981
Ex certification code: PO Ex ia I

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