



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 08ATEX1328X** Issue: **7**

4 Equipment: **700XA Gas Chromatograph**

5 Applicant: **Rosemount Analytical Inc.**

6 Address: **10241 West Little York  
Suite 200  
Houston  
Texas 77040  
USA**

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

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

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, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

IEC 60079-0:2007

EN 60079-1:2007

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 2G  
Ex d IIC T6 Gb  
(Ta = -20°C to +60°C)

Or when the LSIV  
unit is fitted:



II 2G  
Ex d IIC T4 Gb  
(Ta = -20°C to +60°C)

When fitted with the optional external sampling system



II 2G  
Ex d IIC T3 Gb  
(Ta = -20°C to +60°C)



II 2G  
Ex d IIC T4 Gb  
(Ta = -20°C to +60°C)

Project Number 32490

C Ellaby  
Deputy Certification Manager

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## SCHEDULE

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#### 13 DESCRIPTION OF EQUIPMENT

The 700XA Analyzer (Electrical Rating: 90-130/180-264 VAC, 150 W, 50/60 Hz, 1 Phase or 20-32 VDC, 150 W, Permanently Connected) is a gas chromatograph (GC) type analyzer housed in a proprietary flameproof compartment which is divided into two chambers (compartments).

##### **Analyzer Assembly**

The upper compartment is the "oven compartment", it is provided with a domed cover. This compartment contains the columns, detectors, pneumatically operated switching valves and solenoids that make up the analyzer assembly. Process tubing enters the oven compartment through purpose designed tube entries that are screwed into M32 x 1.5 ISO threaded entries tapped in the compartment wall. These devices incorporate cylindrical flame paths. The interface between the process tubes and the tube entries forms a cylindrical flame path. A breathing element is included that screws into an M20 x 1.5 ISO threaded entry. An additional entry – 3/4-14 NPT – is provided for the electrical feed through that must be sealed adjacent to the compartment. An opening with an M75 x 1.5 ISO threads for an optional liquid sample injection valve may be present.

##### **Controller Assembly**

The lower compartment is the "electronics compartment". It is provided with a compartment lid that incorporates a glass window. This compartment houses the central processor, power supply, operational electronics and communication electronics that support analysis. Power and telecommunications cables enter through a number of M32 x 1.5 ISO threaded entries tapped in the compartment wall. A barrier wall between the two compartments has one M40 X 1.5 ISO threaded passage for a sealed cable assembly providing necessary communication between systems.

##### **Design options**

- i. An alternative bottom compartment which eliminates the wiring access conduits leading from the lower compartment to the surface near the upper opening. The change reduces overall volume by a small amount as shown on drawing DE-22001 rev H.
- ii. The fitting of an optional MAT Valve (LSIV).

**Variation 1** - This variation introduced the following changes:

- i. The introduction of the Flexi Rigid PCB Cable entry device that is fitted between compartments.

**Variation 2** - This variation introduced the following changes:

- i. The addition of an optional field bus enclosure within the bottom compartment.
- ii. The clarification of drawing information which includes the following:
  - **Drawing DE-22001** - the clarification of the tolerances for the 10.000-8 cover thread and the drilled hole for the 6.000-12 thread for the bottom compartment.
  - **Drawing DE-22003** - the removal of the note regarding routine overpressure testing and the clarification of the tolerance with respect to the diameter of the seal bore.
  - **Drawing DE-22008** - the removal of the note regarding routine overpressure testing and the clarification of the tolerance associated with the cover thread.
  - **Drawing DE-22114** - the addition of the optional field bus enclosure within the bottom compartment together with the clarification of drawing notes.

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### **Sira Certification Service**

Rake Lane, Eccleston, Chester, CH4 9JN, England

Tel: +44 (0) 1244 670900  
Fax: +44 (0) 1244 681330  
Email: [info@siracertification.com](mailto:info@siracertification.com)  
Web: [www.siracertification.com](http://www.siracertification.com)



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- **Drawing BE-22170** - the correction of dimensions.
- **Drawing BE-20879** - the grade of aluminium for the tube fitting nut was changed.
- **Drawing BE-22109-001** - the label information was clarified to reflect the latest status of the certification, the reference to the dust marking was removed and the maximum power rating was corrected.
- **Drawing BE-22109** - the label information was clarified to reflect the latest status of the certification, the reference to the dust marking was removed and the maximum power rating was corrected.
- **Drawing 3684** – the clarification of dimensions and tolerances.

