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User Guide

SolarEdge ONE Controller for C&I

Version 1.4

December 2025

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Revision history

Version	Date	Description
1.4	December 2025	Energy Meters list update.
1.3	November 2025	Adding FFG section and SolarEdge Go application utilization.
1.2	September 2025	Change in meter wire connection

About this guide

This guide provides detailed information about the SolarEdge ONE Controller for C&I (see image below), including instructions for setup and configuration, ensuring that the installer can operate it correctly and synchronize it with the site's system devices.



Figure 1: ONE Controller for C&I

Related documents

In addition to this User Guide, it is recommended to review the following documents for comprehensive information regarding the SolarEdge ONE Controller for C&I:

- Quick Installation Guide (QIG): Provides detailed step-by-step instructions for installing and setting up the controller.
- Declaration of Conformity: Contains official compliance statements, standards, and certifications applicable to the SolarEdge ONE Controller for C&I.
- One Controller for C&I Datasheet: Lists the full technical specifications and electrical characteristics of the controller

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Overview

The SolarEdge ONE Controller for C&I optimizes energy use across commercial and industrial facilities. It seamlessly integrates the site's energy infrastructure, including PV inverters, SolarEdge Commercial Storage System (CSS-OD), meters, sensors, and other energy equipment, enabling near real-time monitoring and control.

System architecture

The following diagram (Figure 2) illustrates a typical system architecture, where the SolarEdge ONE Controller for C&I serves as the central management unit for site devices and communication interfaces.

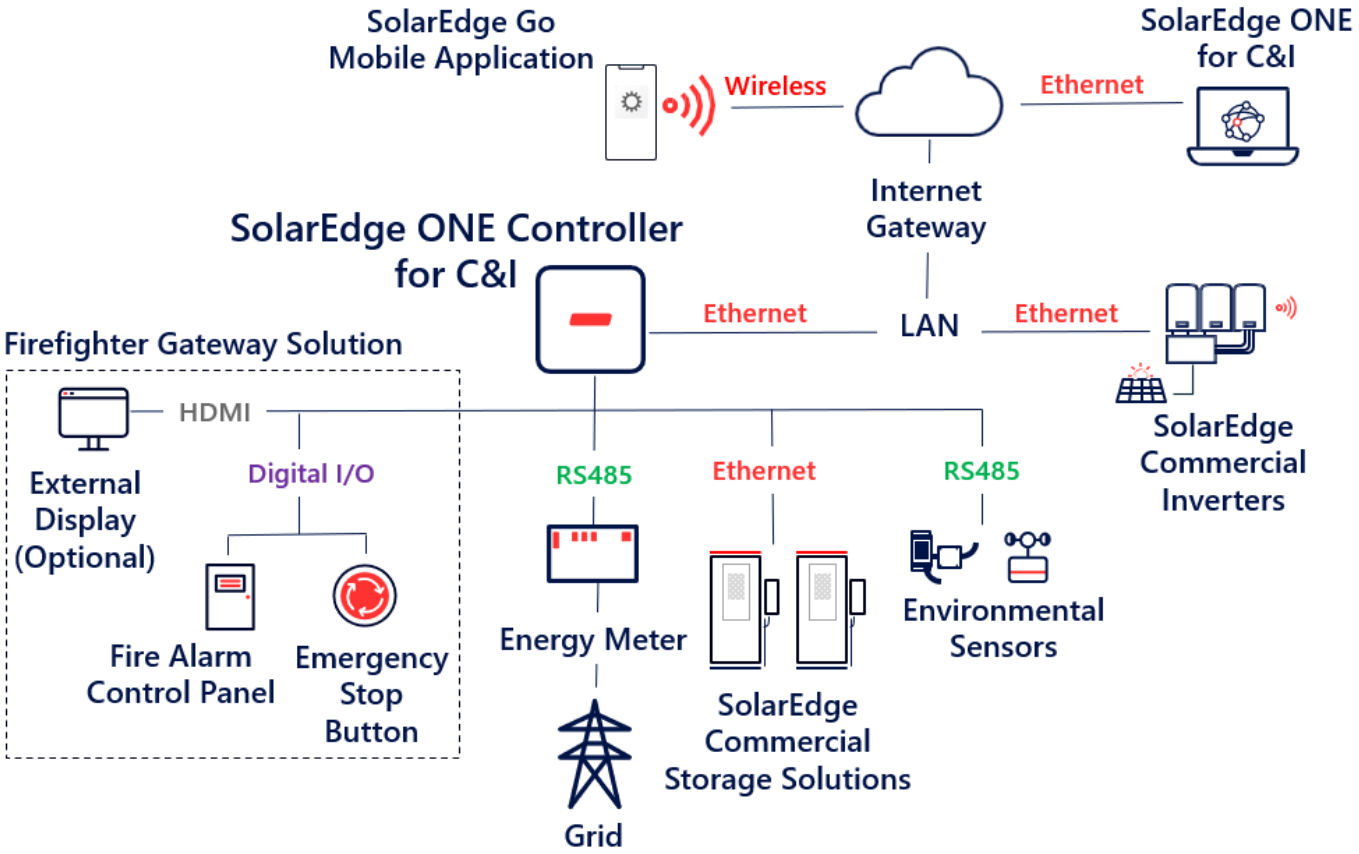


Figure 2: ONE Controller for C&I System Block Diagram (Typical)

Key features

- Optimizing the use of locally generated energy to reduce electricity costs, enabled by the SolarEdge ONE for C&I optimization platform
- Local communication gateway that connects the site's energy assets, including SolarEdge PV
- Inverters, batteries, meters, and more Interfaces with selected third-party environmental sensors to enable in-depth analysis for O&M and energy optimization
- Designed to comply with grid regulations to enable safe and reliable electricity generation
- Acts as a cyber secured gateway for external communications designed to protect against unauthorized access
- Includes extended local data retention in case of cloud connectivity interruptions

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- Enables centralized safety management of SolarEdge systems through automated or manual DC shutdown, with visible confirmation of system voltage
- Supports secure over-the-air firmware upgrades

System building blocks

A typical system with the ONE Controller for C&I includes the following building blocks:

- **ONE Controller for C&I**: serves as the central management device. Through its various I/O ports and communication interfaces, it enables the user to monitor and control all system components.
- **Site management via SolarEdge Go application** allows the user to monitor and control the system remotely from almost anywhere (including site commissioning).
- **SolarEdge commercial inverters and CSS-OD Batteries:** connected over Ethernet to the ONE Controller's LAN
- **Firefighting Gateway**: provides internal monitored fire emergency scenarios including optional display of system status through HDMI interface.
- **Miscellaneous peripherals connectivity**: Supports additional components such as environmental sensors, energy meters, and more, with extended interfaces enabling comprehensive monitoring and control of most site devices.

ONE controller interfaces

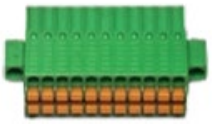
The following table summarizes the ONE controller device interfaces that are utilized in a typical system. For further installation details, refer to the matching link.

Interface Name	Connectivity	Description	Connected Devices
Industrial I/O	22 pin Dual Row Connector	Includes interfaces connectivity such as RS485, CAN and Digital I/O.	Connecting to Environmental Sensor, Digital Inputs/Outputs, Energy Meters and FFG outputs.
Ethernet	2x RJ45	LAN Communication	Connecting to WAN and LAN
USB	3x Type A 1x Micro	Provides interfaces for service, configuration, etc.	
Display/Video	HDMI	Firefighter Indications monitor.	Optional FFG Display
WLAN Antennas	2x SMA	Wireless communication for Wi-Fi.	
Power	DC Input	Main power inlet 12-36V DC.	

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What's in the package

The ONE Controller package includes the following components:

Item #	Item Description	Quantity	Image
1	Quick Start Installation Guide	1	
2	SolarEdge ONE Controller for C&I	1	
3	Dual-Row Plug	1	
4	Plastic bag containing two of each of the following items: standoffs, nuts, and M3 screws	1	
5	Wall Mount Bracket	1	
6	DIN Rail Mount	1	
7	Power Adapter 100-240VAC 50/60Hz	1	
8	WLAN Antennas	2	

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ONE Controller I/O

The following image and table provide a detailed overview of the panel interfaces and connectivity of the ONE Controller used in the ONE Controller system.

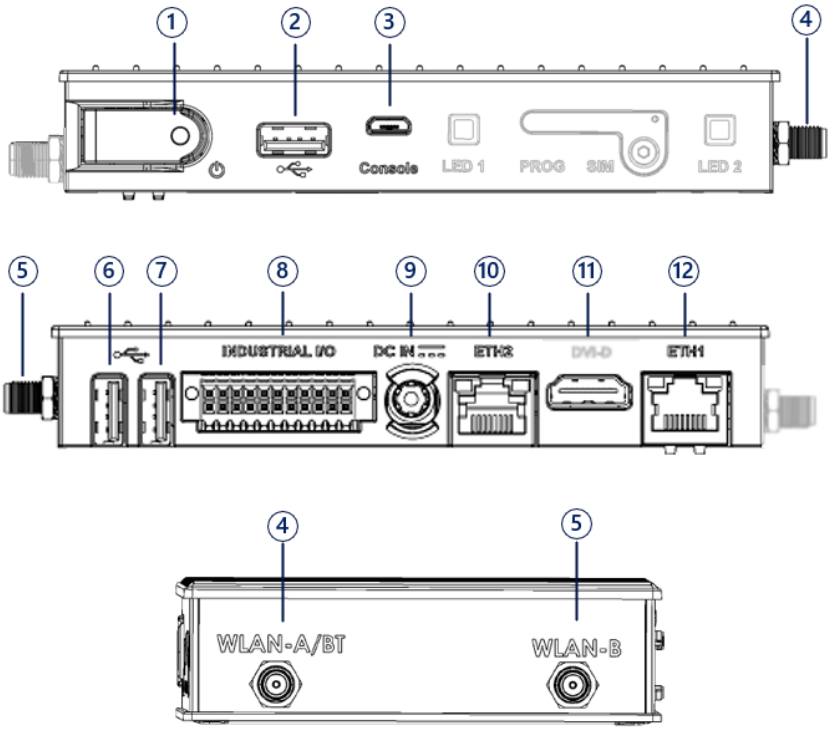


Figure 3: ONE Controller panels illustration

Number	Item	Description
1	⏻	Power ON button with LED
2	⇐	Type A USB 3.0 for Local UI
3	Console	Micro USB for serial debug console
4	WLAN - A/BT	WLAN Antenna connector (one out of two).
5	WLAN-B	WLAN Antenna connector (two out of two).
6	⇐	Type A USB 2.0
7	⇐	Type A USB 2.0
8	Industrial I/O	22-pin dual-row I/O and communication ports
9	DC IN	12-36V DC power input
10	ETH2	1000 Mbps Ethernet RJ45 connector
11		HDMI port for FFG indications display.
12	ETH1	1000 Mbps Ethernet RJ45 connector

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Industrial I/O Connector

This section provides details about the Industrial I/O connector located on the ONE Controller panel (see item 8 in section ONE Controller I/O), which includes connectivity for the following interfaces:

- 2x RS485 Channels (Power domain 1 and 2)
- CAN (Power domain 1)
- 4x Digital Inputs/Outputs (Power domain 3)

For proper setup, when connecting each interface, it is required to follow the procedures outlined in this user guide. The Industrial I/O connector includes interfaces that are designed to operate across different power domains.

