

# Rosemount 751 Field Signal Indicator

## **ROSEMOUNT 751**

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



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## Transcend Your Integral Meter Display with the 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. An LCD meter or analog meter may be ordered to meet specific application requirements.

### **LCD Meter**

The LCD 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.

### **Analog Meter**

With the analog meter, several meter scaling options are available to suit special application requirements with  $\pm 2$  percent of calibrated span accuracy. Linear 0 to 100 percent meter scaling is adequate for the majority of measurement applications. With a flow transmitter, a logarithmic 0 to 100 percent flow scale is available. As an option, the user can specify special meter scaling for direct readout in psi, gph, °F, °C, or other convenient engineering units.

The large, 2<sup>1</sup>/<sub>4</sub>-inch diameter meter face has a 2-inch long scale for easy readability. A zero adjustment is located on the meter faceplate (accessible with the housing cover removed). The meter can be rotated within the enclosure for convenient viewing in 90-degree increments.

## Specifications

### HOUSING SPECIFICATIONS

#### Physical Specifications

##### Materials of Construction

**Enclosure**

Low-copper aluminum

**Paint**

Polyurethane

**O-rings**

Buna N

**Meter Mounting Materials**

Noryl<sup>®</sup> plastic

##### Electrical Connections

3-pole terminal block with 8–32 nickel-plated brass screw terminals, with <sup>3</sup>/<sub>4</sub>–14 NPT conduit. (Stainless steel <sup>3</sup>/<sub>4</sub>- to <sup>1</sup>/<sub>2</sub>-inch reducer available as an option.)

##### Enclosure Rating

NEMA Type 4x. CSA Type 4x. IP66.

##### Weight

Indicator only: 1.8 kg (4 lb)

Indicator with optional mounting bracket: 2.27 (5 lb)

### LCD METER SPECIFICATIONS

#### Functional Specifications

**Input Signal**

4–20 mA dc

**Display****4 mA Point Limits**

–999 to 1000

**Span limits**

200 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****Storage**

–40 to 85 °C (–40 to 185 °F)

**Operating**

–20 to 70 °C (–4 to 158 °F)

–40 to –20 °C (–40 to –4 °F)

loop is intact and the meter is not damaged

**Humidity Limitation**

0 to 95% 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 V dc typical, 1.0 V dc maximum

## Performance Specifications

### Digital Display Resolution

0.05% of calibrated range  $\pm$  1 digit

### Analog Bar Graph Resolution

5.0% of calibrated range

### Indication Accuracy

0.25% of calibrated range  $\pm$  1 digit

### Stability

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

### Temperature Effect

0.01% of calibrated range per °C on zero

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

### Power Interrupt

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

### Failure Mode

LCD 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% of full scale value or 9999, whichever is less

## Physical Specification

### Meter Size

2<sup>1</sup>/<sub>4</sub>-inch diameter face with four <sup>1</sup>/<sub>2</sub>-inch high characters

## ANALOG METER SPECIFICATIONS

### Functional Specifications

#### Input Signal

- 4–20 mA dc
- 10–50 mA dc
- 40–200 mV

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#### NOTE:

Maximum series resistance is ten ohms for ammeters.

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#### Meter Indication

0 to 100% linear scale

0 to 100% flow scale

Special optional ranges

#### Overload Limitation

150% of rated end scale value for two minutes

#### Temperature Limits

–40 to 65 °C (–40 to 150 °F)

#### Humidity Limits

0 to 100% relative humidity

#### Zero Adjustment

Adjustment screw on face of meter

## Performance Specifications

### Indication Accuracy

$\pm$ 2% of calibrated span

### Temperature Effect

Less than 2% of full scale at any point within the temperature limits

## Physical Specification

### Meter Size

2<sup>1</sup>/<sub>4</sub>-inch diameter face with 2-inch long scale

## Product Certifications

### HAZARDOUS LOCATIONS CERTIFICATIONS

#### North American Certifications

##### Factory Mutual (FM) Approvals

- E5** Certificate Number: 0T2H8.AE  
Explosion-Proof for Class I, Division 1, Groups B, C, and D.  
Dust-Ignition Proof for Class II, Division 1, Groups E, F, and G.  
Dust-ignition Proof Class III, Division 1
- I5** Certificate Number: 0T9H2.AX  
Intrinsically safe for Class I, Division 1, Groups A, B, C, and D;  
Class II, Division 1, Groups E, F, and G; Class III, Division 1  
when connected per Rosemount Drawing 01151-0214.  
Nonincendive for Class I, Division 2, Groups A, B, C, and D.
- K5** Combination of E5 and I5  
NEMA Enclosure Type 4X  
Entity Parameters:  