**Variation 3** - This variation introduced the following change:

- i. The applicant's name was changed from Rosemount Analytical Gas Chromatograph Division to that currently shown.

**Variation 4** - This variation introduced the following changes:

- i. To permit the introduction of an optional external sampling system with heating. This uses Raychem trace heating, type 20QTVR1-CT (120VAC) or 20QTVR2-CT (240VAC), inside the sampling system for the 700XA model. The heater is controlled by a temperature switch (Barksdale/Raychem type Raystat Ex-02), set to maintain a maximum of 80°C (T4) or 110°C (T3) resulting in the new coding; Ex d IIC T3 Gb, a new Special Condition For Safe Use is introduced as a result.
- ii. To permit the optional heated vapour regulators and switches to be used within the external sampling system. These being suitably certified with the ratings Ex d IIC Gb T6/T4 and a minimum ambient temperature range of -20°C to +60°C, a new Special Condition For Safe Use is introduced as a result.
- iii. To permit the use of an optional temperature sensor (RTD): 100 ohm RTD, 5/32 O.D. by Minco # S204PD AC887Y26L18, Emerson P/N 2-4-0700-154.
- iv. To permit the use of the optional feed through adapter for all models using a proprietary sealing component; Model LE\*\*\*\*\*/ manufactured by Quintex GmbH.
- v. To permit the optional internal power supplies TDK-Lambda GWS250-24 series and Emerson LCC250.
- vi. To permit a number of minor drawing modifications. These modifications do not affect the type of protection.
- vii. The applicant's address was changed from 5650 Brittmoore Road, Houston 77041, Texas to that currently shown.
- viii. The removal of a superfluous Special Condition For Safe Use

**Variation 5** - This variation introduced the following changes:

- i. The option to use up to two, M32 threaded holes, currently used for the passage of process tubing, for the accommodation of a suitable cable entry device.
- ii. The clarification of drawing information not affecting certification was recognised.



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Variation 6 - This variation introduced the following changes:

- i. The introduction of a new Special Condition For Safe Use and Condition Of Manufacture to give clarification on the use of appropriate certified right angle cable adaptors with the equipment.

#### 14 DESCRIPTIVE DOCUMENTS

##### 14.1 Drawings

Refer to Certificate Annexe.

##### 14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	6 August 2009	R59L17729A	The release of the prime certificate.
1	4 December 2009	R51L20821A	The introduction of Variation 1.
2	30 April 2010	R51L20821B	Report number R51L20821B replaced R51L20821A, the conditions in section 17 being corrected accordingly.
3	19 November 2010	R23439A/00	The introduction of Variation 2.
4	11 April 2011	R24696A/00	The introduction of Variation 3.
5	08 April 2013	R27443A/00	The introduction of Variation 4.
6	21 May 2013	R29466A/00	The introduction of Variation 5.
7	12 February 2014	R32490A/00	The introduction of Variation 6.

#### 15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

- 15.1 When the Vapour regulators and flow switches are fitted they must be suitably certified with the ratings Ex d IIC Gb T5/T6/T4 and for a minimum ambient temperature range  $T_a = -20^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ .
- 15.2 Where right angle bend cable adaptors are used they shall be appropriately certified and shall interface with enclosures via appropriate certified barrier glands.

#### 16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

#### 17 CONDITIONS OF CERTIFICATION

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 When using the bottom compartment to drawing number DE-22001 rev D both compartments shall be pressure tested to the table below in accordance to the ambient temperature it is operated under. There shall be no damage or permanent deformation as a result of these tests.

Top section	Bottom Section
15.375 bar @ $-20^{\circ}\text{C}$	29.35 bar @ $-20^{\circ}\text{C}$

- 17.4 When using the bottom compartment to drawing number DE-22001 rev H both compartments are exempt from an overpressure test when intended for use in a  $-20^{\circ}\text{C}$  environment.

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- 17.5 All cable entry devices fitted shall be suitable for the application, in addition it shall be ATEX certified by a notified body.
- 17.6 The products covered by this certificate incorporate 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 Sira of any modifications of the devices that may impinge upon the explosion safety design of their products.
- 17.7 Where right angle bend cable adaptors are used they shall be appropriately certified and shall interface with enclosures via appropriate certified barrier glands.

