Quick Start Guide
00825-0100-4378, Rev CD
March 2024

Rosemount™ 751 Field Signal Indicator

ROSEMOUNT™

EMERSON

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, Explosion-proof, Flameproof, or Intrinsically Safe (IS) installations. For more information, refer to the Rosemount 751 Reference Manual. 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.

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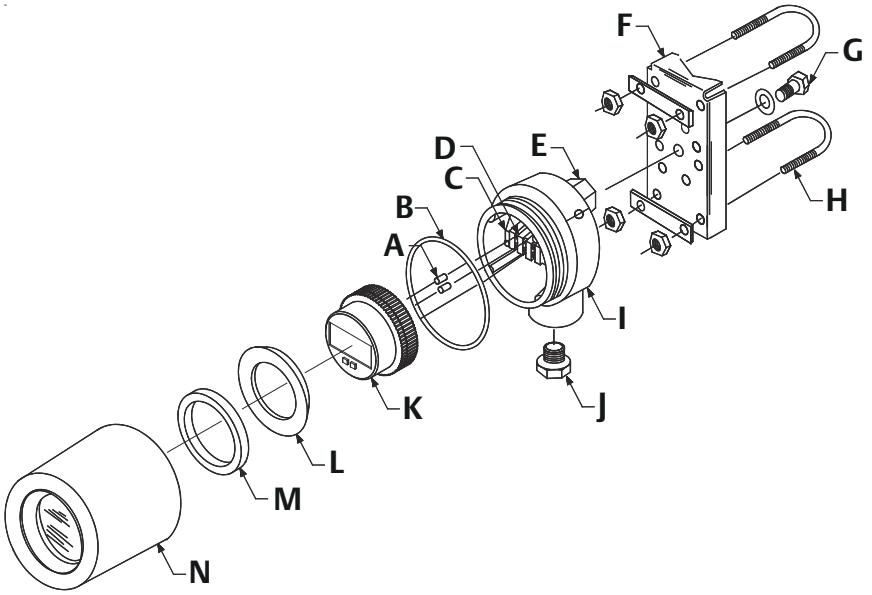
1 Installation

1.1 Assembly

The Rosemount 751 Field Signal Indicator is comprised of the components shown in Figure 1-1. The housing contains an LCD display meter, which plugs into the terminal screws on the housing, as shown in Figure 1-1.

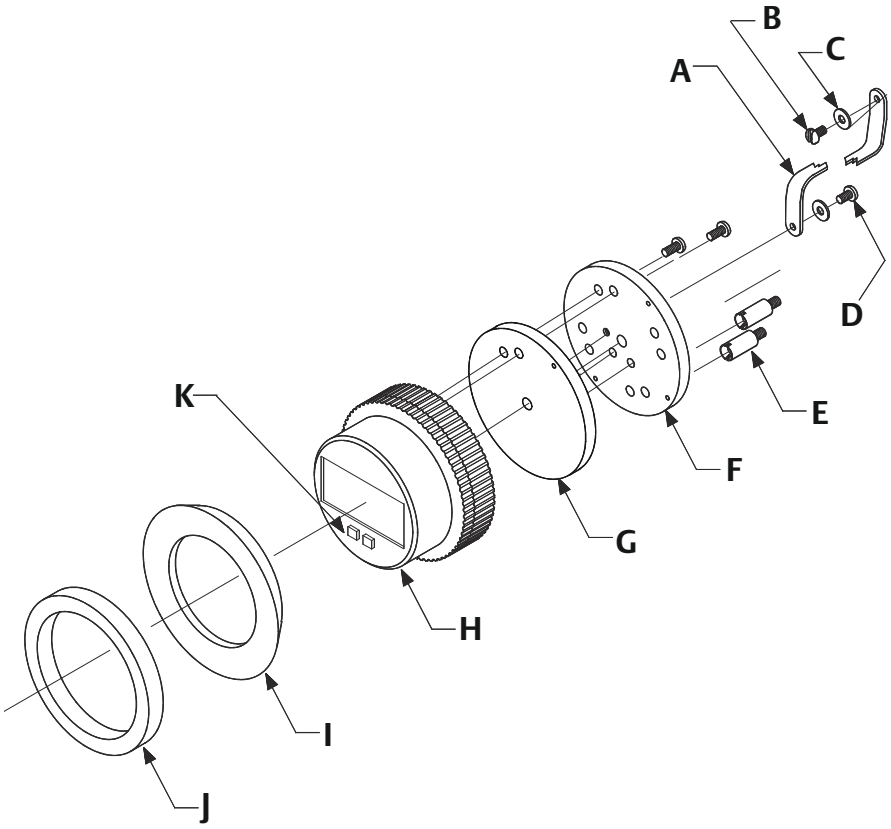
The meter sub-assembly contains the components shown in Figure 1-2.

