

# Rosemount™ 214C Sensor



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# 1 About this guide

This guide provides basic guidelines for Rosemount 214C Sensor models. If the sensor was ordered assembled to a temperature thermowell or transmitter, see the appropriate product literature for information on configuration and hazardous locations certifications.

## 1.1 Safety messages

### NOTICE

Complications can arise when the sensors and the transmitters to which they are assembled are certified to compatible, but each has different approvals. Be aware of the following situations:

- If an I.S. approved 214C sensor is ordered with a housing, a transmitter enclosed in that housing may have a different I.S. approval rating. Refer to the transmitter IS certificate if applicable.
- If a sensor and transmitter have different certifications, or if either has more certifications than the other, installation must comply with the most restrictive requirements required by either component. This is especially (but not exclusively) relevant when combination approvals are ordered on either the sensor or transmitter. Review certifications on both the sensor and transmitter for installation requirements and ensure installation of the sensor/transmitter assembly complies with a single certification that is shared by both of these components and that meets the requirements of the application.

### ⚠ WARNING

#### Explosion

Explosions could result in death or serious injury.

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

**⚠ WARNING****Conduit/cable entries**

Unless marked, the conduit/cable entries in the transmitter housing use a ½–14 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.

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

**Physical access**

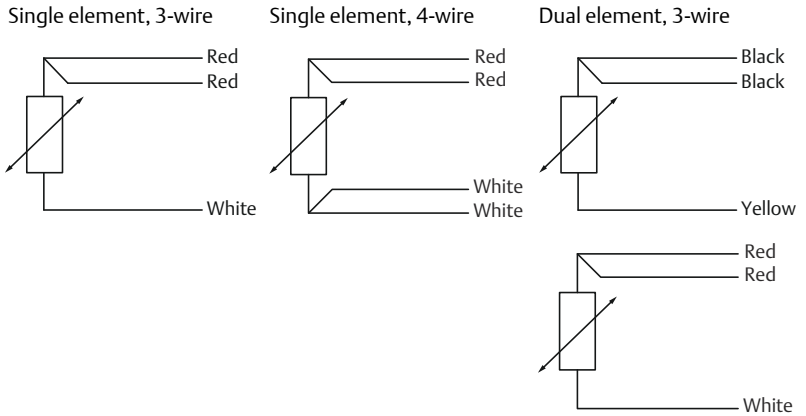
Unauthorized personnel may potentially cause significant damage to and/or misconfiguration of end users’ equipment. This could be intentional or unintentional and needs to be protected against.

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.

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## 2 Wiring diagram for RTDs

Figure 2-1: RTD Lead Wire Configuration per IEC 60751



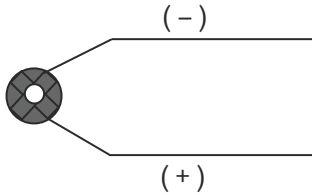
**Note**

To configure a single element, 4-wire RTD as a 3-wire system, connect only one white lead. Insulate or terminate the unused white lead in a manner that prevents shorting to the ground. To configure a single element, 4-wire RTD as a 2-wire system, connect matching colored wires first and then connect the paired wires to the terminal.

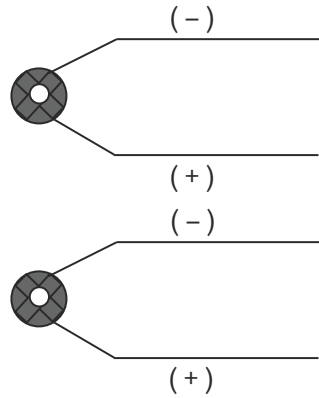
### 3 Wiring diagram for thermocouples

**Figure 3-1: Thermocouple Lead Wire Configuration**

Single thermocouple, 2-wire



Dual thermocouple, 4-wire



Type	IEC 60584 thermocouple colors		ASTM E- 230 thermocouple colors	
	POS (+)	NEG (-)	POS (+)	NEG (-)
J	Black	White	White	Red
K	Green	White	Yellow	Red
T	Brown	White	Blue	Red

**Note**

Dual thermocouple sensors are shipped with one pair of the wires shrink-wrapped together.

## 4 Product certifications

Rev 2.1

### 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](http://Emerson.com/Rosemount).

### Ordinary Location Certification

The Rosemount 214C 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).