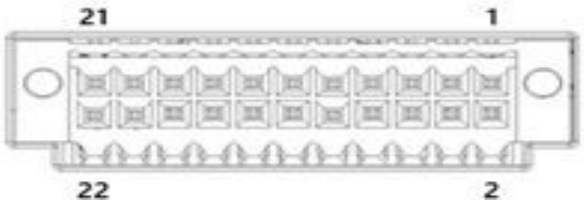


Figure 4: Industrial connector layout

Pin Number	I/O Name	Description	Power Domain (PD)
1	RS485-1 A (+)	RS485 Port #1 Positive signal	1
2	CAN_L	CAN Low signal	1
3	RS485-1 B (-)	RS485 Port #1 Negative signal	1
4	CAN_H	CAN High signal	1
5	RS485-1 (G)	PD #1 Isolated Ground	1
6	RS485-2 B (-)	RS485 Port #2 Negative signal	2
7	RS485-2 A (+)	RS485 Port #2 Positive signal	2
8	RS485-2 (G)	PD #2 Isolated Ground	2
9	IN0	Digital Input #0	3
10	IN1	Digital Input #1	3
11	IN2	Digital Input #2	3
12	Not Applicable		3
13	IN3	Digital Input #3	3
14	Not Applicable		3
15	OUT0	Digital Output #0	3
16	OUT1	Digital Output #1	3
17	OUT3	Digital Output #2	3
18	OUT2	Digital Output #3	3
19	24V_IN	24V Input	3
20	24V_IN	24V Input	3
21	GND_3	PD #3 Isolated Ground	3
22	GND_3	PD #3 Isolated Ground	3

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System requirements

The table below outlines the system requirements necessary for the proper operation of the ONE Controller system.

System Item	Requirements	Notes
WAN Connection	▰ Minimum download speed: 2 Mbps ▰ Recommended download speed: 10 Mbps	Required for cloud communication and remote monitoring
LAN Cables	CAT 5/6	
Interfaces Protocols	▰ Modbus TCP ▰ Modbus Serial RTU (RS485) ▰ CANbus ▰ BACnet	Refer to Appendix B. Supported devices.
Installation	Mounting (Wall or DIN rail)	Refer to the Quick Installation Guide for mechanical and safety instructions..
Mobile Application	SolarEdge Go Application Installed	Used for commissioning, configuration, and site setup.

ONE Controller system procedures

This section provides detailed instructions on how to connect each device and interface to the ONE Controller, including ONE Controller commissioning using the SolarEdge GO application and pairing devices.

The procedures include the following:

1. Connecting the ONE Controller to WAN (Wired)
2. Connecting SolarEdge Devices via LAN
3. Connecting SolarEdge Inverters
4. Connecting The Fire Fighter Panel and Emergency Button
5. Connecting Energy Meters
6. Connecting Environmental Sensors
7. Connecting Digital Input/Output
8. ONE Controller Commissioning via SolarEdge Go Application.
9. Pairing Storage CSS-OD with ONE Controller via SolarEdge Go Application
10. Pairing PV Inverter with ONE Controller via SolarEdge Go Application
11. Pairing Firefighting Gateway with ONE Controller via SolarEdge Go Application
12. Pairing Energy Meter with ONE Controller via SolarEdge Go Application

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Connecting the ONE Controller to WAN (Wired)

To connect the ONE Controller to the internet, follow the steps below (refer to Figure 5):

NOTE

- Please note that the switch is used to connect inverter devices to the Internet Gateway. If the system does not include inverters, the ONE Controller can be connected directly to the Internet Gateway.
- The controller will automatically start up dating when first connected to the power and internet.

1. Locate an Ethernet switch, and using a LAN cable, connect port ETH1 on the ONE Controller to one of the available ports on the ethernet switch.

2. Locate another available LAN port on the switch, and using a LAN cable, connect it to the Internet Gateway (Modem/Router) available LAN port.

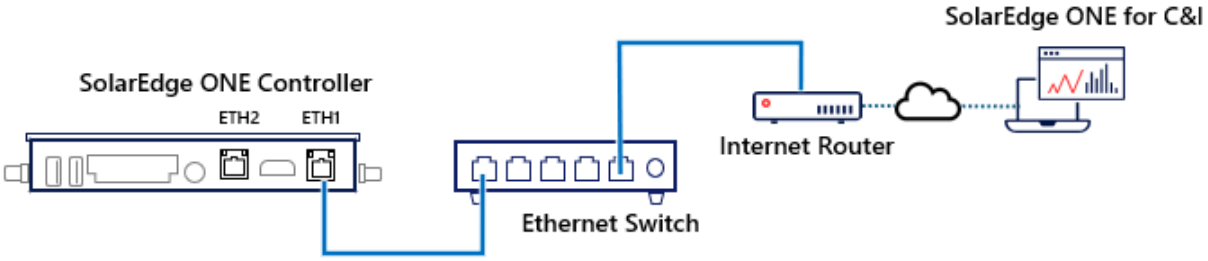


Figure 5: Connecting ONE Controller to Internet Gateway (Wired)

Connecting SolarEdge inverters and storage devices to ONE Controller

Figure 6 depicts a typical communication connectivity of SolarEdge commercial devices such as storage battery CSS-OD and SolarEdge Inverters.

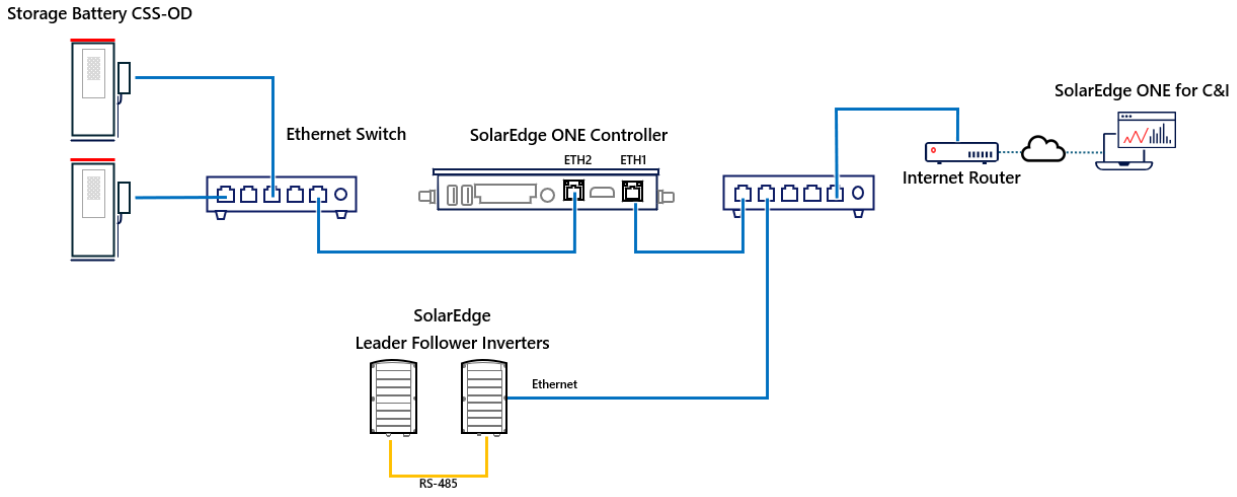


Figure 6: Connecting SolarEdge Devices to LAN

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To establish LAN connectivity between the ONE Controller and the SolarEdge devices follow the steps below:

1. Locate an Ethernet switch with enough available LAN ports.
2. Using LAN cables, connect the available LAN ports (see Figure 6) to each storage CSS-OD device and to LAN port labeled ETH2 on the ONE Controller.
3. Locate the Ethernet switch specified in Connecting the ONE Controller to WAN (Wired), and use a LAN cable to connect any available LAN port to the inverter.
4. To pair the SolarEdge CSS-OD devices with the ONE Controller refer to Pairing Storage CSS-OD with ONE Controller via SolarEdge Go Application.

Connecting SolarEdge Leader-Follower inverters

This section details how to connect leading and follower inverters to the ONE Controller (see Figure 7).

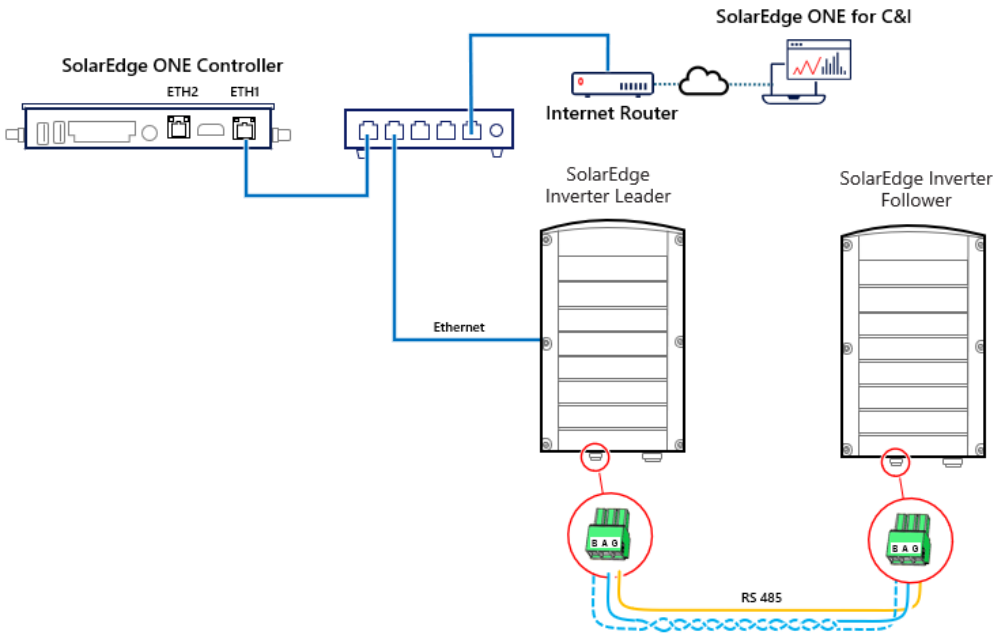


Figure 7: Connecting SolarEdge Following Inverters

To connect the leader and follower inverters to the ONE Controller and to the Internet:

1. Locate the ethernet switch from Connecting the ONE Controller to WAN (Wired), locate an available LAN port and connect it to the LAN port on the inverter panel using a LAN cable.
2. Locate the follower inverter and connect it to the leading inverter by linking their RS485 ports in a daisy-chain configuration and attaching the wires to the appropriate terminals (for installation further details refer to SolarEdge Inverters installation manuals).
3. Use Modbus TCP/IP to configure the connection methods.
4. To pair the SolarEdge Leader inverter with the ONE Controller refer to Pairing PV Inverter with ONE Controller via SolarEdge Go Application.

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NOTE

- This enables the leader inverter to connect to the internet for accessing SolarEdge ONE for C&I, while the ONE Controller for C&I can access the inverter control register via Modbus TCP.
- We recommend using Belden 3109A 4-core twisted pair cabling for serial connections. Ground the cable at only one side of the cable run to avoid ground loops and interference.

Connecting the fire alarm and emergency button

This section explains how to connect the firefighter components to the ONE Controller. Refer to the conceptual connection diagram (Figure 8).

