

# Model 751 Field Signal Indicator



# Model 751 Field Signal Indicator

## NOTICE

Read this manual before working with the product. For personal and system safety, and for optimum product performance, make sure you thoroughly understand the contents before installing, using, or maintaining this product.

Within the United States, Rosemount Inc. has two toll-free assistance numbers:

**Customer Central**

Technical support, quoting, and order-related questions.

1-800-999-9307 (7:00 am to 7:00 pm CST)

**North American Response Center**

Equipment service needs.

1-800-654-7768 (24 hours—includes Canada)

Outside of the United States, contact your local Rosemount representative.

## ⚠ CAUTION

The products described in this document are NOT designed for nuclear-qualified applications. Using non-nuclear qualified products in applications that require nuclear-qualified hardware or products may cause inaccurate readings.

For information on Rosemount nuclear-qualified products, contact your local Rosemount Sales Representative.

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# Model 751

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**Reference Manual**  
00809-0100-4378, Rev BA  
7/22/02

## Section 1 Introduction

The Model 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.

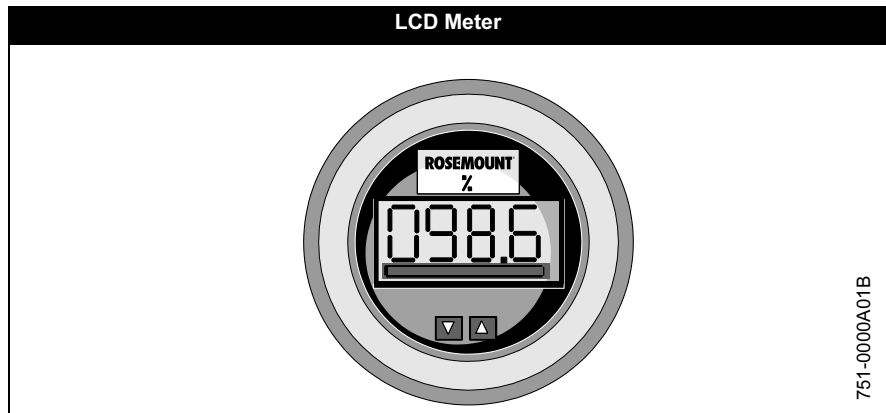
Model 751 Indicators are designed for use in industrial environments where all-weather performance is necessary. These units are vibration- and corrosion-resistant, and explosion-proof or intrinsically safe. An LCD meter or analog meter may be ordered to meet specific application requirements.

### LCD METER

The LCD meter requires an analog 4–20 mA dc output from a two-wire transmitter. It may be configured from a 4 mA point of –999 to 1000 and a 20mA point of –999 to 9999. The sum of the 4mA point and the span must not exceed 9999. The decimal point can be placed in any of three positions (X.X.X.X) or not used. Calibration adjustments are made using noninteractive zero and span buttons. The scaled meter may be labelled with the appropriate engineering units. A twenty-segment bar graph, on the bottom of the meter faceplate, represents the 4–20 mA signal directly.

The large 2<sup>1</sup>/<sub>4</sub>-inch meter face has 1<sup>1</sup>/<sub>2</sub>-inch-high characters for easy readability as shown in Figure 1-1. The 4 and 20 mA points may be changed by pressing the buttons on the meter faceplate. The meter can be rotated in 90-degree increments within the enclosure for convenient viewing.

Figure 1-1. LCD Meter



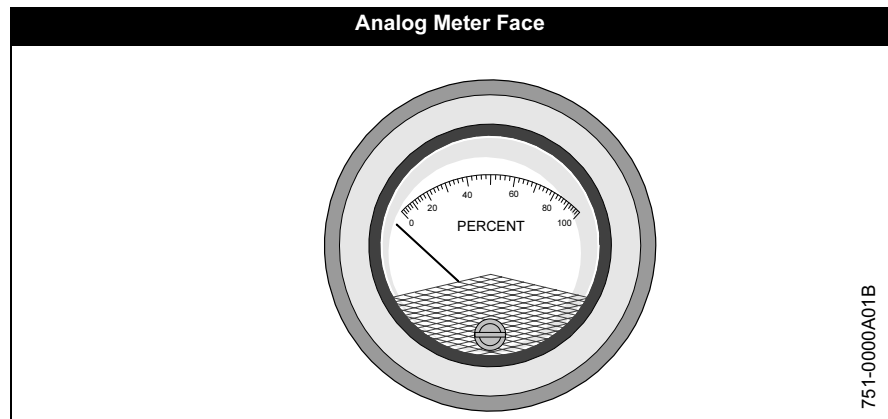
# Model 751

## ANALOG METER

The analog meter requires an analog 4–20 mA dc, 10–50 mA dc, or 40–200 mV dc transmitter output from a two-wire transmitter. Several meter calibration options are available to suit the requirements of a particular application. Linear 0 to 100 percent meter scaling is adequate for the majority of applications. A logarithmic 0 to 100 percent scale is available for use with flow transmitters. 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 two-inch long scale for easy readability as shown in Figure 1-2. A meter-zero adjustment is located on the meter faceplate. The meter can be rotated in 90-degree increments within the enclosure for convenient viewing.

Figure 1-2. Analog Meter



## Section 2 Installation

Assembly .....	page 2-1
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### ASSEMBLY

The Model 751 Field Signal Indicator is comprised of the components shown in Figure 2-1. The housing may contain an analog or LCD 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 2-1.

The meter subassembly contains the components shown in Figure 2-2.

