Quick Start Guide
00825-0200-4648, Rev EK
September 2023

Rosemount™ 648 Wireless Temperature Transmitter

with Rosemount X-well™ Technology

IEC

WirelessHART

ROSEMOUNT™

EMERSON

Rosemount 648 Wireless Temperature Transmitter

Rosemount 648 Hardware Revision	1
HART® Device Revision	4
Device Install Kit/DD Revision	Revision 4, DD Revision 1 or higher

NOTICE

This guide provides basic information for the Rosemount 648 Wireless. It does not provide instructions for detailed configuration, diagnostics, maintenance, service, troubleshooting, or installations. Refer to the Rosemount 648 Wireless Reference Manual for more instruction. The manual and this guide are also available electronically on Emerson.com/Rosemount.

⚠ WARNING

Failure to follow these installation guidelines could result in death or serious injury.
Explosions could result in death or serious injury.

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.

NOTICE

Shipping considerations for wireless products: (Lithium battery: Black Power Module, model number 701PBKKF). The unit was shipped to you without the Black Power Module installed. Remove the Black Power Module prior to shipping the unit. Each Black Power Module contains two "C" size primary lithium batteries. Primary lithium batteries are regulated in transportation by the U. S. Department of Transportation, and are also covered by International Air Transport Association (IATA), International Civil Aviation Organization (ICAO), and European Ground Transportation of Dangerous Goods (ADR).

It is the responsibility of the shipper to ensure compliance with these or any other local requirements. Before shipping, consult current regulations and requirements.

Contents

1 Wireless considerations

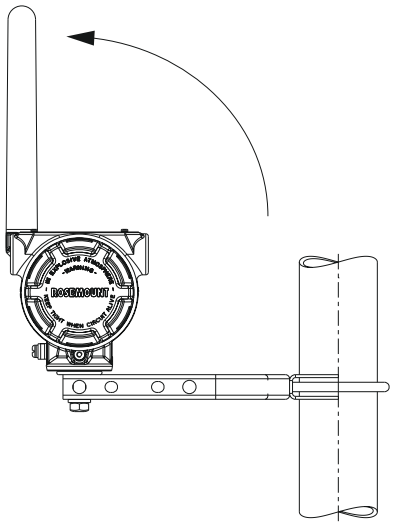
1.1 Power up sequence

The Rosemount 648 Wireless and all other wireless devices should be installed only after the Wireless Gateway (“Gateway”) has been installed and is functioning properly. Wireless devices should also be powered up in order of proximity from the Gateway, beginning with the closest. This will result in a simpler and faster network installation. Enable active advertising on the Gateway to ensure new devices join the network faster. For more information, see the Wireless Gateway Reference Manual.

1.2 Antenna position

Position the antenna vertically, either straight up or straight down, and approximately 3 ft. (1 m) from any large structure, building, or conductive surface to allow for clear communication to other devices.

Figure 1-1: Antenna Position

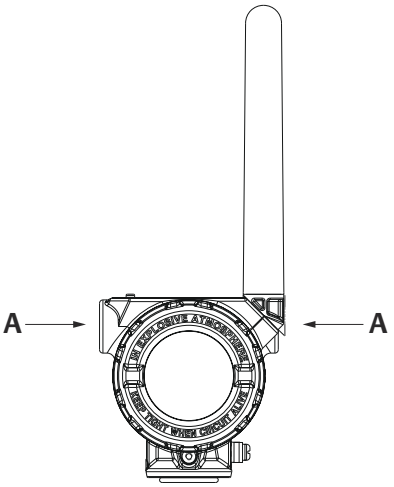


1.3 Conduit entry

Upon installation, ensure each conduit entry is either sealed with a conduit plug using approved thread sealant, or has an installed conduit fitting or cable gland with appropriate threaded sealant.

Note
The conduit entries are threaded ½–14 NPT.