### 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.

## 4.1 USA

### 4.1.1 E5 USA Explosionproof (XP) and Dust-Ignitionproof (DIP)

**Certificate** 70044744

**Standards** FM 3600:2011, FM 3615:2006, UL 50E:2007, UL 61010-1:2010, ANSI/ISA 60529:2004

**Markings** XP CL I, DIV 1, GP B, C, D; DIP CL II, DIV 1, GP E, F, G; CL III; T6 (-50 °C ≤ T<sub>a</sub> ≤ +80 °C), T5 (-50 °C ≤ T<sub>a</sub> ≤ +95 °C); Seal not required; installed per Rosemount drawing 00214-1030; Type 4X<sup>†</sup> and IP 66/67; V<sub>max</sub> 35 VDC, 750 mW<sub>max</sub>

### Special Conditions for Safe Use (X)

1. Flameproof joints are not intended for repair.
2. Cable entries must be used which maintain the ingress protection of the enclosure. Unused cable entries must be filled with suitable blanking plugs.

### 4.1.2 N5 USA Division 2 (NI)

**Certificate** 70044744

**Standards** FM 3600:2011, FM 3611:2004, UL 50E:2007, UL 61010-1:2010, ANSI/ISA 60529:2004

**Markings** NI CL I, DIV 2, GP A, B, C, D; T6 ( $-50\text{ }^{\circ}\text{C} \leq T_a \leq +80\text{ }^{\circ}\text{C}$ ), T5 ( $-50\text{ }^{\circ}\text{C} \leq T_a \leq +95\text{ }^{\circ}\text{C}$ ); installed per Rosemount drawing 00214-1030; Type 4X<sup>†</sup> and IP 66/67;  $V_{\text{max}}$  35 VDC, 750 mW<sub>max</sub>

#### 4.1.3 E6 Canada Explosionproof (XP) and Dust-Ignitionproof (DIP)

**Certificate** 70044744

**Standards** CAN/CSA C22.2 No. 0:2010, CAN/CSA No. 25-1966 (R2000), CAN/CSA C22.2 No. 30-M1986 (R2012), CAN/CSA C22.2 No. 94-M1991 (R2011), CAN/CSA C22.2 No. 61010-1:2012

**Markings** XP CL I, DIV 1, GP B\*, C, D; DIP CL II, DIV 1, GP E, F, G; CL III; T6 ( $-50\text{ }^{\circ}\text{C} \leq T_a \leq +80\text{ }^{\circ}\text{C}$ ), T5 ( $-50\text{ }^{\circ}\text{C} \leq T_a \leq +95\text{ }^{\circ}\text{C}$ ); Seal not required; installed per Rosemount drawing 00214-1030; Type 4X<sup>†</sup> and IP 66/67;  $V_{\text{max}}$  35 VDC, 750 mW<sub>max</sub>

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

1. Flameproof joints are not intended for repair.
2. Cable entries must be used which maintain the ingress protection of the enclosure. Unused cable entries must be filled with suitable blanking plugs.

#### 4.1.4 N6 Canada Division 2

**Certificate** 70044744

**Standards** CAN/CSA C22.2 No. 0:2010, CAN/CSA C22.2 No. 94-M1991 (R2011), CAN/CSA No. 213-M1987 (R2013), CAN/CSA C22.2 No. 61010-1:2012

**Markings** CL I, DIV 2, GP A, B, C, D; T6; ( $-50\text{ }^{\circ}\text{C} \leq T_a \leq +80\text{ }^{\circ}\text{C}$ ), T5 ( $-50\text{ }^{\circ}\text{C} \leq T_a \leq +95\text{ }^{\circ}\text{C}$ ); installed per Rosemount drawing 00214-1030; Type 4X<sup>†</sup> and IP 66/67;  $V_{\text{max}}$  35 VDC, 750 mW<sub>max</sub>

<sup>†</sup>Spring loaded indicator has reduced ingress and dust ratings. Spring loaded sensors must be installed in a thermowell to maintain dust and ingress ratings. Un-painted aluminum enclosures are Type 4 rated. \* Assembly is not Canada Explosionproof (E6) rated to Group B if the AT1 (0079) connection head is used.

