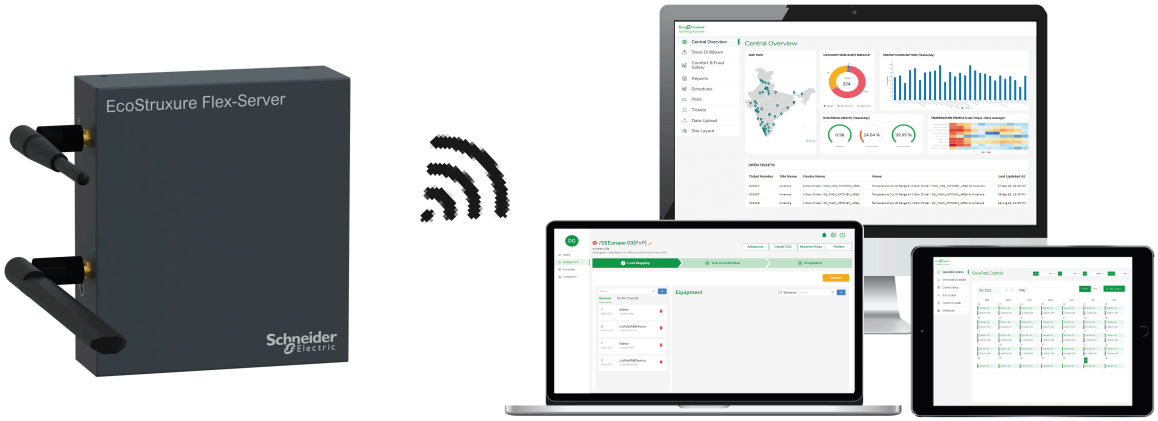
EcoStruxure™ Building Activate

User Guide

For Solution Deployment

DOCA0343EN-00

05/2024



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The information provided in this document contains general descriptions, technical characteristics and/or recommendations related to products/solutions.

This document is not intended as a substitute for a detailed study or operational and site-specific development or schematic plan. It is not to be used for determining suitability or reliability of the products/solutions for specific user applications. It is the duty of any such user to perform or have any professional expert of its choice (integrator, specifier or the like) perform the appropriate and comprehensive risk analysis, evaluation and testing of the products/solutions with respect to the relevant specific application or use thereof.

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Safety Information

Important Information

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result** in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

About the Book

Document Scope

This guide provides complete information to assist in installation and deployment of the EcoStruxure™ Building Activate.

This guide describes the following key points:

- Site Survey templates
- Flex-Server installation
- Site-Set up templates
- Field troubleshooting

This guide is intended for:

- Technicians
- Maintenance Engineer
- Partners

Validity Note

This guide is valid for the IoT-enabled, plug-and-play, open, interoperable architecture, platform, and buildings.

Online Information

The information contained in this guide is likely to be updated at any time. Schneider Electric strongly recommends that you have the most recent and up-to-date version available on www.se.com/ww/en/download/.

The technical characteristics of the devices described in the present document also appear online. To access the information online, go to the Schneider Electric home page.

Available Language of this Document

This document is available in **English** and **French** languages.

Information on Non-Inclusive or Insensitive Terminology

As a responsible, inclusive company, Schneider Electric is constantly updating its communications and products that contain non-inclusive or insensitive terminology. However, despite these efforts, our content may still contain terms that are deemed inappropriate by some customers.

Related Documents

Title of documentation	Reference number
EcoStruxure™ Flex-Server Technical Datasheet	EXBED324401EN EXBED324401FR
EcoStruxure™ Flex-Server Installation Sheet	ZEN0000102

You can download these technical publications and other technical information from our website at www.se.com/ww/en/download/.

Precautions

General Precautions

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, damage, or improper operating results.

⚠⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm power is off.

Failure to follow these instructions will result in death or serious injury.

⚠ WARNING

UNINTENDED OPERATION

- Do not use the software for critical control or protection applications where human or equipment safety relies on the operation of the control action.
- Do not use the software to control time-critical functions because communication delays can occur between the time a control is initiated and when that action is applied.
- Do not use the software to control remote equipment without securing it with an authorized access level, and without including a status object to provide feedback about the status of the control operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠ WARNING

INACCURATE DATA RESULTS

- Do not incorrectly configure the software, as this can lead to inaccurate reports and data results.
- Do not plan your maintenance or service actions solely on messages and information displayed by the software.
- Do not rely solely on data displayed in the software reports to determine if the system is functioning correctly or meeting all applicable standards and requirements.
- Do not use data displayed in the software as a substitute for proper workplace practices or equipment maintenance.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Environmental Precautions

In order to take the measures to conserve the environment, it is recommended to follow the steps for the disposal of packages, products, or batteries:

Package Disposal

The following package disposal rules have to be followed:

- The exceptions detailed in the First Additional Provision of Law 11/1997 on commercial or industrial packaging states that the final holder of the waste of used containers and packaging must deliver the waste to an authorized recuperator, recycler, or revaluer in appropriate conditions for reuse.
- The subsets of the system are recyclable products and cannot be treated as household or municipal waste at the end of its useful life.
- To preserve the environment, manage the waste in accordance with the current environmental regulations and requirements in each country or community. For any assistance, consult the manufacturer.

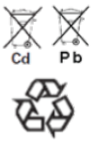
Product Disposal

The following product disposal rules have to be followed:

- The electrical-electronic device (AEE) is marked with the symbol of compliance with the European Directive 2012/19 / EU (WEEE) regarding used electrical and electronic equipment (waste electrical and electronic equipment WEEE, RD 110/2015).
- The directive provides the general framework valid throughout the European Union for the removal and reuse of waste from EEE.
- To dispose off the product and to ensure its proper management, follow the current local environmental legislation and regulations. In this way, it will contribute to environmental conservation.
- The wheeled bin crossed out on the product, in the documentation or on its packaging, means that the electrical-electronic devices and batteries must be collected separately at the end of their life cycle.
- According to the current local legislation and environmental regulations, before the deposit of the RAEE (waste generated from appliances, instruments and devices powered by electricity or batteries) in their collection facilities, the batteries must be removed and deposited separately from the rest of the RAEE for proper management.
- Never dispose the product or its associated equipment with household waste.
- The symbols marked on the product are valid in the European Union and in those places where separate collection systems are available.