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 ¾ to ½-in. conduit reducing bushing
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

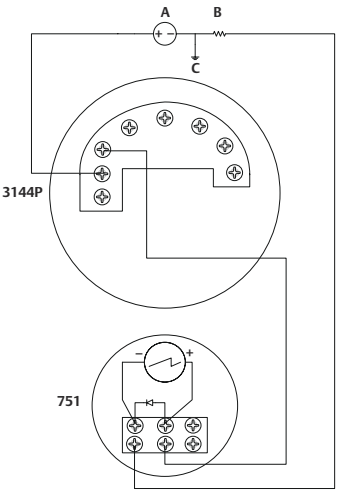
1.2 Wiring diagrams

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.

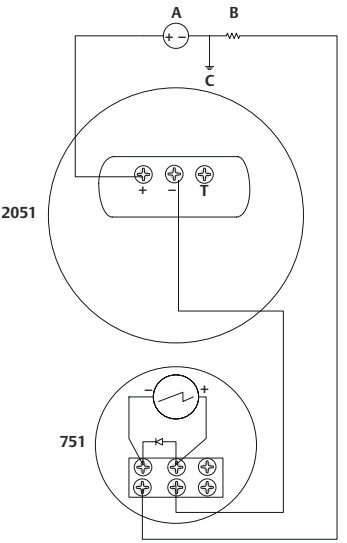
Series configuration

It is recommended that the 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 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 for Rosemount 3144P and 2051



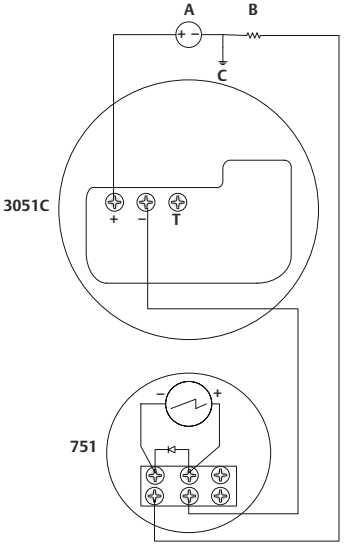
4–20 mA DC Input Signal for Rosemount 3144P



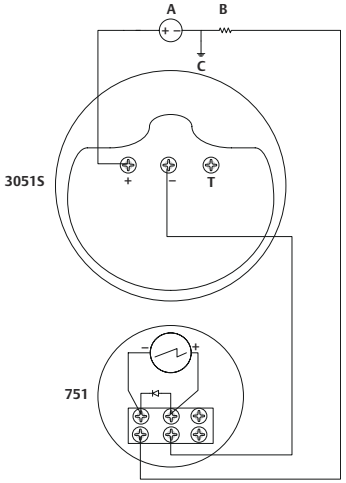
4–20 DC Input Signal for Rosemount 2051

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

Figure 1-4: Rosemount 751 Series Wiring Diagrams for Rosemount 3051C and 3051S



4–20 mA DC Input Signal for Rosemount 3051C



4–20 DC Input Signal for Rosemount 3051S

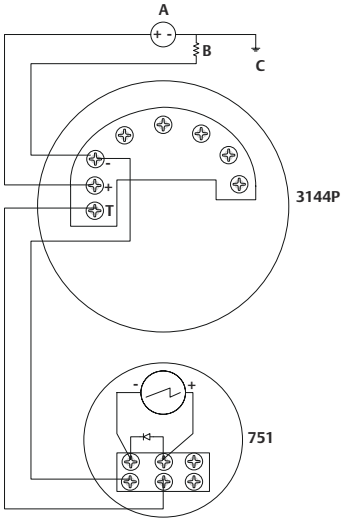
A. Power supply
B. Load resistor
C. Optional ground