Figure 1-2: Conduit Entry



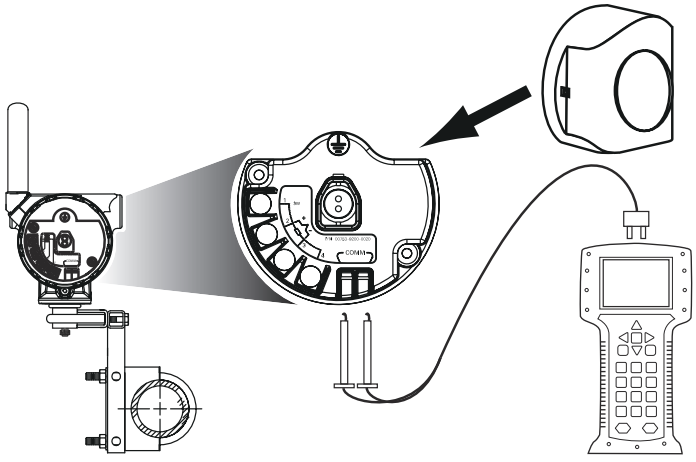
A. Conduit entry

1.4 Field Communicator connections

The Black Power Module needs to be installed in the device for the Field Communicator to interface with the Rosemount 648 Wireless. For HART® Wireless Transmitter communication via a Field Communicator, a Rosemount 648 Wireless Device Dashboard (DD) is required. Rosemount 648 Wireless Transmitters equipped with Rosemount X-well Technology requires DD revision 648 Dev. 4 Rev. 1 or higher to view Rosemount X-well functionality. To obtain the latest DD, visit the Field Communicator System Software and Device Description site at: Emerson.com/Field-Communicator.

Refer to Figure 1-3 for instructions on connecting the Field Communicator to the Rosemount 648 Wireless Transmitter.

Figure 1-3: Connection



2 Physical installation

2.1 Transmitter installation

The transmitter can be installed in one of two configurations:

- Direct Mount, where the sensor is connected directly to the Rosemount 648 Wireless housing's conduit entry.
- Remote Mount, where the sensor is mounted separate from the Rosemount 648 Wireless housing, then connected to the transmitter using conduit.

Select the installation sequence that corresponds to the mounting configuration.

2.2 Direct mount

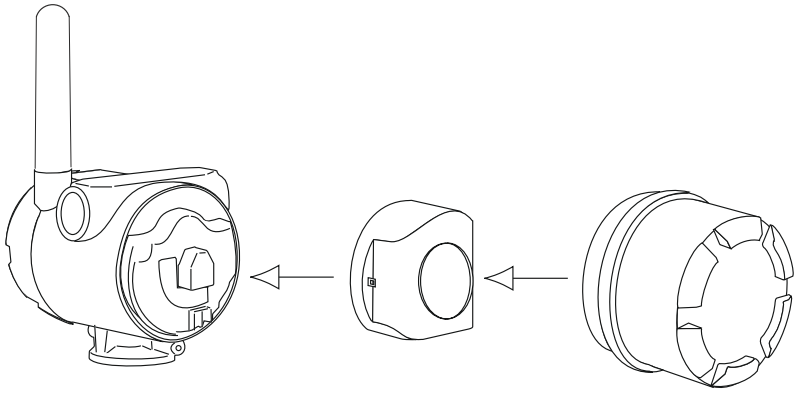
The direct mount installation should not be used when installing with a Swagelok® fitting.

Procedure

1. Install sensor according to standard installation practices using approved thread sealant on all connections.
2. Attach transmitter housing to the sensor using the threaded conduit entry.
3. Attach sensor wiring to the terminals as indicated on the wiring diagram.
4. Connect Black Power Module.

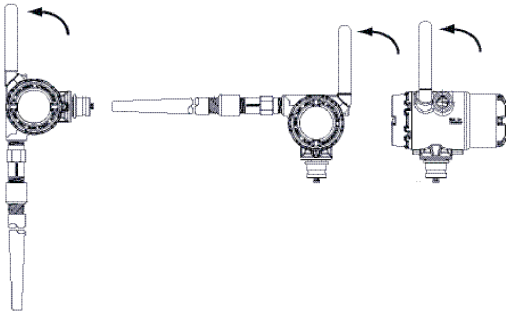
Note
Wireless devices should be powered up in order of proximity from the Wireless Gateway, beginning with the closest device to the gateway. This will result in a simpler and faster network installation.

Figure 2-1: Installing Electronics Housing Cover



5. Close housing cover and tighten to safety specification. Always ensure a proper seal by installing the electronics housing covers so metal touches metal, but do not overtighten.
6. Position antenna vertically, either straight up or straight down. The antenna should be approximately 3 ft. (1 m) from any large structures or buildings. This will allow clear communication to other devices.

Figure 2-2: Possible Antenna Rotation



2.3 Remote mount

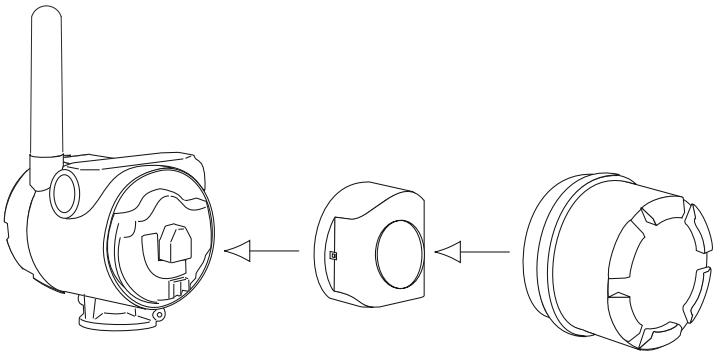
Procedure

1. Install sensor according to standard installation practices using an approved thread sealant on all connections.

2. Run wiring (and conduit, if necessary) from the sensor to the transmitter.
3. Pull wiring through the threaded conduit entry of the transmitter.
4. Attach sensor wiring to the terminals as indicated on the wiring diagram.
5. Connect Black Power Module.

