

Rosemount™ 2555 Solids Level Switches

Capacitance Probe



1 Product certifications

Rev 2.7

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](https://www.emerson.com/Rosemount).

1.2 Hygienic approvals and compliances

EHEDG (Type ED Class I certificate).

(See [Safety instructions for hygienic applications](#))

1.3 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.

1.4 U.S.A.

1.4.1 KZ Ordinary Location certification

Certificate	FM20NUS0010
Standards	FM Class 3810:2018; ANSI/ISA 61010-1:2012; ANSI/ISA 60079-11:2013; ANSI/NEMA® 250:1991; ANSI/IEC 60529:2004
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 NL Dust certification

Certificate	FM20US0087
Standards	FM Class 3600:2018; FM Class 3616:2011; FM Class 3810:2018; ANSI/ISA 61010-1:2012;

	ANSI/ISA 60079-0:2013; ANSI/ISA 60079-11:2013; ANSI/NEMA 250:1991; ANSI/IEC 60529:2004
Markings	DIP Class II/III, Division 1, Groups E, F, and G T4A Ta = -40 °C to +70 °C Type 4/4X/IP67

Specific Instructions

See [Safety instructions for hazardous area](#)

1.4.3 E5 Explosion-proof (XP) and Dust (DIP) certification

Certificate	FM20US0087
Standards	FM Class 3600:2018; FM Class 3610:2010; FM Class 3615:2018; FM Class 3616:2011; FM Class 3810:2018; ANSI/ISA 61010-1:2012; ANSI/ISA 60079-0:2013; ANSI/ISA 60079-11:2013; ANSI/NEMA 250:1991; ANSI/IEC 60529:2004
Markings	XP: Class I, Division 1, Groups B, C, and D T4A Class I, Zone 1, IIB + H2 T4 DIP: Class II/III, Division 1, Groups E, F, and G T4A (See Technical data) Type 4/4X/IP67

Specific Instructions

See [Safety instructions for hazardous area](#)

1.5 Canada

1.5.1 KZ Ordinary Location certification

Certificate	FM20NCA0005
Standards	CSA-C22.2 No. 94:R2011; CSA-C22.2 No. 60529:R2010; CAN/CSA-C22.2 No. 61010-1:2012
Markings	Type 4/4X/IP67

Specific Instructions




See [Safety instructions for hazardous area](#)

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).

1.6 Europe







1.6.1 ND ATEX Dust certification

Certificate	BVS 19 ATEX E 073 X
Standards	EN IEC 60079-0:2018; EN 60079-31:2014
Markings	Compact version:  II 1/2 D Ex ia/tb IIIC T* Da/Db Remote version (electronics enclosure):  II 2D Ex tb [ia] IIIC T* Db Remote version (junction box and probe):  II 1/2D Ex ia/tb IIIC T* Da/Db
Temperature*	See Technical data

Specific Instructions

See [Safety instructions for hazardous area](#)







1.6.2 E8 ATEX Flameproof and Dust certification

Certificate	BVS 19 ATEX E 073 X
Standards	EN IEC 60079-0:2018; EN 60079-1:2014; EN 60079-11:2012; EN 60079-31:2014
Markings	Compact version:  II 2G Ex db ia IIC T* Gb  II 1/2 D Ex ia/tb IIIC T* Da/Db Remote version (electronics enclosure):  II 2G Ex db [ia] IIC T* Gb  II 2D Ex tb [ia] IIIC T* Db Remote version (junction box and probe):  II 2G Ex ia IIC T* Gb  II 1/2D Ex ia/tb IIIC T* Da/Db
Temperature*	See Technical data

Specific Instructions

See [Safety instructions for hazardous area](#)

1.6.3 K1 ATEX Increased Safety, Flameproof and Dust certification

Certificate	BVS 19 ATEX E 073 X
Standards	EN IEC 60079-0:2018; EN 60079-1:2014; EN IEC 60079-7: 2015+A1: 2018; EN 60079-11:2012; EN 60079-31:2014
Markings	Compact version:  II 2G Ex db eb ia IIC T* Gb  II 1/2 D Ex ia/tb IIIC T* Da/Db Remote version (electronics enclosure):  II 2G Ex db eb [ia] IIC T* Gb  II 2D Ex tb [ia] IIIC T* Db Remote version (junction box and probe):  II 2G Ex ia IIC T* Gb  II 1/2D Ex ia/tb IIIC T* Da/Db
Temperature*	See Technical data