Battery Disposal

The following product battery rules have to be followed:



- Used batteries are reusable consumer products and a recycling process must be carried out.
- Used batteries that do not go through the recycling process must be disposed off in accordance with the regulations and environmental requirements in each country or community. This requirement applies in the European Union and in those places where separate collection systems are available.
- For any assistance, consult the battery manufacturer.

Cybersecurity Safety Notice

⚠WARNING

POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY

- Change default passwords at first use to help prevent unauthorized access to device settings, controls, and information.
- Disable unused ports/services and default accounts to help minimize pathways for malicious attackers.
- Place networked devices behind multiple layers of cyber defenses (such as firewalls, network segmentation, and network intrusion detection and protection).
- Use cybersecurity best practices (for example, least privilege, separation of duties) to help prevent unauthorized exposure, loss, modification of data and logs, or interruption of services.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

EcoStruxure™ Building Activate

What's in This Part

Introduction

EcoStruxure™ Master Range

EcoStruxure™ is Schneider Electric's IoT-enabled, plug-and-play, open, interoperable architecture, platform, and buildings. Innovation at every level from connected products to edge control, and applications, analytics, and services.

Overview

EcoStruxure™ Flex-Server Gateway is a multi-protocol IoT gateway that has been designed specifically for commercial applications. It enables businesses to perform bi-directional data or control communication between a range of sensors and devices on-premise and cloud. Exposed physical interfaces include RS485, USB ports, power connector, LEDs, and Ethernet.

System Features and Benefits

The features and benefits of Industrial or Commercial grade gateway are:

- Running standard Linux operating system.
- Fanless operation.
- Remote bidirectional connectivity between cloud and gateway over a VPN.
- Remotely manage all gateways from a single portal.
- Role-based access control for gateway management for different users.
- Remotely configure connected devices on the gateway over the supported protocols.
- Pre-supported library of hundreds of devices.
- Remote health monitoring and management.

Supported Gateways

The supported gateways are listed below:

- LoRa connector - RAK Wireless 7371 - D10005
- RS485 - 3onedata USB485I - USB485i

Box Contents

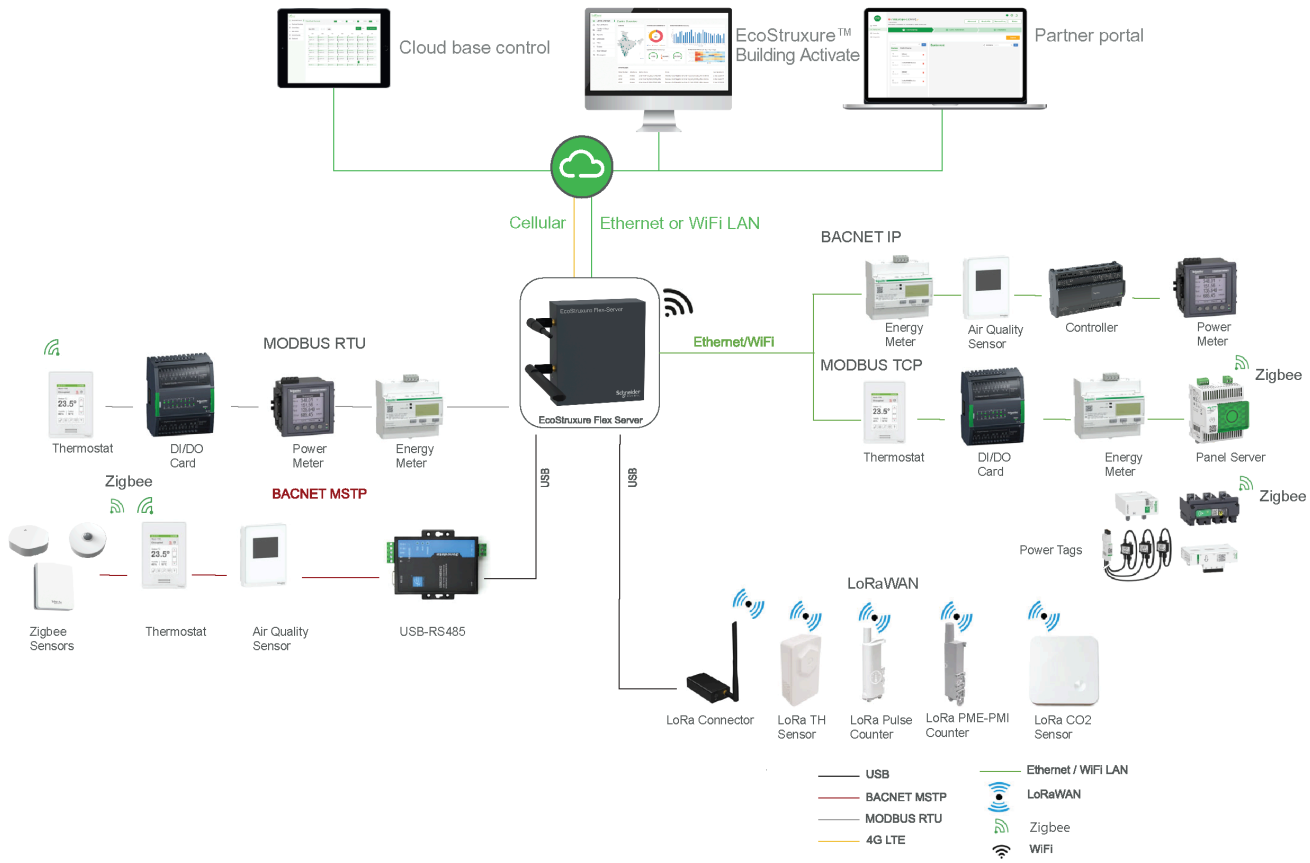
The box contains the listed parts:

- EcoStruxure™ Flex-Server IoT gateway
- Power supply
- 4G antenna
- WiFi antenna
- Six M3 x 6 mm screws flat head
- Five M4 x 25 mm self tapping screws
- Installation guide

- Mounting bracket for gateway and power supply - ESXBFXSVRPRBRKT
- Mounting bracket for LoRa and RS485 - ESXBFXSVRSCBRKT

Architecture

The architecture of the Flex-Server Gateway is shown in the following diagram:



Technical Specifications

Technical Characteristics

Characteristics	Values
Physical Characteristics	
Enclosure	Steel enclosure with powder coating with two external SMA connectors for antenna
Mechanical	
Dimensions	Ethernet: 137 x 124 x 41 mm Ethernet+Cellular: 137 x 194 x 41 mm Ethernet+Cellular+WiFi: 137 x 194 x 41 mm
Weight	Ethernet: 503 g Ethernet+Cellular: 528 g Ethernet+Cellular+WiFi: 558 g
RAM	1GB LPDDR4-3200 SDRAM
Storage	8GB eMMC
Processor	Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5 GHz
Connectors	1x RS485, 2x USB2.0 Type A, 1x 10/100 Ethernet
Electrical Characteristics	
Power Supply	11...24 V DC (12 V DC, 25 W (included in the box))
Communication Characteristics	
Wi-Fi	Dual Band Wi-Fi with external Omnidirectional antenna
LTE	1 X LTE Cat 4 with external Omnidirectional antenna
Environmental Characteristics	
Environmental Conditions	Indoor Use Only
Operating Temperature	0...50 °C
Storage Temperature	-20...65 °C
Humidity	0...95%
Installation	
Mounting	Wall-Mounted
Installation Equipment Included	Installation instructions, mounting brackets, and screws
Certifications and Compliances	CE, UKCA, RoHS, and REACH

Optional Accessories

Reference Number	Description
D10005	LoRA Connector RAK7371 EU868
USB485i	USB to RS485 Connector 3OneData

Flex-Server Guidelines

Parameters	Maximum Number
Flex-Server	
Maximum number of total devices (all protocols combined)	50
Maximum number of controlled points (all devices combined)	500
BACnet	
Maximum number of BACnet MS/TP devices per network	32*
Maximum number of BACnet MS/TP networks per server	2**
Maximum number of BACnet IP devices	50
Point Types	
Analog values	500
Digital values	500
Multi-state values	500
Analog input	500
Digital input	500
Multi-state input	500
Analog output	500
Digital output	500
Multi-state output	500
Modbus	
Maximum number of Modbus RTU devices per RS485 port	32*
Maximum number of RS485 ports	2**
Maximum number of Modbus TCP devices	50
LoRa* **	
Maximum number of LoRa sensors per server (100 messages per day)	50
Maximum number of points	50
SNMP Client (V1 & V3) **Function**	
Maximum number of SNMP devices (1024 Read/Write per device)	10

NOTE: *Maximum number of devices according to protocol specifications and guidelines.

NOTE: **There is one onboard RS485 port, an additional can be added via USB.

NOTE: ***LoRa distances - LoRa is noted for its long range and deep penetration. LoRa transmissions can penetrate glass, metal, and concrete found in most buildings. Radio's antenna and installation can affect the range of LoRa sensors. You must test the transmission and signal strength, when you install wireless devices.

Cable Specifications

Parameter	Details
Media	Twisted pair 18 AWG, 22 AWG, Or 24 AWG (shielded recommended)
Characteristic impedance	100...130 ohms
Distributed capacitance	Less than 100 pF per meter (30 pF per foot)
Maximum length per segment	1200 m (4000 ft) Note: 18 AWG cable
Polarity	Polarity sensitive
Multi-drop	Daisy-chain (no T-connections)
Terminations	1. Devices are installed at both ends of RS485 network: 120 Ohms resistors should be installed at each end. 2. A device is installed at one end of RS485 network and a their-party devices is installed at the other end. Install an End-Of-Line resistor value that matches the third-party device instructions regarding the End-Of-Line resistors. 3. Third-party devices are installed at both ends of RS485 network. Follow the third-party device instructions regarding the End-Of-Line resistors.
Network bias resistors	510 ohms per wire (maximum two sets per segment)
Maximum number of nodes per segment	32
Baud rates supported	9600, 19200, 38400, 57600, 76800, 115200 (Auto detect is not supported)

Commercial Reference Number

Commercial Reference Number	Description
ESXBFXSVR00B008	ESXB Flex-Server, Ethernet, RS485, 8GB storage
ESXBFXSVR0BC008	ESXB Flex-Server, Ethernet, RS485, cellular, 8GB storage
ESXBFXSVRBCW008	ESXB Flex-Server, Ethernet, RS485, cellular, WIFI, 8GB storage

Initial Site Survey

To ensure a fast and efficient implementation of the EcoStruxure™ Building Activate, it is essential to have an accurate site mapping. To facilitate this, we have developed precise templates for translating site information effectively to the commissioning team.

Required Information

Below table provides the information about the parameters to be filled in the survey form:

Category	Site Parameters	Input	Remarks
Site Details	Site name	-	-
	Location	-	-
	Carpet area in sq. feet	-	-
	Total number of floors	-	-
Incomer Source (Electricity)	Number of mains incomer	-	-
	Does the electricity board (EB) incomer has energy meter installed? (Please share model and make)	-	-
	Number of Diesel Generators (DGs)	-	-
	Does the DG incomer has energy meter installed? (Please share model and make)	-	-
	No. of solar Incomer If installed	-	-
Ductable Air Conditioners (ACs) (If Ductable System are installed)	No. of ductable AC's	-	-
	Make and model of ductable AC's	-	-
	Tonnage of each ductable AC's	-	-
	Set temperature of ductable AC's	-	-
	No. of compressor in ductable AC	-	-
	Operating hours of ductable AC's	-	-
Split & Cassette (If splits or cassette System are installed)	No. of split AC's	-	-
	No. of cassette AC's	-	-
	Make and model of AC's (If Available)	-	-
	Tonnage of AC's	-	-
	Set temperature of AC's	-	-
	Operating hours of AC's	-	-
Variable Refrigerant Volume (VRV)/Variable Refrigerant Flow (VRF)	Make and model of VRV/VRF	-	-
	Count of Indoor units	-	-
	Count of master outdoors	-	-
	Count of slave outdoors	-	-
	Wired remote connected to each indoor?	-	-
	Is centralized remote control (CRC) installed (Yes/No)?	-	-
	Is BACnet controller is installed for the VRV/VRF for third party control?	-	-
	Set Temperature	-	-
Air Handling Units (AHUs)	Does the Heating Ventilation and Cooling (HVAC) has separate panel available?	-	-
	Total No. of AHUs	-	-
	Kw rating of each AHUs	-	-

