



## 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.

MASC MS/11-127X		Issue	3				
9 October 2020		Expiry Date	9 October 2023				
IECEx ITA 09.	0004X	Issue / Variatio	ns / Amendment 1				
Nautitech Mining Systems Pty Ltd							
Unit 3, 9 Packard Avenue, Castle Hill NSW 2154, Australia							
Nautitech Mining Systems Pty Ltd							
Unit 3, 9 Packard Avenue, Castle Hill NSW 2154, Australia							
The CAN GAUGE CT5002AA [XX-YY] are designed to provide Digital Data related to measured field							
values, diagno	stics and status of the	device. The appa	aratus comes in two types of enclosure a single				
channel module and up to 12 channel module.							
Refer to below	Annex for full descrip		CTF0000A Aliminad				
CAN GAUGE		туре	CT5002AA[xx-yy]				
Type. Ex Marking							
LA Number	EX Marking: EX Ia I / IIB 14						
Monitorer: MASC MS/11-12/X (10 be additionally marked on equipment)							
warnings.	See Dase Certificate		ing must be applied)				
QAR)/	AU/ITA/QAR08.0004	4/12					
ate:							
The equipment as described above has been allocated the rating Explosion Protected "As above" utilizing the SANS/IEC Standards:							
SANS (IEC) 60079-0: 2005 (2004) Equipment - General requirements							
SANS (IEC) 60079-11: 2007 (2006) "Equipment protection by intrinsic safety 'i' "							
Special conditions of safe use "X":							
See page 2							
Conditions of manufacture:							
Ortano al							
there are a second and the second an							
IECHNICAL OFFICER							
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).							
	MASC MS/11- 9 October 202 IECEx ITA 09. Nautitech Mini Unit 3, 9 Pack Nautitech Mini Unit 3, 9 Pack The CAN GAL values, diagno channel modu Refer to below CAN GAUGE Type: Ex Marking: IA Number: Warnings: OAR) / late: above has been 005 (2004) Equip 2007 (2006) "Equip 2007 (2006) (Equip 2007 (Equi	MASC MS/11-127X 9 October 2020 IECEx ITA 09.0004X Nautitech Mining Systems Pty Ltd Unit 3, 9 Packard Avenue, Castle Hi Nautitech Mining Systems Pty Ltd Unit 3, 9 Packard Avenue, Castle Hi The CAN GAUGE CT5002AA [XX-Y values, diagnostics and status of the channel module and up to 12 channer Refer to below Annex for full descrip CAN GAUGE Type: CT5002AA[xx-yy] Ex Marking: IA Number: MASC MS/11-127X Warnings: See Base Certificate CQAR) / AU/ITA/QAR08.000- Iate: CT5002AA[track and the CHS Act, production assurance (an approved mark scheme or ba	MASC MS/11-127X       Issue         9 October 2020       Expiry Date         IECEx ITA 09.0004X       Issue / Variatio         Nautitech Mining Systems Pty Ltd       Unit 3, 9 Packard Avenue, Castle Hill NSW 2154, Aus         Nautitech Mining Systems Pty Ltd       Unit 3, 9 Packard Avenue, Castle Hill NSW 2154, Aus         The CAN GAUGE CT5002AA [XX-YY] are designed t       values, diagnostics and status of the device. The approximate the object of the device of the device of the device. The approximate the object of the device of the device. The approximate the object of the device of the device. The approximate the object of the device of the device. The approximate the object of the device of the device. The approximate the object of the device of the device. The approximate the object of the device of the device. The approximate the object of the device of the device. The approximate the device of the device of the device. The approximate the device of the device of the device. The approximate the device of the device of the device. The approximate the device of the device of the device of the device of the device. The approximate the device of the de				

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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 Any restrictions and conditions enforced by the chief inspector of mines or chief inspector of factories Any relevant requirements of the MHS Act.