Specific Instructions

See [Safety instructions for hazardous area](#)

1.7 International

1.7.1 NK IECEx Dust certification

Certificate	IECEx BVS 19.0069X
Standards	IEC 60079-0:2017; IEC 60079-11:2011; IEC 60079-31:2013
Markings	Compact version: Ex ia/tb IIIC T* Da/Db Remote version (electronics enclosure): Ex tb [ia] IIIC T* Db Remote version (junction box and probe): Ex ia/tb IIIC T* Da/Db
Temperature*	See Technical data

Specific Instructions

See [Safety instructions for hazardous area](#)

1.7.2 E7 IECEx Flameproof and Dust certification

Certificate	IECEX BVS 19.0069X
Standards	IEC 60079-0:2017; IEC 60079-1:2014-06; IEC 60079-11:2011; IEC 60079-31:2013
Markings	Compact version: Ex db ia IIC T* Gb Ex ia/tb IIIC T* Da/Db Remote version (electronics enclosure): Ex db [ia] IIC T* Gb Ex tb [ia] IIIC T* Db Remote version (junction box and probe): Ex ia IIC T* Gb Ex ia/tb IIIC T* Da/Db
Temperature*	See Technical data

Specific Instructions

See [Safety instructions for hazardous area](#)

1.7.3 K7 IECEx Increased Safety, Flameproof and Dust certification

Certificate	IECEX BVS 19.0069X
Standards	IEC 60079-0:2017; IEC 60079-1:2014-06; IEC 60079-7:2017; IEC 60079-11:2011; IEC 60079-31:2013
Markings	Compact version: Ex db eb ia IIC T* Gb Ex ia/tb IIIC T* Da/Db Remote version (electronics enclosure): Ex db eb [ia] IIC T* Gb Ex tb [ia] IIIC T* Db Remote version (junction box and probe): Ex ia IIC T* Gb Ex ia/tb IIIC T* Da/Db
Temperature*	See Technical data

Specific Instructions

See [Safety instructions for hazardous area](#)

1.8 China

1.8.1 NS CCC and NEPSI certifications

CCC certificate

Certificate 2021322315004064

NEPSI certificate

Certificate GYJ21.2853X

Standards GB 3836.1-2010, GB 3836.2-2010, GB 3836.3-2010, GB 3836.4-2010, GB 12476.1-2013, GB 12476.4-2010, GB 12476.5-2013

Markings DIP Housing
 Ex iaD 20/td A21 IP64 T* °C
 Ex tD [iaD 20] A21 IP64 T* °C
 Ex iaD 20/td A21 IP64 T* °C
 Housing d
 Ex d ia IIC T* °C
 Ex iaD 20/td A21 IP64 T* °C
 Ex d [ia] IIC T1/T* Gb
 Ex tD [iaD 20] A21 IP64 T* °C
 Ex ia IIC T* Gb
 Ex iaD 20/td A21 IP64 T* °C
 Housing de
 Ex d e ia IIC T* °C
 Ex iaD 20/td A21 IP64 T* °C
 Ex d e [ia] IIC T* Gb
 Ex tD [iaD 20] A21 IP64 T* °C
 Ex ia IIC T* Gb
 Ex iaD 20/td A21 IP64 T* °C

Specific Instructions

See certificate

1.9 Brazil

1.9.1 NR INMETRO Dust certification (DIP)

Please contact manufacturer for further details.

1.10 Republic of Korea

1.10.1 NK, K7, E7 Dust certification

Certificate	21-KA4BO-0056X
Standards	See certificate
Markings	Ex ia/tb IIIC T* Da/Db
Temperature*	See certificate

Specific Instructions

See certificate

1.10.2 E7 Flameproof

Certificate	21-KA4BO-0057X
Standards	See certificate
Markings	Ex db ia IIC T* Gb
Temperature*	See certificate

Specific Instructions

See certificate

1.10.3 K7 Increased Safety

Certificate	21-KA4BO-0253X
Standards	See certificate
Markings	Ex db eb ia IIC T* Gb
Temperature*	See certificate

