

1 EU-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially
Explosive Atmospheres - Directive 2014/34/EU**

3 **EU-Type Examination Certificate No: FM10ATEX0046X**

4 **Equipment or protective system:
(Type Reference and Name) MODEL 2230 GRAPHICAL FIELD DISPLAY**

5 **Name of Applicant: Rosemount Tank Radar AB**

6 **Address of Applicant: Layoutvägen 1
Mölnlycke, 43533
Sweden**

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

8 FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of the 26th February 2014, 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 confidential report number:

3037177 dated 23rd December 2010

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018, EN 60079-11:2012 and EN 60529:1991+A1:2000+A2:2013

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment 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, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:



II 1 G Ex ia IIC T4 Ga Ta = -50°C to +70°C; FISCO

Martin Crowe
Certification Manager, FM Approvals Europe Ltd.

Issue date: 10th January 2022

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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SCHEDULE



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13 Description of Equipment or Protective System:

The Rosemount 2230 Graphical Field Display shows inventory tank gauging data such as level, temperature, and pressure via the intrinsically safe 2-wire Raptor Tankbus. The four soft keys allow navigation through the different menus and provide all tank data, directly on the field.

The circuitry of the Model 2230 Graphical Field Display is contained on two printed circuit boards and an LCD display module all housed within an IP66 and IP67 housing.

The Model 2230 Graphical Field Display's housing is constructed of Aluminium Alloy 380. The enclosure is painted two tones with the top half painted in Rosemount blue and the bottom half is painted grey.

The enclosure is shaped $\frac{3}{4}$ of a circle with a length of 124mm, a diameter of 152mm and a height of approximately 78mm.

The Model 2230 Graphical Field Displays have an ambient operating temperature range of -50°C to $+70^{\circ}\text{C}$.

The Model code is as follows:

2230aFbcdAef Graphical Field Display.

a = Default Language: Any single character.

b = Firmware: Any single character.

c = Hazardous Location Certification: I1, KA, KB or KC.

d = Custody Transfer Type Approval: Any single character.

e = Cable/Conduit Connections: 1, 2, G, E or M.

f = Mechanical Installation: W, D, X or P.

Energy Limitation Parameters:

$U_i = 30\text{V}$, $I_i = 300\text{mA}$, $P_i = 1.3\text{W}$, $C_i = 2.1\text{nF}$, $L_i = 1.1\mu\text{H}$

FISCO Parameters:

$U_i = 17.5\text{V}$, $I_i = 380\text{mA}$, $P_i = 5.32\text{W}$

14 Specific Conditions of Use:

1. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore particularly when it is used for applications that specifically require Group II, Category 1 located equipment, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. Additionally, the equipment shall only be cleaned with a damp cloth.
2. The enclosure contains aluminum and is considered to present a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact or friction.
3. The Model 2230 Graphical Field Display will not pass the 500Vrms dielectric strength test and this must be taken into account during installation.
4. To maintain ingress protection ratings IP66 and IP67, thread sealant is required for cable entries and blanking plugs.

15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

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16 Test and Assessment Procedure and Conditions:

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
04 th January 2011	Original Issue.
20 th June 2011	<u>Supplement 1:</u> Report Reference: – 3037177rev110310 dated 11 th May, 2011. Description of the Change: Minor modifications to components, circuit layout and documentation not affecting safety.
21 st January 2014	<u>Supplement 2:</u> Report Reference: – 3049392 dated 20 th January 2014. Description of the Change: Modifications to the model code not affecting safety. Reassessment to latest editions of EN 60079-0, EN 60079-11, EN 60079-26 and EN 60529.
15 th April 2014	<u>Supplement 3:</u> Report Reference: – 3035492rev140317 dated 25 th March 2014. Description of the Change: Added an option for additional printed circuit board conformal coating type HumiSeal 1B73 and HumiSeal 1B31.
01 st May 2017	<u>Supplement 4:</u> Report Reference: – 3057405 dated 05 th May 2017. Description of the Change: Modification to the housing.
13 th February 2018	<u>Supplement 5:</u> Report Reference: RR212432 dated 31 st January 2018. Description of the Change: Minor documentation update.
07 th March 2019	<u>Supplement 6:</u> Description of the Change: Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809.

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Date	Description
11 th December 2019	<u>Supplement 7:</u> Report Reference: – RR221344 dated 10 th December 2019. Description of the Changes: 1. Minor clerical updates to drawings 2. Add encapsulation material
26 th July 2021	<u>Supplement 8:</u> Report Reference: RR227550 dated 23 rd July 2021. Description of the Changes: 1. Updated EN 60079-0:2012+A11:2013 to EN IEC 60079-0:2018 addressing significant changes. 2. Document updates due to addition of UKEX certificate (FM21UKEX0048X). 3. Removed routine testing from part number 272.050
10 th January 2022	<u>Supplement 9:</u> Report Reference: RR230986 dated 10 th January 2022. Description of the Changes: 1) Documentation Updates

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Rosemount Tank Radar AB (1000003453)

Class No 3610

Original Project I.D. 3037177

Certificate I.D. FM10ATEX0046X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>
00809-0100-2230	DC	Reference Manual Rosemount 2230 Graphical Field Display	RR227550
9240040-967	1	APPR. DWG. FM Lumped capacitor model Rosemount 2230	3037177
9240040-973	2	ROSEMOUNT 2230 MODEL CODE DESCRIPTION	3049392
D7000002-976	02	APPR. DWG. ATEX/FM/IECEX MAIN LABEL 2230	RR227550
D7000003-076	02	APPR. DWG. FM. 2230	RR221344
D9240040-909	02	APPR DWG ½" NPT Plug Rosemount 2410 and 5900 Series	3057405
D9240040-946	04	APPR. DWG. FM CONFORMAL COATING / ENCAPSULATION	RR221344
D9240040-949	4	SYSTEM CONTROL DWG FM Rosemount 2230	RR227550
D9240040-968	3	APPR. DWG. FM PCB TDU-TB Rosemount 2230	RR227550
D9240040-969	3	APPR. DWG. FM PCB TDU Rosemount 2230	RR230986