Global Headquarters

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Optimizer&Energy Storage Production Base

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Sungo Energy UK

Add: 60 Windsor Avenue, London SW19 2RR, United Kingdom

Sungo Energy DE

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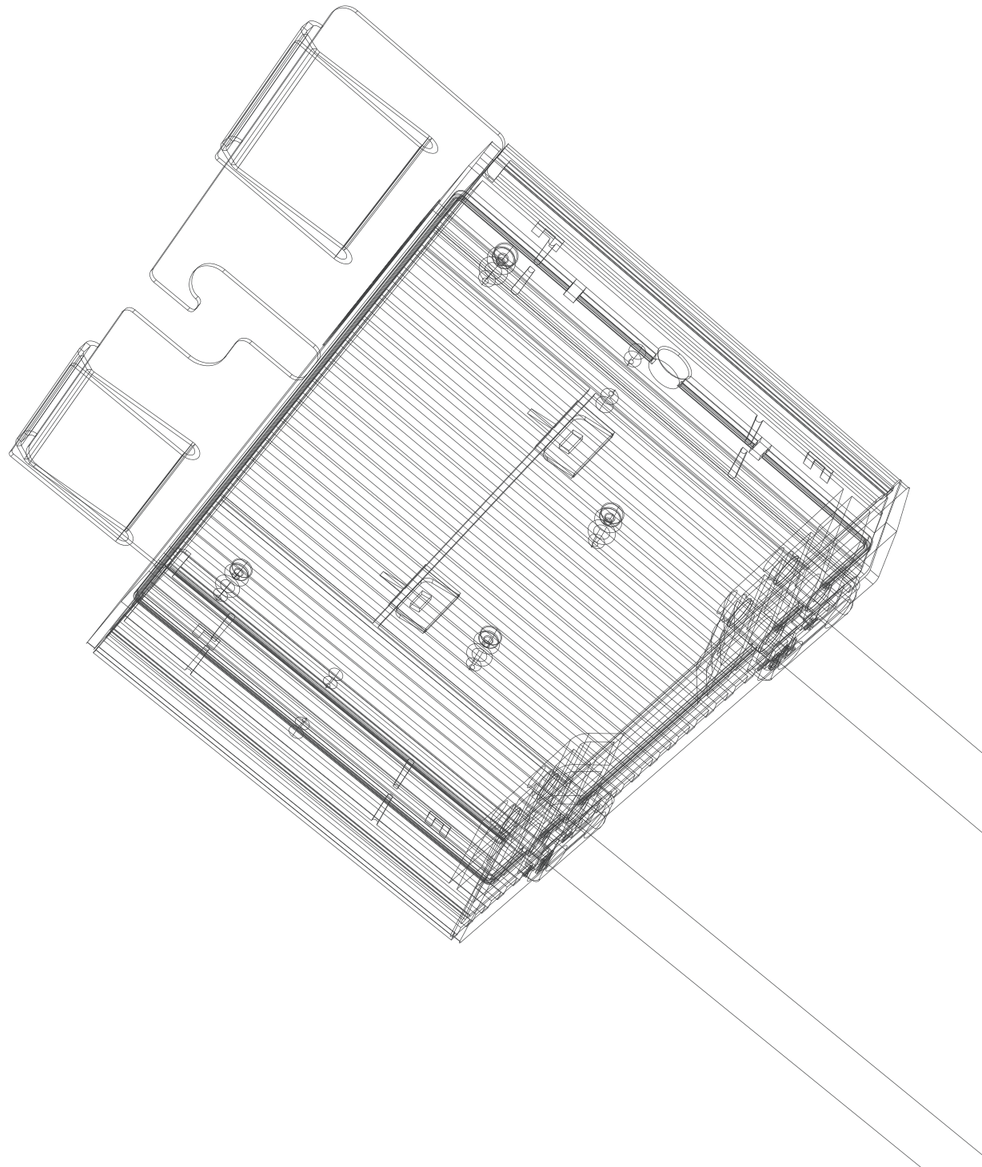
SUNGO-OP-V2-2024 EN

SUNGO
Always Optimized

Smart Optimizer Product Brochure

GO WITH SUNSHINE, ALWAYS OPTIMIZED



SUNGO Energy

SUNGO Energy Technology focuses on the R&D and application of user-side solar+storage products, and is committed to providing global clients with excellent performance, leading-edge solar+storage products and comprehensive energy solutions. We have wide range product lines, including smart optimizers, and lithium-ion battery energy storage systems, which covers the entire industrial chain to meet users' requirements. In the future, we will continue to increase investment in R&D, continuously improve our competitive advantages, and provide global clients with products which are more integrated, easier to install and maintain.

