

# 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: FM10ATEX0012X

4 Equipment or protective system: MODEL 2410 TANK HUB  
(Type Reference and Name)

5 Name of Applicant: Rosemount Tank Radar AB

6 Address of Applicant: Layoutvägen 1  
435 33 Mölnlycke  
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:

3035492EC dated 17<sup>th</sup> March 2014

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 60079-1:2014, EN IEC 60079-7:2015 +A1:2018, 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 safe 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:

**TANK HUB:**

II 2(2) G Ex db eb [ib] IIB T4 Gb Ta = -50°C to +70°C



**TANK HUB (with Active Modem HART Board):**

II 2(2) G Ex db eb [ib] IIB T4 Gb; Ta = -50°C to +70°C



II 2(1) G Ex db eb [ja IIC Ga] IIB T4 Gb; Ta = -50°C to +70°C

**TANK HUB (with Passive Modem HART Board):**

II 2(2) G Ex db eb [ib] IIB T4 Gb; Ta = -50°C to +70°C



II 2 G Ex db eb ib IIB T4 Gb; Ta = -50°C to +70°C

**Richard Zammit**  
Certification Manager, FM Approvals Europe Ltd.

Issue date: 03<sup>rd</sup> February 2022

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F ATEX 020 (Dec/2020)



# SCHEDULE



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## 13 Description of Equipment or Protective System:

The Model 2410 Tank Hub is powered with 24-48Vdc or 48-240Vac / 50Hz to 60Hz and handles data transmissions between the control room and a number of Fieldbus devices. It has a Flameproof enclosure, Increased Safety terminal block compartment, and also contains Intrinsically Safe circuitry for supplying energy to the Intrinsically Safe location. The Fieldbus terminals will either have a FISCO output or an Entity output depending on which fieldbus communications board is installed. The FISCO output electronics are distinguished by option b= Tank Bus (Fieldbus - Power and Communication): F and the Entity output electronics are distinguished by b = Tank Bus (Fieldbus Power and Communication): E. As an option, the Model 2410 Tank Hub can also contain a Modem HART communication board. The Active HART communications option has Intrinsically Safe entity output. The Passive HART Communications board is isolated and receives power from an Intrinsically Safe barrier.

Ingress Protection: IP66/67

The Model Codes are as follows:

### **2410-abcdefghijklmn. Tank Hub.**

II 2(2) G Ex db eb [ib] IIB T4 Gb Ta = -50°C to +70°C; FISCO; IP66 / IP67

FISCO Parameters:

U<sub>o</sub> = 15V, I<sub>o</sub> = 354mA, P<sub>o</sub> = 5.32W

a= Number of Tanks: Any single character.

b= Tank Bus (Fieldbus - Power and Communication): F.

c = Primary communication Bus (Non-IS): R, 4, E, L, V, H, G, U, T, A, B, 6 or 7.

d = Secondary Communication Bus (Non-IS): R, E, 5, K, L, V, H, G, A, U, T, B, 6, 7, 0, or F.

e = Relay Output (SIS/SIL): 3, 2, S, F or 0. (Option 3, 2 and S are not verified by FM Approvals).

f = Relay Outputs (Non-SIS/SIL): 1, 2, F, A or 0. (Option A was not verified by FM Approvals).

g = Integral Display: 1 or 0.

h = Power Supply: P.

i = Firmware: Any single character.

j = Hazardous Location Certification: E1, K1, K2 or K3.

k = Custody Transfer Type Approval: Any single character.

l = Housing: A or S.

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

n = Mechanical Mounting: P, W or 0.

