Rosemount[™] 148 Temperature Transmitter





Safety Messages

NOTICE

This guide provides basic guidelines for installing the Rosemount[™] 148 Temperature Transmmitter. It does not provide instructions for detailed configuration, diagnostics, maintenance, service, troubleshooting, or installations. Refer to the Rosemount 148 Temperature Transmitter Reference Manual for more instruction. The manual and this guide are also available electronically at Emerson.com/Rosemount.

WARNING

Explosions

Explosions could result in death or serious injury.

Installation of device in an explosive environment must be in accordance with appropriate local, national, and international standards, codes, and practices.

Review the Hazardous Locations Certifications for any restricions associated with a safe installation

A WARNING

Process leaks

Process leaks could result in death or serious injury.

Install and tighten thermowells or sensors before applying pressure.

Do not remove the thermowell while in operation.

WARNING

Electrical shock

Electrical shock could cause death or serious injury.

Avoid contact with the leads and terminals. High voltage that may be present on leads can cause electrical shock.

▲ WARNING

Conduit/cable entries

Unless marked, the conduit/cable entries in the transmitter housing use a $\frac{1}{2}$ -14 NPT thread form. Entries marked "M20" are M20 X 1.5 thread form. On devices with multiple conduit entries, all entries have the same thread form.

Only use plugs, adapters, glands, or conduit with a compatible thread form when closing these entries.

When installing in a hazardous location, use only appropriately listed or Ex certified plugs, glands, or adapters in cable/conduit entries.

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1 Software installation

Procedure

- 1. Place the Rosemount[™] 148 PC Programmer CD_ROM into the drive.
- 2. Run setup.exe from Windows[™] XP, 7, 8, or 10.
- 3. When first using the software, configure the appropriate COM ports by selecting **Port Settings** from the Communicate menu.
- 4. Install MACTek® Modem drivers completely before beginning bench configuration on the Rosemount 148 system.

Note

The software defaults to the first available COM port.

2 Configuration

2.1 Configure the transmitter

You must configure the transmitter for certain basic variables to operate. Manufacturers pre-configure the transmitters in the factory to order specifications or factory defaults.

You may need to configure if the transmitter has not been configured or if the configuration variables need revision. To configure, do one of the following:

- Order factory-configuration from Emerson Automation Solutions.
- Use the Rosemount 148 PC Programming interface in a bench configuration setting.

The Rosemount[™] 148 PC Programming Kit includes configuration software and a communication modern.

Prerequisites

The device will need an external power supply of 12–42.4 Vdc.

Procedure

- 1. Hook up the transmitter and a load resistor (250–1100 ohms) wired in series with the power supply.
- 2. Attach the modem in parallel with the load resistor and connect it to the PC.

2.2 Verify configuration

If the transmitter has a sensor connected (either a test sensor or actual installation hardware), you can check the configuration with the **Information** tab on the Rosemount[™] 148 PC Programmer Interface.

Procedure

- 1. Select **Refresh** to update the status and confirm that the transmitter has been configured correctly.
- 2. If there are any problems, refer to the Rosemount 148 Temperature Transmitter Reference Manual for troubleshooting suggestions.

3 Mount the transmitter

3.1 Head mount transmitter with DIN plate style sensor

This type of installation is typical in Europe and Asia Pacific.

Procedure

- 1. Attach the thermowell to the pipe or process container wall.
- 2. Install and tighten thermowells before applying process pressure.
- 3. Assemble the transmitter to the sensor.
 - a) Push the transmitter mounting screws through the sensor mounting plate.
 - Insert the snap rings (optional) into the transmitter mounting screw groove.
- 4. Wire the sensor to the transmitter.
- 5. Insert the transmitter-sensor assembly into the connection head.
 - a) Thread the transmitter mounting screw into the connection head mounting holes.
 - b) Assemble the extension to the connection head.
 - c) Insert the assembly into the thermowell.
- 6. Slip the shielded cable though the cable gland.
- 7. Attach a cable gland into the shielded cable.
- Insert the shielded cable leads into the connection head through the cable entry.
- 9. Connect and tighten the cable gland.
- Connect the shielded power cable leads to the transmitter power terminals.

Avoid contact with sensor leads and sensor connections.

11. Install and tighten the connection head cover.

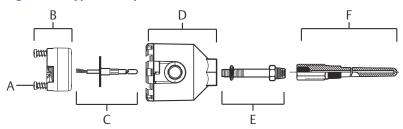
▲ WARNING

Explosions

Make sure enclosure covers are fully engaged to meet explosionproof requirements.

