

# Rosemount™ 148 Temperature Transmitter



**NOTICE**

This guide provides basic guidelines for the Rosemount 148. It does not provide instructions for detailed configuration, diagnostics, maintenance, service, troubleshooting, or installations. Refer to the Rosemount 148 [Reference Manual](#) for more instruction. The manual and this guide are also available electronically on [EmersonProcess.com/Rosemount](http://EmersonProcess.com/Rosemount).

**⚠ WARNING****Explosions could result in death or serious injury.**

Installation of this transmitter in an explosive environment must be in accordance with the appropriate local, national, and international standards, codes, and practices. Review the Hazardous Locations Certifications for any restrictions associated with a safe installation.

**Process leaks may cause harm or result in death.**

- Install and tighten thermowells or sensors before applying pressure.
- Do not remove the thermowell while in operation.

**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.

**Conduit/cable entries**

- Unless marked, the conduit/cable entries in the transmitter housing use a 1/2-14 NPT thread form. Entries marked "M20" are M20 × 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 entries.
- When installing in a Hazardous Location, use only appropriately listed or Ex certified plugs, adapters or glands in cable/conduit entries.

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## 1.0 Software installation

1. Install the Rosemount 148 PC Programmer software.
  - a. Place the Rosemount 148 PC Programmer CD\_ROM into the drive.
  - b. Run setup.exe from Windows NT, 2000, or XP.
2. When first using the Rosemount 148 PC software, configure the appropriate COM ports by selecting **Port Settings** from the *Communicate* menu.
3. Install MACTek Modem drivers completely before beginning bench configuration on the Rosemount 148 system.

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### Note

The software defaults to the first available COM port.

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## 2.0 Configure

The Rosemount 148 must be configured for certain basic variables to operate. In many cases, all of these variables are pre-configured at the factory. Configuration may be required if the transmitter is not configured or if the configuration variables need revision. This can be done in two ways: by ordering factory-configuration by Emerson™ Process Management, or by using the Rosemount 148 PC Programming interface in a bench configuration setting.

The Rosemount 148 PC Programming Kit includes configuration software and a communication modem. The Rosemount 148 device will need an external power supply of 12–42.4 Vdc for configuration.

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.

See "[Table 1: Rosemount 148 Programming Kit spare part numbers](#)" for spares kit and re-order numbers. For more information, refer to the Rosemount 148 [Reference Manual](#).

**Table 1. Rosemount 148 Programming Kit spare part numbers**

Product description	Part number
Programming Software (CD)	00148-1601-0002
Rosemount 148 Programmer Kit - USB	00148-1601-0003
Rosemount 148 Programmer Kit - Serial	00148-1601-0004

### 2.1 Verify transmitter configuration

If the transmitter has a sensor connected (either a test sensor or actual installation hardware), the configuration can be checked using the Information tab on the Rosemount 148 PC Programmer interface. Select **Refresh** to update the status and confirm that the transmitter has been configured correctly. If there are any problems, refer to the Rosemount 148 [Reference Manual](#) for troubleshooting suggestions.

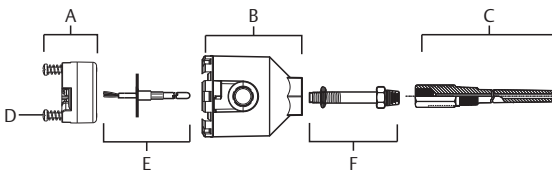
## 3.0 Mount the transmitter

To prevent moisture from draining into the transmitter housing, mount the transmitter at a high point in the conduit run.

### 3.1 Typical European and Asia Pacific installation

#### Head mount transmitter with DIN plate style sensor

1. Attach the thermowell to the pipe or process container wall. Install and tighten the thermowell before applying process pressure.
2. Assemble the transmitter to the sensor.
  - a. Push the transmitter mounting screws through the sensor mounting plate.
  - b. Insert the snap rings (optional) into the transmitter mounting screw groove.
3. Wire the sensor to the transmitter.
4. 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.
5. Slip the shielded cable through the cable gland.
6. Attach a cable gland into the shielded cable.
7. Insert the shielded cable leads into the connection head through the cable entry.
8. Connect and tighten the cable gland.
9. Connect the shielded power cable leads to the transmitter power terminals. Avoid contact with sensor leads and sensor connections. (See [Connect the wiring](#) for instructions on grounding the shield wire.)
10. Install and tighten the connection head cover. Enclosure covers must be fully engaged to meet explosion-proof requirements.



