

Rosemount™ 751 Field Signal Indicator



About this guide

This guide provides basic guidelines for Rosemount 751 Field Signal Indicator. It does not provide instructions for configuration, diagnostics, maintenance, service, troubleshooting, Explosionproof, Flameproof, or intrinsically safe (I.S.) installations. Refer to the Rosemount 751 Reference Manual for more instruction. This manual is also available electronically on Emerson.com/Rosemount.

⚠ WARNING

Explosions could result in death or serious injury.

- Installation of this indicator in an explosive environment must be in accordance with the appropriate local, national, and international standards, codes, and practices. Review the Product Certifications section for any restrictions associated with a safe installation.
- In an explosion-proof/flameproof installation, do not remove the indicator cover when power is applied to the unit.

Electrical shock could cause death or serious injury.

- Avoid contact with the leads and terminals. High voltage that may be present on leads can cause electrical shock.

Physical access

- Unauthorized personnel may potentially cause significant damage to and/or misconfiguration of end users' equipment. This could be intentional or unintentional and needs to be protected against.
- Physical security is an important part of any security program and fundamental to protecting your system. Restrict physical access by unauthorized personnel to protect end users' assets. This is true for all systems used within the facility.

Contents

Installation..... 3

Configuration..... 8

Product Certification..... 11

Declaration of Conformity..... 17

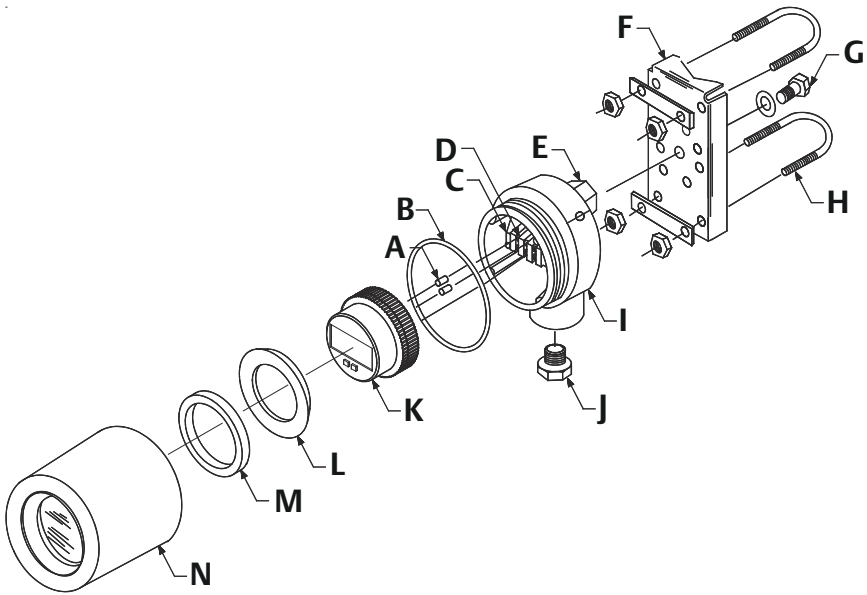
China RoHS..... 20

1 Installation

1.1 Assembly

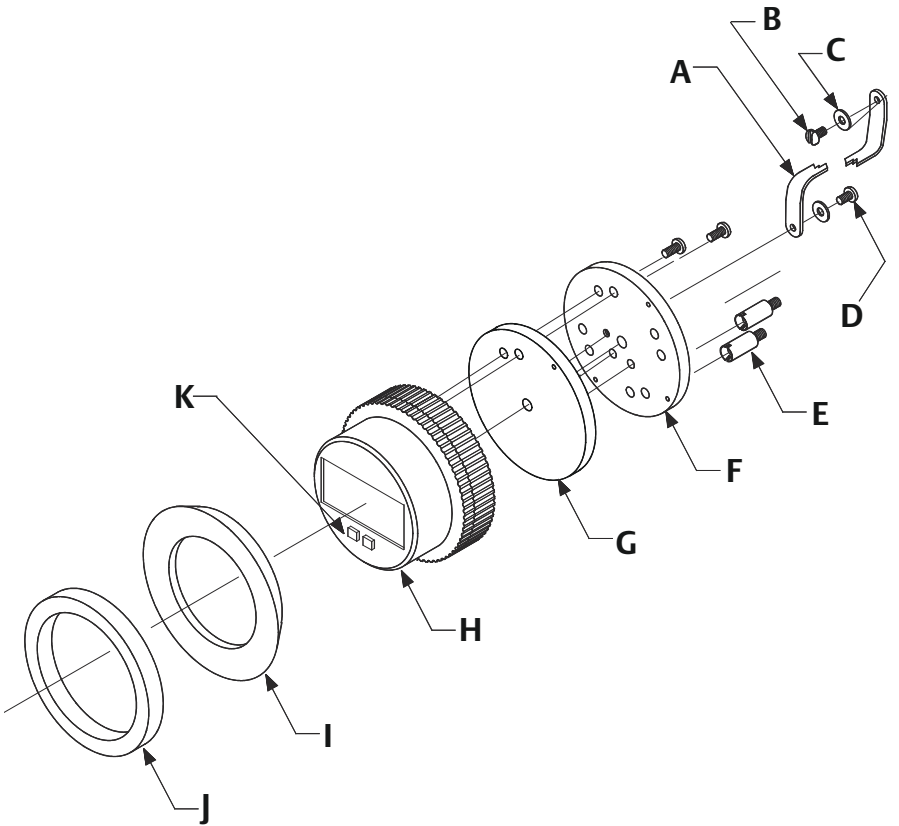
