Hello!

Operating Manual

Getting to know your Sunny Boy

June 2019

SkyEnergy Powered by

SMA ENERGY THAT CHANGES

Hello.
A quick note...

As a trusted SMA PowerUP Partner, you can be sure the following instructions provided by Sky Energy are best practice when it comes to operating your Sunny Boy. Strictly following these instructions will help keep your Sunny Boy working optimally and in excellent condition for many years to come.

From the Sky Energy Technical and Maintenance team

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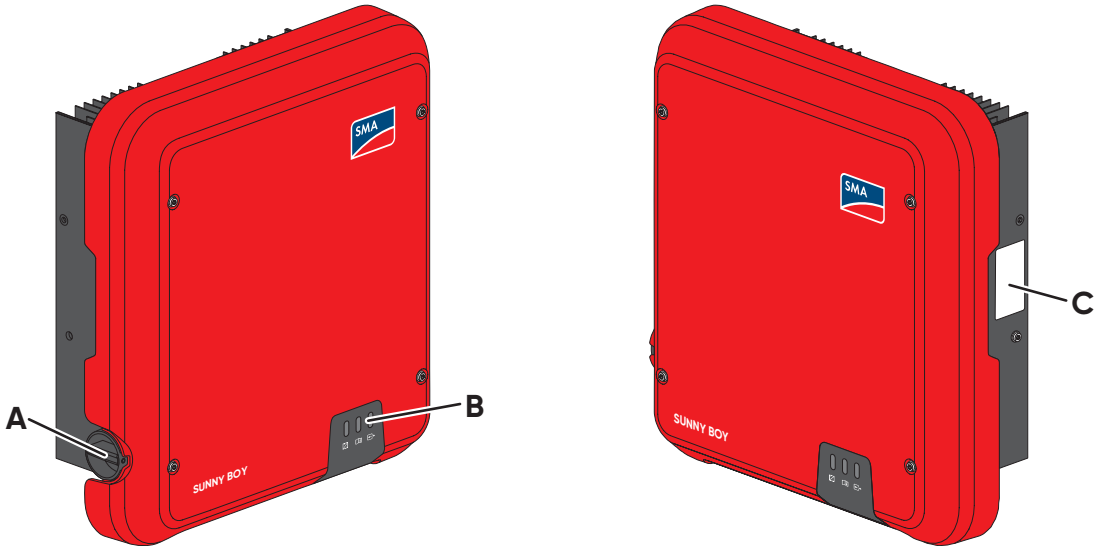
SMA POWERUP
Trusted Solar Energy Partner

00. Contents

01.
Getting to know your Sunny Boy

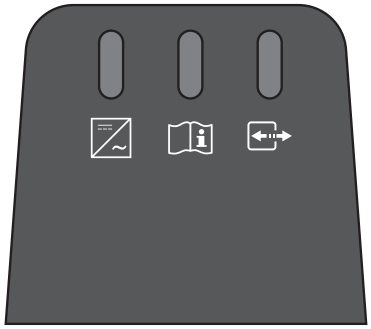


The Sunny Boy is a transformerless PV inverter with two MPP trackers which converts the direct current of the PV array to grid-compliant alternating current and feeds it into the utility grid.

Position	Designation
A	**DC load-break switch** The inverter is equipped with a DC load-break switch. If the DC load-break switch is set to the position I, it establishes a conductive connection between the PV array and the inverter. Setting the DC load-break switch to the O position interrupts the DC electric circuit and completely disconnects the PV array from the inverter. Disconnection takes place at all poles.
B	**LEDs** The LEDs indicate the operating state of the inverter.
C	**Type label** The type label uniquely identifies the inverter. The type label must remain permanently attached to the product. You will find the following information on the type label: • Device type (Model) • Serial number (Serial No.) • Date of manufacture • Identification key (PIC) for registration in Sunny Portal • Registration ID (RID) for registration in Sunny Portal • WLAN password (WPA2-PSK) for the direct connection to the user interface of the inverter via WLAN • Device-specific characteristics