Category	Site Parameters	Input	Remarks
Air Handling Units (AHUs) (continued)	Tonnage Of each AHUs	-	-
	Operating thru Variable Frequency Drive (VFDs) or Direct-on-line (DOL) starter ?	-	-
	If operating thru VFDs, set frequency of VFDs?	-	-
	Is chilled water billing is based on British Thermal Unit (BTU) or Common Area Maintenance (CAM) charges are fixed?	-	-
	Does the AHUs/Ceiling Suspended air conditioning Units (CSUs) have motorized chilled water valve and actuators installed?	-	-
	Actuator make if present (required)	-	-
	Actuator & valve status (working/not working)?	-	-
UPS	Number of UPS systems	-	-
	Do the UPS systems have RS485/SNMP communication port, if yes, please specify make & model	-	-
Electrical Billing	Does the lighting has separate panel available?	-	-
	Annual energy consumption Kwh/Kvah (EB+SOLAR+ DG)	-	-
	Electricity unit cost?	-	-
	Annual electricity bill in INR?	-	-
BTU Billing	Is the BTU billing is based on actual consumption or CAM charges fixed?	-	-
Lighting DB (Raw Power)	No. of LDB ? (Only lighting load)	-	-
	Operating hours	-	-
	Ampere rating of lighting DB?	-	-
Signage	No. of signage	-	-
	Ampere rating of signage MCB?	-	-

Air Handling Unit and Terminal Fan Array Details

Below table provides the details to be filled for air handling unit (AHU) and terminal fan array (TFA):

Sl. No	AHU/ TFA Tag Name	Location/ Area Catered	Operation Hours/ Day	Design Motor Power (kW)	Design Capacity (TR)	Design Capacity (CFM)	Type of motorized Actuator (Two/ Three way)?	Working Condition Of chilled water Valve	Starter Type	Blower Type	VFD Model	Temperature Setpoint (°C)	Is there same water line is used for heating & cooling? (Yes/ No)
1	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-

Water Circulation Chiller Based Cooling

Below table provides the details to be filled for water cooled and air cooled chillers:

Equipment	Count	Tonnage	KW rating	Type	VFD Installed?	Is Modbus/ BACnet IP port is available in Chillers & Heat Pump? If any?	Last measured ikW/tr	Set Point (Leaving water temperature range in degC)?	Chillers make and model
Water Cooled Chillers	-	-	-	-	-	-	-	-	-
Air Cooled Chillers	-	-	-	-	-	-	-	-	-

Below table provides the details to be filled for pumps and cooling tower fan:

Equipment	Count	Flow and pressure (GPM at Bar)	KW rating	Type	VFD Installed?	Make & Model of VFD?	Connected with BMS or any local system?	Pump Zone	Is any close loop control is deployed for any of these pump?
Condenser Pump	-	-	-	-	-	-	-	-	-
Primary Pump	-	-	-	-	-	-	-	-	-
Secondary Pump	-	-	-	-	-	-	-	-	-
Cooling Tower Fan	-	-	-	-	-	-	-	-	-

Additional Kitchen Equipment (Optional)

Below table provides the information about the additional kitchen equipment and the details to be filled as per the requirement:

Sl. No.	Equipment Name	Operating hour (Time)	kW rating
1	Dishwasher	-	-
2	Fryer	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-
11	-	-	-
12	-	-	-
13	-	-	-
14	-	-	-
15	-	-	-
16	-	-	-

Applications

Below table provides the used cases and details to be filled:

Sl. No.	Use Cases	How to Achieve (Observations and suggestions)	Current State of Operations
1	Temperature Compliance	-	-
2	Duty Cycle / Run hours - ACs, Refrigeration etc.	-	-
3	Indoor Temperature Monitoring - FOH/BOH, Zones	-	-
4	Electrical Safety - Mains	-	-
5	DG Run Hours	-	-
6	Centralized Asset Control (Schedule based)	-	-
7	Energy Savings	-	-
	(a) AC	-	-
	(b) Lighting	-	-

Kitchen Applications (Optional)

Below table provides the kitchen applications and the details to be filled as per the requirement:

Sl. No.	Use Cases	How to Achieve (Observations and suggestions)	Current State of Operations
1	Food Safety and Temperature Compliance	-	-
2	Duty Cycle / Run hours - ACs, Refrigeration etc.	-	-
3	Indoor Temperature Monitoring - FOH/BOH, Zones	-	-
4	Electrical Safety - Mains	-	-
5	DG Run Hours	-	-
6	Centralized Asset Control (Schedule based)	-	-
7	Energy Savings	-	-
	(a) AC	-	-
	(b) Exhaust/FA	-	-
	(c) Lighting	-	-

Unboxing the Gateway

To unbox the gateway, perform the following steps:

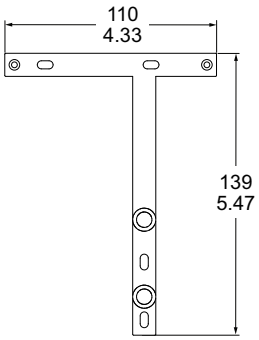
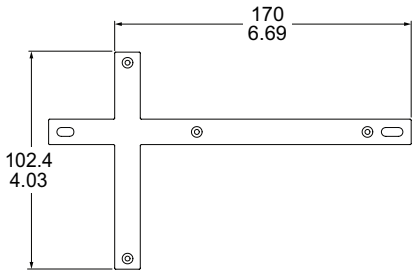
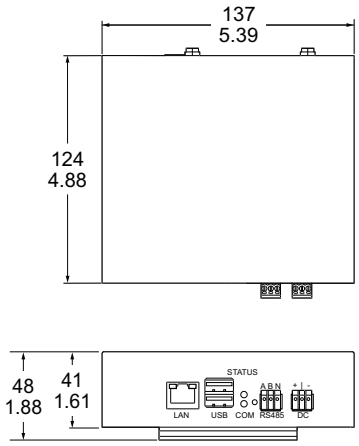
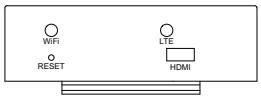
1. Unbox the gateway after you receive it.

