



Mining And Surface Certification CC

CC 2008/202081/23



Certificate Number: MASC M/12-831
Issued: 29 January 2014
Expired: 29 January 2015
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IA – CERTIFICATE (Revision 1: Revised for annual review)

IN TERMS OF REGULATION 21.17.2 OF THE MINERALS ACT (INCORPORATION THE MINE HEALTH AND SAFETY ACT) AND REGULATION 9 (1) OF THE ELECTRICAL MACHINERY REGULATIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT

Ex – Type Examination

Certificate number: **MASC MS/12-831**
Equipment: TX5630 Series Accelerometer
Serial No: (See “Conditions of Certification”)
Applicant: Trolex Limited
Address: Hazel Grove
Stockport
Cheshire SK7 5DY
United Kingdom

Manufacturer: Trolex Limited
Address: Hazel Grove
Stockport
Cheshire SK7 5DY
United Kingdom

DESCRIPTION OF EQUIPMENT OR PROTECTIVE SYSTEM

The TX5630 Series Accelerometers are designed to measure velocity or acceleration by converting the signal generated by the compression of a piezo electric crystal by a given seismic mass and output a 4 to 20mA signal proportional to velocity or acceleration to the monitoring equipment.

The accelerometer comprises a piezo electric crystal connected to a signal conditioning board all contained within a stainless steel enclosure of various shapes measuring approximately 33cm³. The enclosure is a fully welded construction.

Electrical connections are made to the apparatus either via an IP65 rated connector or via an integral cable which is encapsulated in the end of the apparatus.

/. Annex...

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ANNEX

The Group II version of the apparatus (excluding cable) has the following terminal parameters:

U_i = 28V
I_i = 115mA
P_i = 0.65W

The Group I version of the apparatus (excluding cable) has the following terminal parameters:

U_i = 16.5V
P_i = 1.74W

The apparatus must be powered from a power limited source such as an appropriately certified fuse assembly containing a ≤62mA fuse, 1.74W (16.5V x 62mA x 1.7).

The capacitance and inductance to resistance ratio of the different versions have the following parameters:

	Integral Cable			Connector
	Polyurethane Cable	Silicone Cable	Armoured Cable	Polyurethane Cable
C _i	= 160 pF/m	= 370 pF/m	= 290 pF/m	= 120 pF/m
L _i /R _i	= 8.32 μH/Ω	= 15.4 μH/Ω	= 15.4 μH/Ω	= 11.7 μH/Ω

Variation 4.1

The equipment has been assessed and found to be compliant with the latest published standards, IEC 60079-0:2011 Edition 6 and IEC 60079-11:2011 Edition 6.

ExTR: **GB/BAS/ExTR12.0255/00**

File Reference: **12/0642**

MARKING:

Troxel Limited

TX5630 Series Accelerometer

Ex Rating: Ex ia I Ma (-40°C ≤ Ta ≤ +60°C)
Ex ia IIC T6 Ga (-40°C ≤ Ta ≤ +60°C)
Ex ia IIIC IP65 T80°C Da (-40°C ≤ Ta ≤ +60°C)

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/ Compliance...

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COMPLIANCE:

The unit as described above and in MASC Letter **12-831** is hereby certified “Explosion Protected” Ex ia I / IIC / IIIC T6 IP65 (-40°C to +60°C), and is suitable for use in hazardous locations as stated below and as tested, assessed and inspected in accordance with the relevant requirements of SANS Standards:

SANS / IEC 60079: “Electrical apparatus for explosive gas atmospheres”,

- **SANS/(IEC) 60079-0 : 2009 “General Requirements”;**
- **SANS/(IEC) 60079-11 : 2007 “ Intrinsic safety ‘i’”;**
- **ARP 0108 (Edition 1.1) “Regulatory requirements for explosion protected apparatus”.**

Location	Zone 0, 1	Underground (incl. coal dust) / Surface
Hazard Frequency	---	Continuous as could occur under normal operating conditions in hazardous area
Environment	Group I / IIC / IIIC	Methane and coal dust / Hydrogen and Acetylene
Limiting Temperature	T6	Mining / Surface
Ambient Temperature	-40°C to +60°C	

The use of apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:

- SANS 10086 requirements;
- Any conditions mentioned in the above report;
- Codes of Practice enforced in terms of Regulations 21.17.2 of Minerals Act, by Chief Inspector of Mines;
- Any restrictions and conditions enforced by Chief Inspectors of Mines, Principal Inspector (Group I equipment) of Chief Inspector of Factories (Group II equipment);
- Any relevant requirements of the MHS Act or the OHS Act.

SPECIAL CONDITIONS OF USE (“X”)

None

CONDITIONS OF CERTIFICATION:

1. The free end of the cable on the integral cable version of the apparatus must be terminated in an appropriately certified dust proof enclosure.

/ . Conditions....

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CONDITIONS OF CERTIFICATION:

1. This Certificate remains valid based on an annual review covered by an official MASC letter.
2. The apparatus must be additionally marked with the MASC marking details above.
3. This approval only covers the equipment as certified above and does not include any scheduled additions or variations/amendments/new issues to the certificate(s), made after the above date.
4. The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by Baseefa and in this approval.
5. The Baseefa certification must remain valid.
6. The extent of the requirements in the ARP 0108 (or regulations) and SANS 10108 on the certification of the equipment must remain unchanged.
7. The Ex quality assurance notification for the equipment must remain valid.

Approved on behalf of MASC



F du Toit
TECHNICAL SPECIALIST

Mining And Surface Certification

This document is issued based on Mining And Surface Certification's Standard Contract terms and conditions available on request.

While every endeavour is made to ensure that a test / assessment is representative and accurately performed, and that a report is accurate in the quoted results and conclusions drawn from the test / assessment, MASC or its members/employees shall in no way be liable for any error made in carrying out the test / assessment or for any erroneous statement, whether in fact or in opinion, contained in a report issued pursuant to a test / assessment.

MASC takes no responsibility for any non-conformances, exclusions or any results / assessments not in compliance with the standards. By marking the equipment in accordance with the documentation / standard, the manufacturer attests on his own responsibility that the equipment has been constructed in accordance with the applicable requirements of the relevant standards and that the routine verifications and routine tests have been successfully completed and the product complies with the documentation and standard(s).

This document is only for use and application in South Africa. It is issued based on National interpretations and accepted practises.

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Mining And Surface Certification CC Reg No: 2008/202081/23
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