Specific Instructions

See certificate

1.11 United Arab Emirates

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

1.12 Safety instructions for hazardous area

The safety instructions are for versions of the Rosemount 2555 with Product Certification codes NL, E5, 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. Regularly check the condition of seals and the tightness of process connections.
 - a. Ensure the process connection is sealed to maintain the process pressure and prevent the ingress of dust.
 - b. Check the seals more frequently when the process temperatures are above 446 °F (230 °C).
5. The sensor extension has a coating which may constitute a potential risk of ignition from an electrostatic charge. Care should be taken to protect the level switch from external conditions conducive to the build-up of an electrostatic charge on such surfaces. The level switch must not be rubbed or cleaned with a dry cloth.
6. 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.
7. The power supply shall be rated for a potential shortcircuit current of not more than 10 kA.
8. Do not make any changes to the internal electronics and wiring. There is a potential risk of a static electrical charge causing an explosion if the electronic board is not connected to the capacitance probe (sensor).
9. Seal the un-used conduit entries with a suitably rated blanking plugs.
10. A suitable strain-relief must be provided for the wiring cables when the level switch is installed with the factory-supplied cable glands.
11. The diameter of the wiring cable must match to the clamping range of the cable clamp.
12. Use only factory-supplied parts, where applicable.
13. 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.

1.12.1 Technical data

Table 1-1: Maximum Temperatures (Ex Approvals)

Maximum ambient air temperature (T _a)	Maximum process temperature (T _p)	Maximum surface temperature (T)	Temperature class
158 °F (70 °C) ⁽¹⁾	≤248 °F (120 °C)	248 °F (120 °C)	T4
140 °F (60 °C) ⁽²⁾	≤266 °F (130 °C)	(3)	T4
	≤383 °F (195 °C)	(3)	T3
	≤464 °F (240 °C)	(3)	T2
	≤563 °F (295 °C) ⁽⁴⁾	(3)	T2
	≤883 °F (445 °C) ⁽⁴⁾	(3)	T1

- (1) When using the standard housing.
- (2) When using D- or DE-type housings.
- (3) The maximum surface temperature is the same as the maximum process temperature.
- (4) Only for Remote Housing version of the Rosemount 2555.

Permitted ambient temperature at the electronics enclosure:

- -40 ≤ T_a ≤ +158 °F / +70 °C for the standard housing.
- -40 ≤ T_a ≤ +140 °F / +60 °C for the D- and DE-type housings.

The maximum surface temperature is limited to 248 °F (120 °C) by an internal thermal fuse⁽¹⁾.

Permitted temperature at sensor extension, process connection:

- -40 to 464 °F/240 °C
(when Probe Thermal Profile code S, M, R or P is selected)
- -40 to 833 °F/445 °C
(when Probe Thermal Profile code E or V is selected)

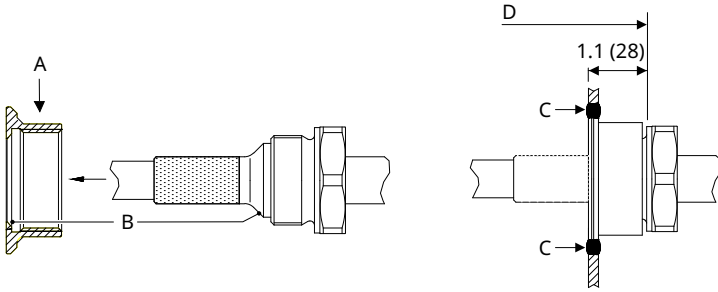
1.13 Safety instructions for hygienic applications

The following instructions are for a Rosemount 2555 Solids Level Switch with process connections and probes covered by EHEDG certificate:

(1) Thermal fuses are circuit breakers in temperature sensing devices to cutoff the circuit by detecting overheat caused from fire, short circuit, or abnormal electronic operation. Thermal fuses are not reusable once they are used.

1. Equipment with an EHEDG Type ED Class I certificate must be dry-cleaned only.
2. Comply with national regulations relevant to hygienic applications.
3. The materials of the process connection and probe are food-grade materials. They are safe to be used in normal and predictable applications in accordance with EU directive 1935/2004 Art. 3.
4. The overall length of the process connection and probe is increased by 0.98 in. (25 mm).
5. When using a welded socket:
 - There must be a metal-to-metal seal between the seat of a welded socket and the bottom face of the threaded process connection as shown in [Figure 1-1](#). No gaps are allowed.
 - Do not use PTFE tape or similar on the thread.
 - The torque required is 100 Nm.
 - The welded socket is not supplied by Emerson. Dimensions for manufacturing are in [Figure 1-2](#). It must be welded flush to the vessel wall.
6. When welding the process connection directly to a vessel wall, the quality of the welding must comply with local and national regulations (e.g. for gaps, transitions, and surface finish) and has to be done according to the EHEDG requirements of Doc. 9.