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Mining And Surface Certification (Pty) Ltd Unit 5 Lelyta Park, 45 Jurg Ave, Hennopspark Ext 87 Centurion, 0157

## IA CERTIFICATE: MASC MS/11-127X **Equipment: CAN Gauge** (Rev 3: Annual review & Update)

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## ANNEX A

This document is based on and must be read in conjunction with certificate IECEx ITA 09.0004X										
Description (According to Base Certificate **)										
"Refer to description	on in Base Certificate ** (and any applicable sc	hedules/	issues/varia	tions)."						
	The CAN GAUGE CT5002AA [XX-YY] are designed to provide Digital Data related to measured field values, diagnostics and status of the device. The apparatus comes in two types of enclosure a single channel module and up to 12 channel module.									
	The single channel module comprises an interface board, a bottom board, a top board fitted with an optional Liquid Crystal Display and either up to 50 integral float boards or gas connection boards all housed in a metallic enclosure fitted with either integral flying leads or plug and sockets mounted in the wall of the enclosure for the connection of external circuits and an optional window.									
	The CAN Gauge Concentrator types are totally encapsulated modules that comprises up to 12 Standard Can Gauge modules mounted in the same stainless steel enclosure with the exception of the loop power input connection each can gauge output separated from adjacent circuits.									
	The model references are detailed in the manufacturers instruction manual noting that Gas CAN Gauge Type CT5002AA [XX-01] is only to be used in Group I atmospheres in ambient temperatures up to 40°C.									
Description	The combinations covered are identified by AA[xx-yy] associated with the model reference identified as follows: AA = 00 to ZZ Device configuration not effecting Certification									
p	XX 01 Gas Sensor fitted. 02 Float Sensor fitted. 03 External Sensing. 04 to 15 Concentrator with 1 up to 12 Conce	entrator u	nits fitted							
	YY 01 Plug/Socket connections 02 Flying leads									
	The IS Relay - CT5002AA[20-01] comprises of an encapsulated CAN gauge assembly and an encapsulat Relay board containing two relays and protective components all housed in a metallic enclosure. External connections are made via integral plugs and sockets located in the wall of the enclosure for the CAN connections and a cable entry gland for the connection of the high voltage supply. (pilot line)									
	The Pilot connections are to be made to a Group I pilot circuit which can be considered to be a non-intrinsically safe circuit in certain circumstances. The pilot circuit connects to the switch contacts of the IS Relay-CT5002AA[20-01] and is separated from the rest of the apparatus circuits by infallible separation.									
Standard	See Base Certificate **									
Special conditions of safe use ("X")	The following conditions apply         1.       The following parameters are to be taken into account in the installation         1.1.       Inputs									
	CT5002AA [01-YY]			CT5002AA [04-YY] to CT5002AA [1	15-					
	CT5002AA [02-YY] CT5002AA [03-YY] "BI	r + CAN"	YY] "BUS Power + CAN"	1						
	$C_i = 2.3$ $\mu F$			$O_i = 0.9$ $V_i$	v N					
	L <sub>i</sub> = Negligible mH		JF							
	*** See table below. The $C_i$ is determined from	om the nu	mber of CA	$L_i =$ Negligible r N Concentrator units fitted see table below	mH V.					
	*** CAN Concentrator Model Number	Ci								
	CT5002AA [04-YY]	2.3	μF							
	CT5002AA [05-YY] CT5002AA [06-YY]	4.b 6.9	uF							
	CT5002AA [07-YY]	9.2	μF							
	CT5002AA [08-YY]	11.5	μF							
	C15002AA [09-YY]	13.8	μF							
	CT5002AA [11-YY]	18.4	μF							
	CT5002AA [12-YY]	20.7	μF							
	CT5002AA [13-YY] 23.0 µF									
	C15002AA [14-YY] CT5002AA [15-VV]	25.3	uF							

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Mining And Surface Certification (Pty) Ltd Reg No: 2015/021934/07 Directors: Roelof Viljoen & Francoius du Toit Unit #5, Lelyta Park, 45 Jurg Avenue, Hennopspark Ext 87, Centurion, 0157 P.O. Box 14344, Clubview, 0014 Tel: 012 653 2959 ◊ Fax: 086 605 8568 e-mail: info@masc-ex.co.za

