



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

Certificate No.:	IECEX SIR 18.0006X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 3	Issue 2 (2020-10-30)
Date of Issue:	2023-09-12		Issue 1 (2019-01-25)
Applicant:	Elster GmbH Steinern Strasse 19-21 55252 Mainz-Kastel Germany		Issue 0 (2018-09-18)
Equipment:	EnCal 3000 proChain GC		
Optional accessory:			
Type of Protection:	Flameproof		
Marking:	Ex db [Ia Ga] IIC T6 Gb Ta = -40°C to +60°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.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

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





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Certificate No.: **IECEX SIR 18.0006X**

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Date of issue: 2023-09-12

Issue No: 3

Manufacturer: **Elster GmbH**
Steinern Strasse 19-21
55252 Mainz-Kastel
Germany

Manufacturing locations: **Elster GmbH**
Steinern Strasse 19-21
55252 Mainz-Kastel
Germany

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

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

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/SIR/ExTR18.0169/00](#)
[GB/SIR/ExTR23.0151/00](#)

[GB/SIR/ExTR19.0015/00](#)

[GB/SIR/ExTR20.0186/00](#)

Quality Assessment Report:

[DE/TUN/QAR11.0003/08](#)



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Date of issue: 2023-09-12

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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The EnCal 3000 proChain gas chromatograph is a measurement device for determining the composition and calorific value of natural gases. The equipment is powered from a 24V d.c. supply and has a maximum rating of 5A, 120W. In addition to the PCB mounted control electronics, the equipment contains a Lithium-thionyl Chloride primary battery which provides back up for the real time clock and status parameters in the event of a power loss.

The sample gases are analysed in a limited release containment system rated at 3 bar maximum, with the equipment internal ambient being maintained by up to three heating plates which operate between a temperature range of $\geq 0^{\circ}\text{C}$ and $\leq 40^{\circ}\text{C}$.

The equipment is housed in an Ex d enclosure with a cylindrical lid and base machined from an aluminium alloy casting. The lid is attached to the base with a M27.5 x 2 mm threaded joint that is secured against loosening by two M4 hexagon socket head cap screws.

The base comprises a sinter breather housing mounted in an M32 x 1.5 mm threaded entry in addition to, two M20 x 1.5 mm and two M25 x 1.5 mm threaded gland entries and ten 1/8" -27 NPT threaded entries which provide the external sample and carrier gas connection to and from the limited release containment system via ten flame arrestors.

Refer to Annexe for CONDITIONS OF MANUFACTURE.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to Annexe for SPECIFIC CONDITIONS OF USE.



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Date of issue: 2023-09-12

Issue No: 3

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

This issue, Issue 3, recognises the following changes; refer to the certificate annex to view a comprehensive history:

1. Add alternate PSU source located at Terminal Board.
2. Add alternate version of Baseboard.
3. Modified Module connection board layout and component changes/alternate source.
4. New version of GCM1000-Board (layout and component changes).
5. Modification on IS-Display Board to add components and alternate source for the critical components.
6. Change of drawing reference numbers from "730-24-216-3" to "73024216", from "73024216-2" to "73024216", and from "73024216-v1.01" to "73024216".

Annex:

[IECEX SIR 18.0006X Iss 3 Annexe.pdf](#)

Annexe to: IECEx SIR 18.0006X Issue 3

Applicant: Elster GmbH

Apparatus: EnCal 3000 proChain GC



Specific Conditions of Use

- i. When the equipment is coated with a paint finish the enclosure is non-conducting and may generate an ignition capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it might be subjected to external conditions that might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.
- ii. The equipment has flamepaths which differ from those in IEC 60079-1 and are not intended for repair.
- iii. The equipment shall not be used with process gases which contain oxygen or any other oxidizer in concentrations greater than found in normal air.

Conditions of Manufacture

The Manufacturer shall comply with the following:

- i. Each enclosure and welded capillary shall be subjected to a routine overpressure test of 16.5 bar for at least 10 seconds as required by clause 16.1 of IEC 60079-1. There shall be no permanent deformation or damage to the enclosure.
- ii. A routine overpressure test of 4.5 bar shall be applied to the internal containment system of the equipment for a period of at least 2 minutes, in accordance with IEC 60079-1:2014 clause G.4.1. There shall be no permanent deformation and the containment system shall pass a leakage test in accordance with IEC 60079-1:2014 clause G.4.3, with a maximum helium leakage rate less than 10^{-2} Pa x l/s (10^{-4} mbar x l/s).
- iii. The manufacturer shall ensure that the internal heaters are set to operate within the temperature range of $\geq 0^{\circ}\text{C}$ and $\leq +40^{\circ}\text{C}$.
- iv. In accordance with IEC 60079-11:2011 clause 11.2, each manufactured transformer of the equipment shall be subjected to an electric strength test using the following test voltage(s) for at least 60s:
1500 Vrms applied between the input and output windings.
Alternatively, a voltage of 20% higher may be applied for at least 1s.
There shall be no evidence of flashover or breakdown and the maximum current flowing shall not exceed 5mA.

Full certificate change history

Issue 1 – this Issue introduced the following changes:

- i. To permit the introduction of an intrinsically safe PCB in the equipment's flameproof enclosure. Resulting in the marking being amended and the introduction of a Condition of Manufacture.
- ii. The recognition of minor drawing modification on Intrinsic Safety General Assembly drawing no. 73024216-9.

Issue 2 – this Issue introduced the following changes:

- v. Update of drawings PSB 30.066 and PSB 30.067 (chromatising replaced with zirconising).
- vi. Update of drawings 1-875-131 and 1-875-131-1 to show enlarged space for O-ring.
- vii. Update PSB 36.064 to reflect revised test pressure.
- viii. Updated drawings 73024221 and 73024227 with minor changes.
- ix. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2012/A11:2013 was replaced by EN IEC 60079-0:2018/AC: 2020-02, IEC 60079-0:2011 Ed.6 was replaced by IEC 60079-0:2017 Ed.7, EN 60079-1:2014 was replaced by EN 60079-1:2014/COR1:2018, IEC 60079-1:2014 Ed.7 was replaced by IEC 60079-1:2014 Ed.7/ISH1.

Date: 12 September 2023

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Annexe to: IECEx SIR 18.0006X Issue 3

Applicant: Elster GmbH

Apparatus: EnCal 3000 proChain GC



Issue 3 – this Issue introduced the following changes:

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- ii. Add alternate version of Baseboard.
- iii. Modified Module connection board layout and component changes/alternate source.
- iv. New version of GCM1000-Board (layout and component changes).
- v. Modification on IS-Display Board to add components and alternate source for the critical components.
- vi. Change of drawing reference numbers from "730-24-216-3" to "73024216", from "73024216-2" to "73024216", and from "73024216-v1.01" to "73024216".

Date: 12 September 2023

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