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Quick Start Guide
00825-0400-2654, Rev DH
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Rosemount™ 214C Sensor



ROSEMOUNT™


EMERSON

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.

Conduit/cable entries

Unless marked, the conduit/cable entries in the 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 in protecting your system. Restrict physical access by unauthorized personnel to protect end users' assets. This is true for all systems used within the facility.

NOTICE



Refer to Product Certification section of this Quick Start Guide documentation.

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 intrinsically safe (IS) approved Rosemount 214C Sensor is ordered with a housing, a transmitter enclosed in that housing may have a different IS approval rating. Refer to the transmitter IS certificate if applicable.

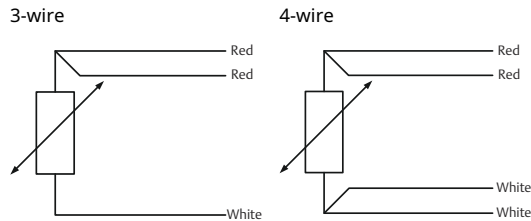
If a sensor and transmitter have different certifications, or if either has more certifications than the other, installation must comply with the most restrictive requirements required by either component. This is especially (but not exclusively) relevant when combination approvals are ordered on either 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.

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.

2 Wiring diagram for RTDs

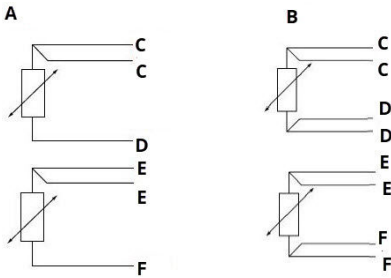
Figure 2-1: RTD Lead Wire Configuration per IEC 60751 - Single Element



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.

Figure 2-2: RTD Lead Wire Configuration per IEC 60751 - Dual Element



- A. 3-wire
- B. 4-wire
- C. Black
- D. Yellow
- E. Red
- F. White

3 Wiring diagram for thermocouples

Figure 3-1: Thermocouple Lead Wire Configuration

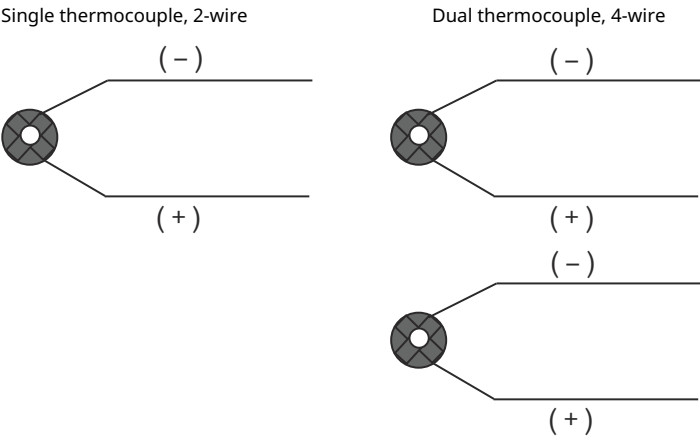


Table 3-1: Thermocouple Wire Color

	IEC 60584 Thermocouple		ASTM E230 Thermocouple	
Type	Positive (+)	Negative (-)	Positive (+)	Negative (-)
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.

Type	Positive (+)	Negative (-)	Positive (+)	Negative (-)
N	Pink	White	Red	Orange

4 Additional RTD specifications

Note
All specifications in this section apply to all RTDs unless noted otherwise. All RTDs meet and/or exceed type and routine tests for sensors/thermometers per IEC 60751:2008.

4.1 Insulation resistance

1000 MΩ minimum insulation resistance when measured at 500 VDC at room temperature.

4.2 Insulation resistance at elevated temperature

Insulation resistance at elevated temperatures for sensor types RT, RH, and RW are tested and meet requirements according to IEC 60751:2008 6.5.1.

4.3 Time response

Sensor response time tested in flowing water according to IEC 60751:2008 6.5.2.	Sensor type RT: T50 average = 8.5 seconds; T90 average = 22.9 seconds
	Sensor type RH: T50 average = 9.15 seconds; T90 average = 24.1 seconds
	Sensor type RW: T50 average = 9.0 seconds; T90 average = 24.4 seconds

4.4 Stability

Stability at upper temperature limit tested and meets requirements according to IEC 60751:2008 6.5.3.

