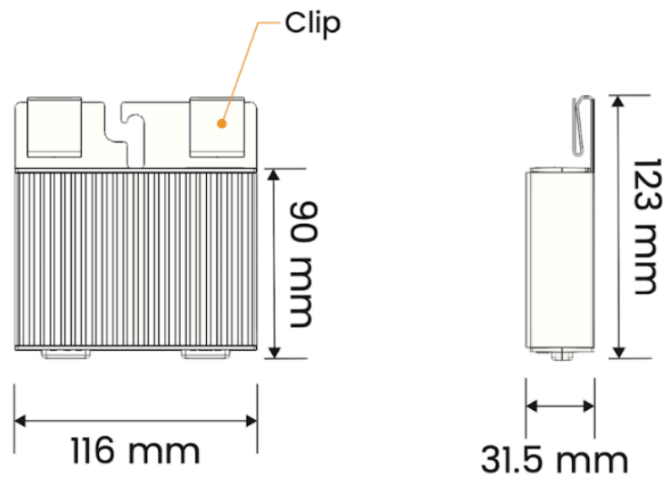


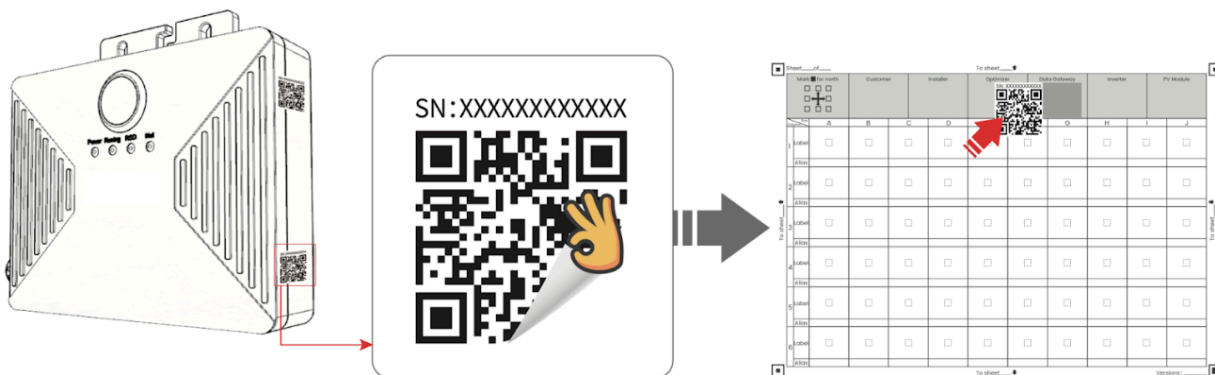
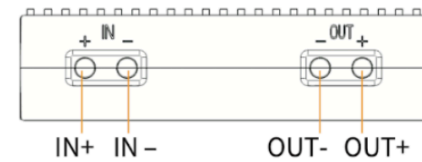
1. Product overview



Model Description

Smart Optimizer ARCHAI iOPT
800W
& Data Gateway ARCHAI GT
Quick Installation Guide

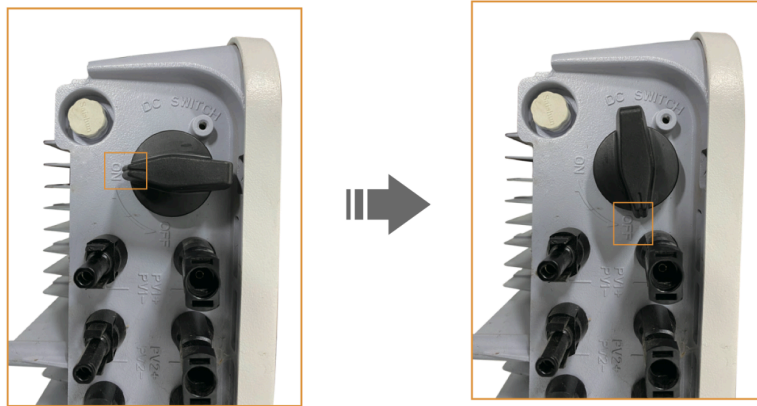
Interface definition



Step 1: Power Down & Disconnect

Before installation, **ensure the inverter is fully shut down:**

- Set the **DC switch to OFF**.
- Disconnect the inverter from the module array.



