Quick Start Guide
MS-00825-0100-4213, Rev AB
August 2024

Rosemount™ IK220 Installation Kit for Rosemount Wireless Corrosion Transmitters

including Rosemount CC21 Commissioning Communicator

ROSEMOUNT™

EMERSON

Safety messages

NOTICE

This guide provides the basic guidelines for the commissioning of Rosemount Wireless Corrosion Transmitter. It does not provide the instructions for the configuration, diagnostics, maintenance, service, troubleshooting or intrinsically safe (I.S.) installations. Refer to the Rosemount Wireless Corrosion Transmitter Reference Manual for more instruction. The manual and this guide are also available electronically on Emerson.com\Rosemount.

This guide does not provide instructions for the mechanical installation of the Rosemount Wireless Corrosion Transmitters. Refer to the specific transmitter manual for the mechanical installation instructions.

Rosemount Wireless Corrosion Transmitters should not be installed without installation training being delivered by qualified trainers.

⚠ WARNING

Explosions could result in death or serious injury

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

Before connecting the CC21 to the transmitter, ensure that the correct low voltage permits have been obtained.

NOTICE

The ruggedised tablet PC is not intrinsically safe. A hot work permit may be required for use.

Installation of Rosemount Corrosion Transmitters in explosive atmospheres must be in accordance with the standards and practices appropriate to the site.

⚠ WARNING

Physical access

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

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

Contents

1 Rosemount Installation Kit IK220 Overview

1.1 What is in the box

Below lists the equipment which is contained in the Installation Kit IK220, it is broken down to show which equipment is used with each Rosemount Wireless Corrosion Transmitter for installation.

All transmitter installations

- Travel adaptor
- Tablet PC (including installation app pre-installed)
- Power cord
- Hex key screwdriver, 2.5 mm (BP20E power module retaining bolts)
- Battery tester
- Rosemount CC21, Commissioning Communicator

Rosemount Wireless WT210 Corrosion Erosion Transmitter

- Torque wrench, ⅜-in. square drive
- Extension bar, ⅜-in. square drive
- 13 mm Deep socket, ⅜-in. square drive
- 9/16-in. Deep socket, ⅜-in. square drive
- Loctite 8009 anti-seize
- Brass wire brush 25 mm (surface preparation)
- Flat file 10-in. (250 mm) (surface preparation)

200 Series Clamp installation for Rosemount Wireless WT210 Corrosion Erosion Transmitter

- Torque wrench, ⅜-in. square drive
- Socket adapter, ⅜-in. to ½-in. square drive
- 24 mm socket, ½-in. square drive
- 24 mm combination spanner

Rosemount Wireless ET210 Corrosion Erosion Transmitter

- Banding tool (ET210)

Rosemount Wireless ET310 & ET410 Corrosion Erosion Transmitter

- 8 mm Socket, ⅜-in. square drive
- Screwdriver, 8 mm hex
- Tin snips

Spares

- M8 washers (WT210) (10)
- Smart nylon buckles (ET210) (10)
- Smart nylon band (ET210) (3.5 m)
- Standard sensor shoe (ET210/ET310) (5)
- Flat sensor shoe (ET210/ET310) (5)
- Strap tensioner ET310 (1)
- Strap tensioner ET410 (1)
- Metal strapping (ET310/ET410) (3.5 m)
- Uncalibrated sample block (including washers and nuts)

2 Commissioning overview and general information

2.1 Rosemount CC21 Commissioning Communicator

The Rosemount CC21 Commissioning Communicator is an electronic interface which connects the tablet PC to Rosemount Wireless Corrosion Transmitter for commissioning in the field.

Compatibility

The Rosemount CC21 is 'associated apparatus' to Rosemount Wireless Corrosion Transmitters, and forms part of the intrinsic safety approval. This device is to be used with models WT210, ET210, ET310, ET310C and ET410.

2.2 Field communicator connections

Connection

The Rosemount CC21 Commissioning Communicator is connected and removed from the transmitter in the same way as the Rosemount BP20E Power Module. The USB connector is plugged into the tablet PC as shown in Figure 2-1.

