

Rosemount 751 Field Signal Indicator



Rosemount 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 Emerson Process Management 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 Emerson Process Management Sales Representative.

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Section 1 Introduction

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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.

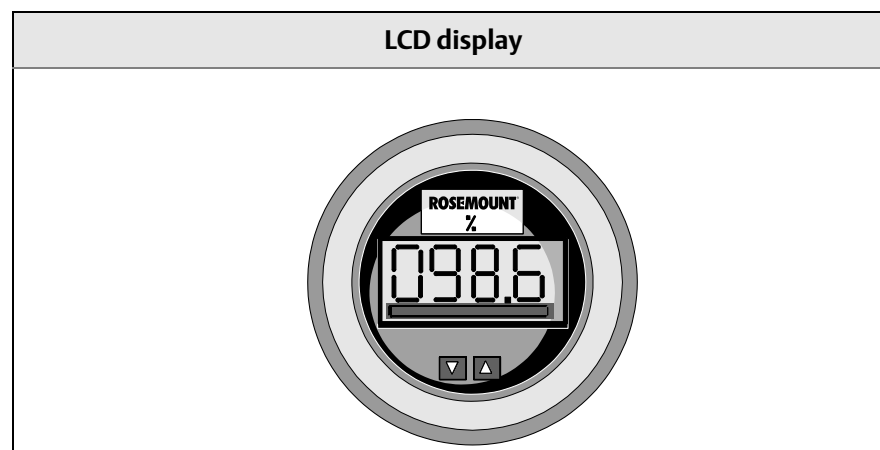
Rosemount 751 Indicators are designed for use in industrial environments where all-weather performance is necessary. These units are vibration- and corrosion-resistant, and explosion-proof or intrinsically safe. An LCD display or analog meter may be ordered to meet specific application requirements.

1.1 LCD display

The LCD display 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 20 mA point of –999 to 9999. The sum of the 4 mA 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 2¹/₄-inch meter face has 1¹/₂-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 display

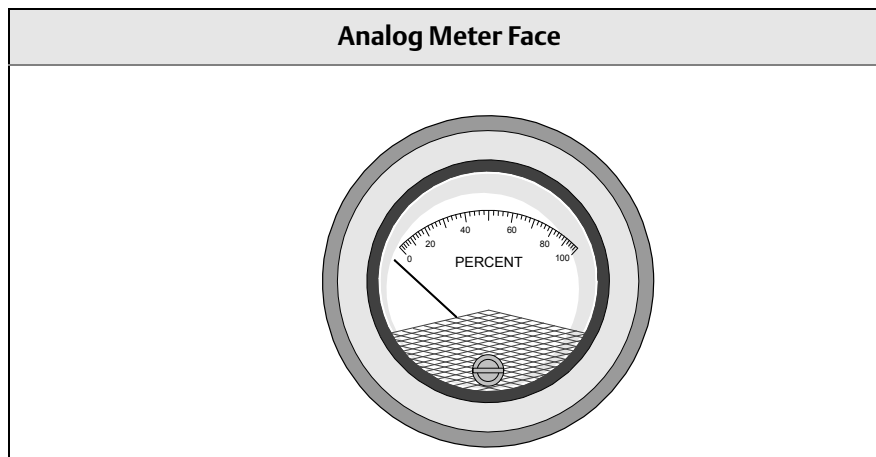


1.2 Analog meter

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 2¹/₄-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° increments within the enclosure for convenient viewing.

Figure 1-2. Analog Meter



1.3 Service support

To expedite the return process outside of the United States, contact the nearest Emerson Process Management representative.

Within the United States, call the Emerson Process Management Instrument and Valves Response Center using the 1-800-654-RSMT (7768) toll-free number. This center, available 24 hours a day, will assist you with any needed information or materials.

The center will ask for product model and serial numbers, and will provide a Return Material Authorization (RMA) number. The center will also ask for the process material to which the product was last exposed.

⚠ CAUTION

Individuals who handle products exposed to a hazardous substance can avoid injury if they are informed of and understand the hazard. If the product being returned was exposed to a hazardous substance as defined by OSHA, a copy of the required Material Safety Data Sheet (MSDS) for each hazardous substance identified must be included with the returned goods.

Emerson Process Management Instrument and Valves Response Center representatives will explain the additional information and procedures necessary to return goods exposed to hazardous substances.

1.4 Product recycling/disposal

Recycling of equipment and packaging should be taken into consideration and disposed of in accordance with local and national legislation/regulations.

Section 2 Installation

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2.1 Assembly

The Rosemount 751 Field Signal Indicator is comprised of the components shown in [Figure 2-1](#). The housing may contain an analog or LCD display. 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. Rosemount 751 Exploded View

