Rosemount™ 248 Temperature Transmitter
Safety Messages

**NOTICE**

This guide provides basic guidelines to install the Rosemount™ 248 Temperature Transmitter. It does not provide instructions for detailed configuration, diagnostics, maintenance, service, troubleshooting, or installations. Refer to the Rosemount 248 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 restrictions associated with a safe installation.

**WARNING**

**Process leaks**

Process leaks could result in death or serious injury.

- Install and tighten thermowells and 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.
- Unless marked, the conduit/cable entries in the transmitter housing use a $\frac{1}{2}–14$ NPT thread form. Entries marked “M20” are M20 × 1.5 thread form. On devices with multiple conduit entries, all entries will 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.

**WARNING**

**Physical access**

Unauthorized personnel may potentially cause significant damage to and/or misconfiguration of end users’ equipment. This could be intentional or unintentional and needs to be protected against.

Physical security is an important part of any security program and fundamental to protecting your system. Restrict physical access by unauthorized personnel to protect end users’ assets. This is true for all systems used within the facility.
1 Configuration

1.1 Bench calibration

There are three ways to configure the transmitter:

- Field Communicator
- Rosemount™ 248 PC Programming Kit
- Custom at the factory using the C1 option code


Connecting a field communicator

The Field Communicator Field Device Revision Dev v1, DD v1 or later is required for complete functionality.

Figure 1-1: Connecting a Field Communicator to a Bench Loop

A. Rosemount 248 Transmitter
B. $250 \leq RL \leq 1100$
C. Field Communicator
D. Power supply
E. Recorder (optional)
F. Ammeter (optional)

**Note**

Do not operate when power is below 12 Vdc at the transmitter terminal.
1.2 Verify transmitter configuration
To verify operation using a Field Communicator, refer to the Rosemount 248 Reference Manual for more detailed description.

1.3 Install Rosemount™ 248 PC programmer kit (HART® 5 only)

Procedure

1. Install all necessary software for Rosemount 248 PC configuration:
   a) Install the Rosemount 248C software
      1. Place the Rosemount 248 CD-Rom in the drive.
      2. Run setup.exe from Windows™ 7, 8, 10, or XP.
   b) Install the MACTek® HART® Modem drivers completely before beginning bench configuration with the Rosemount 248 PC Programming system.

Note
For USB modem: Upon first use, configure appropriate COM ports within the Rosemount 248PC software by selecting Port Settings from the Communicate menu. The USB modem driver emulates a COM port and will add to available port selections in the software’s drop-down box. Otherwise software defaults to first available COM port, which may not be correct.

2. Set up configuration system hardware:
   a) Hook up the transmitter and load resistor (250-1100 ohms) wired in series with the power supply.
      The Rosemount 248 device will need an external power supply of 12-42.4 Vdc for configuration.
   b) Attach the HART modem in parallel with the load resistor and connect it to the PC.

1.3.1 Spares kit and re-order numbers
See Table 1-1 for spares kit and re-order numbers.

Table 1-1: Rosemount™ 248 Programming Kit Spare Part Numbers

<table>
<thead>
<tr>
<th>Product description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programming software (CD)</td>
<td>00248-1603-0002</td>
</tr>
<tr>
<td>Rosemount 148 Programmer Kit - USB</td>
<td>00248-1603-0003</td>
</tr>
</tbody>
</table>
Table 1-1: Rosemount™ 248 Programming Kit Spare Part Numbers (continued)

<table>
<thead>
<tr>
<th>Product description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosemount 148 Programmer Kit - Serial</td>
<td>00248-1603-0004</td>
</tr>
</tbody>
</table>

For more information, refer to the Rosemount 248 Reference Manual.
2 Mount the transmitter

2.1 Overview
Mount the transmitter at a high point in the conduit run to prevent moisture from draining into the transmitter housing.

2.2 Typical European and Asia Pacific installation
Head mount transmitter with DIN plate style sensor

Procedure
1. Attach the thermowell to the pipe or process container wall. Install and tighten thermowells before applying process pressure.
2. Assemble the transmitter to the sensor.
   a) Push the transmitter mounting screws through the sensor mounting plate.
   b) Push the transmitter mounting screws through the sensor mounting plate.
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. Connect and tighten the cable gland.
8. Connect the shielded power cable leads to the transmitter power terminals. Avoid contact with sensor leads and sensor connections.
9. Install and tighten the connection head cover. Enclosure covers must be fully engaged to meet explosion-proof requirements.
2.3 Typical North and South American install

Head mount transmitter with threaded sensor.