Example

Figure 3-1: Typical European and Asia Pacific Installation



- A. Transmitter mounting screws
- B. Rosemount[™] 148 Transmitter
- C. Integral mount sensor with flying leads
- D. Connection head
- F. Extension
- F. Thermowell

3.2 Head mount transmitter with threaded sensor

This type of installation is typical in North and South America.

Procedure

- 1. Attach the thermowell to the pipe or process container wall.
- 2. Install and tighten the thermowell before applying process pressure.
- 3. Attach necessary extension nipples and adapters to the thermowell.
- 4. Seal the nipple and adapter threads with silicone tape.
- 5. Screw the sensor into the thermowell.
- 6. Install drain seals if required for severe environments or to satisfy code requirements.
- Pull the sensor wiring leads through the universal head and transmitter.
- 8. Mount the transmitter in the universal head by threading the transmitter mounting screws into the universal head mounting holes.
- 9. Mount the transmitter-sensor assembly into the thermowell.
- 10. Seal adapter threads with silicone tape.
- Install conduit for field wiring to the conduit entry of the universal head.
- 12. Seal conduit threads with silicone tape.

13. Pull the field wiring leads through the conduit into the universal head.

- 14. Attach the sensor and power leads to the transmitter. Avoid contact with other terminals.
- 15. Install and tighten the universal head cover.

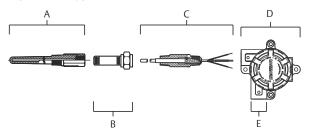
WARNING

Explosions

Fully engage enclosure covers to meet explosion-proof requirements.

Example

Figure 3-2: Typical North and South American Installation

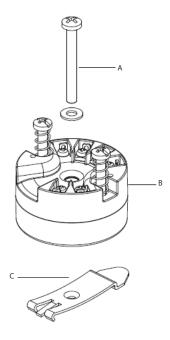


- A. Threaded thermowell
- B. Standard extension
- C. Threaded style sensor
- D. Universal head
- E. Conduit entry

3.3 Mount the the transmitter to a DIN rail

Assemble the appropriate rail mounting kit (part number 00148-1601-0001) to the transmitter as shown.

Figure 3-3: Mounting to DIN Rail



- A. Mounting hardware
- B. Transmitter
- C. Rail clip

3.4 Rail mount transmitter with remote mount sensor

The least complicated assembly uses:

- Remote mounted transmitter
- Integral mount sensor with terminal block
- · Integral style connection head
- Standard extension
- Threaded thermowell

Refer to the Metric Sensor Product Data Sheet for complete sensor and mounting accessory information.

3.5 Rail mount transmitter with threaded sensor

The least complicated assembly uses:

- Threaded sensor with flying heads
- Threaded sensor connection head
- Union and nipple extension assembly
- Threaded thermowell

Refer to Rosemount™ Volume 1 Temperature Sensors and Accessories Product Data Sheet for complete sensor and mounting accessory information.

4 Wire the transmitter

Diagrams and power

- Wiring diagrams are located on the top label of the transmitter.
- An external power supply is required to operate the transmitter.
- The power required across the transmitter power terminals is 12 to 42.4
 Vdc; the power terminals are rated to 42.4

A CAUTION

Transmitter damage

To prevent damaging the transmitter, do not allow terminal voltage to drop below 12.0 Vdc when changing the configuration parameters.

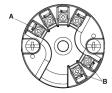
4.1 Power the transmitter

Procedure

- 1. Connect the positive power lead to the "+" terminal.
- 2. Connect the negative power lead to the "-" terminal.
- 3. Tighten the terminal screws.
- 4. Apply power (12–42 Vdc).

Example

Figure 4-1: Power, Communication, and Sensor Terminals



- A. Sensor terminals
- B. Power/communication terminals

4.2 Ground the transmitter

Ungrounded thermocouple, mV, and RTD /Ohm inputs

Each process installation has different requirements for grounding. Use the grounding options recommended by the facility for the specific sensor type, or begin with grounding Option 1 (the most common).

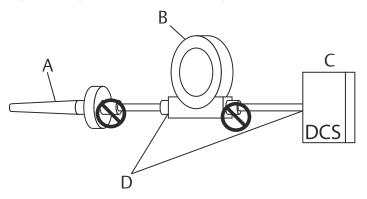
4.2.1 Ground the transmitter: Option 1

Use this method for grounded housing.

