



WWW.SOLTARO.COM – INFO@SOLTARO.COM – TEL 1300 376 582

Main Office & Showroom – 8 Mohr Street, Tullamarine, VIC 3043

Registered Address – Level 9, 440 Collins Street, Melbourne VIC 3000 – ABN 78 800 728 807

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Qendercore Account Setup Instructions

Before attempting setup, it is recommended to navigate to the Qendercore web portal at <https://www.qendercore.com/> and register a Qendercore account. For installers, please contact your Qendercore provider with your Qendercore account email to be setup as an Installer to be granted different access privileges.

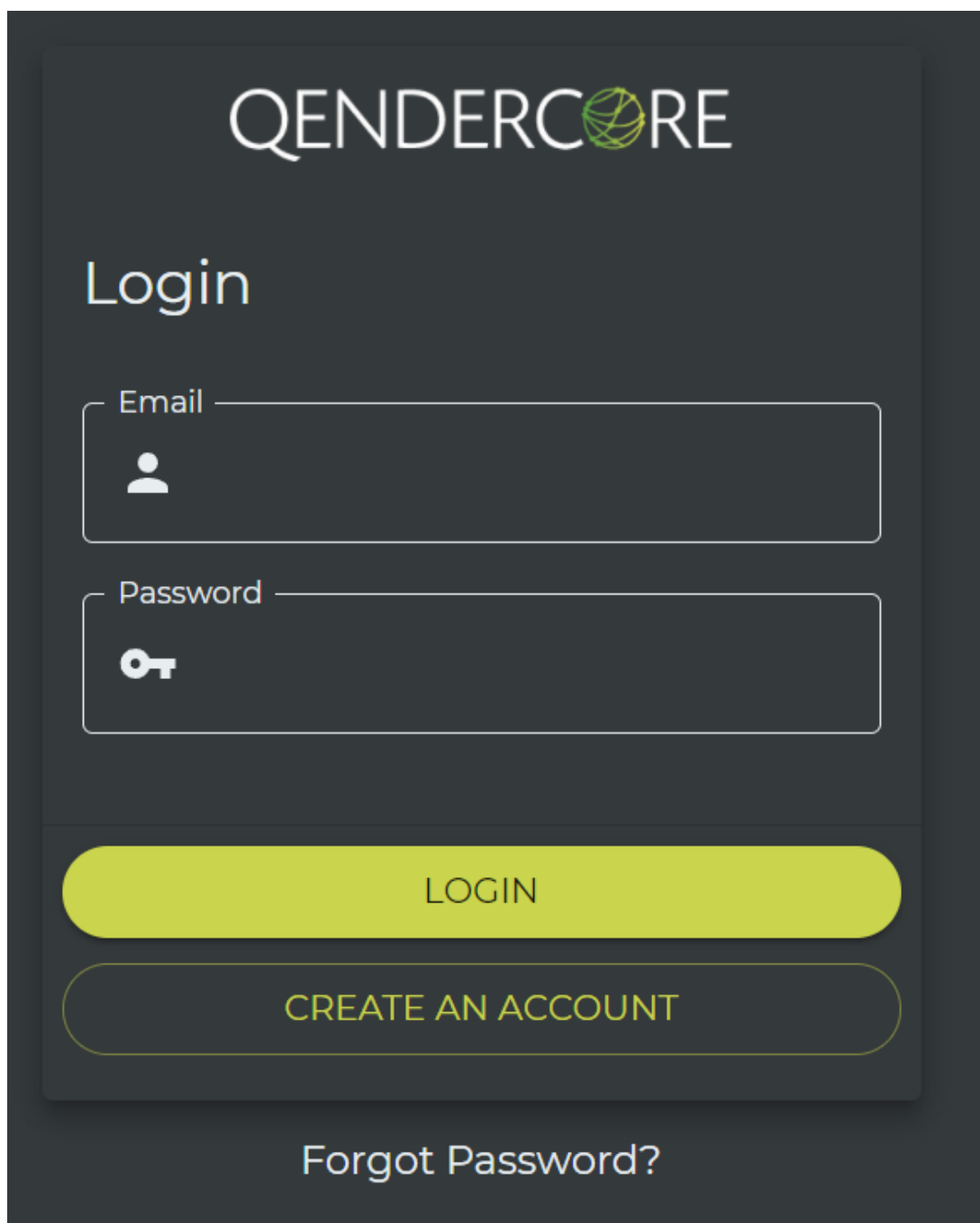
A screenshot of the Qendercore login page. The page has a dark gray background. At the top, the Qendercore logo is displayed in white. Below the logo, the word "Login" is written in a large, white, sans-serif font. There are two input fields: the first is labeled "Email" and contains a white person icon; the second is labeled "Password" and contains a white key icon. Below these fields are two buttons: a green "LOGIN" button and a white "CREATE AN ACCOUNT" button with a green outline. At the bottom, the text "Forgot Password?" is displayed in white.

Figure 1 – Account Login Screenshot

Enter the email address for the end user, then click “Register”. An email will be sent to this email address with instructions on how to complete setup of the account.

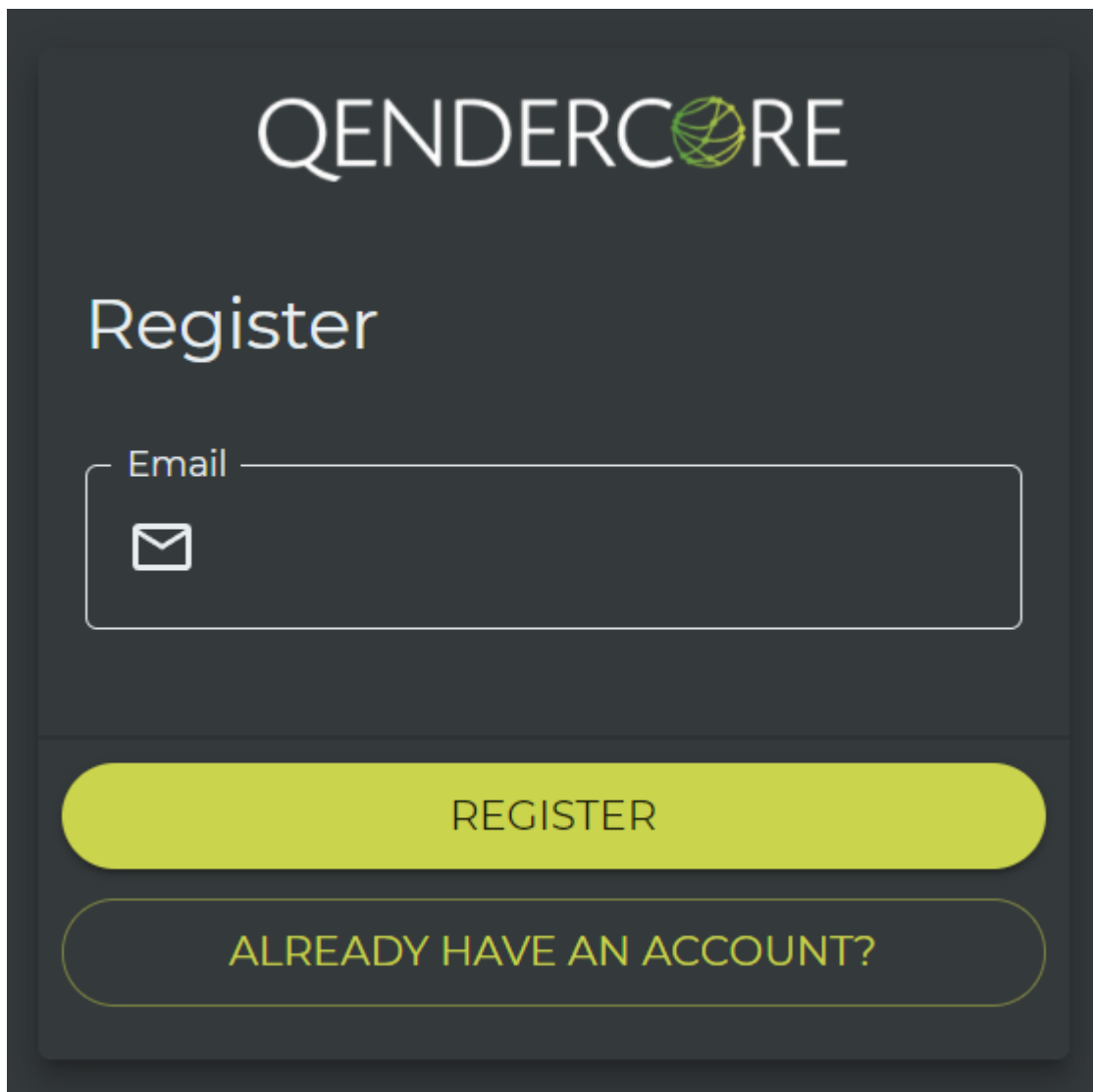
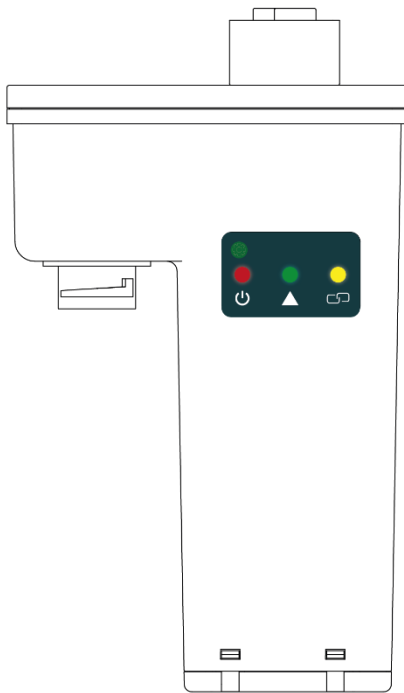
A screenshot of the QENDERCORE registration page. The page has a dark grey background. At the top, the QENDERCORE logo is displayed in white, with a green globe icon replacing the letter 'O'. Below the logo, the word "Register" is written in a large, white, sans-serif font. Underneath, there is a white rectangular input field for an email address. To the left of the input field, the word "Email" is written in a small, white font, and a white envelope icon is positioned inside the field. Below the input field, there are two rounded rectangular buttons. The first button is green and contains the word "REGISTER" in white, uppercase letters. The second button is white with a green border and contains the text "ALREADY HAVE AN ACCOUNT?" in green, uppercase letters.