Your green energy keep optimizing

1.5 million
Annual production capacity of smart optimizers

3GW
Optimizer installed capacity

15 years
Industry experience

More than 15%
Average gain per customer

30%
Percentage of R&D staff

30+
Exported countries

Optimizer Application Scenarios


Blocking Shadow


Differentiation Orientation


PV Module Differentiation Attenuation


Power station renovation

Optimizer Product Solutions

SUNGO Energy has been committed to the application and popularization of PV intelligent optimizer to produce more clean energy for users. The autonomously R & D optimizer products integrate optimization,rapid shutdown and module-level monitoring functions, which can effectively help PV systems to realize multi-generation and multi-installation and accurate management.

SUNGO OPT PRO
Smart optimizer
(optimization)

SUNGO iOPT & SUNGO GT
Smart optimizer
(optimization + shutdown + monitoring)

SUNGO iOPT & SUNGO GTC
Smart optimizer
(optimization + shutdown + monitoring)

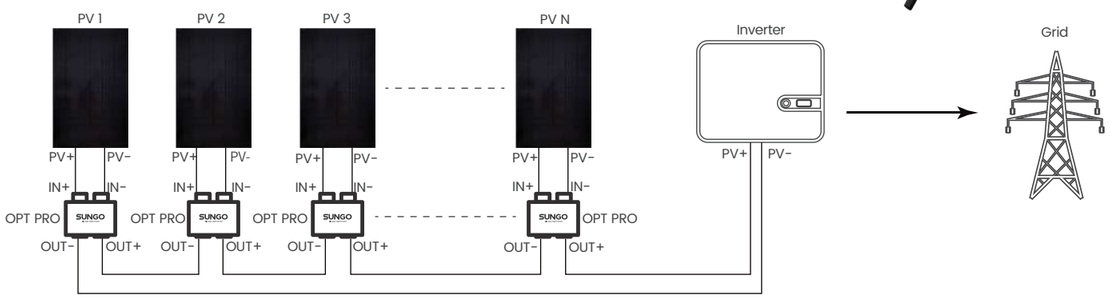
iSungo
Smart Energy Management Platform

Residential and C & I Scenario Solutions
SUNGO OPT PRO

Optimize Power Generation
Fearless of Shading

Features

- Module-level MPPT, no more worries of shading, power generation increased up to **30%**
- Convenient installation, wide range of adaptability, suitable for operating power plant renovation and new power plant installation
- Compatible with all modules on the market and over 99% of inverters
- 25 years products replacement warranty



Technical Parameters

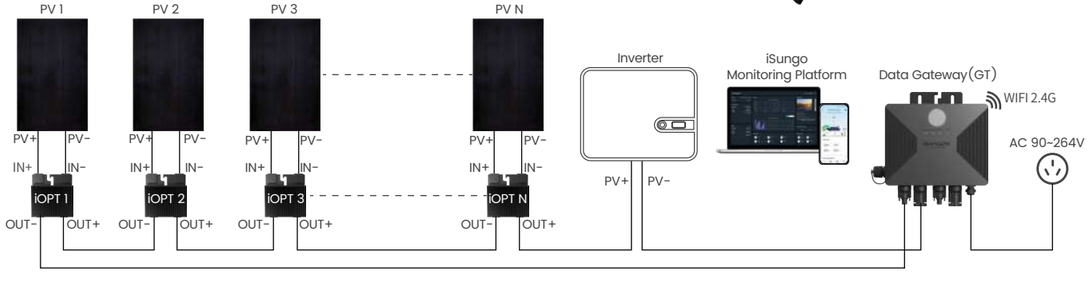
Model	SUNGO OPT PRO
DC Input	
Maximum input power	800W
Maximum operating voltage	70V
MPPT voltage range	7~60V
Maximumcontinuous input current	21A
Maximum input short-circuit current	23A
Night self-consumption	0W
DC Output	
Rated output voltage	58V
Maximum continuous output current	21A
Maximum output power	780W
Maximum system voltage	1500V
Efficiency	
Peak efficiency	99.7%
Power loss @5A	0.9W
Power loss @8A	1.4W
Power loss @12A	2.9W
Power loss @15A	4.5W
Power loss @20A	7.2W
General Data	
Dimensions (W*D*H)	103*21.3*105.3mm
Weight	0.65Kg
Input/output cable length	IN+ 200 / IN- 1100 / OUT+ 750 / OUT- 750mm
Input/output cable size	$4mm^2$(12AWG) / $4mm^2$(12AWG)
Terminals	MC4(compatible)
Protection rating	IP67/NEMA6
Relative humidity	0-100%RH
Operating temperature range	-40~+60°C
Cooling	Natural cooling
Overvoltage category	OVC II
Maximum altitude	≤4000m
Certification	CE
EMC	EN IEC 61000-6-1:2019EN IEC 61000-6-2:2019EN IEC 61000-6-3:2021ENIEC 61000-6-4:2019
Packaging	20pcs/CTN 1080pcs/pallets(20GP)