Firefighter Item	Description	Notes
Emergency Button	Connected to the ONE Controller via a Volt-free relay signal wire, normally closed.	Not provided (must be sourced locally)
Fire Alarm Control Panel	Connected to the ONE Controller via a Volt-free relay signal wire, normally closed.	See connectivity illustration below.
Firefighter Monitor Display (Optional)	Connected via HDMI Cable.	Not provided (must be sourced locally).
AC/DC Power Supply	DC output 24V (current rating above 1A) for Digital Inputs logic voltage levels.	Not provided (must be sourced locally).

Connecting the firefighter components to the ONE Controller enables the controller to detect emergency conditions and manage safe shutdown and disconnection procedures for the PV system and storage units.

NOTE

- All SolarEdge inverters on-site must be running firmware version 4.24.5xx or newer. Configuration of any advanced feature, including the Firefighter Gateway, is not possible until all inverters meet this requirement
- When connecting an external display, use an HDMI cable version 1.0 or above, with a maximum length of 10 meters.
- For distances over 10 meters, external solutions such as HDMI-to-Ethernet converters or repeaters can be considered.
- ONE Controller for C&I supports the following display resolutions: 1024×768 @ 70 Hz, 1366×768 @ 52 Hz, 720×480 @ 60 Hz, 1280×720 @ 60 Hz, 1920×1080 @ 60 Hz.

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Review the diagram for connectivity instructions (see Figure 8), however, take the following into consideration:

- Input ports **IN0** and **IN2** are used for the firefighting component signal wires though the actual connectivity design should be determined according to the site's complete devices and sensors configuration.
- If not provided otherwise (by another device or in parallel to another configuration), 24V DC must be applied to the 24V_IN pin of the Industrial I/O connector (pin #19 or #20), using the ground pins (pins #21 or #22) for the return current connection.
- Ensure the cable length between the 24V power supply and the ONE Controller does not exceed 20 meters.
- To pair the FFG with the ONE Controller refer to Pairing Firefighting Gateway with ONE Controller via SolarEdge Go Application.

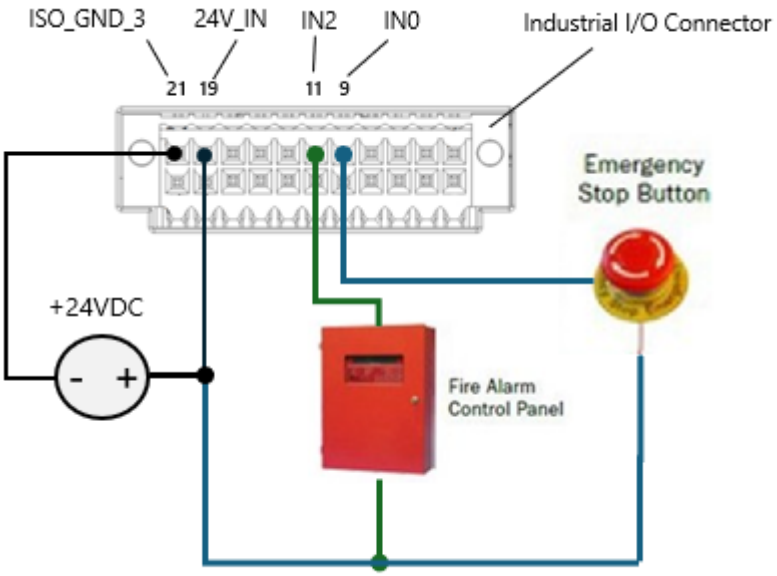


Figure 8: Connecting Firefighting components to the ONE Controller

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Connecting energy meters

The energy meter communicates with the ONE Controller for C&I applications using an industrial communication protocol such as Modbus.
Figure 9 illustrates a typical connection between the ONE Controller (connected through the Industrial I/O connector) and an energy meter using the RS485 interface.

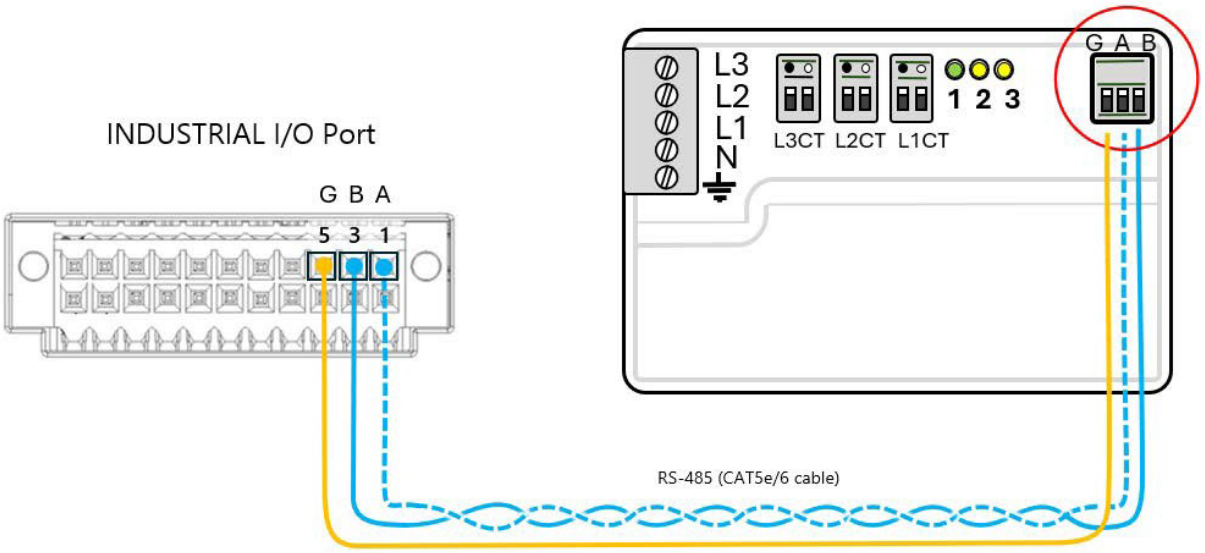


Figure 9: Connecting Energy Meter

To connect the **Energy Meter** to the ONE Controller, follow the steps below:

1. Identify the Industrial I/O connector on the ONE Controller panel (refer to Industrial I/O connector section) and note its pin numbering. Also, locate the RS485 terminal on the Energy Meter device.
2. Connect the wires according to the following instructions:
   - Connect pin labeled B on the Energy meter to **pin #3** of the I/O connector (RS485-1 B (-)).
   - Connect pin labeled A on the Energy meter to **pin #1** of the I/O connector (RS485-1 A (+)).
   - Connect pin labeled G on the Energy meter to **pin #5** of the I/O connector (RS485-1 (G)).
3. If additional Energy Meter devices are used, connect them using the daisy-chain connectivity method on the RS485 terminals.

NOTE

Ensure that the termination block wiring is completed before attaching it to terminal pins 1, 3, and 5.

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Connecting environmental sensors

The ONE Controller is designed to connect to Environmental sensors which include the following sensors list:

- Temperature sensor
- Ambient sensor
- Irradiance sensor
- All-in-One Weather sensor
- Soiling sensor

This diagram below (see Figure 10) illustrates a typical daisy chain connectivity configuration of multiple sensors to the ONE Controller via RS485 interface. This example includes external 24V DC power supply connected in parallel to the entire sensors.

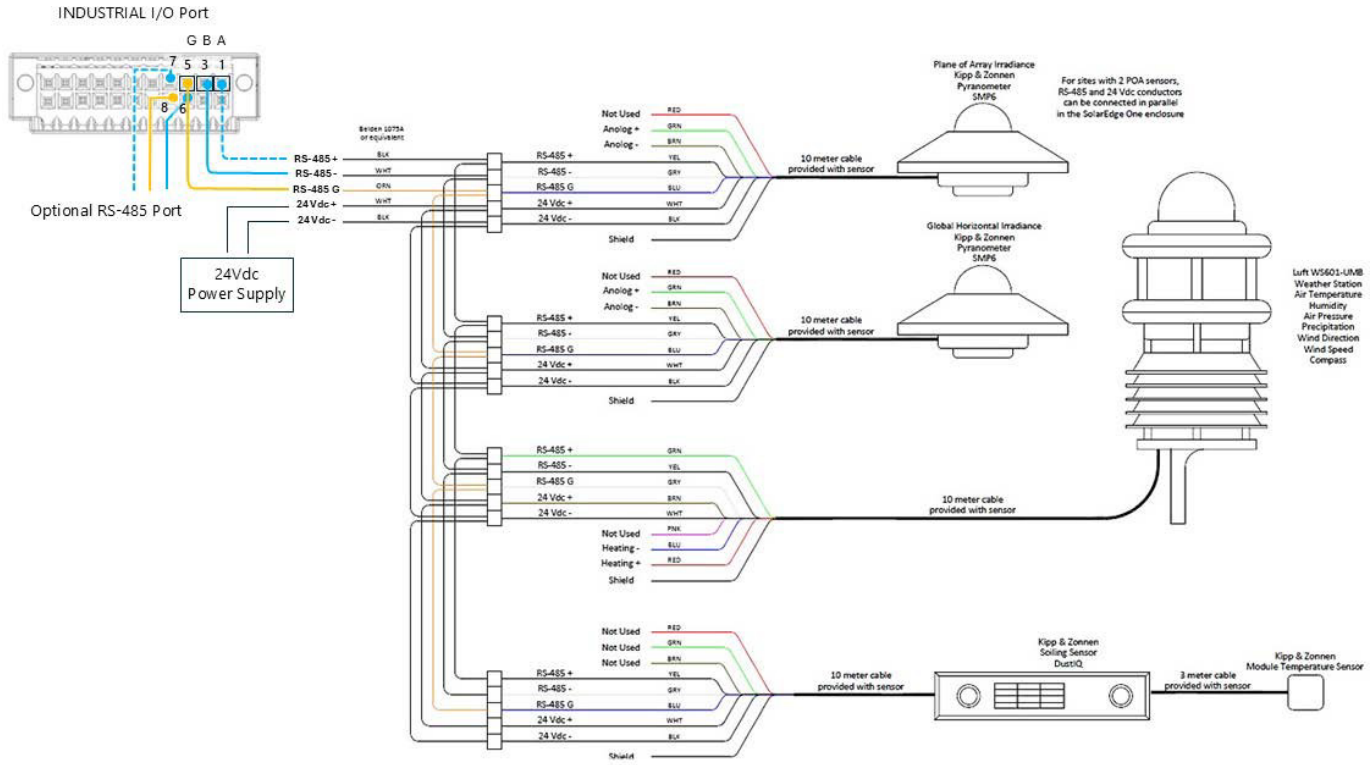


Figure 10: Connecting Environmental Sensors (Daisy Chain)

To connect environmental sensors to the ONE Controller using two different RS485 ports (or one of them) follow the instructions below:

1. Identify the Industrial I/O connector on the ONE Controller panel (refer to Industrial I/O connector section) and note its pin numbering. Also, locate the RS485 wires of the leading sensors.
2. Using RS485 port 1:
   - Connect wire labeled **RS-485−** on the sensor to **pin #3** of the I/O connector (**RS485-1 B (-)**).
   - Connect wire labeled **RS-485+** on the sensor to **pin #1** of the I/O connector (**RS485-1 A (+)**)
   - Connect pin labeled **RS-485 G** on the sensor to **pin #5** of the I/O connector (**RS485-1 (G)**)
3. Using RS485 port 2:
   - Connect wire labeled **RS-485−** on the sensor to **pin #6** of the I/O connector (**RS485-2 B (-)**).