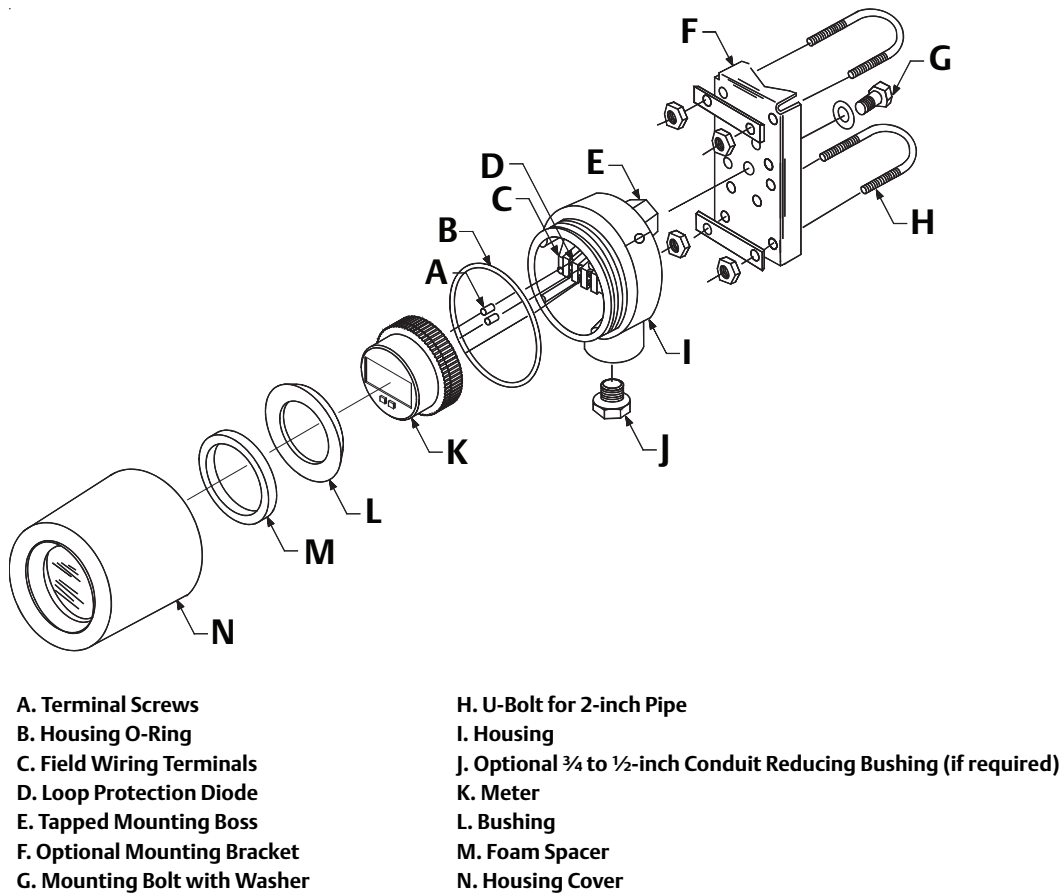
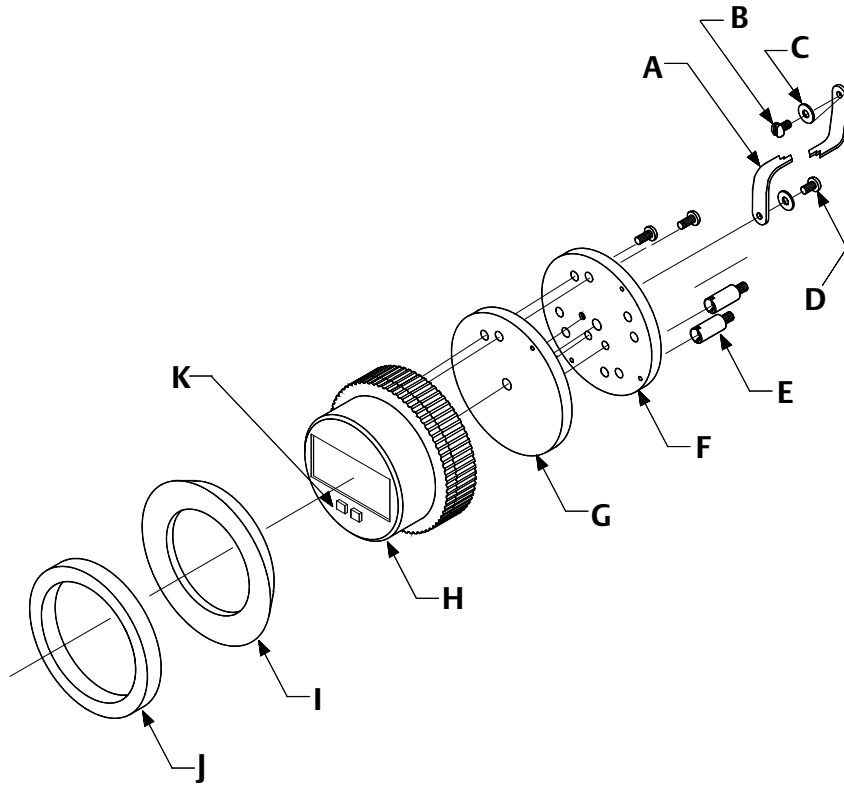


Figure 2-2. LCD display exploded view



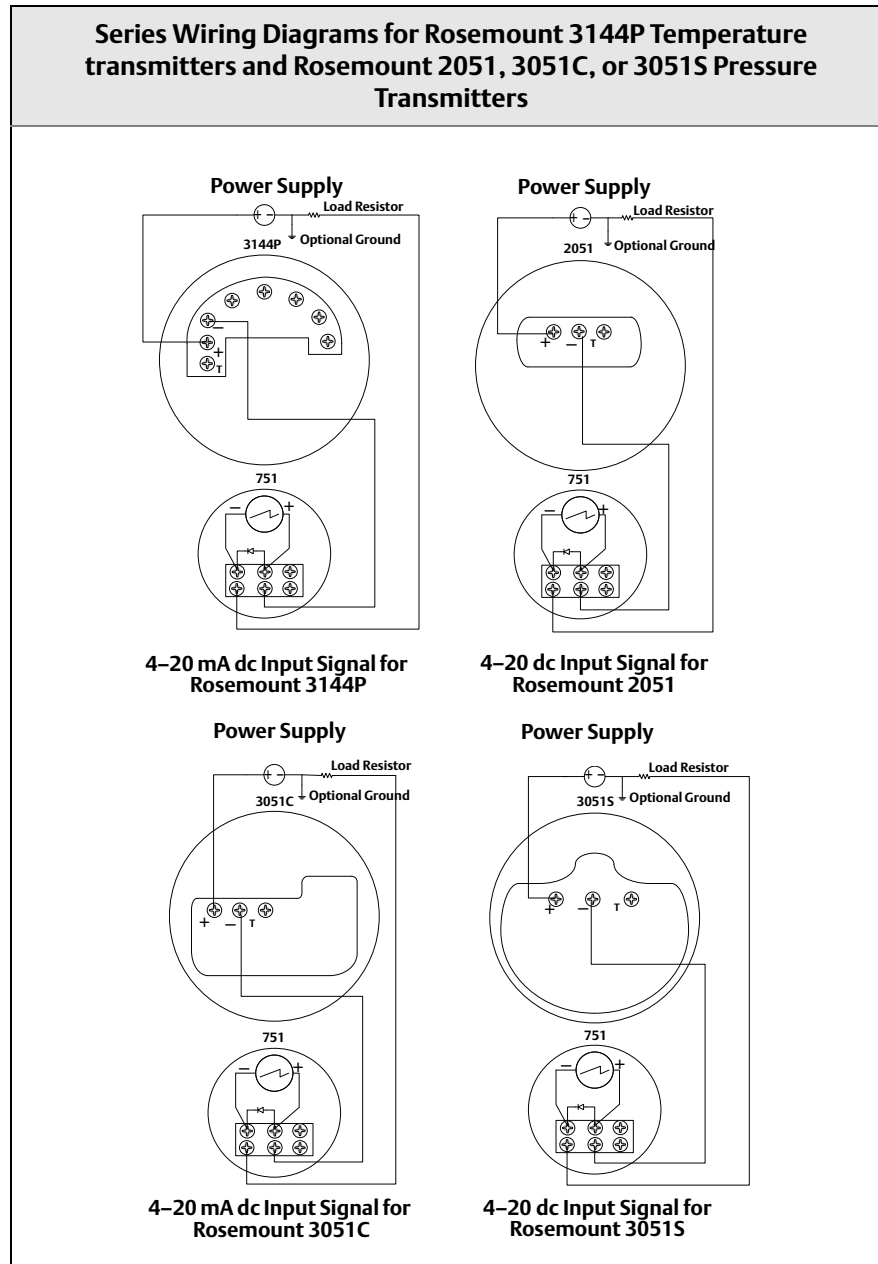
- A. Retaining Straps
- B. Mounting Screw into Housing
- C. Washer for Retaining Strap
- D. Mounting Screws into Mounting Plate
- E. Terminal Screws (2)
- F. Mounting Plate
- G. Spacer Plate
- H. LCD Display
- I. Bushing
- J. Foam Spacer
- K. Configuration Buttons

