

Rosemount™ 2521 Solids Level Switch

Vibrating Fork



1 Product certifications

Rev 1.5

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](https://www.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	FM20US0086X
Standards	FM Class 3810:2018; ANSI/NEMA® 250: 1991; ANSI/IEC 60529:2004
Markings	Type 4X/IP66

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	FM20US0086X
Standards	FM Class 3600:2018; FM Class 3810:2018; ANSI/ISA S12.0.01:2002; ANSI/NEMA 250:1991; ANSI/ISA 60079-0:2009
Markings	DIP Class II/III, Division 1, Groups E, F, and G T* T* (See control drawings and safety instructions) Type 4X/IP66

Specific Instructions

See [Safety instructions for hazardous area](#)

Specific condition of use (X):

The apparatus enclosure contains aluminum and is considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact or friction.

1.3.3 KE Intrinsically safe (IS) and Dust (DIP) certification

Certificate	FM20US0086X
Standards	FM Class 3600:2018; FM Class 3610:2010; FM Class 3810:2018; ANSI/ISA 512.0.01:2002; ANSI/NEMA 250:1991; ANSI/IEC 60529:2004; ANSI/ISA 60079-0:2009; ANSI/ISA 60079-11:2009
Markings	IS: Class I, Division 1, Groups A, B, C and D Class I, Zone 0 and 0/1, AEx ia IIC DIP: Class II, III, Division 1, Groups E, F, and G T* (See control drawings and safety instructions) Type 4X/IP66

Specific Instructions

See [Safety instructions for hazardous area](#)

1.3.4 KY Explosion proof (XP) and Dust (DIP) certification

Certificate	FM20US0086X
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 A, B, C and D T* Class I, Zone 1, AEx d [ia] IIC T* DIP: Class II/III, Division 1, Groups E, F, and G T* T* (See control drawings and safety instructions) Type 4X/IP66

Specific Instructions

See [Safety instructions for hazardous area](#)

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

Certificate	FM20US0086X
Standards	FM Class 3600:2018; FM Class 3610:2018; FM Class 3615:2018; FM Class 3810:2018; ANSI/ISA S12.0.01:2002; ANSI/ISA S12.22.01:2002; ANSI/NEMA 250:1991; ANSI/IEC 60529:2004; ANSI/ISA 60079-0:2009
Markings	XP-IS: Class I, Division 1, Groups A, B, C and D T* Class I, Zone 1, AEx d e [ia] IIC T* DIP: Class II, III, Division 1, Groups E, F, and G T* T* (See control drawings and safety instructions) Type 4X/IP66

Specific Instructions

See [Safety instructions for hazardous area](#)

1.4 Canada

1.4.1 KZ Ordinary Location certification

Certificate	80046076
Standards	CAN/CSA-C22.2 No. 61010-1-04; UL Std. No. 61010-1 (2 nd Edition); IEC 61010-1 (2 nd Edition)
Markings	Type 4X/IP67

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 (DIP) certification

Certificate	80049993
Standards	CAN/CSA C22-2 No. 25-1966; CAN/CSA C22.2 No. 94-M91; CAN/CSA No. 61010-1-2004; CAN/CSA E60079-0-02; IEC 60529:1989
Markings	DIP:

Class II/III, Division 1, Groups E,F, and G; Ex DIP A20/21
 T* (See safety instructions)
 Type 4X/IP66

Specific Instructions

See [Safety instructions for hazardous area](#)

1.4.3 KE Intrinsically Safe (IS) and Dust (DIP) certification

Certificate	80049993
Standards	CAN/CSA C22-2 No. 25-1966; CAN/CSA C22.2 No. 94-M91; CSA Std C22.2 No. 157-M1992; CAN/CSA No. 61010-1-2004; CAN/CSA E60079-0-02; IEC 60529:1989
Markings	IS: Class I, Division 1, Groups A, B, C, and D Class I, Zone 0 and 0/1, Ex ia IIC DIP: Class II, III, Division 1, Groups E,F, and G; Ex DIP A20 and A20/21 T* (See safety instructions)