Residential Scenario Solutions
SUNGO iOPT & SUNGO GT

Optimize Power Generation
Intelligent Management

Features

- Module-level MPPT, no more worries of shading, power generation increased up to **30%**
- Module-level rapid shutdown, ensuring fire and maintenance safety
- Module-level data intelligent monitoring and accurate management
- Fully utilize roof space to achieve system maximization
- Convenient installation, wide range of adaptability, suitable for operating power plant renovation and new power plant installation
- 25 years products replacement warranty



Optimizer Technical Parameters

Model	SUNGO iOPT 800W
DC Input	
Maximum input power	800W
Maximum voltage	70V
MPPT voltage range	12~60V
Maximum continuous input current	21A
Maximum input short-circuits current	23A
Night self-consumption	0W
DC Output	
Output voltage	0~60V
Maximum continuous output current	21A
Maximum output power	780W
Maximum system voltage	1500V
DC Output During Shutdown	
Output voltage (without SUNGO GT)	1±0.1V
Efficiency	
Peak MPPT efficiency	≥99.7%
Communication	
Communication Method	PLC
Communication parameter	PV Voltage, Output Voltage, Output Current, Output Power, Temperature, State
Advanced Protection	
Input overvoltage protection	>75V
Output overcurrent protection	>22A
Output overload protection	>800W
High temperature protection	>110℃
General Data	
Dimensions (W*D*H)	116*31.5*123mm
Weight	0.865kg
Input/output cable length	IN+ 200 / IN- 1100 / OUT+ 750 / OUT- 750mm
Input/output cable size	4mm²(12AWG) / 4mm² (12AWG)
Terminals	MC4(Compatible)
Protection rating	IP68
Relative humidity	0~100%RH
Operating temperature range	-40~+65℃
Cooling	Natural cooling
Certification	CE
Packaging	28pcs/CTN 840pcs/pallets(20GP)

Data Gateway Technical Parameters

Model	SUNGO GT
Match with	SUNGO iOPT 800W
AC Input Parameters	
AC input voltage range	90~264V
AC Input frequency	50/60Hz
Maximum AC input power	5W
Maximum AC input current	0.1A@90Vac
PV Input Parameters	
Terminals	MC4(Compatible)
Maximum system voltage	1500V
Nos of input strings	2
Maximum number of iOPT	40
Maximum current of each string	21A
Maximum module Nos per string	30
Communication Method	
Communication with optimizer	PLC
Communication with upper machine	2.4GHz Wi-Fi / RS485
Rapid Shutdown	
Initial state	Operate
Switch-on	Press the button once until the Running light is on
Switch-on time	<5s
Shut-down	1. Press the button once until the RSD indicator lights up 2. Controller AC power off, all indicator lights off
Shut-down time	<15s
Standards	
Electromagnetic compatibility (EMC)	IEC61000-6-1, IEC61000-6-2, IEC61000-6-3
Production Compliance	IEC62109-1
RoHs	Yes
Installation Specification	
Dimension (W*D*H)	140*33.5*175mm
Weight	0.88kg
AC input cable length	1m
Protection level	IP67
Working temperature range	-40~+70℃
Cooling	Natural cooling
Form of installation	Wall hanging/holding, screw locking
Certification	CE
Packaging	5pcs/CTN 60pcs/pallets(20GP)

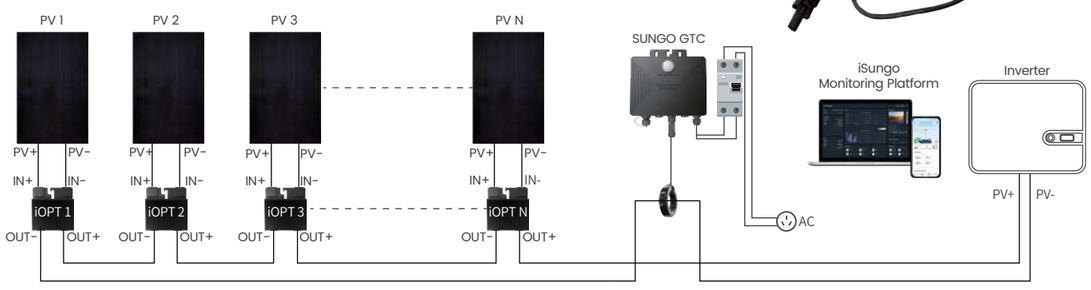
C & I Scenario Solutions
SUNGO iOPT & SUNGO GTC

Optimize Power Generation
Intelligent Management

Features

- Module-level MPPT, no more worries of shading, power generation increased up to **30%**
- Module-level rapid shutdown, ensuring fire and maintenance safety
- Module-level data intelligent monitoring and accurate management
- Fully utilize roof space to achieve system maximization
- Convenient installation, wide range of adaptability, suitable for operating power plant renovation and new power plant installation
- 25 years products replacement warranty

Data Gateway
(GTC)