Symbol	Explanation
	**Inverter** Together with the green LED, this symbol indicates the operating state of the inverter.
	**Observe the documentation** Together with the red LED, this symbol indicates an error.
	**Data transmission** Together with the blue LED, this symbol indicates the status of the network connection.
	**Risk of burns due to hot surfaces** The product can get hot during operation. Avoid contact during operation. Prior to performing any work on the product, allow the product to cool down sufficiently.
	**Danger to life due to electric shock** The product operates at high voltages. Prior to performing any work on the product, disconnect the product from voltage sources. All work on the product must be carried out by qualified persons only.
	**Observe the documentation** Observe all documentation supplied with the product.
	**Danger** This symbol indicates that the inverter must be additionally grounded if additional grounding or equipotential bonding is required at the installation site.
	**Direct current**
	**The product is has no galvanic isolation.**
	**Alternating current**
	**WEEE designation** Do not dispose of the product together with the household waste but in accordance with the disposal regulations for electronic waste applicable at the installation site.
	**CE marking** The product complies with the requirements of the applicable EU directives.
IP65	**Degree of protection IP65** The product is protected against dust intrusion and water jets from any angle.
	**The product is suitable for outdoor installation.**
	**RCM (Regulatory Compliance Mark)** The product complies with the requirements of the applicable Australian standards.

02.
LED Signals



LED	Status	Explanation
Green LED	Flashing: 2 s on 2 s off	**Waiting for connection conditions** The conditions for feed-in operation are not yet met. As soon as the conditions are met, the inverter will start feedin operation.
	Flashing quickly	**Update of central processing unit** The central processing unit of the inverter is being updated.
	Glowing	**Feed-in operation** The inverter feeds in with a power of at least 90%.
	Pulsing	**Feed-in operation** The inverter is equipped with a dynamic power display via the green LED. Depending on the power, the green LED pulses fast or slow. If necessary, you can switch off the dynamic power display via the green LED.
	Off	The inverter is not feeding into the utility grid.
Red LED	Glowing	**Event occurred** If an event occurs, a distinct event message and the corresponding event number will be displayed in addition on the inverter user interface or in the communication product.
Blue LED	Flashes slowly for approx. one minute	**Communication connection is being established** The inverter is establishing a connection to a local network or is establishing a direct connection to an end device via Ethernet (e.g. computer, tablet PC or smartphone).
	Flashes quickly for approx. two minutes	**WPS active** The WPS function is active.
	Glowing	**Communication active** There is an active connection with a local network or there is a direct connection with an end device via Ethernet (e.g. computer, tablet PC or smartphone).

03.
Connect to a local wireless network

There are many benefits for connecting your Sunny Boy inverter to the internet, such as real-time monitoring, remote fault diagnosis, easy access to SMA online platforms, among many others.

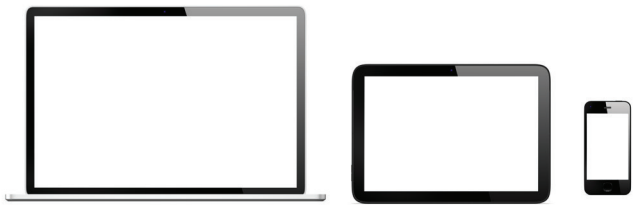
New generation Sunny Boy inverters now come equipped with built-in WiFi and an Ethernet port for monitoring.

03.
Preparation Checklist

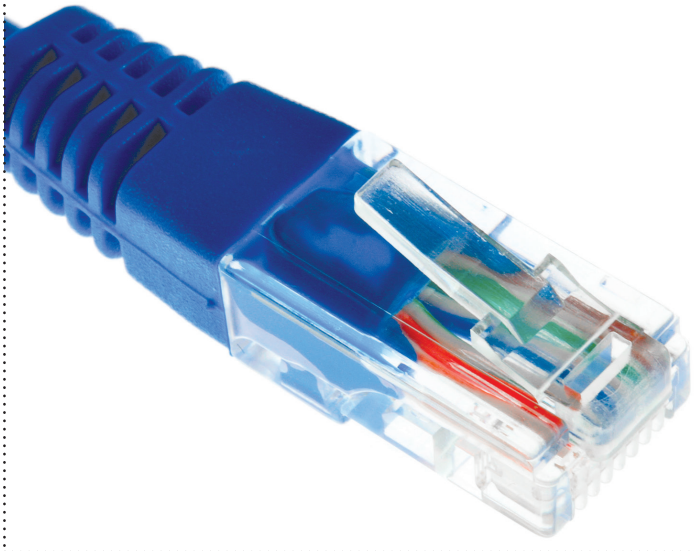
1 of 2

1. Bring your smartphone, tablet or laptop with Ethernet patch cable along to the site

If the installation site is remote, it is your first time commissioning this type of inverter, or it is known the inverter's WiFi has been deactivated, it is recommended you bring a computer with an Ethernet port and an Ethernet patch cable. This will make the configuration process easier should you experience any difficulty. Otherwise, any smartphone or tablet with WiFi capability should be sufficient.