Specific Instructions

See [Safety instructions for hazardous area](#)

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

Certificate	80049993
Standards	CAN/CSA C22-2 No. 25-1966; CSA Std C22.2 No.30-M1986 ; CAN/CSA C22.2 No. 94-M91; CSA Std C22.2 No. 157-M1992; CAN/CSA No. 61010-1-2004; CAN/CSA E60079-0-02; CAN/CSA-E60079-1-02; IEC 60529:1989
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 T* (See safety instructions)

Type 4X/IP66

Specific Instructions

See [Safety instructions for hazardous area](#)

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


Certificate	80049993
Standards	CAN/CSA C22-2 No. 25-1966; CSA Std C22.2 No.30-M1986 ; CAN/CSA C22.2 No. 94-M91; CSA Std C22.2 No. 157-M1992; CAN/CSA No. 61010-1-2004; CAN/CSA E60079-0-02; CAN/CSA-E60079-1-02; CAN/CSA-E60079-7-02; CAN/CSA-E60079-11-02; IEC 60529:1989
Markings	XP-IS: Class I, Zone 1, Ex d e [ia] IIC DIP: Class II, III, Division 1, Groups E,F, and G; Ex DIP A20/21 Type 4X/IP66

Specific Instructions

See [Safety instructions for hazardous area](#)

1.5 Europe




1.5.1 ND ATEX Dust certification

Certificate	BVS 20 ATEX 077X
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 ATEX Flameproof and Dust certification

Certificate	BVS 20 ATEX 077X
Standards	EN IEC 60079-0:2018; EN 60079-1:2014; EN 60079-11:2012; EN 60079-31:2014
Markings	 II 1/2D Ex ta/tb IIIC T* °C Da/Db  II 2G Ex db IIC T* Gb  II 2G Ex db ia IIC T* Gb
Temperature	See Table 1-3 or Table 1-4

Specific Instructions

See [Safety instructions for hazardous area](#)




1.5.3 K1 ATEX Increased Safety, Flameproof and Dust certification

Certificate	BVS 20 ATEX 077X
Standards	EN IEC 60079-0:2018; EN IEC 60079-7:2015 + A1:2018; EN 60079-11:2012; EN 60079-31:2014
Markings	 II 1/2D Ex ta/tb IIIC T* °C Da/Db  II 2G Ex db eb IIC T* Gb  II 2G Ex db eb ia IIC T* Gb
Temperature	See Table 1-3 or Table 1-4

Specific Instructions

See [Safety instructions for hazardous area](#)

1.5.4 IJ ATEX Intrinsically Safe (IS) and Dust (DIP) certification

Certificate	BVS 20 ATEX 077X
Standards	EN IEC 60079-0:2018; EN 60079-11:2012; EN 60079-31:2014
Markings	 II 1/2D Ex ta/tb IIIC T* °C Da/Db  II 1/2G Ex ia IIC T* Ga/Gb  II 1G Ex ia IIC T* Ga
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 20.0064X
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 Flameproof and Dust certification

Certificate	IECEX BVS 20.0064X
Standards	IEC 60079-0:2017; IEC 60079-1:2014-06; IEC 60079-31:2013
Markings	Ex ta/tb IIIC T* °C Da/Db Ex db IIC T* Gb Ex db ia IIC T* Gb
Temperature	See Table 1-3 or Table 1-4

Specific Instructions

See [Safety instructions for hazardous area](#)

1.6.3 K7 IECEx Increased Safety, Flameproof and Dust certification

Certificate	IECEX BVS 20.0064X
Standards	IEC 60079-0:2017; IEC 60079-1:2014-06; IEC 60079-7:2017; IEC 60079-31:2013
Markings	Ex ta/tb IIIC T* °C Da/Db Ex db eb IIC T* Gb Ex db eb ia IIC T* Gb
Temperature	See Table 1-3 or Table 1-4

Specific Instructions

See [Safety instructions for hazardous area](#)