A. Rosemount 148 Transmitter

B. Connection head

C. Thermowell

D. Transmitter mounting screws

E. Integral mount sensor with flying leads

F. Extension

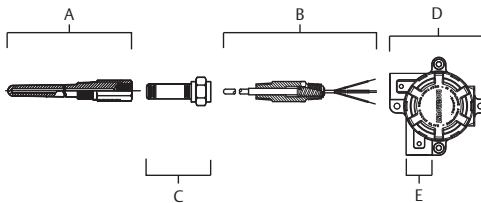
## 3.2 Typical north and south american installation

### Head mount transmitter with threaded sensor

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

#### Note

Enclosure covers must be fully engaged to meet explosion-proof requirements.

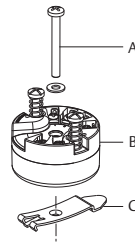


- A. Threaded thermowell
- B. Threaded style sensor
- C. Standard extension

- D. Universal head
- E. Conduit entry

### 3.3 Mounting to a DIN rail

To attach the Rosemount 148H to a DIN rail, assemble the appropriate rail mounting kit (part number 00248-1601-0001) to the transmitter as shown.



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

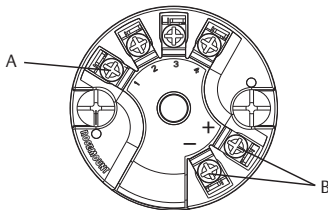
### 4.0 Connect the wiring

- 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 Vdc). 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

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).

**Figure 1. Power, Communication, and Sensor Terminals**



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

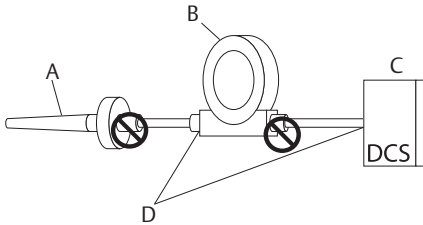
## 4.2 Ground the transmitter

### Ungrounded thermocouple, 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).

#### Option 1 (for grounded housing):

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.

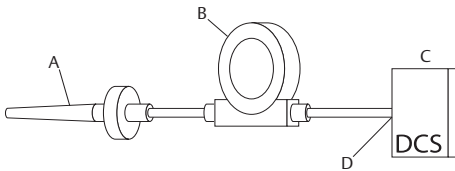


A. Sensor wires  
B. Transmitters

C. 4–20 mA loop  
D. Shield ground point

#### Option 2 (for ungrounded housing):

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.



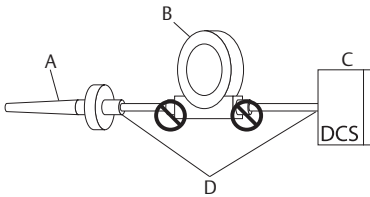
A. Sensor wires  
B. Transmitters

C. 4–20 mA loop  
D. Shield ground point

#### Option 3 (for grounded or ungrounded housing):

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

4. Ground signal wiring shield at the power supply end.



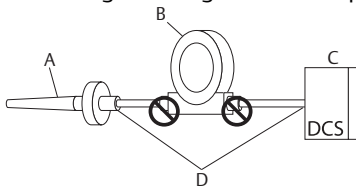
A. Sensor wires  
B. Transmitters

C. 4–20 mA loop  
D. Shield ground point

## Grounded thermocouple inputs

### Option 4

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.
3. Do not connect the signal wiring shield to the sensor wiring shield.
4. Ground signal wiring shield at the power supply end.



A. Sensor wires  
B. Transmitters

C. 4–20 mA loop  
D. Shield ground point



## 5.0 Product Certifications

Rev 1.5

### 5.1 Approved Manufacturing Locations

Emerson Process Management - Chanhassen, Minnesota, USA  
 Rosemount Temperature GmbH - Germany  
 Emerson Process Management Asia Pacific - Singapore

### 5.2 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 [EmersonProcess.com/Rosemount](http://EmersonProcess.com/Rosemount).

### 5.3 Ordinary Location Certification from 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).

#### North America

##### E5 FM Explosionproof, Dust-Ignitionproof, and Nonincendive

Certificate: 3032198

Standards: 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 ≤ T<sub>a</sub> ≤ +85 °C); when installed per Rosemount drawing 00148-1065; Type 4X; IP66/68

##### 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 ≤ T<sub>a</sub> ≤ +40 °C), T5(-50 °C ≤ T<sub>a</sub> ≤ +75 °C) when installed per Rosemount drawing 00148-1055; Type 4X; IP66/68

#### **Special Conditions for Safe Use (X):**

1. When no enclosure option is selected, the Rosemount 148 Transmitter shall be installed in an enclosure meeting the requirements of ANSI/ISA S82.01 and S82.03 or other applicable ordinary location standards.
2. No enclosure or Buz Head option cannot be selected to maintain a Type 4X rating.
3. Enclosure option must be selected to maintain a Type 4 Rating.

