Product Certifications
00825-0200-2501, Rev AB
March 2024

Rosemount™ 2501 Solids Level Switch

Rotating Paddle

ROSEMOUNT™

EMERSON

1 Product certifications

Rev 1.7

1.1 European directive information

A copy of the EU Declaration of Conformity can be found at the end of the document. The most recent revision of the EU Declaration of Conformity can be found at Emerson.com/Rosemount.

1.2 Installing equipment in North America

The US National Electrical Code® (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

1.3 U.S.A.

1.3.1 KZ Ordinary Location certification

Certificate	FM20US0085
Standards	FM Class 3810:2018 ANSI/NEMA® 250: 1991 ANSI/IEC 60529:2004
Markings	Type 4X/IP6X

As standard, the level switch has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

1.3.2 KB Dust certification

Certificate	FM20US0085
Standards	FM Class 3600:2018 FM Class 3810:2018 ANSI/ISA S12.0.01:2002 ANSI/NEMA 250:1991 ANSI/IEC 60529:2004
Markings	DIP Class II/III, Division 1, Groups E, F, and G T*
Temperature	See Table 1-1 or Table 1-2

Specific Instructions

See Safety instructions for hazardous area

1.3.3 KY Explosion-proof (XP) and Dust (DIP) certification

Certificate	FM20US0085
Standards	FM Class 3600:2018 FM Class 3615:2018 FM Class 3616:2011 FM Class 3810:2018 ANSI/NEMA 250:1991 ANSI/IEC 60529:2004
Markings	XP: Class I, Division 1, Groups B, C, and D T* Class I, Zone 1, AEx d IIC T* DIP: Class II/III, Division 1, Groups E, F, and G T* XP CL I, DIV 1, GRPS A Type 4X/IP6X
Temperature	See Table 1-1 or Table 1-2

Specific Instructions

See Safety instructions for hazardous area

1.3.4 KT Increased Safety (IS), Flameproof (XP) and Dust (DIP) certification

Certificate	FM20US0085
Standards	FM Class 3600:2018 FM Class 3615:2018 FM Class 3616:2011 FM Class 3810:2018 ANSI/ISA S12.0.01:2002 ANSI/ISA S12.22.01:2002 ANSI/NEMA 250:1991 ANSI/IEC 60529:2004
Markings	XP-IS: Class I, Division 1, Groups B, C, and D T* Class I, Zone 1, AEx d e IIC T* DIP: Class II, III, Division 1, Groups E, F and G T* Type 4X/IP6X
Temperature	See Table 1-1 or Table 1-2

Specific Instructions

See Safety instructions for hazardous area

1.4 Canada

1.4.1 KZ Ordinary Location certification

Certificate	80046077
Standards	CAN/CSA-C22.2 No. 61010-1-04 CAN/CSA-C22.2 No. 14-13 CAN/CSA-C22.2 No. 94 1-07/94-2-07 UL Std. No. 61010-1 (2nd Edition) UL Std. No. 508 (17th Edition) UL Std. No. 50/50E
Markings	Type 4X/IP6X

As standard, the level switch has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

1.4.2 KB Dust certification

Certificate	80049992
Standards	CAN/CSA C22-2 No. 25-1966 (R2009) CAN/CSA-C22.2 No.94-M91 (R2011) CAN/CSA C22.2 61010-1-12 CAN/CSA-C22.2 No. 60079-0-11 CAN/CSA - C22.2 No. 60529:05 (R2010)
Markings	Class II/III, Division 1, Groups E, F, and G Ex DIP A20/21 Type 4X/IP6X
Temperature	See Table 1-1 or Table 1-2

Specific Instructions

See Safety instructions for hazardous area

1.4.3 KY Explosion-proof (XP) and Dust (DIP) certification

Certificate	80049992
Standards	CAN/CSA C22-2 No. 25-1966 (R2009) CSA Std C22.2 No.30-M1986 (R2012) CAN/CSA-C22.2 No.94-M91 (R2011) CAN/CSA C22.2 61010-1-12 CAN/CSA-C22.2 No. 60079-0-11 CAN/CSA-C22.2 No. 60079-1-11 CAN/CSA - C22.2 No. 60529:05 (R2010)
Markings	XP: Class I, Division 1, Groups B, C, and D Class I, Zone 0, Ex d IIC