Procedure

1. Attach the thermowell to the pipe or process container wall. Install and tighten the thermowell before applying process pressure.
2. Attach necessary extension nipples and adapters to the thermowell. Seal the nipple and adapter threads with silicone tape.
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. Avoid contact with other terminals.
11. Install and tighten the universal head cover.

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

---

**Example**

**Figure 2-2: Typical North and South American Installation**

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

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2.4 Mounting a Rosemount 248H to a DIN rail

**Procedure**

- To attach a head mount transmitter to a DIN rail, assemble the appropriate rail mounting kit (part number 00248-1601-0001).
2.4.1 Rail mount transmitter with remote mount sensor

The least complicated assembly uses:

- a remote mounted transmitter
- an integral mount sensor with terminal block
- an integral style connection head
• a standard extension
• a threaded thermowell

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

2.4.2 Rail mount transmitter with threaded sensor

The least complicated assembly uses:
• a threaded sensor with flying heads
• a threaded sensor connection head
• a union and nipple extension assembly
• a threaded thermowell

Refer to Rosemount Sensor Product Data Sheet for complete sensor and mounting accessory information.
3  Connect the wiring

3.1  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 Vdc).

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

3.1.1  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 3-1: Power, Communication, and Sensor Terminals**

A. Sensor terminals  
B. Power/communication terminals

3.1.2  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).
### 3.1.3 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 3-2: Option 1L Grounded Housing](image)

- **A. Sensor wires**
- **B. Transmitters**
- **C. DCS host system**
- **D. Shield ground point**

### 3.1.4 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.
3.1.5  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.
3.1.6  **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 3-5: Option 4: Grounded Thermocouple Inputs

A. Sensor wires
B. Transmitters
C. DCS host system
D. Shield ground point
4 Perform a loop test

4.1 Overview
The loop test command verifies transmitter output, loop integrity, and operation of any recorders or similar devices installed in the loop.

Note
This is not available with the Rosemount™ 248C Configuration Interface.

4.2 Initiate loop test

Procedure
1. Connect an external ampere meter in series with the transmitter loop (so the power to the transmitter goes through the meter at some point in the loop).
3. Select a discrete milliampere level for the transmitter to output. At Choose Analog Output, select 1. 4 mA, 2. 20 mA, or 3. Other to manually input a value between 4 and 20 milliamperes.
4. Select Enter to show the fixed output.
5. Select OK.
6. In the test loop, check that the fixed mA input and the transmitter's mA output are the same value.

Note
If the readings do not match, either the transmitter requires an output trim or the current meter is malfunctioning.

After completing the test, the display returns to the loop test screen and allows you to choose another output value.

4.3 End the loop test

Procedure
1. Select 5. End.
2. Select Enter.
5 Certified installations

For Safety Certified installations, refer to the Rosemount™ 248 Reference Manual. You can access this manual electronically at Emerson.com/Rosemount or by contacting an Emerson representative.
6  Product certifications

Rev: 0.1

6.1  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.

6.2  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).

6.3  North America

The US National Electrical Code® (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

6.4  USA

6.4.1  E5 USA Explosionproof and Dust-Ignitionproof

Certificate  1091070

Standards  FM Class 3600-2011, FM Class 3611-2004, FM Class 3615-2006, FM 3616-2011, UL Std. No. 60079-0: Ed.6, UL Std. No. 50E

Markings  CL I/II/III, DIV 1, GP, B, C, D, E, F, G; when installed per Rosemount™ drawing 00644-1059; Type 4X; IP66/68

6.4.2  I5 FM Intrinsic Safety and Nonincendive

Certificate  1091070

Standards  FM Class 3600-2011, FM Class 3610-2010, FM Class 3611-2004, UL Std. No. 60079-0: Ed.6, UL Std. No. 60079-11: Ed. 6, UL Std. No. 50E