Figure 2-1. Model 751 Exploded View

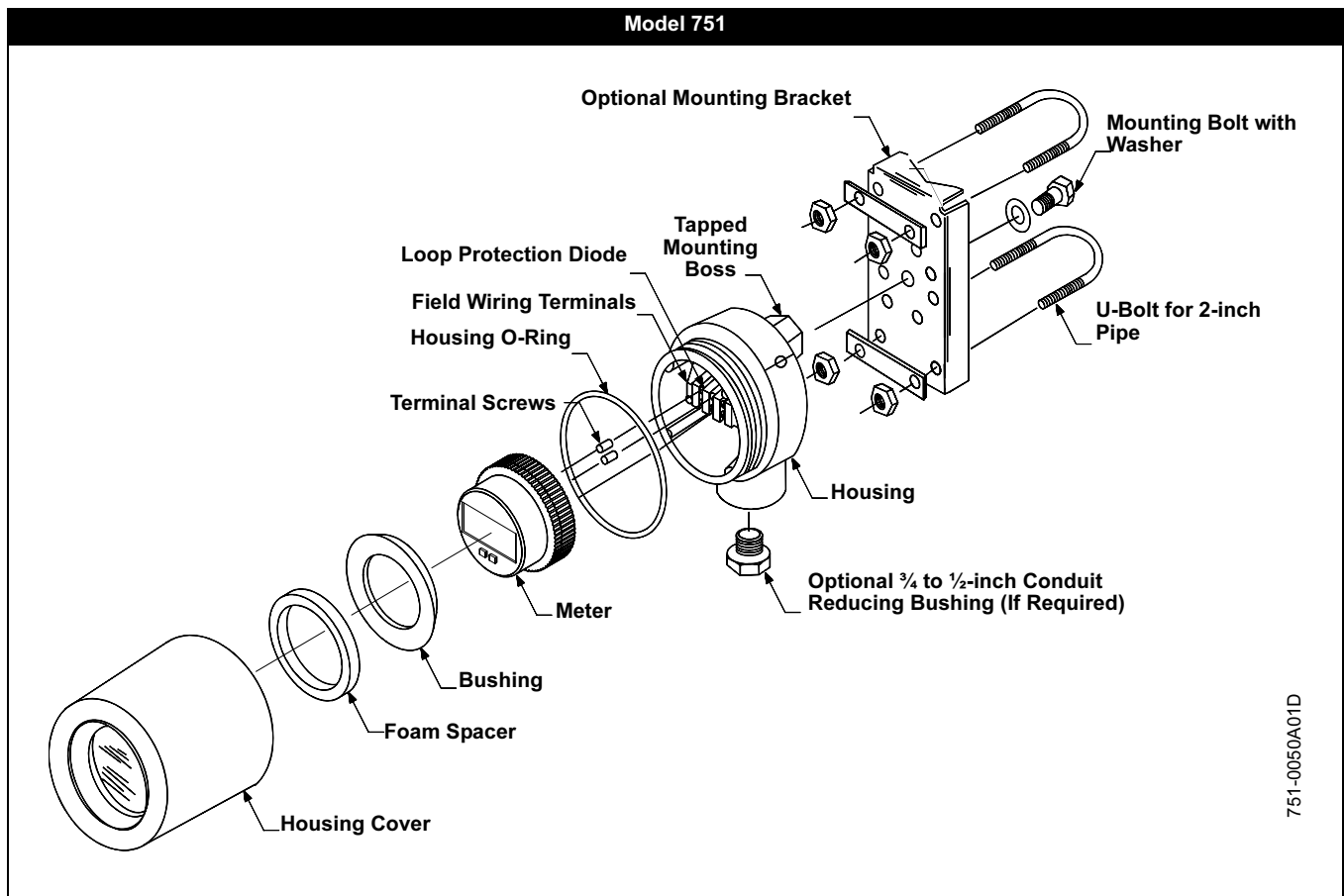
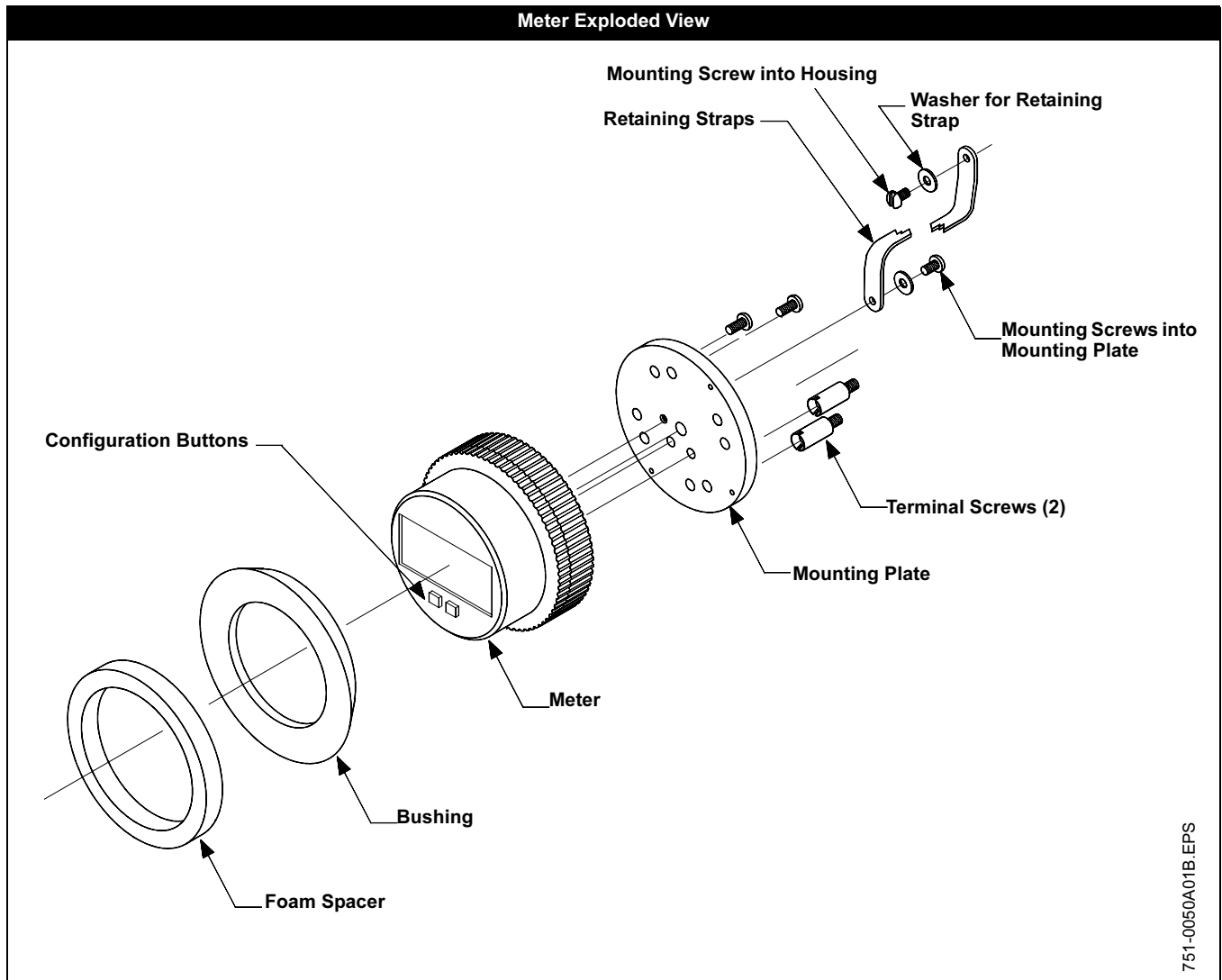