Pic label: DC switch in OFF position

2. Installing the Optimiser

Step 1: Power Down & Disconnect

Before proceeding with installation, **ensure the inverter is completely powered down:**

- Turn the **DC switch to OFF**.
- Disconnect the inverter from the module array.

 **Illustration:** DC switch in OFF position

Step 2: Plan Installation Layout

Proper placement is key for seamless connectivity between the Optimiser, components, and adjacent Optimisers.

Recommended cable lengths:

- **Optimiser IN+:** 200mm exposed
- **Optimiser IN-:** 1100mm exposed
- **Optimiser OUT+/OUT-:** 750mm

ARCHAI iOPT 800W Smart Optimiser and Gateway Operating instructions

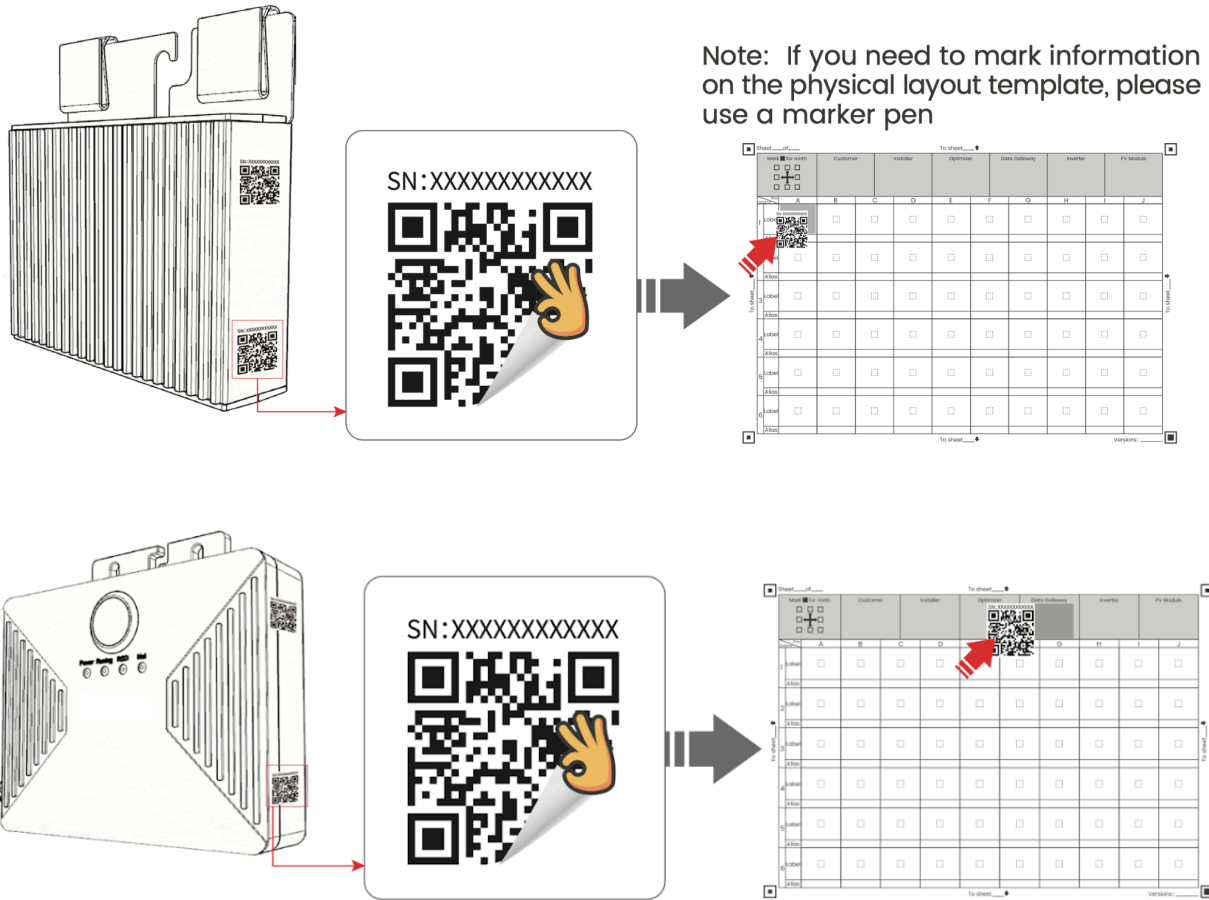
Step 3: Install Optimiser & Data Gateway

Once the installation points are confirmed:

- Mount the **Optimiser and data gateway** in close proximity to the strings while maintaining distance from the inverter.
- Remove the **SN label** and attach it to the **physical layout template** for easy identification.