Parallel configuration

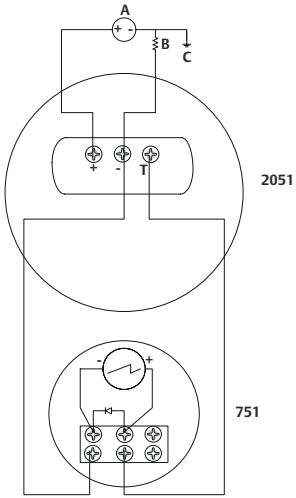
It is recommended that the device be wired in a parallel configuration when the 4-20 mA transmitter includes a test terminal. Utilization of the test terminal is required in a parallel configuration. Connecting the indicator across the positive and negative terminals of the 4-20 mA transmitter could 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 1-5: Rosemount 751 Parallel Wiring Diagrams for Rosemont 3144P and 2051



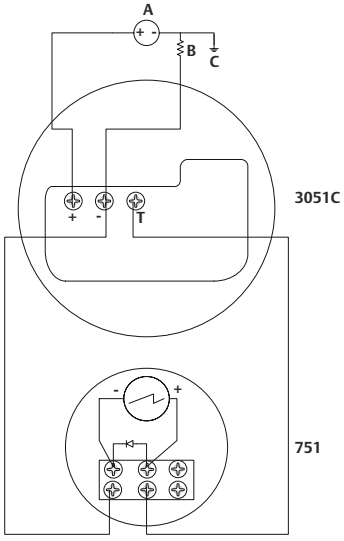
4–20 mA DC Input Signal for Rosemount 3144P



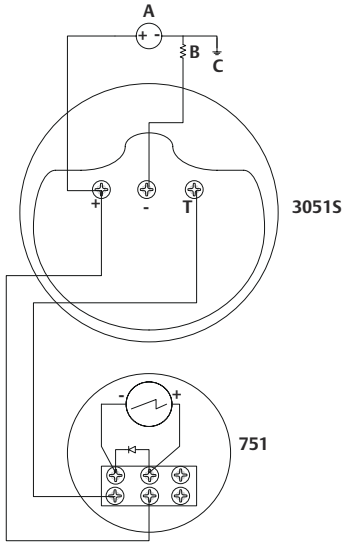
4–20 DC Input Signal for Rosemount 2051

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

Figure 1-6: Rosemount 751 Parallel Wiring Diagrams for Rosemount 3051C and 3051S



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.

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.

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, then the indicator will revert to reading the current signal.

Table 2-1: LCD Display Mode Options

Options	Relationship between Input Signal and Digital Display
Lin	Linear
LinF	Linear with 5-second filter
Srt	Square root
SrtF	Square root with 5-second filter

Square root function: This only relates to the digital display. The bar graph output remains linear with the current signal.

Square root response: 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.

Filter response: This operates upon “present input” and “input received in the previous five second interval” in the following manner:

Display = (0.75 previous input) + (0.25 present input)

This relationship is maintained provided that the previous reading minus the present reading is less than 25 percent of full scale.

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

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

3 Product Certification

Rev 1.22

3.1 Declaration of Conformity Information

A copy of the EU/UK Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EU/UK 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, GP E, F, G; -40 °C ≤ T_a ≤ +85 °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 °C ≤T_a≤ +60 °C); when installed per 00751-0074; Type 4X

Special Conditions 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 Explosion-proof

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 Explosion-proof 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/UKEX Flameproof

ATEX Certificate: DEMKO 18 ATEX 1958X

UKEX Certificate: UL21UKEX2050X

Standards EN IEC 60079-0:2018; EN 60079-1:2014

Markings Ex 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 ¾ NPT to ½ NPT 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/UKEX Intrinsic Safety

ATEX Certificate:	Baseefa03ATEX0448X
UKEX Certificate:	BAS21UKEX0737X
Standards	EN IEC 60079-0:2018, EN 60079-11:2012
Markings	Ⓔx 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/UKEX Type n

ATEX Certificate:	Baseefa03ATEX0454
UKEX Certificate:	BAS21UKEX0738
Standards	EN IEC 60079-0:2018; EN 60079-15:2010
Markings	Ⓔx 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 60079-0:2017; 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 ¾ NPT to ½ NPT 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: 2017; IEC 60079-11: 2011

Markings 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 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 60079-0:2020, ABNT NBR IEC 60079-1:2016

Markings Ex db IIC T5/T6 Gb; T6 (–40 °C ≤ T_a ≤ +40 °C), T5 (–40 °C ≤ T_a ≤ +70 °C)

Special Condition 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.