Figure 2 - Register Account Screenshot

Qendercore Hub Overview



Interactive Button: Used to change Hub State



Power LED: Used to indicate Hub On/Off



Mode LED: Used to indicate Hub Mode



Connectivity LED: Used to indicate Hub Connectivity State

Figure 3 - Qendercore Hub

Installation of Qendercore Hub

Connect the Qendercore hub to your Soltaro All in One 2 by aligning the round connector with the “EMS” connector on the inverter and pushing it upwards (**DO NOT CONNECT WHILE INVERTER IS ENERGIZED**). Once connected, tighten the outer locking until it is firm. Once complete, switch on the inverter and wait for the status LEDs (**Green** and **Yellow**) to start flashing.

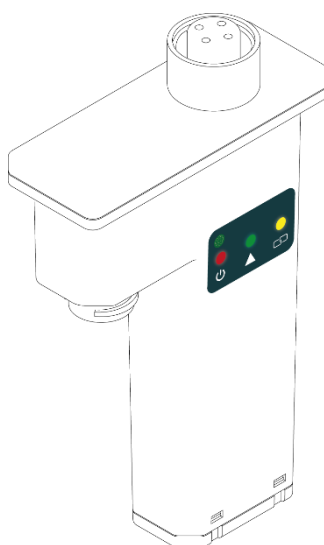


Figure 4 - Qendercore Hub (Side View)

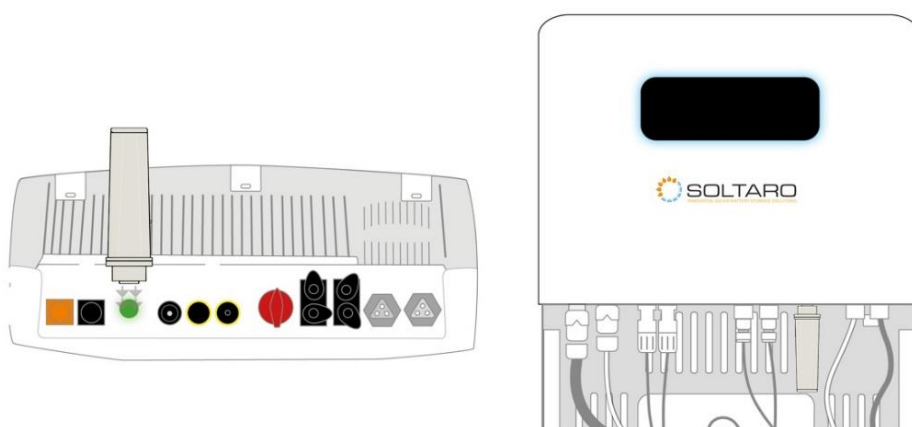


Figure 5- Qendercore Hub Installation

Connecting to Qendercore Hub

You are able to access your Qendercore Hub either directly via [Local Access Point](#), or via a [Local Network](#) that the Qendercore Hub is connected to.

LOCAL ACCESS POINT (AP)

Once your Qendercore Hub is plugged in and inverter is powered, the “Power” LED (**RED**) should light up. Shortly after, the Status lights will start flashing, push the Interactive Button twice (two short presses) to enter Setup Mode. The “Mode” light (**Green**) should start flashing on and off approximately every 1.5 seconds. Once in Setup Mode you will need to push the Interactive Button three times (three short presses) to enter Local AP Mode. The “Mode” light (**Green**) should now be flashing on and off every 0.1 seconds.

Once in Local AP mode, the Qendercore Hub will provide a temporary WiFi access point that can be connected to by one device (eg. computer, smartphone, or tablet) to complete the setup process. Using your device, open your WiFi settings, and connect to the AP named “Qendercore”. The password is “p1234567”. (NOTE: On some smart devices, it may be necessary to activate Airplane Mode before switching WiFi back on, to prevent the device from prioritizing mobile data connections) It is normal for this network to show a “No Internet” message from your device.

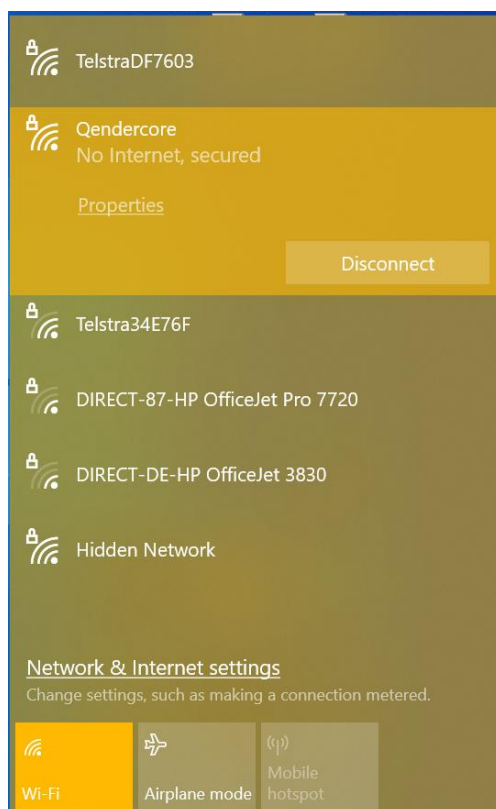


Figure 6 - WiFi AP

Once connected to the Local AP of the Hub, navigate to your preferred Web Browser, and input the Address:

<http://qendercore.local/> (Only available for Windows 10 + Above)

OR

192.168.89.89

You will be directed to the page below.

From here, you can navigate to [Internet Connection](#) or [Soltaro Inverter Setup](#).