Figure 2-2. Meter Exploded View

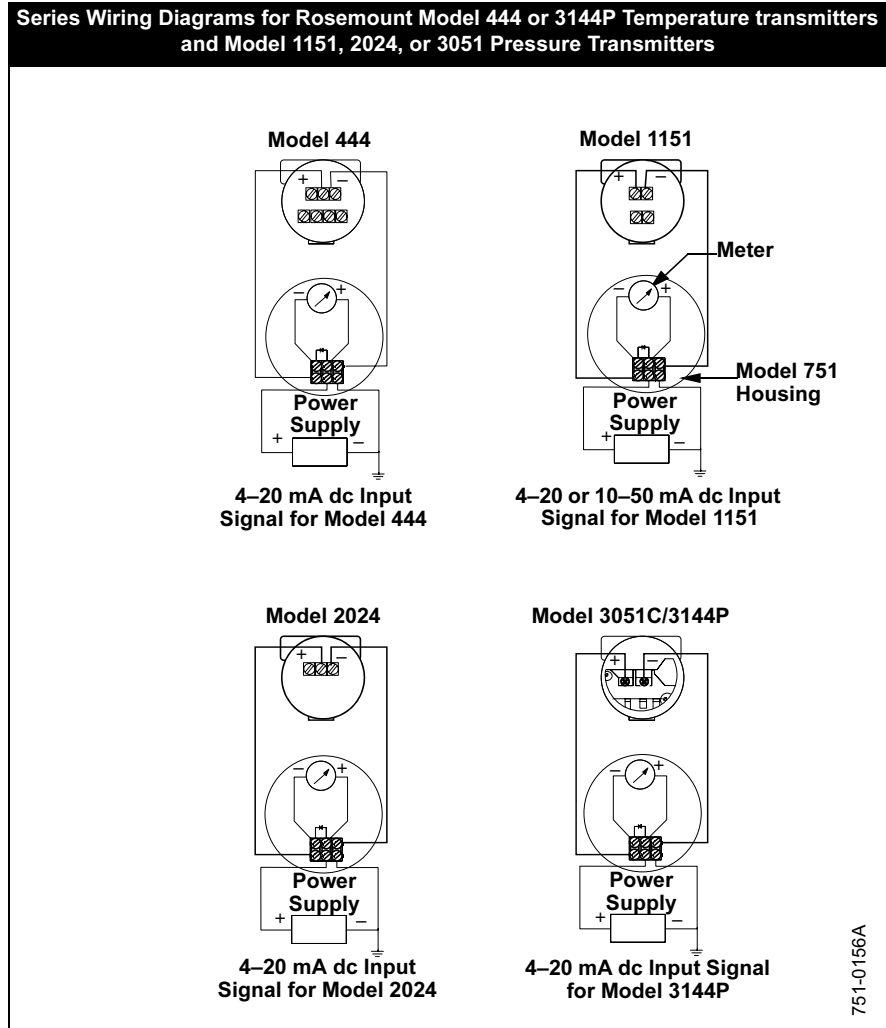




**WIRING DIAGRAMS**

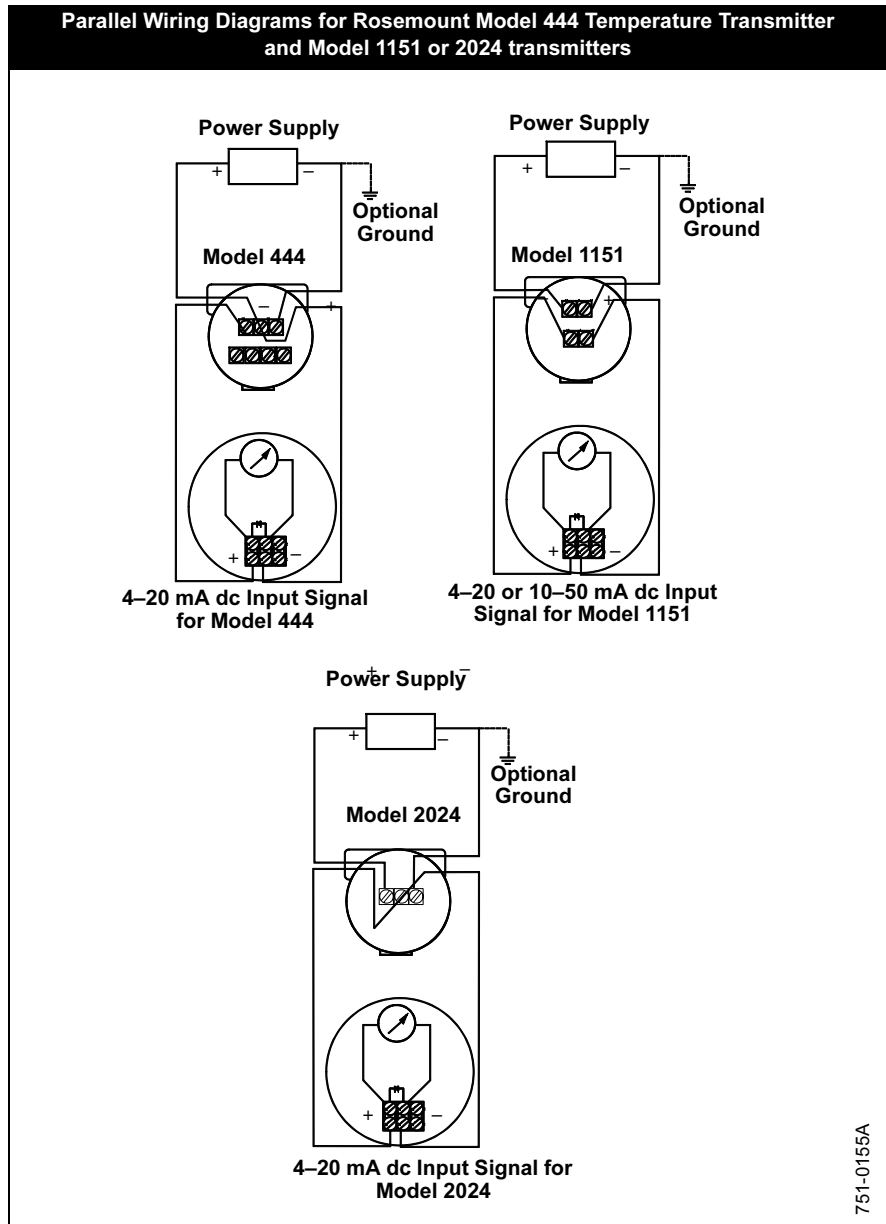
Use the following wiring diagrams to wire the Model 751 Field Signal Indicator, in series or in parallel, with Rosemount transmitters. Use shielded cable for best results in electrically noisy environments.