Why is this important?

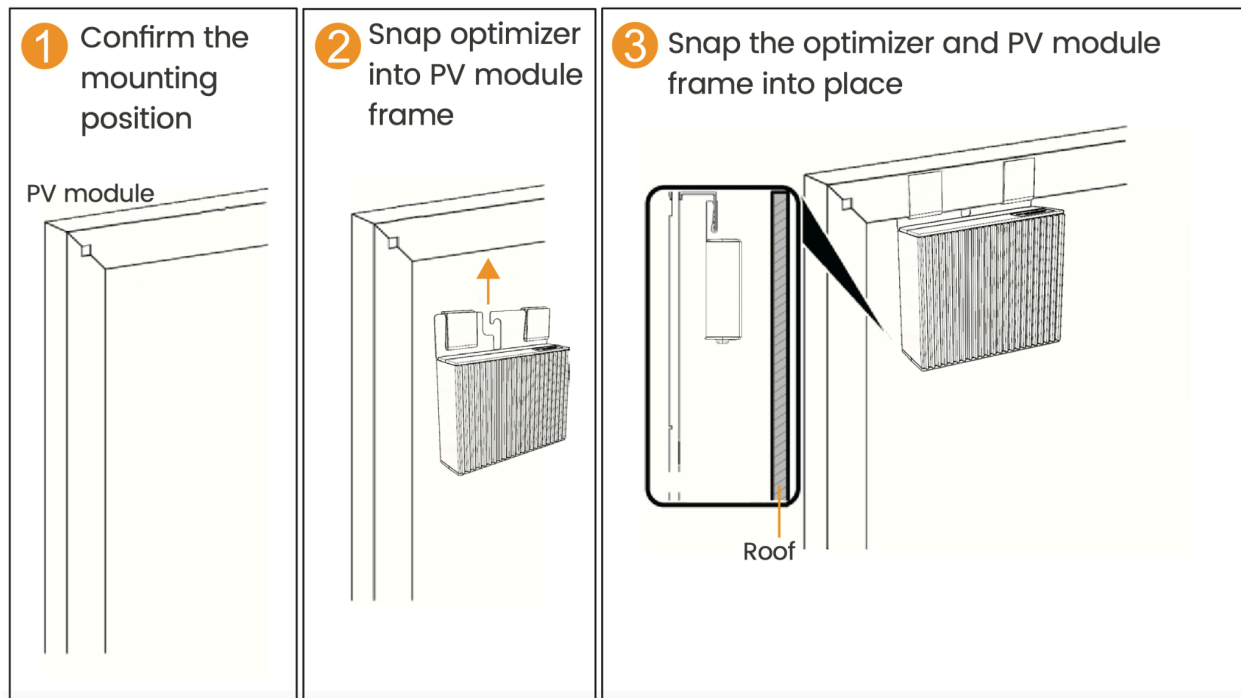
Each Optimiser must be mapped to its exact physical location. In case of a failure, this layout enables **quick identification and replacement** of the faulty Optimiser.



Step 4: Mounting the Optimiser

After Removing the the SN label from the back of the Optimiser:

1. **Confirm the mounting position** on the PV module bezel.
2. **Snap the Optimiser into the PV module frame** securely.
3. Ensure the Optimiser is **firmly locked in place** for a stable connection.



Secure the Optimiser

Attach the Optimiser to the **outer frame** on the back of the PV module using the clips. Firmly **snap the clips into place** to ensure a secure installation.