2.2 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 751 indicator be wired in a series configuration when the 4-20 mA transmitter does not contain a test terminal. The 751 is designed so the analog or LCD display can be removed from the housing without impacting the integrity of the 4-20 mA loop. Removal of the entire 751 device from the series configuration will disrupt the loop.

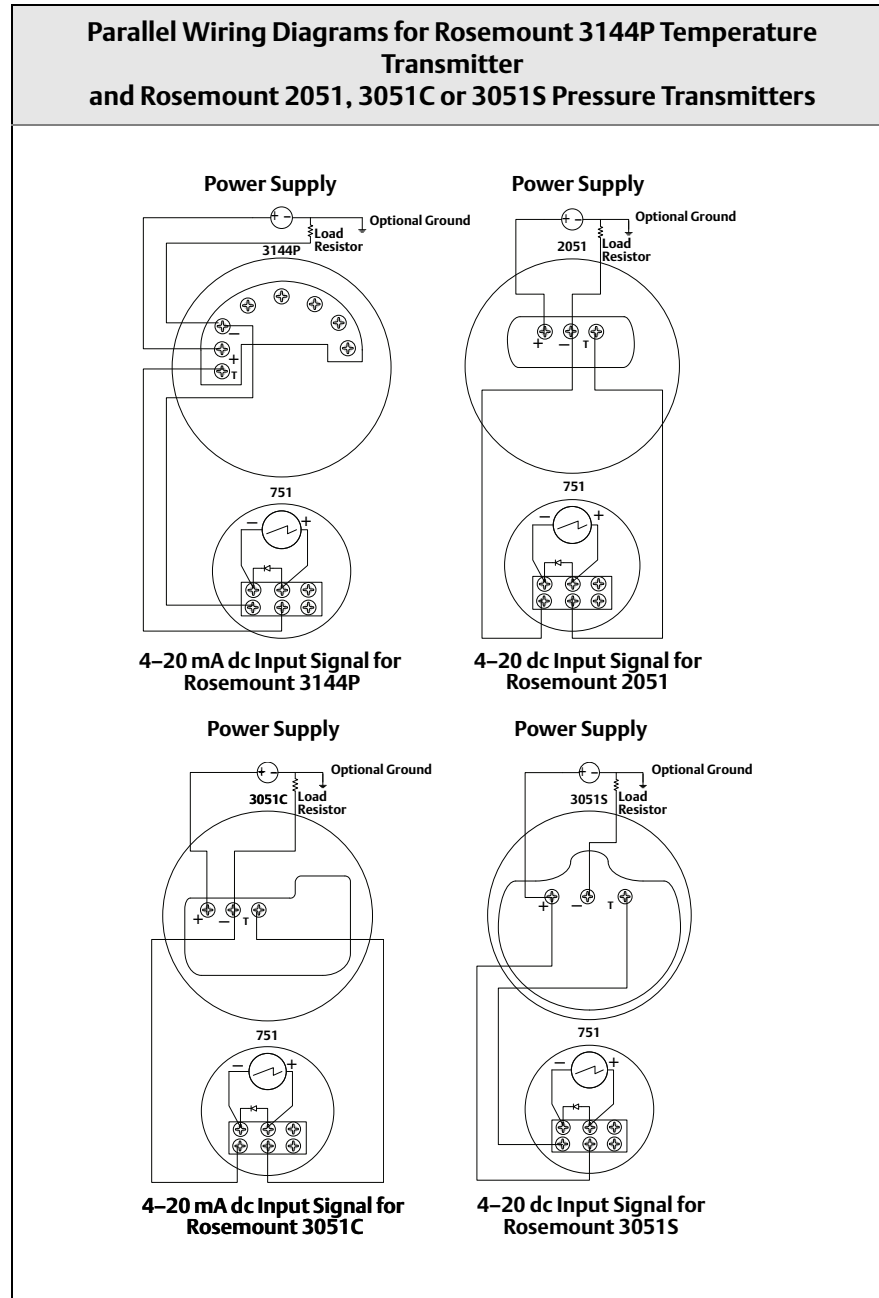
Figure 2-3. Rosemount 751 Series Wiring Diagrams



It is recommended that the 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 2-4. Rosemount 751 Parallel Wiring Diagrams



2.3 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.

2.3.1 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 display body.

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.

2.3.2 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 that 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 2-1](#)).

Table 2-1. LCD display 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>Square root function only relates to the digital display. The bar graph output remains linear with the current signal.</p> <p>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.</p> <p>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.</p> | |

2.3.3 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.

2.3.4 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.

2.3.5 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 is now configured.