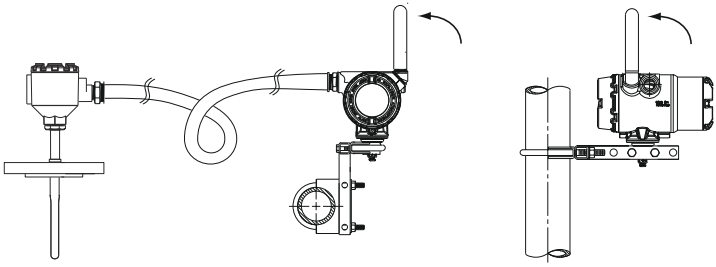
Note
Wireless devices should be powered up in order of proximity from the wireless gateway, beginning with the closest device to the Gateway. This will result in a simpler and faster network installation.

Figure 2-3: Installing Electronics Housing Cover



6. Close housing cover and tighten to safety specification. Always ensure a proper seal by installing the electronics housing covers so metal touches metal, but do not overtighten.
7. Position antenna vertically, either straight up or straight down.The antenna should be approximately 3 ft. (1 m) from any large structures or buildings. This will allow clear communication to other devices.

Figure 2-4: Possible Antenna Rotation



2.4 Rosemount X-well Installation

Rosemount X-well Technology is only available in the Rosemount 648 Wireless and 0085 pipe clamp sensor factory assembled complete point solution. Rosemount X-well Technology will only work as specified with factory supplied and assembled pipe clamp sensor.

In general, pipe clamp sensor installation best practices shall be followed (see Rosemount 0085 Pipe Clamp Sensor Reference Manual) with Rosemount X-well Technology specific requirements noted below:

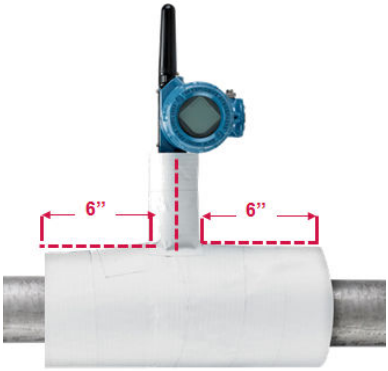
Procedure

1. Direct mounting of transmitter on pipe clamp sensor is required for Rosemount X-well Technology to properly function.
2. Transmitter head shall be placed away from dynamic external temperature sources, such as a boiler.
3. Insulation (½-in. thick minimum) is required over the sensor clamp assembly and sensor extension up to transmitter head to prevent heat loss. Apply a minimum of 6 inches of insulation on each side of the pipe clamp sensor. Care should be taken to minimize air gaps between insulation and pipe. See Figure 2-5.

   Note
   DO NOT apply insulation over transmitter head.

4. Although it will come factory configured as such, ensure that pipe clamp RTD sensor is assembled in 3-wire configuration. See Figure 4-1 for more information.

Figure 2-5: Rosemount 648 Wireless with Rosemount X-well Technology Installation Drawing



2.5 LCD display

Transmitters ordered with the optional LCD display will be shipped with the display installed. The LCD display can be rotated in 90 degree increments by squeezing the two tabs, pulling out, rotating and snapping back into place. If LCD display pins are inadvertently removed from the interface board, carefully re-insert the pins before snapping the LCD display back into place.

Procedure

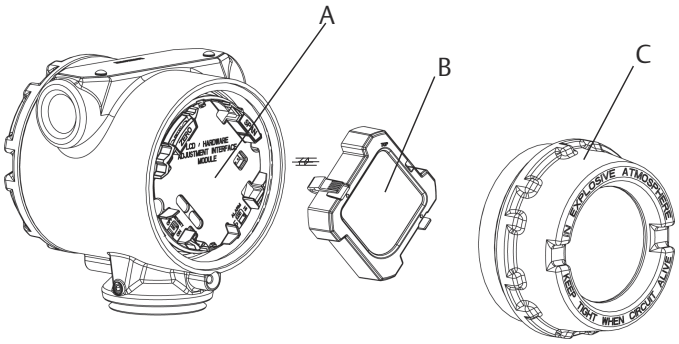
1. Remove the LCD display cover. Do not remove the instrument covers in explosive environments when the circuit is live.
2. Put the 4-pin connector into the LCD display, rotate to the desired position and snap into place.
3. Replace the transmitter cover.