Figure 2-3. Model 751 Series Wiring Diagrams



# Model 751

Figure 2-4. Model 751 Parallel Wiring Diagrams



**LCD METER  
 CONFIGURATION**

The 20-segment bar graph is factory calibrated and represents 4–20 mA directly, but the end points of the LCD meter 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**

**⚠ WARNING**

Explosions can result in death or serious injury. Do not remove the instrument cover in explosive environments when the circuit is alive.

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

**NOTE**

The LCD meter 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.

**Position the Decimal  
 Point and Select the  
 Meter Function**

2. Press the left and right configuration buttons simultaneously and release them immediately.
3. To move the decimal point to the desired location, press the left configuration button. Note that the decimal point wraps around.
4. To scroll through the mode options, press the right configuration button repeatedly until the meter displays the desired mode (See Table 2-1).

Table 2-1. LCD Meter Mode Options

Options	Relationship between Input Signal and Digital Display
L in	Linear
LinF	Linear with five-second filter
Srt	Square root
SrtF	Square root with five-second filter
<p><b>Square root function</b> only relates to the digital display. The bar graph output remains linear with the current signal.</p> <p><b>Square root response</b>                      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.</p> <p><b>Filter response</b> operates upon “present input” and “input received in the previous five second interval” in the following manner:  <math>Display = (0.75 \times \text{previous input}) + (0.25 \times \text{present input})</math>                      This relationship is maintained provided that the previous reading minus the present reading is less than 25 percent of full scale.</p>	

# Model 751

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## **Store the Information**

5. Press both configuration buttons simultaneously for two seconds. Note that the meter displays “- -” for approximately 7.5 seconds while the information is being stored.

## **Set the Display Equivalent to a 4 mA Signal**

6. Press the left configuration button for two seconds.
7. 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.
8. To store the information, simultaneously press both configuration buttons for two seconds.

## **Set the Display Equivalent to a 20 mA Signal**

9. Press the right configuration button for two seconds.
10. 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. The sum of the 4 mA point and the span must not exceed 9999.
11. To store the information, simultaneously press both configuration buttons for two seconds. The LCD meter is now configured.

## **Replace the Cover**

12. Make sure the rubber gasket is seated properly, and thread the transparent housing cover onto the LCD meter body.

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# Appendix A Reference Data

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Housing Specifications .....	page A-1
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Analog Meter Specifications .....	page A-4
Dimensional Drawings .....	page A-5
Ordering Information .....	page A-6

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## 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 <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)

# Model 751

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## LCD METER SPECIFICATIONS

### Functional Specifications

#### Input Signal

4–20 mA dc

#### Display

##### 4 mA Point Limits

–999 to 1000

##### 20 mA Point 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

##### 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**

0.5% 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

# Model 751

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## 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

±2% of calibrated span

#### Temperature Effect

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

### Physical Specification

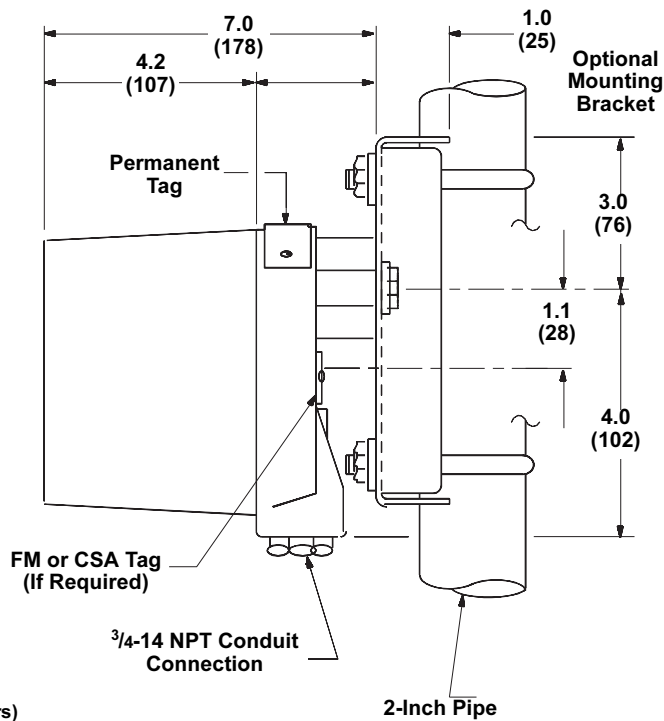
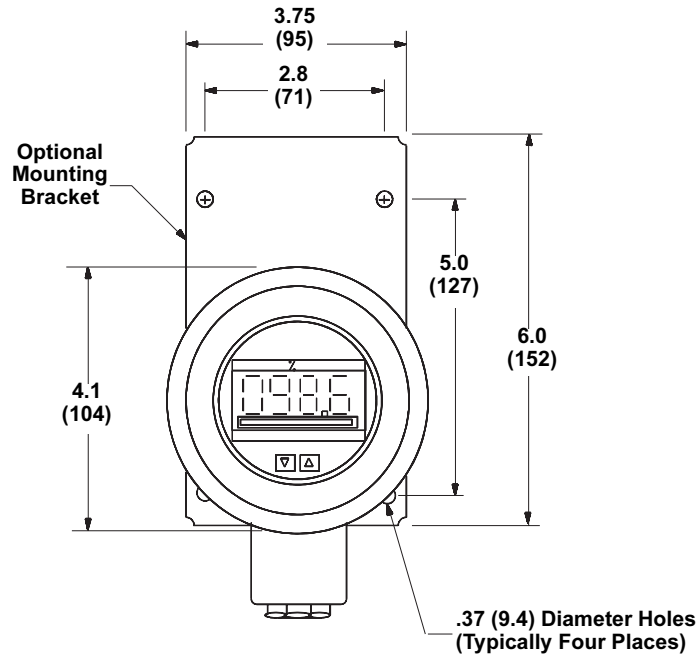
#### Meter Size

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



**DIMENSIONAL DRAWINGS**

**FIGURE 1. Dimensional Drawing**



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

751-0000A01A

# Model 751

## 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	Hazardous Locations Certifications
NA	No Approval Required
E5	FM Explosion-proof approval
I5	FM Intrinsic safety and non-incendive approval
K5	FM Intrinsic safety, non-incendive, and explosion-proof approval combination
E6	CSA Explosion-proof approval
I6	CSA Intrinsic safety approval
C6	CSA Intrinsic safety, non-incendive, and explosion-proof approval combination
E7	SAA Flameproof approval
I7	SAA Intrinsic safety approval
N7	SAA Type n approval
E8	CESI Explosion-proof approval
I8	CESI Intrinsic safety approval
N1	BASEEFA Non-incendive approval
Code	Options
B	Mounting Bracket for Flat Surface or 2-inch Pipe
C	Stainless Steel Reducer ¾- to ½-inch for Conduit Connection (See Figure 1 for reference.)
<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 1/16 inch (1.6 mm). A wired-on tag is available upon request.