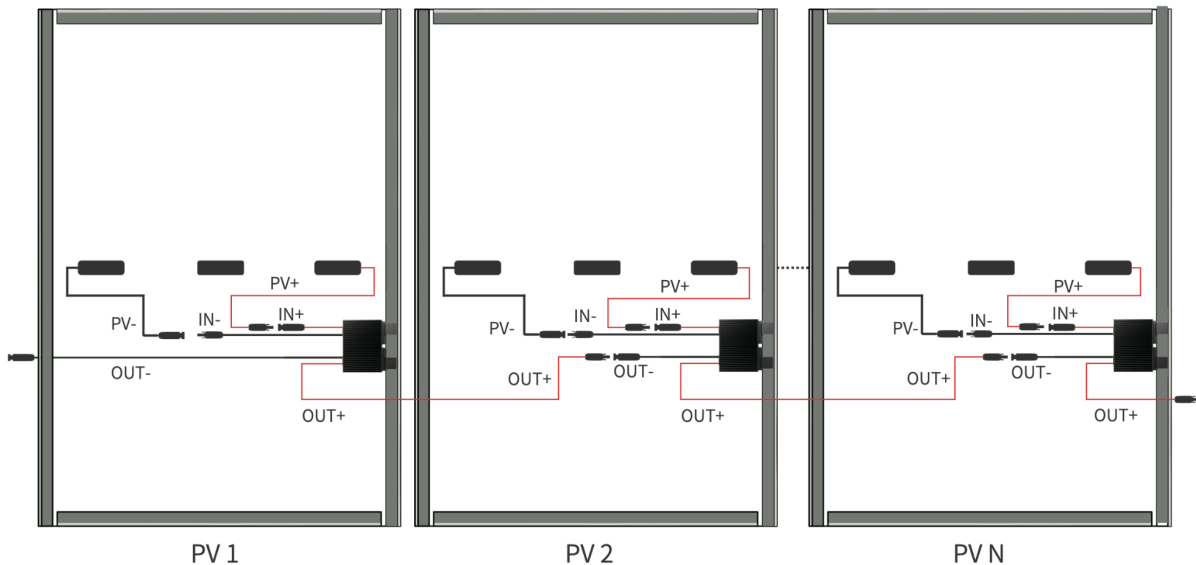
3. Optimiser Cable Connections

Step 1: Proper Cable Installation

Follow the correct wiring sequence to prevent damage to the Optimiser or PV module:

1. **Connect IN+ and IN-** of the Optimiser to the **positive and negative terminals** of the PV panel junction box.
2. **Link OUT+ of the first Optimiser to OUT-** of the next Optimiser.

3. **Repeat** this connection sequence for all remaining Optimisers.



⚠ Caution!

During Installation:

- ✓ Connect the input cables first (PV Optimiser IN+ and IN-).
- ✓ Connect the output cables second (PV Optimiser OUT+ and OUT-).

During Disassembly:

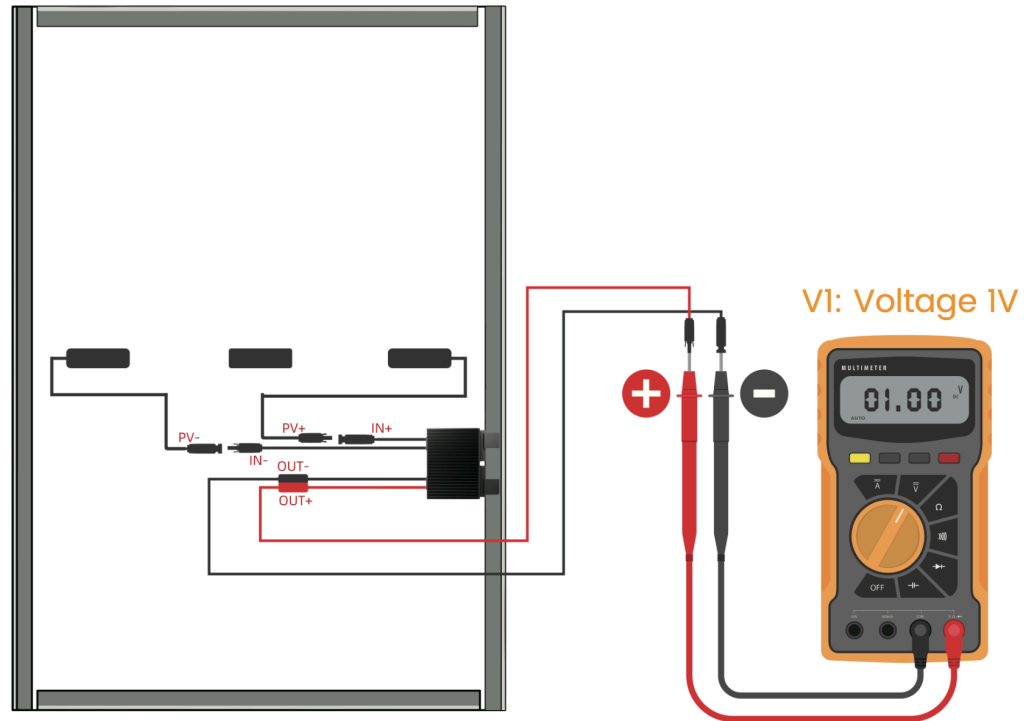
- ✗ Disconnect the output cables first (PV Optimiser OUT+ and OUT-).
- ✗ Disconnect the input cables second (PV Optimiser IN+ and IN-).