2.3.6 Replace the cover

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

Appendix A Reference data

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A.1 **Housing specifications**

A.1.1 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 kg (5 lb)

A.2 LCD display specifications

A.2.1 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

–40 to 70 °C (–40 to 158 °F)⁽¹⁾

Humidity limitation

0 to 95% non-condensing relative humidity

Update period

750 ms

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

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

A.2.2 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 display 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

A.2.3 Physical specification

Meter size

2¹/₄-inch diameter face with four ¹/₂-inch high characters

A.3 Analog meter specifications

A.3.1 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

A.3.2 Performance specifications

Indication accuracy

±2% of calibrated span

Temperature effect

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

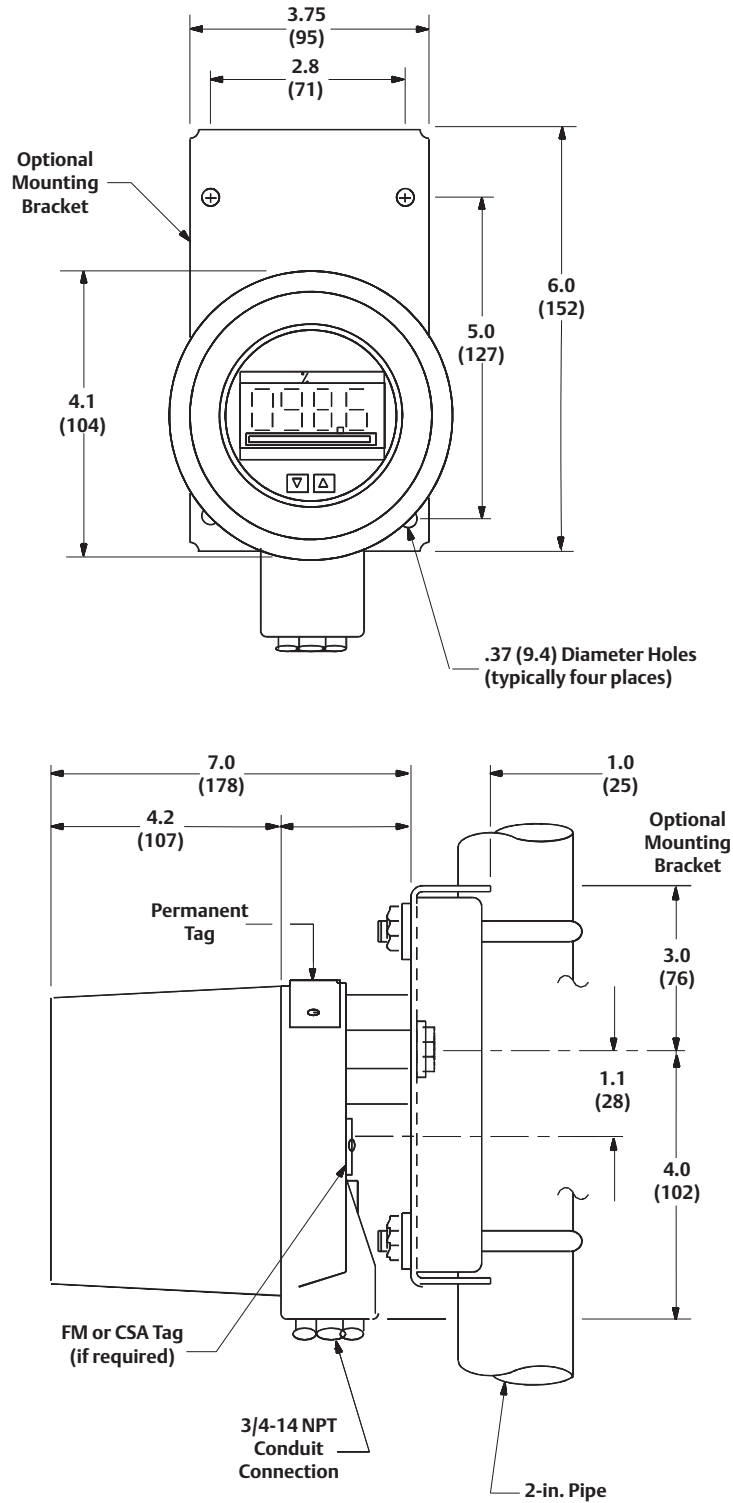
A.3.3 Physical specification

Meter size

2¹/₄-inch diameter face with 2-inch long scale

A.4 Dimensional drawings

Figure A-1. Dimensional Drawing



Dimensions are in inches (millimeters).

A.5 Ordering information

| Model | Product description |
|---|--|
| 751 | Remote Signal Indicator |
| Input signal | |
| A | 4–20 mA dc |
| B | 10–50 mA dc (Not Available with LCD display) |
| C | 40–200 mV dc (Not Available with LCD display) |
| Meter scale | |
| M1 | Linear Analog Meter, 0–100% Scale |
| M2 | Square Root Analog Meter, 0–100% Flow |
| M6 | Square Root Analog Meter, 0–10 $\sqrt{\quad}$ |
| M4 ⁽¹⁾ | Linear LCD display, 0–100% Scale |
| M7 ⁽¹⁾ | Special Scale LCD display (specify range, mode, and engineering units) |
| M8 ⁽¹⁾ | Square Root LCD display, 0–100% Flow |
| M9 ⁽¹⁾ | Square Root LCD display, 0–10 $\sqrt{\quad}$ |
| Product certificates | |
| 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 |
| Options | |
| Mounting bracket | |
| B | Mounting Bracket for Flat Surface or 2-inch Pipe |
| Reducer | |
| C | Stainless Steel Reducer $\frac{3}{4}$ - to $\frac{1}{2}$ -in. 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 $\frac{1}{16}$ in. (1.6 mm). A wired-on tag is available upon request.

Appendix B Product Certifications

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B.1 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.rosemount.com.