Laptop, tablet or smartphone



Ethernet patch cable

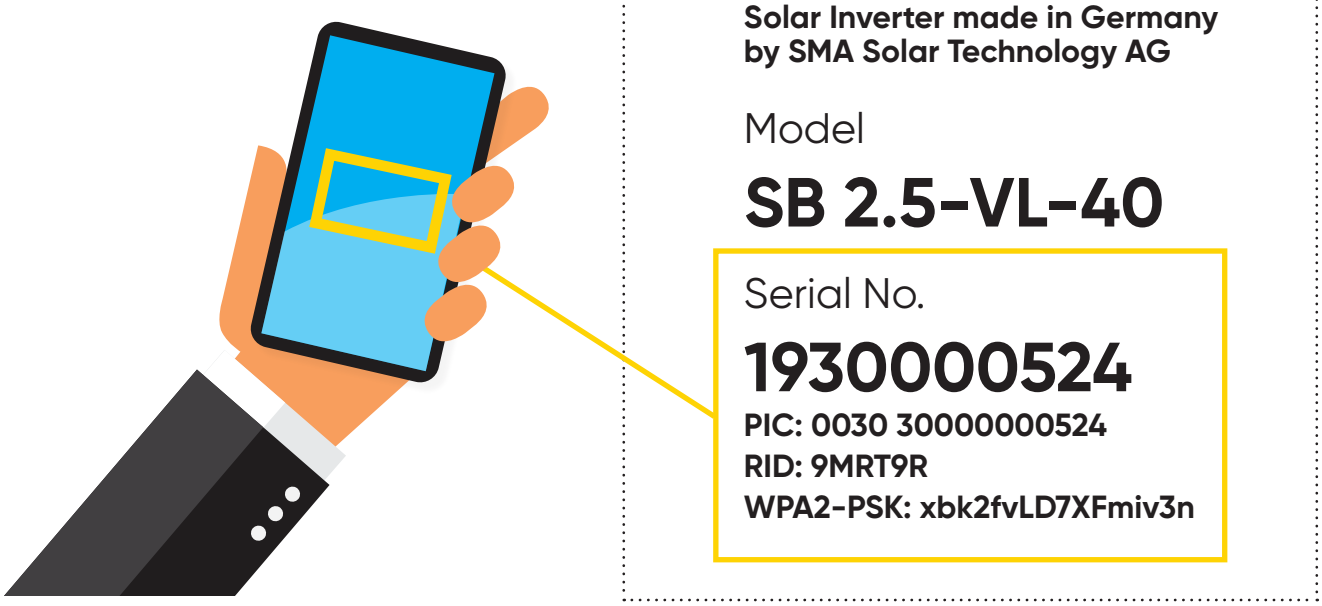
03.
Preparation Checklist

2 of 2

2. Take a picture of the serial number, PIC and RID

Information such as the serial number, PIC and RID can be found on the inverter label and the documentation that comes with the inverter. After the device is installed, information on the label may become difficult to read.

If this information is not on hand (after leaving the installation site), taking a picture of the label and having it readily available will be useful for future reference. This information is necessary for registration to Sunny Portal and may be needed during commissioning.



03.
Take note

There are two different ways to connect your Sunny Boy inverter with WiFi to a local wireless network:

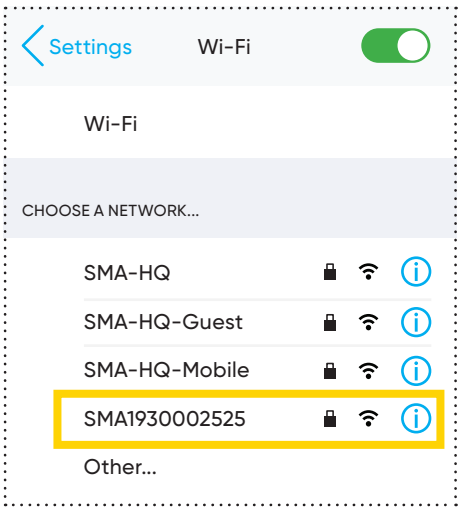
Option a) Connecting via WiFi using your laptop/smartphone/table

