1 # EU - TYPE EXAMINATION CERTIFICATE

2 **Product or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU – Annex III**

3 EU - Type Examination Certificate No.: **TRAC11ATEX21319X (incorporating variation V1 to V3)**

4 Product: **Hydrocarbon Dewpoint Analyser, Condumax II**

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, Notified Body number 0891, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 Annex II to the Directive.

The examination and test results are recorded in the confidential report **TRA-005554-33-00A, TRA024251-33-01B, TRA-031433-33-00A & TRA-035543-33-00A**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012/A11:2013 **EN 60079-1:2007**

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 EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive 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 d IIB+H2 T6 Gb (Tamb = -40°C to +44°C)
Ex d IIB+H2 T5 Gb (Tamb = -40°C to +59°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: 2017-05-05

Unit 1, Pendle Place, Skelmersdale, West Lancashire, WN8 9PN, United Kingdom
Element Materials Technology Warwick Ltd.
Registered in England and Wales. Registered Office: 5 Fleet Place, London, EC4M 7RD
Company Reg No. 02536659

13 SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

14 TRAC11ATEX21319X (incorporating variation V1 to V3)

15 Description of Product

The Condumax II Hydrocarbon Dewpoint Analyser is designed for on-line measurement of the hydrocarbon condensation temperature of natural gas. A microprocessor controls all the functions associated with sampling and data processing. The Condumax II incorporates a display behind the main enclosure glass and proximity switches allow the user to control operation.

The Condumax II is housed within an ATEX / IECEx component certified flameproof enclosure (JCE model GUB5, certificate numbers IECEx TRC12.0002U / TRAC12ATEX0008U) and has been assessed for use with group IIB+H2 gases.

High pressure microbore process lines enter and exit the flameproof housing via suitably rated sintered elements used to prevent flame propagation from the enclosure to the process (either Michell FA/BR range or M.A.M FT/VS 16090 range). The flameproof enclosure also incorporates a breathing device with sintered element (either Michell FA/BR range or M.A.M FT/VS 16090 range). to prevent pressure build up within the main enclosure should there be a leak from the process lines.

The maximum allowable flow rate into the flameproof enclosure is 1.5 LPM, with a maximum pressure of 138 Bar, these limits ensure pressure build-up within the enclosure is below 100mBar above atmospheric pressure. The process line is purged to ensure the process gas/fluid is above the upper explosive limit before applying power to the system.

The equipment can be supplied either uncoated, painted or powder coated.

Electrical characteristics: Input 90-260 Vac 50/60 Hz 125 W

16 Test report No. (associated with this certificate issue): TRA-035543-33-00A

17 Specific Conditions of Use

1. Do not open when an explosive gas atmosphere may be present.
2. External cables shall be compatible with a temperature of 80°C (T6) or 95°C (T5)
3. Maximum process pressure shall not exceed 138 Barg for the hydrocarbon dewpoint circuit.
4. Maximum combined process flow into the enclosure shall not exceed 1.5 LPM.
5. All process lines shall be purged to ensure the process gas or liquid is above it's upper explosive limit before applying power.
6. Where painted or powder coated, the enclosures could present an electrostatic hazard. Clean only with a damp or anti-static cloth.
7. The enclosure is to be earthed externally using the earth point provided.
8. Only suitably ATEX / IECEx certified (as appropriate) cable glands and blanking elements shall be used.

18 Essential Health and Safety Requirements (Directive Annex II)

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	**Subject**
None	None

19 Drawings and Documents

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

20 Routine Tests

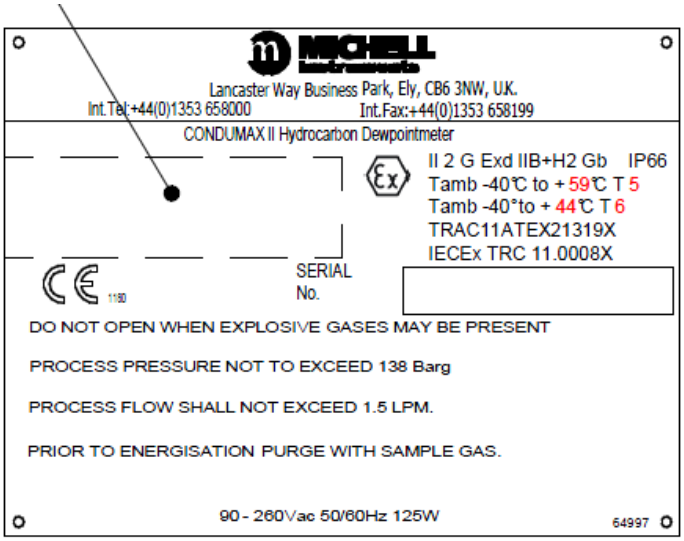
Refer to Specific Conditions for Manufacture.

21 Specific Conditions for Manufacture

1. The manufacturer shall perform routine end of line tests on the internal pipe work:
   - For product applications up to a maximum 150 bar of the Hydrocarbon Dew point circuit shall be tested by applying a pressure of 207 Barg for 10 minutes. The test is deemed satisfactory if there is no damage, deformation or loss of applied pressure.
   - For product applications up to a maximum 138 bar of the Water Dew point circuit shall be tested by applying a pressure of 207 Barg for 10 minutes. The test is deemed satisfactory if there is no damage, deformation or loss of applied pressure.

22 Photographs

23 Details of Markings



24 Details of Variations to this Certificate

This certificate is a consolidated certificate and reflects the latest status of the certification, including the following variations:

- Variation V1 – Change of flame arrestors, update of special conditions for safe use.
- Variation V1 issue 2 – update of label. No other change.
- Variation V2 -- Addition of an Optics control pcb and update to drawings.
- Variation V3 -- Replacement of flame arrestors and breathers resulting in changes to ambient range, temperature class and an update to the special conditions of use

25 Notes to CE marking

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

26 Notes to this certificate

Element Materials Technology certification reference: **TRA-035543-32-00A**

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

Notified Body 0891 is the designation for Element Materials Technology Warwick Ltd (formerly known as TRaC Global Ltd).

In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variation certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

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 Annex II of Directive 2014/34/EU and the generally acknowledged state of the art (e.g. as determined by the publishers of those standards).

APPENDIX A - TECHNICAL DOCUMENTS

Title:	Drawing No.:	Rev. Level:	Date:
CONDUMAX II IECEx and ATEX Certification Drawing (3 sheets)	Ex90530	04	2017-03-29
Condumax II User's Manual Appendix G	97081	27.1	2017-03