



UNITED KINGDOM CONFORMITY ASSESSMENT

1 **UKCA UK TYPE EXAMINATION CERTIFICATE**

2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

3 Certificate Number: **CSAE 22UKEX1084X** Issue: **0**

4 Product: **CT5800 Continuous Gas Analyzer**

5 Manufacturer: **Emerson Process Management Limited**

6 Address: **2 Hunt Hill
Cumbernauld
Glasgow
G68 9LF
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 CSA Group Testing UK Limited, Approved Body number 0518, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), 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 reports listed in Section 14.2.

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

EN IEC 60079-0:2018 EN 60079-1:2014

Except in respect of those requirements listed at Section 16 of the schedule to this certificate. The above standards may not appear on the UKAS Scope of Accreditation, but have been added through flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This UK 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 be in accordance with Regulation 41 and include the following:



II 2G
Ex db IIB+H₂ T4 Gb
Ta = -20°C to +55°C

Name: Michelle Halliwell
Title: Director of Operations



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CSA Group Testing UK Ltd., Unit 6 Hawarden Industrial Park, Hawarden, CH5 3US, UK
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Certificate No. CSAE 22UKEX1084X

DQD544.21 Issue 3 (2022-04-14)

Page 1 of 4

SCHEDULE

UK TYPE EXAMINATION CERTIFICATE

CSAE 22UKEX1084X

Issue 0

13 DESCRIPTION OF PRODUCT

The CT5800 Continuous Gas Analyzer is an infra-red laser based spectrometer used for the analysis and measurement of gases. The measurement results are displayed on the equipment or they can be communicated to external equipment. A containment system in the form of a gas cell is provided inside the enclosure for the measurement of the gas mixture. The gas cell has an inlet and an outlet through which the process gas flows.

Maximum operating pressure of process gas: 1 barg
Temperature of process gas: +4 °C to +60 °C
Supply Voltage: 220 V to 240 V, 50 Hz
or
110 V to 120 V, 60 Hz

The enclosure is cast aluminium with an opening cover for access. The cover is fastened with 20 off M16 fasteners which are held captive in the cover when opened. A glass display window and keypad is provided in the cover.

Internal heaters are provided and limited to the following maximum temperatures.

Enclosure +5 °C
Gas Cell +50 °C

The bottom of the enclosure is provided with 4 off M20 x 1.5 and 8 off M18 x 1.5 entries. The process gas inlet and outlet utilises two of the M18 entries and are each fitted with a flame arrestor. Breathing devices are fitted as required into the M18 or M20 entries.

The remainder of the entries are fitted with a suitably certified cable entry or a blanking plug.

The CT5800 Continuous Gas Analyzer provides a degree of ingress protection IP66.

Incorporated amendments:

The product description includes the following applicable amendments. Amendments directly applicable to UKCA certification have been included in this list.

1. The introduction of changes to the permissible laser path lengths.
2. The introduction of an improved gas fitting for the PT100 temperature sensor component.
3. The introduction of an alternative detector models PDA10D2 and PDA8A2.
4. The introduction of an additional 3 tapped holes on the bottom housing of the enclosure.
5. The introduction of an alternative input module in the flameproof enclosure.
6. To permit the replacement of the cement material options to secure the window of the Ex d enclosure.
7. Introduction of pressure sensor type TE MTE8000 manufactured by First Sensor AG and type Titan TPTa manufactured by Stork Solutions Ltd as alternatives of currently approved pressure sensor type CTE8002AY7V manufactured by First Sensor AG (drawing W-1050-0002 item 7) mounted on the containment system.

SCHEDULE

UK TYPE EXAMINATION CERTIFICATE

**CSAE 22UKEX1084X
Issue 0**

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	05 July 2022	R80116202A	The release of the prime certificate.

15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

- 15.1 This equipment has flamepaths which differ from those in EN 60079-1:2014. Emerson Process Management Limited shall be contacted for guidance when maintaining the flamepaths.
- 15.2 The fasteners which secure the cover are non-standard and shall therefore only be replaced by fasteners supplied by the manufacturer for this purpose. The fasteners must always be fitted with the washer supplied by the manufacturer.
- 15.3 The equipment has non-conductive surfaces which are a potential electrostatic charging hazard – see the instructions for guidance.
- 15.4 The user shall ensure that the flow of process gas is limited to a maximum flow rate of 6 litres per minute.
- 15.5 The equipment shall only be used with process gases which are classified for equipment group IIB + H₂ and must not contain oxygen or any other oxidizer in concentrations greater than that found in normal air.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (REGULATIONS SCHEDULE 1)

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

17 PRODUCTION CONTROL

- 17.1 Holders of this certificate are required to comply with production control requirements defined in Schedule 3A, as applicable, and CSA Group Testing UK Regulations for Certificate Holders
- 17.2 Each enclosure shall be subjected to a routine pressure test as required by clause 16.1 of EN 60079-1:2014. A minimum pressure of 10.71 bar shall be applied and held for at least 10 seconds. The test is considered satisfactory if the following conditions are met:
 - The enclosure has suffered no permanent deformation or damage invalidating the type of protection.
 - The joints in no place have been permanently enlarged.
 - There is no leakage through the walls of the enclosure or the cemented window joint.
- 17.3 Each gas cell and pipework between the cell and the flame arrestors at the inlet and outlet shall be subjected to a routine pressure test as required by annex G.4.1 of EN 60079-1:2014. A pressure of 1.5 bar shall be applied and held for at least 120 seconds. The increase of the test pressure should achieve the maximum pressure within 5 seconds. The test is considered satisfactory if no permanent deformation occurs and compliance with the leakage test for a containment system with a limited release as required by Annex G.4.3 of EN 60079-1:2014 is verified.





SCHEDULE

UK TYPE EXAMINATION CERTIFICATE

CSAE 22UKEX1084X
Issue 0

- 17.4 The equipment covered by this certificate incorporates the following previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform CSA Group of any modifications of the devices that may impinge upon the explosion safety design of the equipment.

Manufacturer Product	Type	Certificate	Relevant standards	Relevant Ex marking
Ex Innovations Ltd. Breather/drain	CT	ITS 13ATEX17782X issue 2	EN 60079-0:2012 EN 60079-1:2007	II 2G Ex d IIC Gb
Ex Innovations Ltd. Thread adaptor	AB	Sira 10ATEX1225X issue 7	EN 60079-0:2009 EN 60079-1:2007	II 2G Ex d IIC Gb



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Certificate Annexe

Certificate Number: CSAE 22UKEX1084X
Product: CT5800 Continuous Gas Analyzer
Manufacturer: Emerson Process Management Limited

Issue 0

Drawing	Sheets	Rev.	Date (Stamp)	Title
A-1050-0001	1 to 2	C	25 Jan 21	Front Cover, Window Assembly
A-1050-0002	1 to 3	C	14 Feb 19	Enclosure Details
A-1050-0003	1 to 3	C	14 Feb 19	Enclosure Details
A-1050-0004	1 to 14	D	09 Jun 22	CT5800 Top Level Cert Drawing, ATEX/IECEX/UKEx
A-1050-0006	1 to 3	B	09 Mar 17	Gas Cell Seals
M-1050-0001	1 to 2	C	14 Feb 19	Bottom Housing
M-1050-0002	1 of 1	B	09 Mar 17	Top Housing
M-1050-0003	1 to 2	D	09 Jun 22	CT5800 Side Plaque ATEX/IECEX
W-1050-0002	1 to 3	D	09 Jun 22	CT5800 Certification Component Index Drg.



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