Rosemount™ 751 Field Signal Indicator
CAUTION
This guide provides basic guidelines for Rosemount 751 Remote 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 (document number 00809-0100-4378) for more instruction. This manual is also available electronically on www.rosemount.com.

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 approvals section of the Rosemount 751 Reference Manual for any restrictions associated with a safe installation.
- In an Explosionproof/Flameproof installation, do not remove the indicator cover when power is applied to the unit.

Electrical shock can result in death or serious injury.
- Avoid contact with the leads and terminals. High voltage that may be present on leads can cause electrical shock.

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Installation

Assembly

The Rosemount 751 Field Signal Indicator is comprised of the components shown in Figure 1. The housing may contain an analog or 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.

The meter subassembly contains the components shown in Figure 2.

Figure 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
   (if required)
K. Meter
L. Bushing
M. Foam spacer
N. Housing cover
Figure 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
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 Rosemount 751 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 Rosemount 751 device from the series configuration will disrupt the loop.
Figure 3. Rosemount 751 Series Wiring Diagrams

Rosemount 3144P Temperature Transmitters and Rosemount 2051, 3051C, or 3051S Pressure Transmitters

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

4–20 mA dc Input Signal for Rosemount 3144P  
4–20 mA dc Input Signal for Rosemount 2051

4–20 mA dc Input Signal for Rosemount 3051C  
4–20 dc Input Signal for Rosemount 3051S
It is recommended that the Rosemount 751 indicator 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 751 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 751 indicator without affecting the integrity of the 4-20 mA loop. Additionally, spare 751 indicators can be added without disrupting the loop.
Figure 4. Rosemount 751 Parallel Wiring Diagrams

Parallel Wiring Diagrams for Rosemount 3144P Temperature Transmitter and Rosemount 2051, 3051C or 3051S Pressure Transmitters

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

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A. 4–20 mA dc Input Signal for Rosemount 3144P
B. 4–20 mA dc Input Signal for Rosemount 2051
C. 4–20 mA dc Input Signal for Rosemount 3051C
D. 4–20 mA dc Input Signal for Rosemount 3051S
June 2016

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Configuration

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.

Remove the cover

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

Position the decimal point and select the meter function

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 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.
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Table 1. LCD Display Mode Options

<table>
<thead>
<tr>
<th>Options</th>
<th>Relationship between input signal and digital display</th>
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<tr>
<td>L in</td>
<td>Linear</td>
</tr>
<tr>
<td>LinF</td>
<td>Linear with five-second filter</td>
</tr>
<tr>
<td>Srt</td>
<td>Square root</td>
</tr>
<tr>
<td>SrtF</td>
<td>Square root with five-second filter</td>
</tr>
</tbody>
</table>

**Square root function** 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** operates upon “present input” and “input received in the previous five second interval” in the following manner:

\[
\text{Display} = (0.75 \times \text{previous input}) + (0.25 \times \text{present input})
\]

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

Store the information

1. Press both configuration buttons simultaneously for two seconds.

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

Set the display equivalent to a 4 mA signal

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.

Set the display equivalent to a 20 mA signal

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.

Replace the cover

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

European Directive Information

A copy of the EC Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EC Declaration of Conformity can be found at www.EmersonProcess.com.

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).

Installing Equipment in 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
Certificate: 0T2H8.AE
Markings: XP CL I, DIV 1, GP B, C, D; DIP CL II/III, DIV 1, GP E, F, G; -40 °C ≤ Ta ≤ +85 °C; Type 4X

I5 USA Intrinsically Safe; Nonincendive
Certificate: 0T9H2AX
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 ≤ T₂ ≤ +60 °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.
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Canada

E6 Canada Explosionproof
Certificate: 1718395
Standards: CSA Std C22.2 No. 25-1966; CSA Std C22.2 No. 50-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

I6 Canada Intrinsically Safe
Certificate: 1718395
Markings: Intrinsically Safe for CL I DIV 1; when installed per 00751-0068; Type 4X

Europe

E8 ATEX Flameproof
Certificate: DEKRA11ATEX0240X
Markings: II 2 G Ex d IIC T5/T6 Gb, T6(-20 °C ≤ T_a ≤ +40 °C), T5(-20 °C ≤ T_a ≤ +70 °C)

Special Condition for Safe Use (X):
1. The original manufacturer shall be contacted for information on the dimensions of the flameproof joints.

I8 ATEX Intrinsic Safety
Certificate: Baseefa03ATEX0448X
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.

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)

International

E7 IECEx Flameproof
Certificate: IECEx DEK 11.0082X
Standards: IEC 60079-0:2007-10; IEC 60079-1:2007-04
Markings: Ex d IIC T5/T6 Gb, T6(-20 °C ≤ T_a ≤ +40 °C), T5(-20 °C ≤ T_a ≤ +70 °C)

Special Condition for Safe Use (X):
1. The original manufacturer shall be contacted for information on the dimensions of the flameproof joints.
IECEx Intrinsic Safety
Certificate: IECEx BAS 11.0064X
Markings: Ex ia IIC T5/T6 Ga; T6(-60 °C ≤ Ta ≤ +40 °C), T5(-60 °C ≤ Ta ≤ +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
INMETRO Flameproof
Certificate: NCC 12.1204X
Markings: Ex d IIC T5/T6 Gb; T6(-20 °C ≤ Ta ≤ +40 °C), T5(-20 °C ≤ Ta ≤ +70 °C)

Special Condition for Safe Use (X):
1. The manufacturer should be contacted for information on the dimensions of the flameproof joints.