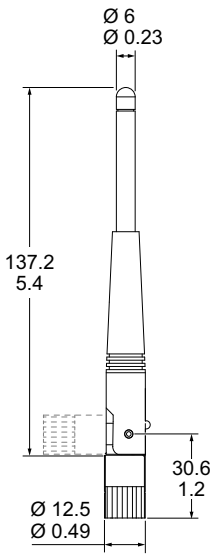
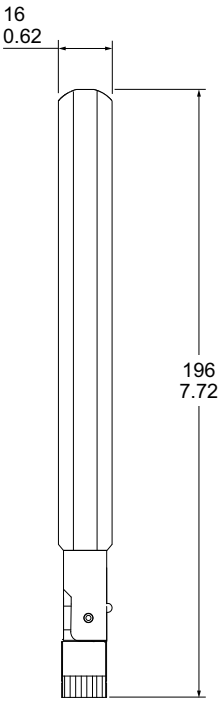
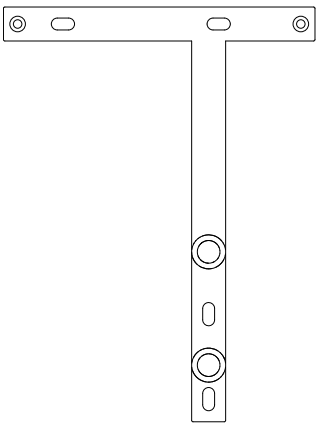
   NOTE: The gateway is received in two layers of packaging, the shipping box and the product packaging.

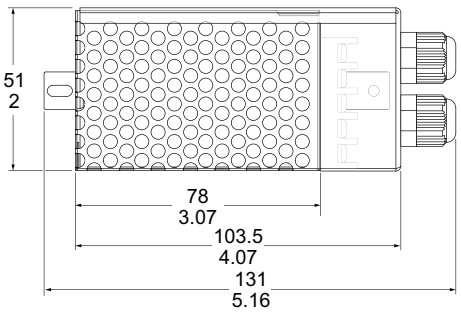
2. Remove the outside packaging and arrange the gateway in an organized manner.

Assembling the Gateway

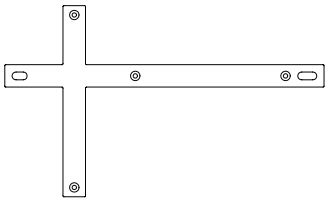
Refer to the below table for physical description and dimensions:

Description	Image
Mounting bracket for gateway and power supply	
Mounting bracket for LoRa and RS485	
Gateway dimensions	
Gateway	

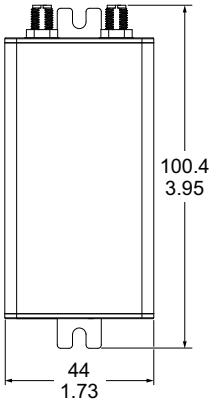
WiFi antenna	
4G antenna	
Installing mounting bracket with power supply	



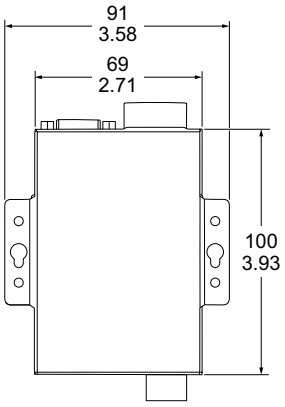
Installing Mounting Bracket LoRa and RS485I



LoRa Connector

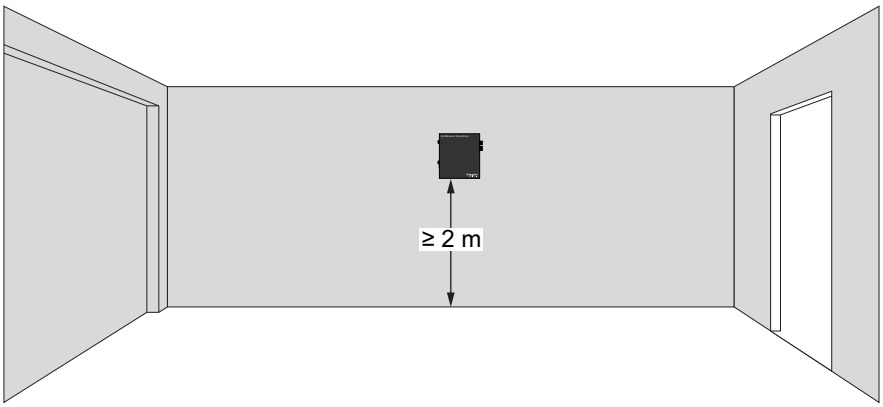


RS485 Converter



Perform the following steps to install the gateway on mounting bracket with power supply:

NOTE: The gateway must be installed ≥ 2 m (6.562 ft) above the ground level:



1. Mark the positions of three drilling holes on the surface to install the mounting bracket.
2. Drill three holes using a drill bit of 6 mm diameter.
3. Install the mounting bracket on the surface with three M4 x 25 mm self tapping screws.
4. Tighten the screws using PH1 screwdriver.
5. Hang the gateway on the mounting bracket.
6. Remove the cover on the power supply.
7. Install the power supply on the mounting bracket with two M3 x 6 mm flat head screws.
8. Tighten the screws using PH1 screwdriver.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Turn off all power supplying this equipment before working on or inside equipment.
- Before powering on, install the power supply cover after wiring.
- Do not open or access the power supply through the open vents.