Markings  CL I/II/III, DIV 1, GP A, B, C, D, E, F, G; NI CL1, DIV 2, GP A, B, C, D when installed per Rosemount™ drawing 00248-1056; Type 4X; IP66/68
6.5  Canada

6.5.1  I6 Canada Intrinsically Safe

**Certificate** 1091070


**Markings** IS CL I, DIV 1 GP A, B, C, D when installed per Rosemount drawing 00248-1056; CL I DIV 2 GP A, B, C, D; Type 4X, IP66/68

6.5.2  K6 CSA Intrinsically Safe, Explosionproof, and Division 2

**Certificate** 1091070


**Markings** XP CL I/II/III, DIV 1, GP B, C, D, E, F, G when installed per Rosemount™ drawing 00644-1059; IS CL I, DIV 1 GP A, B, C, D when installed per Rosemount drawing 00248-1056; CL I DIV 2 GP A, B, C, D; Type 4X, IP66/68; Conduit Seal not required

6.6  Europe

6.6.1  E1 ATEX Flameproof

**Certificate** FM12ATEX0065X


**Markings** Ex II 2 G Ex db IIC T6...T1 Gb, T6(-50 °C ≤ Ta ≤ +40 °C), T5...T1(-50 °C ≤ Ta ≤ +60 °C)

See Table 6-2 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 display cover against impact energies greater than four 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.

6.6.2 I1 ATEX Intrinsic Safety

Certificate Baseefa18ATEX0090X


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

See Table 6-2 for entity parameters.

Special conditions for safe use (X):

1. The equipment, if supplied without an enclosure, 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 1GΩ; light alloy or zirconium enclosures must be protected from impact and friction if located in a Zone 0 environment.

6.6.3 N1 ATEX Zone 2 - with enclosure

Certificate Baseefa18ATEX0091X

Standards EN IEC 60079-0:2018, EN 60079-15:2010

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

6.6.4 NC ATEX Zone 2 - without enclosure

Certificate Baseefa18ATEX0091X

Standards EN IEC 60079-0:2018, EN 60079-15:2010

Markings II 3 G Ex nA IIC T5/T6 Gc, T5(-60 °C ≤ Ta ≤ +80 °C), T6(-60 °C ≤ Ta ≤ +60 °C)
**Special conditions for safe use (X):**

1. The equipment, if supplied without an enclosure, 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 and be located in an area of pollution degree 2 or better as defined in IEC 60664-1.

### 6.6.5 ND ATEX Dust

**Certificates**  FM12ATEX0065X  
**Markings**  II 2 D Ex tb IIIC T130°C Db, (-40°C ≤ Ta ≤ +70°C); IP66  
See Table 6-2 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 display cover against impact energies greater than four 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.

### 6.7 International

#### 6.7.1 E7 IECEx Flameproof

**Certificate**  IECEx FMG 12.0022X  
**Markings**  Ex db IIC T6...T1 Gb, T6(-50 °C ≤ Ta ≤ +40 °C), T5...T1(-50 °C ≤ Ta ≤ +60 °C); Ex tb III C T130C Db Ta = -40 °C to +70 °C; IP66
See Table 6-2 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 display cover against impact energies greater than four 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.

6.7.2 I7 IECEx Intrinsic Safety

Certificate  IECEx BAS 18.0062X


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

See Table 6-3 for entity parameters.

Special conditions for safe use (X):

1. The equipment, if supplied without an enclosure, 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 1GΩ; light alloy or zirconium enclosures must be protected from impact and friction if located in a Zone 0 environment.

6.7.3 N7 IECEx Zone 2 - with enclosure

Certificate  IECEx BAS 18.0063X

Standards  IEC 60079-0:2017, IEC 60079-15:2010
Markings  Ex nA IIC T5/T6 Gc; T5(-60°C ≤ Ta ≤ +80°C), T6(-60°C ≤ Ta ≤ +60°C)

6.7.4  NG IECEx Zone 2 - without enclosure

Certificate  IECEx BAS 18.0063X

Standards  IEC 60079-0:2017, IEC 60079-15:2010

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

Special conditions for safe use (X):

1. The equipment, if supplied without an enclosure, 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 and be located in an area of pollution degree 2 or better as defined in IEC 60664-1.