The Rosemount 751 Field Signal Indicator is comprised of the components shown in [Figure 1-1](#). The housing may contain an analog or liquid crystal display (LCD) display meter. Both meters are independent of component parts and are completely interchangeable. Both meters plug into the terminal screws on the housing, as shown in [Figure 1-1](#).

The meter subassembly contains the components shown in [Figure 1-2](#).

Figure 1-1: Rosemount 751 Exploded View

- A. Terminal screws
- B. Housing O-ring
- C. Field wiring terminals
- D. Loop protection diode
- E. Tapped mounting boss
- F. Optional mounting bracket
- G. Mounting bolt with washer
- H. U-bolt for 2-in. pipe
- I. Housing
- J. Optional $\frac{3}{4}$ - to $\frac{1}{2}$ -in. conduit reducing bushing (if required)
- K. Meter
- L. Bushing
- M. Foam spacer
- N. Housing cover

Figure 1-2: Meter Exploded View



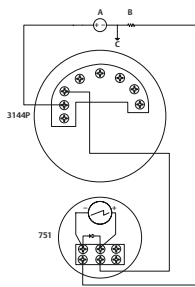
- A. Retaining straps
- B. Mounting screw into housing
- C. Washer for retaining strap
- D. Mounting screws into mounting plate
- E. Terminal screws (2)
- F. Mounting plate
- G. Spacer plate
- H. LCD display
- I. Bushing
- J. Foam spacer
- K. Configuration buttons

1.2 Wiring diagrams

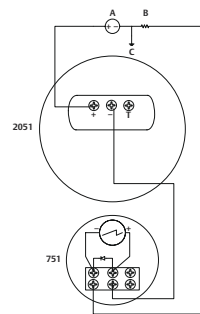
Use the following wiring diagrams to wire the Rosemount 751 Field Signal Indicator, in series or in parallel, with Rosemount transmitters. Use shielded cable for best results in electrically noisy environments.

It is recommended that the Rosemount 751 Indicator be wired in a series configuration when the 4-20 mA transmitter does not contain a test terminal. The indicator is designed so the analog or LCD display meter can be removed from the housing without impacting the integrity of the 4-20 mA loop. Removal of the entire device from the series configuration will disrupt the loop.