## 4.2 Europe

### 4.2.1 E1 ATEX Flameproof

**Certificate** DEMKO 16 ATEX 1677X



**Standards** EN 60079-0:2012+A11 2013, EN 60079-1:2014

**Markings**  $\text{Ex}$  II 2 G Ex db IIC T6...T1 Gb T6(-50 °C ≤ T<sub>a</sub> ≤ +80 °C), T5(-50 °C ≤ T<sub>a</sub> ≤ +95 °C), T4...T1(-50 °C ≤ T<sub>a</sub> ≤ +100 °C) V<sub>max</sub> = 45 Vdc, P<sub>max</sub> = 750 mW

### Installation Instructions

1. Use field wiring suitable for both the minimum and maximum service temperatures.
2. These devices are provided without cable glands/conduit sealing devices/blanking elements. Proper selection of suitable cable glands/conduit sealing/blanking elements should occur in the field.
3. Unused apertures shall be closed with suitable blanking elements.
4. The enclosures may be provided with up to three ½–14 NPT, ¾–14 NPT, or M20 x 1.5 entries, with location of the entries specified in the installation instructions document.

### Special Conditions for Safe Use (X)

1. Refer to certificate for details regarding process and ambient temperature limits.
2. When the Rosemount 214C sensor is provided with an enclosure with a display cover, the maximum ambient shall be 95 °C.
3. The non-metallic label on the device may store an electrostatic charge and become a source of ignition in Group III atmospheres. Care shall be taken to reduce electrostatic build-up. For example, the non-metallic label may be rubbed with a damp cloth.
4. The display covers were impacted at 4 J according to a low risk of mechanical danger. Guard the display covers against impact energies greater than 4 J.
5. Flameproof joints are not intended for repair.
6. The stand-alone Rosemount 214C sensors without an enclosure must be assembled to a suitable Ex certified enclosure of a volume no greater than 0.55 L to maintain the types of protection “db” and “tb”.
7. The spring-loaded sensors and DIN sensors must be installed in a thermowell to maintain IP6X ratings.
8. Contact indicating sensors do not meet requirements for protection type “tb” and therefore are not “tb” rated.

### 4.2.2 I1 ATEX Intrinsic Safety

**Certificate** Baseefa16ATEX0101X

**Standards** EN 60079-0:2012+A11:2013, EN 60079-11:2012

**Markings** Ⓢ II 1 G Ex ia IIC T5/T6 Ga (SEE CERTIFICATE FOR SCHEDULE)

Thermocouples; $P_i = 500 \text{ mW}$	$T6 \text{ } 60^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$
RTDs; $P_i = 192 \text{ mW}$	$T6 \text{ } 60^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$
RTDs; $P_i = 290 \text{ mW}$	$T6 \text{ } 60^\circ\text{C} \leq T_a \leq +60^\circ\text{C}$
	$T5 \text{ } 60^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$

#### Special Condition for Safe Use (X)

1. The equipment must be installed in an enclosure which affords it a degree of ingress protection of at least IP20.

### 4.2.3 N1 ATEX Zone 2

**Certificate** BAS00ATEX3145

**Standards** EN 60079-0:2012+A11:2013, EN 60079-15:2010

**Markings** Ⓢ II 3 G Ex nA IIC T5 Gc ( $-40^\circ\text{C} \leq T_a \leq 70^\circ\text{C}$ )

### 4.2.4 ND ATEX Dust Ignitionproof

**Certificate** DEMKO 16 ATEX 1677X

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

**Markings** Ⓢ II 2 D Ex tb IIIC T130 °C Db ( $-50^\circ\text{C} \leq T_a \leq +100^\circ\text{C}$ )  $V_{\text{max}} = 45 \text{ Vdc}$ ,  $P_{\text{max}} = 750 \text{ mW}$

#### Installation Instructions

1. Use field wiring suitable for both the minimum and maximum service temperatures.
2. These devices are provided without cable glands/conduit sealing devices/blanking elements. Proper selection of suitable cable glands/conduit sealing/blanking elements should occur in the field.
3. Unused apertures shall be closed with suitable blanking elements.
4. The enclosures may be provided with up to three  $\frac{1}{2}$ –14 NPT,  $\frac{3}{4}$ –14 NPT, or M20 x 1.5 entries, with location of the entries specified in the installation instructions document.

### Special Conditions for Safe Use (X)

1. Refer to certificate for details regarding process and ambient temperature limits.
2. When the 214C sensor is provided with an enclosure with a display cover, the maximum ambient shall be 95 °C.
3. The non-metallic label on the device may store an electrostatic charge and become a source of ignition in Group III atmospheres. Care shall be taken to reduce electrostatic build-up. For example, the non-metallic label may be rubbed with a damp cloth.
4. The display covers were impacted at 4 J according to a low risk of mechanical danger. Guard the display covers against impact energies greater than 4 J.
5. Flameproof joints are not intended for repair.
6. The stand-alone Rosemount 214C sensors without an enclosure must be assembled to a suitable Ex certified enclosure of a volume no greater than 0.55 L to maintain the types of protection “db” and “tb”.
7. The spring loaded sensors and DIN sensors must be installed in a thermowell to maintain IP6X ratings.
8. Contact indicating sensors do not meet requirements for protection type “tb” and therefore are not “tb” rated.

