For Additional Product Information:

If QR code is not affixed here, product documents can be located by entering your product's S/N into the search tool (magnifier icon) at the top of the webpage found at **www.emerson.com**

Quick Start Guide
MS-00825-0100-XXXX, Rev AA
February 2025

Emerson Synchros™ *Wireless*HART Platform

EMERSON

NOTICE

This guide provides basic guidelines for the Synchros WirelessHART Platform. All Synchros sensor modules falls within the guidelines of this QSG for commissioning and provisioning, unless otherwise stated. Please refer to the sensor specific install guide for instructions.

Shipping Considerations

Emerson shipped the product to you with the Synchros Power Module, but not electrically connected.

Synchros Power Module contains one "D" size primary lithium-thionyl chloride battery. Primary lithium batteries are regulated in transportation by the U.S. Department of Transportation and are also covered by the International Air Transport Association (IATA), International Civil Aviation Organization (ICAO), and European Ground Transportation of Dangerous Goods (ADR). It is the shipper's responsibility to ensure compliance with these or any other local requirements. Before shipping, consult current regulations and requirements.

Communications Module to Sensor Module

Communications module and sensor modules are paired from the factory and should never be connected to other communications or sensor modules.

The Synchros device has serial numbers on the cover, WirelessHART communications module, and the sensor module to prevent any mis-matching combinations.

⚠ WARNING

Explosions could result in death or serious injury.

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

Ensure device is installed in accordance with intrinsically safe practices.

Electric shock could cause death or serious injury.

Care must be taken during transportation of device to prevent electrostatic charge build-up.

Device must be installed to ensure a minimum antenna separation distance of 8 in. (20 cm) from all persons.

Ground the electronics enclosure in accordance with local and national installation codes.

Product Certification

Verify that the operating environment of the device is consistent with the appropriate hazardous location's certifications.

Before connecting a handheld communicator in an explosive atmosphere, ensure that the instruments are installed in accordance with intrinsically safe or non-incendive field wiring practices.

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

Ensure only qualified personnel perform the installation

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.

Contents

Overview

1.1 In the box

- Emerson Synchros WiHART Platform Quick Start Guide
- Synchros Sensor Quick Start Guide
- Synchros Device
- Synchros Power Module (included inside product)
- Mounting brackets or hardware (if ordered with product)

Note
Equipment in the box may differ by sensor module. Refer to the sensor module QSG for what is in the box.

1.2 Ordered separately

- Spare parts available, see Synchros product data sheet.

1.3 Synchros Device

A. Cover
B. WirelessHART Communications Module
C. Synchros Power Module
D. Synchros Sensor Module (will vary depending on sensor model option)

2 Device preparation

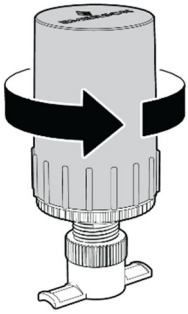
Note

Communications module and sensor modules are paired from the factory and should never be connected to other communications or sensor modules.

The Synchros device has serial numbers on the cover, WirelessHART communications module, and the sensor module to prevent any mis-matching combinations.

2.1 Remove Cover

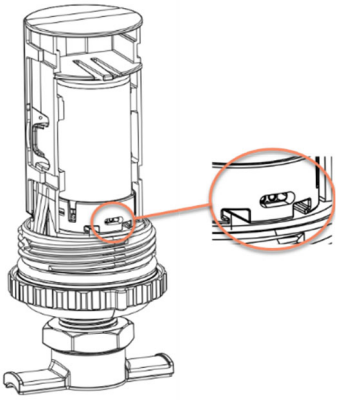
Cover can be removed by rotating the cover counterclockwise.



2.2 Power Up Device

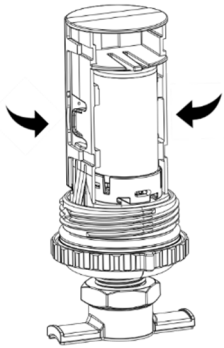
Synchros Power Module is included with the product, but not electrically connected. To power up the Synchros device, the Power Module will need to be removed from the communications module and re-installed.

Figure 2-1: Synchros Power Module – Terminal Connections

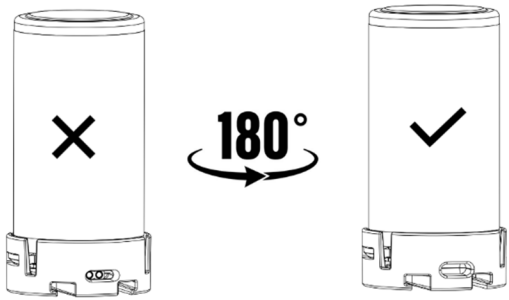


Procedure

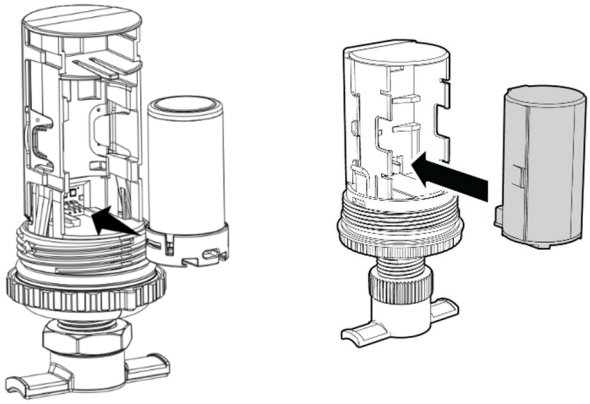
1. Eject the Power Module by compressing the two points on the sides of the communications module



2. Rotate the Power Module 180degrees so the electrical connectors match up with the communications module



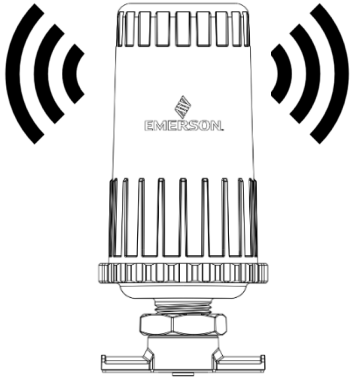
3. Re-install Power Module to communications module. Power symbol, present on the bottom of the power module, should go into the device.