Figure 2-1: Tablet PC and CC21 Commissioning Communicator

A. Tablet PC (running installation tool)
B. Rosemount Wireless Corrosion Transmitter
C. CC21 (inc. USB cable)

2.3 Installation App

The installation app software communicates with the transmitter through the CC21 commissioning communicator. The software is used to:

1. Provision the *Wireless*HART® network configuration to the transmitter.
2. Monitoring the ultrasonic signal during the mechanical installation.

To complete the commissioning of the transmitter, both steps need to be completed.

2.4 Terminology

Sensor ID

This is a unique four-character identifier given to each Rosemount Wireless Corrosion Transmitter. This identifier is found on the transmitter label and is used throughout the software to identify the transmitter.

Mac address

A unique 64-bit address in the form of eight sets of two hexadecimal digits separated by dashes, e.g. 12-AB-CD-EF-12-34-56-0F, used in *Wireless*HART gateway software and Plantweb™ Insight to identify transmitters.

Network ID

A number up to five digits long to identify the *Wireless*HART network. This number is set on the gateway using the gateway interface. The transmitters must have the matching network ID.

Join key

A 32 digital hexadecimal security key which is set on the gateway. A transmitter must have a matching join key in order to join the network. There are two types of join key:

1. Common join key: on the gateway, a single join key is entered. On the transmitters the same common join key can be set on all sensors to join the network.
2. Commission file: provisioning uses automated data entry from commissioning file saved onto the tablet PC.

Provisioning

The process of setting the network ID and join key on the Rosemount Wireless Corrosion Transmitters.

It is recommended that provisioning is done using a common join key on the Rosemount *Wireless*HART Gateway. This is because using the common join key option is the easiest to set up. The same key must be configured on each transmitter during the provisioning; this is either typed or read in automatically using a commissioning file.

The details on how to set up a common join key are shown in the Rosemount *Wireless*HART Gateway Setup.

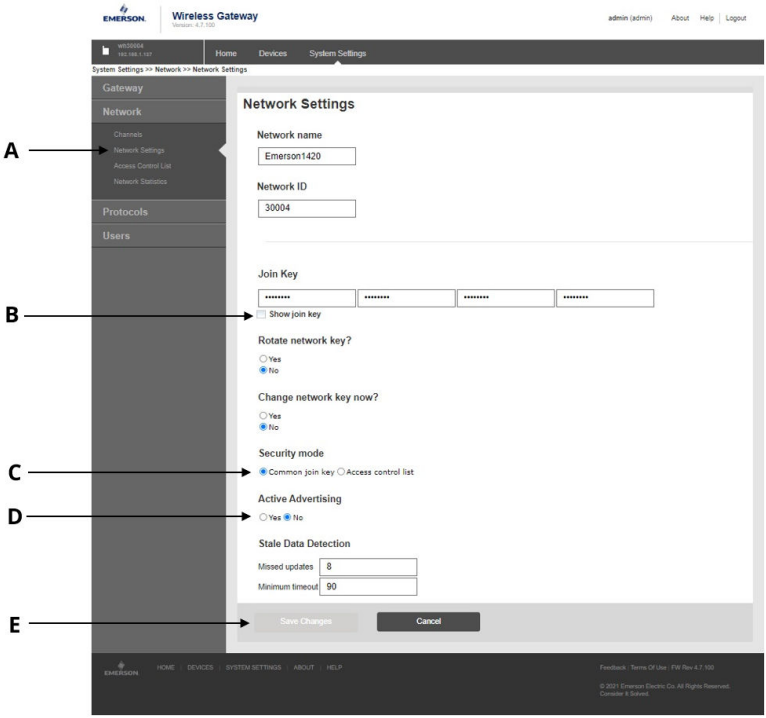
2.5 Rosemount *Wireless*HART Gateway Setup

This section details how to set up a common join key on the Rosemount *Wireless*HART Gateway.

Procedure

1. Navigate to Emerson gateway browser.
2. Once in the gateway browser, navigate to **Network** → **Network Settings**.
3. Select **Show join key** button.
4. Click **common join key**.
5. Click **Yes** on active advertising.
6. Click **Save Changes**.