1.6.4 IL IECEx Intrinsically Safe and Dust certification

Certificate	IECEx BVS 20.0064X
Standards	IEC 60079-0:2017; IEC 60079-11:2011; IEC 60079-31:2013
Markings	Ex ta/tb IIIC T* °C Da/Db Ex ia IIC T* Ga/Gb Ex ia IIC T* Ga
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 and NEPSI certifications

CCC certificate

Certificate	2021322315004063
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NEPSI certificate

Certificate	GYJ21.2852X
Standards	GB 3836.1-2010, GB 3836.2-2010, GB 3836.3-2010, GB 3836.4-2010, 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 Ex d ia IIC T* Gb Ex ia IIC T* Ga/Gb Ex ia IIC T* Ga

Specific Instructions

See certificate

1.8 United Arab Emirates

Certificate	23-11-22694/Q23-11-048838/NB0002
Markings	same as IECEx (NK, E7, K7, I7)

1.9 Safety instructions for hazardous area

The safety instructions are for versions of the Rosemount 2521 with Product Certification codes KB, KE, KY, KT, E8, K1, IJ, E7, K7, and IL 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.

Installation of a flameproof or explosion-proof Rosemount 2521 with a conduit system

In a conduit system, single electric conductors are installed in a certified pipe system. This pipe system must also have a flameproof or explosion-proof construction.

For ATEX and IECEx approvals, both enclosure of the level switch and pipe system need to be isolated from each other by using a certified flameproof or explosion-proof seal. The seal must be installed directly in, or at, the conduit entries of the level switch. Unused conduit entries must be sealed using suitably certified blanking elements (stopping plugs).

For FM and CSA approvals, both enclosure of the level switch and pipe system need to be isolated from each other by using a certified flameproof seal. The seal must be installed within 18 inches of the enclosure wall. Unused conduit entries must be sealed using suitably certified blanking elements (stopping plugs).

1.10 FM and CSA thermal data

Table 1-1: Maximum temperatures (IS approvals)

Versions of electronics modules that are intrinsically safe:

- NAMUR (IEC 60947-5-6), 8/16 mA, and 4-20 mA

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)	158 °F (70 °C)	176 °F (80 °C)	T6	T6
140 °F (60 °C)	176 °F (80 °C)	185 °F (85 °C)	T6	T5
	194 °F (90 °C)	194 °F (90 °C)	T5	T5
	212 °F (100 °C)	212 °F (100 °C)	T5	T4
	230 °F (110 °C)	230 °F (110 °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

Table 1-2: Maximum temperatures (non-IS approvals)

Versions of electronics modules that are not intrinsically safe:

- Universal voltage Relay SPDT and Relay DPDT
- 3-wire PNP
- 2-wire without contact (8/16 mA or 4-20 mA)

Max. ambient air temperature (T _a)	Max. process temperature (T _p)	Max. surface temperature (T)	Temperature class (division)	Temperature class (zone)
140 °F (60 °C)	176 °F (80 °C)	248 °F (120 °C)	T4A	T4
	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

1.11 ATEX and IECEx thermal data

Table 1-3: Temperatures (electronic module types A and B)

Max. ambient air temperature (T _a)	Max. process temperature (T _p)	Max. surface temperature (T)	Temperature class
140 °F (60 °C)	176 °F (80 °C)	248 °F (120 °C)	T4
140 °F (60 °C)	194 °F (90 °C)	248 °F (120 °C)	T4
140 °F (60 °C)	212 °F (100 °C)	248 °F (120 °C)	T4
140 °F (60 °C)	230 °F (110 °C)	248 °F (120 °C)	T4
140 °F (60 °C)	248 °F (120 °C)	248 °F (120 °C)	T4
140 °F (60 °C)	266 °F (130 °C)	266 °F (130 °C)	T4
140 °F (60 °C)	284 °F (140 °C)	284 °F (140 °C)	T3
140 °F (60 °C)	302 °F (150 °C)	302 °F (150 °C)	T3

Table 1-4: Temperatures (electronic module type C)

