

Chesterton Connect™ Universal Gateway

Model R920

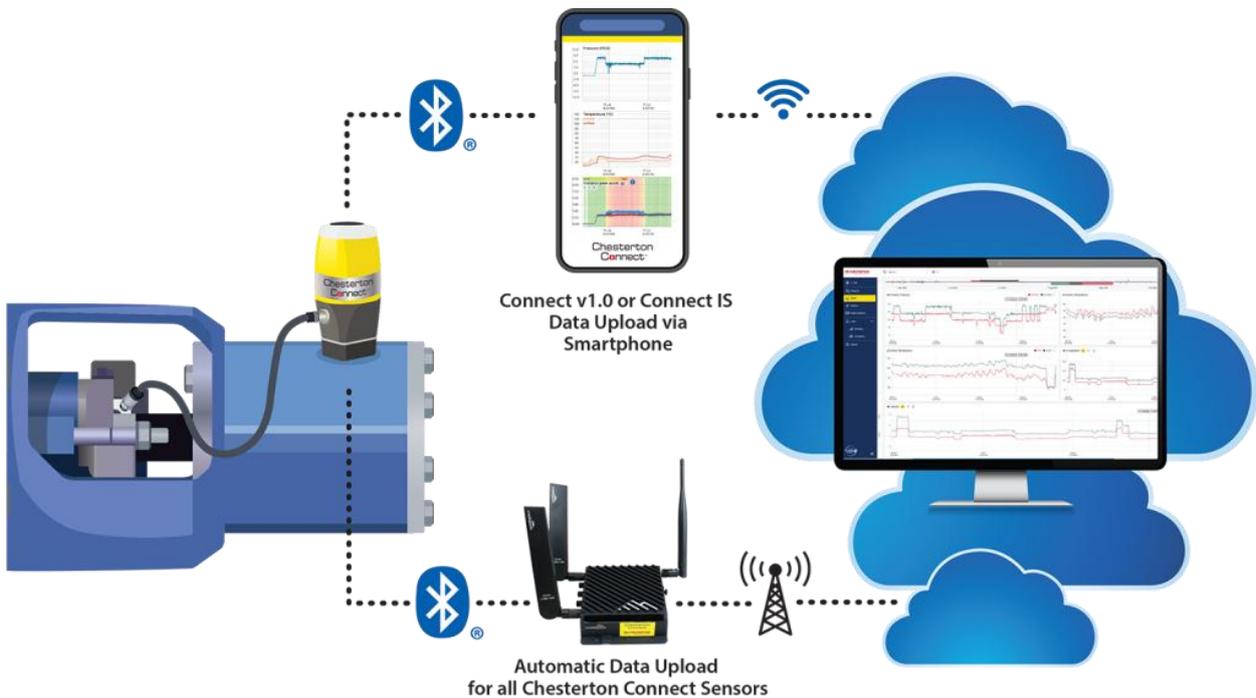


OVERVIEW

The Chesterton Connect™ Universal Gateway enables automatic data transfer from Chesterton Connect sensors to the Cloud. Utilizing the Chesterton Connect Cloud, the Universal Gateway facilitates remote monitoring of equipment to improve operations and equipment reliability.

The Universal Gateway has been optimized for 3G/4G/LTE and GSM cellular networks globally. The Gateway automatically connects to the strongest available cellular signal, eliminating manual configuration setup. Combining superior wireless signal strength with plant integration to SCADA systems, Ethernet bridging, and hazardous location support this Chesterton Connect Gateway offers a versatile solution that is easy to install and use worldwide.

SYSTEM DIAGRAM





Chesterton Connect™

Advantages:

- Easy to install and set up.
- Automatically connects to standard 3G/4G/LTE and GSM cellular networks.

- Supports up to 100 sensors.
- Ruggedized, industrial, compact design.
- Ethernet bridging for difficult installations.
- Plant integration using MODBUS TCP.
- Wi-Fi enabled for private setup or open networks.
- Supports Hazardous Class 1 Division II*.

Product Order Number:

North and South America P/N 434853
Europe, Africa, Middle East, and Asia
Pacific P/N 434854

Contents:

- Universal Gateway
- Installed Global SIM Card
- Communication Port Covers
- Global AC Power Supply
- Global Power Plugs
- Mounting Template and M4 Screws
- Bluetooth 2.4 GHz Antenna
- Cellular Antennas (QTY: 2)
- Optional DC Power Cable

Featured Benefits

Ethernet Bridging

In areas without cellular service, run a single Ethernet cable up to 100 meters from the Gateway to a location with a cellular modem. Alternatively, use the Ethernet port for a secure, wired connection to the plant's guest network to transmit sensor data to the Cloud.