6.8  Brazil

6.8.1  E2 Flameproof and Dust-Ignitionproof

Certificate  UL-BR 13.0535X


Markings  Ex db IIC T6...T1 Gb; T6...T1(-50°C ≤ Ta ≤ +40°C), T5...T1(-50°C ≤ Ta ≤ +60°C) Ex tb IIIc T130°C Db; IP66; (-40°C≤Ta≤+70°C)

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 display cover against impact energies greater than four 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.

6.8.2 I2 Intrinsic Safety

**Certificate**  UL-BR 19.0202X  
**Standards**  ABNT NBR IEC 60079-0:2013, ABNT NBR IEC 60079-11:2013  
**Markings**  Ex ia IIC T5 Ga (-60°C ≤ Ta ≤ +80°C)  
Ex ia IIC T6 Ga (-60°C ≤ Ta ≤ +60°C)  
See Table 6-2 for Entity Parameters and Temperature Classifications.

**Special Conditions for Safe Use (X)**
1. The equipment, if supplied without an enclosure, 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 1GΩ; light alloy or zirconium enclosures must be protected from impact and friction when installed if located in a Zone 0 environment (areas that required EPL Ga).

6.8.3 N2 Zone2

**Certificate**  UL-BR 19.0203X  
**Standards**  ABNT NBR IEC 60079-0:2013, ABNT NBR IEC 60079-15:2012  
**Markings**  Ex nA IIC T5 Gc (-60°C ≤ Ta ≤ +80°C)  
Ex nA IIC T6 Gc (-60°C ≤ Ta ≤ +60°C)  

**Special Conditions for Safe Use (X)**
1. The equipment, if supplied without an enclosure, must be installed in a suitably certified enclosure such that it is afforded a degree of protection of at least IP54 in accordance with ABNT NBR IEC 60529 and ABNT NBR IEC 60079-15 and be located in an area of pollution degree 2 or better as defined in IEC 60664-1.

6.9 China

6.9.1 E3 NEPSI Flameproof

**Certificate**  GYJ16.1335X  
**Standards**  GB3836.1-2010, GB3836.2-2010
**Markings**  
Ex d IIC T6~T1 Gb: T6...T1(-50 °C ≤ Ta ≤ +40 °C) T5...T1 (-50 °C ≤ Ta ≤ +60 °C)

- 产品安全使用特殊条件  
  证书编号后缀“X”表明产品具有安全使用特殊条件：涉及隔爆接合面的维修须联系产品制造商

- 产品使用注意事项
  1. **Table 6-1:** 产品使用环境温度与温度组别的关系为

<table>
<thead>
<tr>
<th>温度组别</th>
<th>环境温度</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6~T1</td>
<td>-50 °C ≤ Ta ≤ +40 °C</td>
</tr>
<tr>
<td>T5~T1</td>
<td>-50 °C ≤ Ta ≤ +60 °C</td>
</tr>
</tbody>
</table>

2. 产品外壳设有接地端子，用户在使用时应可靠接地
3. 安装现场应不存在对产品外壳有腐蚀作用的有害气体
4. 现场安装时，电缆引入口须选用国家指定的防爆检验机构按检验认可，具有 Ex dIIC 防爆等级的电缆引入装置或堵封件，冗余电缆引入口须用堵封件有效密封
5. 现场安装、使用和维护必须严格遵守“断电后开盖！”的警告语


6.10  EAC

6.10.1  EM Technical Regulation Customs Union (EAC) Flameproof

**Markings**  
1Ex d IIC T6...T1 Gb X, T6(-50°C≤Ta≤+40°C), T5...T1(-50°C≤Ta≤+60°C); IP66/IP67

**Special conditions for safe use (X):**  
See certificate for special conditions.
6.11 Korea

6.11.1 EP Korea Explosionproof/Flameproof

**Certificate**

13-KB4BO-0208X

**Markings**

Ex d IIC T6; T6(-40 °C ≤ Tamb ≤ +65 °C)

Special conditions for safe use (X):

See certificate for special conditions.