## 4.3 International

### 4.3.1 E7 IECEx Flameproof

**Certificate** IECEx UL 16.0048X

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

**Markings** Ex db IIC T6...T1 Gb T6(-50 °C ≤ T<sub>a</sub> ≤ +80 °C), T5(-50 °C ≤ T<sub>a</sub> ≤ +95 °C), T4...T1(-50 °C ≤ T<sub>a</sub> ≤ +100 °C) V<sub>max</sub> = 45 Vdc, P<sub>max</sub> = 750 mW

### Installation Instructions

1. Use field wiring suitable for both the minimum and maximum service temperatures.
2. These devices are provided without cable glands/conduit sealing devices/blanking elements. Proper selection of suitable cable glands/conduit sealing/blanking elements should occur in the field.
3. Unused apertures shall be closed with suitable blanking elements.

- The enclosures may be provided with up to three ½–14 NPT, ¾–14 NPT, or M20 × 1.5 entries, with location of the entries specified in the installation instructions document.

### Special Conditions for Safe Use (X)

- Refer to certificate for details regarding process and ambient temperature limits.
- When the Rosemount 214C sensor is provided with an enclosure with a display cover, the maximum ambient shall be 95 °C.
- The non-metallic label on the device may store an electrostatic charge and become a source of ignition in Group III atmospheres. Care shall be taken to reduce electrostatic build-up. For example, the non-metallic label may be rubbed with a damp cloth.
- The display covers were impacted at 4 J according to a low risk of mechanical danger. Guard the display covers against impact energies greater than 4J.
- Flameproof joints are not intended for repair.
- The stand-alone Rosemount 214C sensors without an enclosure must be assembled to a suitable Ex certified enclosure of a volume no greater than 0.55 L to maintain the types of protection “db” and “tb”.
- The spring loaded sensors and DIN sensors must be installed in a thermowell to maintain IP6X ratings.
- Contact indicating sensors do not meet requirements for protection type “tb” and therefore are not “tb” rated.

#### 4.3.2 I7 IECEx Intrinsic Safety

**Certificate** IECEx BAS 16.0077X

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

**Markings** Ex ia IIC T5/T6 Ga (SEE CERTIFICATE FOR SCHEDULE)

Thermocouples; $P_i = 500 \text{ mW}$	$T_6 \text{ } 60 \text{ } ^\circ\text{C} \leq T_a \leq +70 \text{ } ^\circ\text{C}$
RTDs; $P_i = 192 \text{ mW}$	$T_6 \text{ } 60 \text{ } ^\circ\text{C} \leq T_a \leq +70 \text{ } ^\circ\text{C}$
RTDs; $P_i = 290 \text{ mW}$	$T_6 \text{ } 60 \text{ } ^\circ\text{C} \leq T_a \leq +60 \text{ } ^\circ\text{C}$
	$T_5 \text{ } 60 \text{ } ^\circ\text{C} \leq T_a \leq +70 \text{ } ^\circ\text{C}$

### Special Condition for Safe Use (X)

- The equipment must be installed in an enclosure which affords it a degree of ingress protection of at least IP20.

### 4.3.3 N7 IECEx Zone 2

<b>Certificate</b>	IECEx BAS 07.0055
<b>Standards</b>	IEC 60079-0:2011, IEC 60079-15:2010
<b>Markings</b>	Ex nA IIC T5 Gc; T5(-40 °C ≤ T <sub>a</sub> ≤ +70 °C)

### 4.3.4 NK IECEx Dust Ignitionproof

<b>Certificate</b>	IECEx UL 16.0048X
<b>Standards</b>	IEC 60079-0:2011, IEC 60079-31:2013
<b>Markings</b>	Ex tb IIIC T 130 °C Db (-50 °C ≤ T <sub>a</sub> ≤ +100 °C) V <sub>max</sub> = 45 Vdc, P <sub>max</sub> = 750 mW

#### Installation instructions

1. Use field wiring suitable for both the minimum and maximum service temperatures.
2. These devices are provided without cable glands/conduit sealing devices/blanking elements. Proper selection of suitable cable glands/conduit sealing/blanking elements should occur in the field.
3. Unused apertures shall be closed with suitable blanking elements.
4. The enclosures may be provided with up to three ½–14 NPT, ¾–14 NPT, or M20 × 1.5 entries, with location of the entries specified in the installation instructions document.

