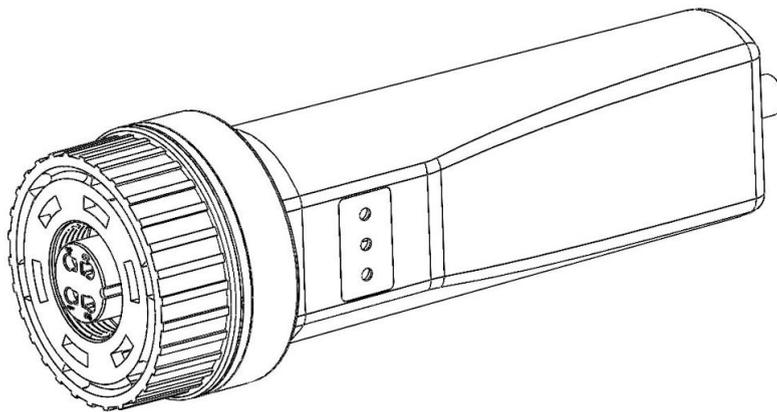


autarco

Installation Manual

Digital Wi-Fi stick for Autarco inverters





Contact Information

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Other Information

This manual is an integral part of the unit. Please read the manual carefully before installation, operation or maintenance. Keep this manual for future reference.

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1 Introduction

1.1 Read this first

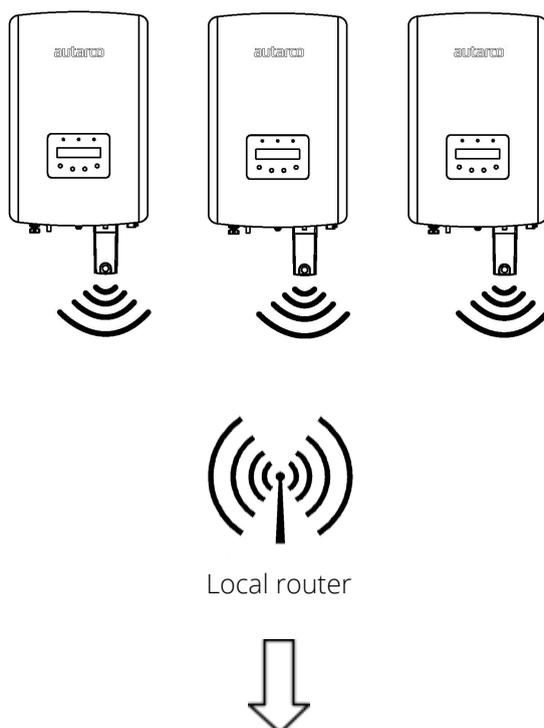
The main purpose of this user manual is to provide instructions and detailed procedures for installing, operating, maintaining, and troubleshooting the Autarco Wi-Fi sticks which are used with Autarco inverters. Please keep this user manual available at all times.

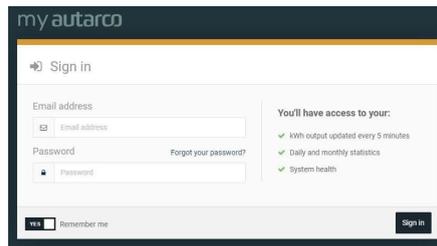
1.2 Important symbols:



WARNING! Indicates safety instruction, which if not correctly followed, can result in injury or property damages.

2 Wi-Fi monitoring connection topography





<https://my.aurarco.com>

2.1 LED indicator lights

There are three LED status indicator lights on the stick. The PWR light (red) indicates power status of the stick. The COM light (orange) indicates communication between the stick and the inverter. The NET light (green) indicates communication between the stick and the Autarco server.

Light	Status	Description
 PWR (red)	ON	The stick has power.
	OFF	The stick has no power.
 COM (orange)	ON	The stick can successfully receive data from all connected inverters.
	FLASHING	The stick is processing data from an inverter.
	OFF	The stick can not successfully receive data from at least one of the connected inverters.
 NET (green)	ON	The stick is connected to the server. Monitoring connection has been successful.
	FLASHING	The stick is trying to connect to the server.
	OFF	The stick is not connected to the server.

