

# 1 EC-TYPE EXAMINATION CERTIFICATE



2 Equipment or Protective systems intended for use in Potentially  
Explosive Atmospheres - Directive 94/9/EC

3 EC-Type Examination Certificate No: FM10ATEX0046X

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

5 Name of Applicant: Rosemount Tank radar AB

6 Address of Applicant: Gamelstadsvagen 18B  
SE-40251 GÖTEBORG  
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 Ltd, notified body number 1725 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 confidential report number:

3037177EC dated 23<sup>rd</sup> 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 60079-0:2012, EN 60079-11:2012, EN 60079-26:2007, and EN 60529:2013.

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, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. 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 Ta = -50°C to +70°C; FISCO; IP66, IP67

**Mick Gower**  
Certification Manager, FM Approvals Ltd.

Issue date: 15<sup>th</sup> April 2014

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

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# SCHEDULE

to EC-Type Examination Certificate No. FM10ATEX0046X

## 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  $-50^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ .

The Model code is as follows:

### **2230aFbcdAef Graphical Field Display.**

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:

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

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.

## 14 Special Conditions for Safe 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, Zone 0 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.

## 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.

## 16 Test and Assessment Procedure and Conditions:

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# SCHEDULE



Member of the FM Global Group

to EC-Type Examination Certificate No. FM10ATEX0046X

This EC-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 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 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
4 <sup>th</sup> January, 2011	Original Issue.
20 <sup>th</sup> June, 2011	<u>Supplement 1:</u> Report Reference: – 3037177rev110310 dated 11 <sup>th</sup> May, 2011. Description of the Change: Minor modifications to components, circuit layout and documentation not affecting safety.
21 <sup>st</sup> January 2014	<u>Supplement 2:</u> Report Reference: – 3049392 dated 20 <sup>th</sup> 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 <sup>th</sup> April 2014	<u>Supplement 3:</u> Report Reference: – 3035492rev140317 dated 25 <sup>th</sup> March 2014. Description of the Change: Added an option for additional printed circuit board conformal coating type HumiSeal 1B73 and HumiSeal 1B31.

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# Blueprint Report

## Rosemount Tank Radar AB (1000003453)

Class No 3610

## 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>	<u>Electronic Drawing</u>
300560EN	BA	Reference Manual Rosemount 2230 Graphical Field Display	3049392	Yes (pdf)
9240040-935	1	Appr. DWG FM Rosemount 2230	3037177	Yes (pdf)
9240040-936	2	Appr. DWG Main Label Rosemount 2230	3049392	Yes (pdf)
9240040-946	2	APPR. DWG. FM CONFORMAL COATING / ENCAPSULATION	3037177	Yes (pdf)
9240040-946	03	APPR. DWG. FM CONFORMAL	140317	Yes (pdf)
9240040-949	2	SYSTEM CONTROL DWG FM Rosemount 2230	3049392	Yes (pdf)
9240040-967	1	APPR. DWG. FM Lumped capacitor model Rosemount 2230	3037177	Yes (pdf)
9240040-968	1	APPR. DWG. FM PCB TDU-TB Rosemount 2230	3/31/2011	Yes (pdf)
9240040-969	1	APPR. DWG. FM PCB TDU Rosemount 2230	3037177	Yes (pdf)
9240040-973	2	ROSEMOUNT 2230 MODEL CODE DESCRIPTION	3049392	Yes (pdf)