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 TRC 14.0016X**

Certificate history:

Issue 3 (2017-04-05)
Issue 2 (2015-07-23)
Issue 1 (2014-10-24)
Issue 0 (2014-08-22)

Status: **Current**

Issue No: 4

Date of Issue: 2020-03-05

Applicant: **Michell Instruments Ltd**
Unit 48, Lancaster Way Business Park
Ely, Cambridgeshire
CB6 3NW
United Kingdom

Equipment: **Process Moisture Analyser, QMA601-Ex1, QMA601-Ex2, QMA601-Ex3 & QMA601-Ex4**

Optional accessory:

Type of Protection: **Flameproof Ex db**

Marking: Ex db IIB+H2 T6 Gb

Tamb = -40 °C to +60 °C

Approved for issue on behalf of the IECEx Certification Body: **Stephen Winsor**

Position: **Certification Manager**

Signature: (for printed version)

Date:

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:

Element Materials Technology
Unit 1 Pendle Place
Skelmersdale
West Lancashire

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Certificate No.: **IECEx TRC 14.0016X**

Date of issue: 2020-03-05 Issue No: 4

Manufacturer: **Michell Instruments Ltd**
Unit 48, Lancaster Way Business Park
Ely
Cambridgeshire
CB6 3NW
United Kingdom

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 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

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 Reports:

GB/TRC/ExTR14.0018/00 GB/TRC/ExTR14.0018/01 GB/TRC/ExTR14.0018/02
GB/TRC/ExTR14.0018/03 GB/TRC/ExTR14.0018/04

Quality Assessment Report:

GB/BAS/QAR07.0018/10

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The QMA601-Ex Process Moisture Analyser is designed to provide measurement of trace moisture content in various process operations. The measurement is provided by comparing the difference in frequency of two oscillating quartz crystal.

The Process Moisture Analyser consists externally of a cylindrical Ex d tb certified aluminium enclosure with a threaded lid (Certificate: IECEx PTB 07.0027U/ PTB06ATEX1023U/ PTB06ATEX1023U). There are four model variations covered by this assessment. The QMA601-Ex1/Ex3 are display versions and utilise a glass window in the lid allowing the user to view and use the LED touch screen display. The QMA601-Ex2/Ex4 version use a blind aluminium lid with no glass window present. Enclosure has a free volume of 21 litres.

There are 4 x M20 Cable entries on the enclosure with which only suitably rated cable entry devices are to be used. There are 4 x ½" NPT Ex d tb certified flame arrestors present (either Michell FA/BR range or M.A.M FT/VS 16090 range) on the enclosure, two for the process inlet pipes, and one for outlet pipe. An enclosure breather, of the same, (either Michell FA/BR range or M.A.M FT/VS 16090 range) is also fitted.

Internally the QMA601-Ex consists of a display screen, main PCB and user terminals, mains filter PCB and power connection terminals, power supply unit and an oven assembly. Within the oven assembly is the process moisture analyser system. The analyser system is primarily made up of gas sample lines processing stages & Sensor. All internal joints are vacuum brazed or welded full circumference joints and are 100% leak checked at 3 bar (1.5 x max working pressure of 2 bar, as stipulated by the manufacturer). Total combined allowable flow rate into the enclosure is limited to 5.0 LPM.

A heater is present within the assembly and is utilised to retain the internal operating temperatures at lower ambient temperatures. A temperature controller on the main PCB switches the heater off when a temperature of 70 °C is reached internally. An additional thermostat is present and activated at 70 °C. This thermostat complies with EN60730 and is co-located with the coin cell PCB. An additional non-resettable thermal fuse is included as a further regulatory device which activates at 73 °C.

SPECIFIC CONDITIONS OF USE: YES as shown below:
1. Clean only with a damp or anti-static cloth.

2. External Cables shall be suitable for use at temperatures of 86 °C.

3. Maximum combined process flow into the enclosure shall not exceed 5.0ltr/min.

4. Only suitably certified cable glands, blanking elements and thread adapters must be used.

5. The enclosure must be earthed externally using the earth point provided.

6. Do not open when energised or when an explosive atmosphere may be present.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- Assessment to IEC 60079-1:2014 (ed 7.0), removal of explosive dust atmosphere marking and reduction of maximum internal pressure to 2 bar.

Annex:

Annex to CoC IECEx TRC 14.0016X is 4.pdf

Element Materials Technology,
Unit 1, Pendle Place,
Skelmersdale,
West Lancashire, WN8 9PN,
United Kingdom

Annex to IECEx Certificate of Conformity IECEx TRC 14.0016X issue No.: 4

Routine Tests
1. The enclosure shall withstand a test pressure of at least 18 bar for not less than 10 seconds in accordance with EN/IEC 60079-1 Clause 16.1. There shall be no damage or deformation which may impair the explosion protection properties of the equipment.
2. The containment system shall withstand a test pressure of at least 3 bar for not less than 120 seconds in accordance with EN/IEC 60079-1 Clause G.4.1. There shall be no damage or deformation which may impair the explosion protection properties of the equipment.

Manufacturer's Documents

Title:	Drawing No.:	Rev. Level:	Date:
QMA601 Process Moisture Analyser IECEx & ATEX Certification drawing. (Sheets 1 to 4)	Ex90572	05	2019-11-29
APPENDIX B. QMA601 User's Manual	97449	3.2	2020-03

* Denotes information not provided by manufacturer

Attention is drawn to the operating and installation instructions which may contain useful information in relation to conditions of use.