

# Rosemount™ 751 Field Signal Indicator



- Compact, rugged, and designed for industrial environments
- Available with explosion-proof and intrinsic safety certifications
- Provides flexible mounting options

# Feature and benefit

## Transcend integral meter display with Rosemount 751

The Rosemount 751 Field Signal Indicators provide a means of displaying important process variables. These devices operate with any two-wire transmitter that measures input variables such as pressure, flow, liquid level, or temperature. Rosemount indicators are ideal for installations where an integral meter would be difficult to view.

Rosemount 751 Indicators are designed for use in industrial environments where all-weather performance is necessary. These units are vibration- and corrosion-resistant, and explosion-proof or intrinsically safe.

## LCD display meter

The LCD display meter may be configured from a 4 mA point of -999 to a 20 mA point of 9999 with a linear or square-root response. A 20-segment bar graph at the bottom of the display directly represents the 4–20 mA signal.

Changing the 4 mA and 20 mA points is easy. Just remove the housing and meter covers, and press the meter faceplate buttons. The meter can be rotated in 90-degree increments within the enclosure for convenient viewing.

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## Ordering information

Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See [Material selection](#) for more information.

**Table 1: Rosemount 751 Field Signal Indicator Ordering Information**

★ The Standard offering represents the most common models and options. These options should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

Model	Product description	
751	Remote Signal Indicator	★
<b>Input signal</b>		
A	4–20 mA dc	★
B	10–50 mA dc (not available with LCD display meter)	★
C	40–200 mV dc (not available with LCD display meter)	★
<b>Meter scale</b>		
M4 <sup>(1)</sup>	Linear LCD display meter, 0–100% Scale	★
M7 <sup>(1)</sup>	Special scale LCD display meter (specify range, mode, and engineering units)	★
M8 <sup>(1)</sup>	Square root LCD display meter, 0–100% Flow	★
M9 <sup>(1)</sup>	Square root LCD display meter, 0–10 $\sqrt{\quad}$	★
<b>Product certificates</b>		
NA	No approval required	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	NEPSI Flameproof	★
E5	FM Explosion-Proof	★
E6	CSA Explosion-Proof	★
E7	IECEX Flameproof	★
E8	ATEX Flameproof	★
I5	FM Intrinsic Safety and Non-incendive	★
I6	CSA Intrinsic Safety	★
I7	IECEX Intrinsic Safety	★
I8	ATEX Intrinsic Safety	★
N1	ATEX Type N Non-incendive	★
C6	CSA Intrinsic Safety, Non-incendive, and Explosion-proof approval combination	★
K5	FM Intrinsic Safety, Non-incendive, and Explosion-proof approval combination	★
KM	Technical Regulations Customs Union (EAC) Flameproof, Intrinsic Safety	★
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety	★
EM	Technical Regulations Customs Union (EAC) Flameproof	★

**Table 1: Rosemount 751 Field Signal Indicator Ordering Information (continued)**

<b>Model</b>	<b>Product description</b>	
NM	Technical Regulations Customs Union (EAC) Type N	★
<b>Mounting bracket</b>		
B	Mounting bracket for flat surface or 2-in. pipe	★
<b>Reducer</b>		
C	Stainless steel reducer ¾- to ½-in. for conduit connection (see <a href="#">Figure 1</a> for reference)	★
<b>Bar code tag</b>		
BT	Customer specified barcode tag	★
<b>Extended product warranty</b>		
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★
<b>Typical model number: 751 A M1 NA BC</b>		

(1) *May be reconfigured in the field.*

# Specifications

## Housing specifications

### Physical specifications

#### Material selection

Emerson provides a variety of Rosemount product with various product options and configurations including materials of construction that can be expected to perform well in a wide range of applications. The Rosemount product information presented is intended as a guide for the purchaser to make an appropriate selection for the application. It is the purchaser's sole responsibility to make a careful analysis of all process parameters (such as all chemical components, temperature, pressure, flow rate, abrasives, contaminants, etc.), when specifying product, materials, options, and components for the particular application. Emerson is not in a position to evaluate or guarantee the compatibility of the process fluid or other process parameters with the product, options, configuration, or materials of construction selected.

#### Conformance to specifications [ $\pm 3\sigma$ (Sigma)]

Technology leadership, advanced manufacturing techniques, and statistical process control ensure specification conformance to at least  $\pm 3\sigma$ .

#### Materials of construction

<b>Enclosure</b>	Low-copper aluminum
<b>Paint</b>	Polyurethane
<b>O-rings</b>	Buna N
<b>Meter mounting materials</b>	GE polyphenylene oxide plastic

#### Electrical connections

3-pole terminal block with 8–32 nickel-plated brass screw terminals, with  $\frac{3}{4}$ –14 NPT conduit (stainless steel  $\frac{3}{4}$ - to  $\frac{1}{2}$ -in. reducer available as an option).