### **2410-abcdefghijklmn. Tank Hub.**

II 2(2) G Ex db eb [ib] IIB T4 Gb Ta = -50°C to +70°C; FISCO; IP66 / IP67

II 2(1) G Ex db eb [ia IIC Ga] IIB Gb T4 Ta = -50°C to +70°C; Entity; IP66 / IP67

FISCO Parameters:

U<sub>o</sub> = 15V, I<sub>o</sub> = 354mA, P<sub>o</sub> = 5.32W

Energy Limitation Parameters::

U<sub>o</sub> = 23.1V; I<sub>o</sub> = 95.3mA; P<sub>o</sub> = 550mW

Group IIC: Co = 0.14μF, Lo = 3.9mH

Group IIB: Co = 1.0μF, Lo = 15mH

Group IIA: Co = 3.67μF, Lo = 33mH

a= Number of Tanks: Any single character.

b= Tank Bus (Fieldbus - Power and Communication): F.

c = Primary Communication Bus (Non-IS): R, 4, E, L, V, H, G, U, T, A, B, 6 or 7.

d = Secondary Communication Bus (HART®/4-20mA Active IS Input/Output): W, C or 8.

e = Relay Output (SIS/SIL): 3, 2, S, F or 0. (Option 3, 2 and S are not verified by FM Approvals).

f = Relay Outputs (Non-SIS/SIL): 1, 2, F, A or 0. (Option A was not verified by FM Approvals).

g = Integral Display: 1 or 0.

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h = Power Supply: P.  
i = Firmware: Any single character.  
j = Hazardous Location Certification: E1, K1, K2 or K3.  
k = Custody Transfer Type Approval: Any single character.  
l = Housing: A or S.  
m = Cable/Conduit Connections: 1, 2, G, E or M.  
n = Mechanical Mounting: P, W or 0.

## **2410-abcdefghijklmn. Tank Hub.**

II 2(2) G Ex db eb [ib] IIB T4 Gb Ta = -50°C to +70°C; FISCO; IP66 / IP67

II 2 G Ex db eb ib IIB T4 Gb Ta = -50°C to +70°C; Entity; IP66 / IP67

FISCO Parameters:

U<sub>o</sub> = 15V, I<sub>o</sub> = 354mA, P<sub>o</sub> = 5.32W

Energy Limitation Parameters:

U<sub>i</sub> = 30V; I<sub>i</sub> = 300mA; P<sub>i</sub> = 1W, C<sub>i</sub> = 0; L<sub>i</sub> = 0

a = Number of Tanks: Any single character.

b = Tank Bus (Fieldbus - Power and Communication): F.

c = Primary Communication Bus (Non-IS): R, 4, E, L, V, H, G, U, T, A, B, 6 or 7.

d = Secondary Communication Bus (HART®/4-20mA Passive IS Input/Output): D or 9.

e = Relay Output (SIS/SIL): 3, 2, S, F or 0. (Option 3, 2 and S are not verified by FM Approvals).

f = Relay Outputs (Non-SIS/SIL): 1, 2, F, A or 0. (Option A was not verified by FM Approvals).

g = Integral Display: 1 or 0.

h = Power Supply: P.

i = Firmware: Any single character.

j = Hazardous Location Certification: E1, K1, K2 or K3.

k = Custody Transfer Type Approval: Any single character.

l = Housing: A or S.

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

n = Mechanical Mounting: P, W or 0.

## **2410-abcdefghijklmn. Tank Hub**

II 2(2) G Ex db eb [ib] IIB T4 Gb Ta = -50°C to +70°C; Entity; IP66/IP67

Energy Limitation Parameters: (Fieldbus):

U<sub>o</sub> = 15V, I<sub>o</sub> = 200mA, P<sub>o</sub> = 3W, C<sub>o</sub> = 1.99µF, L<sub>o</sub> = 143µH

a = Number of Tanks: Any single character.

b = Tank Bus (Fieldbus Power and Communication): E.

c = Primary Communication Bus (Non-IS): R, 4, E, L, V, H, G, U, T, A, B, 6 or 7.

d = Secondary Communication Bus (Non-IS): R, E, 5, K, L, V, H, G, A, U, T, B, 6, 7, 0, or F.

e = Relay Output (SIS/SIL): 3, 2, S, F or 0. (Option 3, 2 and S are not verified by FM Approvals).

f = Relay Outputs (Non-SIS/SIL): 1, 2, F, A or 0. (Option A was not verified by FM Approvals)

g = Integral Display: 1 or 0.

h = Power Supply: P.

i = Firmware: Any single character.

j = Hazardous Location Certification: E1, K1, K2 or K3.

k = Custody Transfer Type Approval: Any single character.

l = Housing: A or S.