Max. ambient air temperature (T _a)	Max. process temperature (T _p)	Max. surface temperature (T)	Temperature class
122 °F (50 °C)	158 °F (70 °C)	176 °F (80 °C)	T6
140 °F (60 °C)	176 °F (80 °C)	185 °F (85 °C)	T5
140 °F (60 °C)	194 °F (90 °C)	194 °F (90 °C)	T5
140 °F (60 °C)	212 °F (100 °C)	212 °F (100 °C)	T4
140 °F (60 °C)	230 °F (110 °C)	230 °F (110 °C)	T4
140 °F (60 °C)	248 °F (120 °C)	248 °F (120 °C)	T4
140 °F (60 °C)	266 °F (130 °C)	266 °F (130 °C)	T4
140 °F (60 °C)	284 °F (140 °C)	284 °F (140 °C)	T3
140 °F (60 °C)	302 °F (150 °C)	302 °F (150 °C)	T3

Note

The maximum surface temperature of the electronic enclosure with a thermal fuse is limited to 242.6 °F (117 °C).

1.12 Control drawings

Figure 1-1: USA and Canada control drawing D700006/345

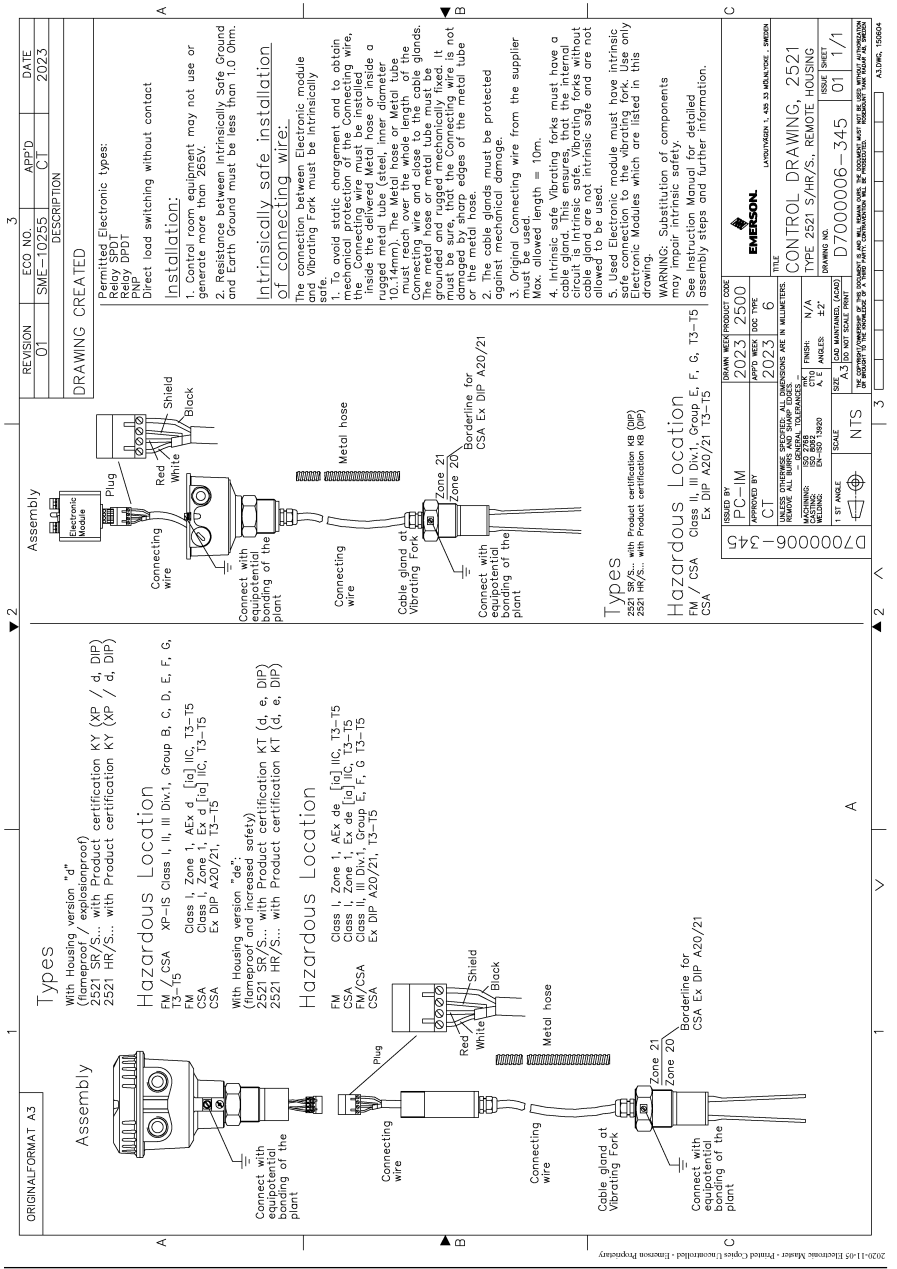
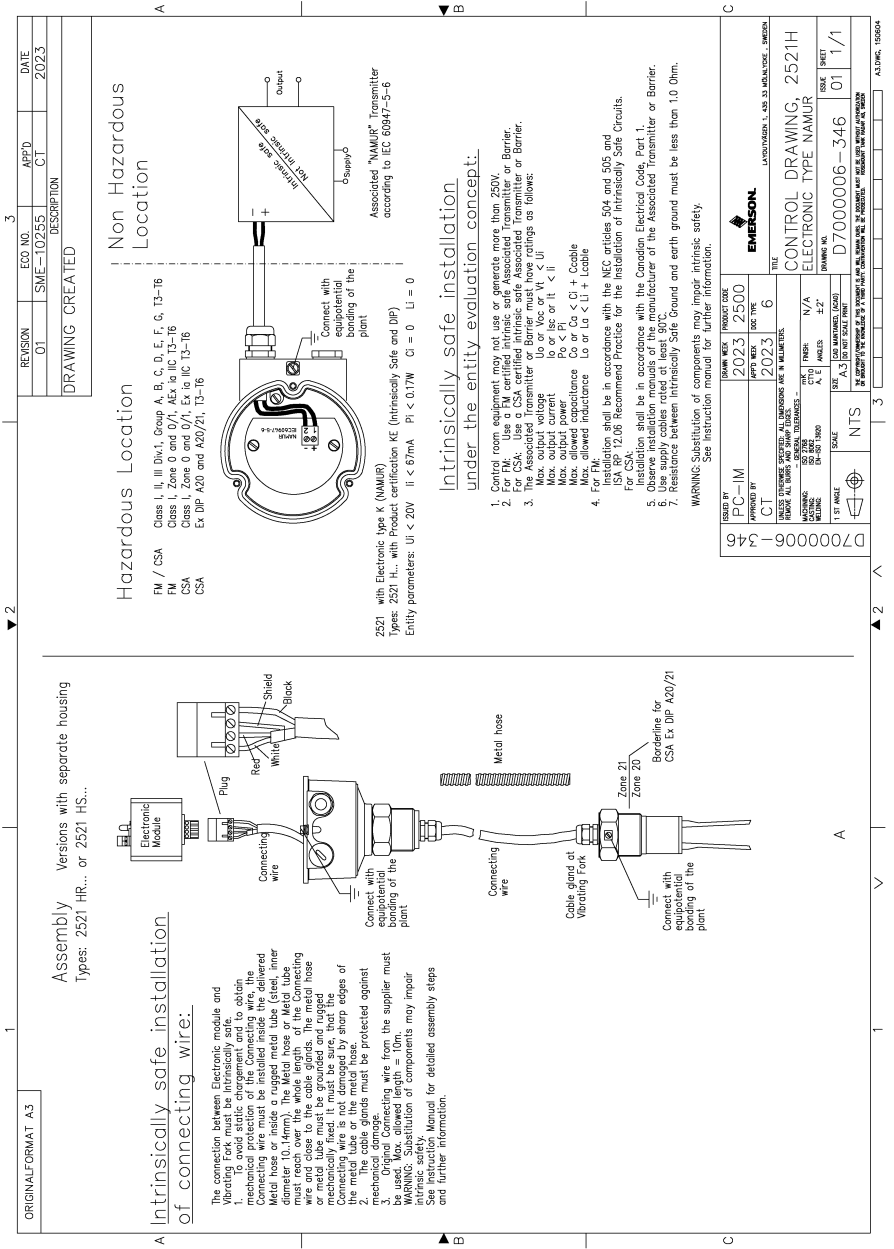





