



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 14.0011X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 2	Issue 1 (2017-06-27) Issue 0 (2014-06-11)
Date of Issue:	2023-11-16		
Applicant:	Nautitech Mining Systems Pty Limited Unit 3/9 Packard Ave Castle Hills NSW 2154 Australia		
Equipment:	Smart Piezo Valve Type 12105		
Optional accessory:			
Type of Protection:	Intrinsic Safety "ia"		
Marking:	Ex ia I Ma -20°C ≤ Ta ≤ +70°C		

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





IECEX Certificate of Conformity

Certificate No.: **IECEX MSC 14.0011X**

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Date of issue: 2023-11-16

Issue No: 2

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/ExTR14.0005/00](#)

Quality Assessment Report:

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



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The "Smart Piezo Valve Type 12105" is a piezo actuated pneumatic valve designed for mining applications in temperatures up to +70 °C. The circuits are encapsulated to provide environmental protection and are housed in a non-metallic enclosure.

The equipment is powered from other compatible intrinsically safe equipment.

SPECIFIC CONDITIONS OF USE: YES as shown below:

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

P1 Terminals	4 & 2 to 1 (3 not connected)
Maximum Input Voltage U_i	9 V
Maximum Input Capacitance C_i	Negligible
Maximum Input Inductance L_i	Negligible



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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 14.0011X-2_Annexe.pdf](#)



IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX MSC 14.0011X	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-191-299	1 of 9	Part # 12105-0.7 Smart Piezo Valve – COVERSHEET SCHEMATIC	1	2014-03-13
ZUQPTY4FSNWN-191-299	2 of 9	Part # 7500-0.7 SPV-PCB2-Interconnect SCHEMATIC	1	2014-03-13
ZUQPTY4FSNWN-191-299	3 of 9	Part # 7502-0.7 SPV-PCB1-Main SCHEMATIC	1	2014-03-13
ZUQPTY4FSNWN-191-299	4 of 9	Part # DS_EM-1 IS Barrier Ui_9V Io_421mA SCHEMATIC	1	2014-03-13
ZUQPTY4FSNWN-191-299	5 of 9	Part # DS_EN-1 IS Barrier Piezoelectric 30V SCHEMATIC	1	2014-03-13
ZUQPTY4FSNWN-191-299	6 of 9	Part # 7502-0.7 SPV-PCB1-Load SCHEMATIC	1	2014-03-13
ZUQPTY4FSNWN-191-299	7 of 9	Part # DS_BW-1 8MIPS PROCESSOR SCHEMATIC	1	2013-10-08
ZUQPTY4FSNWN-191-299	8 of 9	Part # DS_EP-1 ONE_WIRE_DRIVER SCHEMATIC	1	2014-03-14
ZUQPTY4FSNWN-191-299	9 of 9	Part # 7502-0.7 SPV-PCB1- Valve SCHEMATIC	1	2014-03-25
ZUQPTY4FSNWN-191-312	1	PART 12105-1 Smart Piezo Valve CERTIFICATION DETAIL	1	2014-01-24
12105-A	1	Smart Piezo Valve DATASHEET	2	2017-06-02
ZUQPTY4FSNWN-191-298	1 of 10	Part #7501 SPV-PCB1-Main TOP LAYER PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-298	2 of 10	Part #7501 SPV-PCB1-Main Mid-Layer 1 PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-298	3 of 10	Part #7501 SPV-PCB1-Main Mid-Layer 2 PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-298	4 of 10	Part #7501 SPV-PCB1-Main Mid-Layer 3 PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-298	5 of 10	Part #7501 SPV-PCB1-Main Mid-Layer 4 PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-298	6 of 10	Part #7501 SPV-PCB1-Main Bottom Layer PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-298	7 of 10	Part #7501 SPV-PCB1-Main Top Silkscreen Overlay PCB ARTWORK	1	2014-03-25

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IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX MSC 14.0011X	Issue No.:	2
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Document / Drawing No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
ZUQPTY4FSNWN-191-298	8 of 10	Part #7501 SPV-PCB1-Main Bottom Silkscreen Overlay PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-298	9 of 10	Part #7501 SPV-PCB1-Main Top Solder Mask Print PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-298	10 of 10	Part #7501 SPV-PCB1-Main Bottom Solder Mask Print PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-310	1 of 6	Part #7499 SPV-PCB2-Interconnect TOP LAYER PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-310	2 of 6	Part #7499 SPV-PCB2-Interconnect Bottom Layer PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-310	3 of 6	Part #7499 SPV-PCB2-Interconnect Top Silkscreen Overlay PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-310	4 of 6	Part #7499 SPV-PCB2-Interconnect Bottom Silkscreen Overlay PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-310	5 of 6	Part #7499 SPV-PCB2-Interconnect Top Solder Mask Print PCB ARTWORK	1	2014-03-25
ZUQPTY4FSNWN-191-310	6 of 6	Part #7499 SPV-PCB2-Interconnect Bottom Solder Mask Print PCB ARTWORK	1	2014-03-25

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

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