   The following LCD display temperature limits:

   - Operating:–4 to 175 °F (–20 to 80 °C)
   - Storage:–40 to 185 °F (–40 to 85 °C)

Note
Only use Rosemount Wireless LCD Display part number: 00753-9004-0002.

Figure 2-6: Optional LCD Display



A. LCD display pins
B. LCD display display
C. LCD display cover

3 Verify operation

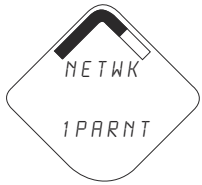
3.1 Four methods of verification

Operation can be verified using four methods at the device:

- LCD display
- Field Communicator
- Wireless Gateway
- AMS Wireless Suite or AMS Device Manager

LCD display

During normal operation, the LCD display will show the PV value at the confirmed update rate. Refer to the Rosemount 648 Wireless Reference Manual for error codes and other LCD display messages. Select the Diagnostic button to display the TAG, Device ID, Network ID, Network Join Status, and Device Status screens.

Searching for network	Joining network	Connected with one parent	Connected with two parents
			

Field Communicator

For HART® Wireless transmitter communication via a Field Communicator, a Rosemount 648 Wireless Device Dashboard (DD) is required. Rosemount 648 Wireless transmitters equipped with Rosemount X-well Technology requires DD revision 648 Dev. 4 Rev. 1 or higher to view Rosemount X-well functionality. To obtain the latest DD, visit the Field Communicator System Software and Device Description site at: Emerson.com/Field-Communicator.

The communication status may be verified in the wireless device using the following Fast Key sequence:

Table 3-1: Rosemount 648 Wireless Fast Key Sequence

Function	Fast Key sequence	Menu items
Communications	3, 4	Comm, Join Mode, Neighbor Count, Advertisement Count, Join Attempts

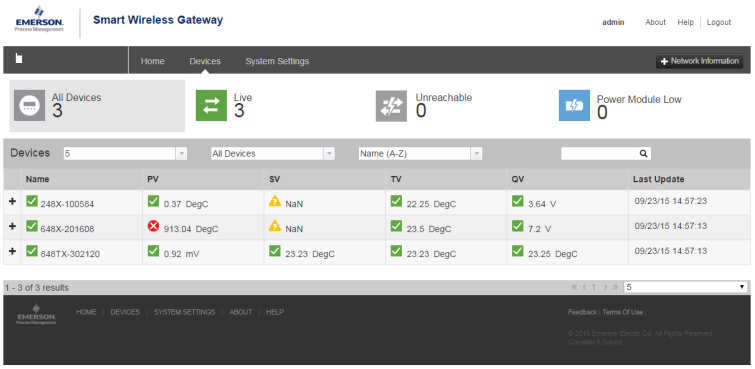
Wireless Gateway

If the Rosemount 648 Wireless was configured with the Network ID and Join Key and sufficient time for network polling has passed, the transmitter will be connected to the network. To verify device operation and connectivity using the Wireless Gateway's web based user interface, navigate to the Devices page. This page will also display the transmitter's tag, PV, SV, TV, QV, and Last Update time. Refer to Wireless Gateway User Interface Manual Supplement for terms, user fields, and parameters used in the Wireless Gateway web based user interface.

Note
The time to join the new device(s) to the network is dependent upon the number of devices being joined and the number of devices in the current network. For one device joining an existing network with multiple devices, it may take up to five minutes. It may take up to 60 minutes for multiple new devices to join the existing network.

Note
If the device joins the network and immediately has an alarm present, it is likely due to sensor configuration. Check the sensor wiring (see Figure 4-1) and the sensor configuration (see Table 4-1).

Figure 3-1: Wireless Gateway Network Settings

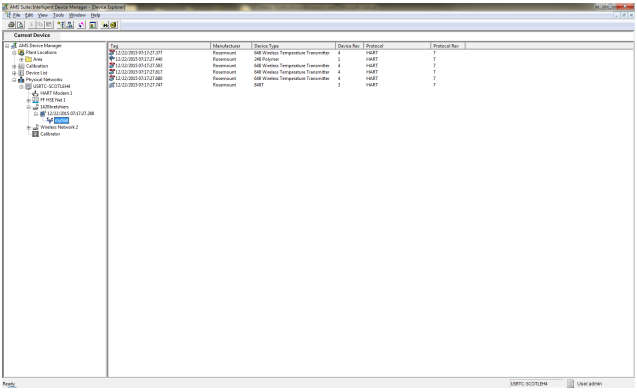


AMS Wireless Configurator

For HART® Wireless transmitter communication via AMS Device Manager, a Rosemount 648 Wireless Device Dashboard (DD) is required. Rosemount 648 Wireless Transmitters equipped with Rosemount X-well Technology requires DD revision 648 Dev. 4 Rev. 1 or higher to view Rosemount X-well functionality. To obtain the latest DD, visit the Emerson Easy Upgrade site at:

Emerson.com/Device-Install-Kits

Figure 3-2: AMS Wireless Configurator Explorer Window



Troubleshooting

If the device is not joined to the network after power up, verify the correct configuration of the network ID and join key, and verify that Active Advertising has been enabled on the Wireless Gateway. The network ID and join key in the device must match the network ID and join key of the Gateway.

The network ID and join key may be obtained from the Wireless Gateway on the *Setup* > *Network* > *Settings* page on the web server (see Figure 3-1). The network ID and join key may be changed in the wireless device by using the following Fast Key sequence.

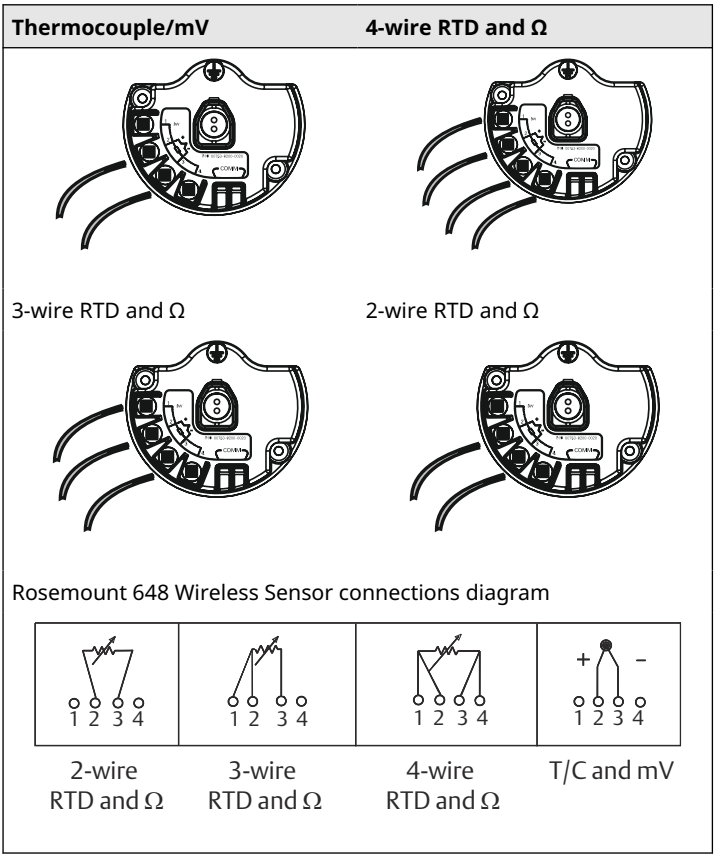
Table 3-2: Wireless Configuration Fast Key Sequence

Function	Fast Key sequence	Menu items
Wireless Configuration	2, 2, 1	Network ID, Join to Network, Broadcast Info

4 Reference Information

The Rosemount 648 Wireless is compatible with a number of RTD and thermocouple sensor types. Figure 4-1 shows the correct input connections to the sensor terminals on the transmitter. Figure 4-2, Figure 4-3, and Figure 4-4 show the lead wire configurations for Rosemount sensors. To ensure proper sensor connection, anchor the sensor lead wires into the appropriate compression terminals and tighten the screws.

Figure 4-1: Sensor Wiring



Emerson provides 4-wire sensors for all single element RTDs. Use these RTDs in 3-wire configurations by leaving the unneeded leads disconnected and insulated with electrical tape.

Note
In order to communicate with a Field Communicator, the device must be powered by connecting the black power module.

Figure 4-2: Single Element Rosemount 65, 68, 78 Series, and 58C Lead Wire Configurations

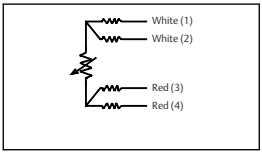


Figure 4-3: Rosemount 183 Series Thermocouple Lead Wire Configurations

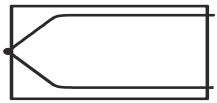
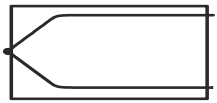
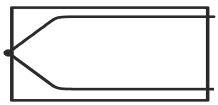
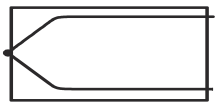
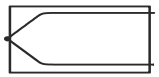
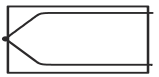
Type J	Type E
	
Type K	**Type T**
	

Figure 4-4: Series 185 Thermocouple Lead Wire Configurations

Type J	Type N	Type K
		

Note
The wiring diagrams shown above apply only to Rosemount sensors.