Following this order ensures **safe and proper operation** of the Optimiser.

Step 2: Optimiser Detection

1. **Connect the Optimiser input (IN)** to the PV junction box.
2. **Measure output voltage:**
 - Use a **multimeter**:
 - Connect the **positive probe** to the Optimiser's **OUT+**.
 - Connect the **negative probe** to the Optimiser's **OUT-**.
 - Check the **output voltage** of the individual Optimiser to ensure proper functionality.

ARCHAI iOPT 800W Smart Optimiser and Gateway Operating instructions

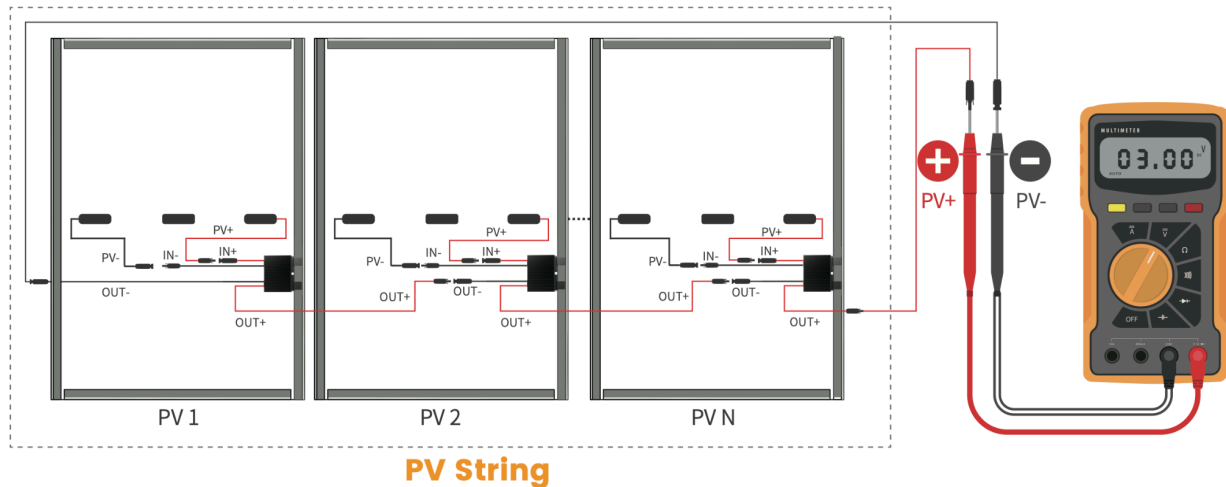


ARCHAI iOPT 800W Smart Optimiser and Gateway Operating instructions

Voltage (V_i)	Status	Solution
$0.9V \leq V_i \leq 1.1V$	Optimizer Normal	✅ No action needed
$V_i > 1.1V$	Optimizer Fault	🔄 Replace the optimizer
$V_i < 0.9V$	Possible Issues:	🔍 Follow the steps below:
	Weak light conditions	1 Measure voltage under sufficient light
	Optimizer input not connected	2 Ensure the optimizer input cable is properly connected
	Incorrect wiring	3 Adjust and reconnect the optimizer input to the PV module output
	Optimizer fault	4 If voltage is still abnormal, replace the optimizer
$V_i \approx -1V$	Multimeter probes reversed	🔄 Swap positive and negative probes

Final Step:

After confirming the Optimiser and input cables are properly connected, **connect the Optimiser output cable**. Then, under sufficient light, measure the **voltage of the entire photovoltaic string** to verify proper operation.