4.5 Effects of temperature cycling

Effect of temperature cycling tested and meets requirements according to IEC 60751:2008 6.5.5.

4.6 Hysteresis

Effect of hysteresis tested and meets requirements according to IEC 60751:2008 6.5.6.

4.7 Self heating

Self-heating tested and meets requirements according to IEC 60751:2008 6.5.7.

4.8 Process immersion

Minimum immersion depth tested according to IEC 60751:2008 6.5.8.	Sensor type RT, single: Minimum immersion depth = 30 mm
	Sensor type RT, dual: Minimum immersion depth = 45 mm
	Sensor type RH, single and dual: Minimum immersion depth = 40 mm
	Sensor type RW, single and dual: Minimum immersion depth = 50 mm

4.9 Vibration limits

Vibration tested according to IEC 60751:2008 6.6.4.	Sensor type RT and RH: Meets 3 g vibration between 20 and 500 Hz for 150 hours.
	Sensor type RW: Meets 1 g vibration between 20 and 500 Hz for 150 hours.

4.10 Functional specifications

Power	Overvoltage Category I
Environmental	Pollution Degree 4

5 Additional thermocouple specifications

Note
All specifications in this section apply to all thermocouple types unless noted otherwise. All thermocouples meet and/or exceed type and routine tests for sensors/thermometers per IEC 61515:2016.

5.1 Insulation resistance

1000 MΩ minimum insulation resistance when measured at 500 VDC at room temperature.

5.2 Time response

Sensor response time tested in flowing water according to IEC 61515:2016 5.3.2.8.	Grounded: T50 average = 1.9 seconds; T90 average = 4.0 seconds
	Ungrounded: T50 average = 2.8 seconds; T90 average = 7.3 seconds

5.3 Process immersion

Minimum immersion depth tested according to IEC 60751:2008 6.5.8.	Grounded thermocouples: Minimum immersion depth = 5 mm
	Ungrounded thermocouples: Minimum immersion depth = 10 mm

5.4 Continuity

Electrical continuity and polarity are tested and meet requirements according to IEC 61515:2016 5.3.2.

5.5 Functional specifications

Power	Overvoltage Category I
Environmental	Pollution Degree 4

6 Product certifications

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/global](https://emerson.com/global).

6.2 Ordinary location certification

The Rosemount 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).

Note

The terminal strip in the aluminum with terminal strip (AT1 or AT3) connection head requires sensor lead wires to have a wire termination (such as a bootlace ferrule or spade lug).

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 North America

6.4.1 E5 USA Explosion-proof

Certificate	CSA15CA70044744X
Markings	XP CL I, DIV 1, GP B, C, and D; T5/T6
	DIP CL II, DIV 1, GP E, F, G; CL III
	T6 (–50 °C ≤ Ta ≤ +80 °C); T5 (–50 °C ≤ Ta ≤ +95 °C)
	XP CL I, Zone 1, AEx db IIC T6...T1 Gb
	DIP ZONE 21, AEx tb IIIC T130°C Db
	T6...T1 (See Table 6-1 .); T 130 °C (See Table 6-1 .)
	Type 4x ⁽¹⁾ and IP 66/67 ⁽¹⁾ .
	Install per Rosemount 00214-1030.
	V _{max} 35 Vdc, 750 mW _{max}

Special Conditions of Safe Use (X):

1. Flameproof joints are not intended to be repaired.
2. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces and only clean

(1) Does not apply to spring-loaded adapter with contact indication.

the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.

3. See instructions (Table 6-1) for relation between process temperature, ambient temperature and temperature class/ maximum surface temperature "T".
4. When provided on their own, adapter style sensors must be assembled to a suitable Ex db or Ex tb enclosure. When assembled to an AEx db enclosure, the free internal volume no greater than 33.6 in.³ (550 cm³).
5. The spring-loaded style adapters and DIN style sensors must be installed in a thermowell to maintain CL II/III or AEx tb protection.
6. The contact indicating adapter style sensor does not meet the requirements for type of protection "tb" or CL II/III.
7. Guard DIN sensors against impacts greater than 4J.