INMETRO Intrinsic Safety
Certificate: UL-BR 15.1094X
Markings: Ex ia IIC T5/T6 Ga; T6(-60 °C ≤ Ta ≤ +40 °C), T5(-60 °C ≤ Ta ≤ +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.

China
China Flameproof
Certificate: GYJ12.1034X
Standards: GB 3836.1-2010, GB 3836.2-2010
Markings: Ex d IIC 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: -20 °C ≤ Ta ≤ +60 °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: GB3836.13-1997 “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).”
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GB3836.16-2006 “Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines).”
GB50257-1996 “Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering.”

**EAC - Belarus, Kazakhstan, Russia**

**EM** Technical Regulations Customs Union (EAC) Flameproof
Certificate: RU C-US.GB05.B.00285
Markings: Ex d IIC T5…T6 X; T5 (-20 °C ≤ T_a ≤ +70 °C); T6 (-20 °C ≤ T_a ≤ +40 °C);

**IM** Technical Regulations Customs Union (EAC) Intrinsic Safety
Certificate: RU C-US.GB05.B.00285
Markings: Ex ia IIC T5…T6 X; T5 (-60 °C ≤ T_a ≤ +80 °C); T6 (-60 °C ≤ T_a ≤ +40 °C);

**NM** Technical Regulations Customs Union (EAC) Type n
Certificate: RU C-US.GB05.B.00285
Markings: Ex nA IIC T6 (-40 °C ≤ T_a ≤ +70 °C);

**Combinations**

K2 Combination of E2 and I2
K5 Combination of E5 and I5
C6 Combination of E6 and I6
KM Combination of EM, IM, and NM
Figure 5. Rosemount 751 Declaration of Conformity

EU Declaration of Conformity
No: RMD 1012 Rev. H

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

Kelly Klein
June 15, 2016

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EU Declaration of Conformity
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EMC Directive (2004/108/EC) This directive is valid until 19 April 2016
EMC Directive (2014/30/EU) This directive is valid from 20 April 2016

Harmonized Standards: EN 61326-1:2013

ATEX Directive (94/9/EC) This directive is valid until 19 April 2016
ATEX Directive (2014/34/EU) This directive is valid from 20 April 2016

DEKRA11ATEX0240X – Flameproof
Equipment Group II Category 2G (Ex d IIC T5/T6 Gb)
Harmonized Standards:
EN 50079-1:2007
Other Standards:
EN 50079-0:2009 (a review against EN60079-0:2012, which is harmonized, shows no significant changes relevant to this equipment so EN60079-0:2009 continues to represent “State of the Art”)

Baseefa3ATEX0448X – Intrinsic Safety
Equipment Group II Category 1G (Ex ia IIC T5/T6 Ga)
Harmonized Standards:
EN 50079-0:2012, EN 60079-11:2012

Baseefa3ATEX0454 – Type n
Equipment Group II Category 3G (Ex nA IIC T6 Gc)
Harmonized Standards:
EN 50079-0:2012, EN 60079-15:2010
EU Declaration of Conformity
No: RMD 1012 Rev. H

ATEX Notified Body

DEKRA Certification B.V. [Notified Body Number: 0344]
Meander 1051, 6825 MJ
Arnhem, The Netherlands

SGS Baseefa Limited [Notified Body Number: 1180]
Rockhead Business Park Studen Lane
SK17 9RZ Buxton
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ATEX Notified Body for Quality Assurance

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## Quick Start Guide

### List of Rosemount 751 Parts with China RoHS Concentration above MCVs

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<thead>
<tr>
<th>Part Name</th>
<th>Hazardous Substances</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Lead (Pb)</td>
</tr>
<tr>
<td></td>
<td>Mercury (Hg)</td>
</tr>
<tr>
<td></td>
<td>Cadmium (Cd)</td>
</tr>
<tr>
<td></td>
<td>Hexavalent Chromium (Cr+6)</td>
</tr>
<tr>
<td></td>
<td>Polybrominated Biphenyls (PBB)</td>
</tr>
<tr>
<td></td>
<td>Polybrominated Diphenyl Ethers (PBDE)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electronics Assembly</th>
<th>X</th>
<th>O</th>
<th>O</th>
<th>O</th>
<th>O</th>
<th>O</th>
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</thead>
<tbody>
<tr>
<td>Housing Assembly</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>X</td>
<td>O</td>
<td>O</td>
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<tr>
<td>Sensor Assembly</td>
<td>X</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

*This table is proposed in accordance with the provision of SJ/T11364.*

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: 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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