Procedure

- 1. Connect sensor wiring shield to the transmitter housing.
- 2. Ensure the sensor shield is electrically isolated from surrounding fixtures that may be grounded.
- 3. Ground signal wiring shield at the power supply end.

Figure 4-2: Option 1L Grounded Housing



- A. Sensor wires
- B. Transmitters
- C. 4-20 mA loop
- D. Shield ground point

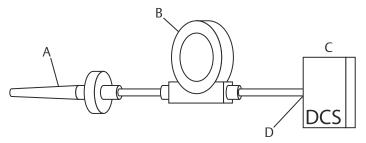
4.2.2 Ground the transmitter: Option 2

Use this method for grounded housing.

Procedure

- 1. Connect signal wiring shield to the sensor wiring shield.
- 2. Ensure the two shields are tied together and electrically isolated from the transmitter housing.
- 3. Ground shield at the power supply end only.
- 4. Ensure the sensor shield is electrically isolated from the surrounding grounded fixtures.

Figure 4-3: Option 2 Grounded Housing



- A. Sensor wires
- B. Transmitters
- C. 4-20 mA loop
- D. Shield ground point

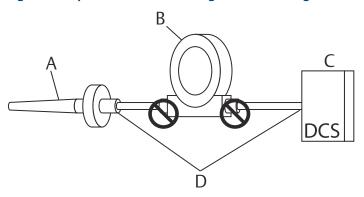
4.2.3 Ground the transmitter: Option 3

Use this method for grounded or ungrounded housing.

Procedure

- 1. Ground sensor wiring shield at the sensor, if possible.
- 2. Ensure that the sensor wiring and signal wiring shields are electrically isolated from the transmitter housing.
 - Do not connect the signal wiring shield to the sensor wiring shield.
- 3. Ground signal wiring shield at the power supply end.

Figure 4-4: Option 3: Grounded or Ungrounded Housing



- A. Sensor wires
- B. Transmitters
- C. 4 20 mA loop
- D. Shield ground point

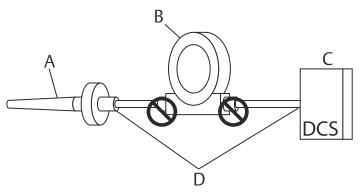
4.2.4 Ground the transmitter: Option 4

Use this method for grounded thermocouple inputs.

Procedure

- 1. Ground sensor wiring shield at the sensor.
- 2. Ensure that the sensor wiring and signal wiring shields are electrically isolated from the transmitter housing.
 - Do not connect the signal wiring shield to the sensor wiring shield.
- 3. Ground signal wiring shield at the power supply end.

Figure 4-5: Option 4: Grounded Thermocouple Inputs



- A. Sensor wires
- B. Transmitters
- C. 4-20 mA loop
- D. Shield ground point

5 Product certifications

5.1 European Directive Information

A copy of the EU Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EU Declaration of Conformity can be found at Emerson.com/Rosemount.

5.2 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).

5.3 North America

5.3.1 E5 FM Explosionproof, Dust-Ignitionproof, and Nonincendive

Certificate 3032198

Standards used FM Class 3600:2011, FM Class 3611:2004, FM Class 3615:2006, FM Class 3810:2005, IEC 60529: 2004, NEMA

- 250: 1991

Markings

XP CL I, DIV 1, GP B, C, D; **DIP** CL II/III, DIV 1, GP E, F, G; **NI** CL I, DIV 2, GP A, B, C, D; T5(-50 °C \leq Ta \leq +85 °C); when installed per Rosemount[™] drawing 00148-1065; Type 4X; IP66/68

5.3.2 I5 FM Intrinsic Safety and Nonincendive

Certificate 3032198

Standards used FM Class 3600:2011, FM Class 3610:2010, FM Class 3611:2004, FM Class 3810:2005, IEC 60529: 2004, NEMA

- 250: 1991

Markings

IS CL I/II/III, DIV 1, GP A, B, C, D, E, F, G; **NI** CL1, DIV 2, GP A, B, C, D; T6(-50 °C ≤ Ta ≤ +40 °C), T5(-50 °C ≤ Ta ≤ +75 °C) when installed per Rosemount[™] drawing 00148-1055;

Type 4X; IP66/68

Special Conditions for Safe Use (X):

 When no enclosure option is selected, the Model 148 Temperature Transmitter shall be installed in an enclosure meeting the requirements of ANSI/ISA S82.01 and S82.03 or other applicable ordinary location standards.

To maintain a Type 4X rating, do not select N (No enclosure) or B (Buz Head).