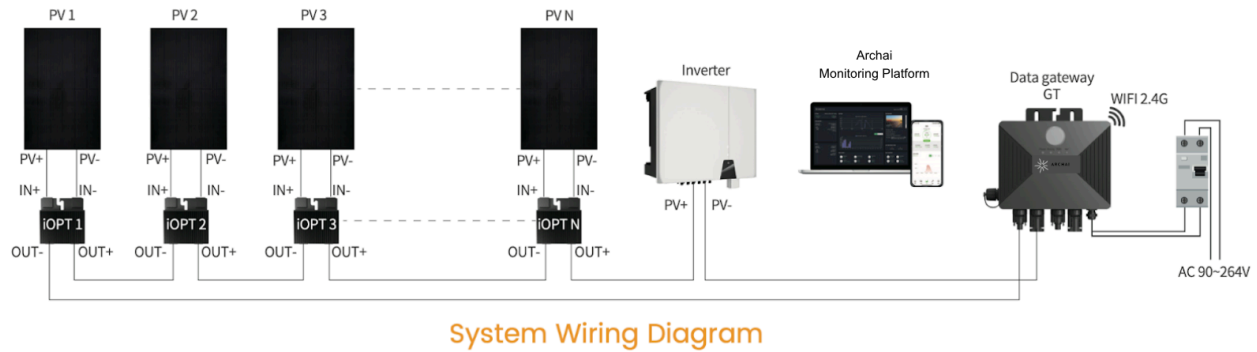
ARCHAI iOPT 800W Smart Optimiser and Gateway Operating instructions

Voltage Issue	Possible Causes	Suggested Solutions
String Voltage = 0V	- PV module strings have an open circuit	1 Check for an open circuit in the string.
	- Cables are not correctly assigned to the string	2 Ensure cables are connected to the correct string.
String Voltage = Negative	- Multimeter probes are reversed	1 Swap the positive and negative multimeter probes.
	- Incorrect cable labeling	2 Label cables properly to avoid confusion.
String Voltage < Expected Voltage	- Some optimizer inputs are not connected	1 Check if all PV modules and string cables are properly connected.
	- Some optimizer outputs are not connected	2 Ensure all optimizer outputs are connected.
	- Some optimizer outputs are reversed	3 Check if any optimizer outputs are reversed.
String Voltage > Expected Voltage	- The actual number of optimizers in the string is greater than expected	1 Verify the correct number of optimizers in the string.
	- PV module is connected directly to the string, bypassing the optimizer	2 Ensure the PV module is connected to the optimizer, not directly to the string.

4. Installing the GT & Connecting the Strings to the Inverter

1. **Install the GT** near the inverter for optimal connectivity.
2. **Connect OUT+** of the last Optimiser to the **PV+** terminal on the inverter.
3. **Connect OUT-** of the first Optimiser to the **PV-** terminal on the inverter through the magnetic ring of the GT.
4. Once connections are verified, **connect the GT to the MCB** and then to the **AC**.

ARCHAI iOPT 800W Smart Optimiser and Gateway Operating instructions



5. GT Installation & System Power-Up

GT Installation & Setup

- The **GT** is **IP67 waterproof**, meaning it can be used without requiring a distribution cabinet.
- Connect the **AC input** line to the AC power using the **L16-2 waterproof connector**.
- **Check structural mounts:** Ensure they are secure, and all screws are properly tightened.
- **Verify cable connections:** Ensure all cables are connected with correct polarity, with firm and reliable connections, ensuring there are **no short circuits**.

5. System Power-Up & Product Management

Step 1: Turn on the Inverter

- Confirm that the system is correctly connected.
- Ensure the **DC switch** on the inverter is **ON** and that the inverter is powered on.

Step 2: Connect the Data Gateway to Power

- Connect the **data gateway** to a **90-264V AC power supply**.
- Ensure that the **green power indicator** is always on, and the **running indicator** light is also on.
- Verify that the inverter is functioning normally.

Step 3: GT Status Indication

1. Search Optimiser Self-Test & Indicator Status

- Press the center button to turn on the **Running light**.
- Ensure that the **Rapid Shutdown (RSD)** light turns off for an extended period.
- After 5 seconds, **press and hold the button**. The GT enters self-test mode, and the 2, 3, and 4 indicator lights will flash back and forth.

ARCHAI iOPT 800W Smart Optimiser and Gateway Operating instructions

- Release the button, and wait about **10 minutes** for the **Running indicator light** to flash, indicating a successful self-test.
- Press the button again to keep the **Running indicator** continuously on, confirming the Optimiser is working normally.
- If the 3 indicator lights **blink**, this indicates a test failure. In this case, check all connections and rerun the test.
- If the test fails **three times**, please **contact technical support** for assistance.