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

n = Mechanical Mounting: P, W, X or 0.

## **2410-abcdefghijklmn. Tank Hub.**

II 2(2) G Ex db eb [ib] IIB T4 Gb Ta = -50°C to +70°C; Entity; IP66/IP67

II 2(1) G Ex db eb [ia IIC Ga] IIB T4 Gb Ta = -50°C to +70°C; Entity; IP66/IP67

Energy Limitation Parameters: (Fieldbus):

U<sub>o</sub> = 15V, I<sub>o</sub> = 200mA, P<sub>o</sub> = 3W, C<sub>o</sub> = 1.99µF, L<sub>o</sub> = 143µH

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Energy Limitation Parameters: (Active HART):

U<sub>o</sub> = 23.1V, I<sub>o</sub> = 95.3mA, P<sub>o</sub> = 550mW

Group IIC: C<sub>o</sub> = 0.14μF, L<sub>o</sub> = 3.9mH

Group IIB: C<sub>o</sub> = 1.0μF, L<sub>o</sub> = 15mH

Group IIA: C<sub>o</sub> = 3.67μF, L<sub>o</sub> = 33mH

a = Number of Tanks: Any single character.

b = Tank Bus (Fieldbus - Power and Communication): E.

c = Primary Communication Bus (Non-IS): R, 4 E, L, V, H, G, U, T, A, B, 6 or 7.

d = Secondary Communication Bus (HART@/4-20mA Active IS Input/Output): W, C or 8.

e = Relay Output (SIS/SIL): 3, 2, S, F or 0. (Option 3, 2 and S are not verified by FM Approvals).

f = Relay Outputs (Non-SIS/SIL): 1, 2, F, A or 0. (Option A was not verified by FM Approvals).

g = Integral Display: 1 or 0.

h = Power Supply: P.

i = Firmware: Any single character.

j = Hazardous Location Certification: E1, K1, K2 or K3.

k = Custody Transfer Type Approval: Any single character.

l = Housing: A or S.

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

n = Mechanical Mounting: P, W or 0.

## **2410-abcdefghijklmn. Tank Hub.**

II 2(2) G Ex db eb [ib] IIB T4 Gb Ta = -50°C to +70°C; Entity; IP66/IP67

II 2 G Ex db eb ib IIB T4 Gb Ta = -50°C to +70°C; Entity; IP66/IP67

Energy Limitation Parameters: (Fieldbus):

U<sub>o</sub> = 15V, I<sub>o</sub> = 200mA, P<sub>o</sub> = 3W, C<sub>o</sub> = 1.99μF, L<sub>o</sub> = 143μH

Energy Limitation Parameters: (Passive HART):

U<sub>i</sub> = 30V, I<sub>i</sub> = 300mA, P<sub>i</sub> = 1W, C<sub>i</sub> = 0, L<sub>i</sub> = 0

a = Number of Tanks: Any single character.

b = Tank Bus (Fieldbus - Power and Communication): E.

c = Primary Communication Bus (Non-IS): R, 4, E, L, V, H, G, U, T, A, B, 6 or 7.

d = Secondary Communication Bus (HART@/4-20mA Passive IS Input/Output): D or 9.

e = Relay Output (SIS/SIL): 3, 2, S, F or 0. (Option 3, 2 and S are not verified by FM Approvals).

f = Relay Outputs (Non-SIS/SIL): 1, 2, F, A or 0. (Option A was not verified by FM Approvals).

g = Integral Display: 1 or 0.

h = Power Supply: P.

i = Firmware: Any single character.

j = Hazardous Location Certification: E1, K1, K2 or K3.

k = Custody Transfer Type Approval: Any single character.

l = Housing: A or S.