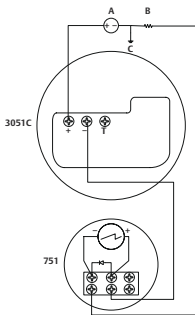
Figure 1-3: Rosemount 751 Series Wiring Diagrams



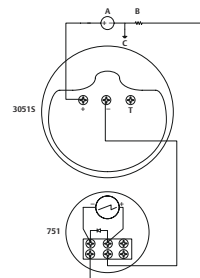
4–20 mA dc Input Signal for Rosemount 3144P



4–20 dc Input Signal for Rosemount 2051



4–20 mA dc Input Signal for Rosemount 3051C



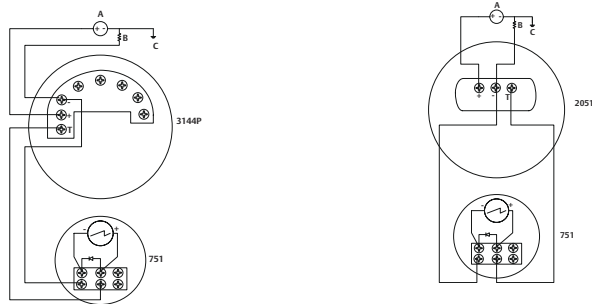
4–20 dc Input Signal for Rosemount 3051S

- A. Power supply
- B. Load resistor
- C. Optional ground

It is recommended that the device be wired in a parallel configuration when the 4-20 mA transmitter includes a test terminal. Utilization of the test terminal is required in a parallel configuration. Connecting the indicator across the positive and negative terminals of the 4-20 mA transmitter could impact the loop.

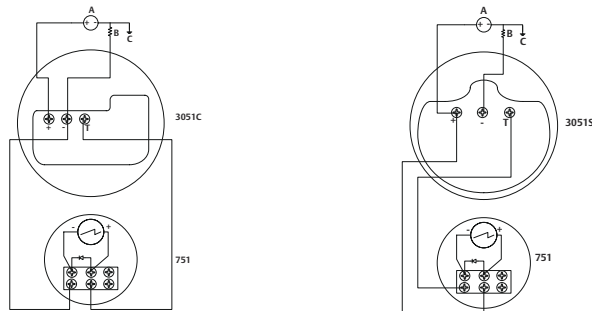
A parallel configuration will allow the removal of the indicator without affecting the integrity of the 4-20 mA loop. Additionally, spare indicators can be added without disrupting the loop.

Figure 1-4: Rosemount 751 Parallel Wiring Diagrams



4–20 mA dc Input Signal for Rosemount 3144P

4–20 dc Input Signal for Rosemount 2051



4–20 mA dc Input Signal for Rosemount 3051C

4–20 dc Input Signal for Rosemount 3051S

- A. Power supply
- B. Load resistor
- C. Optional ground

2 Configuration

2.1 LCD display configuration

The 20-segment bar graph is factory calibrated and represents 4–20 mA directly, but the end points of the LCD display are user-definable. The meter requires a current between 4 and 20 mA in order to be scaled, but the actual value of the current is not significant.

2.1.1 Remove the cover

▲ WARNING

Explosions could result in death or serious injury. Do not remove the transmitter cover in explosive atmospheres when the circuit is live.

Procedure

Unscrew and remove the transparent housing cover from the LCD display body.

2.1.2 Position the decimal point and select the meter function

Procedure

1. Press the left and right configuration buttons simultaneously and release them immediately.
2. To move the decimal point to the desired location, press the left configuration button.

Note

The decimal point wraps around.

3. To scroll through the mode options, press the right configuration button repeatedly until the meter displays the desired mode (see [Table 2-1](#)).

Note

The LCD display time-out is approximately 16 seconds. If you do not press the configuration buttons within 16 seconds, the indicator will revert to reading the current signal.