Table 6-1: Explosion-proof

Process temperature range (°C ⁽¹⁾)	Ambient temperature range (°C ⁽¹⁾)	Temperature class
-60 °C to +80 °C	-60 °C to +80 °C	T6
-60 °C to +95 °C	-60 °C to +80 °C	T5
-60 °C to +130 °C	-60 °C to +80 °C	T4
-60 °C to +195 °C	-60 °C to +80 °C	T3
-60 °C to +290 °C	-60 °C to +80 °C	T2
-60 °C to +440 °C	-60 °C to +80 °C	T1
-60 °C to +100 °C	-60 °C to +80 °C	T130 °C

(1) Minimum process temperature and minimum ambient temperature is limited to -50 °C for models with enclosure designation "AD1" or "SD1".

6.4.2 N5 USA Non-Incendive

Certificate	CSA15CA70044744X
Markings	NI CL I, DIV 2, GP A, B, C, and D; T6 (-50 °C ≤ T _a ≤ +80 °C); T5 (-50 °C ≤ T _a ≤ +95 °C) Type 4x* and IP 66/67 ⁽²⁾ ; Install per Rosemount 00214-1030. V _{max} 35 VDC, 750 mW _{max}

6.4.3 I5 USA Intrinsic Safety

Certificate	CSA15CA70044744X
Markings	IS CL I, DIV 1, GP A, B, C, and D CL I, Zone 0, AEx ia IIC T5/T6 Ga Type 4x ⁽³⁾ and IP 66/67 ⁽³⁾ ; Install per 00214-1020 For entity parameters, see Table 6-2, Table 6-3 and Table 6-4.

Special Conditions of Use (X):

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

(2) Does not apply to spring-loaded adapter with contact indication.
(3) Does not apply to spring-loaded adapter with contact indication.

Table 6-2: Thermocouples/RTDs

Parameter	Value
Ui	60V
Ii	100 mA
Pi	See Table 6-3 .
Ci	75pF
Li	600nH

Table 6-3: IS temperature ranges

Rating	Temperature range
Thermocouples; Pi = 500mW	T6 (-60 °C ≤ Ta ≤ +70 °C)
RTDs; Pi = 192 mW	T6 (-60 °C ≤ Ta ≤ +70 °C)
RTDs; Pi = 290 mW	T6 (-60 °C ≤ Ta ≤ +60 °C) T5 (-60 °C ≤ Ta ≤ +70 °C)

Table 6-4: ReadyConnect™

Parameter	Value
Ui	10V
Ii	20mA
Pi	50mW T5/T6 (-60 °C ≤ Ta ≤ +70 °C)
Ci	75pF
Li	9.461mH

6.4.4 E6 Canada Explosion-proof

Certificate	CSA15CA70044744X
Markings	XP CL I, DIV 1, GP B, C, and D; T5/T6 DIP CL II, DIV 1, GP E, F, G; CL III T6 (-50 °C ≤ Ta ≤ +80 °C); T5 (-50 °C ≤ Ta ≤ +95 °C) XP Ex db IIC T6...T1 Gb DIP Ex tb IIIC T130°C Db T6...T1 (See Table 6-1 .); T130°C (See Table 6-1 .) Type 4x ⁽⁴⁾ and IP 66/67 ⁽⁴⁾ Install per Rosemount 00214-1030 V _{max} 35 VDC, 750 mW _{max} Assembly is not Canada Explosion-proof (E6) rated to Group B or IIC if the AT1 (Aluminum with Terminal Strip) connection head is used.

Special Conditions of Use (X)

1. Flameproof joints are not intended for repair.
2. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could 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.

⁽⁴⁾ Does not apply to spring-loaded adapter with contact indication.

3. See instructions ([Table 6-1](#)) for relation between process temperature, ambient temperature and temperature class/ maximum surface temperature "T".
4. When provided on their own, adapter style sensors must be assembled to a suitable Ex db or Ex tb enclosure. When assembled to an Ex db enclosure, the free internal volume no greater than 550 cm³.
5. The spring-loaded style adapters and DIN style sensors must be installed in a thermowell to maintain CL II/III or Ex tb protection.
6. The contact indicating adapter style sensor does not meet the requirements for type of protection "tb" or CL II/III.
7. Guard DIN sensors against impacts greater than 4J.