Failure to follow these instructions will result in death or serious injury.

9. Do the necessary wiring. Refer to the *EcoStruxure™ Flex-Server Installation Sheet - ZEN0000102*.

   NOTE: Use 0.2 A fuse with appropriate line to main voltage between AC power supply & mains.

10. Install the power supply cover again using PH1 screwdriver.

Perform the following steps to install the LoRa connector and RS485I on mounting bracket:

1. Mark the positions of two drilling holes on the surface to install the mounting bracket.
2. Drill two holes using a drill bit of 6 mm diameter.
3. Install the mounting bracket on the surface with two M4 x 25 mm self tapping screws.
4. Tighten the screws using PH1 screwdriver.
5. Install two M3 x 6 mm flat head screws on the dedicated screw slot present on mounting bracket.
6. Hang the RS485 converter on the two M3 x 6 mm flat head screws installed on the mounting bracket.
7. Install the LoRa connector on the mounting bracket with two M4 x 25 mm self tapping screws.
8. Tighten the screws using PH1 screwdriver.

Cellular Configuration:

NOTICE
REDUCED DEVICE PERFORMANCE • This device is for indoor use only and is not suitable for wet locations. • Do not install the device close to an exterior window. • When replacing a device, install the new device in the same position and direction as the replaced device. **Failure to follow these instructions can result in equipment damage.**

1. In case of a cellular configuration, open the four screws on the sides of the gateway and carefully open the box, without removing the antenna cables. Insert a micro SIM card and close the gateway.
2. Attach the WiFi antenna to the WiFi antenna connector on gateway.
3. Attach the 4G antenna to the 4G antenna connector on gateway.
4. Place the gateway on the mounting bracket 1 using countersunk head screws.
5. Connect the power supply pin 5 (V+) to +12 Vdc on gateway and power supply pin 4 (V-) to -12 Vdc on the gateway using 24 AWG.
6. Connect the Modbus or the BACnet to the RS485 port on the gateway.
7. Connect Modbus or the BACnet to the RS485 converter using the manual provided with the RS485 converter.
8. Connect the LoRa module using the USB cable provided in the box.
9. Connect the RS485 converter with the USB cable provided in the box.
10. Connect the pin 1, 2, and 3 (AC/L, AC/N,FG) to Live, Neutral and Earth respectively using 26 AWG wire.
11. Switch on the AC mains power supply.

Ensuring the Gateway is Online

Make sure that the gateway is online, and then proceed with the deployment process.

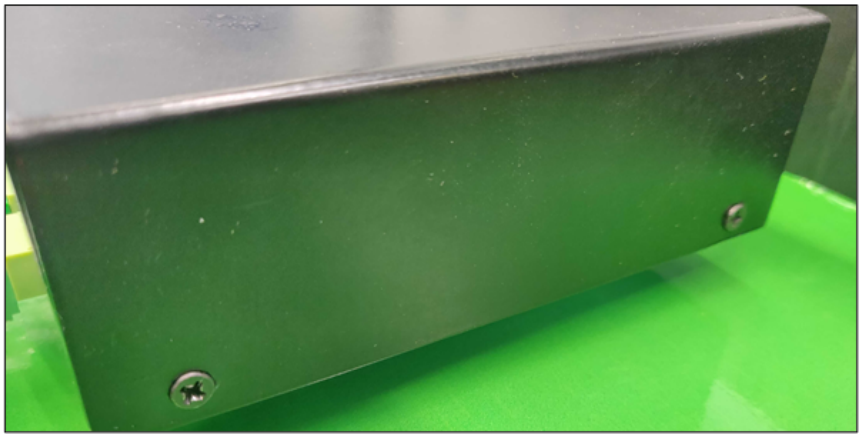
To get the kit online, you need to make sure that the gateway can be connected through the internet, once the gateway is powered up.

NOTICE
LOSS OF COMMUNICATION • Carefully open the cover to ensure that antenna cables are not damaged. • Make sure to connect antenna cables to the correct antenna port if they are disconnected. • Take necessary precautions to avoid component damage from tools and electrostatic discharge. • When handling the product or any conductive cable/ESD-sensitive component connected to the product, wear a conductive wrist strap connected to ground through a minimum of 1 MΩ resistance. • Avoid touching exposed conductors and component leads with skin or clothing. **Failure to follow these instructions can result in equipment damage.**

There are two ways to get the gateway online, through GSM and through WiFi:

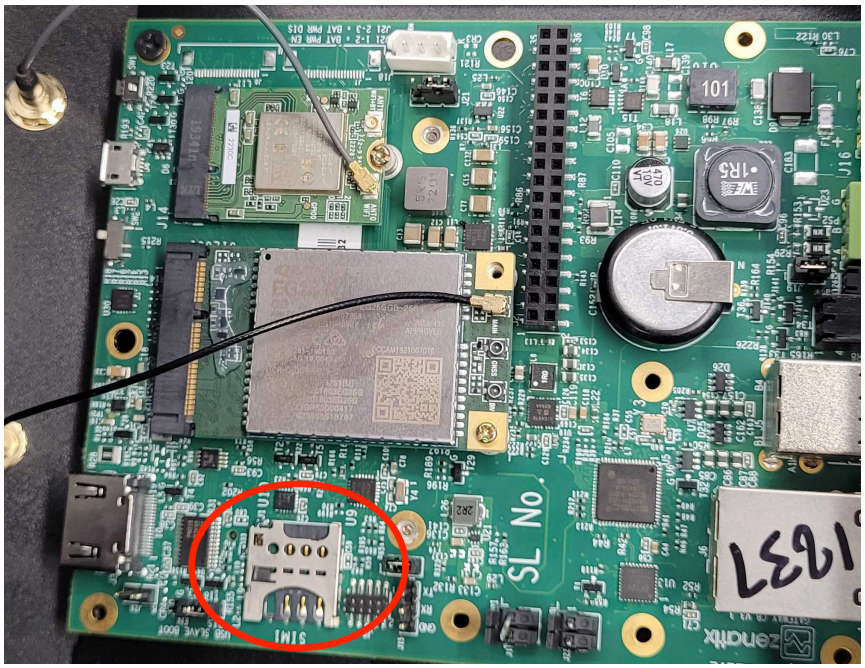
1. **Getting the gateway online through GSM**:
    a. Open the gateway screws and delicately remove the top cover.

