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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Content

ROSEMOUNT®

EMERSON™
Process Management

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 ±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, $2^{1}/_{4}$-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[®] plastic

Electrical Connections

3-pole terminal block with 8–32 nickel-plated brass screw terminals, with $^3/_4$–14 NPT conduit. (Stainless steel $^3/_4$- to $^1/_2$-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 ± 1 digit

Analog Bar Graph Resolution

5.0% of calibrated range

Indication Accuracy

0.25% of calibrated range ± 1 digit

Stability

0.1% calibrated range ± 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

$2^{1}/_{4}$-inch diameter face with four $^{1}/_{2}$-inch high characters

ANALOG METER SPECIFICATIONS

Functional Specifications

Input Signal

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

NOTE:
Maximum series resistance is ten ohms for ammeters.

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

±2% of calibrated span

Temperature Effect

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

Physical Specification

Meter Size

$2^{1}/_{4}$-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 V	A-G
I_{max} = 165 mA	A-G
I_{max} = 225 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 (Tamb = 40°C)
Class I, Zone 1
DIP T6 (Tamb = 40°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° to 40°C)
T5 (T_{amb} = -20° to 70°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 V
I_i = 200 mA
C_i = 0.0 uF
C_i = 0
L_i = 0 mH

European Certifications

E8 **ATEX Flameproof**

Certificate Number: CESI03ATEX263

ATEX Marking: Ex II 2 G
EEx d IIC T6 (-20°C $\leq$ Tamb $\leq$ 60°C)
IP65

Entity Parameters:

V_{max} = 60 Vdc

I8 **ATEX Intrinsic Safety**

Certificate Number: Baseefa03ATEX0448X
ATEX Marking: Ex II 1 G

EEx ia IIC
T5 (-60°C $\leq$ T_{amb} $\leq$ 80°C);
T6 (-60°C $\leq$ T_{amb} $\leq$ 40°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.
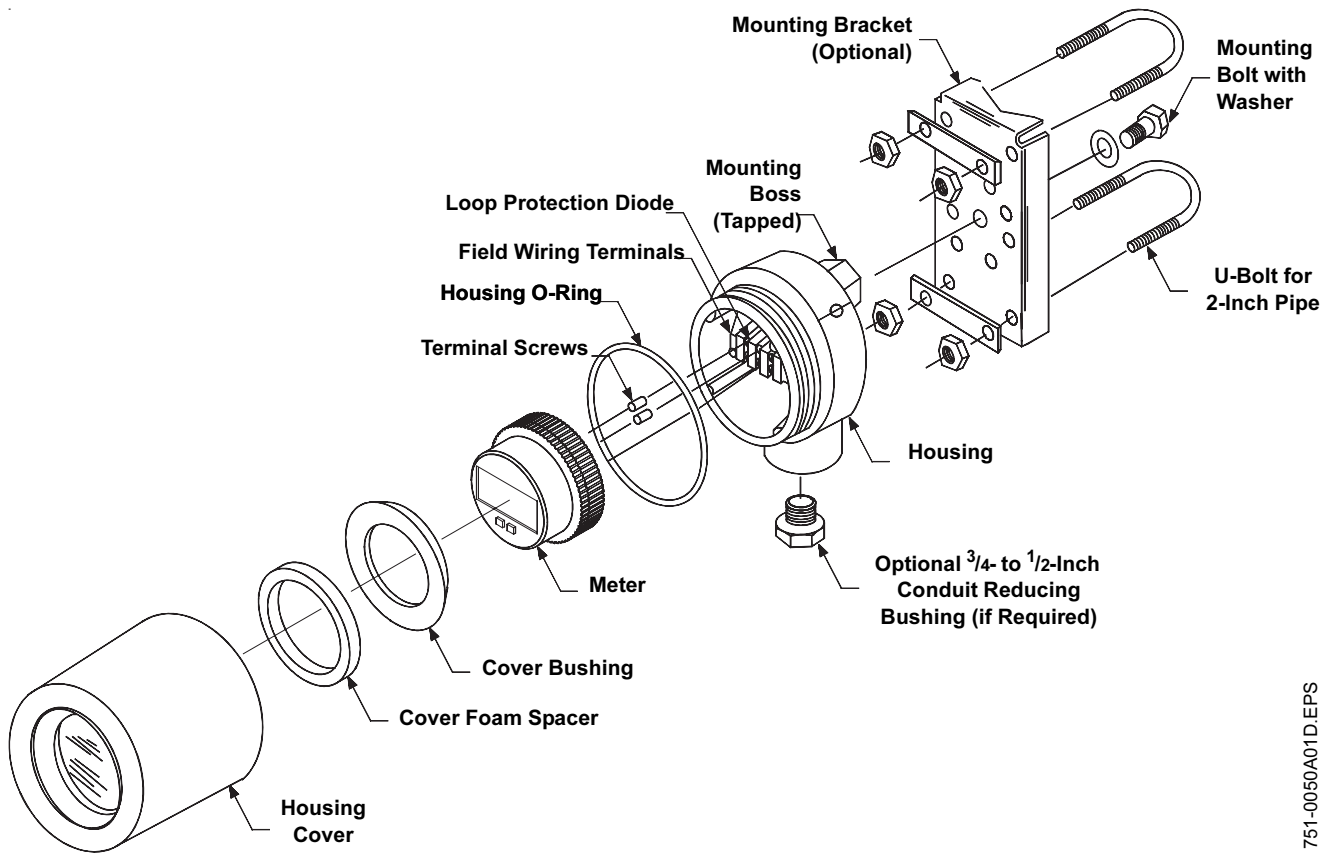
Entity Parameters:
U_i = 60V
I_i = 200 mA
L_i = 0
C_i = 0