Table 2-1: LCD Display Mode Options

Options	Relationship between Input Signal and Digital Display
L in	Linear
LinF	Linear with 5-second filter

Table 2-1: LCD Display Mode Options (continued)

Options	Relationship between Input Signal and Digital Display
Srt	Square root
SrtF	Square root with 5-second filter
Square root function only relates to the digital display. The bar graph output remains linear with the current signal.	
<p>Square root response</p> <p>The digital display will be proportional to the square root of the input current where 4 mA = 0 and 20 mA = 1.0, scaled per the calibration procedure. The transition point from linear to square root is at 25 percent of full scale flow.</p>	
<p>Filter response operates upon “present input” and “input received in the previous five second interval” in the following manner:</p> <p>Display = (0.75 previous input) + (0.25 present input)</p> <p>This relationship is maintained provided that the previous reading minus the present reading is less than 25 percent of full scale.</p>	

2.1.3 Store the information

Procedure

Press both configuration buttons simultaneously for two seconds.

Note

The meter displays “- -” for approximately 7.5 seconds while the information is being stored.

2.1.4 Set the display equivalent to a 4 mA signal

Procedure

1. Press the left configuration button for two seconds.
2. To decrease the display numbers, press the left configuration button. To increase the numbers, press the right configuration button. Set the numbers between -999 and 1000.
3. To store the information, simultaneously press both configuration buttons for two seconds.

2.1.5 Set the display equivalent to a 20 mA signal

Procedure

1. Press the right configuration button for two seconds.

2. To decrease the display numbers, press the left configuration button. To increase the numbers, press the right configuration button. Set the numbers between -999 and 9999.

Note

The sum of the 4 mA point and the span must not exceed 9999.

3. To store the information, simultaneously press both configuration buttons for two seconds. The LCD display meter is now configured.

2.1.6 Replace the cover

Procedure

Make sure the rubber gasket is seated properly, and thread the transparent housing cover onto the LCD display meter body.

3 Product Certification

Rev 1.10

3.1 European Directive Information

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

3.2 Ordinary Location Certification

As standard, the transmitter 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).

3.3 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.

3.4 USA

3.4.1 E5 USA Explosion-proof

Certificate 0T2H8.AE

Standards FM Class 3600: 1989, FM Class 3615: 1989

Markings XP CL I, DIV 1, GP B, C, D; DIP CL II/III, DIV 1, GPE, F, G; $-40^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$; Type 4X

3.4.2 I5 USA Intrinsically Safe; Nonincendive

Certificate 0T9H2AX

Standards FM Class 3600: 2011, FM Class 3610: 2010, FM Class 3611: 2004, FM Class 3810: 1989, NEMA-250: 1991, ANSI/ISA 60079-0: 2009, ANSI/ISA 60079-11: 2009

Markings IS CL I/II/III, DIV 1, GP A, B, C, D, E, F, G; T5; IS CL I, Zone 0, AEx ia IIC T5; NI CL I, DIV 2, GP A, B, C, D T5; $(-60^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C})$; when installed per 00751-0074; Type 4X

Special Condition for Safe Use (X):

1. 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.

3.5 Canada

3.5.1 E6 Canada Explosionproof


Certificate 1718395**Standards** CSA Std C22.2 No. 25-1966; CSA Std C22.2 No. 30-M1986; CAN/CSA-C22.2 No. 94-M91; CSA Std C22.2 No. 142-M1987**Markings** Explosionproof for CL I, DIV 1, GP C, D; CL II, DIV 1, GP E, F, G; CL III; DIV 1; CL I DIV 2, GP A, B, C, D; Type 4X

3.5.2 I6 Canada Intrinsically Safe

Certificate 1718395**Standards** CSA Std C22.2 No. 25-1966; CSA Std C22.2 No. 30-M1986; CAN/CSA-C22.2 No. 94-M91; CSA Std C22.2 No. 142-M1987; CAN/CSA-C22.2 No. 157-92; CSA Std C22.2 No. 213-M1987**Markings** Intrinsically Safe for CL I DIV 1; when installed per 00751-0068; Type 4X

