



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

|                     |   |              |                             |
|---------------------|---|--------------|-----------------------------|
| Certificate No.:    | <b>IECEX FMG 10.0005X</b>   | Page 1 of 4  | <u>Certificate history:</u> |
| Status:             | <b>Current</b>  | Issue No: 15 | Issue 14 (2021-10-19)       |
| Date of Issue:      | 2022-02-03  |              | Issue 13 (2021-07-22)       |
| Applicant:          | <b>Rosemount Tank Radar AB</b><br>Layoutvägen 1<br>Mölnlycke, 43533<br><b>Sweden</b>  |              | Issue 12 (2019-12-10)       |
| Equipment:          | <b>MODEL 2410 TANK HUB</b>  |              | Issue 11 (2019-03-27)       |
| Optional accessory: |   |              | Issue 10 (2018-12-21)       |
| Type of Protection: | <b>Flameproof, Increased Safety, Intrinsic Safety, FISCO &amp; Entity</b>   |              | Issue 9 (2018-01-31)        |
| Marking:            | Ex db eb [ib] IIB T4 Gb; Ta = -50°C to 70°C; FISCO; or Ex db eb [ib] IIB T4 Gb; Ta = -50°C to 70°C; FISCO; and Ex db eb [ia IIC Ga] IIB T4 Gb; Ta = -50°C to 70°C; Entity;<br>or Ex db eb [ib] IIB T4 Gb; Ta = -50°C to 70°C; FISCO; and Ex db eb ib IIB T4 Gb; Ta = -50°C to 70°C; Entity;<br>or Ex db eb [ib] IIB T4 Gb; Ta = -50°C to 70°C; Entity;<br>or Ex db eb [ib] IIB T4 Gb; Ta = -50°C to 70°C; Entity; and Ex db eb [ia IIC Ga] IIB T4 Gb; Ta = -50°C to 70°C; - Entity;<br>or Ex db eb [ib] IIB T4 Gb; Ta = -50°C to 70°C; Entity; and Ex db eb ib IIB T4 Gb; Ta = -50°C to 70°C; Entity;<br>IP66; IP67 |              | Issue 8 (2017-03-31)        |
|                     |   |              | Issue 7 (2017-03-07)        |
|                     |   |              | Issue 6 (2016-12-14)        |
|                     |   |              | Issue 5 (2015-08-03)        |

Approved for issue on behalf of the IECEx  
Certification Body:

**J.E.Marquedant**

Position:

**VP, Manager - Electrical Systems**

Signature:  
(for printed version)

Date:

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**1151 Boston-Providence Turnpike**  
**Norwood, MA 02062**  
**United States of America**





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Date of issue: 2022-02-03

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Manufacturer: **Rosemount Tank Radar AB**  
Layoutvägen 1  
Mölnlycke, 43533  
**Sweden**

Additional  
manufacturing  
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

## STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-1:2014-06](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

## TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[US/FMG/ExTR10.0009/00](#)  
[US/FMG/ExTR10.0009/03](#)  
[US/FMG/ExTR10.0009/06](#)  
[US/FMG/ExTR10.0009/09](#)  
[US/FMG/ExTR10.0009/12](#)  
[US/FMG/ExTR10.0009/15](#)

[US/FMG/ExTR10.0009/01](#)  
[US/FMG/ExTR10.0009/04](#)  
[US/FMG/ExTR10.0009/07](#)  
[US/FMG/ExTR10.0009/10](#)  
[US/FMG/ExTR10.0009/13](#)

[US/FMG/ExTR10.0009/02](#)  
[US/FMG/ExTR10.0009/05](#)  
[US/FMG/ExTR10.0009/08](#)  
[US/FMG/ExTR10.0009/11](#)  
[US/FMG/ExTR10.0009/14](#)

Quality Assessment Report:

[NO/PRE/QAR15.0014/04](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

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 terminals, 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.

See link in Annex for model code variations.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

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



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

Minor documentation updates.

**Annex:**

[RR230718\\_IECEX\\_FMG\\_10.0005X\\_015 Annex.pdf](#)

**IECEX FMG 10.0005X Issue 15 – Annex**  
**Rosemount Tank Radar AB**  
**Model 2410 Tank Hub**  
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The model code variations for the 2410 Tank Hub are as follows:

**Model 2410-abcdefghijklmn. Tank Hub.**

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

FISCO Parameters:

Uo = 15V, Io = 354mA, Po = 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: E7, 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.

**Model 2410-abcdefghijklmn. Tank Hub.**

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

Ex db eb [ja IIC Ga] IIB T4 Gb Ta = -50°C to +70°C; Entity; IP66 / IP67

FISCO Parameters:

Uo = 15V, Io = 354mA, Po = 5.32W

Entity Parameters:

Uo = 23.1V; Io = 95.3mA; Po = 550mW

IIC: Co = 0.14µF, Lo = 3.9mH

IIB: Co = 1.0µF, Lo = 15mH

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.

h = Power Supply: P.

i = Firmware: Any single character.

j = Hazardous Location Certification: E7, 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.

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**Model 2410-abcdefghijklmn. Tank Hub.**

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

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

FISCO Parameters:

Uo = 15V, Io = 354mA, Po = 5.32W

Entity Parameters:

Ui = 30V; Ii = 300mA; Pi = 1W, Ci = 0; Li = 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: E7, 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.

**Model 2410-abcdefghijklmn. Tank Hub**

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

Entity Parameters (Fieldbus):

Uo = 15V, Io = 200mA, Po = 3W, Co = 1.99µF, Lo = 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: E7, 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.

**Model 2410-abcdefghijklmn. Tank Hub.**

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

Ex db eb [ja IIC Ga] IIB T4 Gb Ta = -50°C to +70°C; Entity; IP66/IP67

Entity Parameters (Fieldbus):

Uo = 15V, Io = 200mA, Po = 3W, Co = 1.99µF, Lo = 143µH

Entity Parameters (Active HART):

Uo = 23.1V, Io = 95.3mA, Po = 550mW

Group IIC: Co = 0.14µF, Lo = 3.9mH

Group C, IIB: Co = 1.0µF, Lo = 15mH

Group D, IIA: Co = 3.67µF, Lo = 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.

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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: E7, 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.

**Model 2410-abcdefghijklmn. Tank Hub.**

Ex db eb [jb] IIB T4 Gb Ta = -50°C to +70°C; Entity; IP66/IP67

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

Entity 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

Entity 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: E7, 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.