## Appendix B Approvals

### HAZARDOUS LOCATIONS CERTIFICATIONS

#### Factory Mutual (FM) Approvals

- E5** Explosion Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition Proof for Class II and III, Division 1, Groups E, F, and G. Indoor and outdoor use, NEMA Type 4X.
- I5** Intrinsically safe for Class I, II, and III, Division 1, Groups A, B, C, D, E, F, and G hazardous locations in accordance with entity requirements and Rosemount drawing 01151-0214. Nonincendive for Class I, Division 2, Groups A, B, C, and D hazardous locations. Outdoor use, NEMA Type 4X.
- K5** Combination of E5 and I5

#### Canadian Standards Association (CSA) Approvals

- 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 and Class III, Division 1. Suitable for Class I, Division 2, Groups A, B, C, and D hazardous locations. CSA enclosure type 4X.
- I6** Intrinsically safe for Class I, Division 1, Groups A, B, C, and D. Intrinsic safety approval only when connected with approved barrier systems, see Rosemount drawing 00751-0068; CSA enclosure type 4X.
- C6** Combination of E6 and I6.

#### British Approvals Service for Electrical Equipment in Flammable Atmospheres (BASEEFA) Type N Approval

- N1** Ex N II T6

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## Standards Association of Australia (SAA) Approvals

- E7** Explosion proof approval  
Ex d IIB+H2 T6  
Class I, Zone 1  
DIP T6  
Class II  
IP 65

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### SPECIAL CONDITIONS

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.

- 
- I7** Intrinsic safety approval  
Ex ia IIC T6 ( $T_{amb} = 40^{\circ}\text{C}$ )  
Ex ia IIC T5 ( $T_{amb} = 70^{\circ}\text{C}$ )  
Class I, Zone 0

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### SPECIAL CONDITIONS

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.

- 
- N7** Type n  
Ex n IIC T6 ( $T_{amb} = 40^{\circ}\text{C}$ )  
Ex n IIC T5 ( $T_{amb} = 70^{\circ}\text{C}$ )  
Class I, Zone 2

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## Centro Elettrotecnico Sperimentale Italiano (CESI) Approvals

- E8** Explosion proof approval  
Certificate No: 95.D.095  
EEx d IIC T6  
IP65
- I8** Intrinsic safety approval  
Certificate No: 82.020X  
EEx ia IIC T6  
IP65

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### SPECIAL CONDITIONS FOR SAFE USE (X)

The power supply units, or the safety barriers, used to supply measuring systems where meter series 751...I8 are inserted, must be certified according to EN 50.014/50.020 standards and must have a short circuit current consistent with the instrument mounted inside the meter.

The temperature class corresponding to the meters series 751...I8 and the equivalent inductance value ( $L_{eq}$ ), to mark on the nameplate are those of the instrument mounted inside the meter; such instrument must be provided with a COMPONENT CERTIFICATE according to EN 50.014/50.020 Stds.

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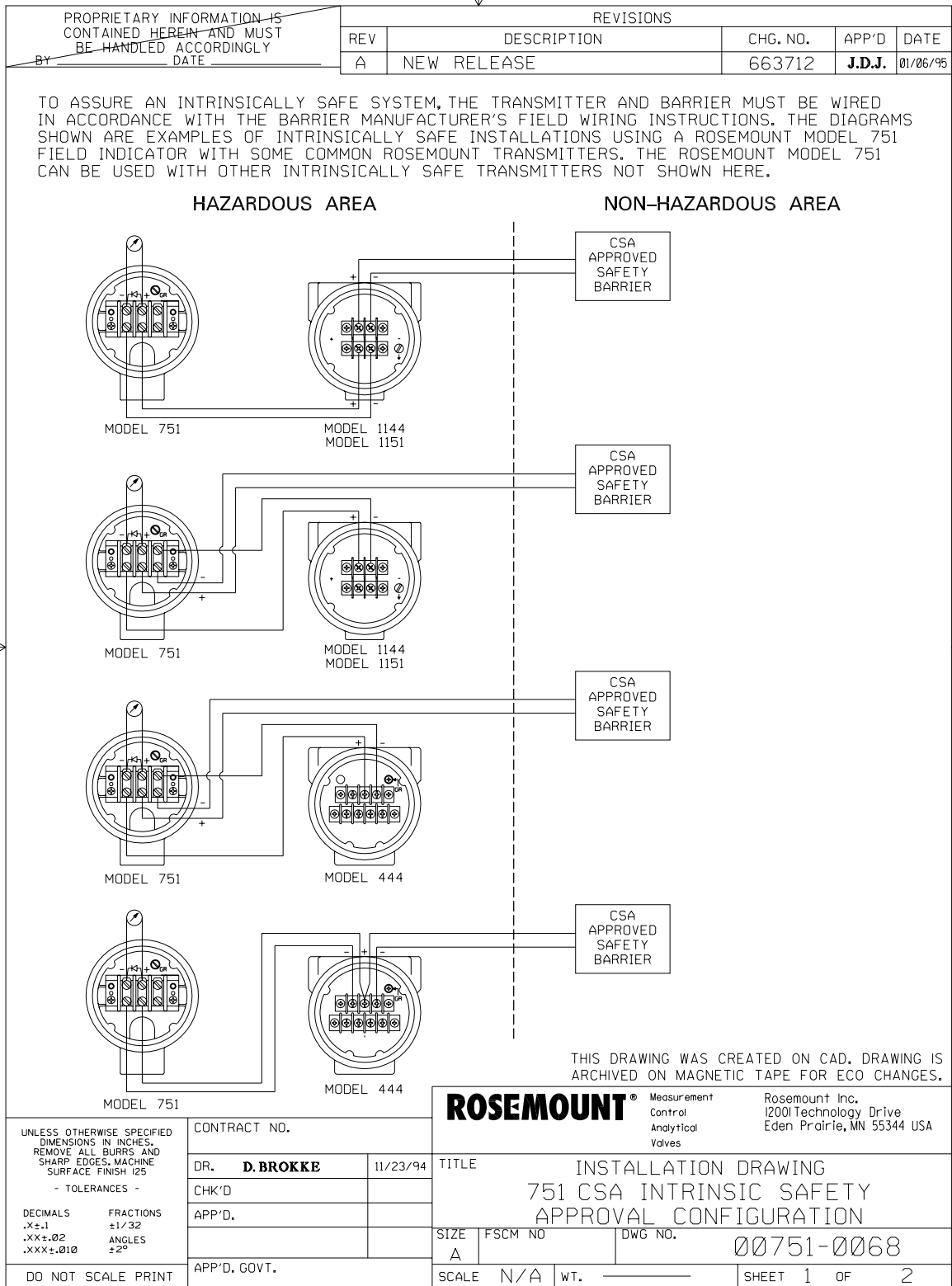
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## Appendix C      Approval Drawings