Plant Integration

Facilities can now access Cloud-based maintenance views while securely integrating with plant SCADA systems via the industry standard MODBUS TCP. Each sensor features a MODBUS register map, enabling SCADA programmers to map registers directly to their SCADA application.

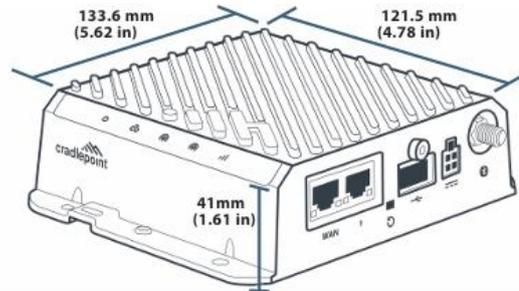
Hazardous Installations

The Universal Gateway is Class 1 Division 2 certified for Zone 2 locations when installed in a NEMA enclosure. When paired with the Chesterton Connect IS Intrinsically Safe sensor, your hazardous location can have a complete solution.

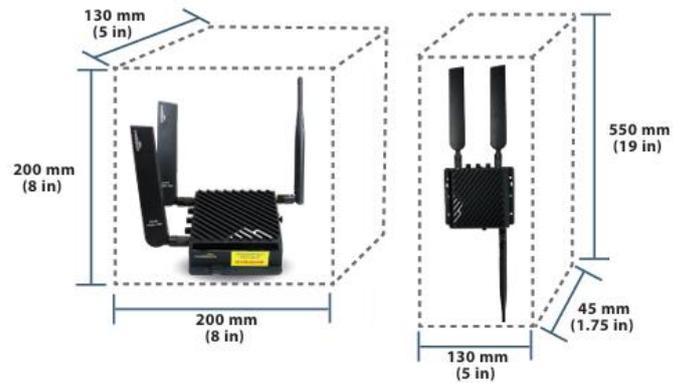
Wireless Expansion

Plant control and process systems can now expand their installations wirelessly. This easy, cable free sensor installation helps reduce expansion costs compared to traditional wired setups.

BASE DIMENSIONS



INSTALLATION SPACE NEEDED

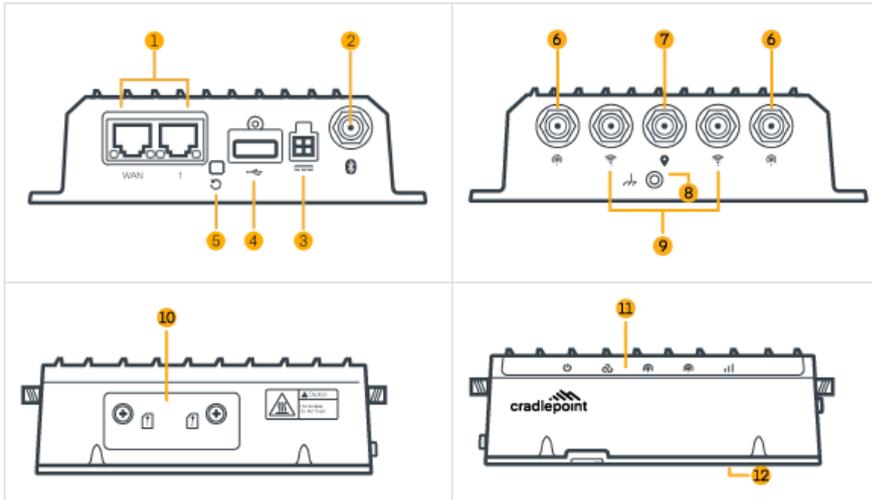


Chesterton Connect Universal Gateway Compatibility

Chesterton Connect v1.0 Sensor	Chesterton Connect IS Sensor	Chesterton Connect Gauge	Chesterton Connect Nano	Chesterton Connect Link (Ex Humidity Link)

Quick Start Guide

External device components



1	Gigabit Ethernet (GbE) Ports
2	Antenna Connector for Bluetooth® Wireless Technology
3	DC Power Port
4	Locking USB 2.0 Port
5	Reset Button
6	Cellular Antenna Connectors (Female SMA)
7	GNSS Antenna Connector
8	Ground Connector
9	Wi-Fi Antenna Connector (Female RP-SMA)
10	SIM Door (SIM Slots behind)
11	LED Panel
12	RX20 Connector (on bottom, not shown)