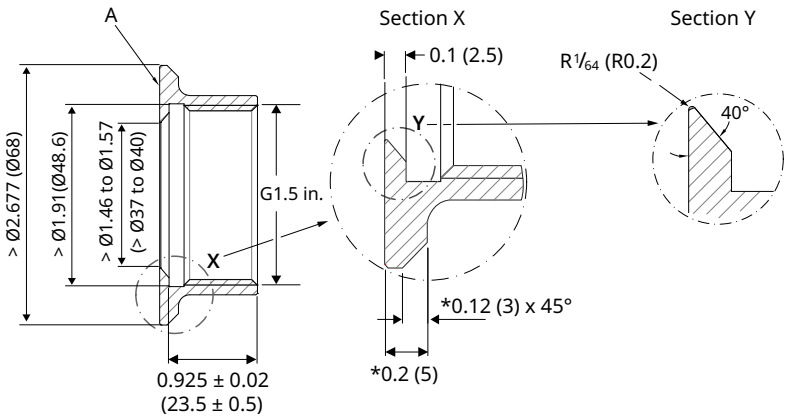
Figure 1-1: Metal-to-metal Seal Using Welded Socket



- A. Welded socket flush to the vessel wall
- B. Metal-to-metal seal
- C. Welded directly to the vessel wall
- D. Total length $L + 0.98$ in. (25 mm)

Dimensions are in inches (mm) unless otherwise stated.

Figure 1-2: Dimensions For Welding Socket



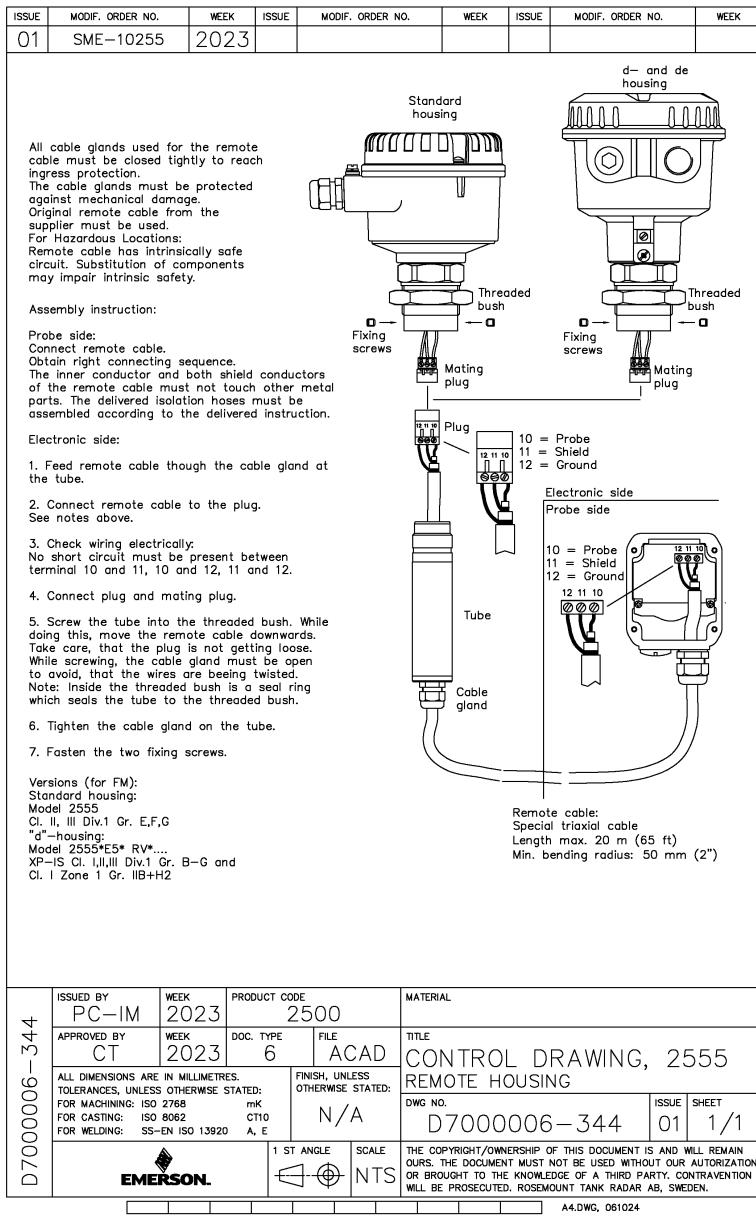
Dimensions are in inches (mm) unless otherwise stated.