Figure 1-2: USA and Canada control drawing D7000006/346



1.13 EU Declaration of Conformity

Figure 1-3: EU Declaration of Conformity

	<h2 style="margin: 0;">EU Declaration of Conformity</h2> <p style="margin: 0;">No: RMD 1152 Rev. C</p>	
<p>We,</p> <p style="margin-left: 40px;">Rosemount Tank Radar AB Layoutvägen 1 S-435 33 MÖLNLYCKE Sweden</p> <p>declare under our sole responsibility that the product,</p> <p style="margin-left: 40px;">Rosemount™ 2521 Solids Level Switch – Enhanced Vibrating Fork</p> <p>manufactured by,</p> <p style="margin-left: 40px;">Rosemount Tank Radar AB Layoutvägen 1 S-435 33 MÖLNLYCKE Sweden</p> <p>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.</p> <p>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.</p>		
 <hr style="border: 0; border-top: 1px solid black;"/> <p style="font-size: small;">(signature)</p>	<p>Manager Product Approvals</p> <hr style="border: 0; border-top: 1px solid black;"/> <p style="font-size: small;">(function)</p>	
<p>Dajana Prastalo</p> <hr style="border: 0; border-top: 1px solid black;"/> <p style="font-size: small;">(name)</p>	<p>6-May-22;</p> <hr style="border: 0; border-top: 1px solid black;"/> <p style="font-size: small;">(date of issue)</p>	
<p style="font-size: x-small;">Page 1 of 4</p>		



EU Declaration of Conformity

No: RMD 1152 Rev. C



EMC Directive (2014/30/EU)

All Models

Harmonized Standards: EN 61326-1:2013

LV Directive (2014/35/EU)

All Models

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

RoHS Directive (2011/65/EU)

All Models

Harmonized Standard: EN IEC 63000:2018

The Model 2521 is in conformity with Directive 2011/65/EU of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment.



EU Declaration of Conformity

No: RMD 1152 Rev. C



ATEX Directive (2014/34/EU)

Rosemount 2521***ND***

BVS 20 ATEX E 077 X

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

Rosemount 2521***IJ***

BVS 20 ATEX E 077 X

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

Equipment Group II, Category 1/2 G (Ex ia IIC T* Ga/Gb)

Equipment Group II, Category 1G (Ex ia IIC T* Ga)

Rosemount 2521***E8***

BVS 20 ATEX E 077 X

Equipment Group II, Category 2G (Ex db ia IIC T* Gb)

Equipment Group II, Category 2G (Ex db IIC T* Gb)

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

Rosemount 2521***K1*;**

BVS 20 ATEX E 077 X

Equipment Group II, Category 2G (Ex db eb ia IIC T* Gb)

Equipment Group II, Category 2G (Ex db eb IIC T* Gb)

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

Harmonized Standards: EN IEC 60079-0:2018 EN 60079-1:2014 EN IEC 60079-7:2015 + A1:2018 EN 60079-11:2012 EN 60079-26:2015 EN 60079-31:2014



EU Declaration of Conformity

No: RMD 1152 Rev. C



ATEX Directive Notified Body

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

ATEX Notified body for Quality Assurance

DNV Nemko Presafe AS [Notified Body Number: 2460]
Veritasveien 3
1363 Høvik
Norway

(Minor variations in design to suit the application and/or mounting requirements are identified by alpha/numeric characters where indicated * above)

1.14 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 2521
List of Rosemount 2521 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

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
00825-0200-2521, Rev. AB
March 2024

For more information: [Emerson.com/global](https://www.emerson.com/global)

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