Figure 2-2: Rosemount *Wireless*HART Gateway settings



A. Network settings
B. Show join key button
C. Common join key option
D. Yes and No button on active advertising
E. Save Changes button

3 Commissioning of a Rosemount Wireless Corrosion Transmitter

This section will detail the process of commissioning a Rosemount Wireless Corrosion Transmitter. This will include configuring and provisioning the transmitter to a wireless network and installation of the transmitter.

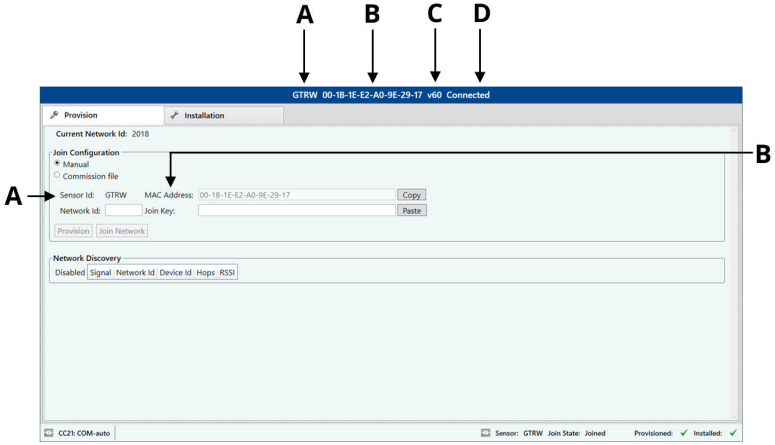
3.1 Configuring a Rosemount Wireless Corrosion Transmitter to a wireless network

Procedure

1. Connect the CC21 to the tablet PC and transmitter (as described earlier in the guide).
2. Start the installation app on the tablet PC.

   When there is a transmitter connected, the Sensor ID and MAC address will appear in the provisioning tab of the software within a few seconds. Refer to Figure 3-1 on what the screen should look like.

Figure 3-1: Installation App provisioning screen



A. Sensor ID
B. MAC address
C. Firmware version
D. Connection status

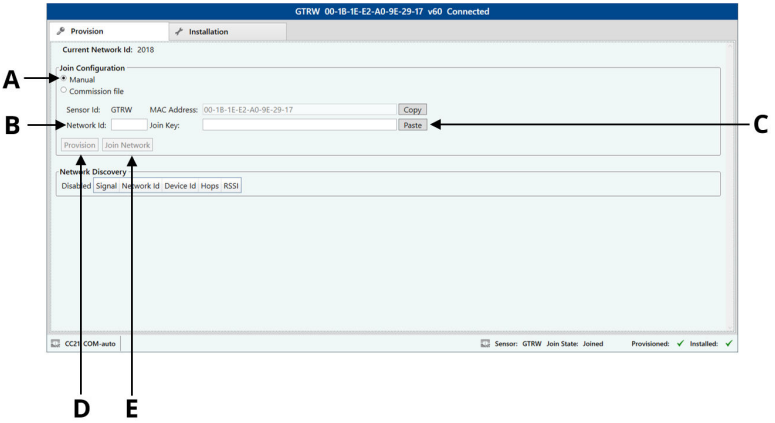
3.2 Provisioning using manual data entry

Provisioning information can be entered using the keyboard on the tablet PC for each transmitter individually.

Procedure

1. Select **Manual**.
2. Enter the Network ID.
3. Enter the Join Key.
4. Click **Provision** (only available with valid Network ID and Join Key).
5. Click **Join Network** to attempt join the sensor to the network now and to view the join status. This is useful for wireless diagnostics.