3 Installation

In the following steps you will;

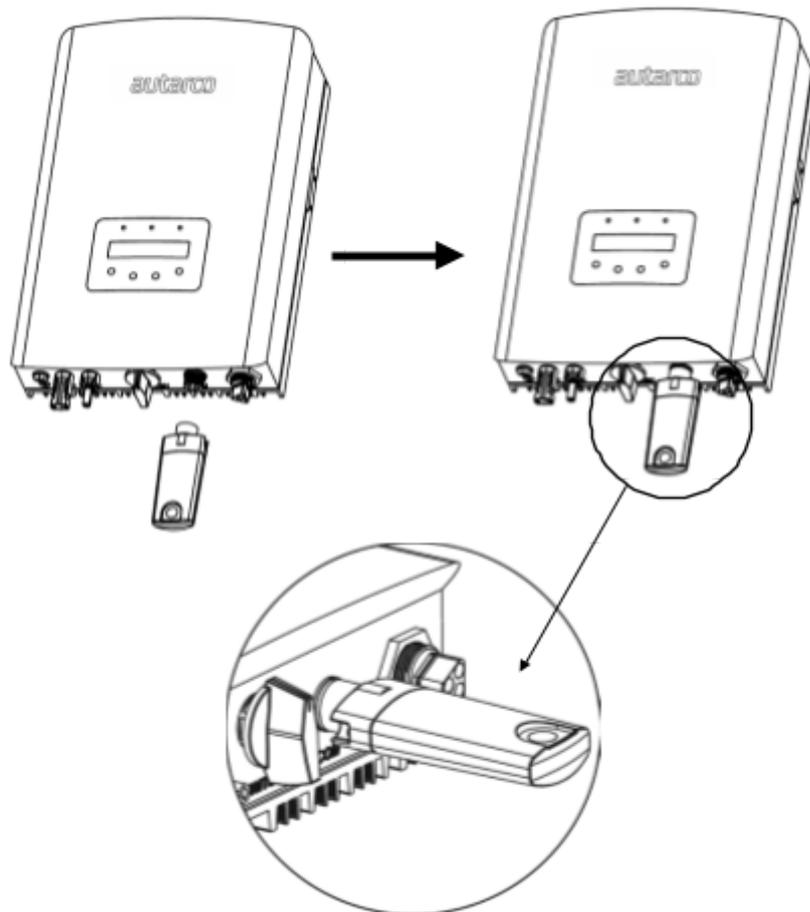
1. Access the local Wi-Fi network created by the Monitoring Stick.
2. Give the Wi-Fi Stick privileges to connect to the on-site router via the Monitoring Stick's online interface.
3. The Wi-Fi Stick can then use the local internet connection to send monitoring data via your on-site router to the Autarco server.

3.1 Install the Wi-Fi stick

Connect the Wi-Fi stick to the corresponding communication interface on the inverter (make sure the four connector pin numbers correspond) and tighten the Wi-Fi stick.



WARNING! Never turn the stick itself but only the black ring around the connector. If the stick itself is rotated while it is in the inverter, cables inside the stick are broken and the guarantee is voided.



WARNING! The Wi-Fi Stick must be kept away from large metal objects and electrical devices with strong magnetic fields, such as microwave ovens, refrigerators, PV panels and metal walls to ensure the communication quality. Communication quality may be affected in lightning storms.

3.2 Connect the Stick to the local Wi-Fi Network

When the stick is connected to a generating inverter successfully, the red “PWR” indicator will turn on immediately. The orange “COM” indicator will start to flash and then turn solid.

Only proceed with the next steps after both PWR and COM indicators are on. You will now establish the link between the monitoring device and Autarco’s server by using the existing on-site Wi-fi network.

In the following steps you will;

1. Access the local Wi-Fi network created by the Monitoring Stick.
2. Give the Wi-Fi Stick privileges to connect to the on-site router via the Monitoring Stick’s online interface.
3. The Wi-Fi Stick can then use the local internet connection to send monitoring data via your on-site router to the Autarco server.