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- Connect wire labeled **RS-485+** on the sensor to **pin #7** of the I/O connector (**RS485-2 A (+)**)
- Connect pin labeled **RS-485 G** on the sensor to **pin #8** of the I/O connector (**RS485-2 (G)**)

Connecting digital input/output

The ONE Controller includes four digital inputs compatible with EN 61131 and four digital outputs compatible with EN 61131-2. These digital I/O pins feature the following:

- Designed for 24V PLC applications
- Galvanic isolation from main unit and other I/O modules
- Digital outputs maximal output current of 0.5A per channel

The operating conditions of the digital I/O are listed in the following table:

Parameter	Description	Min.	Typ.	Max.	Unit
24V_IN	External voltage applied to Pin #19, 20, named 24V_IN	12	24	30	V
VIN Low	Maximal Input voltage level recognized as LOW			4	V
VIN High	Minimum Input voltage level recognized as HIGH	6			V

Connecting digital output

Figure 11 illustrates a typical digital output configuration (OUT0 is selected as an example). A 24 VDC supply is applied to the 24V_IN terminal on the Industrial I/O connector. To activate the connected external device, the ONE Controller outputs 24 VDC (provided on pin #19) through pin #15 (OUT0), which is connected to the external device (the load). To disable the connected external device, the ONE Controller internally disconnects the OUT0 pin from the 24 V supply, thereby shutting down the device.

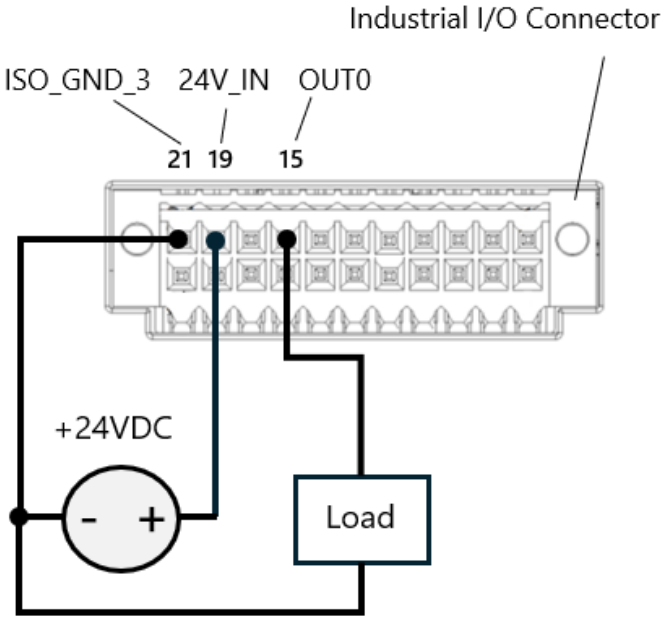


Figure 11: connecting digital output

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Connecting digital input

Figure 12 illustrates a typical digital input configuration (IN0 is selected as an example). A 24 VDC supply is applied to the 24V_IN terminal on the Industrial I/O connector. The external device output, which is modeled as a contact switch (a binary signal), is connected to pin #9 and presents either 0 V when the contact is open or 24 V when the contact is closed. The ONE Controller then compares this signal to the applied 24 VDC to determine whether the input state corresponds to logic "1" or logic "0".

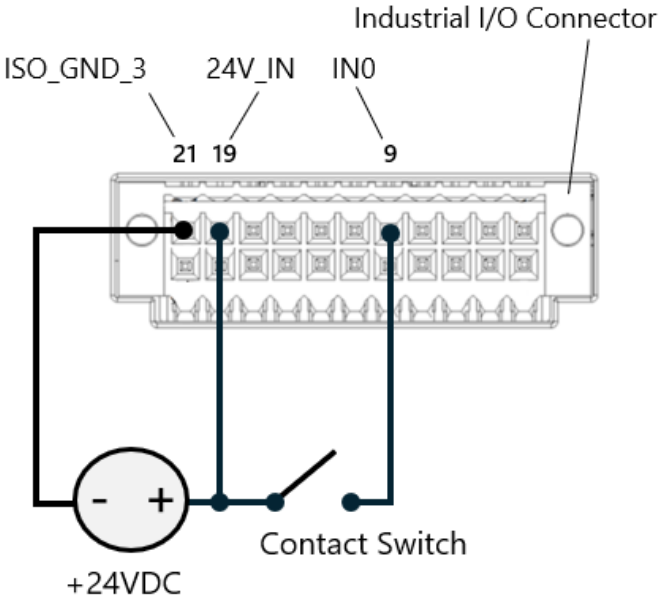


Figure 12: connecting digital input

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ONE Controller commissioning via SolarEdge Go application

This section includes details regarding system commissioning using the SolarEdge Go mobile application. Before commissioning or configuring the site, ensure that all system components meet the following requirements:

- The ONE Controller for C&I must be running firmware version 1.5.2 or later.
- All SolarEdge inverters on-site must be running firmware version 4.24.5xx or newer. configuration of any advanced feature, including the Firefighter Gateway, is not possible until all inverters meet this requirement.
- Communication between the ONE Controller and inverters must use IP-based Ethernet cabling. RS-485 communication is not supported for the Firefighting Gateway or for inverter control.
- All devices should be on the same network segment and discoverable by ONE Controller.
- The SolarEdge Go mobile application must be installed on a compatible device for all site configuration and commissioning steps. The application is available in the different application stores.
- Ensure that all devices are powered on and properly networked before beginning configuration.
- ONE Controller commissioning can be done remotely. Make sure you have the device's serial number ready in advance.

To perform ONE Controller commissioning using the SolarEdge Go application follow the procedure below:

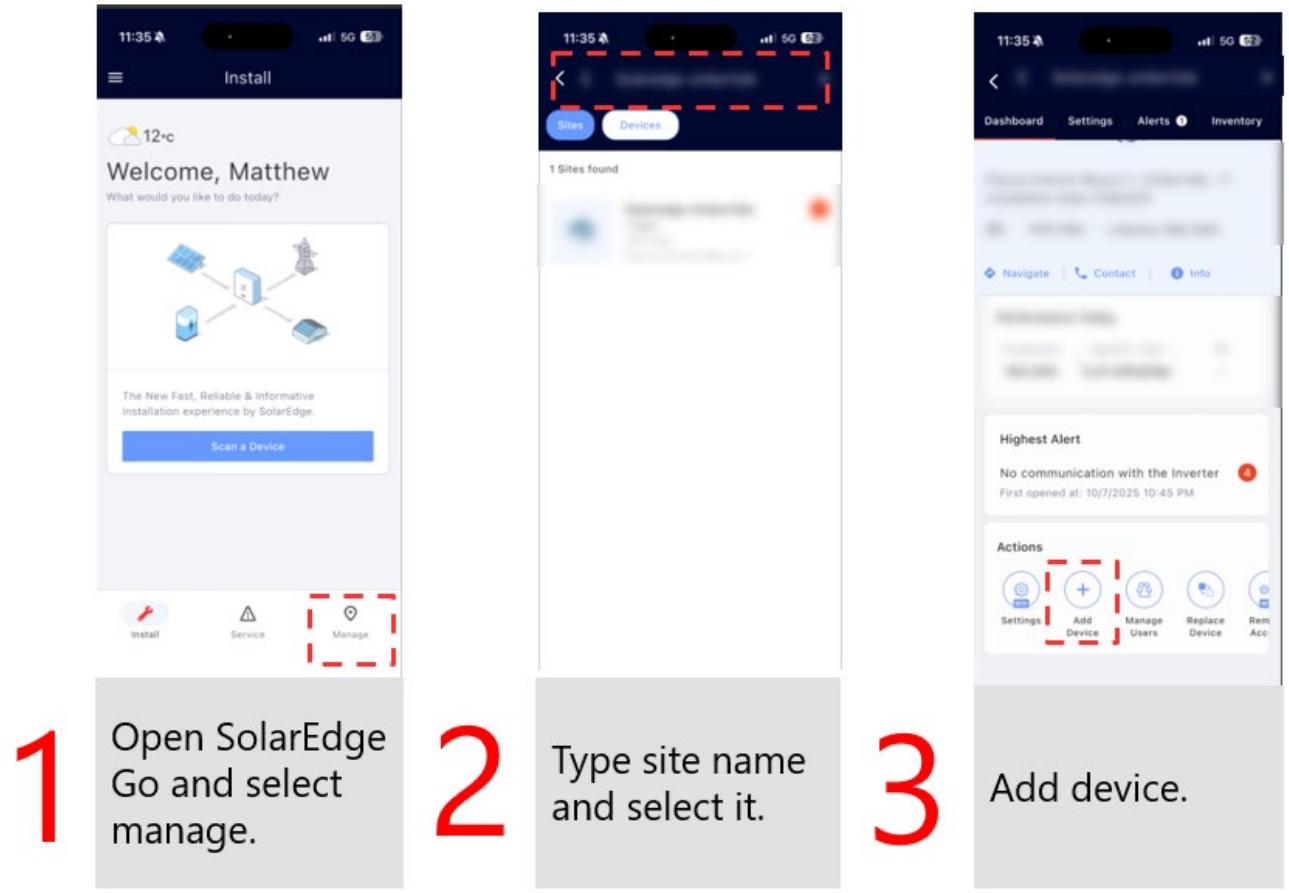


Figure 13: ONE Controller Commissioning Steps 1-3

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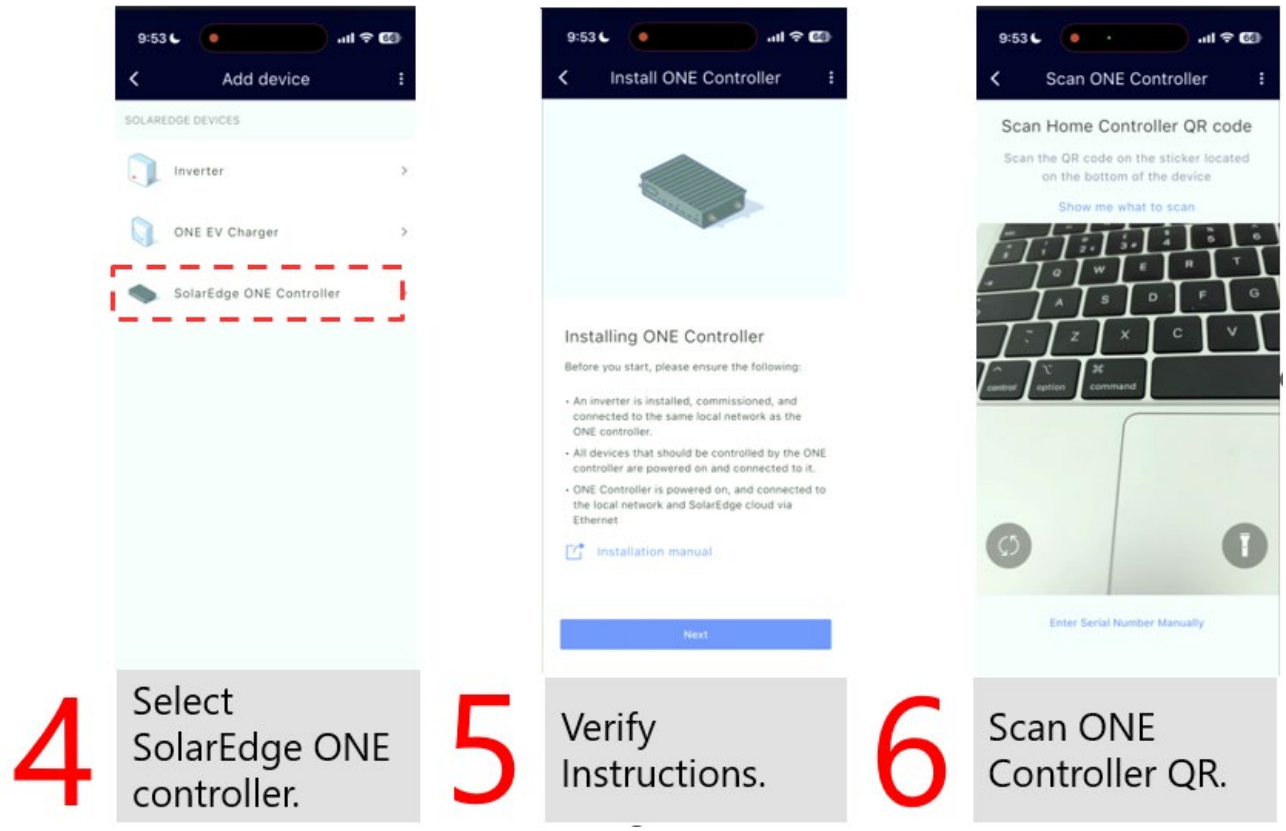