3. Enclosure option must be selected to maintain a Type 4 Rating.

5.3.3 I6 CSA Intrinsic Safety and Division 2

Certificate 1091070

Standards CAN/CSA C22.2 No. 0-M90, CSA Std. C22.2 No. 25-1966, **used** CAN/CSA C22.2 No. 94-M91, CAN/CSA C22.2 No. 157-92,

CSA C22.2 No. 213-M1987, C22.2 No 60529-05

Markings IS CL I, DIV 1 GP A, B, C, D when installed per Rosemount[™]

drawing 00248-1056; Suitable for **CLI DIV 2** GP A, B, C, D when installed per Rosemount drawing 00248-1055; T6(-50 °C \leq Ta \leq +40 °C), T5(-50 °C \leq Ta \leq +60 °C); Type 4X, IP66/68 for enclosure options "A", "G", "H", "U"; Seal not

required (See drawing 00248-1066)

5.3.4 K6 CSA Explosionproof, Intrinsic Safety, and Division 2

Certificate 1091070

Standards CAN/CSA C22.2 No. 0-M90, CSA Std. C22.2 No. 25-1966, Used CSA Std. C22.2 No. 30-M1986 CAN/CSA C22.2 No. 94-M

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 C22.2 No. 213-M1987, C22.2 No 60529-05

Markings XP CL I/II/III, DIV 1, GP B, C, D, E, F, G when installed per

Rosemount^M drawing 00248-1066; **IS** CL I, DIV 1 GP A, B, C, D when installed per Rosemount drawing 00248-1056; Suitable for **CL I DIV 2** GP A, B, C, D when installed per Rosemount drawing 00248-1055; T6(-50 °C \leq Ta \leq +40 °C), T5(-50 °C \leq Ta \leq +60 °C); Type 4X, IP66/68 for enclosure options "A", "G", "H", "U"; Seal not required (See drawing

00248-1066)

5.4 Europe

5.4.1 E1 ATEX Flameproof

Certificate FM12ATEX0065X

Standards EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN **used** 60529:1991 +A1:2000 + A2:2013

Markings (x) II 2 G Ex db IIC T6...T1 Gb, T6(-50 °C \leq Ta \leq +40 °C),

T5...T1(-50 °C \leq Ta \leq +60 °C); see Table 5-1 for process

temperatures.

Specific conditions for safe use (X):

- 1. See certificate for ambient temperature range.
- 2. The non-metallic label may store an electrostatic charge and become a source of ignition in Group III environments.
- 3. Guard the LCD cover against impact energies greater than 4 joules.
- 4. A suitable certified Ex d or Ex tb enclosure is required to be connected to temperature probes with Enclosure option "N".
- 5. Care shall be taken by the end user to ensure that the external surface temperature on the equipment and the neck of DIN Style Sensor probe does not exceed 266 °F (130 °C).
- 6. Non-Standard Paint options may cause risk of electrostatic discharge. Avoid installations that cause electrostatic build-up on painted surfaces and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.

5.4.2 I1 ATEX Intrinsic Safety

Certificate Baseefa08ATEX0030X

Standards

EN 60079-0: 2012, EN 60079-11: 2012

used Markings

 \bigcirc II 1 G Ex ia IIC T5/T6 Ga, T5(-60 °C \leq Ta \leq +80 °C),

T6(-60 °C \leq Ta \leq +60 °C).

See Table 5-2 for entity parameters.

Special conditions for safe use (X):

1. The apparatus must be installed in an enclosure which affords it a degree of protection of at least IP20. Non-metallic enclosures must have a surface resistance of less than 1 G Ω ; light allow or zirconium enclosures must be protected from impact and friction when installed.

5.4.3 N1 ATEX Type n - with enclosure

Certificate BAS00ATEX3145

Standards used EN 60079-0:2012, EN 60079-15:2010

Markings \boxtimes II 3 G Ex nA IIC T5 Gc (-40 °C \leq Ta \leq +70 °C)

5.4.4 NC ATEX Type n - without enclosure

Certificate Baseefa13ATEX0092X

Standards used EN 60079-0:2012, EN 60079-15:2010

Markings x | | 3 G Ex nA | | | C T5/T6 Gc, T5(-60 ° C ≤ Ta ≤ +80 ° C), T6(-60 ° C ≤ Ta ≤ +60 ° C)

Special conditions for safe use (X):

 The Model 148 Temperature Transmitter must be installed in a suitably certified enclosure such that it is afforded a degree of protection of at least IP54 in accordance with IEC 60529 and EN 60079-15.