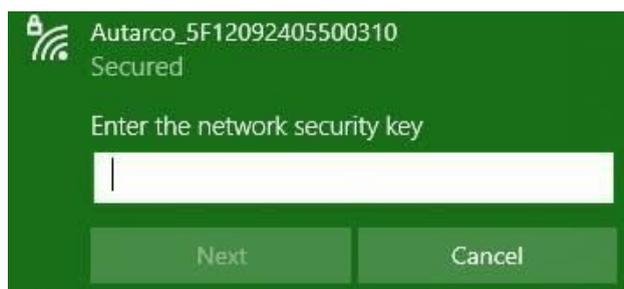
To begin, look up the serial number of the Wi-Fi-Stick. This is printed on a sticker on the back of the stick:



5F12092405500310

As an **example** we will use Wi-Fi serial number 5F12092405500310.

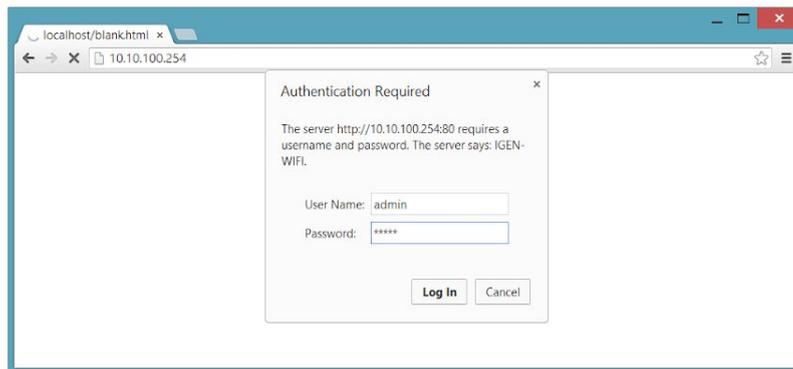
Step 1 — Each Wi-Fi stick creates its own secured wireless network with network name: Autarco_<serial number> e.g. “Autarco_5F12092405500310”. Using a computer, tablet or mobile phone, connect to this wireless network and use password: **123456789**. Here is an example of the screen in Windows:



Step 2 — After you are connected to this Wi-Fi network, you enter IP address 10.10.100.254 in the address bar of any modern web browser:

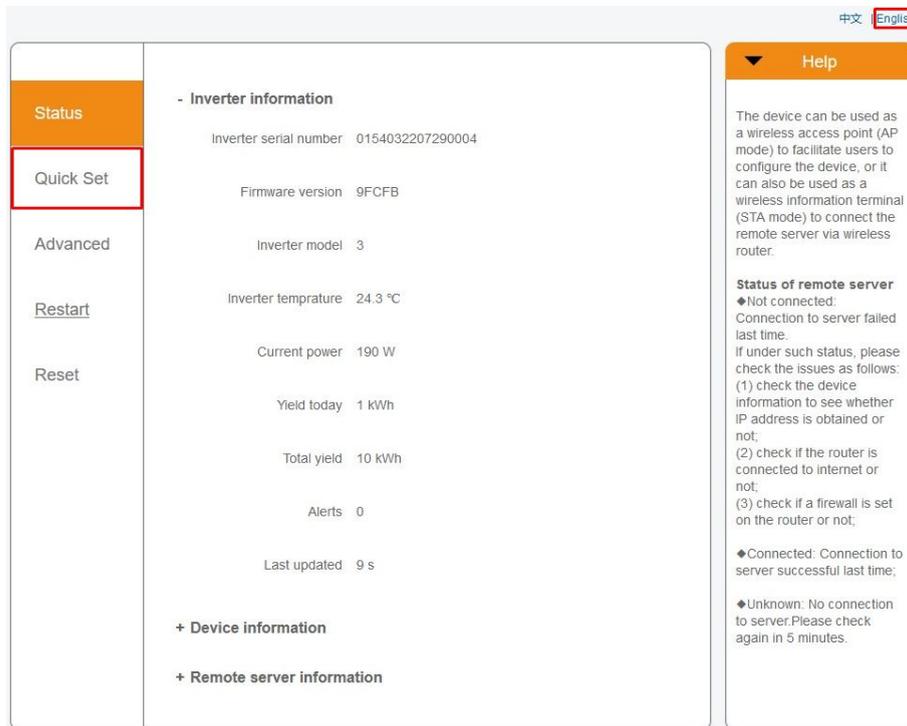


Step 3 — Access to the Wi-Fi Stick's configuration interface is password protected. When prompted for the username and password use **"admin"** and **"123456789"**.

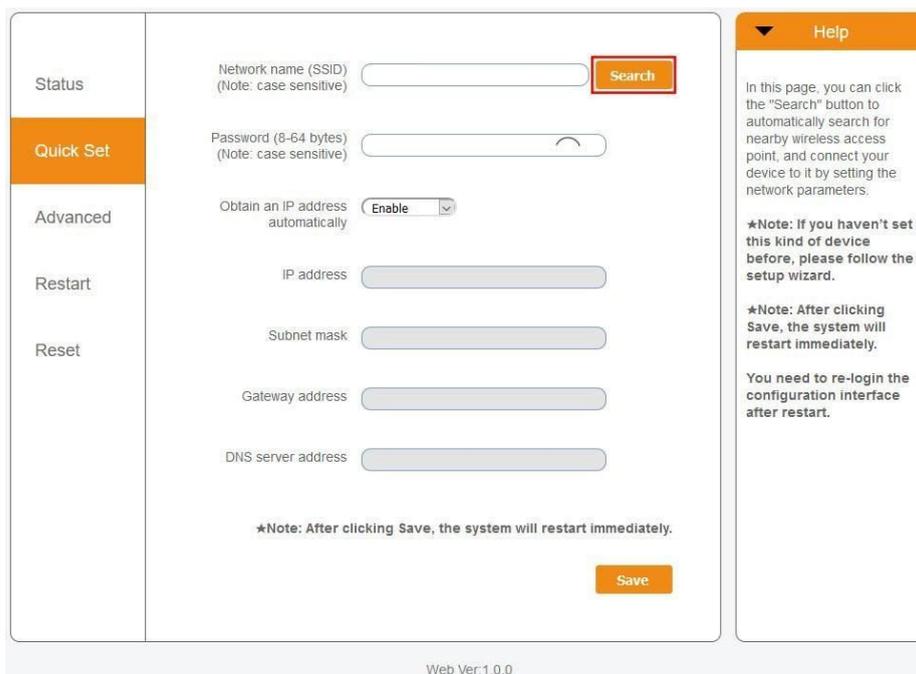


WARNING! Passwords are case sensitive. If using an iPad, iPhone or other tablet device, please ensure that the first character of the password hasn't automatically become uppercase.

Step 4 — Click on the **Quick Set** link in the main menu on the left.
 *If it's in Chinese please press **ENGLISH** in the top right corner



Step 5 — Click **SEARCH**.



Step 6 — A list of nearby Wi-Fi networks will now appear. Find the Wi-Fi signal created by your local Wi-Fi router and select it. This is the same Wi-Fi network you connect to on your home devices to use the internet. Click **OK** to continue. If you can't find it in the list, click **REFRESH** and ensure the signal is present at the inverter location by checking on your phone or other device.

Please select your current wireless network

Site Survey

SSID	RSSI(%)	Channel
<input checked="" type="radio"/> Your home Wi-Fi network	100	64
<input type="radio"/> Wi-Fi Extender	100	64
<input type="radio"/> Wi-Fi Repeater	100	64
<input type="radio"/> Your neighbors Wi-Fi network	100	64
<input type="radio"/> Ziggo-43643E	100	64
<input type="radio"/> VRV9517UWAC34-A-99	100	64
<input type="radio"/> Timmie en Lauw wifi	80	96

*Note: When RSSI of the selected WiFi network is lower than 15%, the connection may be unstable, please select other available network or shorten the distance between the device and router.

