



# 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](http://www.iecex.com)

Certificate No.: **IECEx CML 23.0197X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2024-02-02

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

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

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:

**L A Brisk**

Position:

**Assistant Certification Manager**

Signature:  
(for printed version)

Date:  
(for printed version)

02 Feb 2024

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Certificate issued by:

**Eurofins E&E CML Limited**  
Unit 1, Newport Business Park  
New Port Road  
Ellesmere Port, CH65 4LZ  
United Kingdom





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Page 2 of 3

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Manufacturing locations: **Michell Instruments Limited**  
Unit 48  
Lancaster Way Business Park  
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**United Kingdom**

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 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-1:2014](#) 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 Report:

[GB/CML/ExTR23.0301/00](#)

Quality Assessment Report:

[GB/BAS/QAR07.0018/13](#)



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Page 3 of 3

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**EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The QMA601 & QMA601-LR Process Moisture Analysers are designed to provide measurement of trace moisture content in various process operations.

**See Annex for full description and Conditions of Manufacture.**

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

**See Annex for Specific Conditions of Use.**

**Annex:**

[IECEx CML 21.0197X Iss. 0 Annex.pdf](#)

**Annexe to:** IECEx CML CML 23.0197X Issue 0

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

**Applicant:** Michell Instruments Ltd



## Description

The QMA601 & QMA601-LR Process Moisture Analyzers are 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 QMA601-LR Analyzer provides an low range trace moisture content output.

The Process Moisture Analyser consists externally of a cylindrical Ex db certified aluminium enclosure with a threaded lid (Certificate: IECEx PTB 07.0027U / PTB 06ATEX1023U). The lid utilises a glass window in the allowing the user to view and use the LED touch screen display.

There are four model variations covered by this assessment:

QMA601-Ex1 (24V DC)

QMA601-Ex3 (240V AC)

QMA601-LR-Ex1 (24V DC)

QMA601-LR-Ex3 (240V AC)

The enclosure has a free volume of 19 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 db 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 & QMA601-LR consist 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.



Certificate Annex IECEx  
Version: 10.0 Approval: Approved



**Eurofins E&E CML Limited**  
Newport Business Park, New Port Road  
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## Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.
- ii. The enclosure shall with 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.
- iii. 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.

## Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

- i. Clean only with a damp or anti-static cloth
- ii. External Cables shall be suitable for use at temperatures of 86 °C
- iii. Only suitably certified cable glands, blanking elements and thread adapters must be used.
- iv. The enclosure must be earthed externally using the earth point provided.
- v. Do not open when energised or when an explosive atmosphere may be present.



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