3.8.2 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 °C ≤ T_a ≤ +40 °C), T5 (–60 °C ≤ T_a ≤ +80 °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 China

3.9.1 E3 China Flameproof

Certificate GYJ21.3427X （CCC 认证）

Standards GB/T 3836.1-2021, GB/T 3836.2-2021

Markings Ex db IIC T5…T6 Gb

产品安全使用特殊条件

1. 产品使用环境温度范围

温度组别	环境温度
T6	-40 ℃ ≤Ta≤＋ 40 ℃
T5	-40 ℃ ≤Ta≤＋ 70 ℃

2. 涉及隔爆结合面的维修须联系产品制造商。
3. 产品外壳涂层可能造成静电放电危险；为避免可能引起静电积累，设备只能用湿布清洁外壳涂层表面。
4. 产品使用注意事项：
5. 产品外壳设有接地端子，用户在使用时应可靠接地。
6. 安装现场应不存在对产品外壳有腐蚀作用的有害气体。

7. 现现场安装时，电缆引入口须选用经国家指定的防爆检验机构检验认可、具有 Ex db IIC Gb 防爆等级的电缆引入装置或堵封件，冗余电缆引入口须用堵封件有效密封。
8. 用于爆炸性气体环境中，现场安装、使用和维护必须严格遵守“断电后开盖！”的警告语。
9. 用户不得自行更换该产品的零部件，应会同产品制造商共同解决运行中出现的故障，以杜绝损坏现象的发生。
10. 产品的安装、使用和维护应同时遵守产品使用说明书、GB/T3836.13-2021“爆炸性环境 第 13 部分：设备的修理、检修、修复和改造”、GB/T3836.15-2017“爆炸性环境 第 15 部分：电气装置的设计、选型和安装”、GB/T3836.16-2017“爆炸性环境 第 16 部分：电气装置的检查与维护”和 GB50257-2014“电气装置安装工程爆炸的有关规定。

3.9.2 I3 China Intrinsic Safety (Special Y0052)

Certificate: GYJ19.1331X（CCC 认证）

Standards: GB/T 3836.1-2021、GB/T 3836.4-2021

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

一、 产品安全使用特殊条件

产品防爆合格证号后缀“X”代表产品安全使用有特殊条件：

1. 产品使用环境温度与温度组别的关系为：

温度组别	环境温度
T6	-60 ℃≤Ta≤＋ 40 ℃
T5	-60 ℃≤Ta≤＋ 80 ℃

2. 当产品外壳为铸铝材质且带有聚氨酯或聚酯纤维涂层时，在 0 区使用应注意防止产品受到冲击或摩擦，以防静电积累危险。

二、产品使用注意事项

a. 本安电气参数：

最高输入电压 U_i (V)	最大输入电流 I_i (mA)	最大内部等效参数	
		C_i(nF)	L_i(mH)
60	200	0	0

b. 该产品必须与已通过防爆认证的关联设备配套共同组成本安防爆系统方可使用于爆炸性气体环境。其系统接线必须同时

遵守本产品和所配关联设备的使用说明书要求，接线端子不得接错。

c. 用户不得自行更换该产品的零部件，应会同产品制造商共同解决运行中出现的故障，以杜绝损坏现象的发生。

d. 产品的安装、使用和维护应同时遵守产品使用说明书、GB/T3836.13-2021“爆炸性环境 第 13 部分：设备的修理、检修、修复和改造”、GB/T3836.15-2017“爆炸性环境 第 15 部分：电气装置的设计、选型和安装”、GB/T3836.16-2017“爆炸性环境 第 16 部分：电气装置的检查与维护”、GB/T3836.18-2017“爆炸性环境 第 18 部分：本质安全电气系统”、GB50257-2014“电气装置安装工程爆炸和火灾危险环境电力装置施工及验收规范”的有关规定。

3.10 Japan

3.10.1 E4 Japan Flameproof

Certificate CML 18JPN1417X

Markings Ex db IIC T6/T5 Gb, T6 (-40 °C ≤ T_a ≤ + 40 °C), T5 (-40 °C ≤ T_a ≤ +70 °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.