##### I6 CSA Intrinsic Safety and Division 2

Certificate:1091070

Standards: CAN/CSA C22.2 No. 0-M90, CSA Std. C22.2 No. 25-1966, 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 CL I DIV 2 GP A, B, C, D when installed per Rosemount drawing 00248-1055; T6(-50 °C ≤ T<sub>a</sub> ≤ +40 °C), T5(-50 °C ≤ T<sub>a</sub> ≤ +60 °C); Type 4X, IP66/68 for enclosure options "A", "G", "H", "U"; Seal not required (See drawing 00248-1066).

**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, 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 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 ≤ T<sub>a</sub> ≤ +40 °C), T5(-50 °C ≤ T<sub>a</sub> ≤ +60 °C); Type 4X, IP66/68 for enclosure options "A", "G", "H", "U"; Seal not required (See drawing 00248-1066).**Europe****E1** ATEX Flameproof

Certificate: FM12ATEX0065X

Standards: EN 60079-0: 2012, EN 60079-1: 2007, EN 60529:1991 +A1:2000


Markings:  II 2 G Ex d IIC T6...T1 Gb, T6(-50 °C ≤ T<sub>a</sub> ≤ +40 °C), T5...T1(-50 °C ≤ T<sub>a</sub> ≤ +60 °C)See [Table 2](#) at the end of the Product Certifications section for process temperatures**Special 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. 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 130 °C.
7. Non-Standard Paint options may cause risk from 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.

**I1** ATEX Intrinsic Safety

Certificate: Baseefa08ATEX0030X

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


Markings:  II 1 G Ex ia IIC T5/T6 Ga, T5(-60 °C ≤ T<sub>a</sub> ≤ +80 °C), T6(-60 °C ≤ T<sub>a</sub> ≤ +60 °C)See [Table 3](#) at the end of the Product Certifications section for entity parameters**Special Condition 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 GΩ; light alloy or zirconium enclosures must be protected from impact and friction when installed.

**N1** ATEX Type n - with enclosure

Certificate: BAS00ATEX3145


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

Markings:  II 3 G Ex nA IIC T5 Gc (-40 °C ≤ T<sub>a</sub> ≤ +70 °C);

**NC** ATEX Type n - without enclosure

Certificate: Baseefa13ATEX0092X

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

Markings:  II 3 G Ex nA IIC T5/T6 Gc, T5(-60 °C ≤ T<sub>a</sub> ≤ +80 °C), T6(-60 °C ≤ T<sub>a</sub> ≤ +60 °C)**Special Condition for Safe Use (X):**

1. The Rosemount 148 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.

**ND** ATEX Dust

Certificate: FM12ATEX0065X

Standards: EN 60079-0: 2012, EN 60079-31: 2009, EN 60529:1991 +A1:2000

Markings:  II 2 D Ex tb IIIC T130 °C Db, (-40 °C ≤ T<sub>a</sub> ≤ +70 °C); IP66See [Table 2](#) at the end of the Product Certifications section for process temperatures.**Special 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 display 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 130 °C.
7. Non-Standard Paint options may cause risk from 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.

**International****E7** IECEx Flameproof and Dust

Certificate: IECEx FMG 12.0022X

Standards: IEC 60079-0:2011, IEC 60079-1:2007-04, IEC 60079-31:2008

Markings: Ex d IIC T6...T1 Gb, T6(-50 °C ≤ T<sub>a</sub> ≤ +40 °C), T5...T1(-50 °C ≤ T<sub>a</sub> ≤ +60 °C); Ex tb IIIC T130 °C Db, (-40 °C ≤ T<sub>a</sub> ≤ +70 °C); IP66See [Table 2](#) at the end of the Product Certifications section for process temperatures.**Special 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 display 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 130 °C.
7. Non-Standard Paint options may cause risk from 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.