$V_{max} = 40\text{ V}$	A-G
$I_{max} = 165\text{ mA}$	A-G
$I_{max} = 225\text{ mA}$	C,D,E,F,G
$C_i = 0$	A-G
$L_i = 0$	A-G
- E3** NEPSI Flameproof  
Certificate Number: GYJ04107  
Ex ia IIC T6 (except acetylene)

##### Canadian Standards Association (CSA) Approvals

- Certificate Number: 33332-225
- E6** Explosion-Proof for Class I, Division 1, Groups C and D;  
Dust-Ignition Proof for Class II, Division 1, Groups E, F, and G;  
Dust-Ignition Proof for Class III, Division 1; Suitable for  
Class I, Division 2, Groups A, B, C, and D.  
CSA ENCLOSURE TYPE 4X
- I6** Intrinsically safe for Class I, Division 1, Groups A, B, C, and  
D when installed per the Rosemount Drawing 00751-0068.
- C6** Combination of E6 and I6

#### Australian Certifications

- E7** **SAA Flameproof**  
Certification AUS Ex 494x  
Ex d IIB + H2 T6 ( $T_{amb} = 40^{\circ}\text{C}$ )  
Class I, Zone 1  
DIP T6 ( $T_{amb} = 40^{\circ}\text{C}$ )  
Class II  
IP65

##### CONDITIONS OF CERTIFICATION (X):

For transmitters having NPT or PG cable entry thread, an appropriate flameproof thread adaptor shall be used to facilitate application of certified flameproof cable glands. Only SAA certified flameproof temperature sensors shall be used with the Model 444 Temperature Transmitter if fitted directly into the tapped entry of the enclosure.

- I7** **SAA Intrinsic Safety**  
Certification AUS Ex 122x  
Ex ia IIC  
T6 ( $T_{amb} = -20^{\circ}$  to  $40^{\circ}\text{C}$ )  
T5 ( $T_{amb} = -20^{\circ}$  to  $70^{\circ}\text{C}$ )  
Class I, Zone 0  
IP66

##### CONDITIONS OF CERTIFICATION (X):

The equipment has been assessed to the "Entity" concept and upon installation the barrier/entity parameters must be taken into account.

##### Entity Parameters:

$U_i = 30\text{ V}$   
 $I_i = 200\text{ mA}$   
 $C_i = 0.0\text{ uF}$   
 $C_i = 0$   
 $L_i = 0\text{ mH}$

#### European Certifications

- E8** **ATEX Flameproof**  
Certificate Number: CESI03ATEX263  
ATEX Marking: Ex II 2 G  
EEx d IIC T6 ( $-20^{\circ}\text{C} \leq T_{amb} \leq 60^{\circ}\text{C}$ )  
IP65  
Entity Parameters:  
 $V_{max} = 60\text{ Vdc}$
- I8** **ATEX Intrinsic Safety**  
Certificate Number: Baseefa03ATEX0448X  
ATEX Marking: Ex II 1 G  
EEx ia IIC  
T5 ( $-60^{\circ}\text{C} \leq T_{amb} \leq 80^{\circ}\text{C}$ );  
T6 ( $-60^{\circ}\text{C} \leq T_{amb} \leq 40^{\circ}\text{C}$ )

##### SPECIAL CONDITION FOR SAFE USE (X):

1. The apparatus enclosure may contain light metals. The apparatus must be installed in such a manner as to minimize the risk of impact or friction with other metal surfaces.