2.3 Antenna position

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

Figure 2-4: Synchros Antenna Position



3 Provisioning & commissioning

3.1 Provision transmitter with wired HART

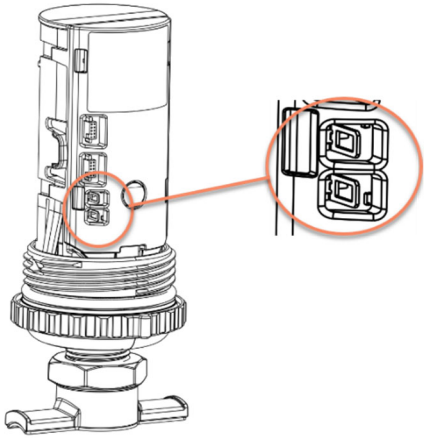
Prerequisites

You must power up the transmitter before the Communication Device can interface with the it. For HART® wireless transmitter communication via a communication device, an Synchros wireless device descriptor (DD) is required.

Procedure

To obtain the latest DD, go to Software & Drivers.

Figure 3-1: Connection diagram



A. Communication terminals

3.2 Commission transmitter to Gateway

Prerequisites

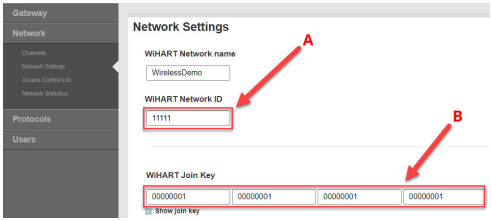
Verify the Wireless Gateway is installed and functioning properly before powering any wireless devices.

If you're unsure if you ordered the device with the factory-configured option, you can manually enter the network ID and join key to match the Gateway.

Procedure

1. To obtain the network ID and join key, go to **Network** → **Network Settings** in the Gateway user interface.

Figure 3-2: Network Settings page in Gateway user interface



A. Network ID

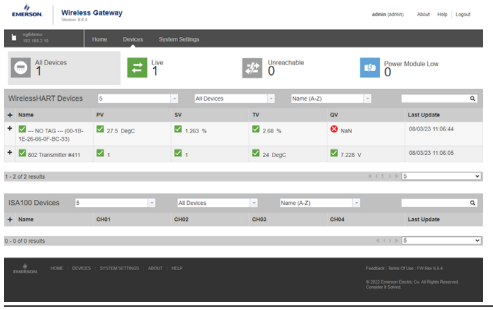
B. Join Key

2. Use communication device or HART® modem to configure the transmitter by entering the network ID and join key, as shown in Figure 3-2. Device variables will vary by sensor type.

Note

It may take several minutes for the device to join the network.

Figure 3-3: Gateway Explorer page



3.3 Configuration defaults

Configuration option	Default value
Network ID	1234
Join Key	12340000 00000000 00000000 00000000
Message	PRODUCT MODEL CODE
Description	[EMPTY] 16 characters maximum
Default Long Tag Format	[EMPTY] 32 characters maximum
Default Short Tag Format	SERIAL NUMBER
Update Rate	5 minutes

3.3.1 Update rate

The default update rate is 5 minutes. You can change this at commissioning or at any time through AMS Device Manager, the AMS Trex Communicator, or Smart Wireless gateway web server.

The update rate can be set from 1 minute to 24 hours (with 1-hour resolution, always rounding to the next hour).

Reducing the update rate minimizes power consumption and extends the life of the power module. For Synchros WirelessHART platform, go to the Power Module Life Estimator tool to calculate estimated life of your wireless device based on update rate, network topology, and environmental conditions.

4 Battery Information

4.1 Replacing the Synchros Power Module

The power module may be replaced in hazardous locations. Replace the battery only with Emerson Part Number 9000X-9000-0001. Follow the instructions in the User Guide for replacing the power module.

5 Product certifications

Revision 1.0

5.1 European Directive information

A copy of the EC Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EC Declaration of Conformity can be found at Emerson.com/Rosemount.

5.2 Telecommunication compliance

All wireless devices require certification to ensure they adhere to regulations regarding the use of the radio frequency (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.

5.3 Federal Communications Commission (FCC) and Innovation, Science, and Economic Development Canada (ISED)

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 7.9 in. (20 cm) from all persons.

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science, and Economic Development Canada's license exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Changes or modification to the equipment not expressly approved by Emerson could void the user's authority to operate the equipment.

L'émetteur/récepteur exempt de licence contenu dans le present appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Les changements ou les modifications apportés à l'équipement qui n'est pas expressément approuvé par Emerson pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement.

5.4 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).

5.5 Installing in 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.

5.6 North America, ATEX, IECEx

5.6.1 KQ NA Division 1, Zone 0

Certificate	FM24US0017X
Markings	NI Class I, Division 2, Groups A, B, C, D T4 (-50 °C ≤ Ta ≤ +70 °C)

Field wiring shall be rated for +172 °F (+78 °C).

Enclosure Type 4X/IP66

Specific Conditions for Safe Use (X):

Only the Emerson SmartPower™ 701PBKKF shall be used for replacement.

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

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