#### Enclosure rating

NEMA<sup>®</sup> Type 4x. CSA Type 4x. IP66

#### Weight

<b>Indicator only:</b>	1.8 kg (4 lb)
<b>Indicator with optional mounting bracket:</b>	2.27 kg (5 lb)

#### Tagging

The indicator will be tagged, at no charge, in accordance with customer requirements. All tags are stainless steel. The standard tag is permanently attached to the indicator. Tag character height is 1/16-in. (1.6 mm). A wired-on tag is available upon request.

## LCD display meter specifications

### Functional specifications

#### Input signal

4–20 mA dc

**Display****4 mA point limits**

-999 to 1000

**Span limits**

-999 to 9999

The sum of the 4 mA point and span must not exceed 9999. Adjustments are made using non-interactive zero and span buttons.

**Display options**

Standard display response is linear with mA input. Optional square root or filtered response may be selected.

**Overload limitations**

666 mA, maximum

**Temperature limits**

<b>Storage</b>	-40 to 85 °C (-40 to 185 °F)
<b>Operating</b>	-40 to 70 °C (-40 to 185 °F) <sup>(1)</sup>

**Humidity limitation**

0 to 95 percent non-condensing relative humidity

**Update period**

750 ms

**Response time**

Responds to changes in input within a maximum of two update periods. If the filter is activated, then the display responds to the change within nine update periods.

**Voltage drop**

0.7 Vdc typical, 1.0 Vdc maximum

**Performance specifications****Digital display resolution**

0.05 percent of calibrated range  $\pm$  1 digit

**Analog bar graph resolution**

5.0 percent of calibrated range

**Indication accuracy**

0.25 percent of calibrated range  $\pm$  1 digit

**Stability**

0.1 percent calibrated range  $\pm$  1 digit per six months

**Temperature effect**

0.01 percent of calibrated range per °C on zero

0.02 percent of calibrated range per °C on span over the operating temperature range

(1) For temperatures below -20 °C or above 60 °C, the LCD display may not be readable but the loop will remain intact and the LCD display will not be damaged.

**Power interrupt**

All calibration constants are stored in EEPROM memory and are not affected by power loss.

**Failure mode**

LCD display meter failure will not affect transmitter operation.

**Under/Over range indication**

Input current < 3.5 mA: Display blank

Input current > 22.0 mA: Display flashes 112.5 percent of full scale value or 9999, whichever is less

**EMC performance**

Meets all industrial environment requirements of EN61326. Analog performance will align with attached product EMC specification (e.g., <1% of span). Maximum deviation of display reading will be less than 15 percent Span during EMC disturbance.

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**Note**

During a surge, burst, or ESD event, the display reading may exceed the maximum EMC deviation limit or reset; however, the device will self-recover and return to normal operation within specified start-up time.

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**Physical specifications****Meter size**

2¼-in. diameter face with four ½-in. high characters

# Product Certification

Rev 1.10

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

## 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).

## 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.

## USA

### E5 USA Explosion-proof

<b>Certificate</b>	0T2H8.AE
<b>Standards</b>	FM Class 3600: 1989, FM Class 3615: 1989
<b>Markings</b>	XP CL I, DIV 1, GP B, C, D; DIP CL II/III, DIV 1, GP E, F, G; $-40^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$ ; Type 4X

### I5 USA Intrinsically Safe; Nonincendive

<b>Certificate</b>	0T9H2AX
<b>Standards</b>	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
<b>Markings</b>	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.



## Canada

### 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

### 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

## Europe

### 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<sub>a</sub> ≤ +40 °C), T5(-40 °C ≤ T<sub>a</sub> ≤ +70 °C) V<sub>max</sub> = 60 Vdc; I<sub>max</sub> = 50 mA; P<sub>max</sub> = 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.

### 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<sub>a</sub> ≤ +40 °C), T5(-60 °C ≤ T<sub>a</sub> ≤ +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.

## N1 ATEX Type n

<b>Certificate</b>	Baseefa03ATEX0454
<b>Standards</b>	EN 60079-0:2012; EN 60079-15:2010
<b>Markings</b>	Ⓔ II 3 G Ex nA IIC T6 Gc; (-40 °C ≤ T <sub>a</sub> ≤ +70 °C)

## International

### E7 IECEx Flameproof

<b>Certificate</b>	IECEx UL 18.0040X
<b>Standards</b>	IEC 60079-0:2011; IEC 60079-1:2014-06
<b>Markings</b>	Ex db IIC T5/T6 Gb, T6(-40 °C ≤ T <sub>a</sub> ≤ +40 °C), T5(-40 °C ≤ T <sub>a</sub> ≤ +70 °C) V <sub>max</sub> = 60 Vdc; I <sub>max</sub> = 50 mA; P <sub>max</sub> =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.