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

1. Refer to certificate for details regarding process and ambient temperature limits.
2. When the Rosemount 214C sensor is provided with an enclosure with a display cover, the maximum ambient shall be 95 °C.
3. The non-metallic label on the device may store an electrostatic charge and become a source of ignition in Group III atmospheres. Care shall be taken to reduce electrostatic build-up. For example, the non-metallic label may be rubbed with a damp cloth.
4. The display covers were impacted at 4 J according to a low risk of mechanical danger. Guard the display covers against impact energies greater than 4J.
5. Flameproof joints are not intended for repair.
6. The stand-alone Rosemount 214C sensors without an enclosure must be assembled to a suitable Ex certified enclosure of a volume no

greater than 0.55 L to maintain the types of protection “db” and “tb”.

7. The spring loaded sensors and DIN sensors must be installed in a thermowell to maintain IP6X ratings.
8. Contact indicating sensors do not meet requirements for protection type “tb” and therefore are not “tb” rated.

## 4.4 Brazil

### 4.4.1 E2 Brazil Flameproof & Dust Ignitionproof

**Certificate** UL-BR 17.0199X

**Standards** ABNT NBR IEC 60079-0:2013, ABNT NBR IEC 60079-1:2016, ABNT NBR IEC 60079-31:2014

**Markings** Ex db IIC T6...T1 Gb T6(-50 °C ≤ T<sub>a</sub> ≤ +80 °C), T5(-50 °C ≤ T<sub>a</sub> ≤ +95 °C), T4...T1(-50 °C ≤ T<sub>a</sub> ≤ +100 °C);  
Ex tb IIIC T130 °C Db (-50 °C ≤ T<sub>a</sub> ≤ +100 °C)

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

1. Refer to certificate for details regarding process and ambient temperature limits.
2. When the Rosemount 214C sensor is provided with an enclosure with a display cover, the maximum ambient shall be 95 °C.
3. The non-metallic label on the device may store an electrostatic charge and become a source of ignition in Group III atmospheres. Care shall be taken to reduce electrostatic build-up. For example, the non-metallic label may be rubbed with a damp cloth.
4. The display covers were impacted at 4 J according to a low risk of mechanical danger. Guard the display covers against impact energies greater than 4J.
5. Flameproof joints are not intended for repair.
6. The stand-alone Rosemount 214C sensors without an enclosure must be assembled to a suitable Ex certified enclosure of a volume no greater than 0.55 L to maintain the types of protection “db” and “tb”.
7. The spring loaded sensors and DIN sensors must be installed in a thermowell to maintain IP6X ratings.
8. Contact indicating sensors do not meet requirements for protection type “Ex tb” and therefore are not “Ex tb” rated on this certificate.

#### 4.4.2 I2 Brazil Intrinsic Safety

**Certificate** UL-BR 18.0257X

**Standards** ABNT NBR IEC 60079-0:2013, ABNT NBR IEC 60079-11:2013

**Markings** Ex ia IIC T6...T5 Ga Thermocouples:  $P_i = 500 \text{ mW}$ , T6( $-60 \text{ }^\circ\text{C} \leq T_a \leq +70 \text{ }^\circ\text{C}$ ) RTDs:  $P_i = 192 \text{ mW}$ , T6( $-60 \text{ }^\circ\text{C} \leq T_a \leq +70 \text{ }^\circ\text{C}$ )  $P_i = 290 \text{ mW}$ , T6( $-60 \text{ }^\circ\text{C} \leq T_a \leq +60 \text{ }^\circ\text{C}$ ), T5( $-60 \text{ }^\circ\text{C} \leq T_a \leq +70 \text{ }^\circ\text{C}$ )

##### Special Condition for Safe Use (X)

1. The equipment must be installed in an enclosure which affords it a degree of ingress protection of at least IP20.

#### 4.5 Korea

##### 4.5.1 EP Korea Flameproof

**Certificate** 17-KA4BO-0305X

**Markings** Ex d IIC T6...T1, T6( $-50 \text{ }^\circ\text{C} \leq T_a \leq +80 \text{ }^\circ\text{C}$ ), T5( $-50 \text{ }^\circ\text{C} \leq T_a \leq +95 \text{ }^\circ\text{C}$ ), T4...T1( $-50 \text{ }^\circ\text{C} \leq T_a \leq +100 \text{ }^\circ\text{C}$ )

##### Special Condition for Safe Use (X)

1. Refer to certificate for Special Conditions for Safe Use.

##### 4.5.2 IP Korea Intrinsic Safety

**Certificate** 17-KA4BO-0304X

**Markings** Ex ia IIC T6/T5

##### Special Condition for Safe Use (X)

1. Refer to certificate for details regarding process and ambient temperature limits as well as Special Conditions for Safe Use.