##### Entity Parameters:

$U_i = 60\text{ V}$   
 $I_i = 200\text{ mA}$   
 $L_i = 0$   
 $C_i = 0$

##### **N1** **ATEX Type N**

Certificate Number: Baseefa03ATEX0454  
ATEX Marking: Ex II 2 G  
EEx nA II T6 ( $-40^{\circ}\text{C} \leq T_{amb} \leq 70^{\circ}\text{C}$ )  
IP54  
Rated Voltage = 5V

## Dimensional Drawings

FIGURE 1. Rosemount 751 Field Signal Indicator

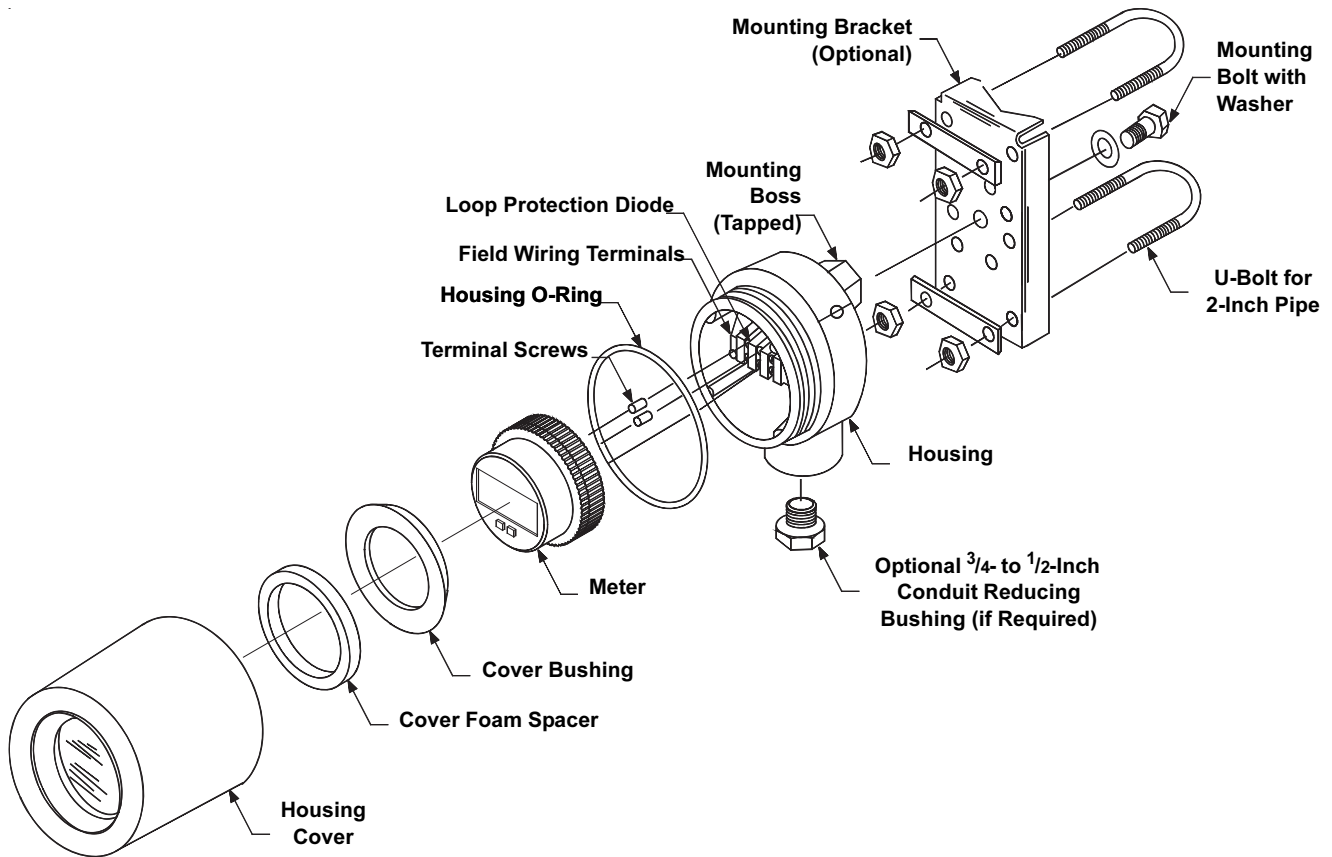
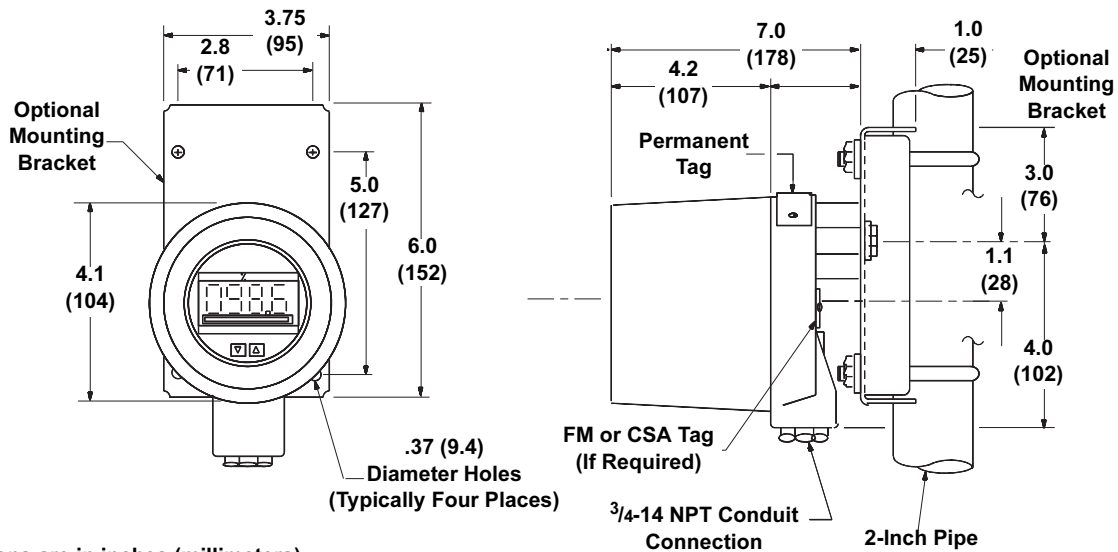