3.6 Europe

3.6.1 E8 ATEX Flameproof

Certificate DEMKO 18 ATEX 1958X**Standards** EN 60079-0:2012+A11:2013; EN 60079-1:2014**Markings**  II 2 G Ex db IIC T5/T6 Gb, T6(-40 °C ≤ T_a ≤ +40 °C), T5(-40 °C ≤ T_a ≤ +70 °C) V_{max} = 60 Vdc; I_{max} = 50 mA; P_{max} = 1.5 W

Installation Instructions

1. Only use plugs, adapters, glands, or conduit with a compatible thread form when closing conduit entries.
2. The 751 may be provided with a ¾NPT to ½NPT thread adapter. This thread adapter has not been assessed under DEMKO 18 ATEX 1958X. When installing this thread adapter, refer to manufacturer's installation instructions.

Special Conditions for Safe Use (X):

1. Flameproof joints are not intended for repair.
2. Painted enclosures may cause risk from electrostatic discharge. Avoid installation that could cause electrostatic build-up on painted surfaces, and only clean the painted surfaces with a damp cloth.

3.6.2 I8 ATEX Intrinsic Safety**Certificate** Baseefa03ATEX0448X**Standards** EN 60079-0:2012, EN 60079-11:2012**Markings** Ⓢ II 1 G Ex ia IIC T5/T6 Ga; T6(-60 °C ≤ T_a ≤ +40 °C), T5(-60 °C ≤ T_a ≤ +80 °C)**Special Condition for Safe Use (X):**

1. The enclosure may be made from aluminum alloy and given a protective polyurethane or epoxy polyester paint finish; however, care should be taken to protect it from impact or abrasion if located in a zone 0 environment.

3.6.3 N1 ATEX Type n**Certificate** Baseefa03ATEX0454**Standards** EN 60079-0:2012; EN 60079-15:2010**Markings** Ⓢ II 3 G Ex nA IIC T6 Gc; (-40 °C ≤ T_a ≤ +70 °C)**3.7 International****3.7.1 E7 IECEx Flameproof****Certificate** IECEx UL 18.0040X**Standards** IEC 60079-0:2011; IEC 60079-1:2014-06**Markings** Ex db IIC T5/T6 Gb, T6(-40 °C ≤ T_a ≤ +40 °C), T5(-40 °C ≤ T_a ≤ +70 °C) V_{max}= 60 Vdc; I_{max}= 50 mA; P_{max}=1.5 W**Installation Instructions**

1. Only use plugs, adapters, glands, or conduit with a compatible thread form when closing conduit entries.
2. The 751 may be provided with a ¾NPT to ½NPT thread adapter. This thread adapter has not been assessed under IECEx UL 18.0040X. When installing this thread adapter, refer to manufacturer's installation instructions.

Special Conditions for Safe Use (X):

1. Flameproof joints are not intended for repair.
2. Painted enclosures may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces, and only clean the painted surfaces with a damp cloth.

3.7.2 I7 IECEx Intrinsic Safety

Certificate IECEx BAS 11.0064X**Standards** IEC 60079-0: 2011; IEC 60079-11: 2011**Markings** Ex ia IIC T5/T6 Ga; T6($-60\text{ °C} \leq T_a \leq +40\text{ °C}$), T5($-60\text{ °C} \leq T_a \leq +80\text{ °C}$)**Special Condition for Safe Use (X):**

1. The enclosure may be made of aluminum alloy and given a protective polyurethane or epoxy polyester paint finish; however, care should be taken to protect it from impact or abrasion if located in a Zone 0 environment.

3.8 Brazil

3.8.1 E2 INMETRO Flameproof

Certificate UL-BR 16.0054X**Standards** ABNT NBR IEC 60079-0:2008 + Errata 1:2011, ABNT NBR IEC 60079-1:2009 + Errata 1:2011**Markings** Ex db IIC T5/T6 Gb; T6($-40\text{ °C} \leq T_a \leq +40\text{ °C}$), T5($-40\text{ °C} \leq T_a \leq +70\text{ °C}$)**Special Condition for Safe Use (X):**

1. Flameproof joints are not intended for repair.
2. Optional paint may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces, and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.

