



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 MSC 13.0005X**

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Certificate history:

Status: **Current**

Issue No: 2

[Issue 1 \(2017-06-27\)](#)

[Issue 0 \(2014-01-31\)](#)

Date of Issue: 2023-11-16

Applicant: **Nautitech Mining Systems Pty Limited**
Unit 3/9 Packard Ave
Castle Hills NSW 2154
Australia

Equipment: **Gas Detector**

Optional accessory: Type 12053

Type of Protection: **Intrinsic Safety "ia"**

Marking: Ex ia I Ma

Approved for issue on behalf of the IECEx
Certification Body:

Ujen Singh

Position:

Quality and Certification Manager

Signature:
(for printed version)

Date:
(for printed version)

16 November 2023

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:

TestSafe Australia
919 Londonderry Road
Londonderry, NSW 2753
Australia





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Date of issue: 2023-11-16

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Manufacturer: **Nautitech Mining Systems Pty Limited**
Unit 3/9 Packard Ave
Castle Hills NSW 2154
Australia

Manufacturing locations: **Nautitech Mining Systems Pty Limited**
Unit 3/9 Packard Ave
Castle Hills NSW 2154
Australia

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 60079-0:2011](#) Explosive atmospheres - Part 0: General requirements
Edition:6.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

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 Report:

[AU/MSC/ExTR13.0004/00](#)

Quality Assessment Report:

[AU/MSC/QAR21.0001/01](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Gas Detector Type 12053 is an instrument used for measuring and reporting the atmospheric concentration of a target gas. It is suitable for fixed installation on stationary or mobile plant and is powered from an intrinsically safe fieldbus.

MODEL VARIANTS ("XX-XX" Denotes calibrated range and mounting options)

MODEL	Additional Features	Target Gas
CX053-00-XX-XX	NIL SPAN, NIL PURGE (BASE MODEL)	Methane
CX053-01-XX-XX	SPAN ENABLED ONLY	Methane
CX053-02-XX-XX	PURGE ENABLED ONLY	Methane
CX053-03-XX-XX	SPAN AND PURGE ENABLED(FULLY FEATURED)	Methane

The Gas Detector Type 12053 consists of two flow sensors, barrier circuits, a processor circuit, radio frequency circuits and an IECEx component certified methane sensor.

Refer to the attached Annexe for the list of manufacturer's documentation.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. It is a specific condition of use that the following parameters are taken into account during any installation:

The maximum input parameters are:

P1 Terminals	4 to 3	5 to 6
Maximum Input Voltage U_i	9 V	9 V
Maximum Input Power P_i	-----	2.83 W
Maximum Internal Capacitance C_i	5.5 μ F	5.82 μ F
Maximum Internal Inductance L_i	Negligible	Negligible

The maximum output parameters are:

P1 Terminals	5 to 6
Maximum output Voltage U_o	8.61 V
Maximum output Current I_o	217.4 mA
Maximum output Power P_o	0.47 W
Maximum output Capacitance C_o	44 μ F
Maximum output Inductance L_o	47 μ H

2. It is a specific condition of use that no more than 8 data input/outputs shall be combined in any systems.

3. It is a specific condition of use that the wiring to the P1 connector shall contain an earthed metal screen around pins 5 and 6; the earthed screen shall be terminated at the power source.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Variations permitted by Issue 2:

The auditing body was changed to TestSafe Australia.

Annex:

[IECEX MSC 13.0005X-2_Annexe.pdf](#)



IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX MSC 13.0005X	Issue No.:	2
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Drawing list pertaining to Issue 2 of this Certificate:

Document / Drawing No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
ZUQPTY4FSNWN-169-269	1 of 22	Part #12053 12053_Coversheet SCHEMATIC	4	2014-01-09
ZUQPTY4FSNWN-169-269	2 of 22	Part #DS_AB IS BARRIER Ui_9V Ci_5uF Po_3.06W SCHEMATIC	2	2013-11-28
ZUQPTY4FSNWN-169-269	3 of 22	Part #DS_AF SMPS-Um9V 5V GIS SCHEMATIC	2	2013-11-28
ZUQPTY4FSNWN-169-269	4 of 22	Part #DS_AE UM_10 Uo_8V61 Io_220mA Po_470mW SCHEMATIC	1	2013-08-14
ZUQPTY4FSNWN-169-269	5 of 22	Part #DS_AK OPTO-CAN-IS_IS_1MHZ SCHEMATIC	2	2013-11-28
ZUQPTY4FSNWN-169-269	6 of 22	Part #DS_AM OPTO-2CH-Um9V-5V-3V3_ISIS SCHEMATIC	1	2013-06-13
ZUQPTY4FSNWN-169-269	7 of 22	Part #DS_AN OPTO-2CH-Um9V-3V-5V_ISIS SCHEMATIC	1	2013-06-13
ZUQPTY4FSNWN-169-269	8 of 22	Part #DS_AH PHY-CAN-5V SCHEMATIC	2	2013-11-28
ZUQPTY4FSNWN-169-269	9 of 22	Part #DS_AR SENSOR-FLOW_CTA SCHEMATIC	2	2013-08-21
ZUQPTY4FSNWN-169-269	10 of 22	Part #DS_AP Ui_9V FlowSensor SCHEMATIC	1	2013-01-31
ZUQPTY4FSNWN-169-269	11 of 22	Part #7439_PS 12053_POWER SUPPLIES SCHEMATIC	1	2013-08-21
ZUQPTY4FSNWN-169-269	12 of 22	Part #7439_CPU 12053_Processor SCHEMATIC	1	2013-08-21
ZUQPTY4FSNWN-169-269	13 of 22	Part #7439_DIB 12053_Daughter_Input SCHEMATIC	1	2013-03-25
ZUQPTY4FSNWN-169-269	14 of 22	Part #DS_AS IS BARRIER Ui_9V MIPEX SCHEMATIC	3	2013-12-17
ZUQPTY4FSNWN-169-269	15 of 22	Part #7440_LR 12053_LED RING SCHEMATIC	1	2013-08-21
ZUQPTY4FSNWN-169-269	16 of 22	Part #7440_TS 12053_TEMP_SENSOR SCHEMATIC	1	2013-08-21
ZUQPTY4FSNWN-169-269	17 of 22	Part #7440_BT 12053_BLUETOOTH SCHEMATIC	1	2013-08-21
ZUQPTY4FSNWN-169-269	18 of 22	Part #7458_FPS 12053_FILTER_POSITION_SENSOR SCHEMATIC	1	2013-08-21