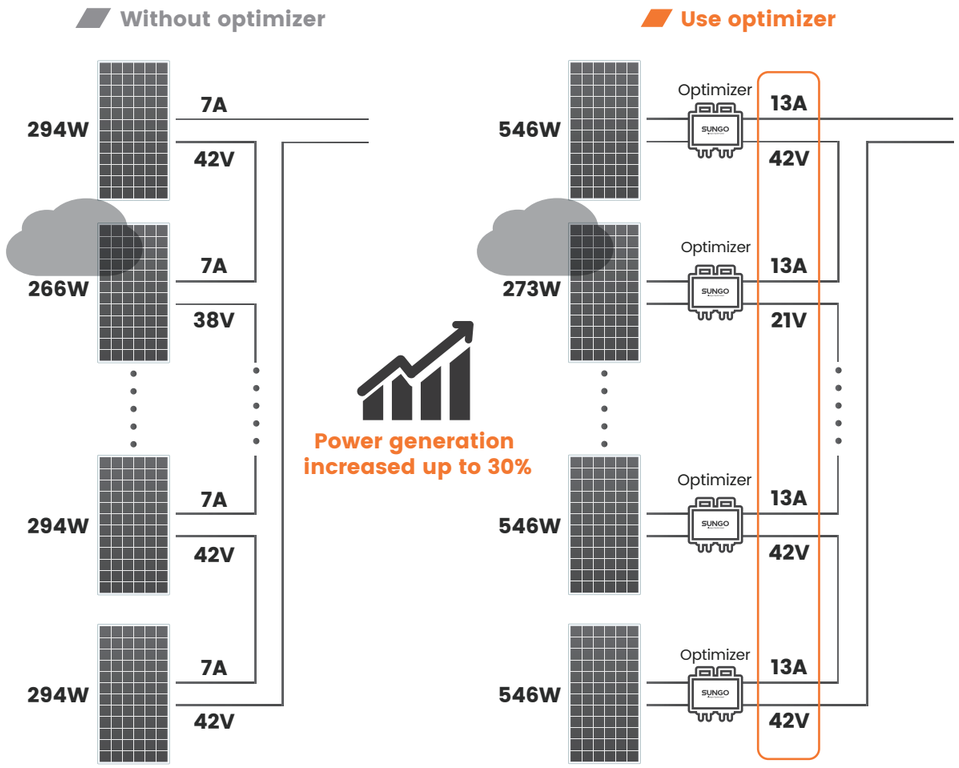
Optimizer Technical Parameters

Model	SUNGO iOPT 800W
DC Input	
Maximum input power	800W
Maximum voltage	70V
MPPT voltage range	12~60V
Maximum continuous input current	21A
Maximum input short-circuits current	23A
Night self-consumption	0W
DC Output	
Output voltage	0~60V
Maximum continuous output current	21A
Maximum output power	780W
Maximum system voltage	1500V
DC Output During Shutdown	
Output voltage (without SUNGO GT)	1±0.1V
Efficiency	
Peak MPPT efficiency	≥99.7%
Communication	
Communication method	PLC
Communication parameter	PV Voltage, Output Voltage, Output Current, Output Power, Temperature, State
Advanced Protection	
Input overvoltage protection	>75V
Output overcurrent protection	>22A
Output overload protection	>800W
High temperature protection	>110℃
General Data	
Dimensions (W*D*H)	116*31.5*123mm
Weight	0.865kg
Input/output cable length	IN+ 200 / IN- 1100 / OUT+ 750 / OUT- 750mm
Input/output cable size	4mm²(12AWG) / 4mm² (12AWG)
Terminals	MC4(Compatible)
Protection rating	IP68
Relative humidity	0~100%RH
Operating temperature range	-40~+65°C
Cooling	Natural cooling
Certification	CE
Packaging	28pcs/CTN 840pcs/pallets(20GP)

Data Gateway Technical Parameters

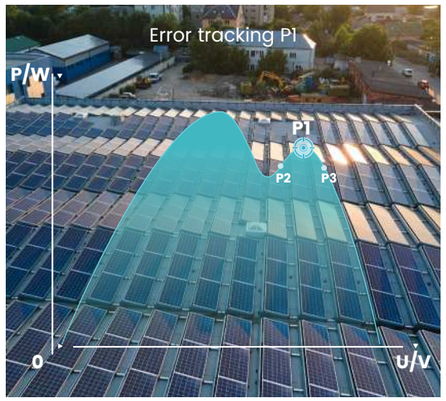
Model	SUNGO GTC
Match with	SUNGO iOPT 800W/SUNGO RSDi-2
AC Input Parameters	
AC input voltage range	90~264V
AC Input frequency	50/60Hz
Maximum AC input power	5W
Maximum AC input current	0.1A@90Vac
PV Input Parameters	
Terminals	MC4(Compatible)
Maximum system voltage	1500V
Nos of input strings	10
Maximum number of iOPT	200
Maximum number of RSDi-2	100
Communication Method	
Communication with optimizer	PLC
Communication with upper machine	2.4GHz Wi-Fi / RS485
Rapid Shutdown	
Initial state	Operate
Switch-on	Press the button once until the Running indicator lights up
Switch-on time	<5s
Shutdown	1. Press the button once until the RSD indicator lights up 2. Controller AC power off, all indicator lights off
Shutdown time	<15s
Standards	
Electromagnetic compatibility (EMC)	IEC61000-6-1, IEC61000-6-2, IEC61000-6-3
Production Compliance	IEC62109-1
RoHs	Yes
Installation Specification	
Dimension (W*D*H)	140*33.5*175mm
Weight	0.88kg
AC input cable length	1m
Protection level	IP67
Working temperature range	-40~+70°C
Cooling	Natural cooling
Form of installation	Wall hanging/holding, screw locking
Certification	CE
Packaging	8pcs/CTN 48pcs/pallets(20GP)