3.8.2 I2 INMETRO Intrinsic Safety

Certificate UL-BR 15.1094X**Standards** ABNT NBR IEC 60079-0:2008 + ERRATA 1:2011, ABNT NBR IEC 60079-11:2009

Markings Ex ia IIC T5/T6 Ga; T6($-60\text{ °C} \leq T_a \leq +40\text{ °C}$), T5($-60\text{ °C} \leq T_a \leq +80\text{ °C}$)

Special Condition for Safe Use (X):

1. The enclosure may be made of aluminum alloy and given a protective polyurethane or epoxy polyester paint finish; however, care should be taken to protect it from impact or abrasion if located in places where EPL Ga is required.

3.9 EAC - Belarus, Kazakhstan, Russia

3.9.1 EM Technical Regulation Customs Union TR CU 012/2011 (EAC) Flameproof

Markings 1Ex db IIC T6...T5 Gb X; T5 ($-40\text{ °C} \leq T_a \leq +70\text{ °C}$); T6 ($-40\text{ °C} \leq T_a \leq +40\text{ °C}$);

See certificate for Special Conditions for Safe Use.

3.9.2 IM Technical Regulation Customs Union TR CU 012/2011 (EAC) Intrinsic Safety

Markings 0Ex ia IIC T6...T5 Ga X; T5 ($-60\text{ °C} \leq T_a \leq +80\text{ °C}$); T6 ($-60\text{ °C} \leq T_a \leq +40\text{ °C}$);

See certificate for Special Conditions for Safe Use.

3.10 China

3.10.1 E3 China Flameproof

Certificate GYJ17.1007X (CCC 认证)

Standards GB 3836.1-2010, GB 3836.2-2010

Markings Ex d IIC T5/T6 Gb

Special Conditions for Safe Use (X):

1. Symbol “X” is used to denote specific conditions of use: Contact the original manufacturer when repair work relates to the flamepath.
2. Ambient temperature range is: T6($-20\text{ °C} \leq T_a \leq +40\text{ °C}$), T5($-20\text{ °C} \leq T_a \leq +70\text{ °C}$).
3. The earth connection facility in the enclosure should be connected reliably.
4. During installation, there should be no mixture harmful to flameproof housing.

5. During installation in hazardous location. Cable glands, conduits and blanking plugs, certified by state-appointed inspection bodies with Ex d IIC Gb degree, should be used.
6. During installation, use and maintenance in explosive gas atmospheres, observe the warning “Do not open when energized.”
7. End users is not permitted to change any components insides, but to settle the problem in conjunction with manufacturer to avoid damage to the product.
8. When installation, use and maintenance of this product, observe following standards: GB3836.13-2013 “Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres” GB3836.15-2000 “Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous area (other than mines)” GB3836.16-2006 “Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)” GB50257-2014 “Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering”.

3.10.2 I3 China Intrinsic Safety (Special Y0052)

Certificate: GYJ19.1331X (CCC 认证)

Standards: GB 3836.1-2010, GB 3836.4-2010, GB 3836.20-2010

Markings: Ex ia IIC T5/T6 Ga; T5(-60 °C ~ +80 °C), T6(-60 °C ~ +40 °C)