	DIP: Class II, III, Division 1, Groups E,F, and G Ex DIP A20/21 Type 4X/IP6X
Temperature	See Table 1-1 or Table 1-2

Specific Instructions

See Safety instructions for hazardous area

1.4.4 KT Increased Safety (IS), Flameproof (XP) and Dust (DIP) certification

Certificate	80049992
Standards	CSA Std C22.2 No.25-1966 (R2009) CSA Std C22.2 No.30-M1986 (R2012) CAN/CSA-C22.2 No.94-M91 (R2011) CAN/CSA C22.2 61010-1-12 CAN/CSA-C22.2 No. 60079-0-11 CAN/CSA-C22.2 No. 60079-1-11 CAN/CSA-C22.2 No. 60079-7-12 CAN/CSA - C22.2 No. 60529:05 (R2010)
Markings	XP-IS: Class I, Zone 1, Ex de [ia] IIC DIP: Class II, III, Division 1, Groups E,F, and G Ex DIP A20/21 Type 4X, IP66
Temperature	See Table 1-1 or Table 1-2

Specific Instructions

See Safety instructions for hazardous area

1.5 Europe

1.5.1 ND Dust certification

Certificate	BVS 20 ATEX E 076X
Standards	EN IEC 60079-0:2018 EN 60079-31:2014
Markings	 II 1/2D Ex ta/tb IIIC T* °C Da/Db
Temperature	See Table 1-3 or Table 1-4

Specific Instructions

See Safety instructions for hazardous area

1.5.2 E8 Explosion-proof (XP) and Dust (DIP) certification

Certificate	BVS 20 ATEX E 076X
Standards	EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-31:2014
Markings	II 1/2D Ex ta/tb IIIC T* °C Da/Db II 2G Ex db IIC T* Gb
Temperature	See Table 1-3 or Table 1-4

Specific Instructions

See Safety instructions for hazardous area

1.5.3 K1 Increased Safety (IS), Flameproof (XP) and Dust (DIP) certification

Certificate	BVS 20 ATEX E 076X
Standards	EN IEC 60079-0:2018 EN IEC 60079-7:2015 + A1:2018 EN 60079-1:2014 EN 60079-31:2014
Markings	II 1/2D Ex ta/tb IIIC T* °C Da/Db II 2G Ex db eb IIC T* Gb
Temperature	See Table 1-3 or Table 1-4

Specific Instructions

See Safety instructions for hazardous area

1.6 International

1.6.1 NK IECEx Dust certification

Certificate	IECEx BVS 20.0063X
Standards	IEC 60079-0:2017, IEC 60079-31:2013
Markings	Ex ta/tb IIIC T* °C Da/Db
Temperature	See Table 1-3 or Table 1-4

Specific Instructions

See Safety instructions for hazardous area

1.6.2 E7 IECEx Explosion-proof and Dust certification

Certificate	IECEx BVS 20.0063X
Standards	IEC 60079-0:2017, IEC 60079-31:2013, IEC 60079-1:2014-06
Markings	Ex db IIC T* Gb Ex ta/tb IIIC T* °C Da/Db
Temperature	See Table 1-3 or Table 1-4

Specific Instructions

See Rosemount Safety instructions for hazardous area

1.6.3 K7 IECEx Increased Safety, Flameproof and Dust certification

Certificate	IECEx BVS 20.0063X
Standards	IEC 60079-0:2017, IEC 60079-1:2014-06, IEC 60079-31:2013, IEC 60079-7:2017
Markings	Ex db eb IIC T* Gb Ex ta/tb IIIC T* °C Da/Db
Temperature	See Table 1-3 or Table 1-4

