



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX ITA 09.0007X** Page 1 of 5 **Certificate history:**
Status: **Current** Issue No: 5 **Issue 4 (2020-07-01)**
Date of Issue: 2021-08-23 **Issue 3 (2016-12-23)**
Issue 2 (2012-08-10)
Issue 1 (2010-03-31)
Issue 0 (2009-06-01)
Applicant: **Nautitech Mining Systems Pty Ltd**
Unit 3/9 Packard Avenue
Castle Hill
NSW 2154
Australia
Equipment: **Solenoids / Coils Type A (CT500131), Type B (CT500130), Type C (CT500166) and Type D (CT500167)**
Optional accessory:
Type of Protection: **Encapsulation "m"**
Marking: Type A: NTMS Part No. CT500131 Ex mb I; -20 °C ≤ Ta ≤ 120°C
Type B: NTMS Part No. CT500130 Ex mb I; -20°C ≤ Ta ≤ 120°C
Type C: NTMS Part No. CT500166 Ex mb I; 0°C ≤ Ta ≤ 110°C
Type D: NTMS Part No. CT500167 Ex mb I; 0°C ≤ Ta ≤ 90°C

Approved for issue on behalf of the IECEx
Certification Body:

Ajay Maira

Position:

Certification Authority

Signature:
(for printed version)

Ajay Maira

Date:

2021-08-23

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

Ex Testing and Certification Pty Ltd
1/30 Kennington Drive
Tomago NSW 2322
Australia



TESTING & CERTIFICATION



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Date of issue: 2021-08-23

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Manufacturer: **Nautitech Mining Systems Pty Ltd**
Unit 3/9 Packard Avenue
Castle Hill
NSW 2154
Australia

Additional
manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2007-10 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:5

IEC 60079-18:2004 Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation 'm' electrical apparatus

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[AU/ExTC/ExTR20.0024/00](#)
[AU/ITA/ExTR09.0010/02](#)

[AU/ITA/ExTR09.0010/00](#)
[AU/ITA/ExTR16.0016/00](#)

[AU/ITA/ExTR09.0010/01](#)

Quality Assessment Report:

[AU/MSQ/QAR21.0001/00](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Type A solenoid coil (CT500131) is for use with the Heui fuel pump on various Caterpillar diesel engines.

The Type B solenoid coil (CT500130) is for use with fuel injectors on various Caterpillar diesel engines.

The Type C solenoid coil (CT500166) is for use with fuel injectors on various Cummins diesel engines.

The Type D solenoid coil (CT500167) is for use with the fuel pressure regulator valve on various Cummins diesel engines.

Refer to the Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

For prior issues 0,1 & 2, please refer to prior certificate issues.

For subsequent issues, please refer to Annex.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
See Annexe for details.



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Additional information:

Job 21105

Annex:

[IECEX ITA 09_0007X-05 Annex final.pdf](#)

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Annexe



Annexe for Certificate No.:

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Description: (Continued from certificate)

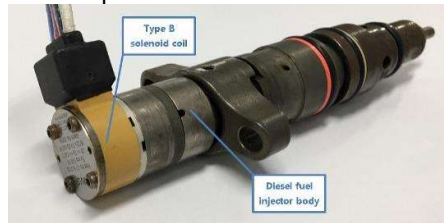
Type A Heui pump solenoid coil (CT500131) and heatsink assembly

The Nautitech Type A Heui pump solenoid coil is for use with Caterpillar C7 engines and other equivalent engines. It is part of an electronic fuel injection system for diesel engines that allows the engine to operate more efficiently and with reduced noise, emissions and fuel consumption. The system is suitable for operation of the engine in Group I Zone 1.



Type B injector solenoid coil (CT500130) and injector body assembly

The Nautitech Type B injector solenoid coil is for use with the diesel fuel injectors of Caterpillar C7 engines and other equivalent engines. It is part of an electronic fuel injection system for diesel engines that allows the engine to operate more efficiently and with reduced noise, emissions and fuel consumption. The system is suitable for operation of the engine in Group I Zone 1.



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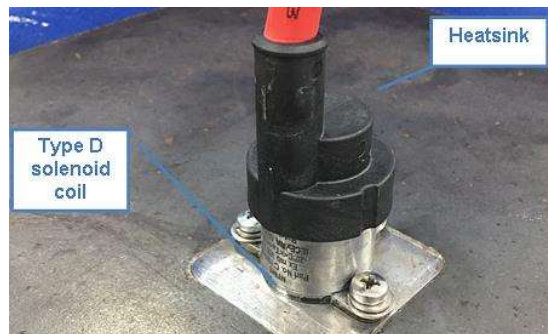
Type C injector solenoid coil (CT500166) and injector body assembly

The Nautitech Type C injector solenoid coil is for use with the diesel fuel injectors of Cummins QSB engines and other equivalent engines. It is part of an electronic fuel injection system for diesel engines that allows the engine to operate more efficiently and with reduced noise, emissions and fuel consumption. The system is suitable for operation of the engine in Group I Zone 1.



Type D fuel pressure regulator solenoid coil (CT500167) and heatsink assembly

The Nautitech Type D fuel pressure regulator solenoid coil is for use with Cummins QSB engines and other equivalent engines. It is part of an electronic fuel injection system for diesel engines that allows the engine to operate more efficiently and with reduced noise, emissions and fuel consumption. The system is suitable for operation of the engine in Group I Zone 1.



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For information on the earlier issues (0,1 & 2), please refer directly to the certificate issues.