This section contains the following drawings:

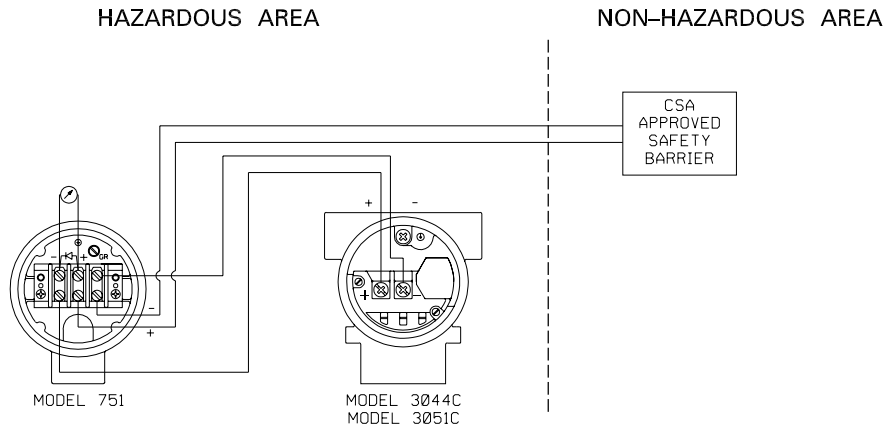
- Rosemount Drawing 00751-0068, Rev. A, 2 sheets: Model 751 CSA Intrinsic Safety Approval Configuration Installation.
- Rosemount Drawing 01151-0214, Rev. V, 6 sheets: Index of Intrinsically Safe Barrier Systems and Entity Parameters for 444, 1135, 1144, 1151, and 3051 Transmitters and 751 Field Signal Indicators.

You must follow the installation guidelines presented by these drawings in order to maintain certified ratings for installed instruments.



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REVISIONS				
REV	DESCRIPTION	CHG. NO.	APP'D	DATE
A		663712		



WARNING - EXPLOSION HAZARD  
 DO NOT DISCONNECT EQUIPMENT UNLESS  
 POWER HAS BEEN SWITCHED OFF OR THE  
 AREA IS KNOWN TO BE NON-HAZARDOUS.

AVERTISSEMENT - RISQUE D'EXPLOSION  
 AVANT DE DÉCONNECTER L'ÉQUIPEMENT,  
 COUPER LE COURANT OU S'ASSURER QUE  
 L'EMPLACEMENT EST DÉSIGNÉ NON-DANGEREUX.

INTRINSICALLY SAFE/SECURITE INTRINSEQUE		APPROVED FOR CLASS I, DIV. 1
DEVICE	PARAMETERS	
CSA APPROVED SAFETY BARRIER	30 V OR LESS 330 OHMS OR MORE 28 V OR LESS 300 OHMS OR MORE 25 V OR LESS 200 OHMS OR MORE 22V OR LESS 180 OHMS OR MORE	GROUPS A, B, C, & D
CSA APPROVED SAFETY BARRIER	30 V OR LESS 150 OHMS OR MORE	GROUPS C, & D

Rosemount Inc.  
 1200 Technology Drive  
 Eden Prairie, MN 55344 USA

THIS DRAWING WAS CREATED ON CAD. DRAWING IS  
 ARCHIVED ON MAGNETIC TAPE FOR ECO CHANGES.

DR. <b>D. BROKKE</b>	SIZE A	FSCM NO	DWG NO. 00751-0068
ISSUED	SCALE N/A	WT.	SHEET 2 OF 2

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REVISIONS					
LTR	DESCRIPTION	ECO NO	REV BY	APPR	DATE
P	Change entity parameters (Fm on re-exam) correct 444 CI	637376	WCR	WCR	9/24/90
R	Add 1151 Low Power Barrier System, Model 751 LI to 0	638105		WCR	11/27/90
T	1135, 1144, 1151 Li TO $\phi$	639039	SVC	WCR	1/23/91
U	1151 Li TO 20; Ci .01 AND .034	651426	SVC	WCR	12/11/92
V	751 Li TO $\phi$	662242		QSE	11/17/94

CONTENTS	
ENTITY APPROVALS	SHEETS 2 THRU 4
APPROVED PARAMETERS	SHEETS 2 THRU 3
CONNECTION DIAGRAMS	SHEET 4

# MASTER

APPROVED SOURCES OF SUPPLY	
MFG	MFG PART NO

Material purchased to this Rosemount Specification Control Drawing shall be required to meet all the specifications of this drawing. Any mention of manufacturer's part number within this drawing is for reference only. This is necessary to ensure design control of Rosemount's end product. It is Rosemount's intent to purchase your standard material whenever possible.

## SPECIFICATION CONTROL DRAWING

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.  TOLERANCES:  DECIMALS    FRACTIONS .X ± .1       ± 1/32 .XX ± .02    ANGLES .XXX ± .010   ± 2°	PREPARED BY: <i>Nancy Nix</i>	DATE: 9/28/90	<b>ROSEMOUNT</b> ® Measurement Control Analytical Valves	
	CHECKED BY: <i>WCR</i>			
	APPROVED BY Q.C.			TITLE INDEX OF INTRINSICALLY SAFE BARRIER SYSTEMS & ENTITY PARAMETERS FOR 444, 1135, 1144, 1151, & 2051 TRANSMITTERS AND 751 FIELD INDICATORS
	APPROVED BY ENG. <i>N.C. Faust</i>	DATE: 9/28/90		
	APPROVED BY PURCH.			
FINAL APPROVAL ES			SIZE CODE IDENT NO    DRAWING NO A                    04274 <b>01151-0214</b>	
			SCALE None    U/M: Each    SHEET 1 OF 1	

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1

ENTITY CONCEPT APPROVALS

The entity concept allows interconnection of intrinsically safe apparatus to associated apparatus not specifically examined in combination as a system. The approved values of maximum open circuit voltage ( $V_{OC}$  or  $V_T$ ) and maximum short circuit current ( $I_{SC}$  or  $I_T$ ) for the associated apparatus must be less than or equal to the maximum safe input voltage ( $V_{MAX}$ ) and input current ( $I_{MAX}$ ) of the intrinsically safe apparatus. In addition, the approved maximum allowable connected capacitance ( $C_A$ ) and inductance ( $L_A$ ) of the associated apparatus must be greater than the maximum unprotected internal capacitance ( $C_I$ ) and inductance ( $L_I$ ) of the intrinsically safe apparatus. The approved entity concept parameters are as follows:

**Model 444**

Class I, Div. 1, Groups A and B

$V_{MAX} = 40V$

$I_{MAX} = 165\text{ mA}$

$C_I = 0.044\mu F$

$L_I = 0$

$V_{OC}$  or  $V_T$  is less than or equal to 40V

$I_{SC}$  or  $I_T$  is less than or equal to 165 mA

$C_A$  is greater than 0.0441F

$L_A$  is greater than 0

Class I, Div. 1, Groups C and D

$V_{MAX} = 40V$

$I_{MAX} = 225\text{ mA}$

$C_I = 0.044\mu F$

$L_I = 0$

$V_{OC}$  or  $V_T$  is less than or equal to 40V

$I_{SC}$  or  $I_T$  is less than or equal to 225 mA

$C_A$  is greater than 0.0441F

$L_A$  is greater than 0

**Model 751**

Class I, Div. 1, Groups A and B

$V_{MAX} = 40V$

$I_{MAX} = 165\text{ mA}$

$C_I = 0$

$L_I = 0$

$V_{OC}$  or  $V_T$  is less than or equal to 40V

$I_{SC}$  or  $I_T$  is less than or equal to 165 mA

$C_A$  is greater than 0

$L_A$  is greater than 0

Class I, Div. 1, Groups C and D

$V_{MAX} = 40V$

$I_{MAX} = 225\text{ mA}$

$C_I = 0$

$L_I = 0$

$V_{OC}$  or  $V_T$  is less than or equal to 40V

$I_{SC}$  or  $I_T$  is less than or equal to 225 mA

$C_A$  is greater than 0

$L_A$  is greater than 0

**MASTER**

<b>Rosemount Inc.</b> MINNEAPOLIS, MINNESOTA		SIZE <b>A</b>	FSCM. NO.	DRAWING NO. <b>01151-0214</b>
DR.		SCALE: NONE	WT.	SHEET <b>2</b> OF <b>6</b>
ISSUE				

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# MASTER

**Model 1151**

Class I, Div. 1, Groups A and B

$V_{MAX} = 40V$   
 $I_{MAX} = 165\text{ mA}$   
 $C_I(1151\text{ Std}) = 0$   
 $C_I(\text{Smart } 1151) = 0.024\mu F$   
 $C_I(1151\text{ Std w/R Option}) = 0.010\mu F$   
 $C_I(1151\text{ Smart w/R\_Option}) = 0.034\mu F$   
 $L_I(1151\text{ Std}) = 0$   
 $L_I(1151\text{ w/R\_Option}) = 20\mu H$

$V_{OC}$  or  $V_T$  is less than or equal to 40V  
 $I_{SC}$  or  $I_T$  is less than or equal to 165 mA  
 $C_A$  is greater than 0  
 $C_A$  is greater than  $0.024\mu F$   
 $C_A$  is greater than  $0.010\mu F$   
 $C_A$  is greater than  $0.034\mu F$   
 $L_A$  is greater than 0  
 $L_A$  is greater than  $20\mu H$

Class I, Div. 1, Groups C and D

$V_{MAX} = 40V$   
 $I_{MAX} = 225\text{ mA}$   
 $C_I(1151\text{ Std}) = 0$   
 $C_I(\text{Smart } 1151) = 0.024\mu F$   
 $C_I(1151\text{ Std w/R Option}) = 0.010\mu F$   
 $C_I(1151\text{ Smart w/R\_Option}) = 0.034\mu F$   
 $L_I(1151\text{ Std}) = 0$   
 $L_I(1151\text{ w/R\_Option}) = 20\mu H$

$V_{OC}$  or  $V_T$  is less than or equal to 40V  
 $I_{SC}$  or  $I_T$  is less than or equal to 225 mA  
 $C_A$  is greater than 0  
 $C_A$  is greater than  $0.024\mu F$   
 $C_A$  is greater than  $0.010\mu F$   
 $C_A$  is greater than  $0.034\mu F$   
 $L_A$  is greater than 0  
 $L_A$  is greater than  $20\mu H$

**Model 2051**

Class I, Div. 1, Groups A and B

$V_{MAX} = 40V$   
 $I_{MAX} = 165\text{ mA}$   
 $C_I = 0.012\mu F$   
 $L_I = 480\mu H$

$V_{OC}$  or  $V_T$  is less than or equal to 40V  
 $I_{SC}$  or  $I_T$  is less than or equal to 165 mA  
 $C_A$  is greater than  $0.012\mu F$   
 $L_A$  is greater than 480IH

Class I, Div. 1, Groups C and D

$V_{MAX} = 40V$   
 $I_{MAX} = 225\text{ mA}$   
 $C_I = 0.012\mu F$   
 $L_I = 480\mu H$

$V_{OC}$  or  $V_T$  is less than or equal to 40V  
 $I_{SC}$  or  $I_T$  is less than or equal to 225 mA  
 $C_A$  is greater than  $0.012\mu F$   
 $L_A$  is greater than 480IH

<b>Rosemount Inc.</b> MINNEAPOLIS, MINNESOTA		SIZE <b>A</b>	FSCM. NO.	DRAWING NO. <b>01151-0214</b>
DR.		SCALE: NONE WT.		SHEET <b>3</b> OF <b>6</b>
ISSUE				

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**Model 1135**

Class I, Div. 1, Groups A and B

$V_{MAX} = 40V$   
 $I_{MAX} = 165\text{ mA}$   
 $C_I = 0.008\mu F$   
 $L_I = 0$

$V_{OC}$  or  $V_T$  is less than or equal to 40V  
 $I_{SC}$  or  $I_T$  is less than or equal to 165 mA  
 $C_A$  is greater than 0.0081F  
 $L_A$  is greater than 0

Class I, Div. 1, Groups C and D

$V_{MAX} = 40V$   
 $I_{MAX} = 225\text{ mA}$   
 $C_I = 0.008\mu F$   
 $L_I = 0$

$V_{OC}$  or  $V_T$  is less than or equal to 40V  
 $I_{SC}$  or  $I_T$  is less than or equal to 225 mA  
 $C_A$  is greater than 0.0081F  
 $L_A$  is greater than 0

**Model 1144**

Class I, Div. 1, Groups A and B

$V_{MAX} = 40V$   
 $I_{MAX} = 165\text{ mA}$   
 $C_I = 0$   
 $L_I = 0$

$V_{OC}$  or  $V_T$  is less than or equal to 40V  
 $I_{SC}$  or  $I_T$  is less than or equal to 165 mA  
 $C_A$  is greater than 0  
 $L_A$  is greater than 0