##### 4.5.3 KP Korea Flameproof Dust Ignitionproof and Intrinsic Safety

**Certificate** 17-KA4BO-0306X in addition to the EP and IP certificate numbers

**Markings** Ex tb IIIC T130 °C, T130 °C ( $-50 \text{ }^\circ\text{C} \leq T_a \leq +100 \text{ }^\circ\text{C}$ ) in addition to the markings for EP and IP

##### Special Condition for Safe Use (X)

1. Refer to certificate for details regarding process and ambient temperature limits as well as Special Conditions for Safe Use.

## 4.6 Russia

### 4.6.1 EM Technical Regulation Customs Union TR CU 012/2011 (EAC) Flameproof

**Markings** 1Ex db IIC T6...T1 Gb X, T6( $-55^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$ ), T5( $-55^{\circ}\text{C} \leq T_a \leq +95^{\circ}\text{C}$ ), T4...T1 ( $-55^{\circ}\text{C} \leq T_a \leq +100^{\circ}\text{C}$ )

#### Special Condition for Safe Use (X)

1. Refer to certificate for Special Conditions for Safe Use

### 4.6.2 IM Technical Regulation Customs Union TR CU 012/2011 (EAC) Intrinsic Safety

**Markings** 0Ex ia IIC T5, T6 Ga X

#### Special Condition for Safe Use (X)

1. Refer to certificate for details regarding process and ambient temperature limits as well as Special Conditions for Safe Use.

### 4.6.3 KM Technical Regulation Customs Union TR CU 012/2011 (EAC) Flameproof, Dust-Ignitionproof, and Intrinsic Safety

**Markings** Ex tb IIIC T130 °C Db X in addition to the markings above for EM and IM.

#### Special Condition for Safe Use (X)

1. Refer to certificate for details regarding process and ambient temperature limits as well as Special Conditions for Safe Use.

## 4.7 China

### 4.7.1 E3 China Flameproof

**Certificate** GYJ17.1010X (CCC 认证)

**Standards** GB 3836.1-2010, GB 3836.2-2010, GB 12476.1-2013, GB 12476.5-2013

**Markings** Ex d IIC T6~T1 Gb, Ex tD A21 IP6X T130 °C

\*Dust Ignitionproof approvals/markings are only available through the K3 option code

#### 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：

1. 涉及隔爆接合面的维修须联系产品制造商。



2. 非金属铭牌可能带来静电放电危险，产品用于爆炸性粉尘危险场所时需要采取措施以防止静电积聚。

### 产品使用注意事项

1. 产品温度组别和使用环境温度的关系为：

温度组别	环境温度	
	AR1、SR1、AD1、SD1、AT1	AR2、SR2
T6	$-50^{\circ}\text{C} \leq \text{Ta} \leq +80^{\circ}\text{C}$	$-50^{\circ}\text{C} \leq \text{Ta} \leq +80^{\circ}\text{C}$
T5	$-50^{\circ}\text{C} \leq \text{Ta} \leq +95^{\circ}\text{C}$	$-50^{\circ}\text{C} \leq \text{Ta} \leq +95^{\circ}\text{C}$
T4~T1	$-50^{\circ}\text{C} \leq \text{Ta} \leq +100^{\circ}\text{C}$	$-50^{\circ}\text{C} \leq \text{Ta} \leq +95^{\circ}\text{C}$
T130°C	$-50^{\circ}\text{C} \leq \text{Ta} \leq +100^{\circ}\text{C}$	$-50^{\circ}\text{C} \leq \text{Ta} \leq +95^{\circ}\text{C}$

2. 产品温度组别和过程温度的关系为：

外壳类型	扩展长度	过程温度 (°C)						
		气体						粉尘
		T6	T5	T4	T3	T2	T1	
AR2、SR2	无扩展	55	70	95	95	95	95	95
	3"	55	70	100	100	100	100	100
	6"	60	70	100	100	100	100	100
	9"	65	75	110	110	110	110	110
AR1、SR1、AD1、SD1、AT1	任何长度	85	100	135	200	300	450	130