IA CERTIFICATE: MASC MS/11-127X Equipment: CAN Gauge (Rev 3: Annual review & Update)

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	1.2. Outputs								
	Multiple Output Version			Concer	Concentrator VersionsCT5002AA-I04-				
	CT5002AA-I03-YY1 "Sensor"			YYltoC	YYltoCT5002AA-I15-YYlPer Channel "Sensor"				
				1/. =	8.9	V			
					As supply				
	P _	1 02	۱۸/	$P_{-}$	1 92	10/			
		30	UE	<u> </u>	30	UF			
	$C_i =$	Nogligiblo	m L	$C_i =$	Nogligiblo	µi m⊔			
		Tregligible	11111	<i>Li</i> –	Inegligible	11111			
	<ol> <li>The Gas temperat</li> <li>When fitt suitable e</li> <li>The IS R consider in the ins</li> <li>Inputs</li> </ol>	CAN Gauge Type C tures up to 40 °C. ted with an integral c enclosure offering a lelay – CT500201[20 ed as non-intrinsicall stallation / application	T5002AA [01-) able the electric degree of prote -01] may only b y safe under ce 1.	Y] is only to be cal connections ction not less the used for con rtain circumsta	e used in Group I atmos to the integral cable mu nan IP20. nection to a Group I pilo nces. This must be take	pheres in ambient ust be housed within a ot circuit which can be en in to consideration			
	CT5002AA[2	0-YY]		CT5002	CT5002AA[20-01]				
	"BUS Power	+ CAN"		Pilot Ci	rcuit				
	$U_i =$	8.9	V	$U_m =$	1,575	Vpeak			
	$C_i =$	2.3	μF	$I_m =$	1.0 A	A			
	$L_i =$	Negligible	mH						
	4.2. Outputs								
	$Pilot Circuit$ $U_o =$ $I_o =$ $P_o =$ $C_i =$ $L_i =$	0 0 0 Negligible Negligible	V A W µF mH						
Conditions of manufacture	None								
Conditions of	This IA Certific	cate covers all units	sold from the da	ate of this docu	ment to the expiry date	of this certificate.			
Certification	As per ARP 0	108 a maximum thre	e yearly review	is required on	this IA Certificate (expi	ry is determined as			
	per the QAR/0	QAN/QMS expiry dat	e).			•			
	<ul> <li>The apparatus</li> </ul>	s must be additionally	y marked with t	ne MASC mark	ing details above.				
	This approval	only covers the equi	pment as certifi	ed above and o	loes not include any sch	neduled additions or			
	variations / an	nendments / new iss	ues to the certif	cate(s), made	after the above date.				
	<ul> <li>The equipment</li> </ul>	nt does not need to	be re-tested w	nen used on th	ne conditions and with s	such restrictions as			
	prescribed by	the certificate on whi	ch this IA Certifi	cate is based a	nd any other conditions i	in this IA Certificate.			
	<ul> <li>The certification</li> </ul>	on on which this IA C	ertificate is bas	ed must remai	n valid.				
	The extent of	the requirements in	the ARP 0108	(or regulation	s), SANS 10108 and a	ny other applicable			
	regulations on	the certification of the	ne equipment m	ust remain und	changed.				
	<ul> <li>The Ex quality</li> </ul>	assurance notificati	on/report for the	e equipment m	ust remain valid.				
Conclusion:	<ul> <li>From the above</li> </ul>	ve and the selective e	examination of t	he documentat	ion, nothing contrary to	the requirements of			
	the applicable	standards was four	nd, provided tha	t the equipme	nt / component is used	as described in the			
	above docume	ent / certificate and a	according to the	MASC condition	ons below. A MASC IA	certificate is issued			
	based on the	based on the work done as per the Base Certificate **.							
	• The routine tests for production units according to the Base Certificate ** must be complied with (if								
	applicable).								

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 / inspection is representative and accurately performed, and that a report / certificate is accurate in the quoted results and conclusions drawn from the test / assessment / inspection, MASC or its directors/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 / certificate issued pursuant to a test / assessment / inspection.

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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