        IMPORTANT: Take extra care during this step, as the top cover is connected to the antenna cable via a thin wire.



b. After opening the top cover, you will be able to see the top view of the board. Insert the active SIM card in the designated slot as shown in the image.

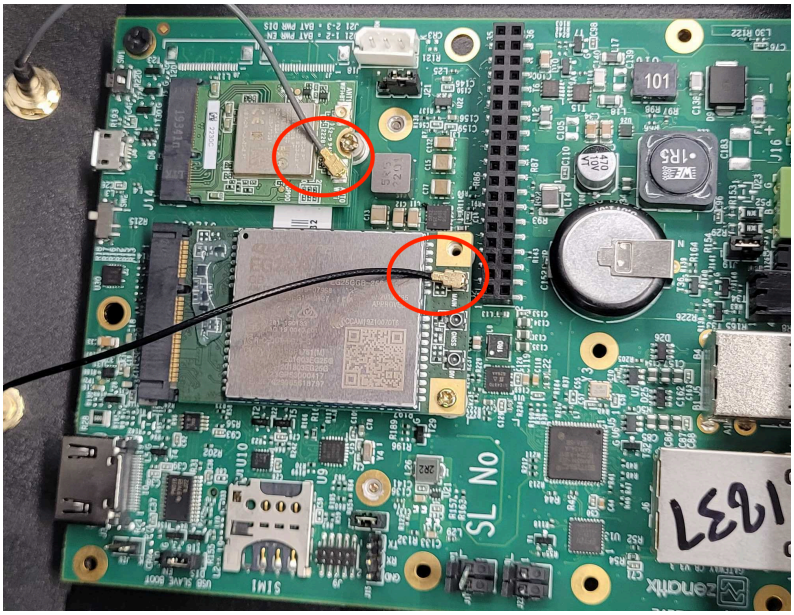
NOTE: If SIM is PIN enabled, contact www.se.com/buildings.



c. While removing the top cover of the box, if the antenna wire becomes detached from the board, you can attach it again by following these steps:

(1) After opening the top cover, carefully inspect the top view of the board.

(2) Locate the connection point labeled **MAIN** as shown in the image below.



(3) Attach the antenna wire again to the **MAIN** connection point.

d. Once the SIM card is properly placed, fix the screws back and make sure that the antenna is still attached to the gateway.

NOTE: If the antenna gets removed then the GSM will not work.

e. After powering up the kit, allow the gateway to boot up. This process may take up to five minutes. Once completed, the device should come online and be visible on the partner portal page.

NOTE: The connectivity depends on the network of the network provider being available in the location where the gateway is currently in.

2. **Getting the gateway online through WiFi**:
   a. To get the gateway online, provide a hotspot to the device with the following credentials:
      - **SSID**: xxxxx
      - **Password**: xxxxxxxx

      NOTE: It may take up to five minutes to get online.
   b. Once the gateway is online, share the compute module and carrier board serial number with the commissioning engineer, so that he can initiate the provisioning process.

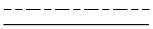
LED Indicators

LED indicators are used to check the status of the internet connection, server connection, SD card health, gateway firmware health, device connection, and data transfer. Refer to the below tables for more details about top LED indicators and bottom LED indicators.

Gateway Status LED

Sl. No.	Indicator	Description
1		Internet is accessible but not connected to the server.
2		Internet is not accessible but connected to the server.
3		Internet is accessible and is connected to the server (All OK).
4		Internet is not accessible and not connected to the server.
5		Flash storage is healthy but gateway firmware is not healthy.
6		Flash storage is not healthy but gateway firmware is healthy.
7		Flash storage is healthy and gateway firmware is healthy (All OK).
8		Flash storage is not healthy and gateway firmware is not healthy.
9		All OK.

Network Status LED

Sl. No.	Indicator	Description
1		No power.
2		WiFi is ON.
3		WiFi is OFF, device is searching for the network.
4		WiFi is OFF, device is registered on network but it is in an idle state.
5		WiFi is OFF, internet connection is available and data transfer is taking place successfully.
6		WiFi is OFF, phone calling is taking place.
7		WiFi is ON, device is not connected to the cellular network and it is searching for the network.
8		WiFi is ON, device is registered on cellular network but it is in an idle state.
9		WiFi is ON, internet connection is available and data transfer is taking place successfully.
10		WiFi is ON, phone calling is taking place.

Eternet Status LED

Sl. No.	Indicator	Description
1	_ _ _ _ _ _ _ _ _ _ _	Ethernet communication is not connected.
2	Ethernet LED 1: 	Ethernet communication active.
3	Ethernet LED 2: 	Ethernet communication active.

Power LED

Sl. No.	Indicator	Description
1	_ _ _ _ _ _ _ _ _ _ _	No Power.
2		Gateway is powered.

NOTE: Press the reset button using a pin for 1-2 seconds and release for a reboot/reset.

Provisioning the Gateway

Perform the following steps to provision the gateway:

1. Power on the gateway by connecting it to the power source using the power cable provided inside the box.
2. Wait for the top LED of the gateway to blink red and green alternatively, this should take up to five minutes.

   NOTE: The inserted SIM will be able to get the gateway online automatically. The option to choose between WiFi or Ethernet is available in the later stages.