### I7 IECEx Intrinsic Safety

<b>Certificate</b>	IECEx BAS 11.0064X
<b>Standards</b>	IEC 60079-0: 2011; IEC 60079-11: 2011
<b>Markings</b>	Ex ia IIC T5/T6 Ga; T6(-60 °C ≤ T <sub>a</sub> ≤ +40 °C), T5(-60 °C ≤ T <sub>a</sub> ≤ +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.

## Brazil

### E2 INMETRO Flameproof

<b>Certificate</b>	UL-BR 16.0054X
<b>Standards</b>	ABNT NBR IEC 60079-0:2008 + Errata 1:2011, ABNT NBR IEC 60079-1:2009 + Errata 1:2011
<b>Markings</b>	Ex db IIC T5/T6 Gb; T6(-40 °C ≤ T <sub>a</sub> ≤ +40 °C), T5(-40 °C ≤ T <sub>a</sub> ≤ +70 °C)

#### Special Condition for Safe Use (X):

1. Flameproof joints are not intended for repair.

- 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.

## I2 INMETRO Intrinsic Safety

<b>Certificate</b>	UL-BR 15.1094X
<b>Standards</b>	ABNT NBR IEC 60079-0:2008 + ERRATA 1:2011, ABNT NBR IEC 60079-11:2009
<b>Markings</b>	Ex ia IIC T5/T6 Ga; T6(-60 °C ≤ T <sub>a</sub> ≤ +40 °C), T5(-60 °C ≤ T <sub>a</sub> ≤ +80 °C)

### Special Condition for Safe Use (X):

- 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.

## China

### E3 China Flameproof

<b>Certificate</b>	GYJ17.1007X (CCC 认证)
<b>Standards</b>	GB 3836.1-2010, GB 3836.2-2010
<b>Markings</b>	Ex d IIC T5/T6 Gb

### Special Conditions for Safe Use (X):

- Symbol “X” is used to denote specific conditions of use: Contact the original manufacturer when repair work relates to the flamepath.
- Ambient temperature range is: T6(-20 °C ≤ T<sub>a</sub> ≤ +40 °C), T5(-20 °C ≤ T<sub>a</sub> ≤ +70 °C).
- The earth connection facility in the enclosure should be connected reliably.
- During installation, there should be no mixture harmful to flameproof housing.
- 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.
- During installation, use and maintenance in explosive gas atmospheres, observe the warning “Do not open when energized.”
- 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.
- 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”.

### I3 China Intrinsic Safety (Special Y0052)

<b>Certificate:</b>	GYJ19.1331X (CCC 认证)
<b>Standards:</b>	GB 3836.1-2010, GB 3836.4-2010, GB 3836.20-2010
<b>Markings:</b>	Ex ia IIC T5/T6 Ga; T5(-60 °C ~ +80 °C), T6(-60 °C ~ +40 °C)

**Special Condition for Safe Use (X):**

See certificate for special conditions of safe use.

## EAC - Belarus, Kazakhstan, Russia

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

**Markings** 1Ex db IIC T6...T5 Gb X; T5 (-40 °C ≤ T<sub>a</sub> ≤ +70 °C); T6 (-40 °C ≤ T<sub>a</sub> ≤ +40 °C);  
See certificate for Special Conditions for Safe Use.

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

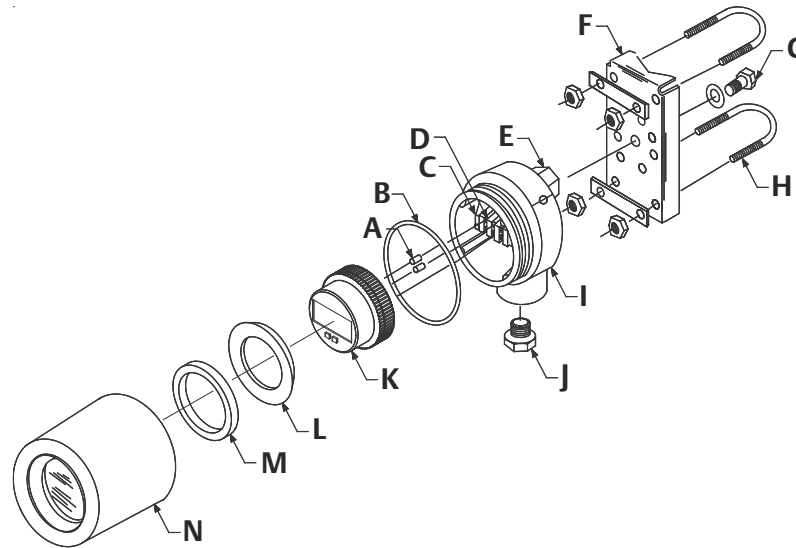
**Markings** 0Ex ia IIC T6...T5 Ga X; T5 (-60 °C ≤ T<sub>a</sub> ≤ +80 °C); T6 (-60 °C ≤ T<sub>a</sub> ≤ +40 °C);  
See certificate for Special Conditions for Safe Use.