Four permanently illuminated status indicators from left to right (1, 2, 3, 4)



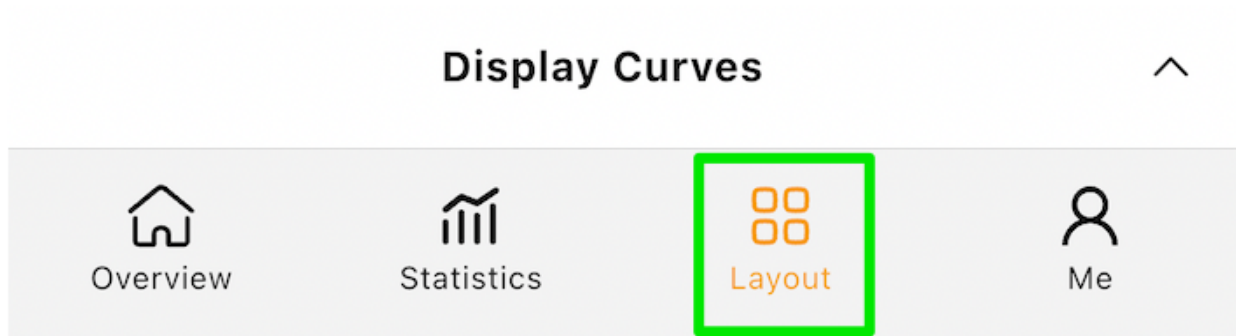
Indicator Status Descriptions

Indicator Lights	Status Description
No indicator lights on	⚠ Incorrect or faulty circuit connection
● 1 on, ● 2 off, ● 3 on, ● 4 on	Optimizer off, network connected normally
● 1 on, ● 2 on, ● 3 off, ● 4 off	Optimizer started, network not connected
● 1 on, ● 2 blinking, ● 3 blinking, ● 4 blinking	Optimizer self-test in progress
● 1 on, ● 2 off, ● 3 off, ● 4 on	Optimizer started, network connected normally
● 1 on, ● 2 blinking, ● 3 on, ● 4 on (or off)	✅ Self-test successful, optimizer running normally
● 1 on, ● 2 off, ● 3 on, ● 4 off	Optimizer off, network not connected
● 1 on, ● 2 off, ● 3 blinking, ● 4 on (or off)	❌ Self-test failed, check connections

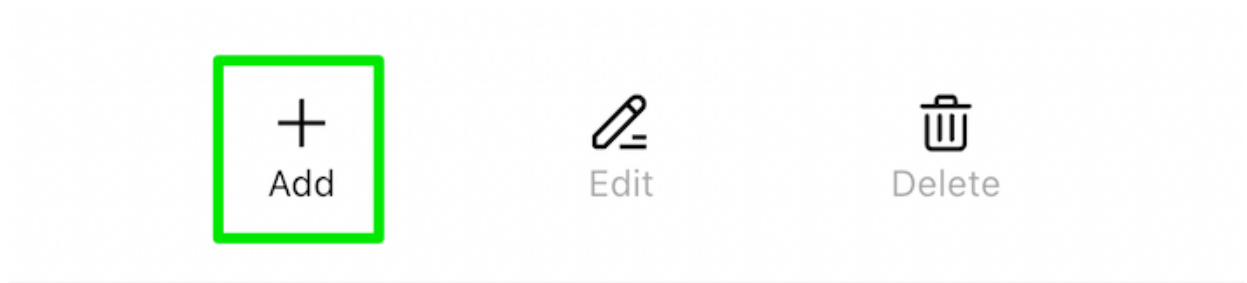
This guide helps you quickly interpret the **indicator status** to identify the Optimiser's operating condition and troubleshoot any issues.

Configuring Panel Layout

Select “Layout”



Select “Add”



ARCHAI iOPT 800W Smart Optimiser and Gateway Operating instructions

Select the code linked the optimiser you wish to add, specify it's position (in the form of rows and columns), then click save. Repeat for each optimise listed within the component list.