Table 4-1 lists the Fast Key sequences for common transmitter functions.

Table 4-1: Rosemount 648 Wireless Fast Key Sequence

Function	Fast Key sequence	Menu items
Device Information	2, 2, 7	Tag, Long Tag, Descriptor, Message, Date
Guided Setup	2, 1	Configure Sensor, Join to Network, Config Advance Broadcasting, Calibrate Sensor
Manual Setup	2, 2	Wireless, Sensor, Display, HART®, Device Temperature, Terminal Temp, Device Information, Power, Security
Wireless Configuration	2, 2, 1	Network ID, Join to Network, Broadcast Info
Sensor Configuration	2, 2, 2, 5	Type, Connection, Units, Serial Number, Transmitter-Sensor Matching, RMT X-well Setup
Sensor Calibration	3, 5, 2	Sensor Value, Sensor Status, Current Lower Trim, Current Upper Trim, RTD 2 Wire Offset, Lower Sensor Trim, Upper Sensor Trim, Device variable trim reset

5 Power module replacement

Expected black power module life is 10 years at reference conditions.(1)

When module replacement is required, perform the following procedure:

5.1 Replace the power module

Procedure

1. Remove the cover and module.
2. Replace the module (part number 701PBKKF) and cover.
3. Tighten to specification and verify operation.

5.2 Handling considerations

The Black Power Module with the wireless unit contains two “C” size primary lithium-thionyl chloride battery (Black Power Module, model number 701PBKKF). Each battery contains approximately 5.0 grams of lithium. Under normal conditions, the battery materials are self-contained and are not reactive as long as the batteries and the pack integrity are maintained. Care should be taken to prevent thermal, electrical, or mechanical damage.

Contacts should be protected to prevent premature discharge.

Black Power Module should be stored in a clean and dry area. For maximum Black Power Module life, storage temperature should not exceed 86 °F (30 °C).

Note
Continuous exposure to ambient temperature limits of –40 °F or 185 °F (–40 °C or 85 °C) may reduce specified life by less than 20 percent.

Use caution when handling the Black Power Module, it may be damaged if dropped from heights in excess of 20 ft.

Battery hazards remain when cells are discharged.

5.3 Environmental considerations

As with any battery, local environmental rules and regulations should be consulted for proper management of spent batteries. If no specific requirements exist, recycling through a qualified recycler is

(1) Reference conditions are 70 °F (21° C), transmit rate of once per minute, and routing data for three additional network devices.

encouraged. For battery specific information, consult the materials safety data sheet.

5.4 Shipping considerations

The unit was shipped to you without the Black Power Module installed. Remove the module prior to shipping the unit.

6 Product certifications

Rev 3.11

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 Telecommunication Compliance

All wireless devices require certification to ensure they adhere to regulations regarding the use of the RF spectrum. Nearly every country requires this type of product certification.

Emerson is working with governmental agencies around the world to supply fully compliant products and remove the risk of violating country directives or laws governing wireless device usage.

6.3 FCC and IC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: This device may not cause harmful interference. This device must accept any interference received, including interference that may cause undesired operation. This device must be installed to ensure a minimum antenna separation distance of 20 cm from all persons.

6.4 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).

6.5 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.

6.6 USA

6.6.1 I5 U.S. Intrinsic Safety (IS), Nonincendive (NI), and Dust Ignition-Proof (DIP)

Certificate FM 18US0009X

Standards FM Class 3600 — 2011, FM Class 3610 — 2010, FM Class 3611 — 2004, FM Class 3810 — 2005, ANSI/NEMA® 250 — 2003, ANSI/ISA-60079-0 — 2009, ANSI/ISA-60079-11 — 2009

Markings IS CL I, DIV 1, GP A, B, C, D; CL II, DIV 1, GP E, F, G; Class III, T4; Class 1, Zone 0 AEx ia IIC T4; T4(–50 °C ≤ T_a ≤ +70 °C) when installed per Rosemount drawing 00648-1000; NI CL I, DIV 2, GP A, B, C, D T4/T5; T4(–50 °C ≤ T_a ≤ +70 °C), T5(–50 °C ≤ T_a ≤ +40 °C) when installed per Rosemount drawing 00648-1000; DIP CL II, DIV 1, GP E, F, G; CL III, T5;T5(–50 °C ≤ T_a ≤ +85 °C); Type 4X; IP66

Special Conditions for Safe Use (X):

1. The Rosemount 648 Transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.
2. The surface resistivity of the antenna is greater than 1 GΩ . To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or dry cloth.
3. The Rosemount 648 Wireless Transmitter shall only be used with the 701PBKKF Rosemount SmartPower™ Battery Pack (P/N 00753-9220-0001), Computational Systems Inc Battery Pack (P/N MHM-89004) or alternatively the Perpetuum Intelligent Power Module Vibration Harvester (P/N IPM71008).