6.4.5 N6 Canada Non-Incendive

Certificate	CSA15CA70044744X
Markings	NI CL I, DIV 2, GP A, B, C, and D T6 (-50 °C ≤ T _a ≤ +80 °C); T5 (-50 °C ≤ T _a ≤ +95 °C) Type 4x ⁽⁵⁾ and IP 66/67 ⁽⁵⁾ ; Install per Rosemount 00214-1030 V _{max} 35 VDC, 750 mW _{max}

6.4.6 I6 Canada Intrinsic Safety

Certificate	CSA15CA70044744X
Markings	IS CL I, DIV 1, GP A, B, C, and D Ex ia IIC T5/T6 Ga Type 4x ⁽⁶⁾ and IP 66/67 ⁽⁶⁾ ; When installed per 00214-1020. For entity parameters, see Table 6-2 , Table 6-3 and Table 6-4 .

Special Conditions of Use (X)

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

6.5 Europe

6.5.1 E1 ATEX Flameproof

Certificate	Dekra 19ATEX0076X
Markings	 II 2 G Ex db IIC T6...T1 Gb T6...T1 (See Table 6-1 .)

Special Conditions for Safe Use (X):

1. Flameproof joints are not intended for repair.
2. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could 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.
3. See instructions ([Table 6-1](#)) for relation between process temperature, ambient temperature and temperature class/ maximum surface temperature "T".
4. When provided on their own, adapter style sensors must be assembled to a suitable Ex db or Ex tb enclosure. When assembled to an Ex db enclosure, the free internal volume no greater than 650 cm³.
5. Guard DIN sensors against impacts greater than 4J.

⁽⁵⁾ Does not apply to spring-loaded adapter with contact indication.

⁽⁶⁾ Does not apply to spring-loaded adapter with contact indication.

6.5.2 ND ATEX Dust-Ignition-proof

Certificate	Dekra 19ATEX0076X
Markings	 II 2 D Ex tb IIIC T 130 °C Gb T 130 °C (See Table 6-1 .)

Specific Conditions of Safe Use (X):

1. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could 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.
2. See instructions ([Table 6-1](#)) for relation between process temperature, ambient temperature, and temperature class/ maximum surface temperature "T".
3. When provided on their own, adapter style sensors must be assembled to a suitable Ex tb enclosure.
4. The spring-loaded style adapters and DIN style sensors must be installed in a thermowell to maintain Ex tb protection.
5. The contact indicating adapter style sensor does not meet the requirements for type of protection "tb".

6.5.3 N1 ATEX Zone 2

Certificate	BAS00ATEX3145
Markings	 II 3 G Ex nA IIC T5 Gc or Ex ec IIC T5 Gc, T5 (-40 °C ≤ T _a ≤ +70 °C)

6.5.4 I1 ATEX Intrinsic Safety

Certificate	Baseefa 16ATEX0101X
Markings	 II 1 G Ex ia IIC T5/T6 Ga See Table 6-2 , Table 6-3 , and Table 6-4 for entity parameters.

Specific Conditions of Use (X)

1. The equipment must be installed in an enclosure which affords it a degree of ingress protection of at least IP20.
2. The equipment has T_{amb} with special range mentioned in product description.

6.6 International

6.6.1 E7 IECEx Flameproof

Certificate	IECEx Dek 19.0041X
Markings	Ex db IIC T6...T1 Gb T6...T1 (See Table 6-1)

Special Conditions of Safe Use (X):

1. Flameproof joints are not intended to be repaired.
2. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could 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.
3. See instructions ([Table 6-1](#)) for relation between process temperature, ambient temperature and temperature class/ maximum surface temperature "T".
4. When provided on their own, adapter style sensors must be assembled to a suitable Ex db or Ex tb enclosure. When assembled to an Ex db enclosure, the free internal volume no greater than 650 cm³.

- Guard DIN sensors against impacts greater than 4J.

6.6.2 NK IECEx Dust-Ignitionproof

Certificate	IECEx DEK 19.0041X
Markings	Ex tb IIIC T 130 °C Gb T 130 °C (See Table 6-1)

Special Conditions of Safe Use (X):

- Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could 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.
- See instructions ([Table 6-1](#)) for relation between process temperature, ambient temperature and temperature class/ maximum surface temperature "T".
- When provided on their own, adapter style sensors must be assembled to a suitable Ex tb enclosure.
- The spring-loaded style adapters and DIN style sensors must be installed in a thermowell to maintain Ex tb protection.
- The contact indicating adapter style sensor does not meet the requirements for type of protection "tb".

