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UNITED KINGDOM CONFORMITY ASSESSMENT

**UK TYPE EXAMINATION CERTIFICATE**2 **Product or Protective System Intended for use in Potentially Explosive Atmospheres  
SI 2016:1107 (as amended by SI 2019:696) – Schedule 3A, Part 1**3 Type Examination Certificate No.: **EMA21UKEX0001X**4 Product: **Process Moisture Analyser,  
QMA601-Ex1, QMA601-Ex2 QMA601-Ex3 & QMA601-Ex4**5 Manufacturer: **Michell Instruments Ltd.,**6 Address: **Unit 48, Lancaster Way Business Park, Ely, Cambridgeshire,  
CB6 3NW, United Kingdom**

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Element Materials Technology, Approved Body number 0891, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, SI 2016:1107 (as amended by SI 2019:696), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential report **TRA-022213-33-00A, TRA-024251-33-00A, TRA-027025-33-00A, TRA-035534-33-00B & TRA-048861-33-00A.**9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 60079-0:2012+A11:2013 EN 60079-1:2014**

Except in respect of those requirements listed at section 18 of the schedule.

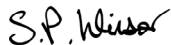
10 If the sign “X” is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall include the following:

 **II 2 G Ex db IIB+H2 T6 Gb Tamb = -40 °C to +60 °C**

This certificate and its schedules may only be reproduced in its entirety and without change. This certificate is issued in accordance with the Element Materials Technology Ex Certification Scheme.



S P Winsor, Certification Manager

Issue date: 2021-01-15

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### 13 SCHEDULE TO UK TYPE EXAMINATION CERTIFICATE

### 14 CERTIFICATE NUMBER EMA21UKEX0001X

### 15 Description of Product

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 1/2" 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.

**16 Test report No. (associated with this certificate issue):** TRA-022213-33-00A, TRA-024251-33-00A, TRA-027025-33-00A, TRA-035534-33-00B & TRA-048861-33-00A

### 17 Specific Conditions of Use

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 5.0 ltr/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 energized or when an explosive atmosphere may be present.



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

### 18 Essential Health and Safety Requirements (Regulations Schedule 1)

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.

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## 19 Drawings and Documents

The list of controlled technical documentation is given in Appendix A to this schedule.

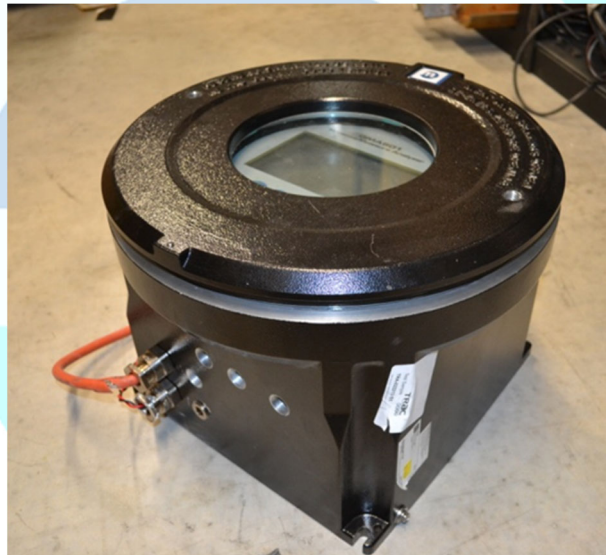
## 20 Routine Tests

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.

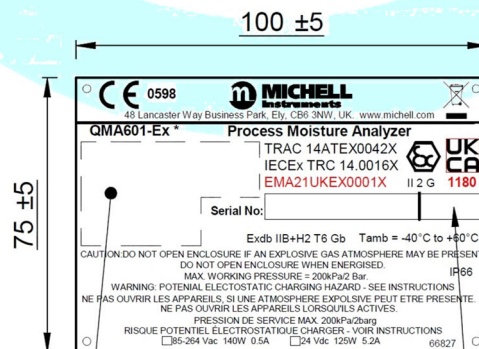
## 21 Specific Conditions for Manufacture

None.

## 22 Photographs



## 23 Details of Markings



INFORMATION CONTAINED IN THIS AREA IS NOT PERTINENT TO ATEX & IECEX CERTIFICATION

SERIAL NUMBER ENTERED IN L.H. BOX. MONTH & YEAR OF MANUFACTURE e.g. "0714" ENTERED IN R.H. BOX

**SCHEDULE TO UK TYPE EXAMINATION CERTIFICATE**  
**CERTIFICATE NUMBER EMA21UKEX0001X**

**24 Certificate History**

Original certificate      2021-01-15      First issue.

This certificate is a consolidated certificate and reflects the latest status of the certification, including all variations and amendments.

**25 Notes to UKCA marking**

In respect of UKCA Marking, Element Materials Technology accepts no responsibility for the compliance of the product against all applicable Regulations in all applications.

**26 Notes to this certificate**

Element Materials Technology certification reference: TRA-052656-01 (GU-MILQ-0006).

Throughout this certificate, the date format yyyy-mm-dd (year-month-day) is used.

Approved Body 0891 is the designation for Element Materials Technology Warwick Ltd.

**27 Conditions for the validity of this certificate**

This certificate remains valid for so long as:

- (i) The equipment listed in section 4 is manufactured in accordance with the documents listed in Appendix A of this certificate.
- (ii) The standards listed in section 9 of this certificate continue to satisfy the Essential Health and Safety Requirements of Schedule 1 of the Regulations SI 2016:1107 (as amended by SI 2019:696) and the generally acknowledged state of the art (e.g. as determined by the publishers of those standards).

**SCHEDULE TO UK TYPE EXAMINATION CERTIFICATE**  
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**APPENDIX A - TECHNICAL DOCUMENTS**

<b>Title:</b>	<b>Drawing No.:</b>	<b>Rev. Level:</b>	<b>Date:</b>
QMA601 Process Moisture Analyser IECEx & ATEX Certification drawing. (Sheets 1 to 4)	Ex90572	06	2020-11-25
APPENDIX B. QMA601 User's Manual	97449	4.1	2021-01