Sensor terminal parameters
U_o = 6.6 V
I_o = 26.2 mA
P_o = 42.6 mW
C_o = 23.8 µF
L_o = 50 mH

6.6.2 N5 U.S. Nonincendive (NI) and Dust Ignition-Proof (DIP)

Certificate FM 3027705

Standards FM Class 3600 — 2011, FM Class 3611 — 2004, FM Class 3810 — 2005, ANSI/NEMA 250 — 2003

Markings NI CL I, DIV 2, GP A, B, C, D T4/T5; T4(–50 °C ≤ T_a ≤ +70 °C), T5(–50 °C ≤ T_a ≤ +40 °C); DIP CL II, DIV 1, GP E, F, G; CL III, T5; T5(–50 °C ≤ T_a ≤ +85 °C); Type 4X; IP66/67

Special Condition for Safe Use (X):

For use only with the Model 701PBKKF (P/N 753-9220-0001) Smart Power Battery Module, Computational Systems Inc Battery Pack (P/N MHM-89004) or alternatively the Perpetuum Intelligent Power Module Vibration Harvester (P/N IPM71008).

6.7 Canada

6.7.1 I6 Canada Intrinsically Safe

Certificate CSA 1143113

Standards CAN/CSA C22.2 No. 0-10, CAN/CSA C22.2 No. 94-M91, CSA Std C22.2 No. 142-M1987, CSA Std C22.2 No. 157-92, CSA Std C22.2 No. 60529:05

Markings Intrinsically Safe Class I, Division 1, Groups A, B, C and D T3C; Class 1, Zone 0, IIC, T3C; when connected per Rosemount drawing 00648-1020; Type 4X

Sensor terminal parameters
U_o = 6.6 V
I_o = 26.2 mA
P_o = 42.6 mW
C_o = 23.8 µF
L_o = 50 mH

6.8 Europe

6.8.1 I1 ATEX Intrinsic Safety

Certificate: Baseefa07ATEX0011X

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

Markings: ⟨Ex⟩II 1 G Ex ia IIC T4 Ga, T4(-60 °C ≤ T_a ≤ +70 °C)

For use with Rosemount SmartPower power module part number 753-9220-0001, or for use with Emerson SmartPower option 701PBKKF.

Sensor terminal parameters
U_o = 6.6 V
I_o = 26.2 mA
P_o = 42.6 mW
C_o = 11 µF
L_o = 25 mH

Special Conditions for Safe Use (X):

1. The surface resistivity of the antenna is greater than 1 GΩ. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or dry cloth.
2. The power module may be replaced in a hazardous area. The power module has a surface resistivity greater than 1 GΩ and must be properly installed in the wireless device enclosure. Care must be taken during transportation to and from the point of installation to prevent electrostatic charge build-up.

6.8.2 NM ATEX Intrinsic Safety for Mining

Certificate: Baseefa07ATEX0011X

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

Markings: ⟨Ex⟩I M 1 Ex ia I Ma(-60 °C ≤ T_a ≤ +70 °C)

Sensor terminal parameters
U_o = 6.6 V
I_o = 26.2 mA
P_o = 42.6 mW
C_o = 11 µF
L_o = 25 mH

Special Conditions for Safe Use (X):

1. The surface resistivity of the antenna is greater than 1 GΩ. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or dry cloth.
2. The power module may be replaced in a hazardous area. The power module has a surface resistivity greater than 1 GΩ and must be properly installed in the wireless device enclosure. Care must be taken during transportation to and from the point of installation to prevent electrostatic charge build-up.

6.9 International

6.9.1 I7 IECEx Intrinsic Safety

Certificate	IECEx BAS 07.0007X
Standards	IEC 60079-0: 2017, IEC 60079-11: 2011
Markings	Ex ia IIC T4 Ga, T4 (–60 °C ≤ T_a ≤ +70 °C)

Sensor terminal parameters
U_o = 6.6 V
I_o = 26.2 mA
P_o = 42.6 mW
C_o = 11 µF
L_o = 25 mH

Special Conditions for Safe Use (X):

1. The surface resistivity of the antenna is greater than 1 GΩ . To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or dry cloth.
2. The Model 701PBKKF Power Module may be replaced in a hazardous area. The Power Modules have a surface resistivity greater than 1 GΩ and must be properly installed in the wireless device enclosure. Care must be taken during transportation to and from the point of installation to prevent electrostatic charge build-up.
3. The Rosemount 648 enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in a Zone 0 area.