B.2 Ordinary location certification for FM approvals

As standard, the transmitter has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by FM Approvals, a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

B.2.1 North America

- E5** FM Explosionproof
Certificate: OT2H8.AE
Standards Used: FM Class 3600: 1989, FM Class 3615: 1989
Markings: **XP** CL I, DIV 1, GP B, C, D; **DIP** CL II/III, DIV 1, GP E, F, G; Type 4X

- I5** FM Intrinsic Safety and Nonincendive
Certificate: OT9H2AX
Standards Used: 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
Markings: **IS** CL I / II / III, DIV 1, GP A, B, C, D, E, F, G; T5(-60 °C ≤ T_a ≤ +60 °C); **IS** CL I, Zone 0, AEx ia IIC T5(-60 °C ≤ T_a ≤ +60 °C); **NI** CL I, DIV 2, GP A, B, C, D; T5(-60 °C ≤ T_a ≤ +60 °C); when installed per Rosemount drawing 00751-0074; Type 4X

- E6** CSA Explosionproof
Certificate: 1718395
Standards Used: 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: **Explosionproof** for CL I, GP C, D; CL I, GP E, F, G; CL III; Suitable for **CL I DIV 2**, GP A, B, C, D; Type 4X

- I6** CSA Intrinsic Safety
Certificate: 1718395
Standards Used: 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 Groups A, B, C, D; when installed per Rosemount drawing 00751-0068; Type 4X

B.2.2 Europe

E8 ATEX Flameproof

Certificate: DEKRA11ATEX0240X

Standards Used: EN 60079-0:2009, EN 60079-1:2007

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):

The original manufacturer shall be contacted for information on the dimensions of the flameproof joints.

I8 ATEX Intrinsic Safety

Certificate: Baseefa03ATEX0448X

Standards Used: EN 60079-0:2009, EN 60079-11:2007

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):

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.

N1 ATEX Type n

Certificate: Baseefa03ATEX0454

Standards Used: EN 60079-0:2009; EN 60079-15:2010

Markings: Ⓢ II 3 G Ex nA IIC T6 Gc; (-40 °C ≤ T_a ≤ +70 °C)

B.2.3 International

E7 IECEx Flameproof

Certificate: IECEx DEK 11.0082X

Standards Used: 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):

The original manufacturer shall be contacted for information on the dimensions of the flameproof joints.

I7 IECEx Intrinsic Safety

Certificate: IECEx BAS 11.0064X

Standards Used: IEC 60079-0: 2011; IEC 60079-11: 2011

Markings: 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):

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

Certificate: NCC 12.1204X

Standards Used: ABNT NBR IEC 60079-0:2011, ABNT NBR IEC 60079-2011

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):

The manufacturer should be contacted for information on the dimensions of the flameproof joints.

I2 INMETRO Intrinsic Safety

Certificate: NCC 12.1163X

Standards Used: ABNT NBR IEC 60079-0:2011, ABNT NBR IEC 60079-11:2009, ABNT NBR IEC 60079-26:2009

Markings: 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):

The enclosure may be made of aluminum alloy; however, care should be taken to protect it from impact or abrasion if located in a Zone 0 environment.

China

E3 China Flameproof

Certificate: GYJ12.1034X

Standards Used: 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 ≤ T_a ≤ +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)."
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."