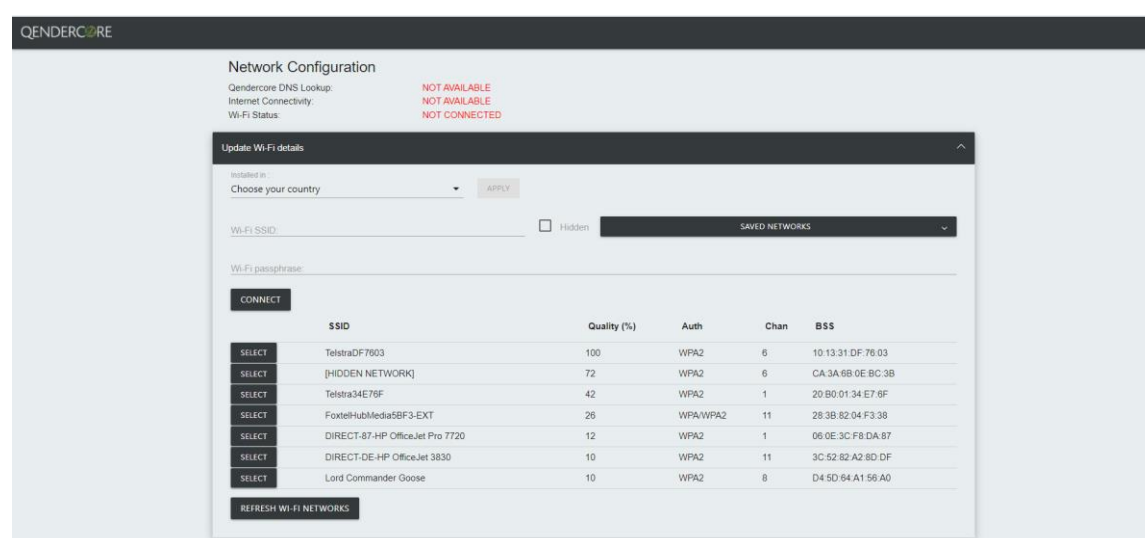


Figure 7 - Network Configuration

LOCAL NETWORK

Press the Interactive Button twice (Two short presses) to activate Setup Mode on the Qendercore Hub. The “Mode” light (**Green**) should start flashing on and off approximately every 1.5 seconds. Connect your smart device or computer to the same network as the Qendercore Hub. On computers with Windows 10 or above, navigate to <http://qendercore.local/> in your chosen web browser. This should automatically navigate to the Qendercore Setup Page. Otherwise, login to the Modem or use a method of IP scanning to determine the assigned IP address for the Qendercore Hub (Screenshots below from Angry IP Scanner for Windows and WiFiMan for Android).

192.168.0.59	[n/a]	[n/s]	[n/s]	
192.168.0.60	[n/a]	[n/s]	[n/s]	
192.168.0.61	13 ...	qendercore.modem	[n/a]	
192.168.0.62	[n/a]	[n/s]	[n/s]	
192.168.0.63	[n/a]	[n/s]	[n/s]	

Figure 8 - Angry IP Scanner for Windows

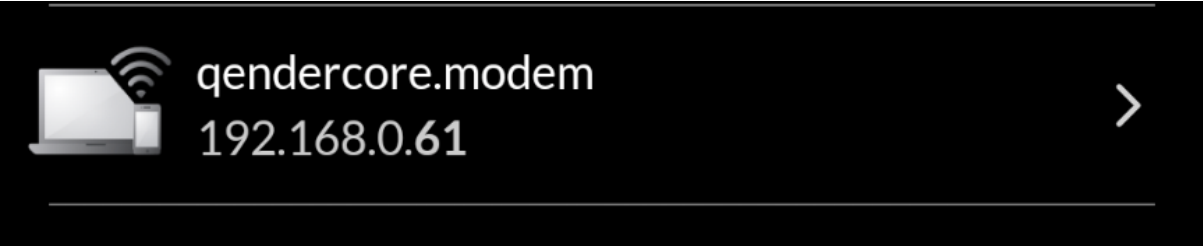


Figure 9 - WiFiMan for Android

Navigate to the correct IP address (Or <http://qendercore.local/>) while the Hub is in Setup Mode. You will be directed to the below webpage, on this webpage you can elect to set a WiFi network as a backup option ([WiFi Network Setup](#) –), or you can continue to link a Qendercore Account ([Linking a Qendercore Account](#)).

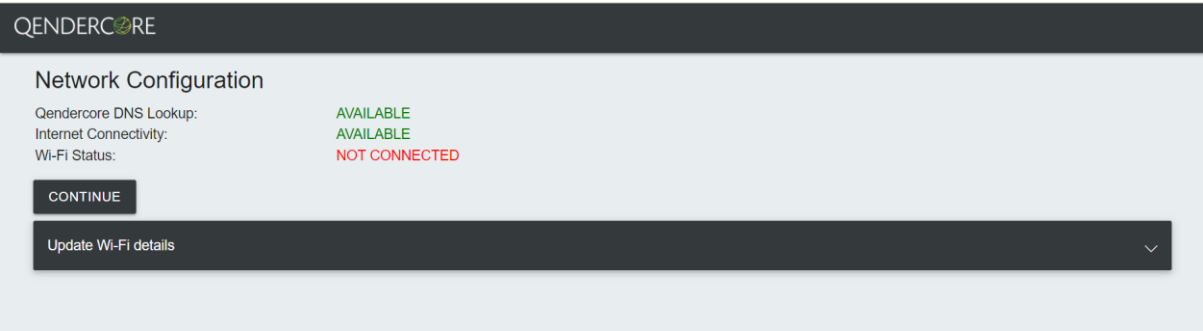


Figure 10 - Ethernet Network Configuration, Completed

Internet Connection

There are various methods of connecting your Qendercore hub to your local network:

1. [WiFi Network Setup – Manual Entry](#)
2. [WiFi Setup – WPS](#) (Only available for Wi-Fi routers with WPS functionality)
3. [Ethernet Connection Setup](#)

These methods are outlined in the following sections. Please note, after initial internet connection, a software update may happen automatically on the Hub ([LED Status](#)). During this time, setup mode will be interrupted, and you may be required to reconnect to the Hub after completion of the update.

WiFi Network Setup – Manual Entry

Once you have connected to your Qendercore Hub following the steps above, input your installation Country and press “Apply”. Select your preferred Wi-Fi network by clicking on it and input the correct password for this network into the “Wi-Fi Passphrase” section. If your chosen network is not broadcasting an SSID, you can select “Hidden Network” to enter an SSID manually (please ensure that “Hidden” is selected in this scenario). Once all details have been input, please press CONNECT to attempt Wi-Fi connection to the chosen Wi-Fi network.

Once it has successfully connected to the Local network, the page will refresh and will show you the availability of:

1. Qendercore DNS Lookup
2. Internet Connectivity
3. Local Wi-Fi connection

If any of these are not showing as “Connected” or “Available”, please refer to the Troubleshooting section of the manual.

If everything is OK, please press the “Continue” button to move to Linking a Qendercore Account.

The screenshot displays the 'Network Configuration' interface. At the top, it shows the status of three services: 'Qendercore DNS Lookup' (AVAILABLE), 'Internet Connectivity' (AVAILABLE), and 'Wi-Fi Status' (CONNECTED). Below this is a 'CONTINUE' button. The main section is titled 'Update Wi-Fi details' and contains a dropdown menu for 'Residing in' set to 'Australia', with an 'APPLY' button next to it. Below this is a 'Wi-Fi SSID' field containing 'TelstraDF7603' and a checkbox for 'Hidden'. To the right of the SSID field is a 'SAVED NETWORKS' dropdown menu. Below the SSID field is a 'Wi-Fi passphrase' field. A 'CONNECT' button is located below the passphrase field. At the bottom of the form is a 'REFRESH WI-FI NETWORKS' button. A table of available Wi-Fi networks is displayed, with columns for 'SSID', 'Quality (%)', 'Auth', 'Chan', and 'BSS'. Each row has a 'SELECT' button to its left.