Figure 14: ONE Controller Commissioning Steps 4-6

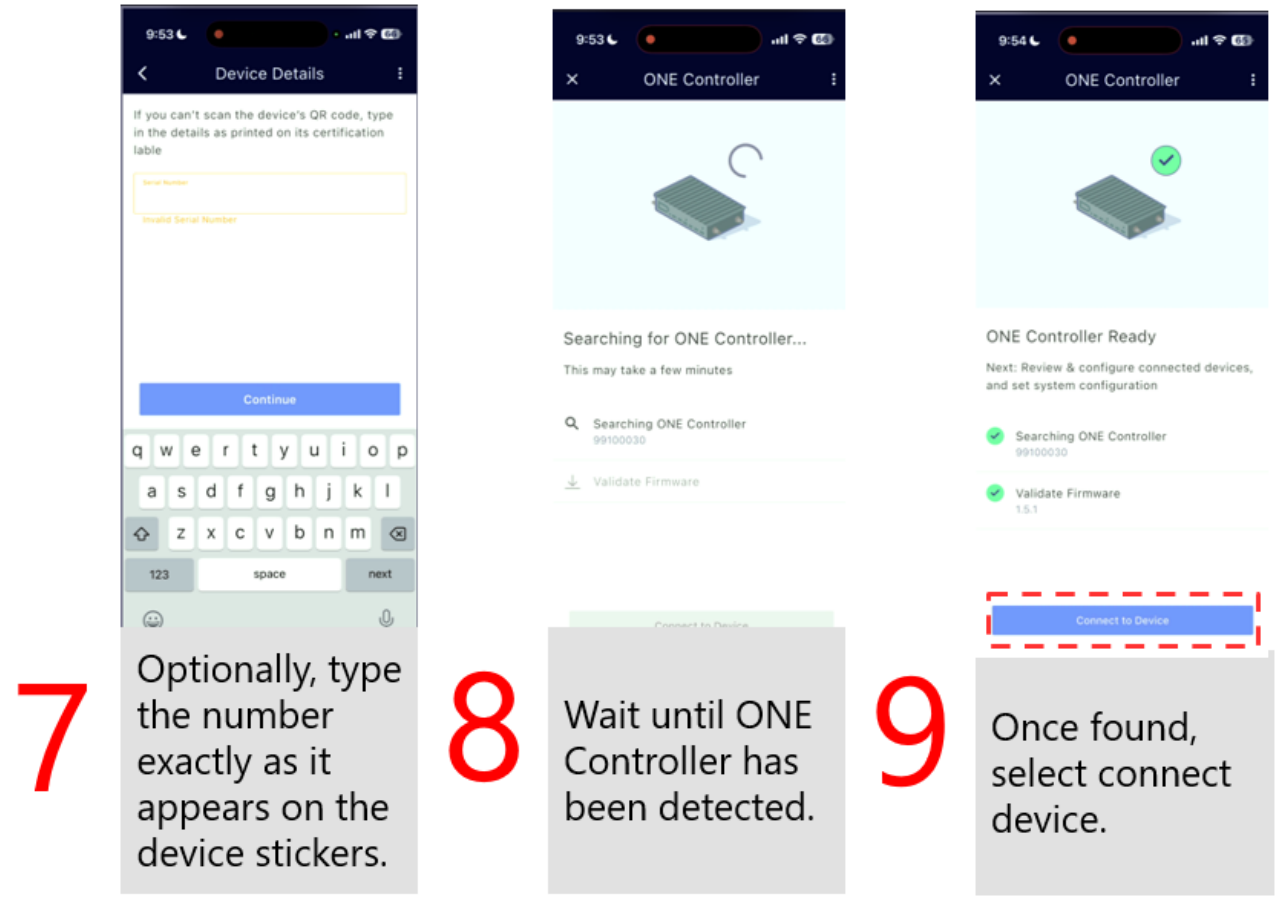


Figure 15: ONE Controller Commissioning Steps 7-9

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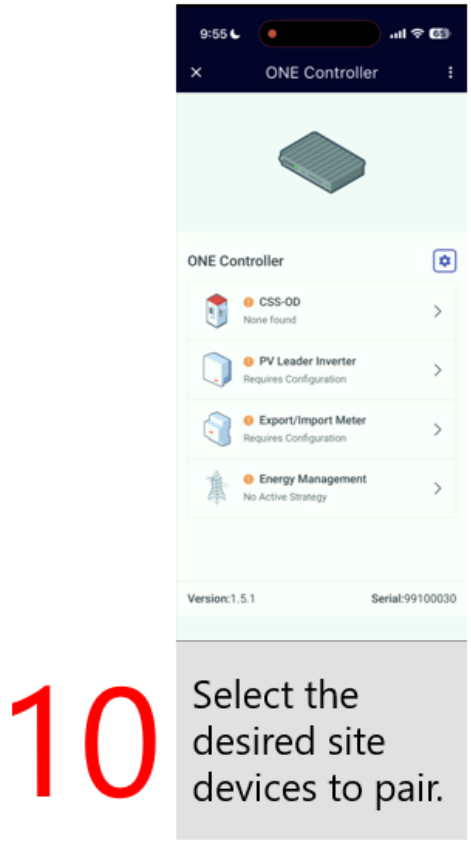


Figure 16: ONE Controller Commissioning Step 10

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Pairing storage CSS-OD with ONE Controller via SolarEdge Go application

To pair CSS-OD with the ONE Controller follow the instructions below:

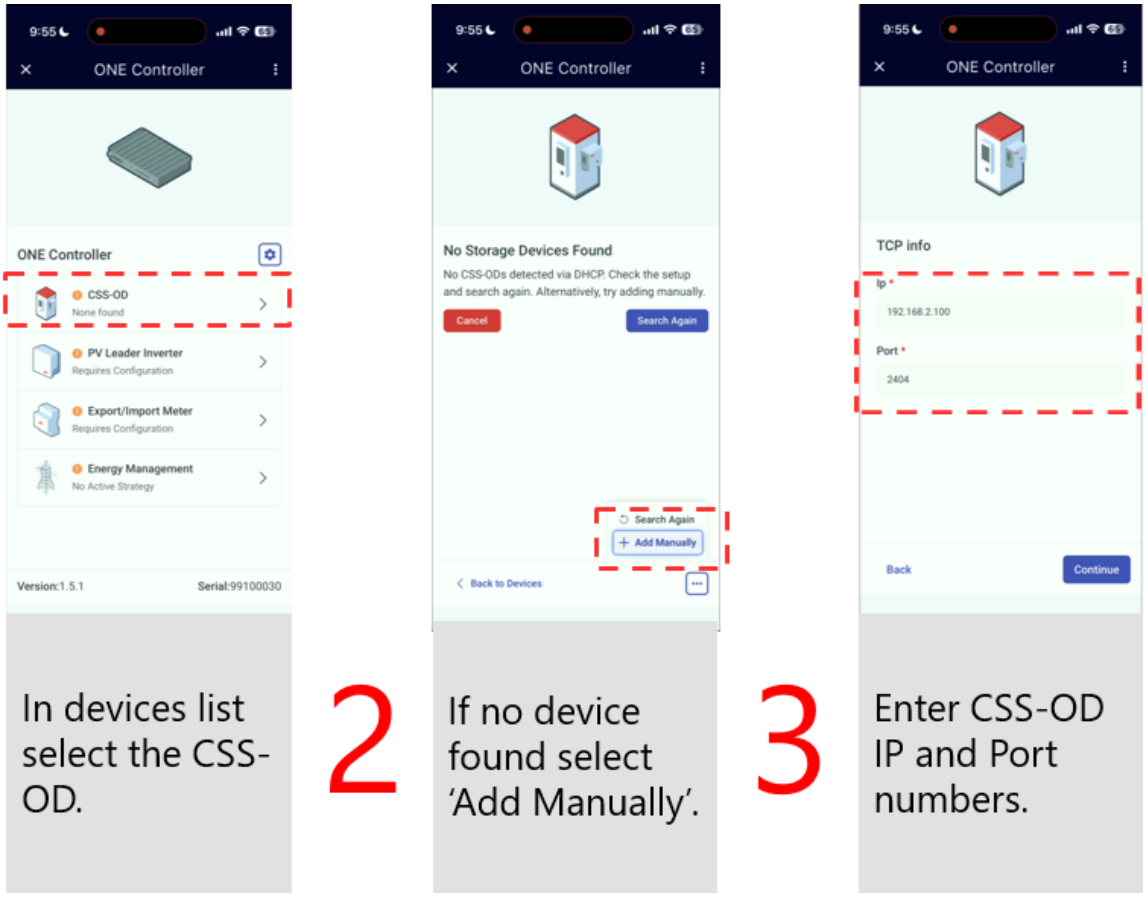
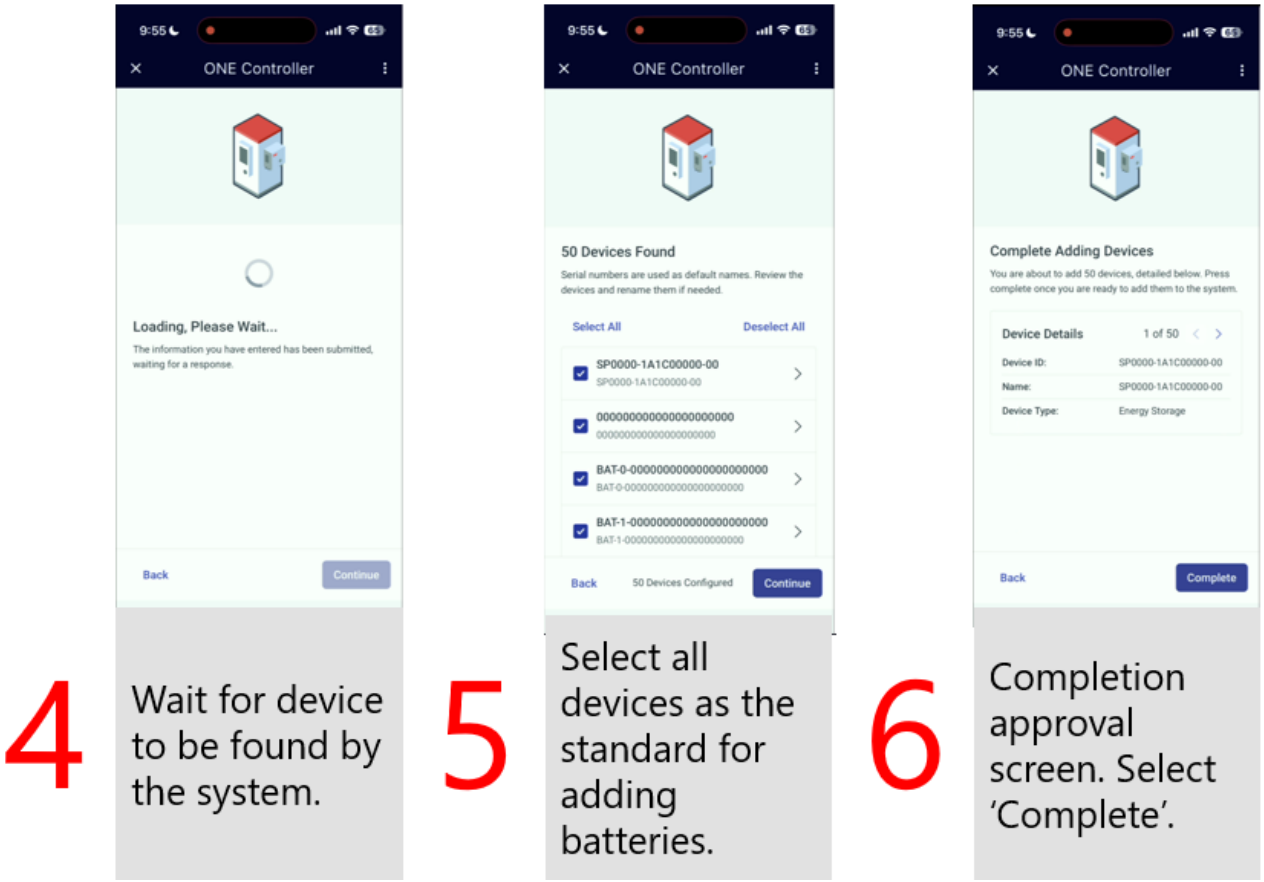