* Suggested values for chamfer height and angle.

- A. Surfaces finish in contact with the process, $Ra \leq 0.8 \mu m$




1.14 Control drawings

Figure 1-3: USA and Canada installation drawing D700006/344



1.15 EU Declaration of Conformity

Figure 1-4: EU Declaration of Conformity

	<h2 style="margin: 0;">EU Declaration of Conformity</h2> <p style="margin: 0;">No: RMD 1150 Rev. D</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™ 2555 Solids Level Switch – Capacitive Probe</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>(signature)</p>	<p>Manager Product Approvals</p> <hr style="border: 0; border-top: 1px solid black;"/> <p>(function)</p>	
<p>Dajana Prastalo</p> <hr style="border: 0; border-top: 1px solid black;"/> <p>(name)</p>	<p>6-May-22;</p> <hr style="border: 0; border-top: 1px solid black;"/> <p>(date of issue)</p>	
<p>Page 1 of 4</p>		



EU Declaration of Conformity

No: RMD 1150 Rev. D



EMC Directive (2014/30/EU)

All Models

Harmonized Standards: EN 61326:2013

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 2555 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 1150 Rev. D



ATEX Directive (2014/34/EU)

Rosemount 2555***ND***
BVS 19 ATEX E 073X

Compact Version

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

Remote Housing

Equipment Group II, Category 2D (Ex tb [ia] IIIC T* Db)

Junction box + probe

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

Rosemount 2555***E8***
BVS 19 ATEX E 073X

Compact Version

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

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

Remote Housing

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

Equipment Group II, Category 2D (Ex tb [ia] IIIC T* Db)

Junction box + probe

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

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

Rosemount 2555***K1***
BVS 19 ATEX E 073X

Compact Version

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

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

Remote Housing

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

Equipment Group II, Category 2D (Ex tb [ia] IIIC T* Db)

Junction box + probe

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

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

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

(Minor variations in design to suit the application and/or mounting requirements are identified by alpha/numeric characters where indicated * above). The manufacturer declares that this product complies with the requirements of the latest editions of the standards. The changes of the latest editions have been checked and do not affect this product.



EU Declaration of Conformity

No: RMD 1150 Rev. D

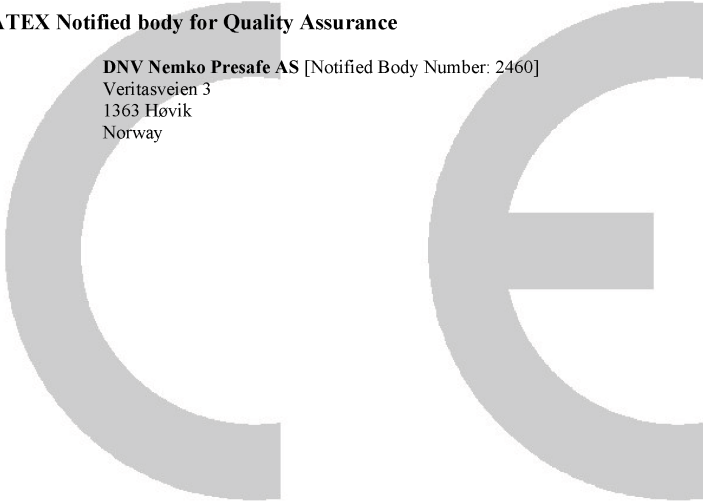


ATEX Directive Notified Body

DEKRA Testing and Certification GmbH [Notified Body Number: 0158]
Handwerkstraße 15, 70565 Stuttgart
Germany

ATEX Notified body for Quality Assurance

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



1.16 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 2555
List of Rosemount 2555 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
00825-0200-2555, Rev. AD
March 2024

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

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