	SSID	Quality (%)	Auth	Chan	BSS
SELECT	TelstraDF7603	100	WPA2	6	10:13:31:DF:76:03
SELECT	[HIDDEN NETWORK]	72	WPA2	6	CA:3A:6B:0E:BC:3B
SELECT	Telstra34E70F	44	WPA2	1	20:B0:01:34:E7:0F
SELECT	Lord Commander Goose	30	WPA2	8	D4:5D:64:A1:56:A0
SELECT	DIRECT-DE-HP OfficeJet 3830	30	WPA2	11	3C:52:82:A2:8D:DF
SELECT	DIRECT-87-HP OfficeJet Pro 7720	10	WPA2	1	06:0E:3C:F8:DA:87

Figure 11- Network Configuration, Completed

WiFi Setup – WPS

Once your Qendercore Hub is plugged in and the Status lights are flashing, push the Interactive Button twice (two short presses) to enter Setup Mode. The “Mode” light (**Green**) should start flashing on and off approximately every 1.5 seconds. Once in Setup Mode you will need to push the Interactive Button once (one long press 3-6 seconds) to enter WPS Pairing Mode. The “Mode” light (**Green**) should now be flashing on and off every 0.4 seconds.

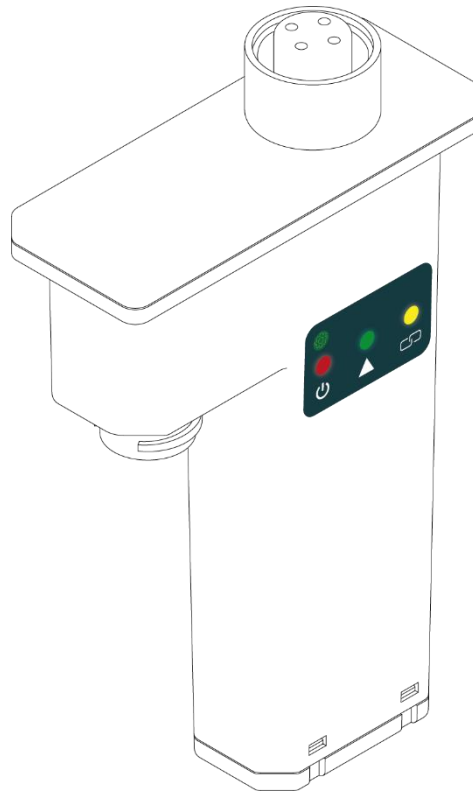


Figure 12 - Qendercore Hub (Side View)

Once in WPS mode, follow the instructions for the target WiFi router to activate WPS Pairing mode on the router. This could be by pushing a button on the router, or it may require logging into the router's configuration wizard. Please confirm the process with the router manufacturer if required.

Once both devices are in WPS Pairing Mode at the same time, the Hub should automatically connect to the target WiFi router. Once pairing is complete and WiFi network connection is confirmed, the “Connectivity” (**Yellow**) LED will flash faster in accordance with the LED Status section of this document. Once the LED remains on, and blinks off every 3 seconds, communications have been established with the Qendercore servers, and it is ready for account setup ([Linking a Qendercore Account](#)).

Ethernet Connection Setup

Assemble the Ethernet connector by passing the Ethernet cable through the weatherproof gland, and then fitting off an RJ45 connector using the T-568B connection standard. Once the Status LEDs of the Hub are flashing, connect the RJ45 connector to the Ethernet port of the Qendercore Hub and twist the weatherproof lockring onto the Ethernet port. Tighten the weatherproof gland until it is firm.

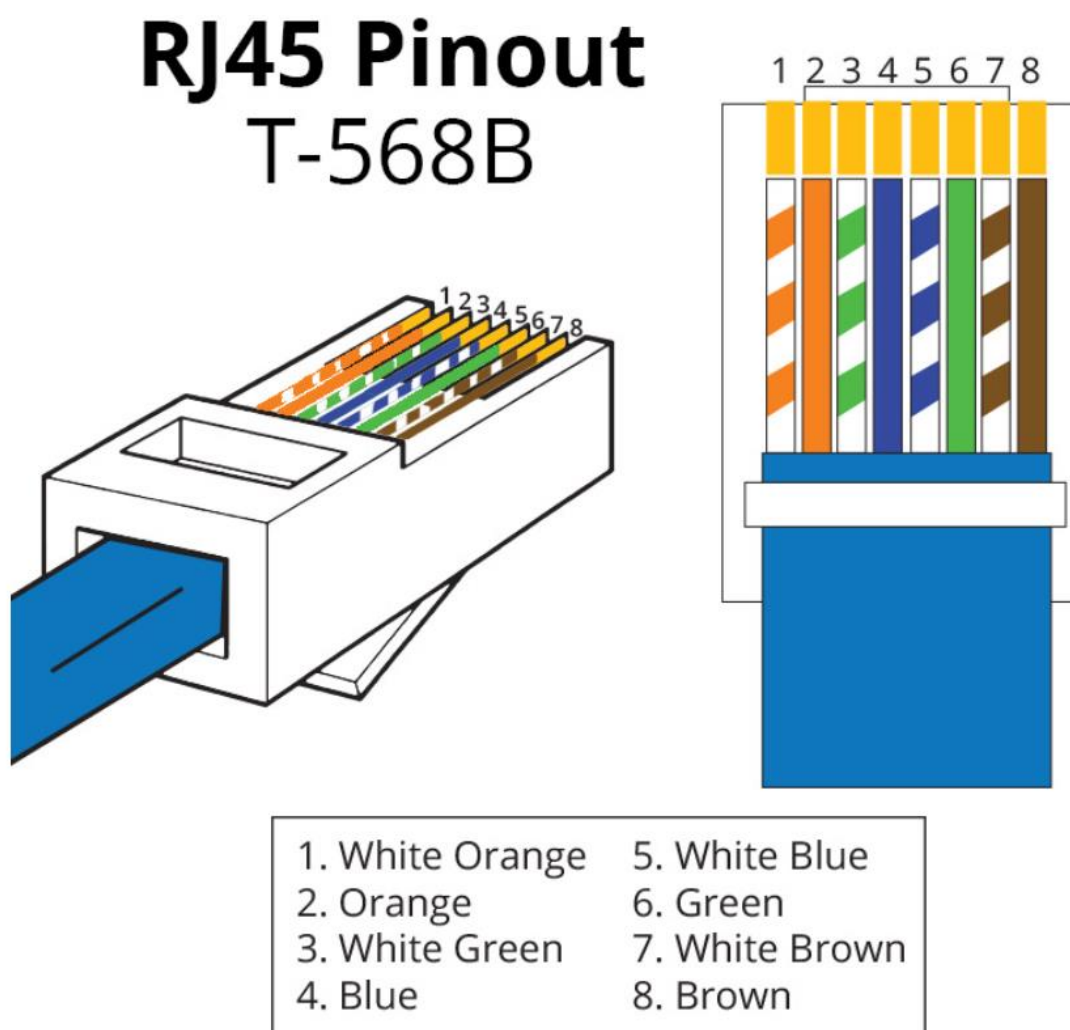


Figure 13 - RJ45 Ethernet Pinout

Once network connection is detected via the Ethernet cable, the “Connectivity” (Yellow) LED will flash faster in accordance with the LED Status section of this document. Once the LED remains on, and blinks off every 3 seconds, communications have been established with the Qendercore servers, and it is ready for linking a Qendercore account (See “Link a Qendercore Account”).