Class I, Div. 1, Groups C and D

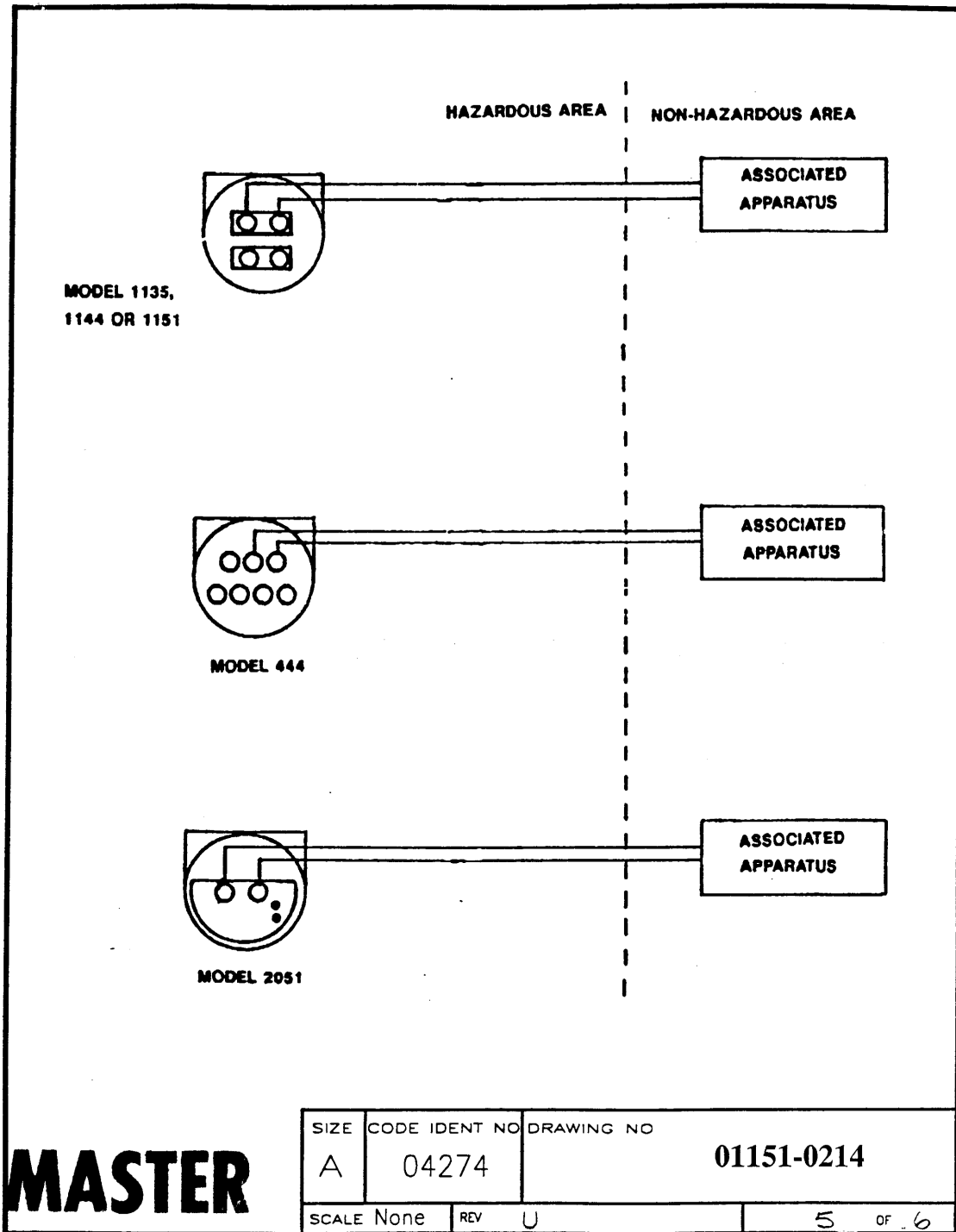
$V_{MAX} = 40V$   
 $I_{MAX} = 225\text{ mA}$   
 $C_I = 0$   
 $L_I = 0$

$V_{OC}$  or  $V_T$  is less than or equal to 40V  
 $I_{SC}$  or  $I_T$  is less than or equal to 225 mA  
 $C_A$  is greater than 0  
 $L_A$  is greater than 0

**MASTER**

<b>Rosemount Inc.</b> MINNEAPOLIS, MINNESOTA		SIZE <b>A</b>	FSCM. NO.	DRAWING NO. <b>01151-0214</b>
DR.		SCALE: NONE	WT.	SHEET <b>4</b> OF <b>6</b>
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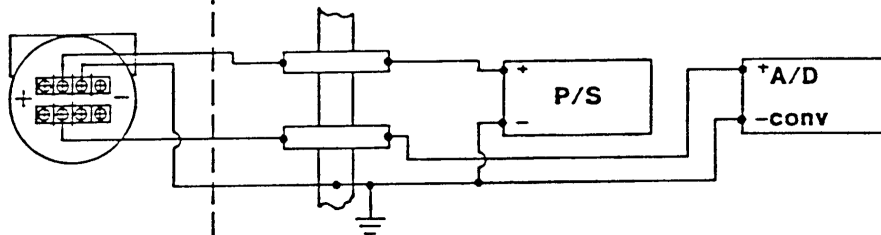


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1151 --- L & M CIRCUIT CONNECTION WITH INTRINSIC SAFETY BARRIERS

HAZARDOUS AREA

NON-HAZARDOUS AREA

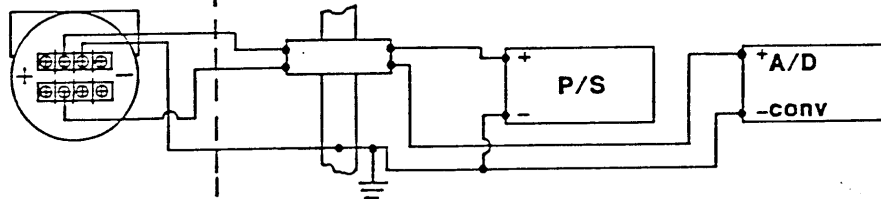


Two Single Channel Barriers

CIRCUIT DIAGRAM 1  
 (ONLY FOR USE WITH BARRIERS APPROVED IN THIS CONFIGURATION)

HAZARDOUS AREA

NON-HAZARDOUS AREA



One Dual Channel Barrier

CIRCUIT DIAGRAM 2

**MASTER**

SIZE	CODE IDENT NO	DRAWING NO
A	04274	01151-0214
SCALE	NONE	REV U
		6 OF 6

Form No. 60120A-2

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# Model 751

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# Reference Manual

00809-0100-4378, Rev BA  
July 2002

# Model 751

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