Figure 17: Pairing CSS OD Steps 1-3



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Figure 18: Pairing CSS OD Steps 4-6

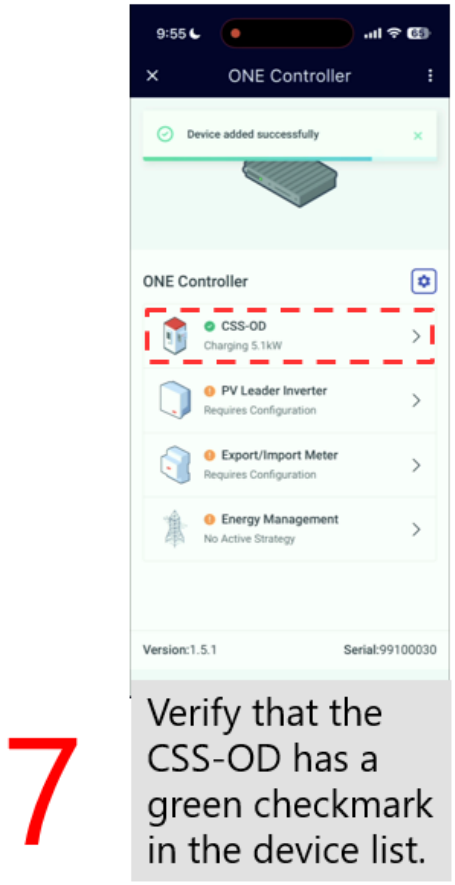


Figure 19: Pairing CSS OD Step 7

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Pairing PV Inverter with ONE Controller via SolarEdge Go Application

To pair PV inverter with the ONE Controller follow the instructions below:

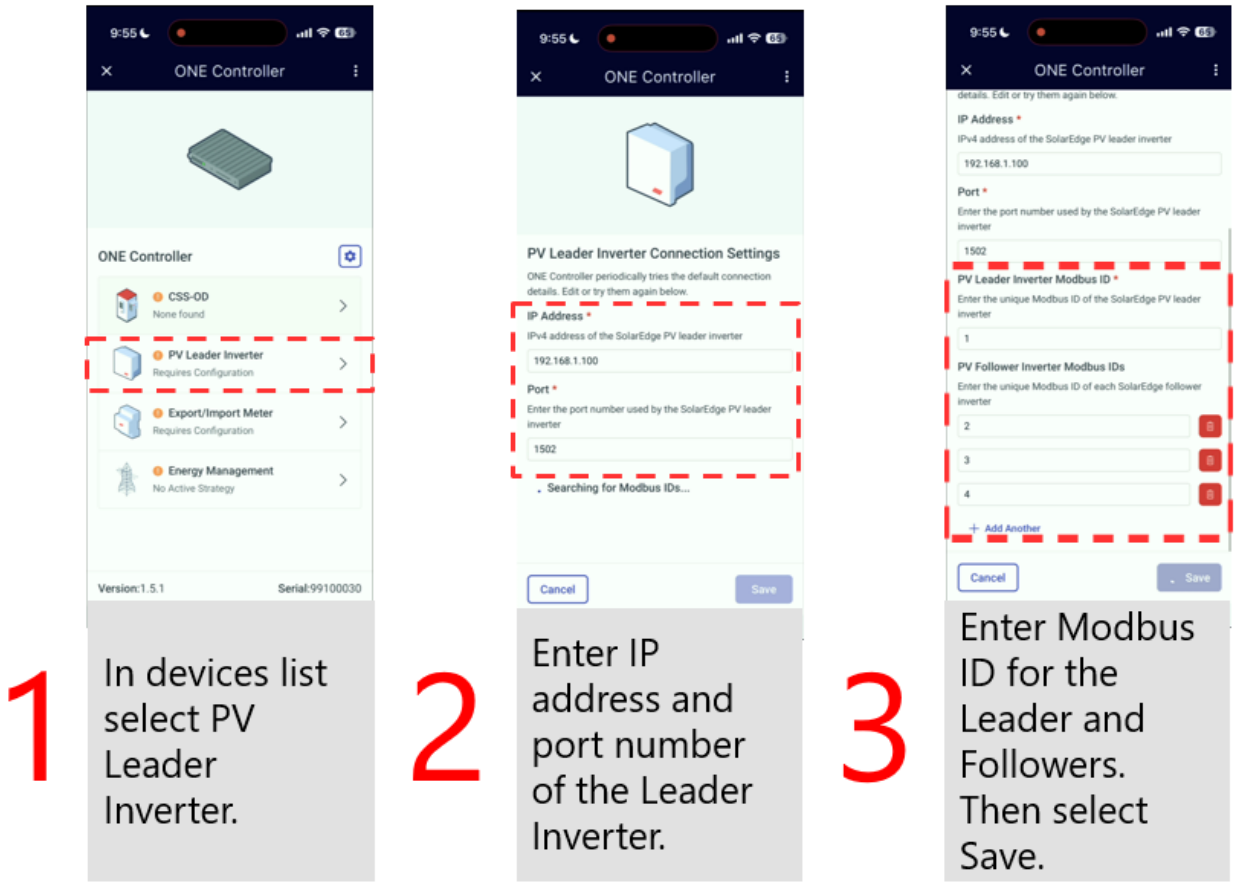


Figure 20: Pairing PV Inverters Steps 1-3

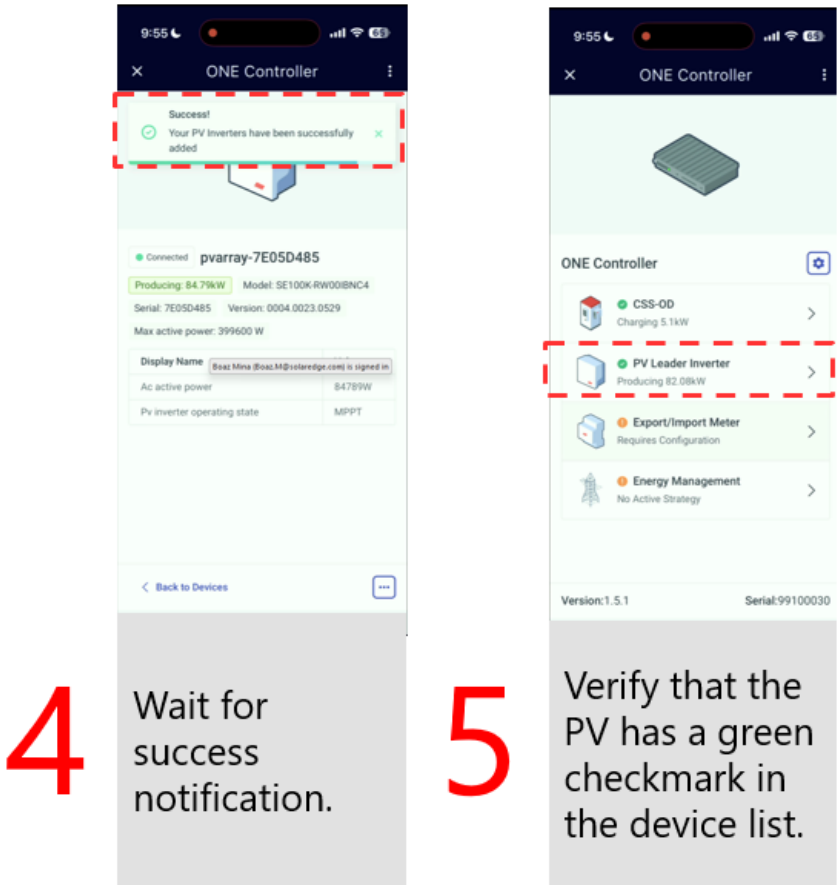


Figure 21: Pairing PV Inverters Steps 4-5

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Pairing Firefighting Gateway with ONE Controller via SolarEdge Go Application

To pair the Firefighting Gateway with the ONE Controller, follow the instructions below:

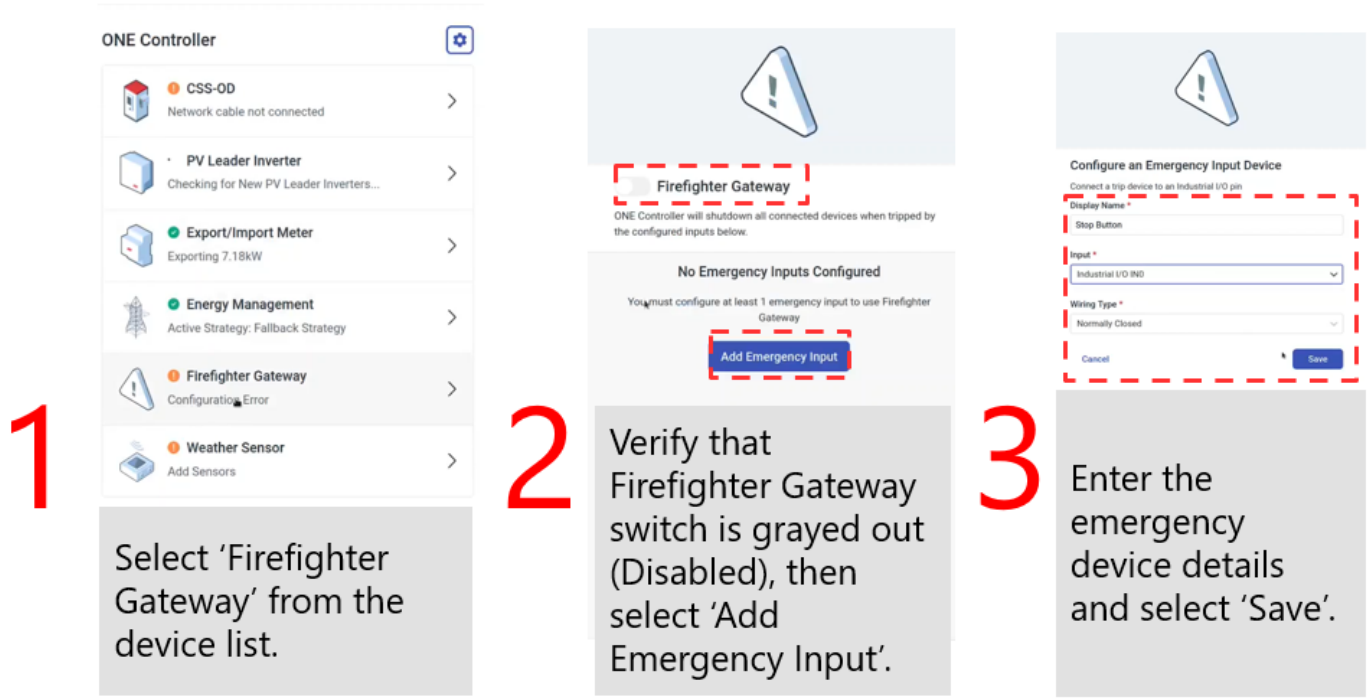


Figure 22: Pairing Firefighting Gateway Steps 1-3

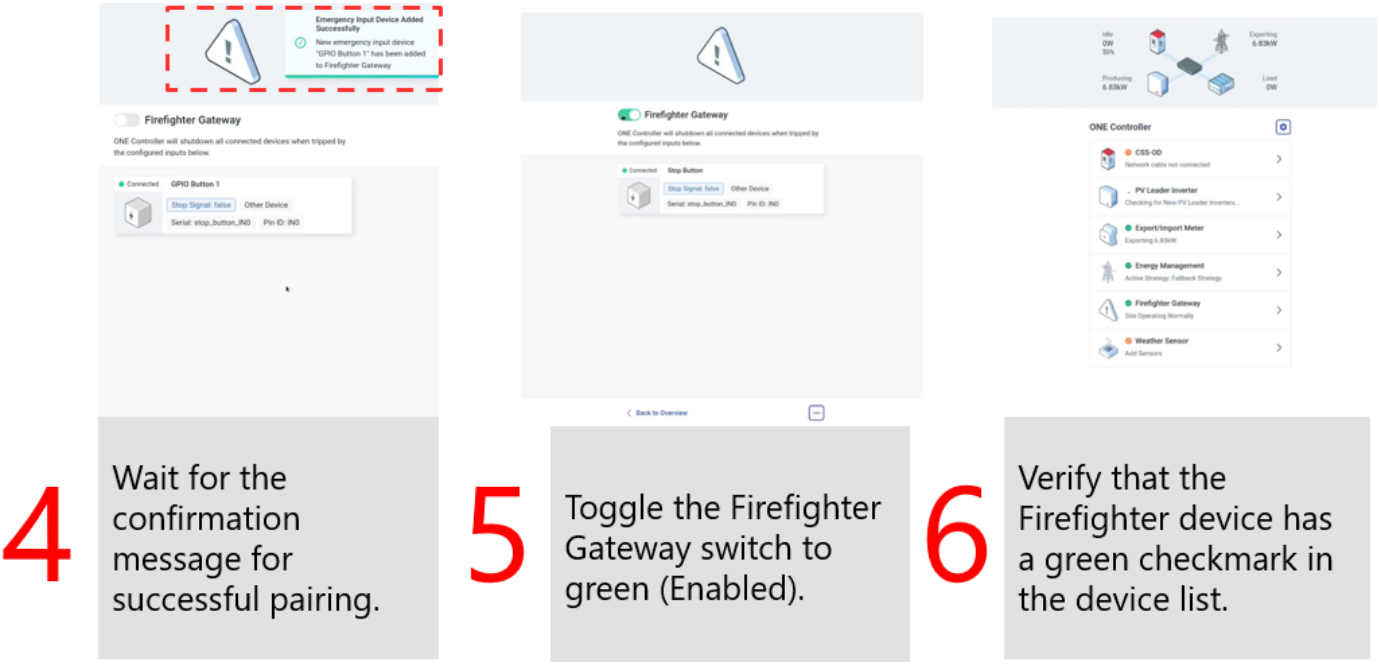


Figure 23: Pairing Firefighting Gateway Steps 4-6

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Pairing Energy Meter with ONE Controller via SolarEdge Go Application

To pair Energy Meter with the ONE Controller, follow the instructions below:

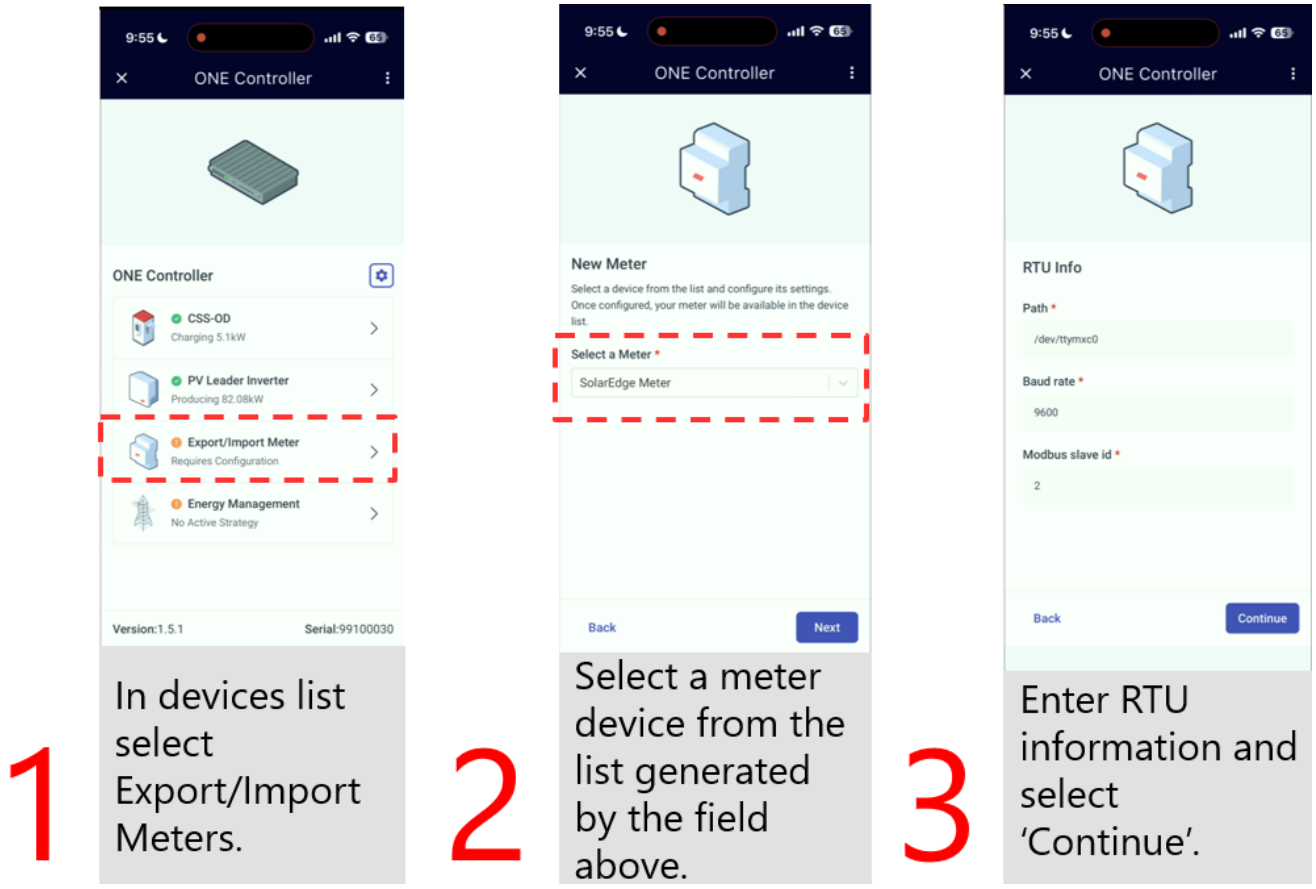


Figure 24: Pairing Meter Device OD Steps 1-3

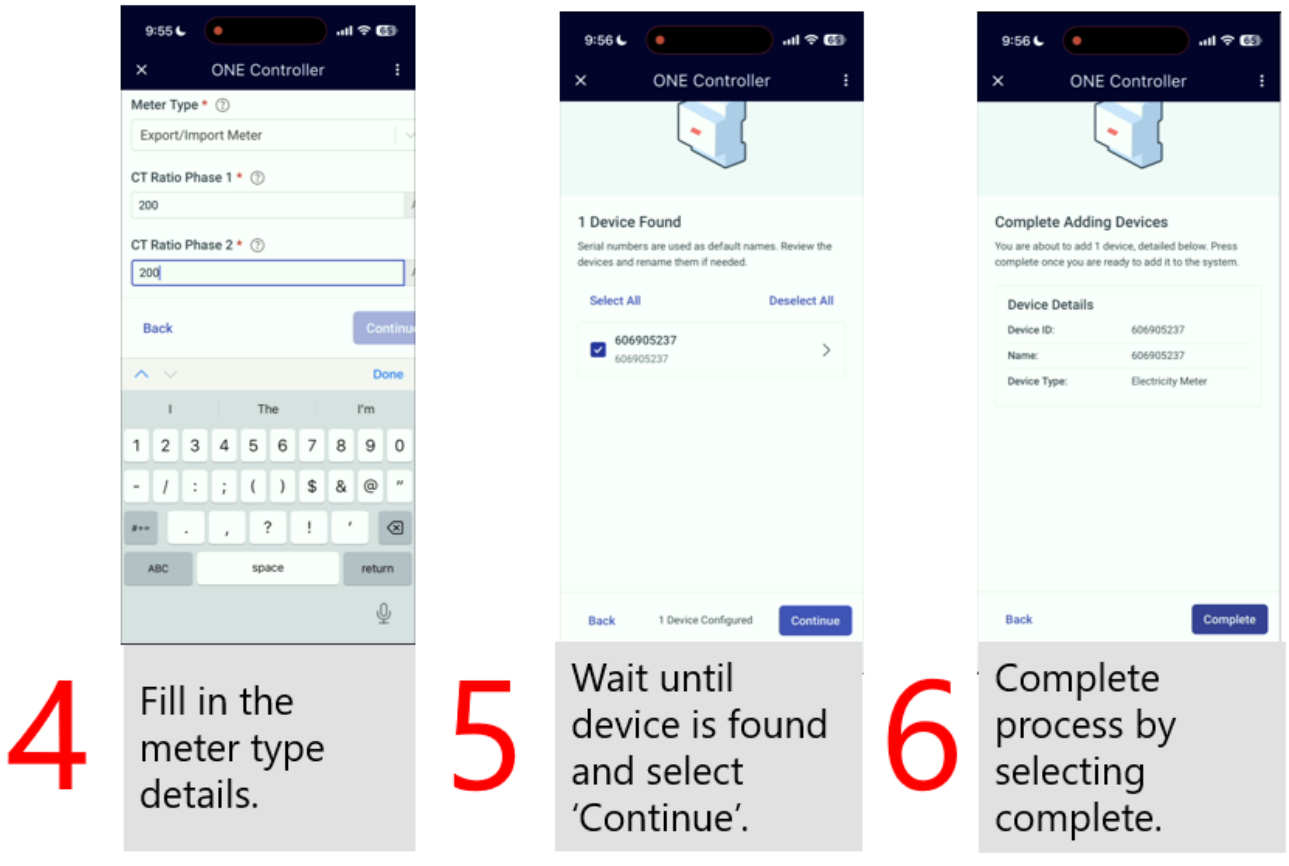


Figure 25: Pairing Meter Device Steps 4-6

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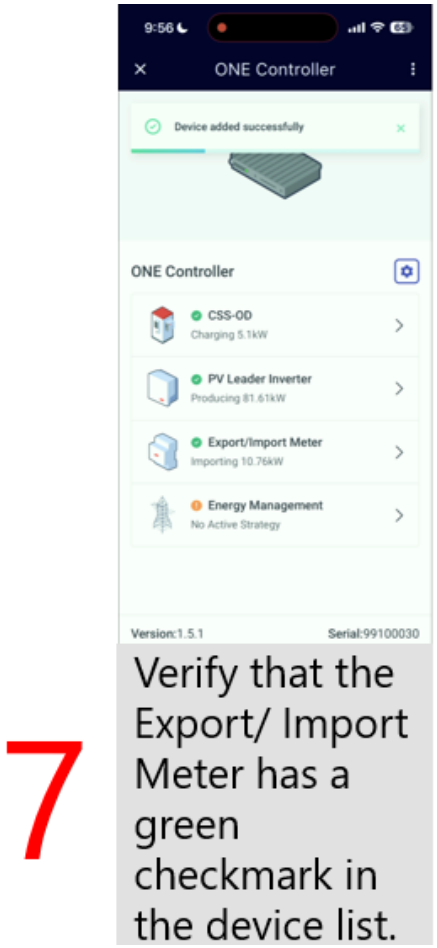


Figure 26: Pairing Meter Device Steps 7

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Troubleshooting

The table below provides solutions to common issues that may arise during the installation and operation of the SolarEdge ONE Controller for C&I. Use it to help diagnose and resolve problems effectively.

Issue	Indicator	Possible causes	Solutions
No Power to the ONE Controller for C&I	The ONE Controller for C&I does not power on	• Power adapter is not connected properly • Faulty power adapter or power supply	1. Ensure the power adapter is securely connected to the ONE Controller for C&I and the power outlet. 2. Check the power adapter for any visible damage. 3. If damaged, replace it with a compatible adapter. 4. Verify that the power outlet is functioning by testing it with another device.
No Internet Connection	The ONE Controller for C&I cannot connect to the internet	• Incorrect network settings • Network cable is not properly connected; router or network issues	1. Check the network cable connections at both ends (controller and router). 2. Verify the network settings in the ONE Controller's Local UI. 3. Restart the router and the ONE Controller for C&I. 4. Test the network with another device to see if it is blocked by a firewall. 5. Review the required ports.

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Issue	Indicator	Possible causes	Solutions
SolarEdge GO Application Has No Internet Connection.	'No internet connection' message is displayed on the screen.	• Internet connection issues	Check cellular or WiFi connectivity.
Devices Not Communicating with the ONE Controller for C&I	Connected devices (e.g., inverters, meters) are not communicating with the ONE Controller for C&I	• Incorrect wiring or connections • Incompatible device settings	1. Verify all wiring and connections according to the installation guide. 2. Ensure that all devices are configured with the correct communication settings (e.g., baud rate, parity, stop bits). 3. Check that each device has a unique ID and is properly addressed in the ONE Controller's settings.
Error Messages in the Local UI	Error messages appear in the Local UI	• Configuration issues • Connected device errors	1. Refer to the error message details and follow any suggested actions. 2. Check for firmware or software updates and apply them if available. 3. Restart the ONE Controller for C&I and recheck the configuration settings.

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Issue	Indicator	Possible causes	Solutions
Inconsistent Data or Readings	Data from connected devices is inconsistent or incorrect	• Faulty sensors or devices • Interference or noise in communication lines	1. Verify the accuracy of the sensors or devices by cross-checking with other measurement tools. 2. Ensure that communication lines are properly shielded and grounded to prevent interference. 3. Replace any faulty sensors or devices.

If the issue persists, contact SolarEdge support with details, including error messages and the details of the ONE Controller for C&I found on the About page of the Local UI.

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Appendix A: Modbus maps

The following table includes Modbus holding register maps with the following features:

- All registers are read-only, and values are in big-endian format.
- For values spanning more than one register, the high word is used first.
- This map should be used initially to detect whether the site has PV and storage, as well as the nominal power of each.

Register	Size	Name	R/W	Units	Type	Range	Description
0x0064/	16	ControllerSerial	R	N/A	ASCII		Serial
100							number of
							the controller
0x0074/	8	EmsSoftware	R	N/A	ASCII		EMS
116		Version					Software
							version
0x0078/	4	MaxAcPvPow	R	Watt	Uint	=0	Total Rated
124		er			64		power of the
							site PV array,
							zero if no PV
							is available
0x0080/	4	MaxAcStorag	R	Watt	Uint	=0	Total Rated
128		ePower			64		power of the
							site Storage
							array, zero if
							no PV is
							available
0x0084/	4	MaxStorageC	R	Watt	Uint	=0	Nominal
132		hargePower			64		charge
							power of the
							site storage
							array, zero if
							no storage is
							available
0x008C	4	MaxProducti	R	Watt	Uint	=0	Total Max
/140		onPower			64		Production
							power of the
							site,
							including all
							assets
							available
0x0090/	4	NameplateSt	R	Watt	Uint	=0	Nameplate
144		orageEnergy			64		Storage
							Energy, zero
							if no storage

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Register	Size	Name	R/W	Units	Type	Range	Description
							is available
0x0190/300	4	GridPower	R	Watt	Int64	positive or negative int	Grid meter Power measurement
0x00CC/204	4	AcPvGenerati on	R	Watt	uint64	positive int	AC PV generation power
0x00D0/208	4	AcStoragePo wer	R	Watt	int64	positive or negative int	Power from/to storage system. positive: dispatch, negative: charge
0x00D4/212	2	SOC	R	Percentage	Float32	0...100	State of charge of the storage system
0x00D6/214	1	Status	R	N/A	Uint16	1...3	Operational status 1: ON 2: Off 3: Manual override 4: Strategy override

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Appendix B: Supported devices

The following devices are supported by packages using the Modbus protocol.[1]

PV Inverters, Commercial Storage Systems, Meters

Product Name	Vendor	Model / Identifier	Supported Protocols
PV Inverters			
SolarEdge three- phase commercial inverters	SolarEdge	SE20K-SE40K	Modbus TCP/IP via Ethernet
SolarEdge three- phase inverters with Synergy technology (SE50K-SE100K)	SolarEdge	SE50K-SE120K	Modbus TCP/IP via Ethernet
Commercial Storage System			
CSS-OD	SolarEdge	CSS-OU-20	IEC 104
Energy meters			
Energy meter	SolarEdge	SE-RWND-3D-480-MB	Modbus RTU over RS485
Energy meter	SolarEdge	SE-WYND-3Y400-MB	Modbus RTU over RS485
Energy meter	SolarEdge	SE-MTR-3Y-400V-A	Modbus RTU over RS485
Energy meter	SolarEdge	SE-WND-3Y400-MB-K2	Modbus RTU over RS485
Energy meter	SolarEdge	SE-RGMTR-3D-208V-A	Modbus RTU over RS485
Energy meter		WND-WR-MB	Modbus RTU over RS485
Energy meter	INPRO	PRO9380	Modbus RTU over RS485
Energy meter	Janitza	UMG Series (96-S2, 104, 512-Pro, 604, 604-Pro, 605-Pro)	Modbus TCP and RTU over RS485

[1]1Contact your local SolarEdge team to request additional devices to be supported.

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Meteorological sensors

Product Name	Vendor	Model / Identifier	Measured Parameters	Supported Protocols
All-in-One Weather Sensor	Thies	Thies Climate Sensor US	• Wind speed • Wind direction • Precipitation • Air temperature • Relative humidity • Air pressure • Brightness • Twilight • Radiation • GPS & Compass	Modbus RTU over RS485
Irradiance Sensor	IMT Technology	Si- RS485TC-2T- MB	• Solar irradiance • Cell temperature • Ambient temperature	Modbus RTU over RS485
Irradiance Sensor	IMT Technology	Si- RS485TC-2T- v-MB	• Solar irradiance • Cell temperature • Temperature (PV module or ambient temperature) • Wind speed	Modbus RTU over RS485
Irradiance Sensor	IMT Technology	Si-RS485TC-T-MB	• Solar irradiance • Cell temperature	Modbus RTU over RS485
Irradiance Sensor	IMT Technology	Si-RS485TC-3T- MB	• Solar irradiance • Cell temperature • Temperature 1 (PV module or ambient temperature) • Temperature 2 (PV module or ambient temperature)	Modbus RTU over RS485

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Product Name	Vendor	Model / Identifier	Measured Parameters	Supported Protocols
Digital Module Temperature Sensors	IMT Technology	Tm-RS485-MB	• PV model surface temperature	Modbus RTU over RS485
All-in-One Weather Sensor	Kipp and Zonen	WS50PV	• Air temperature • Relative humidity • Barometric pressure • Wind speed • Wind direction	Modbus RTU over RS485
Soiling Monitoring System	Kipp and Zonen	DustIQ	• Soiling on PV panels	Modbus RTU over RS485
Smart Rooftop Monitoring System	Kipp and Zonen	RT1	• Solar irradiance • Back panel temperature	Modbus RTU over RS485
Smart Pyranometers	Kipp and Zonen	SMP Series	• Global solar irradiance	Modbus RTU over RS485
Smart Weather Sensor	Lufft	WS500-UMB	• Air temperature • Relative humidity • Air pressure • Wind speed • Wind direction • Precipitation (intensity, type, and amount) • Solar radiation	Modbus RTU over RS485

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Appendix C: networking ports for SolarEdge ONE Controller for C&I

NOTE

The SolarEdge ONE Controller for C&I exposes specific network ports. To ensure secure operation and compliance with cybersecurity requirements, install the SolarEdge ONE Controller only on networks with authorized and trusted devices.

Port	Network	Required
TCP/80	Web server to provide web UI and API	Yes
UDP/5353	mDNS	Yes
UDP/67	DHCP	No
TCP/2404	IEC 104	No
TCP/10502	Modbus	No
TCP/10503	Modbus	No
TCP/443	Telemetry services	Yes
TCP/8883	Telemetry services	Yes
TCP/123	NTP	Yes
TCP/53	DNS	Yes
TCP/5671	Telemetry services	Yes
TCP/9000	Telemetry services	Yes

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