Figure 3-2: Installation App provisioning screen information entry



A. Manual option
B. Network ID
C. Join Key
D. Provision button
E. Join Network button

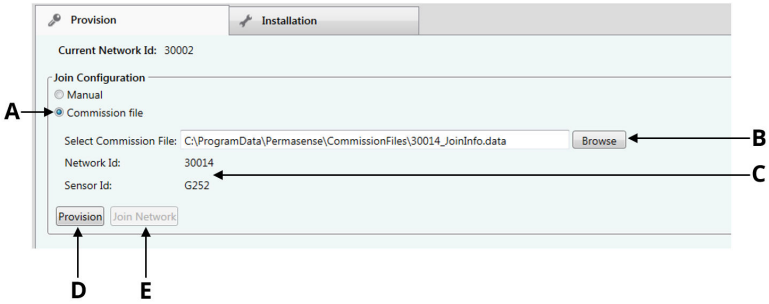
3.3 Provisioning using automated data entry via commissioning file

Automated data entry can make provision large numbers of transmitters faster and less prone to typing errors. First, a commissioning file for each network needs to be generated and copied to the installation app folder on the tablet PC. There is one file generated for each gateway connected to Plantweb Insight.

Procedure

1. Select **Commission file**.
2. Click **Browse** and select the ***commissioning file***.
3. ***Network ID*** and ***Sensor ID*** will be displayed.
4. Click **Provision** (only available with valid Network ID and Join Key).
5. Click **Join Network** to attempt join the sensor to the network now and to view the join status. This is useful for wireless diagnostics.

Figure 3-3: Installation App provisioning screen automatic information entry



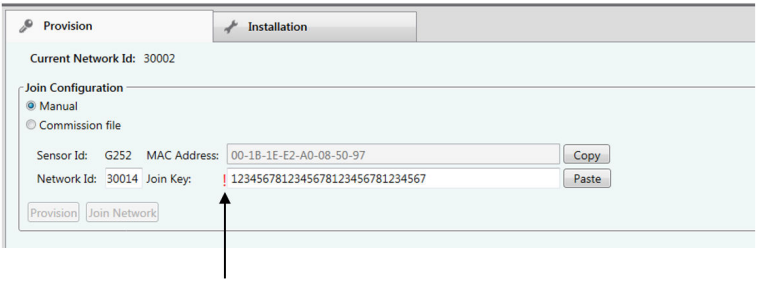
A. Commission file option
B. Browse button
C. Network ID and Sensor ID
D. Provision button
E. Join Network button

3.4 Troubleshooting transmitter provisioning

If the **Provision** button is not highlighted once the ***Network ID*** and ***Join key*** have been entered, this indicates that an insufficient number

of digits have been entered. This will be highlighted in the software with an exclamation mark.

Figure 3-4: Troubleshooting of transmitter provisioning

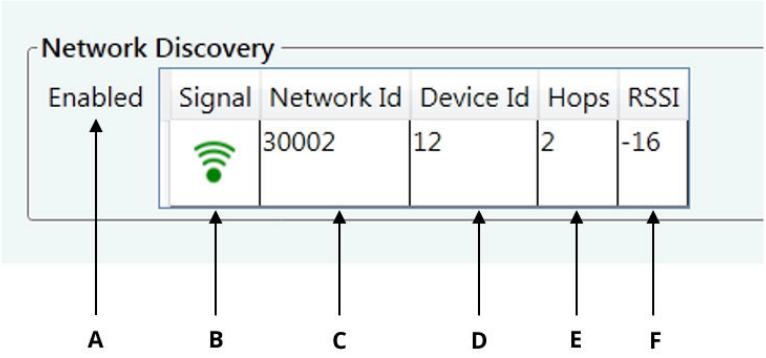


3.5 Network discovery

Sensor network deployment can be done more efficiently when it is known that the sensor being installed is in wireless range of the network. To facilitate this, the Installation app software has a network discovery feature: as soon as a sensor is connected to the Installation app, the transmitter will listen to 'advertisement packets' from other *Wireless*HART transmitters. These advertisement packets are typically transmitted every 45 seconds from transmitters and gateways. When an advertisement is heard, its details are displayed in the ***Network Discovery*** panel on the ***Provision*** tab. Note, only the most recent advertisement message is shown – there may be stronger radio links to the network which will subsequently appear.

Note
When installation is completed, the sensor will automatically start trying to join the network. During this time, network discovery is disabled.