1 Component Number 244219000357-0 



Row **2** 2
Column 1

Orientation

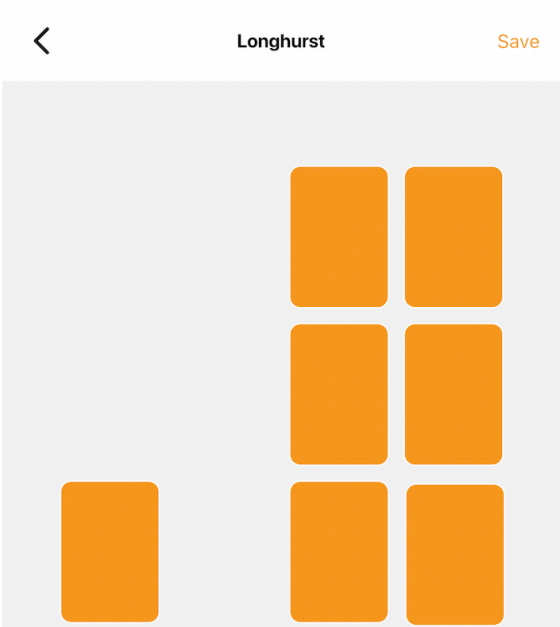
Angle(°) 0°
—  — +

3

Save

ARCHAI iOPT 800W Smart Optimiser and Gateway Operating instructions

Adjust the location of the optimisers by dragging. Click “Save” to finalise.



The Power output for each optimiser will then be displayed. Press and hold to reveal advanced details, including QR reference code to check virtual layout aligns with the physical layout.

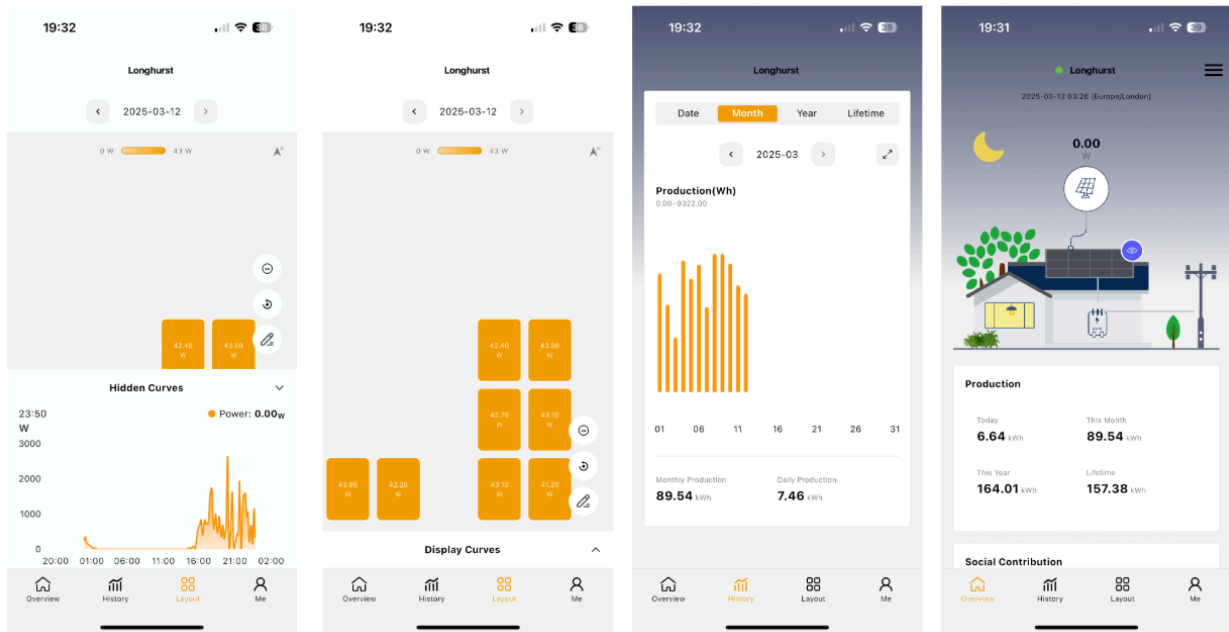


Check the Status of the Power Station

Monitoring via the Archai SolarSync app. [iOS](#) or [Android](#)

Click on **APP OVERVIEW**, then open the drop-down menu in the upper right corner of the page. Select **Layout** to view the status.

After clicking **Layout**, the power plant status will be displayed in various states, as shown below.



Status Clarification

- **Figure 1 - Green Circle in the Upper Right Corner**
The Optimiser is operating normally.
- **Figure 2 - Gray Circle in the Upper Right Corner**
The Optimiser is offline. Please verify that the SN and location information are correct, then search for the device again.
- **Figure 3 - Red Circle in the Upper Right Corner**
The Optimiser has failed and needs to be replaced.