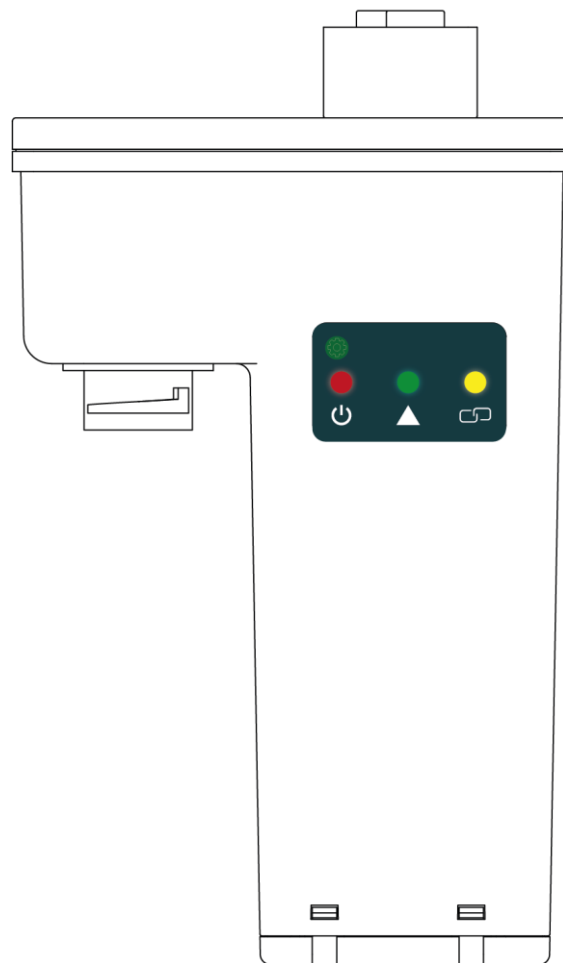


Figure 14 - Qendercore Hub

Linking a Qendercore Account

Please note, the Qendercore Hub may perform a software update on initial connection to the Qendercore Servers (Indicated by alternate flashing of “Mode” (**Green**) and “Connectivity” (**Yellow**) LEDs). Please wait for the update to finish before reconnecting to the Hub and continuing the setup process.

After connecting to your Qendercore Hub ([Connecting to Qendercore Hub](#)) and configuring your internet connection ([Internet Connection](#)), click on “Continue” to be taken to Qendercore Hub Configuration. Please select the relevant time-zone for the installation, confirm the Connected Device details are correct, and then use any of the below methods for linking an account:

- [Scan QR Code with Qendercore App](#)
- [Scan QR Code with Smartphone QR Code Reader/Click on QR Code](#)
- [Link from Web Client](#)
- [Provide Account Details Manually](#)

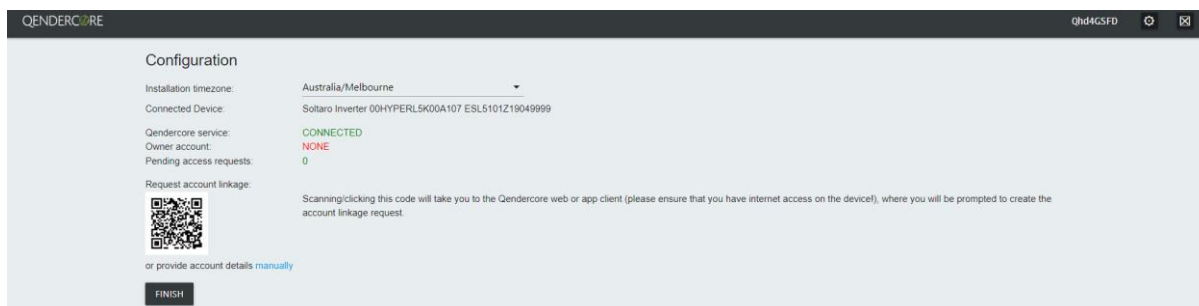


Figure 15 - Qendercore Hub Configuration, Unlinked

Scan QR Code with Qendercore App

Open the Qendercore smartphone app and login to the account that you would like to link the device to. Tap on the Account button (👤) and then tap on “Link Qore”.

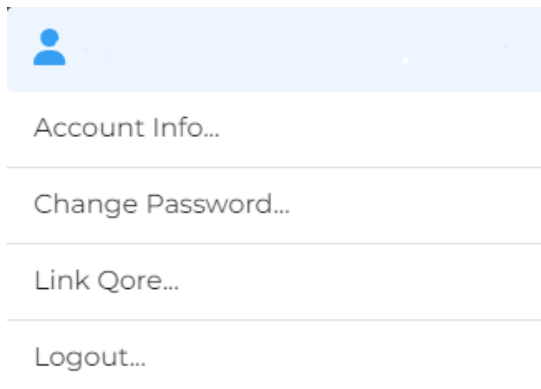


Figure 16 - Account Sub Menu

This will open the inbuilt QR Code Reader. If you scan the QR Code on screen/printed on the Hub, you will be prompted to [“Take Ownership”](#) (If not already taken) or [“Request Access”](#). There is also the option to manually input the Hub ID, which can be found in the top right corner of the Account Configuration page.

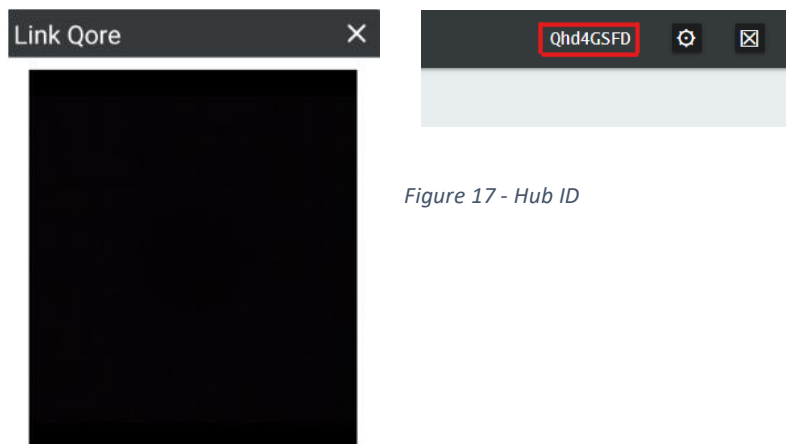


Figure 17 - Hub ID

This allows you to link Qendercore hardware to your account. Please scan the device QR code, or enter the QoreID associated with the device:

QoreID

Submit

Cancel

Figure 18 - QR Code Scanner

Scan QR Code with Smartphone QR Code Reader/Click on QR code

Open a QR Code Reader on a Smartphone and scan the QR Code on screen/printed on the Hub. Alternatively, you can also click on the image of the QR Code on the device you are using. Either option will take you to the Qendercore Web Client and prompt you to login or create an account. Once you are logged in, you will be automatically prompted to [“Take Ownership”](#) (If not already taken) or [“Request Access”](#).

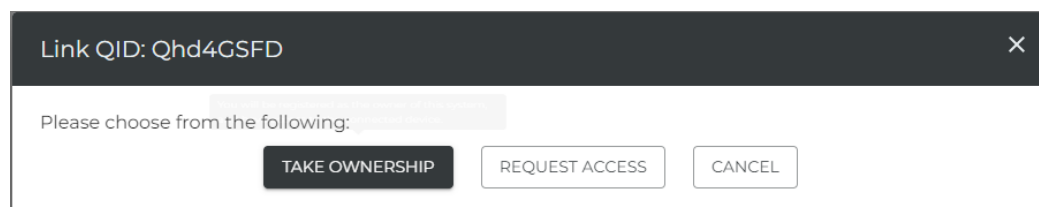


Figure 19 - Link QID

Link from Web Client

Click on the Account button (9) and then click on “Link Qore”

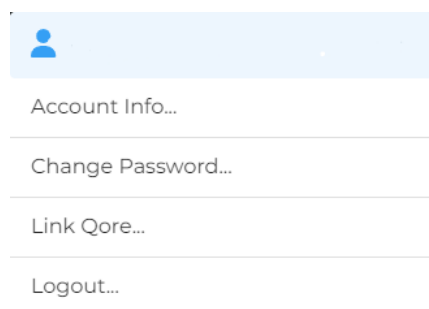


Figure 20 - Account Sub-Menu

This will prompt you to enter the Qendercore Hub ID. This can be found in the top right corner of the Hub Configuration page while connected to the Qendercore Hub.