How the Optimizer Works

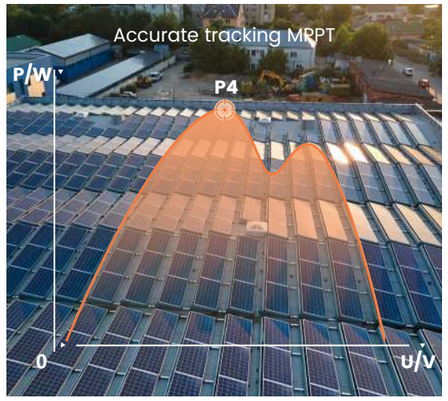


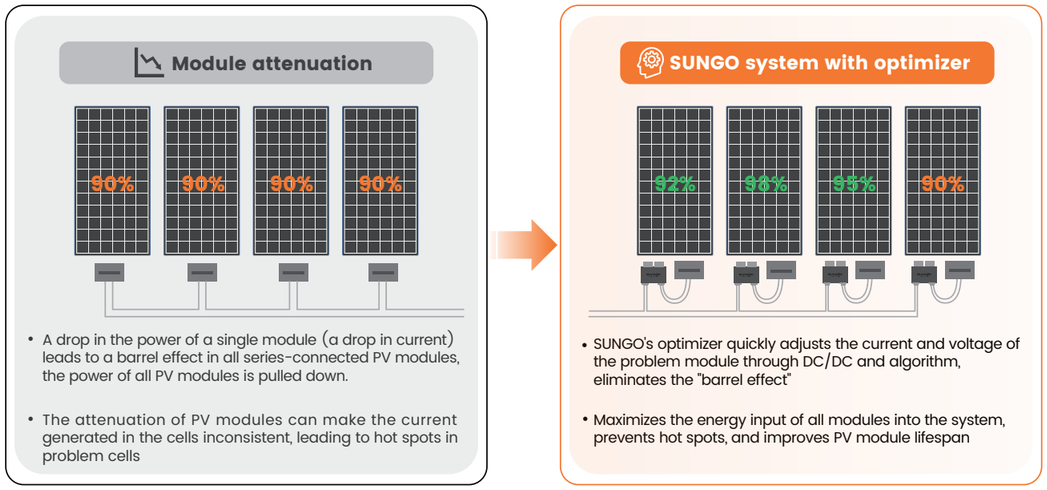
Accurate tracking of the maximum power point, increase the system power generation.