OK Refresh

Web Ver:1.0.0

Help

Please refresh repeatedly if there is no desirable wireless access point available.

Please take care the inverter is installed within reach of your local Wi-Fi network.

Step 7 — Enter the password to your local Wi-Fi network. You can click the eye to show the password. This is the same password you use on other devices to connect to the internet, it may be on the back of your home router.

The screenshot shows a web-based configuration interface for a router. On the left is a sidebar with menu items: Status, Quick Set (highlighted in orange), Advanced, Restart, and Reset. The main content area is titled 'Quick Set' and contains the following fields and controls:

- Network name (SSID):** A text input field containing 'Your home Wi-Fi network' and a 'Search' button. A note below reads '(Note: case sensitive)'.
- Password (8-64 bytes):** A text input field with a red border and a toggle icon (an eye) on the right. A note below reads '(Note: case sensitive)'.
- Obtain an IP address automatically:** A dropdown menu currently set to 'Enable'.
- IP address:** A text input field.
- Subnet mask:** A text input field.
- Gateway address:** A text input field.
- DNS server address:** A text input field.

At the bottom of the main area, there is a note: **★Note: After clicking Save, the system will restart immediately.** and a 'Save' button.

On the right side, there is a 'Help' sidebar with the following text:

In this page, you can click the "Search" button to automatically search for nearby wireless access point, and connect your device to it by setting the network parameters.

★Note: If you haven't set this kind of device before, please follow the setup wizard.

★Note: After clicking Save, the system will restart immediately.

You need to re-login the configuration interface after restart.

At the bottom of the page, it says 'Web Ver:1.0.0'.



WARNING! Passwords are case sensitive. If using an iPad, iPhone or other tablet device, please ensure that the first character of the password hasn't automatically become uppercase.

Step 8 — A) If your local Wi-Fi router is set to assign IP addresses automatically click **SAVE** to finish the setup. This is the most used method.

B) If you have a business network, disable the option “Obtain an IP address automatically” and enter the next four fields accordingly and click **SAVE** to finish the setup.

The screenshot shows the autarco web interface for Wi-Fi configuration. On the left is a navigation menu with 'Quick Set' selected. The main area has the following fields: 'Network name (SSID)' with the value 'Your home Wi-Fi network' and a 'Search' button; 'Password (8-64 bytes)' with a masked input; 'Obtain an IP address automatically' set to 'Enable' (highlighted with a red box); 'IP address', 'Subnet mask', 'Gateway address', and 'DNS server address' as empty input fields. A 'Save' button is at the bottom right. A note states: '★Note: After clicking Save, the system will restart immediately.' A 'Help' sidebar on the right provides instructions: 'In this page, you can click the "Search" button to automatically search for nearby wireless access point, and connect your device to it by setting the network parameters.' and two additional notes: '★Note: If you haven't set this kind of device before, please follow the setup wizard.' and '★Note: After clicking Save, the system will restart immediately. You need to re-login the configuration interface after restart.'

Upon clicking **SAVE**, the Wi-Fi stick will restart and try to connect to your Wi-Fi network. If this succeeds, the AP of the stick will be disabled so no one can log in to it, and all three lights will be solid.

If the green light is not solid, please try the following:

- Reconnect to the AP of the stick.
- If the AP is not visible, press and hold the reset button on the stick for 10 seconds to reset the stick and enable the AP mode.
- Follow step 1 through 8.
- Ensure that your router Wi-Fi channel is set to 1 to 11 (not 12 or 13)

Step 9 — Setup is complete, all three LEDs are solid on.

3.3 MyAutarco (Monitoring Platform) Access

Once the Autarco server is successfully receiving monitoring messages, you need to link the data to a specific system (digital twin) in Helios and generate end customer logins to MyAutarco.

By entering and pairing the serial numbers for these items, Autarco's software knows on which system, inverter and string the received monitoring data should be allocated. We then start visualizing the data in MyAutarco for both Dealer and end customer.