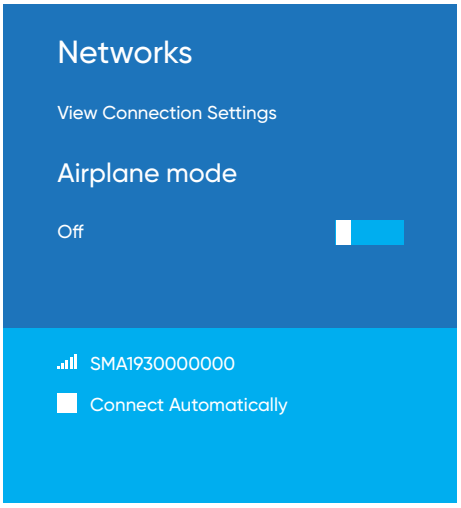
Option b) Connecting via an Ethernet cable using your laptop

03.
(Option a) – Step 1
Connecting to the Inverter

Connecting via WiFi using your laptop/smartphone/tablet

Access your device's WiFi connection in order to detect and connect to the Sunny Boy inverter which will be in the format of SMA19xxxxxxxx.





For a brand new installation, the WiFi password (Network Security Key) is **SMA12345** (mind the capital letters).

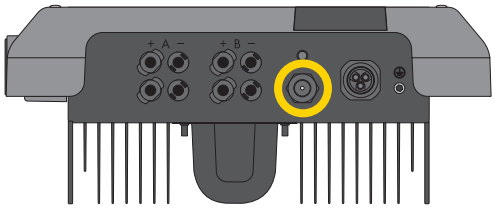
After the initial inverter setup through the '**Installation Assistant**', this initial WiFi password will permanently change to the WPA2-PSK password written on the inverter label. Be mindful of the password as it is case sensitive.

The initial WiFi password will also change to the WPA2-PSK password after 10 hours of operation whether or not the initial setup has been performed.

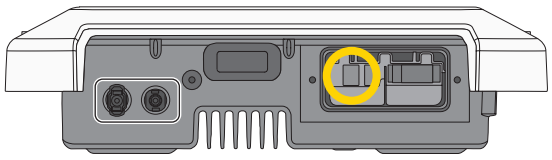
03.
(Option b) - Step 1
Connecting to the Inverter

Connecting via an Ethernet cable using your laptop

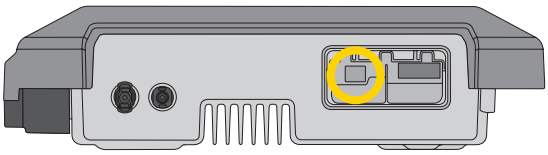
Connect the Ethernet cable to the computer and to the inverter port as shown in yellow in the image below.



SB3.0/3.6/4.0/5.0-1AV-40



SB2.5-1VL-10



SB1.5/2.5-1VL-40

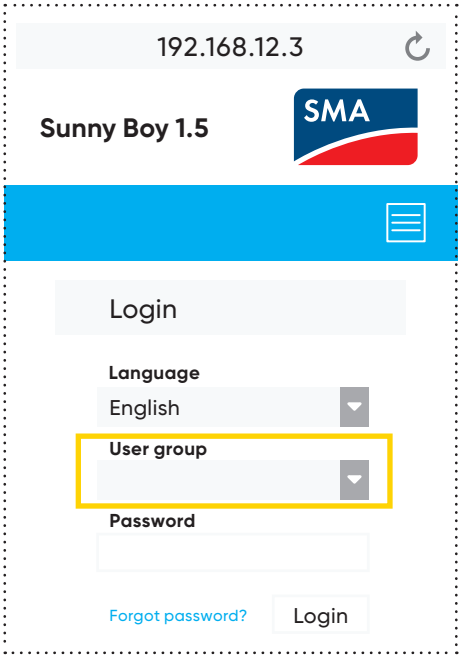
03.
Step 2 - Log in to the inverter interface

Once you have connected to the inverter via WiFi or with a cable, go to your internet browser and type in the default IP address into the address bar according to the image below.