6.6.3 N7 IECEx Zone 2

Certificate	IECEx BAS 07.0055
Markings	Ex nA IIC T5 Gc or Ex ec IIC T5 Gc T5 (-40 °C ≤ T _a ≤ +70 °C)

6.6.4 I7 IECEx Intrinsic Safety

Certificate	IECEx BAS 16.0077X
Markings	Ex ia IIC T5/T6 Ga See Table 6-2 , Table 6-3 , and Table 6-4 for entity parameters.

Special Conditions of Use (X)

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

6.7 Brazil

6.7.1 E2 Brazil Flameproof and Dust-Ignitionproof

Certificate	UL-BR 21.1296X
Markings	Ex db IIC T6...T1 Gb Ex tb IIIC T 130 °C Db T6...T1 (See Table 6-1 .); T 130 °C (See Table 6-1 .)

Special Conditions for Safe Use (X):

- Flameproof joints are not intended for repair.
- Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could 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.
- See instructions ([Table 6-1](#)) for relation between process temperature, ambient temperature and temperature class / maximum surface temperature "T".
- When provided on their own, the adapter style sensors must be assembled to a suitable Ex db or Ex tb enclosure with a free internal volume no greater than 550 cm³.

5. The spring-loaded adapter style sensors and DIN style sensors must be installed in a thermowell to maintain Ex tb protection.
6. The contact-indicating adapter style sensor does not meet the requirements for type of protection "tb".
7. Guards DIN sensors against impacts greater than 4J.

6.7.2 I2 Brazil Intrinsic Safety

Certificate UL-BR 18.0257X (RSK)
UL-BR 23.0090X (SMMC)

Markings Ex ia IIC T6...T5 Ga
See [Table 6-2](#) and [Table 6-3](#) for entity parameters.

Special Conditions of Use (X)

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

6.8 China

6.8.1 E3 China Flameproof

Certificate GYJ22.1915X (CCC 认证)

Markings Ex db IIC T6...T1 Gb, Ex tb IIIC T130 °C Db

*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. 传感器必须配备内部自由空间不超过 550cm3 的 Ex db 或 Ex tb 型外壳。
3. Spring loaded 型和 DIN 型传感器需要安装于套管内以实现 Ex tb 防爆型式。
4. Contact indicating adapter 型传感器不符合 Ex tb 防爆型式。
5. DIN 型传感器需要防止 4 J 以上能量的冲击。
6. 产品温度组别和使用环境温度及过程温度之间的关系为：

过程温度	环境温度	温度组别
-60 °C ≤ Ta ≤ +80 °C	-60 °C ≤ Ta ≤ +80 °C	T6
-60 °C ≤ Ta ≤ +95 °C	-60 °C ≤ Ta ≤ +80 °C	T5
-60 °C ≤ Ta ≤ +130 °C	-60 °C ≤ Ta ≤ +80 °C	T4
-60 °C ≤ Ta ≤ +195 °C	-60 °C ≤ Ta ≤ +80 °C	T3
-60 °C ≤ Ta ≤ +290 °C	-60 °C ≤ Ta ≤ +80 °C	T2
-60 °C ≤ Ta ≤ +440 °C	-60 °C ≤ Ta ≤ +80 °C	T1
-60 °C ≤ Ta ≤ +100 °C	-60 °C ≤ Ta ≤ +80 °C	T130 °C

注：选择 AD1、SD1 外壳时环境温度下限为-50 °C。

- 产品使用注意事项
 1. 产品外壳设有接地端子，用户在使用时应可靠接地。
 2. 安装现场应不存在对产品外壳有腐蚀作用的有害气体。
 3. 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 db II C Gb、Ex tb IIIC Db 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。

- 4. 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。
- 5. 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。
- 6. 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。
- 7. 产品的安装、使用和维护应同时遵守产品使用说明书、GB/T3836.13-2021“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：电气装置的检查与维护”、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 GB15577-2018“粉尘防爆安全规程”的有关规定。

6.8.2 I3 China Intrinsic Safety

Certificate GYJ22.3551X (CCC 认证)

Markings Ex ia IIC T6--T5 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使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、GB/T3836.13-2021 “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：电气装置的检查与维护”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。

6.9 Japan

6.9.1 E4 Japan Flameproof

Certificate	CML 21JPN1842X
Markings	Ex db IIC T6...T1 Gb T6...T1 (See Table 6-1.)