5.4.5 ND ATEX Dust

Certificate FM12ATEX0065X

Standards used EN 60079-0: 2012+A11:2013, EN 60079-31:2014, EN

60529:1991 +A1:2000 + A2:2013

Markings x || 2 D Ex tb |||C T130 °C Db, (-40 °C \leq Ta \leq +70 °C);

IP66

See Table 5-1 for process temperatures.

Specific conditions of use (X):

- 1. See certificate for ambient temperature range.
- 2. The non-metallic label may store an electrostatic charge and become a source of ignition in Group III environments.
- 3. Guard the LCD cover against impact energies greater than 4 joules.
- 4. Flameproof joints are not intended for repair.
- 5. A suitable certified Ex d or Ex tb enclosure is required to be connected to temperature probes with Enclosure option "N".
- Care shall be taken by the end user to ensure that the external surface temperature on the equipment and the neck of DIN Style Sensor probe does not exceed 266 °F (130 °C).
- 7. Non-Standard Paint options may cause risk of electrostatic discharge. Avoid installations that cause electrostatic build-up on painted surfaces and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.

5.5 International

5.5.1 E7 IECEx Flameproof and Dust

Certificate IECEx FMG 12.0022X

Standards IEC 60079-0:2011, IEC 60079-1:2014-06, IEC

used 60079-31:2013

Markings Ex db IIC T6...T1 Gb, T6(-50 °C \leq Ta \leq +40 °C), T5...T1(-50

 $^{\circ}$ C \leq Ta \leq +60 $^{\circ}$ C);

Ex tb IIIC T130 °C Db, $(-40 \, ^{\circ}\text{C} \le \text{Ta} \le +70 \, ^{\circ}\text{C})$; IP66;

See Table 5-1 for process temperatures.

Specific conditions of safe use (X):

1. See certificate for ambient temperature range.

- 2. The non-metallic label may store an electrostatic charge and become a source of ignition in Group III environments.
- 3. Guard the LCD cover against impact energies greater than 4 joules.
- 4. Flameproof joints are not intended for repair.
- 5. A suitable certified Ex d or Ex tb enclosure is required to be connected to temperature probes with Enclosure option "N".
- 6. Care shall be taken by the end user to ensure that the external surface temperature on the equipment and the neck of DIN Style Sensor probe does not exceed 266 °F (130 °C).
- 7. Non-Standard Paint options may cause risk of electrostatic discharge. Avoid installations that cause electrostatic build-up on painted surfaces and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.

5.5.2 I7 IECEx Intrinsic Safety

Certificate IECEx BAS 08.0011X

Standards used IEC 60079-0:2011, IEC 60079-11:2011

Markings Ex ia IIC T5/T6 Ga, T5(-60 °C \leq Ta \leq +80 °C), T6(-60 °C \leq Ta

 \leq +60 °C);

See Table 5-2 for entity parameters.

Special conditions for safe use (x):

1. The apparatus must be installed in an enclosure which affords it a degree of protection of at least IP20. Non-metallic enclosures must have a surface resistance of less than 1 G Ω ; light allow or zirconium enclosures must be protected from impact and friction when installed.

5.5.3 N7 IECEx Type n - with enclosure

Certificate IECEx BAS 07.0055

Standards used IEC 60079-0:2011, IEC 60079-11:2011

Markings Ex ia IIC T5/T6 Ga, T5(-60 °C \leq Ta \leq +80 °C),T6(-60 °C \leq Ta

 \leq +60 °C);

See Table P.C. 2 at the end of the Product Certifications

section for entity parameters.

5.5.4 NG IECEx Type n - without enclosure

Certificate IECEx BAS 13.0052X

Standards used IEC 60079-0:2011, IEC 60079-15:2010

Markings Ex nA IIC T5/T6 Gc; T5(-60 °C \leq Ta \leq +80 °C),T6(-60 °C \leq

 $Ta \le +60 ^{\circ}C$

Special conditions for safe use (X):

 The Model 148 Temperature Transmitter must be installed in a suitably certified enclosure such that it is afforded a degree of protection of at least IP54 in accordance with IEC 60529 and EN 60079-15.