Figure 3-5: Network discovery in provisioning tab



A. Shows if network discovery is active
B. Visual indication of signal strength
C. Network ID
D. Transmitter ID given by WirelessHART gateway
E. Number of hops between transmitter and gateway
F. Signal strength (Good: more than -70; Fair: -70 to -90; Poor less than -90)

3.6 Using the status bar

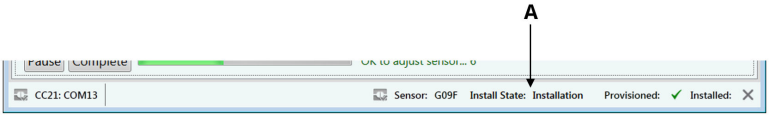
The status bar at the bottom of the window gives the status of:

- Connection to the transmitter
- Provisioning of the transmitter (Provision tab: Figure 3-6)
- Installation of the transmitter (Installation tab: Figure 3-7)

Figure 3-6: Status bar during provisioning

A. Connectivity status to CC21 (if red indicates connection issue)
B. Connectivity status to the transmitter
C. Connectivity of transmitter to wireless network
D. Indicates if the transmitter has provisioning information
E. Indicates if transmitter has been installed (transmitter will not join wireless network until installation has been completed)

Figure 3-7: Status bar during installation



A. Installation status of the transmitter

4 Installation of a Rosemount Wireless Corrosion Transmitter

For mechanical installation and detailed commissioning information of a Rosemount Wireless Corrosion Transmitter, refer to the specific transmitter quick start guide.

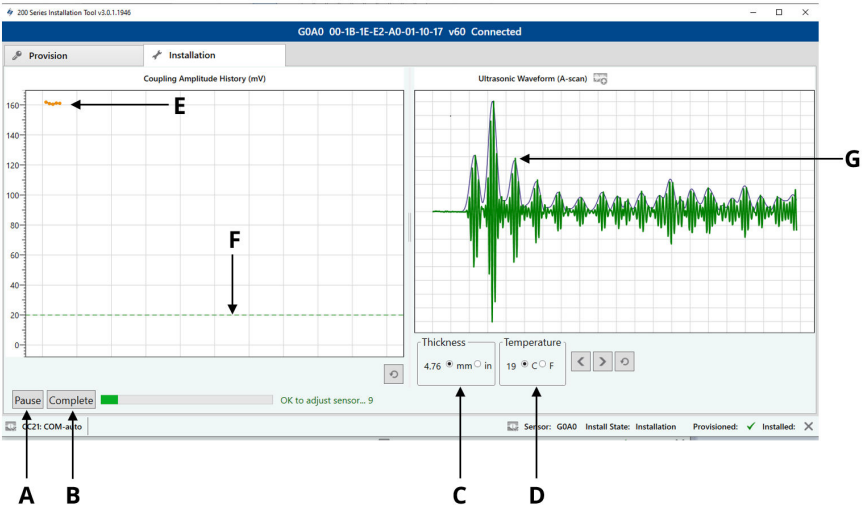
Note
Rosemount Wireless Corrosion Transmitters should not be installed without installation training being delivered by qualified trainers.

4.1 Installation of a Rosemount Wireless WT210 Corrosion Transmitter

In Figure 4-1, this shows how the installation window will be presented when installing Rosemount Wireless WT210 corrosion transmitters.

For detailed installation instructions, please refer to Rosemount Wireless WT210 Corrosion Transmitter Quick Start Guide.

Figure 4-1: Installation app WT210 installation



A. Start/Pause button
B. Complete button
C. Transmitter measured thickness (mm or inches)
D. Transmitter measured temperature (Celsius or Fahrenheit)
E. Transmitter coupling amplitude to measurement surface (update every 1 second)
F. Minimum transmitter coupling amplitude threshold for installation (WT210 only)
G. Transmitter ultrasonic waveform including envelope (update every 10 seconds)

4.2 Installation of Rosemount Wireless ET Range Corrosion Transmitters

In Figure 4-2, this shows how the installation window will be presented when installing Rosemount Wireless ET corrosion transmitters.