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# Certificate Annexe

Certificate Number: Sira 08ATEX1328X  
Equipment: 700XA Gas Chromatograph  
Applicant: Rosemount Analytical Inc.



## Issue 0

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
DE-22001	1 to 3	H	02 Jul 09	Compartment Detail
DE-22001	1 to 2	P11	02 Jul 09	Compartment Detail
DE-22001	1 to 3	D	02 Jul 09	Compartment Detail
DE-22003	1 of 1	C	02 Jul 09	Dome Detail
DE-22006	1 of 1	C	02 Jul 09	Glass Cover Detail
DE-22008	1 of 1	E	02 Jul 09	Side Cover Detail
DE-22100	1 of 1	A	02 Jul 09	Description of entries into compartment
DE-22122	1 of 1	B	02 Jul 09	Machine details for LSIV
DE-22143	1 to 5	A	02 Jul 09	General Assembly Oven
DE-22114	1 to 2	A	02 Jul 09	General Assembly Electronics
DE-22159	1 of 1	A	02 Jul 09	EPC Model 700XA
DE-22171	1 to 2	A	02 Jul 09	Assembly bottom compartment
BE-22118	1 of 1	A	02 Jul 09	Vent Fitting Assembly Detail
BE-22145	1 of 1	B	02 Jul 09	Tube Fitting Adapter
BE-22147	1 of 1	B	02 Jul 09	Tube Fitting Body
BE-22168	1 of 1	A	02 Jul 09	Weight and measures switch
BE-22169	1 of 1	C	02 Jul 09	Sealing fitting flex cable
BE-22170	1 of 1	C	02 Jul 09	Adapter flex cable
BE-20879	1 of 1	B	02 Jul 09	Tube Fitting Nut
CE-22178	1 to 2	B	02 Jul 09	Assembly flex cable
659779	1 of 1	C	02 Jul 09	24 Wire feed through
BE-22109-001	1 of 1	A	29 Jul 09	Certification nameplate
BE-22109	1 of 1	C	29 Jul 09	Certification nameplate

## Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
3684	1 of 1	C	24 Nov 2009	SPF21.5-E-200FR-1-FLEX

Issue 2 No drawings were added with this issue.

## Issue 3

Drawing	Sheets	Rev	Date (Sira stamp)	Title
DE-22001	1 to 3	J	29 Oct 10	Compartment Detail
DE-22003	1 of 1	E	29 Oct 10	Dome Detail
DE-22008	1 of 1	G	29 Oct 10	Side Cover Detail
DE-22114	1 to 2	C	1 Nov 10	General Assembly Electronics
BE-22170	1 of 1	D	29 Oct 10	Adapter Flex Cable
BE-20879	1 of 1	C	29 Oct 10	Tube Fitting Nut
BE-22109-001	1 of 1	B	29 Oct 10	Certification Nameplate (T4)
BE-22109	1 of 1	D	29 Oct 10	Certification Nameplate (T6)
3684	1 of 1	E	29 Oct 10	SPF21.5-E-200FR-1-FLEX
CE-22322	1 of 1	B	29 Oct 10	Fieldbus Enclosure Assembly
CE-22323	1 of 1	C	29 Oct 10	Fieldbus Enclosure Internal Arrangement
CE-22324	1 of 1	B	29 Oct 10	Fieldbus Enclosure Details

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# Certificate Annexe

Certificate Number: Sira 08ATEX1328X  
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## Issue 4

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
BE-22109	1 of 1	E	11 Apr 11	Unit Nameplate CSA & ATEX Model 700XA Universal

## Issue 5

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
DE-22122	1 of 1	C	08 Apr 13	Modification Machine Detail for LSIV, Model 700XA
BE-22109	1 of 1	F	08 Apr 13	Universal name plate for 700XA
712012-0-OD	1 of 1	A	08 Apr 13	Typical Optional Outline & Dimensional Floor Mount Unit, Model 700XA

## Issue 6

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
DE-22171	1 of 2	B	05 Apr 13	Assembly Upper Compartment
DE-22171	2 of 2	B	05 Apr 13	Assembly Bottom Compartment

Issue 7 No new drawings were introduced.

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