Combinations

K2 Combination of E2 and I2

K5 Combination of E5 and I5

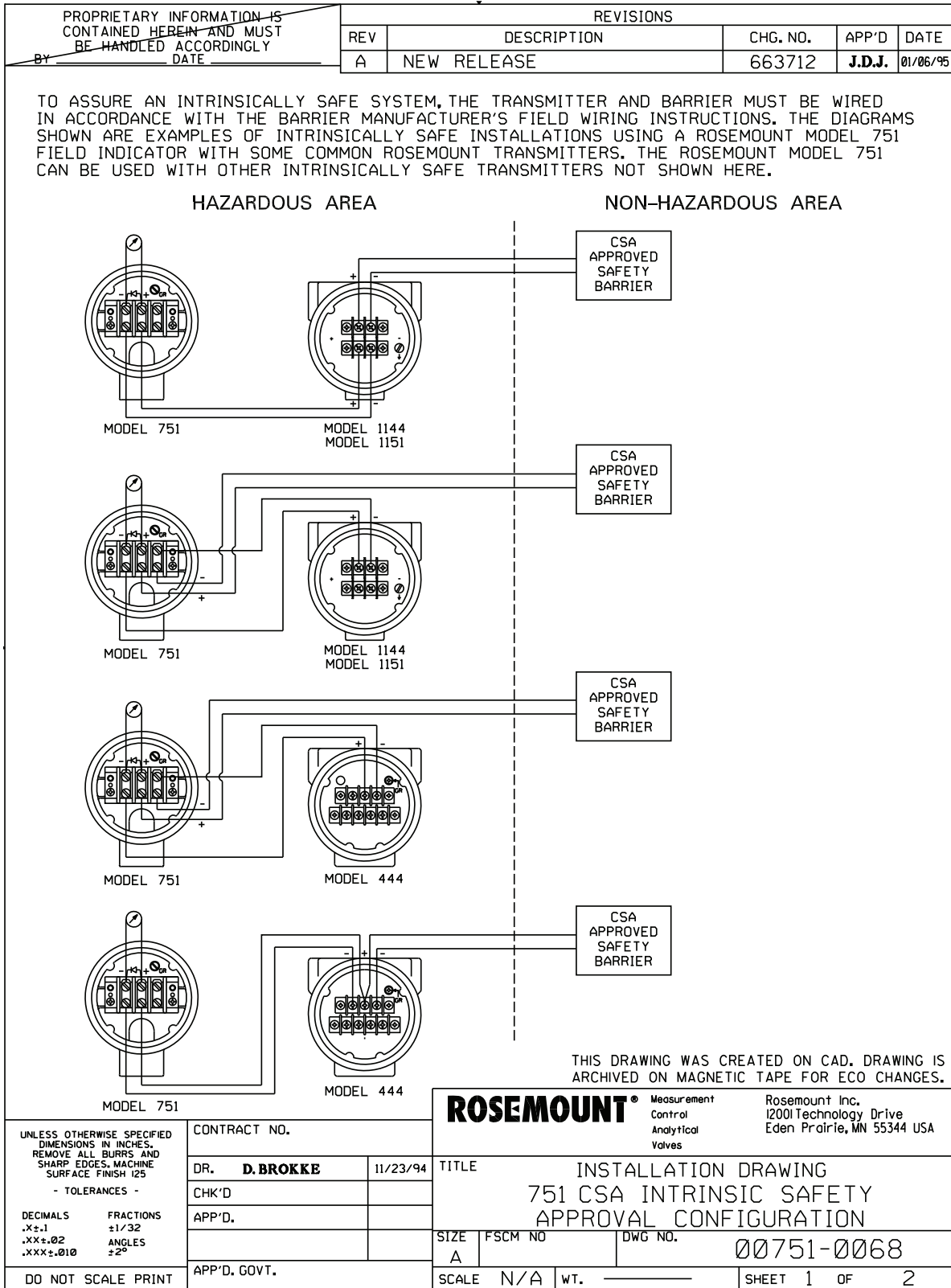
C6 Combination of E6 and I6

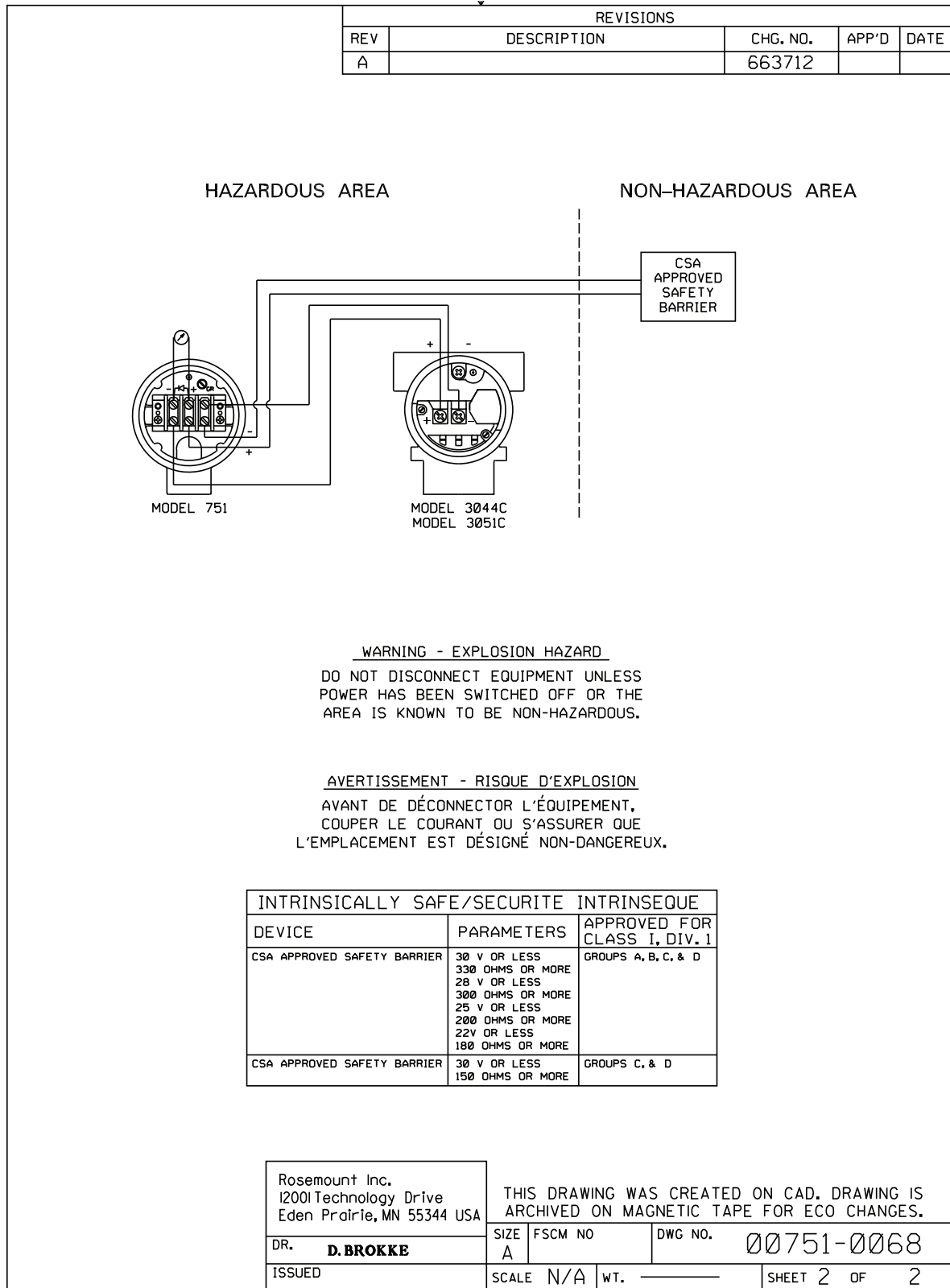
Appendix C Approval drawings

This section contains the following drawings:

- Rosemount Drawing 00751-0068, Rev. A, 2 sheets: Rosemount 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.





| REVISIONS | | | | | |
|-----------|---|--------|--------|------|----------|
| LTR | DESCRIPTION | ECO NO | REV BY | APPR | DATE |
| P | Change entity parameters (Fm on re-exam) correct 444 CI | 637376 | WCR | WCR | 9/28/90 |
| R | Add 1151 Low Power Barrier System, Model 751 LI to 0 | 638105 | | WCR | 4/27/90 |
| T | 1135, 1144, 1151 LI TO ϕ | 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 ϕ | 662242 | | QSE | 4/17/94 |

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| 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: <i>9/28/90</i> | ROSEMOUNT ® 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>W.C. Karnutt</i> | DATE: <i>4/20/90</i> | SIZE CODE IDENT NO DRAWING NO A 04274 01151-0214 |
| | APPROVED BY PURCH. | | SCALE None U/M: Each SHEET 1 OF 1 |
| FINAL APPROVAL ES | | | |

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 0.044IF
 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 0.044IF
 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

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Model and 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 $480\mu H$