3.11 Korea

EP 20-KA4BO-0120X; 20-KA4BO-0437X; 20-KA4BO-0438X

Markings Ex d IIC T6/T5; (-40 °C ≤ T_a ≤ +40 °C) (T6); (-40 °C ≤ T_a ≤ +70 °C) (T5)

See certificate for Special Conditions for Safe Use.

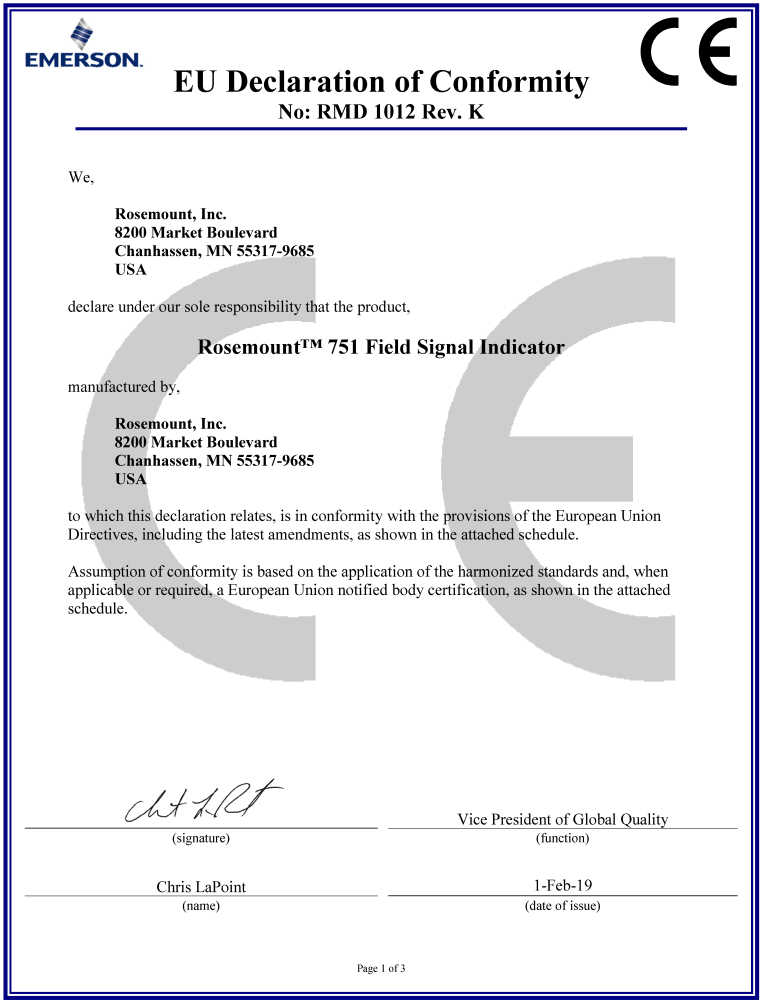
3.12 Combinations

K2 Combination of E2 and I2

K5 Combination of E5 and I5

C6 Combination of E6 and I6

4 Declaration of Conformity



EMERSON.

CE

EU Declaration of Conformity

No: RMD 1012 Rev. K

We,

Rosemount, Inc.
8200 Market Boulevard
Chanhassen, MN 55317-9685
USA

declare under our sole responsibility that the product,

Rosemount™ 751 Field Signal Indicator

manufactured by,

Rosemount, Inc.
8200 Market Boulevard
Chanhassen, MN 55317-9685
USA

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)	Vice President of Global Quality (function)
Chris LaPoint (name)	1-Feb-19 (date of issue)

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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

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EU Declaration of Conformity

No: RMD 1012 Rev. K

ATEX Notified Body

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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.

Quick Start Guide
00825-0100-4378, Rev. CD
March 2024

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