



Mining And Surface Certification (Pty) Ltd

2015/021934/07



Certificate Number: MASC MS/14-0066X
Issue: 9 October 2017
Expire: 9 October 2020
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IA – CERTIFICATE (Revision 1- Update & 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/14-0066X
Equipment: Camera or Display / Instrument housing
Serial No: (See “Conditions of Certification”)

Applicant: Nautitech Mining System Pty Ltd
Address: Unit 3/9 Packard Avenue
Castle Hill,
NSW 2154
Australia

Manufacturer: Nautitech Mining System Pty Ltd
Address: Unit 3/9 Packard Avenue
Castle Hill,
NSW 2154
Australia

DESCRIPTION:

The range of enclosures is manufactured from stainless steel with no welded parts. Optional glass lenses can be cemented in different configurations in the front cover and secure with a suitable threaded stainless steel retaining ring.

The cover is secure with six recessed stainless steel M6 x 1.25 x 16mm SHCS (socket head cap screw) having a class / grade of A2-70.

The range of enclosures consists of a single body and a range of covers for different applications:

Threaded entries:	Cover options:
<ul style="list-style-type: none"> Up to four M20 x 1.5 threaded entries equally spaced on the circumference of the cylindrical body of the enclosure. Up to two M20 x 1.5 threaded entries on the bottom base plate of the enclosure. 	<u>Camera enclosure cover (M5060-0-18-002)</u> Small Germanium glass-IR lens with external retaining ring.
	<u>Small LCD display cover (M5060-0-18-009)</u> Large toughened glass lens with internal retaining ring.
	<u>Large LCD display cover or LED light cover (ME5060-0-18-008)</u> Large toughened glass lens with external retaining ring.

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<ul style="list-style-type: none">* Up to two M20 x 1.5 threaded entries on the cover of the enclosure, applicable the metallic cover only.	<u>Junction box cover (ME5060-0-18-010)</u> Full metallic stainless steel cover with up to two M20 x 1.5 threaded entries
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The cover O-ring is utilised to maintain the IP66 rating.

A single type CR1220 Manganese Dioxide / Lithium battery (Type C as per IEC 60086-1) is approved with its associated circuit for use inside the enclosure.

Note: Any intrinsically safe equipment that may be fitted is not covered by this approval and must be additionally considered for the installation rules.

MARKING

TUV marking remains applicable. The following MASC Certificate number (IA number) should be additionally applied to the equipment.

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COMPLIANCE:

The equipment as described above and in MASC letter 14-0066 R1 is hereby certified "Explosion Protected" Ex d I/IIC T5 Mb Gb -20°C ≤ Tamb ≤ 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/IEC Standards:

The evaluation was conducted according to the requirements of:

- i) **SANS (IEC) 60079-0 : 2012 "General Requirements"**
- ii) **SANS (IEC) 60079-1 : 2009 "Equipment protection by flameproof enclosures "d"**

Location	Zone 1	Mining and Surface
Hazard Frequency	---	Intermittent as could occur under normal operating conditions in hazardous area
Environment	Group I / IIC	Methane (coal dust) / Propane to Hydrogen
Surface Temperature	T5	
Service/Ambient Temperature	-20°C to 60°C	Ambient Temperature

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

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

I. CONDITIONS...

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CONDITIONS OF MANUFACTURE:

- None

SPECIAL CONDITIONS OF USE (X)

- Equipment will have a maximum rating of 10W and 3A. Any equipment rated at 7.3W or greater is to have cable and gland rated at 90°C or better.

CONDITIONS OF CERTIFICATION:

1. This Certificate remains valid based on a three yearly review covered by an official MASC letter.
2. The apparatus should 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 TUV and in this approval.
5. The TUV 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/report for the equipment must remain valid.



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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