6.12 Combinations

**K5**

Combination of E5 and I5

6.13 Tables

**Table 6-2: Process Temperatures**

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Ambient temperatures</th>
<th>Process temperature without LCD cover (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No ext.</td>
</tr>
<tr>
<td>T6</td>
<td>-50 °C to +40 °C</td>
<td>55</td>
</tr>
<tr>
<td>T5</td>
<td>-50 °C to +60 °C</td>
<td>70</td>
</tr>
<tr>
<td>T4</td>
<td>-50 °C to +60 °C</td>
<td>100</td>
</tr>
<tr>
<td>T3</td>
<td>-50 °C to +60 °C</td>
<td>170</td>
</tr>
<tr>
<td>T2</td>
<td>-50 °C to +60 °C</td>
<td>280</td>
</tr>
<tr>
<td>T1</td>
<td>-50 °C to +60 °C</td>
<td>440</td>
</tr>
<tr>
<td>T130°C</td>
<td>-40°C to +70°C</td>
<td>100</td>
</tr>
</tbody>
</table>

**Table 6-3: Entity Parameters**

<table>
<thead>
<tr>
<th></th>
<th>Loop terminals + and -</th>
<th>Sensor terminals 1 to 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage $U_i$</td>
<td>30 V</td>
<td>30 V</td>
</tr>
<tr>
<td>Current $I_i$</td>
<td>266 mA</td>
<td>26 mA</td>
</tr>
<tr>
<td>Power $P_i$</td>
<td>1 W</td>
<td>191 mW</td>
</tr>
<tr>
<td>Capacitance $C_i$</td>
<td>0 nF</td>
<td>1.54 nF</td>
</tr>
</tbody>
</table>
### Table 6-3: Entity Parameters (continued)

<table>
<thead>
<tr>
<th></th>
<th>Loop terminals + and -</th>
<th>Sensor terminals 1 to 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inductance $L_i$</td>
<td>0 mH</td>
<td>0 $\mu$H</td>
</tr>
</tbody>
</table>
6.14 Declaration of Conformity

EU Declaration of Conformity
No: RMD 1134 Rev. A

We,

Rosemount Inc.
8200 Market Boulevard
Chanhassen, MN 55317-9685
USA

declare under our sole responsibility that the product,

Rosemount™ 248 Temperature Transmitter

manufactured by,

Rosemount Inc.
8200 Market Boulevard
Chanhassen, MN 55317-9685
USA

to which this declaration relates, is in conformity with the provisions of the European Union Directives, including the latest amendments, as shown in the attached schedule.

Assumption of conformity is based on the application of the harmonized standards and, when applicable or required, a European Union notified body certification, as shown in the attached schedule.

________________________
(signature)

Chris LaPoint
(name)

________________________
Vice President of Global Quality
(function)

18-Apr-19; Shakopee, MN USA
(date of issue & place)
EU Declaration of Conformity
No: RMD 1134 Rev. A

EMC Directive (2014/30/EU)
Rosemount [Model Number & Description]

ATEX Directive (2014/34/EU)
Rosemount 248 Temperature Transmitter

Basecefa18ATEX0090X – Intrinsic Safety Certificate
Equipment Group II, Category 1 G
Ex ia IIC T5/T6 Ga
Harmonized Standards:
EN IEC 60079-0: 2018, EN 60079-11: 2012

Basecefa18ATEX0091X – Zone 2 Certificate
Equipment Group II, Category 3 G
Ex nA IIC T5/T6 Gc
Harmonized Standards:
EN IEC 60079-0: 2018, EN 60079-15: 2010

FM12ATEX0065X – Flameproof Certificate
Equipment Group II, Category 2 G
Ex db IIC T6…T1 Gb
Harmonized Standards:

FM12ATEX0065X – Dust Certificate
Equipment Group II, Category 2 D
Ex tb IIC T130°C Db
Harmonized Standards:

RoHS Directive (2011/65/EU)
Harmonized Standard:
EN 50581:2012
EU Declaration of Conformity
No: RMD 1134 Rev. A

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

ATEX Notified Body for Quality Assurance

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

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronics Assembly</td>
<td>○</td>
</tr>
<tr>
<td>Housing Assembly</td>
<td>○</td>
</tr>
<tr>
<td>Sensor Assembly</td>
<td>○</td>
</tr>
</tbody>
</table>

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

O: Indicate that said hazardous substance in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

X: Indicate that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.