Specific Instructions

See Safety instructions for hazardous area

1.7 China

1.7.1 NS

CCC certificate

Certificate	2021322315004051

NEPSI certificate

Certificate	GYJ21.2851X
Standards	GB 3836.1-2010, GB 3836.2-2010, GB 3836.3-2010, GB 12476.1-2013, GB 12476.5-2013
Markings	Ex d IIC T* Gb Ex d e IIC T* Gb Ex tD A20/A21 IP6X T...°C

Specific Instructions

See certificate

1.8 United Arab Emirates

Certificate	20-11-28736/Q20-11-001012
Markings	same as IECEx (E7, K7, NK)

1.9 Safety instructions for hazardous area

The safety instructions are for versions of the Rosemount 2501 with Product Certification codes KB, KY, KT, ND, E8, K1, NK, E7, and K7 in the model number.

Safety for mechanical installation

1. Installation of this equipment shall be carried out by suitably trained personnel, in accordance with the applicable code of practice.
2. The weather protection cover is only approved for use in Zone 22.
3. Care should be taken to protect the level switch from an impact, causing damage and becoming an ignition source from friction sparks.
4. The permitted relative pressure is -0.2 to +0.1 bar. This is defined in EU directive 2014/34/EU (for ATEX certifications) and IEC 60079-0 (for IECEx certifications).

Safety for electrical installation

1. Wiring of this equipment shall be carried out by suitably trained personnel, in accordance with the applicable code of practice.
2. All wiring must have insulation suitable for at least 250 Vac. The temperature rating must be at least 194 °F (90 °C).
3. Connect the external equipotential bonding terminal to the plant ground (earth).
4. Always keep the housing lid (cover) fitted during commissioning.
5. Do not remove the housing lid (cover) while circuits are alive.
6. Before removing the housing lid (cover), ensure there are no dust deposits and no airborne dust is present.

Cable glands, conduits, and blanking plugs in hazardous area installations

General installation:

- Installation of this equipment shall be carried out by suitably trained personnel, in accordance with the applicable code of practice.
- Seal the un-used conduit entries with a suitably rated blanking plugs.
- Use only factory-supplied parts, where applicable.
- A suitable strain-relief must be provided for the wiring cables when the level switch is installed with the factory-supplied cable glands.
- The diameter of the wiring cable must match to the clamping range of the cable clamp.
- For parts that are not factory-supplied, it is the responsibility of the installer to ensure:
  - The parts have a certification and type of protection that is equivalent to the approval of the level switch.
  - The parts have an ambient temperature range that complies with the specification of the level switch plus 10 Kelvin.
  - The parts must be installed in accordance with the installation instructions of the part manufacturers.

1.10 FM and CSA thermal data

Table 1-1: Temperatures (enclosure directly mounted to the process connection)

Max. ambient air temperature (T_a)	Max. process temperature (T_p)	Max. surface temperature (T)	Temperature class (division)	Temperature class (zone)
86 °F (30 °C)	122 °F (50 °C)	194 °F (90 °C)	T5	T6
		248 °F (120 °C)(1)	T4A	T4
104 °F (40 °C)	140 °F (60 °C)	212 °F (100 °C)	T5	T4
		248 °F (120 °C)(1)	T4A	T4
122 °F (50 °C)	158 °F (70 °C)	230 °F (110 °C)	T4A	T4
		248 °F (120 °C)(1)	T4A	T4
122 °F (50 °C)	176 °F (80 °C)	248 °F (120 °C)(1)	T4A	T4

(1) Applicable only when universal voltage electronics is fitted.

Table 1-2: Temperatures (enclosure mounted offset to the process connection)