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Document / Drawing No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
ZUQPTY4FSNWN-169-269	19 of 22	Part #7441 7441_PCB1-Main_1r0 SCHEMATIC	1	2013-11-28
ZUQPTY4FSNWN-169-269	20 of 22	Part #7442 7442_PCB2-LEDs_1r0 SCHEMATIC	1	2014-11-28
ZUQPTY4FSNWN-169-269	21 of 22	Part #7459 7459_PCB3-Sensor_1r0 SCHEMATIC	3	2013-01-09
ZUQPTY4FSNWN-169-269	22 of 22	Part #7467 7467_PCB4-Flow_1r0 SCHEMATIC	1	2013-11-28
ZUQPTY4FSNWN-169-270	1	PART 12053-1 GAS DETECTOR CERTIFICATION DETAILS	4	2014-01-09
12053-A	1	GAS DETECTOR DATASHEET	2	2017-05-29
ZUQPTY4FSNWN-169-265	1 of 12	Part# 7439 PCB1-Main Top Layer PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-265	2 of 12	Part# 7439 PCB1-Main GND1 PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-265	3 of 12	Part# 7439 PCB1-Main MidLayer1 PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-265	4 of 12	Part# 7439 PCB1-Main GND2 PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-265	5 of 12	Part# 7439 PCB1-Main VCC PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-265	6 of 12	Part# 7439 PCB1-Main Mid-Layer 2 PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-265	7 of 12	Part# 7439 PCB1-Main GND3 PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-265	8 of 12	Part# 7439 PCB1-Main Bottom Layer PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-265	9 of 12	Part# 7439 PCB1-Main Top Silkscreen Overlay PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-265	10 of 12	Part# 7439 PCB1-Main Bottom Silkscreen Overlay PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-265	11 of 12	Part# 7439 PCB1-Main Top Solder Mask Print PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-265	12 of 12	Part# 7439 PCB1-Main Bottom Solder Mask Print PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-266	1 of 10	Part# 7440 PCB2-LEDs Top Layer PCB Artwork	2	2014-01-09

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Document / Drawing No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
ZUQPTY4FSNWN-169-266	2 of 10	Part# 7440 PCB2-LEDs Mid-Layer1 PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-266	3 of 10	Part# 7440 PCB2-LEDs Mid-Layer2 PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-266	4 of 10	Part# 7440 PCB2-LEDs Mid-Layer3 PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-266	5 of 10	Part# 7440 PCB2-LEDs Mid-Layer4 PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-266	6 of 10	Part# 7440 PCB2-LEDs Bottom Layer PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-266	7 of 10	Part# 7440 PCB2-LEDs Top Silkscreen Overlay PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-266	8 of 10	Part# 7440 PCB2-LEDs Bottom Silkscreen Overlay PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-266	9 of 10	Part# 7440 PCB2-LEDs Top Solder Mask Print PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-266	10 of 10	Part# 7440 PCB2-LEDs Bottom Solder Mask Print PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-267	1 of 6	Part# 7458 PCB3-Sensor Top Layer PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-267	2 of 6	Part# 7458 PCB3-Sensor Bottom Layer PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-267	3 of 6	Part# 7458 PCB3-Sensor Top Silkscreen Overlay PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-267	4 of 6	Part# 7458 PCB3-Sensor Bottom Silkscreen Overlay PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-267	5 of 6	Part# 7458 PCB3-Sensor Top Solder Mask Print PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-267	6 of 6	Part# 7458 PCB3-Sensor Bottom Solder Mask Print PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-268	1 of 8	Part# 7466 PCB4-Flow Top Layer PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-268	2 of 8	Part# 7466 PCB4-Flow MidLayer1 PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-268	3 of 8	Part# 7466 PCB4-Flow Mid-Layer 2 PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-268	4 of 8	Part# 7466 PCB4-Flow Bottom Layer PCB Artwork	2	2014-01-09

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ZUQPTY4FSNWN-169-268	5 of 8	Part# 7466 PCB4-Flow Top Silkscreen Overlay PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-268	6 of 8	Part# 7466 PCB4-Flow Bottom Silkscreen Overlay PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-268	7 of 8	Part# 7466 PCB4-Flow Top Solder Mask Print PCB Artwork	2	2014-01-09
ZUQPTY4FSNWN-169-268	8 of 8	Part# 7466 PCB4-Flow Bottom Solder Mask Print PCB Artwork	2	2014-01-09

Note: An “*” is added before the title of documents that are new or revised.

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