For detailed installation instructions, please refer to the specific transmitter quick start guide:

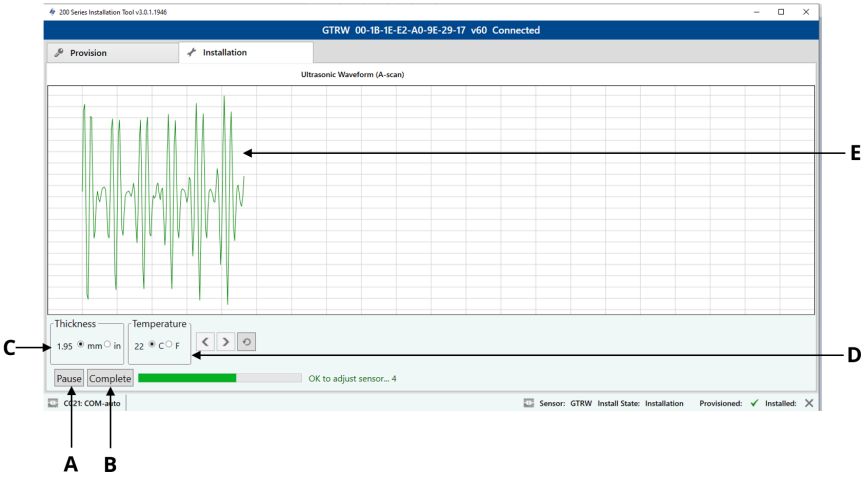
Rosemount Wireless ET210 Corrosion Transmitter Quick Start Guide

Rosemount Wireless ET310 Corrosion Transmitter Quick Start Guide

Rosemount Wireless ET310C Corrosion Transmitter Quick Start Guide

Rosemount Wireless ET410 Corrosion Transmitter Quick Start Guide

Figure 4-2: Installation ET210/ET310/ET410 installation



A. Start/Pause button
B. Complete button
C. Transmitter measured thickness (mm or inches)
D. Transmitter measured temperature (Celsius or Fahrenheit)
E. Transmitter ultrasonic waveform including envelope (update every 10 seconds)

4.3 Troubleshooting

If the application or the transmitter stops responding, then carry out the process below:

Note
It may take up to two minutes for the sensor to send the first waveform through to the application, if there is no communication after this time check the USB connection from the tablet to the CC21, if connected then follow the recommended actions below.

Recommended actions

1. Close the installation app.
2. Unplug the CC21 USB cable from the tablet PC.
3. Disconnect the CC21 from the transmitter.
4. Reconnect the CC21 to the transmitter.
5. Reconnect the CC21 to the Tablet PC.
6. Restart the installation app.

5 Product certifications

Rev 1.0

5.1 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.

5.2 Ordinary location certification

As standard, the device 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).

5.3 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.

5.4 USA

Certificate:	SGSNA/19/BAS/00003
Standards:	UL 913 - 8th Edition, Revision Dec 6 2013
Markings:	Use only with approved sensor - see instructions. Potential static hazard
Special Conditions:	The CC21 Commissioning Cable must only be used in a non-hazardous area – it provides an interface between unspecified non-hazardous area equipment and a Mesh sensor. It must not be used to provide power whilst located in a hazardous area.

5.5 Canada

Certificate:	SGSNA/19/BAS/00003
Standards:	CAN/CSA C22.2 No. 157-92 (R2012) + Upd1 + Upd2

Markings: Use only with approved sensor - see instructions. Potential static hazard

Special Conditions: The CC21 Commissioning Cable must only be used in a non-hazardous area – it provides an interface between unspecified non-hazardous area equipment and a Mesh sensor. It must not be used to provide power whilst located in a hazardous area.

5.6 Europe

Certificate: Baseefa18ATEX0144X

Standards: EN IEC 60079-0:2018, EN60079-11:2012

Markings: Ex II (1) G, [Ex ia Ga] IIC, T_{amb} = -50 °C to +75 °C

Special Conditions: The CC21 Commissioning Cable must only be used in a non-hazardous area – it provides an interface between unspecified non-hazardous area equipment and a Mesh sensor. It must not be used to provide power whilst located in a hazardous area.

5.7 International

Certificate: IECEx BAS18.0088X

Standards: IEC 60079-0:2017 Edition 7.0, IEC 60079-11: 2011 Edition 6.0

Markings: [Ex ia Ga] IIC, T_{amb} = -50 °C to +75 °C

Special Conditions: The CC21 Commissioning Cable must only be used in a non-hazardous area – it provides an interface between unspecified non-hazardous area equipment and a Mesh sensor. It must not be used to provide power whilst located in a hazardous area.