5.6 Combinations

K5 Combination of E5 and I5

5.7 Tables

Table 5-1: Process Temperatures

Temperature	Ambient temperatures	Process temperature without LCD cover (°C)			
class		No ext.	3-in.	6-in.	9-in.
Т6	-50 °C to +40 °C	55	55	60	65
T5	-50 °C to +60 °C			70	75
T4	-50 °C to +60 °C	100	110	120	130
T3	-50 °C to +60 °C	170	190	200	200
T2	-50 °C to +60 °C	280	300	300	300

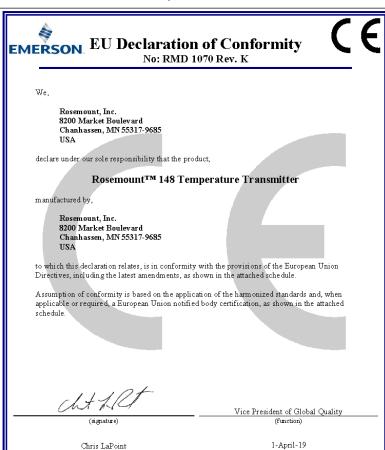
Table 5-1: Process Temperatures (continued)

Temperature	Ambient temperatures	Process temperature without LCD cover (°C)			
class		No ext.	3-in.	6-in.	9-in.
T1	-50 °C to +60 °C	440	450	450	450

Table 5-2: Entity Parameters

	HART® loop terminals + and -	Sensor terminals 1 to 4
Voltage U _i	30 V	45 V
Current I _i	130 mA	26 mA
Power P _i	1 W	290 mW
Capacitance C _i	3.6 nF	2.1 nF
Inductance L _i	0 mH	0 μΗ

5.8 Declaration of conformity



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(date of issue)



EMERSON EU Declaration of Conformity No: RMD 1070 Rev. K



EMC Directive (2014/30/EU)

Harmonized Standards: EN61326-1:2013, EN61326-2-3:2013

ATEX Directive (2014/34/EU)

Baseefa08ATEX0030X - Intrinsic Safety Certificate

Equipment Group II, Category 1 G Ex ia IIC T5/T6 Ga Harmonized Standards: EN 60079-0: 2012+A11: 2013; EN 60079-11: 2012

BAS00ATEX3145 - Type n Certificate

Equipment Group II, Category 3 G Ex nA IIC T5 Gc Harmonized Standards: EN 60079-0: 2012+A11: 2013; EN 60079-15: 2010

Baseefal3ATEX0092X - No Enclosure Option

Equipment Group II, Category 3 G Ex nA IIC T5/T6 Gc Harmonized Standards: EN 60079-0: 2012+A11: 2013; EN 60079-15: 2010

FM12ATEX0065X - Flameproof Certificate Equipment Group II, Category 2 G

Ex db IIC T6...T1 Gb Harmonized Standards EN 60079-0:2012+A11:2013, EN 60079-1: 2014

FM12ATEX0065X - Dust Certificate

Equipment Group II, Category 2 D Ex tb IIIC T130°C Db Harmonized Standards: EN 60079-0:2012+A11:2013, EN 60079-31: 2014

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EMERSON EU Declaration of Conformity No: RMD 1070 Rev. K



ATEX Notified Bodies

FM Approvals Europe Limited [Notified Body Number: 2809] One Georges Quay Plaza Dublin, Ireland. D02 E440

SGS FIMCO OY [Notified Body Number: 0598] P.O. Box 30 (Särkiniementie 3) 00211 HELSINKI Finland

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5.9 **RoHS**

含有 China RoHS 管控物质超过最大浓度限值的部件型号列表 Rosemount 248

		有害物质 / Hazardous Substances					
部件名称 Part Name	铅 Lead (Pb)	汞 Mercury (Hg)	幅 Cadmium (Cd)	六价格 Hexavalent Chromium (Cr +6)	多溴联苯 Polybrominated biphenyls (PBB)	多溴联苯醚 Polybrominated diphenyl ethers (PBDE)	
电子组件 Electronics Assembly	Х	0	0	0	0	0	
壳体组件 Housing Assembly	0	0	0	х	0	0	
传感器组件 Sensor Assembly	Х	0	0	0	0	0	

本表格系依据 SJ/T11364 的規定而制作. This table is proposed in accordance with the provision of SJ/T11364.

O: 意为该部件的所有均质材料中该有害物质的含量均低于 GB/T 26572 所规定的限量要求.

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: 意为在该部件所使用的所有均质材料里,至少有一类均质材料中该有害物质的含量高于 GB/T 26572 所规定的限量要求.

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.



Quick Start Guide 00825-0100-4148, Rev. HB April 2019

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- Facebook.com/Rosemount
- Youtube.com/user/
 RosemountMeasurement

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