Traditional system



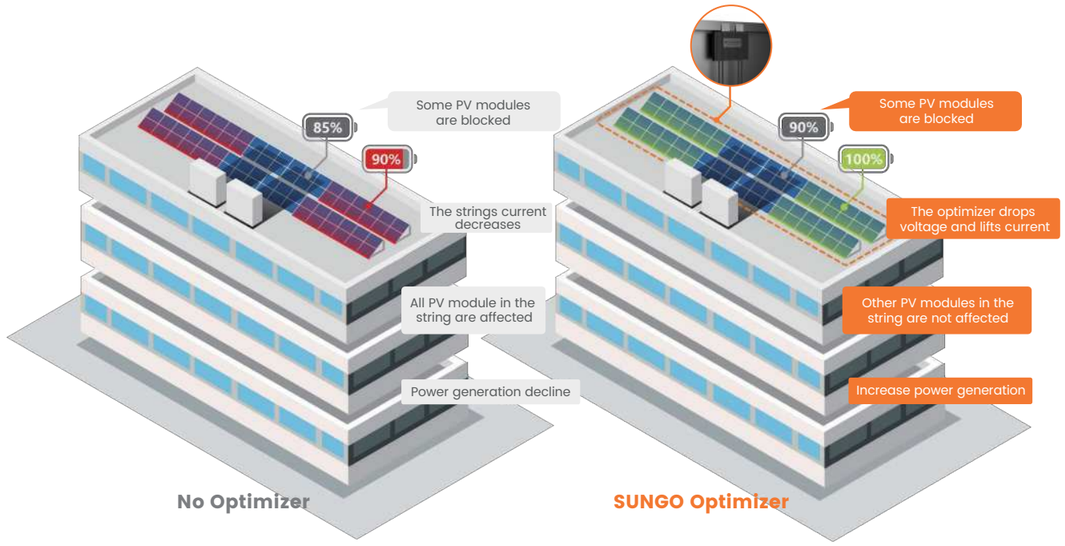
SUNGO Optimizer system





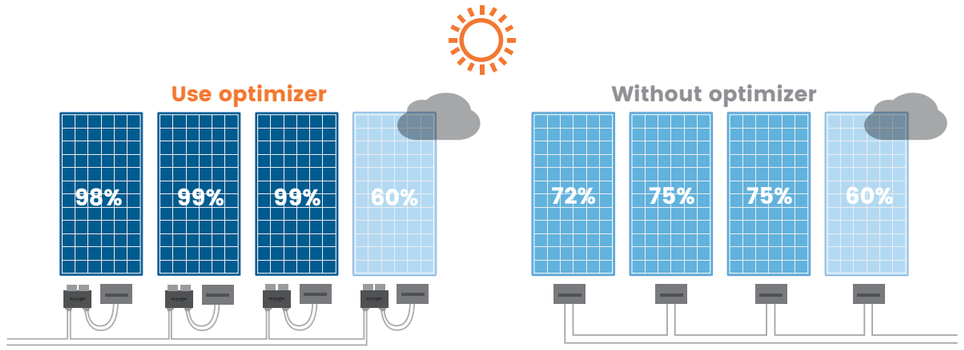
Module-level Optimization

Module-level optimization can increase power generation up to 30%.
Independent optimization at the module-level ensures that each module operates at its own optimum and tracks the maximum current of the string.



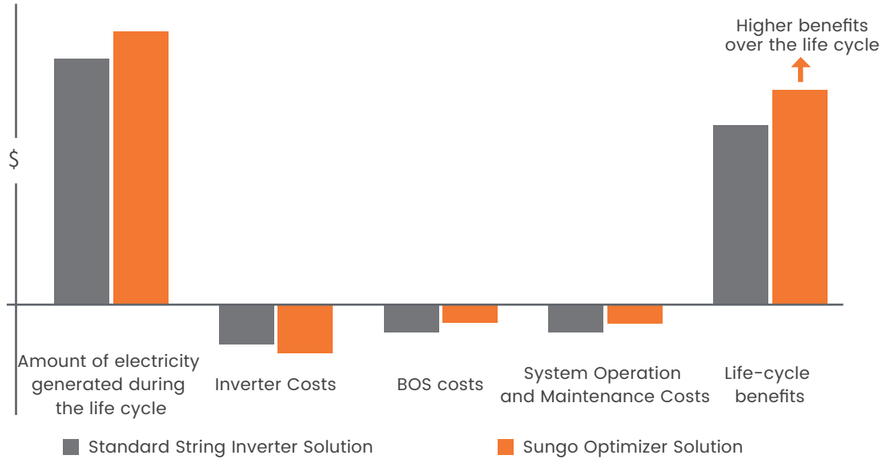
What Problem to Solve

Module-level MPPT tracking to prevent one PV module from affecting the entire string.



More Cost-effective Optimizer Solutions

Sungo's PV Smart Optimizer allows customers to optimize the cost of power generation over the life cycle of the system by increasing the amount of power generation and reducing the cost. It is able to optimize the power generation of each module, thus increasing the amount of power generation within the life cycle of the PV system. Compared to the traditional inverter system, the initial investment of the Sungo system is slightly higher, but the overall installation cost and the maintenance cost within the life cycle are lower, thus making Sungo's overall solution more attractive economically.



Avoiding Inconsistencies In Module Power Produced By PV Module Factory

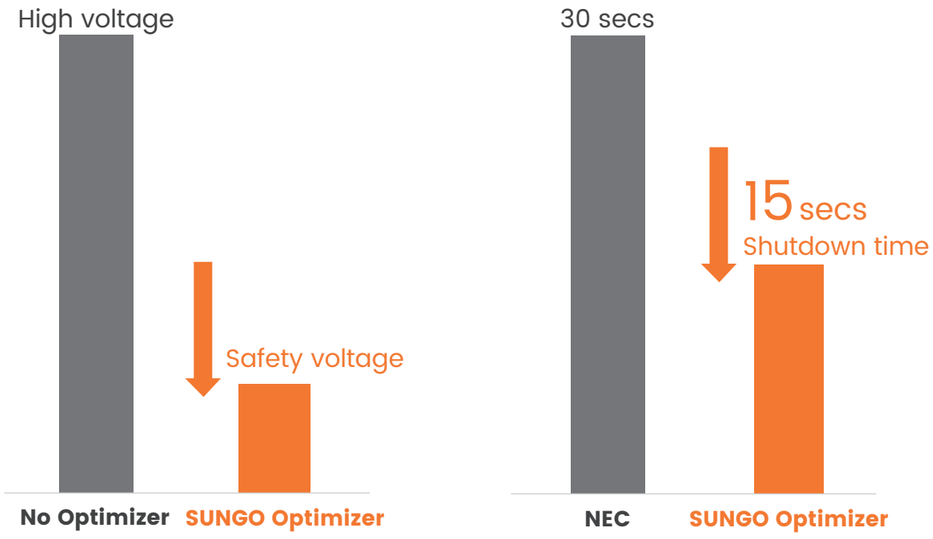
The module manufacturer's specification states that the module has a power tolerance of 0 to 3%, which can cause power generation losses to the system.
The optimizer can effectively solve this problem.