**I7** IECEx Intrinsic Safety

Certificate: IECEx BAS 08.0011X

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

Markings: Ex ia IIC T5/T6 Ga, T5(-60 °C ≤ T<sub>a</sub> ≤ +80 °C), T6(-60 °C ≤ T<sub>a</sub> ≤ +60 °C);See [Table 3](#) at the end of the Product Certifications section 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 GΩ; light alloy or zirconium enclosures must be protected from impact and friction when installed.

**N7** IECEx Type n - with enclosure

Certificate: IECEx BAS 07.0055

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

Markings: Ex nA IIC T5 Gc; T5(-40 °C ≤ T<sub>a</sub> ≤ +70 °C).**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 ≤ T<sub>a</sub> ≤ +80 °C), T6(-60 °C ≤ T<sub>a</sub> ≤ +60 °C).**Special Conditions for Safe Use (X):**

1. The Rosemount 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 IEC 60079-15.

## 5.4 Combinations

- K5** Combination of E5 and I5.

## 5.5 Tables



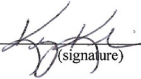
**Table 2. Process Temperature**

Temperature class	Ambient temperature	Process temperature w/o LCD display cover (°C)			
		No ext.	3-in.	6-in.	9-in.
T6	-50 °C to +40 °C	55	55	60	65
T5	-50 °C to +60 °C	70	70	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
T1	-50 °C to +60 °C	440	450	450	450

**Table 3. Entity Parameter**

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 $\mu$ H

Figure 2. Rosemount 148 Declaration of Conformity

	<b>EU Declaration of Conformity</b> No: RMD 1070 Rev. G	
<p>We,</p>		
<p><b>Rosemount, Inc.</b> 8200 Market Boulevard Chanhassen, MN 55317-9685 USA</p>		
<p>declare under our sole responsibility that the product,</p>		
<p><b>Rosemount 148 Temperature Transmitter</b></p>		
<p>manufactured by,</p>		
<p><b>Rosemount, Inc.</b> 8200 Market Boulevard Chanhassen, MN 55317-9685 USA</p>		
<p>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.</p>		
<p>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.</p>		
 (signature)	<p>Vice President of Global Quality (function)</p>	
<p>Kelly Klein (name)</p>	<p>19 Apr 2016 (date of issue)</p>	
<p>Page 1 of 3</p>		



# EU Declaration of Conformity

No: RMD 1070 Rev. G



**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: EN61326-1:2013, EN61326-2-3:2013

**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*

**Baseefa08ATEX0030X – Intrinsic Safety Certificate**

Equipment Group II, Category 1 G

Ex ia IIC T5/T6 Ga

Harmonized Standards:

EN 60079-0: 2012; 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; EN 60079-15: 2010

**Baseefa13ATEX0092X – no enclosure option**

Equipment Group II, Category 3 G

Ex nA IIC T5/T6 Gc

Harmonized Standards:

EN 60079-0: 2012; EN 60079-15: 2010

**FM12ATEX0065X – Flameproof Certificate**

Equipment Group II, Category 2 G

Ex d IIC T6...T1 Gb

Harmonized Standards:

EN 60079-0: 2012, EN 60079-1: 2007

**FM12ATEX0065X – Dust Certificate**

Equipment Group II, Category 2 D

Ex tb IIIC T130°C Db

Harmonized Standards:

EN 60079-0: 2012, EN 60079-31: 2009



# EU Declaration of Conformity



No: RMD 1070 Rev. G

## **ATEX Notified Bodies**

**FM Approvals Ltd.** [Notified Body Number: 1725]  
1 Windsor Dials  
Windsor, Berkshire, SL4 1RS  
United Kingdom

**SGS Baseefa Limited** [Notified Body Number: 1180]  
Rockhead Business Park Staden Lane  
SK17 9RZ Buxton  
United Kingdom

## **ATEX Notified Body for Quality Assurance**

**SGS Baseefa Limited** [Notified Body Number: 1180]  
Rockhead Business Park Staden Lane  
SK17 9RZ Buxton  
United Kingdom



含有 China RoHS 管控物质超过最大浓度限值的部件型号列表 Rosemount 148  
List of Rosemount 148 Parts with China RoHS Concentration above MCVs

部件名称 Part Name	有害物质 / Hazardous Substances					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 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	X	O	O	O	O	O
壳体组件 Housing Assembly	O	O	O	X	O	O
传感器组件 Sensor Assembly	X	O	O	O	O	O

本表格系依据 SJ/T11364 的规定而制作。

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.



### Global Headquarters

#### Emerson Process Management

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+1 952 949 7001  
RFQ.RMD-RCC@EmersonProcess.com

### North America Regional Office

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+1 952 949 7001  
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