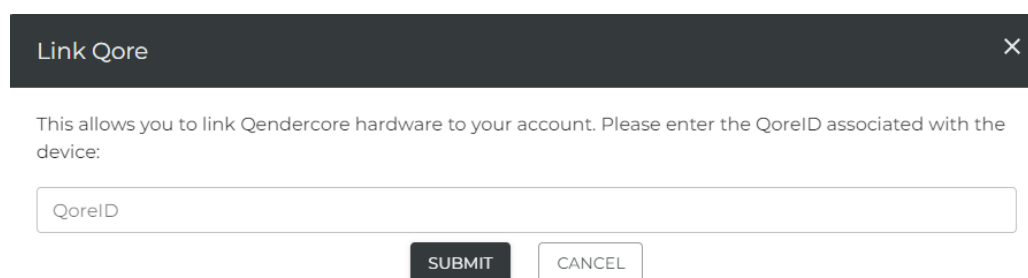


Figure 21 - Link from Web Client

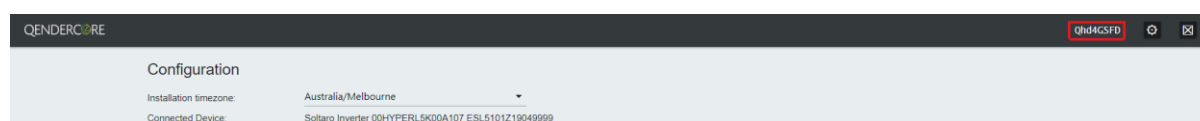
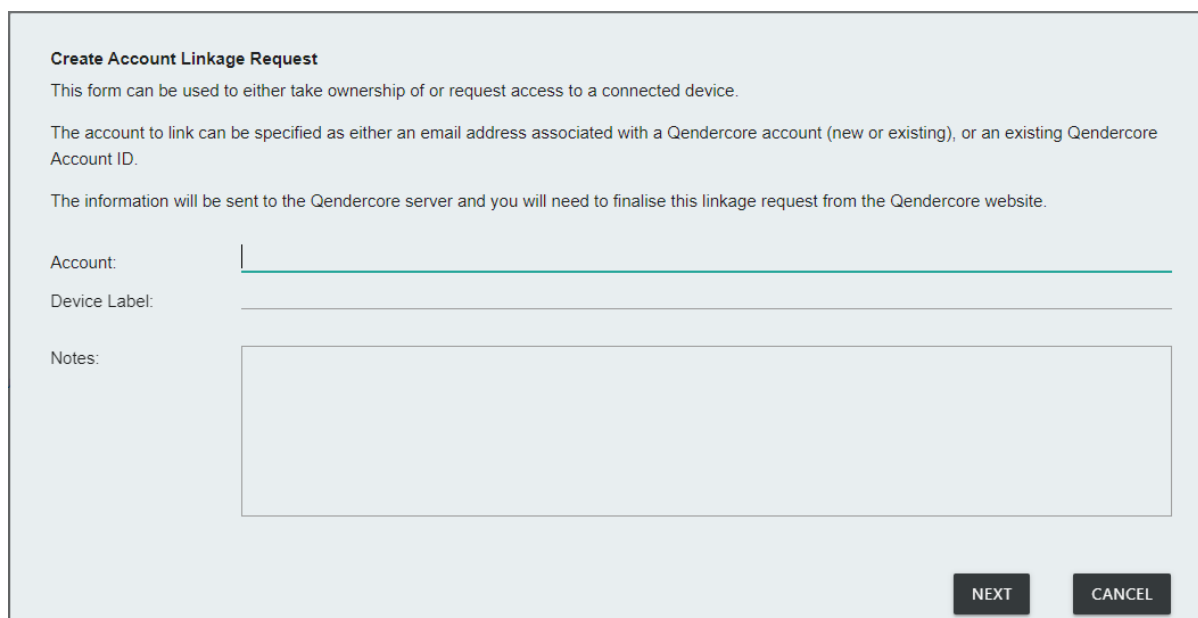


Figure 22 - Qendercore Hub ID

Once you provide the Hub ID, you will be prompted to [“Take Ownership”](#) (If not already taken) or [“Request Access”](#).

Provide Account Details Manually

Click on “Link Manually”, and you will be prompted to create an account linkage request.



The screenshot shows a form titled "Create Account Linkage Request". Below the title, there are three lines of instructional text: "This form can be used to either take ownership of or request access to a connected device.", "The account to link can be specified as either an email address associated with a Qendercore account (new or existing), or an existing Qendercore Account ID.", and "The information will be sent to the Qendercore server and you will need to finalise this linkage request from the Qendercore website." The form contains three input fields: "Account:" with a single-line text input, "Device Label:" with a single-line text input, and "Notes:" with a multi-line text area. At the bottom right, there are two buttons: "NEXT" and "CANCEL".

Figure 23 - Provide Account Details Manually

Here, you can input a Qendercore Account ID (which can be found by clicking on Account Info on the Qendercore App or Web Client), or an email address. If an email address is input, then a One Time Password will be sent to that email address that must be input to submit the request.



The screenshot shows a verification screen. At the top, it says "A verification code has been emailed to" followed by a blurred email address and "Please enter the code received." Below this, there is a label "Verification code:" followed by a single-line text input field. At the bottom right, there are two buttons: "SUBMIT" and "PREVIOUS".

Figure 24- One Time Password

If the email address has an existing Qendercore Account, then an access request notification will come up for that Qendercore Account in the Active Notifications section of the Qendercore App or Web Client. If the email address does not have a Qendercore account created yet, then an automatic email will be sent to that address with a prompt to create an account and an access request notification will be present in the Active Notifications section once the account is created and logged in. From the notification, you will be able to [“Take Ownership”](#) (If not already taken) or [“Request Access”](#).

Active Notifications

Continue with device access request for QID: Qhd4GSFD

Figure 25 - Notification for Access Request

Take Ownership

Ownership of the device should be claimed by the End User of the Product. Any other access should be granted from the device owner to the relevant parties. If claiming Ownership, you will be provided with the below prompt:

Take Ownership

You are claiming ownership of QID: Qhd4GSFD. Please cancel if this is not the case.

Connected Device: Soltaro Inverter 00HYPERL5K00A107 ESL5101Z19049999

Device Label:

Device Notes:

Installation Address:

Street:

City:

State:

Post Code:

Country:

SUBMIT

CANCEL

Figure 26 - Take Ownership

Please provide as much detail as possible for future troubleshooting purposes. The Device Label is what you would like to call the connected Device.

Once you have taken Ownership, any Pending Access Requests will appear in the Notifications section of you Qendercore Account, where you can Approve or Deny them as required.

Active Notifications

Approve installer access request to QID: Qhd4GSFD for

Approve access request to QID: Qhd4GSFD for

Figure 27 - Access Requests

Request Access

For anyone other than the designated Device Owner, you can request access from the Device Owner with the Request Access function. When Requesting Access, you can provide notes for the Access Request. It is recommended that you clearly identify yourself and why you are requesting access so that the Device Owner can easily approve/deny the Access Request.

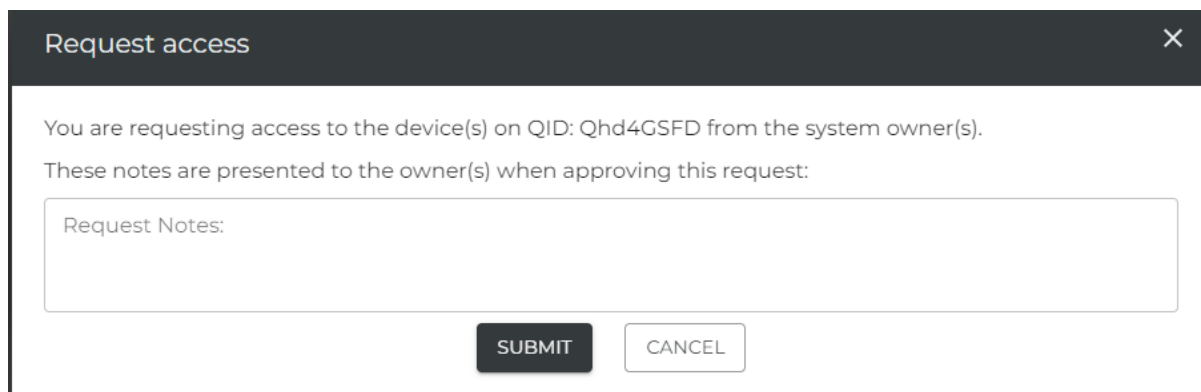


Figure 28 - Request Access

Once initial verification has been completed, the Owner Account in Setup Mode should display “Assigned”. Please press “Finish” to complete Qendercore Setup.