FIGURE 2. Rosemount 751 Dimensional Drawing



**NOTE:**  
Dimensions are in inches (millimeters)

## Ordering Information

Model	Product Description
751	Remote Signal Indicator
Code	Input Signal
A	4–20 mA dc
B	10–50 mA dc (Not Available with LCD Meter)
C	40–200 mV dc (Not Available with LCD Meter)
Code	Meter Scale
M1	Linear Analog Meter, 0–100% Scale
M2	Square Root Analog Meter, 0–100% Flow
M3	Special Scaling Analog Meter (specify range)
M6	Square Root Analog Meter, 0–10 $\sqrt{\quad}$
M4 <sup>(1)</sup>	Linear LCD Meter, 0–100% Scale
M7 <sup>(1)</sup>	Special Scale LCD Meter (specify range, mode, and engineering units)
M8 <sup>(1)</sup>	Square Root LCD Meter, 0–100% Flow
M9 <sup>(1)</sup>	Square Root LCD Meter, 0–10 $\sqrt{\quad}$
Code	Product Certificates
NA	No Approval Required
E3	NEPSI Flameproof
E5	FM Explosion-Proof
E6	CSA Explosion-Proof
E7	SAA Flameproof
E8	ATEX Flameproof
I5	FM Intrinsic Safety and Non-incendive
I6	CSA Intrinsic Safety
I7	SAA 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
Code	Options
<b>Mounting Bracket</b>	
B	Mounting Bracket for Flat Surface or 2-inch Pipe
<b>Reducer</b>	
C	Stainless Steel Reducer 3/4- to 1/2-inch for Conduit Connection (See Figure 1 for reference.)
<b>Bar Code Tag</b>	
BT	Customer Specified Barcode Tag
<b>Typical Model Number: 751 A M1 NA BC</b>	

(1) May be reconfigured in the field.

### 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 <sup>1</sup>/<sub>16</sub> inch (1.6 mm). A wired-on tag is available upon request.

## Product Data Sheet

00813-0100-4378, Rev EA

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# Rosemount 751

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