Site Commissioning Information

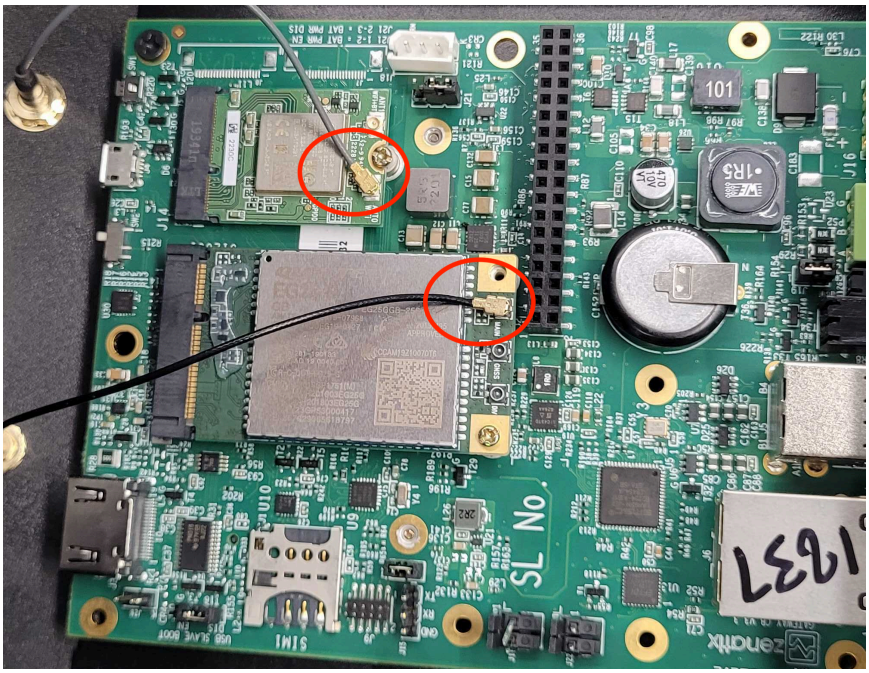
Once the gateway is provisioned and is online, the field engineers start installing the other hardware and once all the devices are installed, fill up the below template and share that with the commissioning engineer.

Sl. No.	Details		Remarks
1	Gateway Details	Carrier board (Compute Module): [Provide carrier board details]	
		Compute Module SN: [Provide Compute Module SN]	
		Detail Sticker on Gateway Enclosure: [Attach photo or provide details]	
2	Site Location	Latitude: [Provide latitude]	
		Longitude: [Provide longitude]	
		Address: [Provide full address]	
3	Hardware Documenta-tion	Site Name: [Provide Site Name]	
		Invoice or Delivery Challan: [Attach document or provide details]	
4	SIM Details	SIM Number: [Provide SIM number]	
		Network Provider: [Provide network provider]	
5	Load Mapping Details:		
	a. Device Information	Device ID: [Provide Device ID]	
		Make and Model of Device: [Provide details]	
		Number of Assets and their Types: [Specify details]	
		Customer Load Details: [Specify details]	
	b. Configuration of the Device	Device Associated with which Asset: [Specify details]	
	c. Location of the Installed Device	Device Installation Location: [Specify details]	
6	Testing Details:		
	a. Device Connection Check	Multimeter Reading: [Provide readings]	For Meter Ampere Matching
	b. Asset Control Verification	Asset Control Status: [Specify status]	
7	Installed Device Pictures	[Attach photos of the installed devices]	
8	Installation Report and Sign-off	[Attach Installation Report and Sign-off document]	

Troubleshooting

The troubleshooting steps for some known issues are listed below:

1. **Issue: If the hardware is missing in the box?**
   - If you find that essential hardware components are missing from the box, please contact your coordinator for assistance in resolving the hardware mismatch issue.
2. **Issue: Internet is not working even if an active SIM is installed inside the gateway?**
   - If you are experiencing issues with the internet not working, even with an active SIM card installed in the gateway, consider the following steps to resolve the problem:
     1. Antenna connection check:
        a. Make sure that the antenna is correctly connected, referring to the provided image.
        b. If the connection is loose or removed, secure it properly.
        c. After resolving the connection issue, wait for 5 minutes for the gateway to come online.
   - Location or SIM operator change:
     1. If the antenna connection is secure and the issue persists, consider changing the location of the gateway.
     2. Alternatively, try using a different SIM operator, as the network coverage at the current location may be insufficient.
     3. If the problem persists after trying these steps, please contact Schneider Electric for further assistance www.se.com/buildings.



3. **Issue: Gateway is on cellular network, however, not coming online?**
   - Follow the below steps to get the gateway online:
     1. Check the antennas and antenna cables properly.
     2. Try removing the SIM card and inserting it again.

        NOTE: Pin enabled SIM card is not supported.

4. **Issue: Gateway is online, however, the data is lost or delayed response is observed?**
    - In case of cellular network:
        1. Check the cellular network signal strength on the plotter.
        2. Check if the data plan is active on the SIM card.
    - In case of WiFi network:
        - Check the WiFi signal strength and speed on the WiFi network using another device (which can be a mobile or a laptop).
5. **Issue: If RS485 port is not sending the data?**
    - Follow the below steps if the RS485 post is not sending the data:
        1. Check if the connections are done as per the install instructions.
        2. Check if correct port is configured.
        3. Check again, if the connections are not reversed.
        4. Check for loose wires.
        5. Check the Modbus/BACnet ID is correct.
        6. Check the baud rate configured for the end device.
        7. Check if any loose stand is shorting on the bus or to the ground.
        8. Check if any Modbus device is connected on BACnet bus or vice-versa.
        9. Check if the number of devices in the loop are as per the specifications in install instructions.
        10. Check if the loading of devices causes the resistance to drop or to increase significantly. You should not connect more than 2 resistors on a single bus.
        11. Check if wires are used as per the specifications in the install instructions.
6. **Issue: If wireless sensor is not commissioning?**
    - Follow the below steps to commission the wireless sensor:
        1. Check if the device is in decommissioned state.
        2. Check if the device is powered on.
        3. Check if the device parameters entered are correct, example: IDs, keys, passwords, baud rates, etc.
7. **Issue: If data from a wireless sensor is not coming?**
    - Follow the below steps to get the data from wireless sensor:
        1. Check the maximum number of devices, distance from gateways according to the specifications provided.
        2. Check the power status of the device.
        3. Check if the device is commissioned properly.

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