5.8 China

Certificate: GYJ20.1347X

Standards: GB/T 3836.1-2021, GB/T 3836.4-2021

Markings: [Ex ia Ga] IIC

Special Conditions: See certificate for specific conditions of safe use.

5.9 Brazil

Certificate: UL-BR 19.1144X

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

Markings: [Ex ia Ga] IIC

Special Conditions: See certificate for specific conditions of safe use.

5.10 Korea

IP Korea (KCS) Intrinsic Safety

Certificate: KCS 23-KA4BO-0098X

Markings: CC-21([Ex ia Ga] IIC)

5.11 UAE

IX ECAS Ex Intrinsic Safety

Certificate: 23-11-22700/Q23-11-048835/NB0002

6 Declaration of Conformity

EU Declaration of Conformity

We, the manufacturer,

Permasense Ltd
Alexandra House, Newton Road, Manor Royal, Crawley
RH10 9TT, UK

declare under our sole responsibility that the product,

Rosemount™ CC21 Commissioning communicator

to which this declaration relates, is in conformity with the relevant European Union harmonisation legislation.

EMC Directive (2014/30/EU)

Harmonised standard:
EN 61326-1:2013

ATEX Directive (2014/34/EU)

EU type examination certificate: Baseefa18ATEX0144X

Ex marking: Ex II (1)G, [Ex ia Ga] IIC

Harmonised standards:
EN IEC 60079-0: 2018
EN 60079-11: 2012

SGS Baseefa performed an EU-type examination - the certificate was transferred to SGS Fimko Oy on 11-Nov-2020

ATEX Notified Body for EU Type Examination Certificate:
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

Authorised Representative in Europe and Northern Ireland:
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: europeproductcompliance@emerson.com
Phone: +40 374 132 000

Signed for and on behalf of Permasense Ltd.

(Signature)	10th June 2024 (date of issue)	Philip Pakianathan (Name)	Global Engineering and Operations Director (Function)	Crawley, UK (Place of issue)

7 China RoHS

中国 RoHS 2 - 中国《电器电子产品有害物质限制使用管理办法 》，2016 年第 32 号令 China RoHS 2 - Chinese order No. 32, 2016; administrative measures for the restriction of hazardous substances in electrical and electronic equipment

作为总部位于美国密苏里州圣路易斯市艾默生电气公司的一个战略性业务单位及艾默生过程管理的一部分（以下简称“艾默生”），永感™意识到于 2016 年 7 月 1 日生效的中国第 32 号令，即《电器电子产品有害物质限制使用管理办法》(“中国 RoHS 2”)， 并已设立符合规体系以履行艾默生在第 32 号令项下的相关义务

Permasense, a strategic business unit of Emerson Electric Co, St. Louis, Missouri and part of Emerson Process Management (“Emerson”), is aware of and has a program to meet its relevant obligations of the Chinese Order No. 32, 2016; Administrative Measures for the Restriction of Hazardous Substances in Electrical and Electronic Equipment (China RoHS 2), which entered into force on 1 July 2016.

艾默生理解中国 RoHS 2 实施的第一阶段须遵守的与产品标识和信息披露等相关的各项要求。作为一个电器电子设备供应商，艾默生确定供应给贵公司的前述型号产品属于中国 RoHS 2 的管理范围

Emerson understands there are numerous requirements with the regulation regarding, among others, marking of product and communications for purpose of the Phase I implementation of China RoHS 2. As a supplier of electrical and electronic equipment, Emerson has determined that the captioned product supplied to your company is within scope of China RoHS 2.

迄今为止，基于供应商所提供的信息，就艾默生所知，前述产品中不存在超过最大浓度限值的中国 RoHS 管控物质，且该产品上已做相应标识。

To date, based on information provided by suppliers and to Emerson’s best knowledge, no China RoHS substances are present at a concentration above the Maximum Concentration Values and the product is marked to reflect this.

Quick Start Guide
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For more information: **Emerson.com/global**

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