Special Conditions for Safe Use (X):

1. Flameproof joints are not intended for repair.
2. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could 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.
3. See instructions ([Table 6-1](#)) for relation between process temperature, ambient temperature and temperature class / maximum surface temperature “T”.
4. When provided on their own, the adapter style sensors must be assembled to a suitable Ex db enclosure with a free internal volume no greater than 550 cm³.
5. Guards DIN sensors against impacts greater than 4J.

6.10 Korea

6.10.1 EP Korea Flameproof and Dust-Ignitionproof

Certificate	22-KA4BO-0073X
Markings	Ex db IIC T6...T1 Gb T5...T1 (See Table 6-1.)

Special Conditions for Safe Use (X):

1. Flameproof joints are not intended for repair.
2. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could 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.
3. See instructions ([Table 6-1](#)) for relation between process temperature, ambient temperature and temperature class / maximum surface temperature “T”.
4. When provided on their own, the adapter style sensors must be assembled to a suitable Ex db enclosure with a free internal volume no greater than 550 cm³.
5. Guards DIN sensors against impacts greater than 4J.

6.10.2 IP Korea Intrinsic Safety

Certificate	17-KA4BO-0304X
Markings	Ex ia IIC T6/T5 Ga See Table 6-2 and Table 6-3 for entity parameters.

Special Conditions of Use (X)

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

6.10.3 KP Korea Flameproof, Dust-Ignitionproof, and Intrinsic Safety

Certificate	22-KA4BO-0074X in addition to the EP and IP certificate numbers
Markings	Ex tb IIIC T 130 °C Db, (-60 °C ≤ T _a ≤ +80 °C) in addition to the markings for EP and IP T 130 °C (See Table 6-1.)

Special Conditions for Safe Use (X) with Dust-Ignitionproof:

1. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could 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.
2. See instructions ([Table 6-1](#)) for relation between process temperature, ambient temperature and temperature class/ maximum surface temperature “T”.
3. When provided on their own, adapter style sensors must be assembled to a suitable Ex tb enclosure.
4. The spring-loaded style adapters and DIN style sensors must be installed in a thermowell to maintain Ex tb protection.
5. The contact indicating adapter style sensor does not meet the requirements for type of protection “tb”.
6. Guard DIN sensors against impacts greater than 4J.

6.11 EAC

6.11.1 EM EAC Flameproof

Certificate	KZ 7500525.01.01.01175
Markings	1Ex db IIC T6...T1 Gb X T6...T1 (See Table 6-1.)

Special Conditions for Safe Use (X):

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

6.11.2 IM EAC Intrinsic Safety

Certificate	KZ 7500525.01.01.01175
Markings	0Ex ia IIC T5, T6 Ga X See Table 6-2 and Table 6-3 for entity parameters.

Special Conditions of Use (X)

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

6.11.3 KM EAC Flameproof, Dust-Ignitionproof, and Intrinsic Safety

Certificate	KZ 7500525.01.01.01175 in addition to the EM and IM certificate numbers
Markings	Ex tb IIC T 130 °C Db X in additions to the markings for EM and IM T 130 °C (See Table 6-1.)

Special Conditions for Safe Use (X) with Dust-Ignitionproof:

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

6.12 Additional codes

K5	Combination of E5, N5, and I5
K6	Combination of E6, N6, and I6
K1	Combination of E1, ND, N1, and I1

K7	Combination of E7, NK, N7, and I7
K3	Combination of E3, I3, and Dust-Ignitionproof
KM	Combination of EM, IM, and Dust Ignitionproof
KP	Combination of EP, IP, and Dust-Ignitionproof
KL	Combination of I5, I6, I1, and I7

6.13 Y3 ATEX/IECEX RFID tag approvals

⚠ WARNING

Additional warnings

The plastic enclosure may present a potential electrostatic ignition hazard.

RFID tag is suitable for installation in a limited set of Zone classified locations and ambient temperature ranges when compared to the transmitter.