3. 产品外壳设有接地端子，用户在使用时应可靠接地。
4. 安装现场应不存在对产品外壳有腐蚀作用的有害气体。
5. 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 Gb，Ex tD A21 IP6X 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。
6. 用于爆炸性气体环境中，现场安装、使用和维护必须严格遵守“断电后开盖！”的警告语。用于爆炸性粉尘环境中，现场安装、使用和维护必须严格遵守“爆炸性粉尘场所严禁开盖！”的警告语。
7. 用于爆炸性粉尘环境中，产品外壳表面需保持清洁，以防粉尘堆积，但严禁用压缩空气吹扫。
8. 用户不得自行更换该产品的零部件，应会同产品制造商共同解决运行中出现的故障，以杜绝损坏现象的发生。
9. 产品的安装、使用和维护应同时遵守产品使用说明书、GB3836.13-2013“爆炸性环境 第 13 部分：设备的修理、检修、修复和改造”、GB/T3836.15-2017“爆炸性环境 第 15 部分：电气装置的设计、选型和安装”、GB/T3836.16-2017“爆炸性环境 第 16 部

分：电气装置的检查和维修”、GB50257-2014“电气装置安装工程爆炸和火灾危险环境电力装置施工及验收规范”和 GB15577-2007“粉尘防爆安全规程”的有关规定。

#### 4.7.2 I3 China Intrinsic Safety

**Certificate** GYJ18.1024X (CCC 认证)

**Standards** GB 3836.1-2010, GB 3836.4-2010, GB 3836.20-2010

**Markings** Ex ia IIC T5/T6 Ga

##### 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：产品必须安装于具有 IP20 外壳防护等级的外壳内方可使用。

##### 产品使用注意事项

1. 产品使用环境温度 and 温度组别的关系为：

传感器类型	最大输入功率 $P_i$ (mW)	温度组别	使用环境温度
热电偶	500	T6	-60°C ~ +70°C
RTD	192	T6	-60°C ~ +70°C
RTD	290	T6	-60°C ~ +60°C
		T5	-60°C ~ +70°C

2. 本安电气参数:

热电偶：

最高输入电压	最大输入电流	最大输入功率	最大内部等效参数	
$U_i$ (V)	$I_i$ (mA)	$P_i$ (mW)	$C_i$ (pF)	$L_i$ (nH)
60	100	500	75	600

最高输出电压 $U_o$ (V)	最大输出电流 $I_o$ (mA)	最大输出功率 $P_o$ (mW)
0.1	50	25

RTD:

最高输入电压	最大输入电流	最大输入功率	最大内部等效参数	
$U_i$ (V)	$I_i$ (mA)	$P_i$ (mW)	$C_i$ (pF)	$L_i$ (nH)
60	100	192/290	75	600

3. 该产品必须与已通过防爆认证的关联设备配套共同组成本安防爆系统方可用于爆炸性气体环境。其系统接线必须同时遵守本产品 and 所配关联设备的使用说明书要求，接线端子不得接错。
4. 用户不得自行更换该产品的零部件，应会同产品制造商共同解决运行中出现的故障，以杜绝损坏现象的发生。
5. 产品的安装、使用和维护应同时遵守产品使用说明书、GB3836.13-2013“爆炸性环境 第 13 部分：设备的修理、检修、修复和改造”、GB3836.15-2000“爆炸性气体环境用电气设备 第 15 部分：危险场所电气安装（煤矿除外）”、GB3836.16-2006“爆炸性气体环境用电气设备 第 16 部分：电气装置的检查和维修（煤矿除外）”、GB3836.18-2010“爆炸性环境 第 18 部分：本质安全系统”和 GB50257-2014“电气装置安装工程爆炸和火灾危险环境电力装置施工及验收规范”的有关规定。

#### 4.7.3 N3 China Zone 2

<b>Certificate</b>	GYJ18.1025 (CCC 认证)
<b>Standards</b>	GB 3836.1-2010, GB 3836.8-2014
<b>Markings</b>	Ex nA IIC T5 Gc, T5(-40 °C ≤ T <sub>a</sub> ≤ +70 °C)