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 $480\mu H$

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Model 1135

Class I, Div. 1, Groups A and B

$$V_{MAX} = 40V$$

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

$$C_I = 0.008\mu F$$

$$L_I = 0$$

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 165 mA

C_A is greater than 0.0081F

L_A is greater than 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

$$V_{MAX} = 40V$$

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

$$C_I = 0$$

$$L_I = 0$$

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 165 mA

C_A is greater than 0

L_A is greater than 0

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

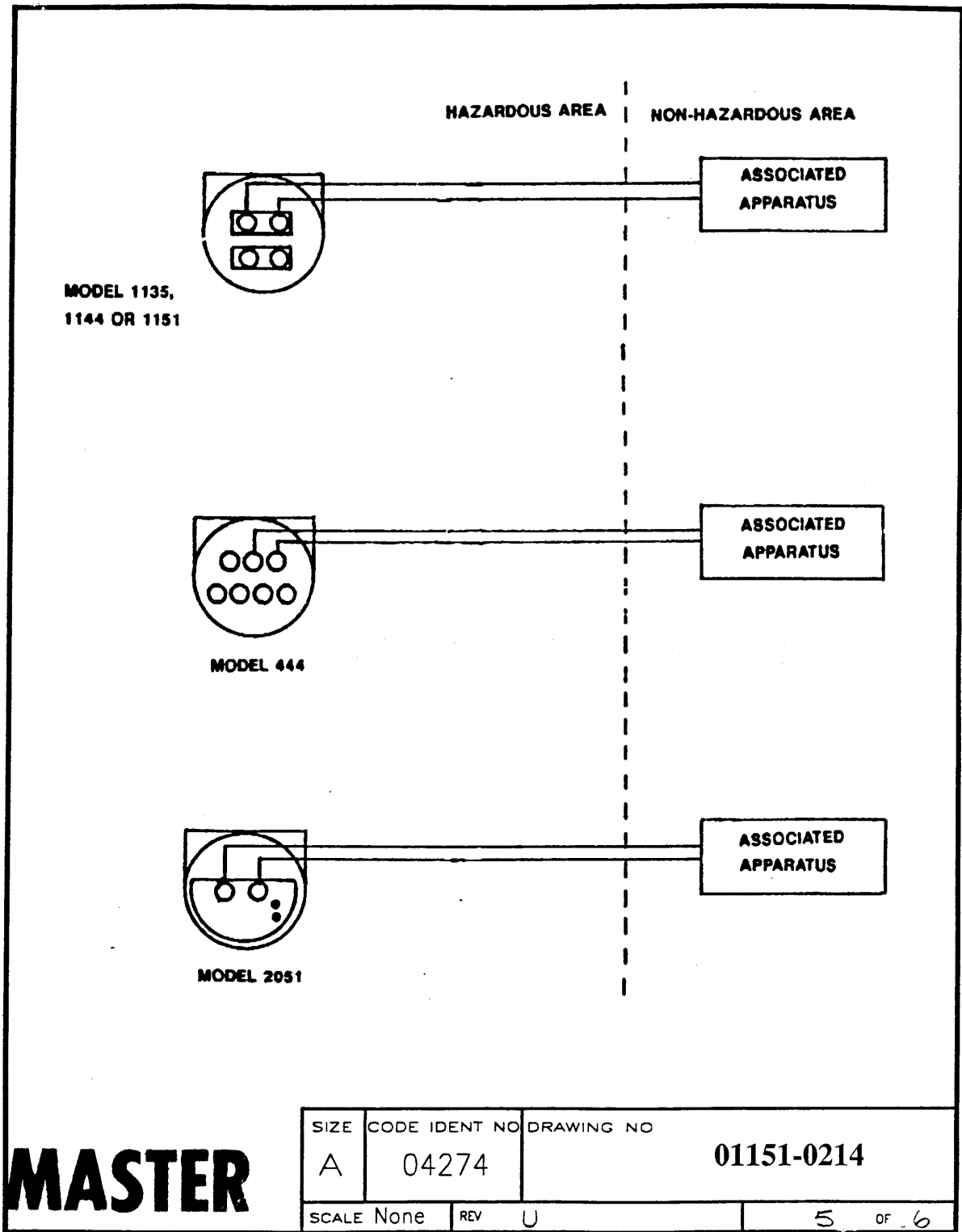
I_{SC} or I_T is less than or equal to 225 mA