N1 **ATEX Type N**

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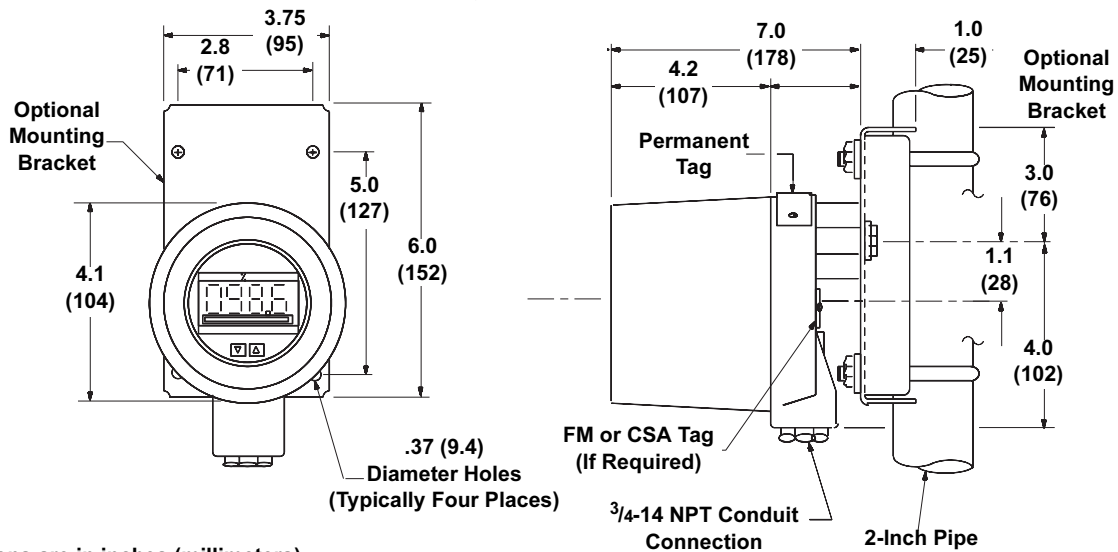IP54
Rated Voltage = 5V

Rosemount 751

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 √
M4[1]	Linear LCD Meter, 0–100% Scale
M7[1]	Special Scale LCD Meter (specify range, mode, and engineering units)
M8[1]	Square Root LCD Meter, 0–100% Flow
M9[1]	Square Root LCD Meter, 0–10 √

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
	Mounting Bracket
B	Mounting Bracket for Flat Surface or 2-inch Pipe
	Reducer
C	Stainless Steel Reducer ¾- to ½-inch for Conduit Connection (See Figure 1 for reference.)
	Bar Code Tag
BT	Customer Specified Barcode Tag

Typical Model Number: 751   A   M1   NA   BC

(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 $1/16$ inch (1.6 mm). A wired-on tag is available upon request.

Emerson Process Management

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