



# Mining And Surface Certification (Pty) Ltd

2015/021934/07

THIS CERTIFICATE IS ISSUED AS AN I.A. CERTIFICATE IN TERMS OF THE RELEVANT REGULATIONS OF THE MINERALS ACT (INCORPORATING THE MINE HEALTH AND SAFETY ACT) AND THE ELECTRICAL MACHINERY REGULATIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT.

<b>IA CERTIFICATE</b>	MASC M/11-123X	<b>Issue</b>	3
<b>Issue Date</b>	9 October 2020	<b>Expiry Date</b>	9 October 2023
<b>** Based on Certificate No</b>	IECEX ITA 09.0007X	<b>Issue / Variations / Amendment</b>	4
<b>Requested by</b>	Nautitech Mining Systems Pty Ltd Unit 3, 9 Packard Avenue, Castle Hill NSW 2154, Australia		
<b>Manufacturer</b>	Nautitech Mining Systems Pty Ltd Unit 3, 9 Packard Avenue, Castle Hill NSW 2154, Australia		
<b>Description</b>	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.		
<b>Equipment</b>	Solenoids / Coils	<b>Type</b>	Type A (CT500131), Type B (CT500130), Type C (CT500166) and Type D (CT500167)
<b>MARKING:</b> Original marking as per certificate * remains applicable. IA number must be added.	<b>Type:</b>  <b>Ex Marking:</b>  <b>IA Number:</b> <b>Warnings:</b>	Type A (CT500131), Type B (CT500130), Type C (CT500166) and Type D (CT500167) 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 MASC M/11-123X (To be additionally marked on equipment) See Base Certificate ** (original marking must be applied)	
<b>Quality Assurance report (QAR) / Notification (QAN) Expiry date:</b>	AU/ITA/QAR08.0004/12		
<b>Compliance:</b> The equipment as described above has been allocated the rating <u>Explosion Protected "As above"</u> utilizing the SANS/IEC Standards: <ul style="list-style-type: none"> <li>SANS (IEC) 60079-0: 2009 (2007) Equipment - General requirements</li> <li>SANS (IEC) 60079-18: 2005 (2004) Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation 'm' electrical apparatus</li> </ul>			
<b>Special conditions of safe use "X":</b> <ul style="list-style-type: none"> <li>See page 2</li> </ul>			
<b>Conditions of manufacture:</b> <ul style="list-style-type: none"> <li>See page 2</li> </ul>			
 <b>Terine Orsmond</b> <b>TECHNICAL OFFICER</b>		 <b>Regardt Zeelie</b> <b>TECHNICAL SPECIALIST</b>	
<p>This certificate covers all units sold as long as the QAR/QAN remains valid.</p> <p>According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).</p>			

# IA CERTIFICATE: MASC M/11-123X

## Equipment: Solenoids / Coils (Rev 3: Annual review & Update)

Page 2 of 2

### ANNEX A

This document is based on and must be read in conjunction with certificate IECEx ITA 09.0007X	
Description (According to Base Certificate **)	
“Refer to description in Base Certificate ** (and any applicable schedules/issues/variants).”	
Standard compliance	See Base Certificate **
Special conditions of safe use (“X”)	<div><div>1.</div><div>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).</div></div> <div><div>2.</div><div>The Type A &amp; 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.</div></div> <div><div>3.</div><div>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).</div></div> <div><div>4.</div><div>The parts to which the equipment may be connected may not exceed the ambient temperature rating of the equipment.</div></div> <div><div>5.</div><div>Solenoids/Coil Type D may only be utilized in a position where it is not subject to impact or direct sunlight.</div></div> <div><div>6.</div><div>The Type C solenoids/coils are limited to a maximum input power and voltage of 4.7W and 250V DC respectively.</div></div> <div><div>7.</div><div>The Type D solenoid/coil is limited to a maximum input power and voltage of 17.5W and 250V DC respectively.</div></div> <div><div>8.</div><div>The use of the equipment to adverse service conditions are not covered by the certification and must be separately considered.</div></div>
Conditions of manufacture	<div><div>1.</div><div>Production units shall be visually examined as required by clause 9.1 of IEC 60079-18:2004 (Ed 2.0).</div></div> <div><div>2.</div><div>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.</div></div> <div><div>3.</div><div>The equipment must comply with the constructional requirements of the applicable industrial safety standards.</div></div> <div><div>4.</div><div>The use of the equipment to adverse service conditions are not covered by the certification and must be separately considered.</div></div>
Conditions of Certification	<div><div>•</div><div>This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate.</div></div> <div><div>•</div><div>As per ARP 0108 a maximum three yearly review is required on this IA Certificate (expiry is determined as per the QAR/QAN/QMS expiry date).</div></div> <div><div>•</div><div>The apparatus must be additionally marked with the MASC marking details above.</div></div> <div><div>•</div><div>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.</div></div> <div><div>•</div><div>The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by the certificate on which this IA Certificate is based and any other conditions in this IA Certificate.</div></div> <div><div>•</div><div>The certification on which this IA Certificate is based must remain valid.</div></div> <div><div>•</div><div>The extent of the requirements in the ARP 0108 (or regulations), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged.</div></div> <div><div>•</div><div>The Ex quality assurance notification/report for the equipment must remain valid.</div></div>
Conclusion:	<div><div>•</div><div>From the above and the selective examination of the documentation, nothing contrary to the requirements of the applicable standards was found, provided that the equipment / component is used as described in the above document / certificate and according to the MASC conditions below. A MASC IA certificate is issued based on the work done as per the Base Certificate **.</div></div> <div><div>•</div><div>The routine tests for production units according to the Base Certificate ** must be complied with (if applicable).</div></div>

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

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

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