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

n = Mechanical Mounting: P, W or 0.

## 14 **Specific Conditions of Use:**

The flamepaths of the equipment are not intended to be repaired. Consult the manufacturer if repair of the flamepath joints is necessary.

## 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
20 <sup>th</sup> September 2010	Original Issue.
24 <sup>th</sup> February 2011 to 16 <sup>th</sup> April 2019	<u>Supplement 1 to 11:</u> See Certificate Dated 16 <sup>th</sup> April 2019.
23 <sup>rd</sup> July 2021	<u>Supplement 12:</u> Report Reference: – RR227099 dated 22 <sup>nd</sup> July 2021. Description of the Change: 1. Update of Certificate Standards. 2. Minor change to the product 3. Examination of the equipment update against EN IEC 60079-0:2018 and EN 60079-7:2015 +A1:2018.
19 <sup>th</sup> October 2021	<u>Supplement 13:</u> Report Reference: – RR229545 dated 19 <sup>th</sup> October 2021. Description of the Change: Update to label and manual as a result of the issuance of a UK Certificate.
03 <sup>rd</sup> February 2022	<u>Supplement 14:</u> Report Reference: – RR230718 dated 03 <sup>rd</sup> February 2022. Description of the Change: Minor documentation changes.

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# Blueprint Report

## Rosemount Tank Radar AB (100003453)

Class No 3610

Original Project I.D. 3035492

Certificate I.D. FM10ATEX0012X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>
00809-0100-2410	ED/Oct 2021	Reference Manual Rosemount 2410 Tank Hub	RR229545
125044-211	1	TRANSFORMER T1 DETAILED SPECIFICATIONS	3043551
9240040-902	2	APPR. DWG. FM BLOCK DIAGRAM	3043551
9240040-909	1	APPR. DWG. FM ½" NPT PLUG	3035492
9240040-920	1	APPR. DWG. FM M16x1.5 PLUG	3035492
9240040-921	1	APPR. DWG. FM ¾" NPT PLUG	3035492
D7000001-082	03	PCB MH ACTIVE/PASSIVE NON-IS	RR221344
D7000002-610	01	APPR. DWG. FM PCB PS ENTITY ROSEMOUNT 2410	3055665
D7000002-611	4	SYSTEM CONTROL DWG. ROSEMOUNT 2410 ENTITY	RR227099
D7000003-282	04	APPR. DWG. ATEX/FM/IECEX MAIN LABEL 2410	RR229545
<b>D7000007-198</b>	<b>01</b>	<b>APPR. DWG LCD WITH SHROUD 2410</b>	<b>RR230718</b>
D9240040-900	7	APPR. DWG. FM	RR227099
D9240040-901	7	SYSTEM CONTROL DRAWING FM	RR227099
D9240040-903	2	APPR. DWG. FM PCB PS	RR227099
D9240040-904	2	APPR. DWG. FM PCB CB	RR227099
D9240040-905	4	APPR. DWG. FM PCB MB	RR227099
D9240040-906	2	APPR. DWG. FM PCB AR	RR227099
<b>D9240040-907</b>	<b>5</b>	<b>FM PCB MH ACTIVE IS Rosemount 2410</b>	<b>RR230718</b>
D9240040-908	2	APPR. DWG. FM NON IS PCB	2/10/14
D9240040-946	04	Coating/Potting	RR221344
D9240040-971	6	ROSEMOUNT 2410 MODEL CODE DESCRIPTION	RR208840
<b>D9240040-988</b>	<b>5</b>	<b>FM PCB MH PASSIVE IS Rosemount 2410</b>	<b>RR230718</b>
Raptor-DE-0061	4	Explosion Protection Description	3043551