



# 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.:	<b>IECEX SIR 17.0026X</b>	Page 1 of 4	<u>Certificate history:</u>
Status:	<b>Current</b>	Issue No: 4	Issue 3 (2022-04-01)
Date of Issue:	2022-06-28		Issue 2 (2021-02-02)
Applicant:	<b>Emerson Process Management Limited</b> 2 Hunt Hill Cumbernauld G68 9LF <b>United Kingdom</b>		Issue 1 (2019-03-26)
Equipment:	<b>CT5800 Continuous Gas Analyzer</b>		Issue 0 (2017-03-22)
Optional accessory:			
Type of Protection:	<b>Flameproof db</b>		
Marking:	Ex db IIB+H <sub>2</sub> T4 Gb Ta = -20°C to +55°C		

Approved for issue on behalf of the IECEx  
Certification Body:

**Michelle Halliwell**

Position:

**Director Operations, UK & Industrial Europe**

Signature:  
(for printed version)

Date:  
(for printed version)

1. This certificate and schedule may only be reproduced in full.
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Certificate issued by:

**CSA Group Testing UK Ltd**  
**Unit 6, Hawarden Industrial Park**  
**Hawarden, Deeside CH5 3US**  
**United Kingdom**





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Date of issue: 2022-06-28

Issue No: 4

Manufacturer: **Emerson Process Management Limited**  
2 Hunt Hill  
Cumbernauld G68 9LF  
**United Kingdom**

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

[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/CSAE/ExTR22.0078/00](#)  
[GB/SIR/ExTR19.0079/00](#)

[GB/CSAE/ExTR22.0116/00](#)  
[GB/SIR/ExTR21.0013/00](#)

[GB/SIR/ExTR17.0058/00](#)

Quality Assessment Report:

[GB/SIR/QAR16.0005/05](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

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.

Refer to the Annexe for additional information

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

1. This equipment has flamepaths which differ from those in IEC 60079-1. The manufacturer shall be contacted for guidance when maintaining the flamepaths.
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.
3. The equipment has non-conductive surfaces which are a potential electrostatic charging hazard – see the instructions for guidance.
4. The user shall ensure that the flow of process gas is limited to a maximum flow rate of 6 litres per minute.
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.



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Date of issue: 2022-06-28

Issue No: 4

## **DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

**This issue, Issue 4, recognises the following changes; refer to the certificate annex to view a comprehensive history:**

1. Following appropriate assessment to demonstrate compliance with the requirements of the latest standard, IEC 60079-0:2011 Ed.6 is replaced with IEC 60079-0:2017 Ed.7.
2. 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.

## **Annex:**

[IECEX SIR 17.0026X Issue 4 Annexe.pdf](#)

Annexe to: IECEx SIR 17.0026X Issue 4  
Applicant: Emerson Process Management Limited  
Apparatus: CT5800 Continuous Gas Analyzer.



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.

## Conditions of Manufacture

1. Each enclosure shall be subjected to a routine pressure test as required by clause 16.1 of IEC 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.
2. 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 IEC 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 IEC 60079-1:2014 is verified.

## Full certificate change history

**Issue 1** – this Issue introduced the following changes:

- i. To introduce changes to the permissible laser path lengths.
- ii. To introduce an improved gas fitting for the PT100 temperature sensor component.
- iii. To introduce alternative detector models PDA10D2 and PDA8A2.
- iv. To introduce an additional 3 tapped holes on the bottom housing of the enclosure.
- v. To introduce an alternative input module in the flameproof enclosure.
- vi. The recognition of minor modifications to scheduled drawings. These amendments are administrative or involve changes to the design that do not affect the aspects of the product that are relevant to explosion safety.

**Issue 2** – this Issue introduced the following change:

- i. To permit the replacement of the cement material options to secure the window of the Ex d enclosure.

**Annexe to:** IECEx SIR 17.0026X Issue 4

**Applicant:** Emerson Process Management Limited

**Apparatus:** CT5800 Continuous Gas Analyzer.



**Issue 3** – this Issue introduced the following change:

- i. The certificate holder and manufacturer's name and address were changed:

<b>From:</b>	<b>To:</b>
Cascade Technologies Ltd	Emerson Process Management Limited
Glendevon House	2 Hunt Hill
Castle Business Park	Cumbernauld
Stirling Scotland, FK9 4TZ	Glasgow, G68 9LF

**Issue 4** – this Issue introduced the following change:

- i. Following appropriate assessment to demonstrate compliance with the requirements of the latest standard, IEC 60079-0:2011 Ed.6 is replaced with IEC 60079-0:2017 Ed.7.
- ii. 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.