#### 产品使用注意事项

1. 产品使用环境温度为：-40 °C ~ +70 °C
2. 输入参数：

类型	输入参数 $U_i$
变送器	42.4 V
热电阻端子	5 V
热电偶端子	0 V

3. 产品外壳内可以安装如下温度变送器模块：

型号	防爆合格证编号
644 系列	GYJ15.1502




型号	防爆合格证编号
248 系列	GYJ15.1089



- 现场安装时，电缆引入口须选用经国家指定的防爆检验机构检验认可、具有 Ex eII C Gb 或 Ex nR IIC Gc 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。电缆引入装置或堵封件的安装使用必须遵守其使用说明书的要求并保证外壳防护等级达到 IP54 (符合 GB4208-2008 标准要求)以上。
- 用户不得自行更换该产品的零部件，应会同产品制造商共同解决运行中出现的故障，以杜绝损坏现象的发生。
- 产品的安装、使用和维护应同时遵守产品使用说明书、GB3836.13-2013“爆炸性环境 第 13 部分：设备的修理、检修、修复和改造”、GB3836.15-2000“爆炸性气体环境用电气设备 第 15 部分：危险场所电气安装（煤矿除外）”、GB3836.16-2006“爆炸性气体环境用电气设备 第 16 部分：电气装置的检查和维护（煤矿除外）”和 GB50257-2014“电气装置安装工程爆炸和火灾危险环境电力装置施工及验收规范”的有关规定。

## 4.8 Combinations

- K1**      Combination of E1, I1, N1, and ND
- K3**      Combination of E3, I3, and N3
- K7**      Combination of E7, I7, N7, and NK
- KA**      Combination of E1 and E6
- KB**      Combination of E5 and E6
- KC**      Combination of E1 and E5
- KD**      Combination of E1, E5, and E6
- KE**      Combination of E1, E5, E6, and E7
- KM**      Combination of EM and IM
- KN**      Combination of N1, N5, N6, and N7
- KP**      Combination of EP and IP

# 5 Declaration of Conformity

	<b>EU Declaration of Conformity</b> No: RMD 1109 Rev. D	
<p>We,</p> <p style="margin-left: 40px;"><b>Rosemount, Inc.</b> 8200 Market Boulevard Chanhassen, MN 55317-9685 USA</p> <p>declare under our sole responsibility that the product,</p> <p style="text-align: center;"><b>Rosemount™ 214C Temperature Sensor</b></p> <p>manufactured by,</p> <p style="margin-left: 40px;"><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>		
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">   <hr style="width: 100%;"/> <p>(signature)</p> </div> <div style="text-align: center;"> <p>Vice President of Global Quality</p> <hr style="width: 100%;"/> <p>(function)</p> </div> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;"> <div style="text-align: center;"> <p>Chris LaPoint</p> <hr style="width: 100%;"/> <p>(name)</p> </div> <div style="text-align: center;"> <p>1-Feb-19</p> <hr style="width: 100%;"/> <p>(date of issue)</p> </div> </div>		
<p>Page 1 of 2</p>		

	<b>EU Declaration of Conformity</b> No: RMD 1109 Rev. D	
<b>ATEX Directive (2014/34/EU)</b>		
<b>DEMKO 16ATEX1677X - Flameproof Certificate</b> Equipment Group II Category 2 G (Ex db IIC T6...T1 Gb) Harmonized Standards: EN 60079-0:2012+A11:2013, EN 60079-1:2014		
<b>DEMKO 16ATEX1677X - Dust Certificate</b> Equipment Group II Category 2 D (Ex tb IIIc T130°C D6) Harmonized Standards: EN 60079-0:2012+A11:2013, EN 60079-31:2009		
<b>BAS00ATEX3145 - Type n Certificate</b> Equipment Group II Category 3 G (Ex nA IIC T5 Gc) Harmonized Standards: EN60079-0:2012+A11:2013, EN60079-15:2010		
<b>Baseefa16ATEX0101X - Intrinsic Safety Certificate</b> Equipment Group II Category 1 G (Ex ia IIC T5/T6) Harmonized Standards: EN 60079-0:2012+A11:2013, EN 60079-11:2012		
<hr/>		
<b>RoHS Directive (2011/65/EU)</b> Harmonized Standard: EN 50581:2012		
<hr/>		
<b>ATEX Notified Bodies</b>		
<b>UL International Demko A/S</b> [Notified Body Number: 0539] Borupvang 5A 2750 Ballerup Denmark		
<b>SGS FIMCO OY</b> [Notified Body Number: 0598] P.O. Box 30 (Särkiniementie 3) 00211 HELSINKI Finland		
<b>ATEX Notified Body for Quality Assurance</b>		
<b>SGS FIMCO OY</b> [Notified Body Number: 0598] P.O. Box 30 (Särkiniementie 3) 00211 HELSINKI Finland		
<hr/>		
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## 6 China 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 214  
List of Rosemount 214 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	○	○	○	○	○	○
壳体组件 Housing Assembly	○	○	○	○	○	○
传感器组件 Sensor Assembly	○	○	○	○	○	○

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.



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