

# 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:** FM09ATEX0047X

4 **Equipment or protective system:  
(Type Reference and Name)** Model 2240 Multi-Input Temperature Transmitter

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 26<sup>th</sup> 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:

3035518EC dated 12<sup>th</sup> September 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  
II 2(1) G Ex ib [ia Ga] IIC T4 Gb; Ta = -50°C to +70°C

**Martin Crowe**  
Certification Manager, FM Approvals Europe Ltd.

Issue date: 10<sup>th</sup> January 2022

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## 13 Description of Equipment or Protective System:

**General** - The Rosemount Tank Radar AB Model 2240 is a Temperature Multiplexer Transmitter.

**Construction** - The circuitry for the 2240 is contained on a single printed circuit board that is mounted in an aluminium two-piece enclosure.

**Ratings** - The ambient operating temperature range of the Model 2240 Transmitters is -50°C to +70°C.

**Environmental Ratings:** IP66, IP67.

**2240SabcdeFGAijk. Multi-Input Temperature Transmitter.**

Energy Limitation Parameters:

U<sub>i</sub> = 30 V, I<sub>i</sub> = 300 mA, P<sub>i</sub> = 1.3 W, C<sub>i</sub> = 2.2nF, L<sub>i</sub> = 2μH

FISCO Parameters:

U<sub>i</sub> = 17.5 V, I<sub>i</sub> = 380 mA, P<sub>i</sub> = 5.32 W, C<sub>i</sub> = 2.2nF, L<sub>i</sub> = 2μH

RTD Terminals, X11 (16 Channels)

U<sub>o</sub> = 5.9V, I<sub>o</sub> = 398mA, P<sub>o</sub> = 585mW,

Groups A/B, IIC Co = 43μF, Lo = 0.2mH

Groups C/D, IIB, Co = 1000μF, Lo = 0.7mH

Groups D, IIA, Co = 1000μF, Lo = 1.8mH

Sensorbus Terminals, X5:

U<sub>o</sub> = 6.6V, I<sub>o</sub> = 223mA, P<sub>o</sub> = 363mW,

Groups A/B, IIC Co = 22μF, Lo = 0.7mH

Groups C/D, IIB, Co = 500μF, Lo = 3.3mH

Groups D, IIA, Co = 1000μF, Lo = 6mH

a = Performance Class: Any single character

b = Number of Temperature Sensor Inputs: 16, 08, 04, 00, X

c = Leads per Temperature Element: 4, 3, 0, X

d = Auxiliary Inputs: A, 0, X

e = Tank Bus: Power and Communication: F, X, U

f = Hazardous Location Certification: I1, KA, KB, KC

g = Custody Transfer Type Approval: Any single character

i = Cable/Conduit Connections: 1, 2, G, E, M

j = Mechanical Installation: M, W, P, 0, X.

k = Options: WR3, WR5, ST, Q1, Q4 and/or Q7.

## 14 Specific Conditions of Use:

1. 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.

2. Rating II 2(1) G Ex ib [ia Ga] IIC T4 Gb Ta = -50°C to 70°C FISCO D9240040-976; IP66, IP67 is only applicable when supplied from a certified Ex [ib] FISCO Power Supply with triplicate output voltage limitation meeting the requirements for two faults ("ia" voltage limitation).

3. The Model 2240 Multi-input Temperature Transmitter 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.

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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
21 <sup>st</sup> September 2010	Original Issue.
26 <sup>th</sup> September 2011	Supplement 1: Report Reference: 3035518rev110309 dated 15 <sup>th</sup> June 2011. Description of the Change: Minor changes to documentation and electrical construction.
21 <sup>st</sup> March 2012	Supplement 2: Report Reference: 3035518rev111020 dated 20 <sup>th</sup> February 2012. Description of the Change: Updated ratings to gas Group IIC and additional special conditions for safe use.
13 <sup>th</sup> January 2014	Supplement 3: Report Reference: 3049393 dated 08 <sup>th</sup> January 2014. Description of the Change: Reassessment to latest editions of Standards. Addition of ratings previously omitted from the certificate.
15 <sup>th</sup> April 2014	Supplement 4: 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.
12 <sup>th</sup> April 2019	Supplement 5: Report Reference: – RR217981 dated 19 <sup>th</sup> March 2019. Description of the Change: Removed Standard EN60079-26:2007; EN60079-26 no longer applies as the equipment uses a single standardised Type of Protection. Updated EN 60079-0:2012 to EN 60079-0:2012+A11:2013 addressing significant changes. Applicant address change from Gamlestadsvägen 18B, SE-40251 Göteborg, Sweden. Minor documentation update. 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 <sup>th</sup> December 2019	<u>Supplement 6:</u> Report Reference: – RR221344 dated 10 <sup>th</sup> December 2019. Description of the Changes: 1. Minor clerical updates to drawings 2. Add encapsulation material
11 <sup>th</sup> March 2021	<u>Supplement 7:</u> Report Reference: – RR226574 dated 11 <sup>th</sup> March 2021. Description of the Change: Rewording Section 13 and add model options. Clerical changes to transformer drawing, manual and label drawing updated.
11 <sup>th</sup> July 2021	<u>Supplement 8:</u> Report Reference: – RR227549 dated 9 <sup>th</sup> July 2021. Description of the Change: Updated EN 60079-0:2012+A11:2013 to EN IEC 60079-0:2018 addressing significant changes. Document updates due to addition of UKEX certificate (FM21UKEX0047X). Added missing output parameters.
10 <sup>th</sup> January 2022	<u>Supplement 9:</u> Report Reference: – RR230986 dated 10 <sup>th</sup> January 2022. Description of the Change: 1) Documentation Updates

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# ***Rosemount Tank Radar AB (1000003453)***

**Class No 3610**

***Original Project I.D. 3035518***

***Certificate I.D. FM09ATEX0047X***

<b><u>Drawing No.</u></b>	<b><u>Revision Level</u></b>	<b><u>Drawing Title</u></b>	<b><u>Last Report</u></b>
000809-0100-2240	EB	Reference Manual/ Rosemount 2240S Multi-Input Temperature Transmitter	RR227549
D7000003-297	04	APPR. DWG. MAIN LABEL Rosemount 2240	RR227549
D9240040-910	4	SYSTEM CONTROL DWG FM, FM-C Rosemount 2240S	RR227549
D9240040-911	4	APPR. DWG FM PCB TTM Rosemount 2240	RR230986
D9240040-912	03	APPR. DWG. FM TRANSFORMER IS	RR227549
D9240040-918	03	APPR. DWG. FM	RR221344
D9240040-946	04	APPR. DWG. FM CONFORMAL	RR221344
D9240040-972	03	Model Code Description	RR227549
D9240040-976	4	SYSTEM CONTROL DWG ATEX, IECEx Rosemount 2240S	RR227549