After pressing “Finish”, you will be directed to the page below. Setup Mode will end, and the Qendercore Hub Setup is complete. You will be able to view your connected inverter on your Qendercore Account within 24 hours. LEDs should change status to indicate setup mode has exited and account is linked ([LED Status](#))

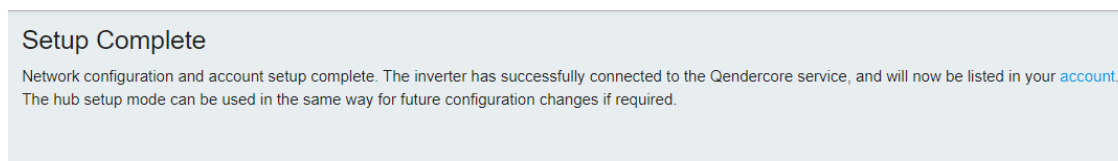




Figure 29 - Setup Complete

Soltaro Inverter Setup

After connecting to your Qendercore Hub ([Connecting to Qendercore Hub](#)), click on the  button in the top right corner to be taken to the Soltaro Maintenance Index. The  button can be used on all pages except the Soltaro Maintenance Index page to reach the Soltaro Maintenance Index.

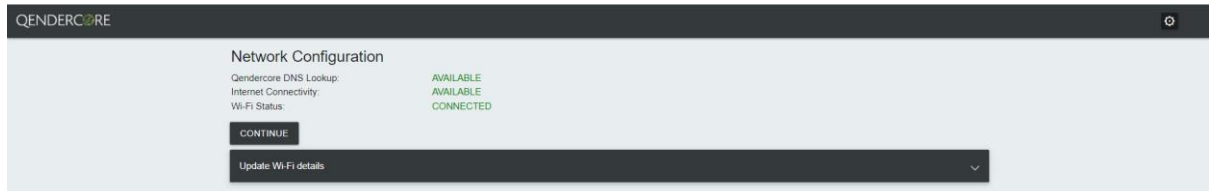


Figure 30 - Network Configuration

You will be prompted to sign in. Leave the Username blank, and input “1111” into the Password section, then press “Sign In”.

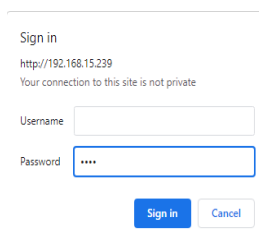

The screenshot shows a sign-in form. At the top, it says 'Sign in' followed by the URL 'http://192.168.15.239' and a warning 'Your connection to this site is not private'. Below this, there are two input fields: 'Username' and 'Password'. The 'Password' field contains four asterisks. At the bottom, there are two buttons: 'Sign in' (in blue) and 'Cancel' (in light blue).

Figure 31- Maintenance Authentication

SOLTARO MAINTENANCE INDEX

Once you have signed in, you will be at the Soltaro Maintenance Index. From here, you can access:

- Inverter Measurements
- Basic Settings
- Advanced Settings
- BMS Registers
- Inverter Operations
- Inverter Faults

You can use the  button in the top right corner to log out and reset your authentication if required. Click on any of the options to be directed to the relevant section.

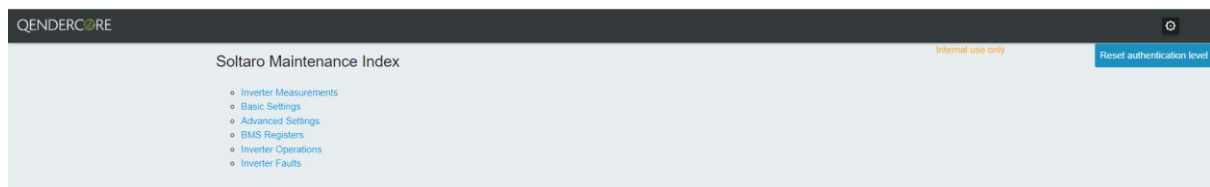


Figure 32 - Soltaro Maintenance Index

INVERTER MEASUREMENTS


This page will show you the values being read by the connected inverter. The values can be updated as required using the “Refresh” button in the top right, or by pushing the  button for each individual group.



Figure 33 - Inverter Measurements

BASIC SETTINGS



The Basic Settings page is for inverter settings related to typical installations. Sections with “Write Batch” at the bottom must be updated in batches. Fields with  next to them must be updated one by one.



Figure 34 - Basic Settings

Once you click “Write Batch” or , you will be given a confirmation popup with the values you are about to change. Check that they are correct, and then click “Confirm”. A description of the new value is provided where it is relevant.



Index	Label	New Value	Raw Value
40047	Work Mode	Back up	1
40048	Country Code	Australia (AS4777.2-2015)	3
40049	Grid Regulation Code	Disable	0
40050	Smart Meter Type	Chint Single Phase	1

Figure 35 - Setting Confirmation



Index	Label	New Value	Raw Value
40051	Inverter Power Limitation	5000 W	5000
40052	Export Limitation	65535 W	65535
40058	EPS Function	UPS with bypass	3
40061	Beep on Grid Failure	30s per hour	0
40062	Beep on Fault	30s per hour	0

Figure 36 - Setting Confirmation

ADVANCED SETTINGS

The Advanced Settings page is provided for settings not typically required for most installations, and to provide a verification page for compliance-related settings.



The functions on this page should only be accessed by qualified professionals. They may relate to standards compliance and/or core functions of the inverter controls. Adjusting these functions without proper instruction could result in a non-compliant or potentially unsafe installation. Please ensure that you contact Soltaro for clarification if required. Any issues that arise from adjusting these functions without authorisation are the sole responsibility of the adjusting party.

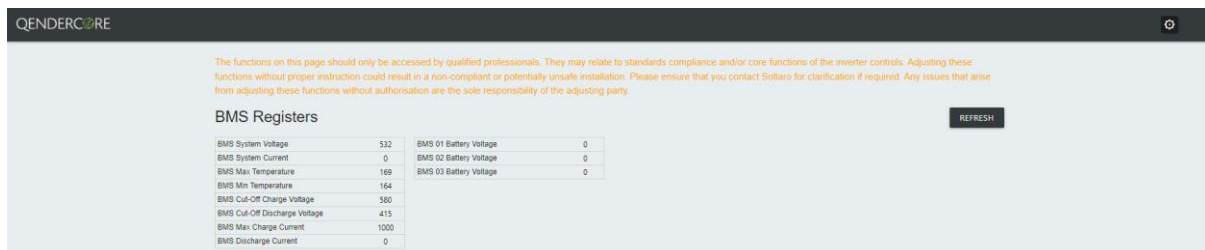
Advanced Settings

Multi-Inverter Setting	Advanced Inverter Setting	Voltage & Frequency Setting
Multi-Inverter Parallel Setting: 0	MPPT Function: 0	Reconnection Time: 60.0 s
Multi-Inverter Total Number: 0	MPPT Scan Enable: 0	Voltage High Limit1: 260.0 V
Parallel Softstart: 0	MPPT Scan Period: 60 min	Voltage High Limit1 Time: 1.95 s
WRITE BATCH	Power Rise Rate: 20 W	Voltage High Limit2: 265.0 V
	Grounding Test: 1	Voltage High Limit2 Time: 0.16 s
	LN Swap Test: 1	Voltage Low Limit1: 180.0 V
	Relay Test: 1	Voltage Low Limit1 Time: 1.95 s
BMS Setting: 0	Insulation Resistance Test: 1	Voltage Low Limit2: 180.0 V
	OCF: 1	Voltage Low Limit2 Time: 2.0 s
	Anti Islanding: 1	Voltage Recovery Time: 60.0 s
	10 Minute Voltage Limit Enable: 1	Freq High Limit1: 52.0 Hz
	10 Minute Voltage Limit: 258.0 V	Freq High Limit1 Time: 0.16 s
	LVRT: 0	Freq High Limit2: 55.0 Hz
	DC Injection Monitoring: 1	Freq High Limit2 Time: 2.0 s
	DC Injection Limit1: 100 mA	Freq Low Limit1: 47.0 Hz
	DC Injection Time1: 1000 ms	Freq Low Limit1 Time: 1.95 s
	DC Injection Limit2: 1000 mA	Freq Low Limit2: 45.0 Hz
	DC Injection Time2: 200 ms	Freq Low Limit2 Time: 2.0 s
	DC Injection Recovery: 100 mA	Freq Recovery High Limit: 50.05 Hz
	DC Injection Recovery Time: 2000 ms	Freq Recovery Low Limit: 48.5 Hz
	EMS Type: 255	Freq Recovery Time: 60.0 s
	Display Type: 2	

Figure 37 - Advanced Settings

BMS REGISTERS

The BMS Registers page is provided to show values recorded by a connected Soltaro Battery.