Max. ambient air temperature (T_a)	Max. process temperature (T_p)	Max. surface temperature (T)	Temperature class (division)	Temperature class (zone)
122 °F (50 °C)	194 °F (90 °C)	248 °F (120 °C)	T4A	T4
	212 °F (100 °C)	248 °F (120 °C)	T4A	T4
	230 °F (110 °C)	248 °F (120 °C)	T4A	T4
	248 °F (120 °C)	248 °F (120 °C)	T4A	T4
	266 °F (130 °C)	266 °F (130 °C)	T4	T4
	284 °F (140 °C)	284 °F (140 °C)	T3C	T3
	302 °F (150 °C)	302 °F (150 °C)	T3C	T3
	320 °F (160 °C)	320 °F (160 °C)	T3C	T3
	338 °F (170 °C)	338 °F (170 °C)	T3A	T3
	356 °F (180 °C)	356 °F (180 °C)	T3A	T3
	374 °F (190 °C)	374 °F (190 °C)	T3	T3
	392 °F (200 °C)	392 °F (200 °C)	T3	T2
	410 °F (210 °C)	410 °F (210 °C)	T2D	T2
	428 °F (220 °C)	428 °F (220 °C)	T2C	T2
	446 °F (230 °C)	446 °F (230 °C)	T2C	T2
	464 °F (240 °C)	464 °F (240 °C)	T2B	T2
	482 °F (250 °C)	482 °F (250 °C)	T2B	T2

1.11 ATEX and IECEx thermal data

Table 1-3: Temperatures (enclosure directly mounted to the process connection)

Plastic enclosure with ot without heating:

-4 °F ≤ Tamb ≤ +86 °F ... +140 °F (-20 °C ≤ Tamb ≤ +30 °C ... +60 °C)

Metal enclosure without heating:

-4 °F ≤ Tamb ≤ +86 °F ... +140 °F (-20 °C ≤ Tamb ≤ +30 °C ... +60 °C)

Metal enclosure with heating:

-40 °F ≤ Tamb ≤ 86 °F ... +140 °F (-40 °C ≤ Tamb ≤ +30 °C ... +60 °C)

Max. ambient air temperature (T_a)	Max. process temperature (T_p)	Max. surface temperature (T)	Temperature class
86 °F (30 °C)	122 °F (50 °C)	194 °F (90 °C)	T5
		248 °F (120 °C)(1)	T4(1)
104 °F (40 °C)	140 °F (60 °C)	212 °F (100 °C)	T4
		248 °F (120 °C)(1)	T4
122 °F (50 °C)	158 °F (70 °C)	230 °F (110 °C)	T4
		248 °F (120 °C)(1)	T4
140 °F (60 °C)	176 °F (80 °C)	248 °F (120 °C)	T4

(1) Applicable for universal voltage electronics when fitted with a thermal fuse to limit the temperature to 117 °C.

Table 1-4: Temperatures (enclosure mounted offset to the process connection)

Plastic enclosure with ot without heating:

-4 °F ≤ Tamb ≤ +140 °F (-20 °C ≤ Tamb ≤ +60 °C)

Metal enclosure without heating:

-4 °F ≤ Tamb ≤ +140 °F (-20 °C ≤ Tamb ≤ +60 °C)

Metal enclosure with heating:

-40 °F ≤ Tamb ≤ +140 °F (-40 °C ≤ Tamb ≤ +60 °C)

Permitted process temperature:

-40 °F ... +482 °F (-40 °C ... +250 °C)

Max. ambient air temperature (T_a)	Max. process temperature (T_p)	Max. surface temperature (T)	Temperature class
140 °F (60 °C)	194 °F (90 °C)	248 °F (120 °C)	T4
	212 °F (100 °C)	248 °F (120 °C)	T4
	230 °F (110 °C)	248 °F (120 °C)	T4
	248 °F (120 °C)	248 °F (120 °C)	T4
	266 °F (130 °C)	266 °F (130 °C)	T4
	284 °F (140 °C)	284 °F (140 °C)	T3
	302 °F (150 °C)	302 °F (150 °C)	T3
	320 °F (160 °C)	320 °F (160 °C)	T3
	338 °F (170 °C)	338 °F (170 °C)	T3
	356 °F (180 °C)	356 °F (180 °C)	T3
	374 °F (190 °C)	374 °F (190 °C)	T3
	392 °F (200 °C)	392 °F (200 °C)	T2
	410 °F (210 °C)	410 °F (210 °C)	T2
	428 °F (220 °C)	428 °F (220 °C)	T2
	446 °F (230 °C)	446 °F (230 °C)	T2
	464 °F (240 °C)	464 °F (240 °C)	T2
	482 °F (250 °C)	482 °F (250 °C)	T2