Connection Method	IP Address	Example
WLAN/WiFi/Wireless	192.168.12.3	
Ethernet Cable	169.254.12.3	

This will log you into the Sunny Boy's web user interface. To perform the initial configuration, you must login as '**Installer**' by changing the **User Group** dropdown.

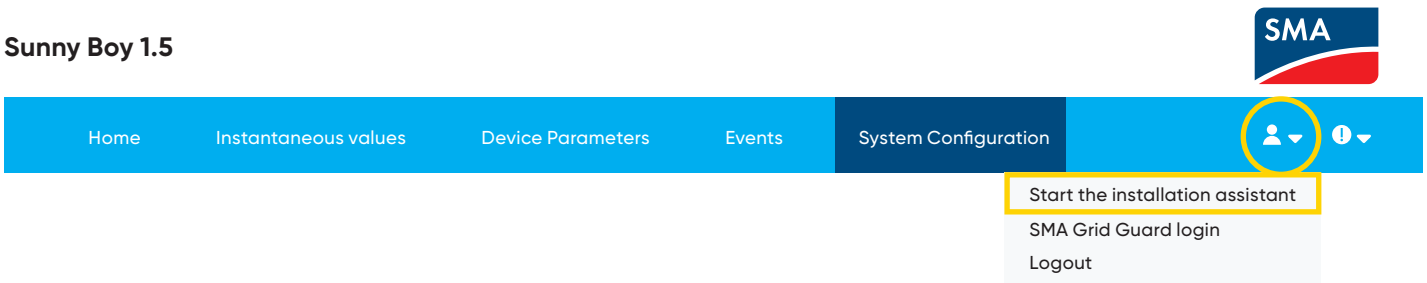
The first time you login, it will ask you to create a password, so make sure you keep the password in your records. The password will be used to register the inverter in **Sunny Portal**.



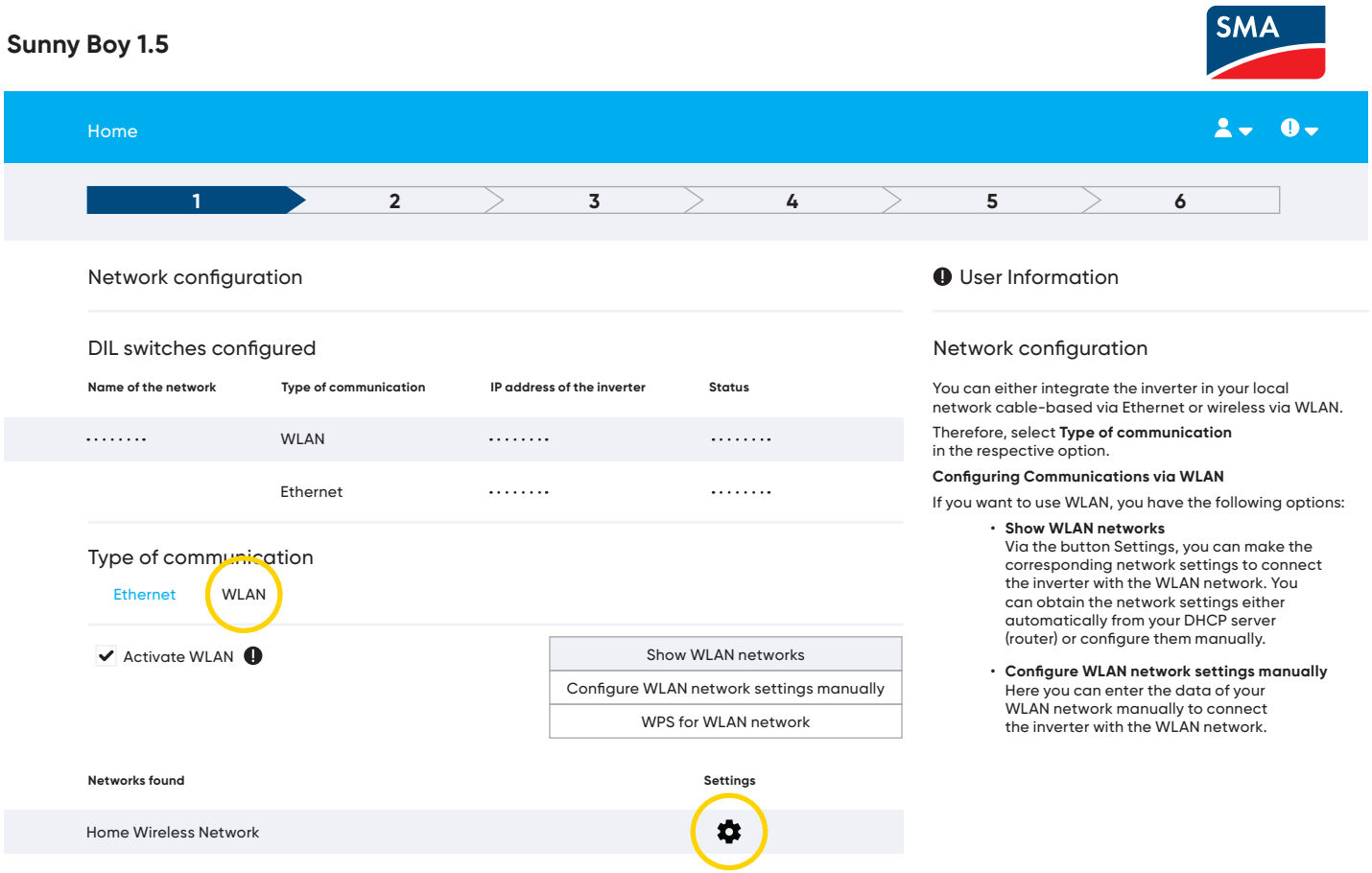
03.
Step 3 – Network configuration to a local wireless router