6.10 Brazil

6.10.1 I2 Brazil Intrinsic Safety

Certificate UL-BR 15.0140X

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

Markings Ex ia IIC T4 (–60 °C ≤ T_a ≤+70 °C), IP66

Sensor terminal parameters
U_o = 6.6 V
I_o = 26.2 mA
P_o = 42.6 mW
C_o= 11 µF
L_o = 25 mH

Special Condition for Safe Use (X):

See certificate for special conditions.

6.11 China

6.11.1 I3 China Intrinsic Safety

Certificate GYJ21.3298X

Standards GB3836.1-2010, GB3836.4-2010, GB3836.20-2010

Markings Ex ia IIC T4 Ga

T code	Ambient temperature
T4	-60 °C ≤ T_a ≤ +70 °C

Sensor terminal parameters
U_o = 6.6 V
I_o = 26.2 mA
P_o = 42.6 mW
C_o = 11 µF

Sensor terminal parameters
L_o = 25 mH

Special Condition for Safe Use (X):

See certificate for special conditions.

6.12 Japan

6.12.1 I4 Japan Intrinsic Safety

Certificate CML 18JPN2105X

Markings Ex ia IIC T4 Ga

See certificate for ambient temperature ranges.

Sensor terminal parameters
U_o = 6.6 V
I_o = 26.2 mA
P_o = 42.6 mW
C_o = 11 µF
L_o = 25 mH

Special Condition for Safe Use (X):

See certificate for special conditions.

6.13 EAC - Belarus, Kazakhstan, Russia

6.13.1 IM Technical Regulation Customs Union Intrinsic Safety

Markings 0Ex ia IIC T4 Ga X, T4 (–60 °C ≤ T_a ≤ +70 °C)

Sensor terminal parameters
U_o = 6.6 V
I_o = 26.2 mA
P_o = 42.6 mW
C_o = 11 µF

Sensor terminal parameters
L_o = 25 mH

Special Condition for Safe Use (X):

See certificate for special conditions.

6.14 Republic of Korea

6.14.1 IP Republic of Korea Intrinsic Safety

Certificate 11-KB4BO-0071

Markings Ex ia IIC T4 T4 (–60 °C ~ +70 °C)

Sensor terminal parameters
U_o = 6.6 V
I_o = 26.2 mA
P_o = 42.6 mW
C_o = 10.9 µF
L_o = 25 mH

Special Condition for Safe Use (X):

See certificate for special conditions.

6.15 Combination

KQ Combination of I1, I5, and I6

7 Declaration of Conformity

EMERSON

EU Declaration of Conformity

No: RMD 1065 Rev. L

CE

We,

Rosemount, Inc.
6021 Innovation Boulevard
Shakopee, MN 55379-4676
USA

declare under our sole responsibility that the product,

Rosemount™ 648 Wireless Temperature Transmitter

manufactured by,

Rosemount, Inc.
6021 Innovation Boulevard
Shakopee, MN 55379-4676
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)

Vice President of Global Quality
(function name - printed)

Mark Lee
(name - printed)

5-Aug-21; Boulder, CO USA
(date of issue & place)

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EMERSON

EU Declaration of Conformity

No: RMD 1065 Rev. L

CE

EMC Directive (2014/30/EU)

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

Radio Equipment Directive (RED) (2014/53/EU)

Harmonized Standards:
EN 300 328 V2.2.2:2019
EN 301 489-1 V2.2.0
EN 301 489-17: V3.2.0
EN 61010-1: 2010
EN 62311: 2008

ATEX Directive (2014/34/EU)

Baseefa07ATEX0011X – Intrinsic Safety Certificate
Equipment Group II, Category 1 G
Ex ia IIC T4/T5 Ga
Equipment Group I, Category 1 M
Ex ia I Ma
Harmonized Standards:
EN IEC 60079-0: 2018
EN 60079-11: 2012

ATEX Notified Body & ATEX Notified Body for Quality Assurance

SGS FIMKO OY [Notified Body Number: 0598]
Takomotie 8
00380 HELSINKI
Finland

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8 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 648 Wireless
List of 648 Wireless 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.

部件名称 Part Name	组装备件说明 Spare Parts Descriptions for Assemblies
电子组件 Electronics Assembly	端子块组件 Terminal Block Assemblies 液晶显示屏或本地操作界面 LCD or LOI Display
壳体组件 Housing Assembly	电子外壳 Electrical Housing

Quick Start Guide
00825-0200-4648, Rev. EK
September 2023

For more information: **Emerson.com/global**

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