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BMS Registers

BMS System Voltage: 532	BMS 01 Battery Voltage: 0
BMS System Current: 0	BMS 02 Battery Voltage: 0
BMS Max Temperature: 169	BMS 03 Battery Voltage: 0
BMS Min Temperature: 164	
BMS Cut-Off Charge Voltage: 580	
BMS Cut-Off Discharge Voltage: 415	
BMS Max Charge Current: 1000	
BMS Discharge Current: 0	

Figure 38 - BMS Registers

INVERTER OPERATIONS

The Inverter Operations page provides the following functionality:

- Inverter Clock Synchronization
 - o Inverter Clock can be synchronized to the Browser (Your Device) or Hub (Qendercore Hub) time. Please note, Hub Synchronization is only available if Qendercore Hub has a valid internet connection to validate the correct time via our servers. Both options are intended to update the inverter clock, so it is only necessary to use one option.
- Restore Factory Defaults
- Emergency Charge
 - o Triggers a 10A, 52V voltage output on the inverter, without requiring battery communications. Intended to “wake up” batteries that have been dormant at low SOC where required.
- Storm Charge
 - o Triggers the inverter to charge any connected batteries to the ChargeEndSOC% at the maximum allowable current. Recommended to set ChargeEndSOC% to 100% when using this functionality.

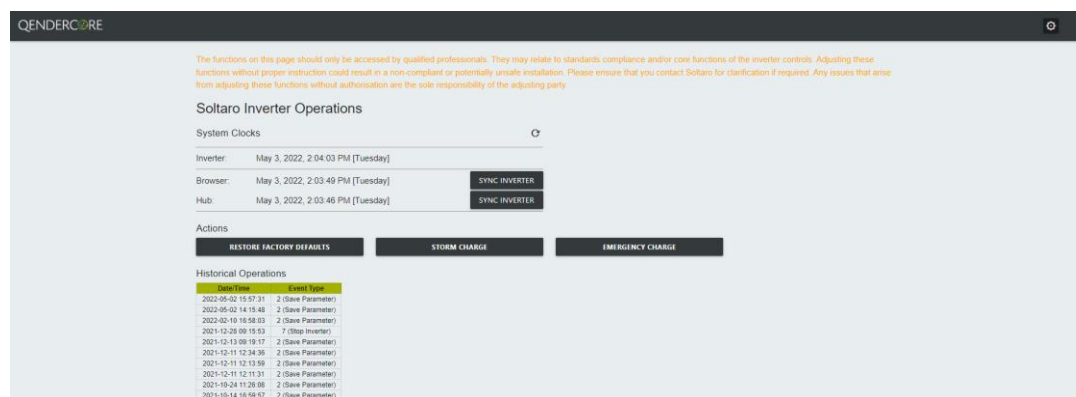


Figure 39 - Inverter Operations

INVERTER FAULTS

This page will show you the last 10 fault codes recorded by the inverter locally. An explanation of the recorded fault codes is provided at the bottom of the page for your convenience. The Numbers in the second table correlate to the Fault Number in the first table. Date/Time of each fault is based on the Inverter Clock at the time that the fault occurred.

Solitario Inverter Faults		
Number	Date/Time	Fault Code (F1, F2, F3)
1	2022-05-03 13:04:55	00000000 00000000 0000
2	2022-05-03 13:04:52	01000000 00000000 0000
3	2022-05-02 15:57:36	00000000 00000000 0000
4	2022-05-02 15:48:31	00000000 00000000 0000
5	2022-05-02 15:48:28	01000000 00000000 0000
6	2022-05-02 15:43:59	01000000 00000000 0000
7	2022-05-02 15:43:55	01000000 00000000 0000
8	2022-05-02 15:34:48	01000000 00000000 0000
9	2022-05-02 15:33:10	01000000 00000000 0000
10	2022-04-29 11:28:03	01000000 00000000 0000

Fault Type	Description	1	2	3	4	5	6	7	8	9	10
Bat. Voltage Protection	Battery Voltage outside allowable limit	x			x	x	x	x	x	x	x
BMS UTP	BMS Low temperature fault	x	x	x	x	x	x	x			

Figure 40 - Inverter Faults

LED Status

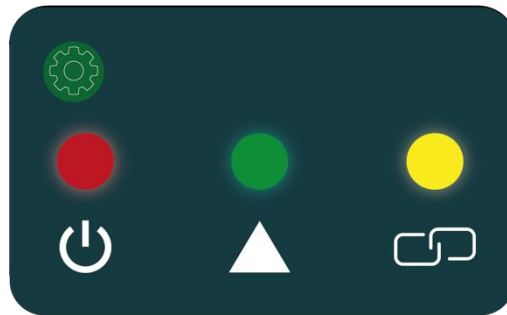





Figure 41 - Qendercore Hub LED's

LED State	 Mode LED
Off:	Hub is Unpowered, or Hub is in start-up process
On, Slow Flash (1.5s):	Hub is in Setup Mode
On, Regular Flash (0.5s):	Hub is in WPS Pairing Mode
On, Fast Flash (0.1s):	Hub is in Local AP Mode
On, Blink Off (3s):	Normal Operation, No Communication to Inverter (See Troubleshooting)
On, Blink (13s):	Normal Operation
Alternating Flash with Connectivity LED:	Firmware Upgrade in Process, do not disconnect or switch off during this time.

LED State	 Connectivity LED
Off:	Hub is Unpowered, or Hub is in start-up process
Off (3s), Blink On:	Dormant, waiting to attempt connection
On, Slow Flash (1.5s):	Waiting for Network Access (See Troubleshooting)
On, Fast Flash (0.1s):	Attempting Connection to Qendercore Servers (See Troubleshooting)
On, Blink Off (3s):	Hub Connected to Qendercore Servers, No Account Linked (See Troubleshooting)
On, Blink (13s):	Logged into account, connected to servers, Normal Operation.
Alternating Flash with Mode LED:	Firmware Upgrade in Process, do not disconnect or switch off during this time.

LED State	 Power LED
Off:	Hub is not Powered (See Troubleshooting)
On:	Hub is powered

Troubleshooting

Error Detail	Recommended Actions
Hub is not Powered	Check connection to inverter is correct and firm. Check inverter is powered correctly.
Normal Operation, No Communication to Inverter	Check connection to inverter is correct and firm. Check inverter is powered correctly, and in correct state to receive communications.
Cannot Connect to Hub Setup	Confirm that Hub is in Setup Mode by checking the Status LED state. Check that you are using the correct IP Address (192.168.89.89 for Local AP or set by WiFi router if connecting via local network). If using a smart device, activate airplane mode before switching WiFi on, to ensure the device is not prioritizing its mobile network.
Waiting for Network Access	If using WiFi, confirm that correct password has been used. If using Ethernet, confirm that cable is not damaged and is correctly terminated and fitted. Confirm that Local Network Modem/Router security settings are not preventing connection.
Attempting Connection to Qendercore Servers	Confirm that connected network has internet connection. Check that connected network security settings are not preventing out-bound connections to ifa.qendercore.com, TCP, Port 14601
Hub Connected to Qendercore Servers, No Account Linked	Follow instructions at Linking a Qendercore Account. Confirm that you are using the correct account details for linking (use the Forgot Password function on the Qendercore website if required). Check that there is an active internet connection to the Qendercore Hub.