Once logged in, you will have the option to setup the inverter using the '**Installation Assistant**'.

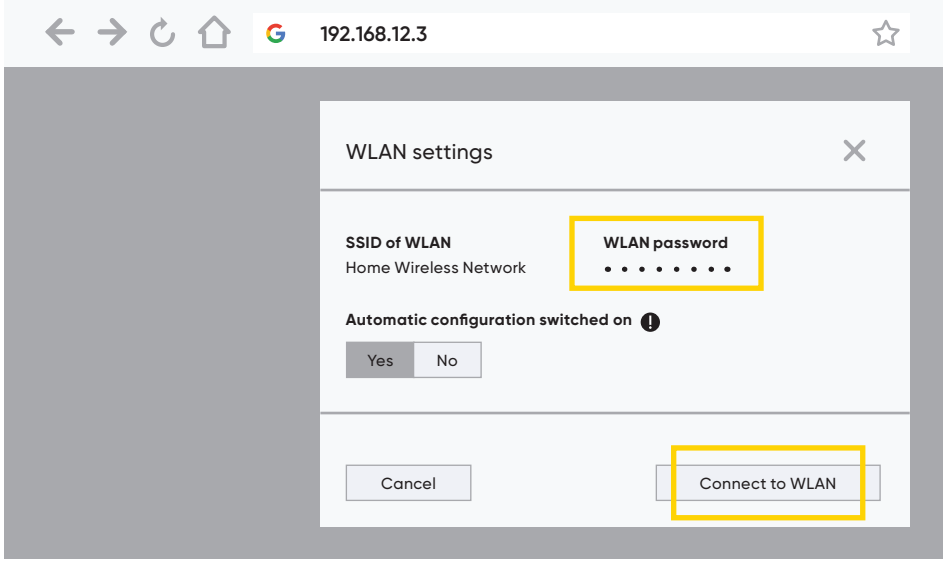
If the "**Configuration with Installation Assistant**" does not appear, it can be selected from the symbol in the top right-hand corner of the interface shown below.



To synchronize the inverter to your local wireless network, select the "WLAN" tab and search for the local wireless network the inverter is connected to. Select that wireless network's "Settings" icon.



If the wireless network has a password, enter it in the area shown and then click "Connect to WLAN"



The router will then assign an IP address to the inverter if DHCP is enabled in the router. The new IP address will be shown in the network configuration page.

Note the new IP address of the inverter as this is how the customer will be able to login in the future.

Network configuration

DIL switches configured

Name of the network	Type of communication	IP address of the inverter
SMA Wireless	WLAN	0.0.0.0
	Ethernet	169.254.12.3

Click "Save and Next". The Sunny Boy inverter has now been connected to the local wireless network. To complete commissioning, continue with the prompts in the Installation Assistant.

Notes

Notes

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1300 787 488
team@skyenergysystems.com.au
www.skyenergysystems.com.au