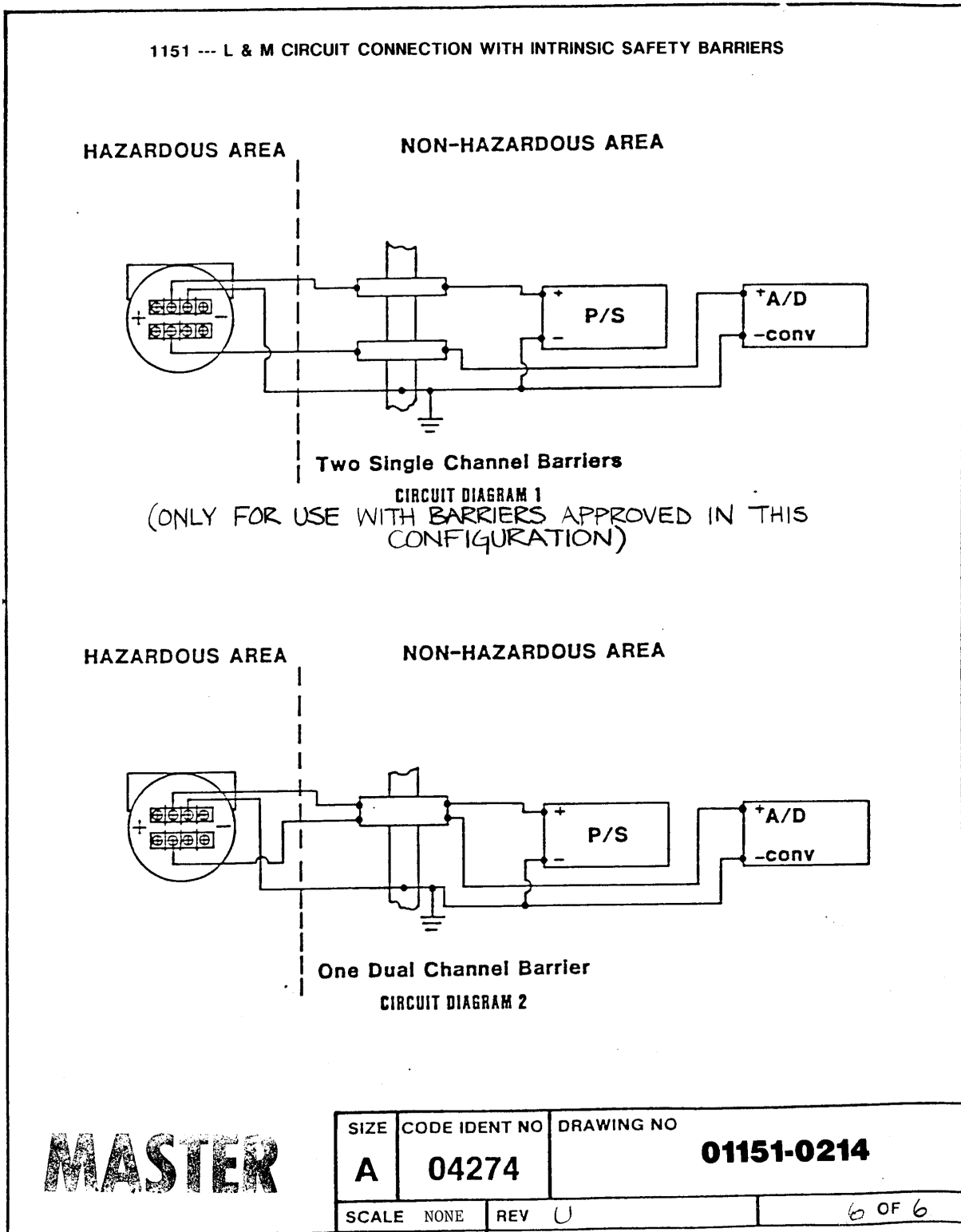
C_A is greater than 0

L_A is greater than 0


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|---|--|------------------|-----------|----------------------------------|
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C.1 Declaration of conformity

| | |
|---|---|
| ROSEMOUNT | CE |
| EC Declaration of Conformity No: RMD 1012 Rev. E | |
| We, | |
| Rosemount Inc. 8200 Market Boulevard Chanhassen, MN 55317-9685 USA | |
| declare under our sole responsibility that the product, | |
| Model 751 Field Signal Indicator | |
| manufactured by, | |
| Rosemount Inc. 12001 Technology Drive Eden Prairie, MN 55344-3695 USA | <i>and</i> 8200 Market Boulevard Chanhassen, MN 55317-9687 USA |
| to which this declaration relates, is in conformity with the provisions of the European Community 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 Community notified body certification, as shown in the attached schedule. | |
|  _____ (signature) | _____ Vice President, Quality (function- printed) |
| _____ Timothy J. Layer (name-printed) | _____ March 1, 2012 (date of issue) |

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Schedule

EC Declaration of Conformity RMD 1012 Rev. E



EMC Directive (2004/108/EC)

Harmonized Standards: EN 61326-1:2006

ATEX Directive (94/9/EC)

Baseefa03ATEX0448X Intrinsic Safety

Equipment Group II Category 1 G; Ex ia IIC T5 or T6 Ga,
T5(-60°C ≤ Ta ≤ +80°C), T6 (-60°C ≤ Ta ≤ +40°C);

Harmonized Standards Used:
EN60079-0:2009; EN60079-11:2007

Baseefa03ATEX0454X Type n

Equipment Group II Category 3 G; Ex nA IIC Gc T6 (-40°C ≤ Ta ≤ +70°C);

Harmonized Standards Used:
EN60079-0:2009; EN60079-15:2010

DEKRA11ATEX0240X Flameproof


Equipment Group II Category 2 G; Ex d IIC T5 or T6 Gb,
T5(-20°C ≤ Ta ≤ +70°C), T6(-20°C ≤ Ta ≤ +40°C)

Harmonized Standards Used:
EN60079-0:2009; EN60079-1:2007



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Schedule



EC Declaration of Conformity RMD 1012 Rev. E

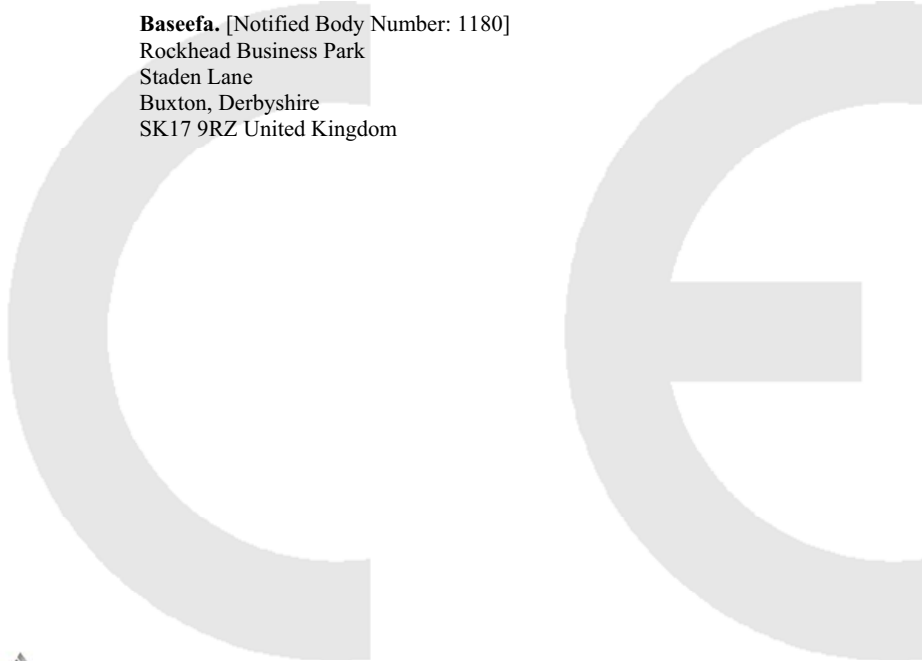
ATEX Notified Bodies for EC Type Examination Certificate


DEKRA Certification B.V.
[Notified Body Number: 0344]
Utrechtseweg 310, 6812 AR
Arnhem, The Netherlands

Baseefa. [Notified Body Number: 1180]
Rockhead Business Park
Staden Lane
Buxton, Derbyshire
SK17 9RZ United Kingdom

ATEX Notified Body for Quality Assurance

Baseefa. [Notified Body Number: 1180]
Rockhead Business Park
Staden Lane
Buxton, Derbyshire
SK17 9RZ United Kingdom





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