LR5-54HPH 405~425M

21.8%	0~3%	<2%	0.55%	HALF-CELL
MAX MODULE EFFICIENCY	POWER TOLERANCE	FIRST YEAR POWER DEGRADATION	YEAR 2-25 POWER DEGRADATION	Lower operating temperature

Protection of Modules and Roof Voltage Safety

The Sungo Optimizer's module-level rapid shutdown in 15 seconds ensures that the roof DC voltage is in a safe range, shorter than the NEC standard requirements.



Smart Energy Management Platform iSungo

Intelligent Operation and Maintenance
Better Experience

App

Station interface for creating new stations and viewing station information

Core data is concise and clear at a glance

PV module layout for viewing PV module operating status

Optimizer detail for viewing PV module information status

Web

Multi-view display at a glance, easy to manage all your power stations

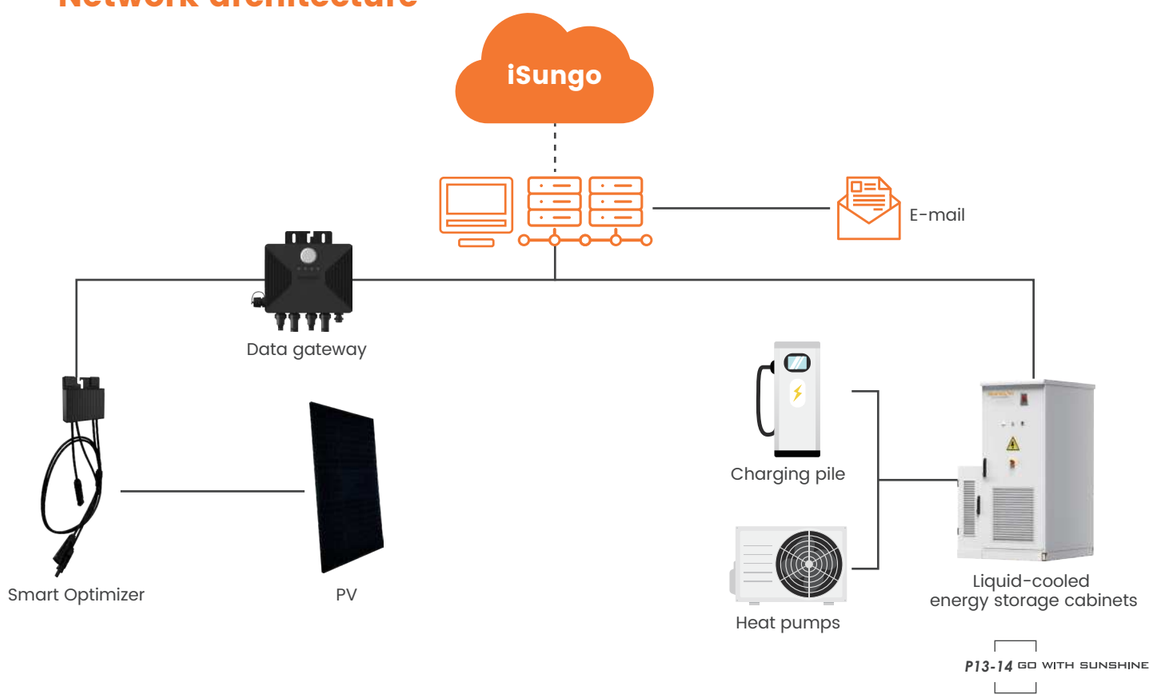
Fast access to module-level performance data to pinpoint module problems

View current and historical data by day, week, month and year, and automatically calculate returns

Features

- Intelligent management, data at a glance
- Module-level data management for easier operation and maintenance
- Comprehensive control of power station operation to realize maximum benefits
- Remote fault analysis to reduce O&M costs