Location Considerations

The R920 gateway is built for installation in a variety of environments. Ericsson recommends having a professional install the R920 gateway to ensure proper signal reception and usage. The following are best practices for determining the location for the installation:

- Ensure that the mounting surface is flat and clear of any obstructions or objects that may interfere with the antennas, signal reception, or cables.
- Position the device for optimal cellular and Wi-Fi signal reception.
- Avoid mounting in direct sunlight or in locations where it may be exposed to the weather. Ensure plenty of airflow for ventilation.
- Keep the device out of reach. It is required that the endpoint be installed behind a locked or gated enclosure to restrict unauthorized access. The R920 is designed to work in elevated ambient temperatures, which may cause the surface of the device to become too hot to safely touch.
- Mount in locations compliant with the Safety, Regulatory, and Warranty guide, included in the product shipping box.

For details about mobile installations, see the Vehicle Installation Guide for Mobile Routers for more information.

IMPORTANT: The R920 gateway requires separation distances between the Ericsson hardware and human beings. The recommended minimum separation distance is listed on the Safety, Regulatory, and Warranty guide included in the shipping box. For assistance with installation or in locating a professional installer, contact Sales and Support.

SIM Card for Wireless Connectivity

A wireless broadband data plan must be added to your R920 Ruggedized gateway for wireless broadband connectivity. The SIM must be provisioned by the carrier. Contact your carrier for details about selecting a data plan and about the process for provisioning your SIM. To configure the router for failover and failback functionality, see NCOS: Effectively utilizing 2-SIM modems.

Required Tools for Setup

Ericsson recommends that a professional install the R920 in any environment. However, the following tools may be necessary for setup:

- #0 Philips-head screwdriver for SIM cover screws
- #2 Philips-head screwdriver for mounting screws
- Mounting tools – Depending on the location of installation, additional mounting tools may be necessary. These tools may include, but are not limited to:
 - Screwdrivers
 - Drill and drill bits
 - Additional screws
 - Zip ties

Quick Start Setup

Follow these steps to prepare your router for installation and mounting.

1. Verify box contents.

Model	Standard orders include	Orders with accessories also include
R920-C7A	<ul style="list-style-type: none"> • [1] R920 Series Ruggedized Router • [1] 3-meter (2x2) Power and GPIO cable • [1] Small accessories kit <ul style="list-style-type: none"> ○ [4] M4 screws, nuts, and washers 	<ul style="list-style-type: none"> • [2] Cellular Antennas • [2] Wifi Antennas • [1] Power Supply (PSU) • [3] PSU clips
R920-C7B	<ul style="list-style-type: none"> • [1] Mounting template • [1] Getting Started card • [1] Safety, Warranty, and Regulatory guide 	

2. Remove the SIM door screws, insert at least one activated 4FF-sized SIM card in the SIM1 slot first (and optionally insert a second in the SIM2 slot), and then reinstall the SIM door and screws.

3. Optionally, attach the RX20 Managed Accessory to the R920.

See the installation instructions detailed in the RX20 Series Managed Accessory Quick Start Guide and then continue to the next step when the managed accessory is attached.

IMPORTANT: The RX20 Series Managed Accessory is for in-vehicle installations only, using cabled-out antennas to connect to a modem installed in the unit.

4. Attach the antennas.

The R920 series gateway does not include antennas. Antennas must be purchased separately or through a third-party vendor. See the Cradlepoint Antenna web page for more information and options.

Mount the gateway.

The R920 series gateway may be mounted in a number of ways and should be completed by a professional installer.

Connect an Ethernet cable (if using Ethernet).

If you are using a wired, Ethernet WAN connection, connect the Ethernet cable to the WAN port on the R920. Connect the other end to your WAN source.

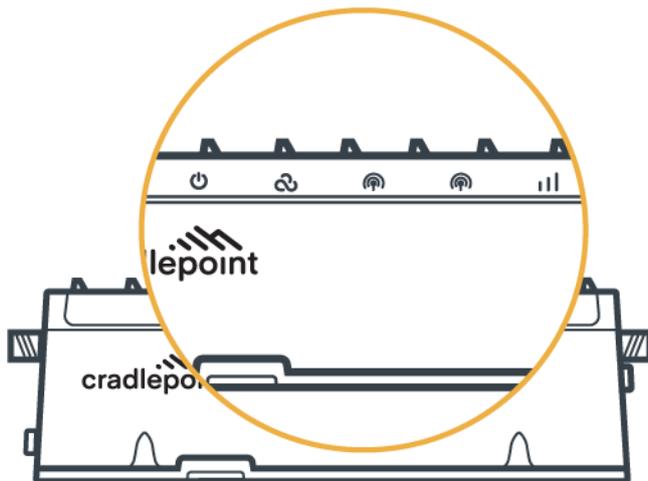
Power up the router.