You will receive your login details after the installer has registered your system with Autarco.



NOTE TO INSTALLER

Before registering this system with Autarco please confirm the following from your customer regarding the creation of their monitoring account and kWh guarantee certificates:

- First name;
- Last name;
- Gender;
- E-mail address;
- Telephone number;
- Exact street address of this system.

You can access this output data on our monitoring website: <http://my.autarco.com>.

4 Stick Reset



The reset button has two functions.

- Press the reset button once to force a message to be sent to the Autarco server immediately.
- Press and hold the reset button for 10 seconds to reset the stick to the factory defaults. The LEDs will switch off momentarily. This will then enable the AP.

CONGRATULATIONS!

Now the inverter is connected to your local Wi-Fi and communicating its output data to our server.

5 Troubleshooting

5.1 The stick has no power ('PWR' indicator is off)

If the inverter is powered on, the Stick is correctly installed and the Address setting is '01', then the stick may be faulty or internal cables have been broken.

Please try to install another stick, carefully paying attention not to twist the blue body of the Monitoring stick.

5.2 The 'PWR' light is on, but the 'COM' light is off

The Wi-Fi Stick is powered up, but cannot successfully receive data from at least one of the connected inverters.

1. Press the button on the back of the Stick once briefly. (This will attempt to force a connection)
2. Check the Inverter Address Setting.

If the Wi-Fi Stick is only monitoring a single inverter, then the Inverter Address setting must be "01".

To check the Inverter Address, use the up and down buttons on the inverter, go to Settings -> Set Address.

This Address is used to identify inverters when there are multiple inverters monitored by a single device.

5.3 Signal quality

The most common reason why the Wi-Fi stick may fail to establish a robust connection with the remote Autarco server, is weak Wi-Fi connectivity with the local router. Check whether the stick gets sufficient signal.

- Check the signal quality in §2.2 step 6.
- If the signal quality is below 30%, install one or more Wi-Fi repeaters between the local router and the inverter.
- Make sure the SSID of the Wi-Fi repeater is different from the SSID of the router, for example by adding "-extended". Hereby you make sure to connect the Wi-Fi stick to the repeater and not directly to the router.
- Follow the instructions in §2.2 after installation of the Wi-Fi repeater.

A signal quality of 30% or more is sufficient.

5.4 Local router settings

In case signal quality is sufficient, or you cannot connect to the local Wi-Fi network at all, please check the settings below on the **local router** to secure and optimize Wi-Fi connectivity.

Log on to the router by browsing to the router's IP address using a computer, laptop, tablet or mobile phone connected to the router's wireless network. If you don't know the IP address of the router, please see the following web page:

<http://www.computerworld.com/article/2474776/network-security-find-the-ip-address-of-your-home-router.html>



WARNING! Autarco does not know and has no way of knowing the router's username and password. Default usernames and passwords depend on the router brand and series.

On the router, try changing the following settings:

- Many routers are configured to use multiple protocols from the Wi-Fi 802.11 family, e.g. b/g/n. This is often called 'mixed mode'. Configure the router to only use 802.11n, or only 802.11g. On some routers, the alternatives are 802.11b/g/n and 802.11b/g; in these cases select the 802.11b/g option (i.e., as "non-mixed" as possible).
- Make sure the Wireless Channel is between 1 and 11.
- Set Wi-Fi encryption to only one encryption type, such as WPA2-Personal or WPA2-PSK. Disable mixed or multiple encryption types.
- Certain characters !@#\$%&*()_+=[\{}|;:","./<>? are not allowed on all router/stick combinations. Preferably use only alphanumeric characters: a-z, A-Z and 0-9 for the SSID and Wi-Fi password.
- The router should be assigning IP addresses dynamically to connected devices. This is called DHCP. Enable DHCP on the router.
- Some routers require a Region setting to be specified in order to function correctly.



WARNING! Changing some of these routers settings may cause other connected devices such as computers, laptops, tablets or mobile phones to disconnect. Re-connect them using the new settings.