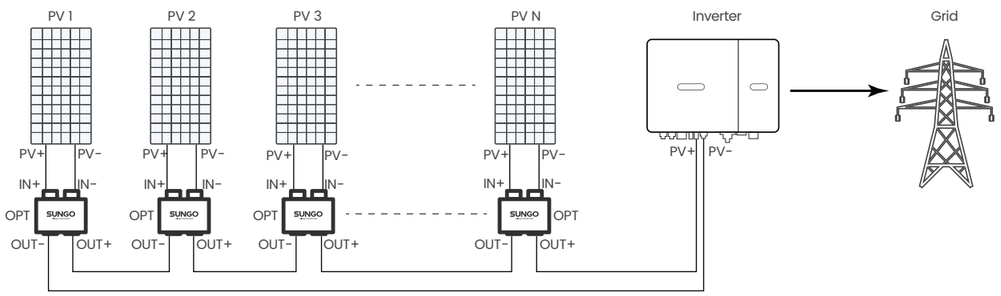
Network architecture



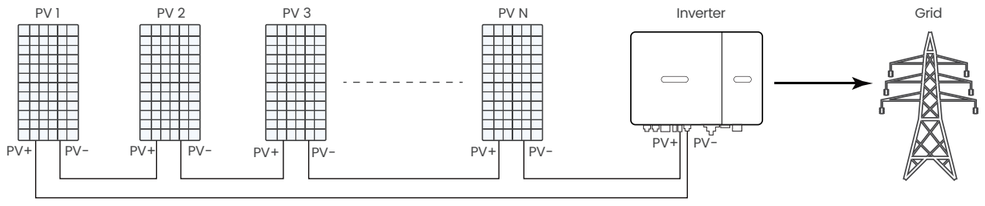
Typical Project Case Introduction

Comparison of two adjacent power stations with and without the optimizer installed.

Average power generation increase: 17.34%



Optimizer installed VS **No optimizer installed**



Optimizer installation date: july 1, 2020

Installed pv capacity: < 50kw for both systems

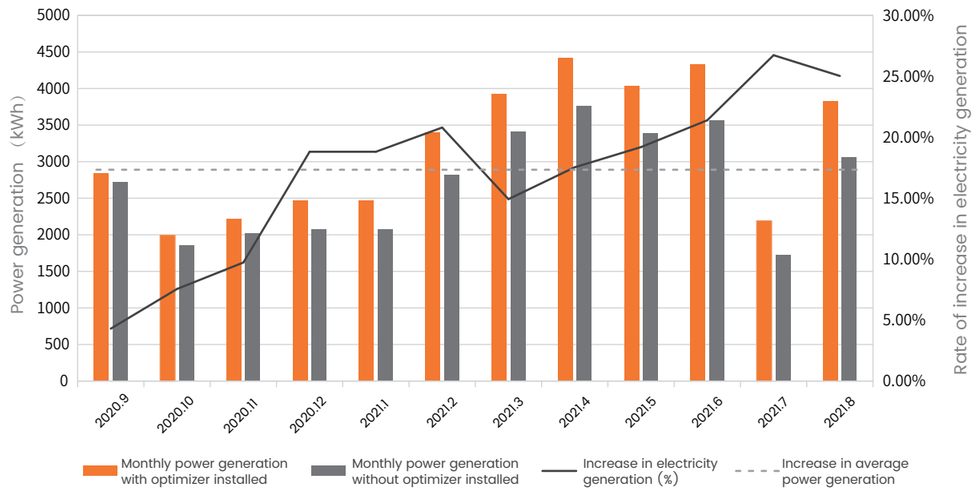
Number of optimizer installations: 143 pcs

Average power generation increase: 17.34%

Comparative Data for Two Neighboring Power Stations

Improvement effect within one year (measured value).

Effect of installing an optimizer (increase in monthly power generation)



Note: This data is collected from actual measurements taken from September 2020 to August 2021 by the customer.

The graph presented visually contrasts the power output of the Gunma Solar PV project in Japan, highlighting the substantial enhancement that occurred when an optimizer was incorporated. The optimizer proved to be highly efficacious, boosting the solar power generation by an impressive margin. Specifically, it enhanced the power generation efficiency from a baseline of 4.30% to a peak of 26.74% within the period spanning September 2020 to August 2021. On average, the installation of the optimizer led to a substantial average improvement of 17.34%, demonstrating its profound positive impact on the overall performance of the system.

Overall, the efficiency of PV power generation tends to improve with optimizers. However, the degree of improvement varies depending on the actual internal and external environment of the project, but the longer the life of the PV panels, the greater the optimization effect. According to a large amount of actual data, the average power generation has increased by more than 15% with Sungo's optimizers.

Project Cases

March 2021 - Fukuoka, Japan - 32 pieces
- comprehensive power generation increased by 22.3%

April 2021 - Czech Republic - 200 pieces
- comprehensive power generation increased by 17.2%

May 2021 - Slovenia - 200 pieces
- comprehensive power generation increased by 10.8%

January 2022 - Switzerland - 22 pieces
- comprehensive power generation increased by 10.2%

July 2022 - Munich, Germany - 18 pieces
- comprehensive power generation increased by 13.5%

September 2022 - Italy - 1,500 pieces
- comprehensive power generation increased by 15.9%

Professional and Comprehensive Service

Fast Response

12-hour agreement signing, 24-hour accurate quotation

Professional R&D Team

Structural, electrical, software, industrial design engineers to satisfy the diverse requirements of clients

After-sales service

- Remote support: first response and fault checking
- On-site support: global programs with 24-hour access
- Follow up & Customer Satisfaction Survey
- Adhere to the concept of global localized operation and service