Conditions of Manufacture pertaining to Issue 3 of this Certificate:

1. Production units shall be visually examined as required by clause 9.1 of IEC 60079-18:2004 (Ed 2.0).
2. It is a condition of certification that each production unit must be dielectric strength tested between the coil and the external surface area of the equipment, using 1500Vac for 1s or 1800Vac for at least 100ms, without any breakdown or arcing occurring.
3. The equipment must comply with the constructional requirements of the applicable industrial safety standards.
4. The use of the equipment to adverse service conditions are not covered by the certification and must be separately considered.

Specific Conditions of Use pertaining to Issue 3 of this Certificate:

1. The types A, B, C coils may only be used inside a suitable metallic IP54 enclosure that can withstand the relevant impact as per IEC 60079-0:2007 (Ed5). (The enclosure shall be suitable for its intended application).
2. The Type A coil is limited to a maximum input power and voltage of 1W and 250V DC respectively.
3. The Type B coil is limited to a maximum input power and voltage of 0.3W and 250V DC respectively.
4. The flying lead(s) must be terminated by means of an acceptable explosion protection technique, e.g. flameproof or increased safety. The flying leads from the coil, extending into a cable from the coil, must be installed to prevent inadvertent stress on the flying leads / insulated conductors, e.g. by means of a compression gland on the cable sheath or mechanically securing the cable by other means (should the sheath form an integral part of the IP rating / mechanical integrity at the cable entry, the 90°C cable sheath rating should be considered at the cable entry position).
5. The parts to which the equipment may be connected may not exceed the ambient temperature rating of the equipment.
6. Solenoids/Coil Type D may only be utilized in a position where it is not subject to impact or direct sunlight.
7. The Type C solenoids/coils are limited to a maximum input power and voltage of 4.7W and 250V DC respectively.
8. The Type D solenoid/coil is limited to a maximum input power and voltage of 17.5W and 250V DC respectively.
9. The use of the equipment to adverse service conditions are not covered by the certification and must be separately considered.

Variations permitted by Issue 3 of this certificate:

The type C and Type D coils have been extensively tested for operation at higher power levels. This testing was performed on blocks of steel that simulated the engine block. This has then translated into a higher assigned power level and ambient for the Type C and D coils.

In this certificate issue, Type C and Type D coils are now restricted to Group I only.

This form is identified as QMA-HAE-08-710 Issued 2019-03-15

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Drawings Associated with the Issue 3 of this Certificate:

Manufacturer's Documents

Title:	Drawing No.:	Sheets	Rev. Level:	Date:
SOLENOID ASSEMBLY - TYPE C	ExME5050-2-99-111-A	8	D	2016-06-15
SOLENOID ASSEMBLY - TYPE D	ExME5050-2-99-115-A	5	D	2016-06-15
SOLENOID ASSEMBLY - TYPE C - INJECTOR ASSY	ME5050-2-99-281-A	1	1	2016-06-23
SOLENOID ASSEMBLY - TYPE D - Ex TEST ASSY	ME5050-2-99-282-A	1	1	2016-06-23
Solenoid Coil Safety Instructions	QA-PM-16-01 ¹	9	1	2016-12-16
Material Drawing for Solenoid Coil	ExMA500112	1	2	2016-12-16
SOLENOID MARKING	ME5050-2-90-015-A	1	2	2016-12-14

¹The drawing number was corrected during Issue 5 of this certificate.

Variations permitted by Issue 4 of this certificate:

The following variations were assessed in ExTC report AU/EXTC/ExTR20.0024/00 (REP19120-01).

1. Removed the requirement regarding maximum power input for Type A & B coils due to the external temperature influence of the hot engine oil surrounding the coils in operation and the limiting output from the caterpillar control systems. Accordingly amended Type A assembly drawing to remove the power rating.
2. Removed Gas Group IIB T4 from the certification for all coils. Amended description to reflect this change. New marking label and solenoid assembly drawing added to document table to reflect this change.
3. Increased Type A ambient temperature from 100°C to 120°C. New marking label drawing added to document table to reflect this change.
4. Added additional cable option for the coils.

Specific Conditions of Use pertaining to Issue 4 of this Certificate:

The specific conditions of use 2 and 3 from issue 3 of this certificate have been combined and amended to read as follows:

2. The Type A & Type B coils are limited to a maximum voltage of 250V DC. It shall only be powered from the limited output from the caterpillar engine control systems.

All other conditions have not changed from issue 3 of this certificate.

This form is identified as QMA-HAE-08-710 Issued 2019-03-15

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Conditions of Certification (Manufacturer's Responsibility) pertaining to Issue 4 of this Certificate:

No change from issue 3 of this certificate.

Drawing list pertaining to Issue 4 of this Certificate:

Manufacturer's Documents

Title:	Drawing No.:	Pages	Rev. Level:	Date:
Solenoid Marking	ME5050-2-90-016-A	1	1	2020-05-08
Solenoid Assembly - Type A	ExMA500110	2	6	2020-05-15
Solenoid Assembly - Type B	ExMA500111	3	5	2020-05-15
Solenoid Assembly – Introduction	ExMA500112	2	-	2020-05-15
Cable Assembly – Engine Coil	EXME5050-2-99-120-A	1	A	2012-03-28

Variations permitted by Issue 5 of this certificate:

- The manufacturer's Quality Assessment was changed from Ex Testing and Certification to another IECEX Certification Body, Mine Safety Technology Centre. QAR reference has been changed accordingly.

Specific Conditions of Use pertaining to Issue 5 of this certificate:

There are no changes to the conditions of use.

Drawings Associated with the Issue 5 of this Certificate:

There are no drawings applicable to this issue of the certificate.