## Combinations

<b>K2</b>	Combination of E2 and I2
<b>K5</b>	Combination of E5 and I5
<b>C6</b>	Combination of E6 and I6
<b>KM</b>	Combination of EM and IM

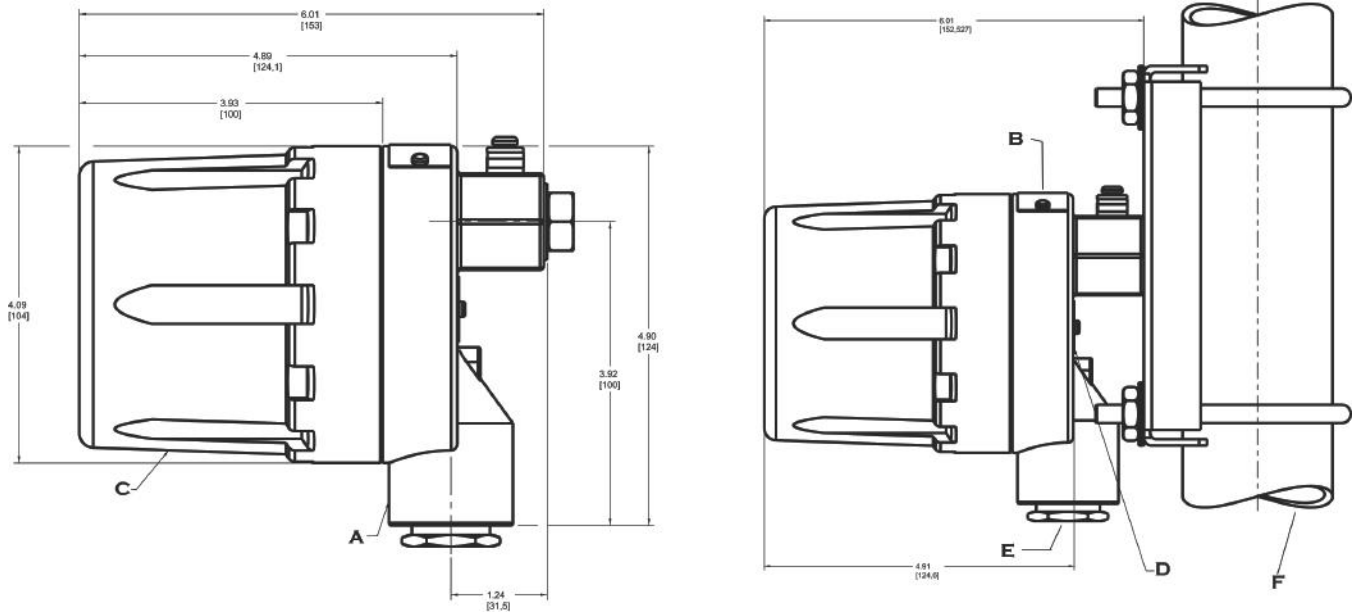
# Dimensional drawings

**Figure 1: Rosemount 751 Field Signal Indicator**



- A. Terminal screws
- B. Housing O-ring
- C. Field wiring terminals
- D. Loop protection diode
- E. Mounting boss (tapped)
- F. Mounting bracket (optional)
- G. Mounting bolt with washer
- H. U-bolt for 2-in. pipe
- I. Cover clamp
- J. Housing
- K. Optional 3/4- to 1/2-in. conduit reducing bushing (if required)
- L. Meter
- M. Cover bushing
- N. Cover foam spacer
- O. Housing cover

Figure 2: Rosemount 751 Dimensional Drawing



- A. *Optional mounting bracket*
- B. *Permanent tag*
- C. *0.37-in. (9.4 mm) diameter holes (typically four places)*
- D. *FM or CSA tag (if required)*
- E. *3/4-14 NPT conduit connection*
- F. *2-in. pipe*

Dimensions are in inches (millimeters).



For more information: [www.emerson.com](http://www.emerson.com)

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