1.12 EU Declaration of Conformity

Figure 1-1: EU Declaration of Conformity

Rev. #2

EMERSON

Declaration of Conformity CE

We,

Rosemount Tank Radar AB
Layoutvägen 1
S-435 33 MÖLNLYCKE
Sweden

declare under our sole responsibility that the product,

Rosemount™ 2501 Solids Level Switch – Rotating Paddle

manufactured by,

Rosemount Tank Radar AB
Layoutvägen 1
S-435 33 MÖLNLYCKE
Sweden

to which this declaration relates, is in conformity with the provisions of the European Union Directives, including the latest amendments, as shown in the attached schedule.

Assumption of conformity is based on the application of the harmonized standards and, when applicable or required, a European Union notified body certification, as shown in the attached schedule.

(signature)	Sr. Manager Product Approvals (function)
Dajana Prastalo (name)	14-Feb-24; Mölnlycke (date of issue & place)

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Declaration of Conformity CE

EMC Directive (2014/30/EU)

Harmonized Standards: EN 61326-1:2013

ATEX Directive (2014/34/EU)

Rosemount 2501********ND***
BVS 20 ATEX E076 X

Equipment Group II, Category 1/2D, Ex ta/tb IIIC T*°C Da/Db

Rosemount 2501********E8***
BVS 20 ATEX E076 X

Equipment Group II, Category 1/2D, Ex ta/tb IIIC T*°C Da/Db
Equipment Group II, Category 2G Ex db IIC T*Gb

Rosemount 2501********E8***
BVS 20 ATEX E076 X

Equipment Group II, Category 1/2D, Ex ta/tb IIIC T*°C Da/Db
Equipment Group II, Category 2G Ex db eb IIC T*Gb

Harmonized Standards:
EN IEC 60079-0:2018
EN 60079-1:2014
EN IEC 60079-7:2015 + A1:2018
EN 60079-31:2014

Low Voltage Directive (2014/35/EU)

Harmonized Standards: EN 61010-1:2010 + A1:2019

RoHS Directive (2011/65/EU) Amended 2015/863

Harmonized standards: EN IEC 63000:2018

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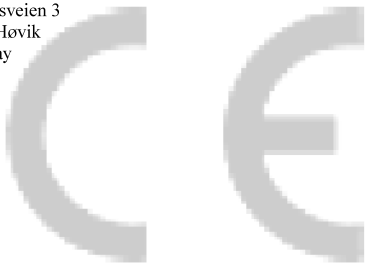
Declaration of Conformity CE

ATEX Notified Body for EU Type Examination Certificates and Type Examination Certificates

DEKRA Testing and Certification GmbH [Notified Body Number: 0158]
Dinnendahlstr. 9, 44809
Bochum, Germany

ATEX Notified body for Quality Assurance

DNV Product Assurance AS [Notified Body Number: 2460]
Veritasveien 3
1363 Høvik
Norway



1.13 China RoHS

含有China RoHS管控物质超过最大浓度限值的部件型号列表 Rosemount 2501
List of Rosemount 2501 Parts with China RoHS Concentration above MCVs

部件名称 Part Name	有害物质 / Hazardous Substances					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr +6)	多溴联苯 Polybrominated biphenyls (PBB)	多溴联苯醚 Polybrominated diphenyl ethers (PBDE)
电子组件 Electronics Assembly	X	O	X	O	O	O
壳体组件 Housing Assembly	X	O	O	O	O	O
过程连接/扩展部件 Process Connection / Extension	X	O	O	O	O	O
测量叶片 Measuring Vane	O	O	O	O	O	O

本表格系依据SJ/T11364的规定而制作.
This table is proposed in accordance with the provision of SJ/T11364.

O: 意为该部件的所有均质材料中该有害物质的含量均低于GB/T 26572所规定的限量要求.
O: Indicate that said hazardous substance in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

X: 意为在该部件所使用的所有均质材料里，至少有一类均质材料中该有害物质的含量高于GB/T 26572所规定的限量要求.
X: Indicate that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.

Product Certifications
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For more information: **Emerson.com/global**

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