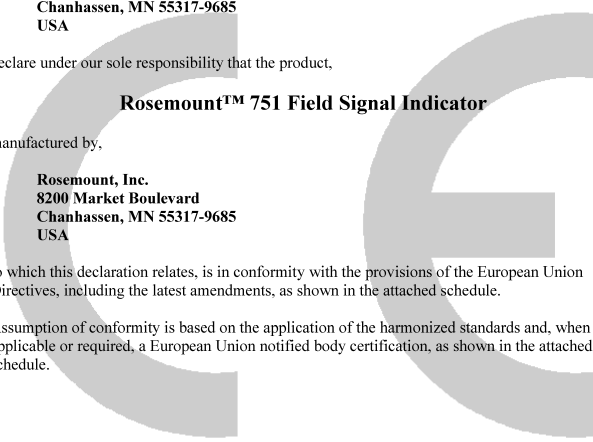

Special Condition for Safe Use (X):

1. See certificate for special conditions of safe use.

3.11 Combinations

K2	Combination of E2 and I2
K5	Combination of E5 and I5
C6	Combination of E6 and I6
KM	Combination of EM and IM

4 Declaration of Conformity

	<h2 style="margin: 0;">EU Declaration of Conformity</h2> <p style="margin: 0;">No: RMD 1012 Rev. K</p>	
<p>We,</p> <p style="margin-left: 40px;">Rosemount, Inc. 8200 Market Boulevard Chanhassen, MN 55317-9685 USA</p> <p>declare under our sole responsibility that the product,</p> <p style="margin-left: 40px;">Rosemount™ 751 Field Signal Indicator</p> <p>manufactured by,</p> <p style="margin-left: 40px;">Rosemount, Inc. 8200 Market Boulevard Chanhassen, MN 55317-9685 USA</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>Vice President of Global Quality</p> <hr style="border: 0; border-top: 1px solid black;"/> <p style="font-size: small;">(function)</p>	
<p>Chris LaPoint</p> <hr style="border: 0; border-top: 1px solid black;"/> <p style="font-size: small;">(name)</p>	<p>1-Feb-19</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 3</p>		



EU Declaration of Conformity



No: RMD 1012 Rev. K

EMC Directive (2014/30/EU)

Harmonized Standards: EN 61326-1:2013

ATEX Directive (2014/34/EU)

DEMKO 18 ATEX 1958X – Flameproof

Equipment Group II Category 2G (Ex db IIC T5/T6 Gb)

Harmonized Standards:

EN60079-0:2012+A11:2013

EN 60079-1:2014

Baseefa03ATEX0448X – Intrinsic Safety

Equipment Group II Category 1G (Ex ia IIC T5/T6 Ga)

Harmonized Standards:

EN 60079-0:2012, EN 60079-11:2012

Baseefa03ATEX0454 – Type n

Equipment Group II Category 3G (Ex nA IIC T6 Gc)

Harmonized Standards:

EN 60079-0:2012, EN 60079-15:2010



EU Declaration of Conformity

No: RMD 1012 Rev. K



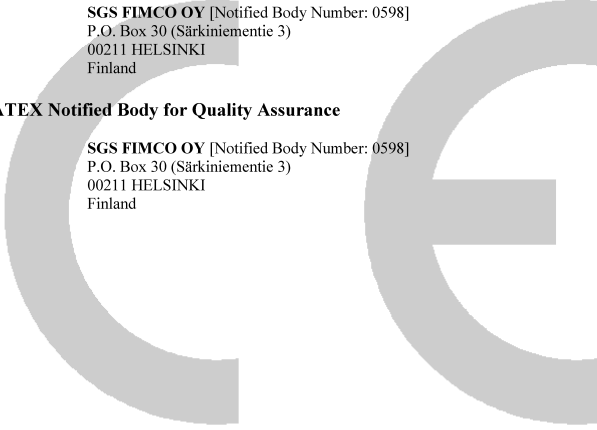
ATEX Notified Body

DEKRA Certification B.V. [Notified Body Number: 0344]
Meander 1051, 6825 MJ
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ATEX Notified Body for Quality Assurance

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5 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 751
List of Rosemount 751 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	O	O	O	O
壳体组件 Housing Assembly	O	O	O	X	O	O
传感器组件 Sensor Assembly	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.



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 [Youtube.com/user/RosemountMeasurement](https://www.youtube.com/user/RosemountMeasurement)

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