If using an optionally available power adapter, you cannot attach an RX20 Series Managed Accessory.

Activate the router through NetCloud Manager.

Activate your R920 Series Ruggedized gateway through NetCloud Manager (NCM). Your router is packaged with NetCloud services and requires that you log into your NetCloud account to activate. Refer to Getting Started with NetCloud Manager for more information.

Understanding LEDs



Status Indicator	Behavior
	POWER: The Cradlepoint R920 must be powered using an approved 9-36 V DC power source.
	 No Light = Not receiving power. Check the power switch and source connection.
	 Solid White = Powered on.
	NCM STATE: Detects whether the device is able to connect to NetCloud Manager.
	 No Light = Unable to connect to NetCloud Manager.
	 Solid White = Connected to NetCloud Manager.
	EMBEDDED MODEM STATE: Indicates information about the integrated modem.
	 No Light = Modem not connected. NOTE: You will not be able to see the icon when the modem is not connected.
	 Solid Green = Modem has established an active WAN connection.
	 Flashing Green = Modem is connecting.
	 Solid Yellow = Modem is not active.
	 Flashing Yellow = Data connection error. No modem connection possible.
	 Solid Red = Carrier reject.
	 Flashing Red = No SIM or SIM Door Open.

	MC400 MODEM STATE: Indicates information about the optional MC400 modem.	
		No Light = Modem not connected. NOTE: You will not be able to see the icon when the modem is not connected.
		Solid Green = Modem has established an active WAN connection.
		Flashing Green = Modem is connecting.
		Solid Yellow = Modem is not active.
		Flashing Yellow = Data connection error. No modem connection possible.
		Solid Red = Carrier reject.
		Blinking Red = No SIM or SIM Door Open.

	CELLULAR HEALTH: Indicates the health of the primary cellular modem's signal.	
		No Light = No cellular connection.
		Solid Green = Cellular health is excellent/good.
		Solid Yellow = Cellular health is fair.
	Solid Red = Cellular health is poor.	

Equipment Monitoring Sensors

Specifications

Chesterton Connect™ Universal Gateway Specifications	
Temperature	Operating range -30°C to 75°C (-22°F to -167°F)
Power	Input DC 12V; Power supply 100/240VAC
Wireless	Cat 7 LTE modem (3G fallback), Wi-fi, Bluetooth 5.1 Cat 7 LTE modem (3G fallback) Module integrated RF Brand: TELIT Model. LM960A18 TACGSM 35792610 Frequency bands LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B32/B66/B71 LTE TDD: B33/B38/B39/B40/B41/B42/B43/B46 WCDMA: B1/B2/B4/B5/B8/B19 Transmitting power máx LTE 22.5 dBm ± 1 dB WCDMA 23 dBm ± 1 dB Modulation LTE: QPSK, 16QAM WCDMA QPSK
WLAN (Wi-Fi)	WLAN802.11b/g/n(HT20): 2412~2462MHz
Bluetooth	WLAN 802.11n(HT40): 2422~2452MHz 5GHz IEEE 802.11a/n/ac (20MHz): 5150-5250 MHz, 5250-5350 MHz, 5470-5725 MHz, 5725-5850 MHz Transmitting power máx.: 2.4GHz: 23.18 dBm conducted 5150~5250 MHz: 21.73 dBm conducted 5250~5350 MHz: 22.17 dBm conducted 5470~5725 MHz: 20.79 dBm conducted 5725~5850 MHz: 20.97 dBm conducted Modulation DSSS / OFDM CCK, BPSK, QPSK, 16QAM, 64QAM, 256 QAM, 1024 QAM Bluetooth: 2402~ 2480MHz Bluetooth: 4.2+EDR (GFSK +π/4DQPSK+8DPSK) BLE Transmitting power máx.: 2.4GHz: 8.48 dBm
Wired	1 GbE Ethernet ports Antenna gain (02) : 5.2 dBi
Enclosed Rating	IP64
Bluetooth Range to Gateway	Up to 400 m (1312 ft)
# Sensor Support	Up to 100 Chesterton Connect devices
Certifications	Safety: UL/cUL, EN62368-1 Materils: WEE, RoHS, California Prop 65 Shock/Vibration: MIL-STD-810G Hazardous: Class 1 Division 2, ATEX Zone 2 / Zone 22
Additional	Dual SIM solts for flexibilty. Cellular fees included with Cloud subscription

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