Certificate	EPS 15 ATEX 11011X
Markings	Ⓔ II 2G Ex ia IIC T6/T4 Gb Ⓔ II 2D Ex ia IIIC T80 °C/T130 °C Db
Certificate	IECEX EPS 15.0042X
Markings	Ex ia IIC T6/T4 Gb Ex ia IIIC T80 °C/T130 °C Db

Specific Conditions of Use (X):

- Maximum ambient temperature range:
 -55 °C to +80 °C (T6 / T80 °C)
 -55 °C to +110 °C (T4 / T130 °C)
- The RFID tags shall never be exposed to high electromagnetic field strengths exceeding RMS values of 1 A/m or 3 V/m, e.g., in high current electrolysis plants.
- Electrostatic charges shall be avoided. The tags shall never be used next to strong charge generating processes.

7 Declaration of Conformity



EU DECLARATION OF CONFORMITY



This declaration of conformity, issued under the sole responsibility of

Rosemount Inc.
6021 Innovation Blvd
Shakopee, MN 55379
USA,

states that the

Rosemount™ Model 85, 214C, and 214XW Temperature Sensors

complies with the provisions of the European Union Directives, including the latest amendments, valid at the time this declaration was signed.

(signature & date of issue)

Oct 24, 2025

Mark Lee
(name)

Vice President, Quality
(function)

Boulder, CO, USA
(place of issue)

Authorized Representative in Europe:
Emerson S.R.L., company No. J12/88/2006
Emerson 4 street, Parcul Industrial
Tetarom II, Cluj-Napoca 400638, Romania

Regulatory Compliance Shared Services Department
Email: europaeproductcompliance@emerson.com Phone: +40 374 132 035

ATEX Notified Bodies for EU Type Examination Certificates:
DEKRA Certification B.V. [Notified Body Number: 0344]

Meander 1051, 6825 MJ ARNHEM Netherlands	P.O. Box 5185, 6802 ED ARNHEM Netherlands
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SGS Fimko Oy [Notified Body Number: 0598]

Takomotie 8
FI-00380 Helsinki
Finland

ATEX Notified Body for Quality Assurance:
SGS Fimko Oy [Notified Body Number: 0598]

Takomotie 8
FI-00380 Helsinki
Finland

EMC Directive (2014/30/EU)

Harmonized Standards:
EN 61326-1:2013
EN 61326-2-3:2013

RoHS Directive (2011/65/EU)

Harmonized Standards:
EN IEC 63000:2018

ATEX Directive (2014/34/EU)

EU-Type Examination Certificate: Baseefa16ATEX0101X
Equipment protection by intrinsic safety "i"
Equipment Group II Category 1 G
Ex ia IIC T5/T6 Ga

Harmonized Standards:
EN IEC 60079-0:2018
EN 60079-11:2012

EU-Type Examination Certificate: DEKRA 19ATEX0076X
Equipment protection by flameproof enclosure "d"
Equipment Group II Category 2 G
Ex db IIC T6...T1 Gb

Equipment dust ignition protection by enclosure "t"
Equipment Group II Category 2 D
Ex tb IIIC T130°C Db

Harmonized Standards:
EN IEC 60079-0: 2018
EN 60079-1: 2014
EN 60079-31: 2014

Ex tb markings do not apply to Models 85 and 214XW

Type Examination Certificate: BAS00ATEX3145
Equipment protection by type of protection "n"
Equipment Group II, Category 3 G
Ex nA IIC T5 Gc

Equipment protection by increased safety "e"
Equipment Group II Category 3 G
Ex ec IIC T5 Gc

Harmonized Standards:
EN IEC 60079-0:2018
EN IEC 60079-7:2015+A1:2018
EN 60079-15:2010

Ex nA and Ex ec markings do not apply to Models 85 and 214XW

含有China RoHS管控物质超过最大浓度限值的部件型号列表 214C Temperature Sensor
List of 214C Temperature Sensor 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)
壳体组件 Housing Assembly	O	O	O	O	O	O
传感器组件 Sensor Assembly	O	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.

部件名称 Part Name	组装备件说明 Spare Parts Descriptions for Assemblies
壳体组件 Housing Assembly	电子外壳 Electrical Housing



Quick Start Guide
00825-0400-2654, Rev. DH
January 2026

For more information: [Emerson.com/global](https://emerson.com/global)

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