



PV Module-level Rapid Shutdown Management Solution

GNE New Energy Technology Co., Ltd.

August 2025

Company Profile



100+
Employees

60+
Shipments

50+
Patents

6GW+
Countries

Jiangsu GNE New Energy Technology Co., Ltd. (abbreviated as GNE) was established in 2013. It is a high-tech leading enterprise of PV MLPE in China.

GNE has long focused on the R&D, manufacturing and sales of **PV storage inverters, power optimizers, intelligent rapid shutdown devices, module-level monitoring and PV communication systems.** The products have been widely used in around the world. It provides customers with a full set of solutions including Module-level power optimization, Module-level rapid shutdown and real-time data acquisition, remote monitoring, so that the factors that cause the decline in the power generation system can be overcome. At the same time, it largely increases the power generation efficiency, reduces the operation and maintenance costs, and improves the safety of the system.

01

Key Product Introduction

Dual RSD



Scoutbee1600M

- **Module-level shutdown:**

One-click shutdown of existing modules or designated modules, protecting the safety of the power station and reducing the risk of electric shock

- **Multiple shutdown methods:**

Support **on-site manual shutdown**, **remote shutdown** and **automatic protection** of overvoltage, overcurrent and overtemperature

- **Equipment default shutdown:**

Ensure the personal safety of installation and maintenance personnel

- **Safe and reliable:**

With output short-circuit protection function, there is no high temperature risk when any module fails

- **Extremely long life:**

25-year life span, matching PV modules

Model		Scoutbee1600M
Input		
Support Modules		2
Max. Input Power Per Module		800W/800W
Max. Input Voltage Per Module		75VDC/75 VDC
Operating Voltage Range Per Module		12~75VDC/12~75 VDC
Max. Input Current		20 A
Output		
Voltage Range		0~150 VDC
Max. Output Current		20 A
Max. Output Power		1600 W
Shutdown Voltage		1.6~2 VDC
Efficiency		>99.8%
Default Working State		Shutdown
Shutdown Time		1 Second
Communication		
Rapid Shut Down		PLC/HPLC
Real-time Monitoring		2.4 G/HPLC
Others		
Temperature range		-40 ~ +85 °C
Relative humidity range		0~100 %
Ingress Protection		IP68 / NEMA Type 6P
Protective Class		II
Installation Specification		
Cable length (Input/Output)		Input 1: In1- 300 mm / In1+ 1300 mm Input 2: In2- 1300 mm / In2+ 300 mm Output: Out- 2800 mm / Out+ 200 mm
Size		157.6x67.7x21 mm
Weight		705 g
Connector (Input/Output)		Compatible with MC4,Staubli
Standard / Certification		
Regulations		NEC 2017 & 2020 (690.12)
Safety		IEC/EN 62109-1:2010; UL 1741; UL 3741:2020; CSA C22.2 No.330:2023; CSA C22.2 No.107.1:2016
EMC		EN IEC 61000-6-2:2019;EN 61000-6-3:2007/+A1:2011; FCC Part 15B
RoHS		2011/65/EU ; (EU) 2015/863
REACH		REACH (EC) No 1907/2006 Compliant
WEEE		2012/19/EU ; EN 50419:2022

Shutdown Controller



Beetrans-Max

- Module-level rapid shutdown within 1 second
- Complied with NEC 2017&2020 690.12 requirements and UL1741/UL3741 regulations
- PLC communication with RSD for rapid shutdown function
- Advanced crosstalk prevention solution Easy to install and operate

Model	Beetrans-Max
Specification	
Maximum No. of Core equipped	4
Maximum String Voltage	1500 V
Communication method	PLC
Maximum Supported Cable Length	300 m
Internet access mode	LAN/WIFI/4G
Application	
Working temperature range	-25~+65 °C
Relative Humidity range	0~100%
Ingress Protection	NEMA Type3R / IP65
Structure	
Size	220x210x66 mm (excluding cable length)
Weight	840 g
Power Supply Parameters	100~240VAC
Magnetic Ring Parameters	
Inside diameter / Outside diameter	29mm / 65mm
Maximum current per ring	160 A
Maximum Supported String Count per Ring	8
Certification	
CE	IEC/EN 62109-1:2010
ETL	UL 1741; UL 3741:2020; CSA C22.2 No.330:2023; CSA C22.2 No.107.1:2016
RoHS	2011/65/EU ; (EU) 2015/863

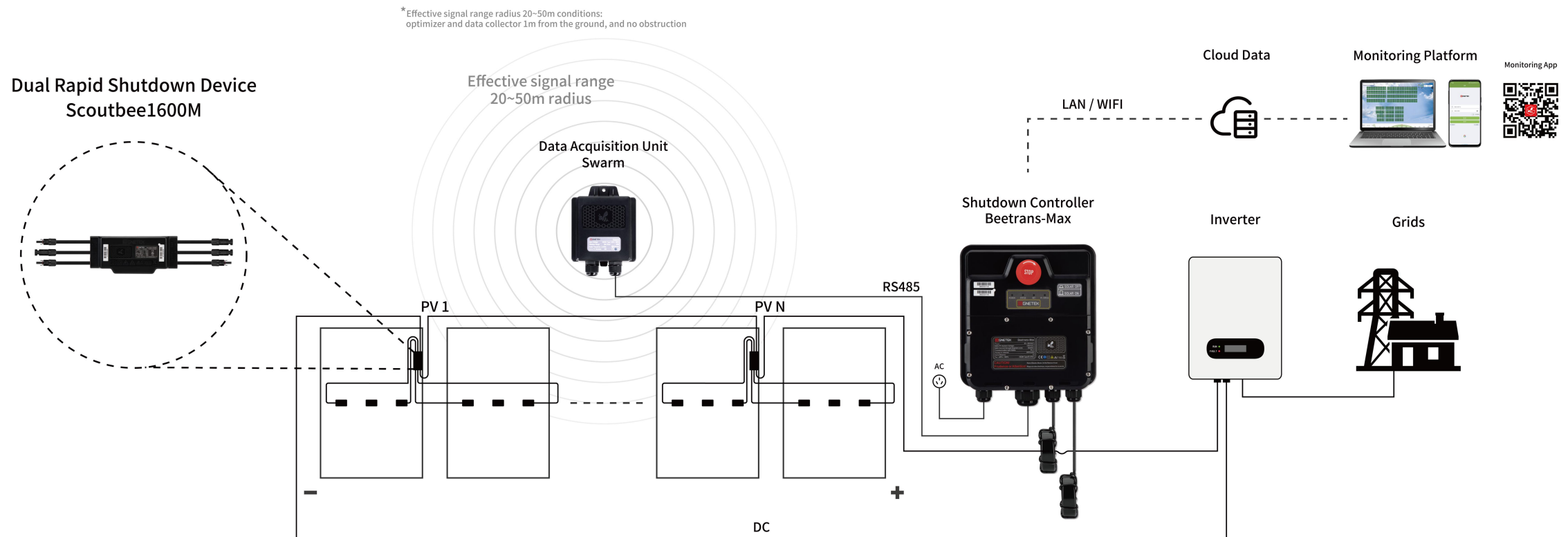


Swarm

- The essential equipment to realize module-level monitoring
- IP65, and can be placed outdoors
- Each Swarm can collect up to **200 RSDs wirelessly**

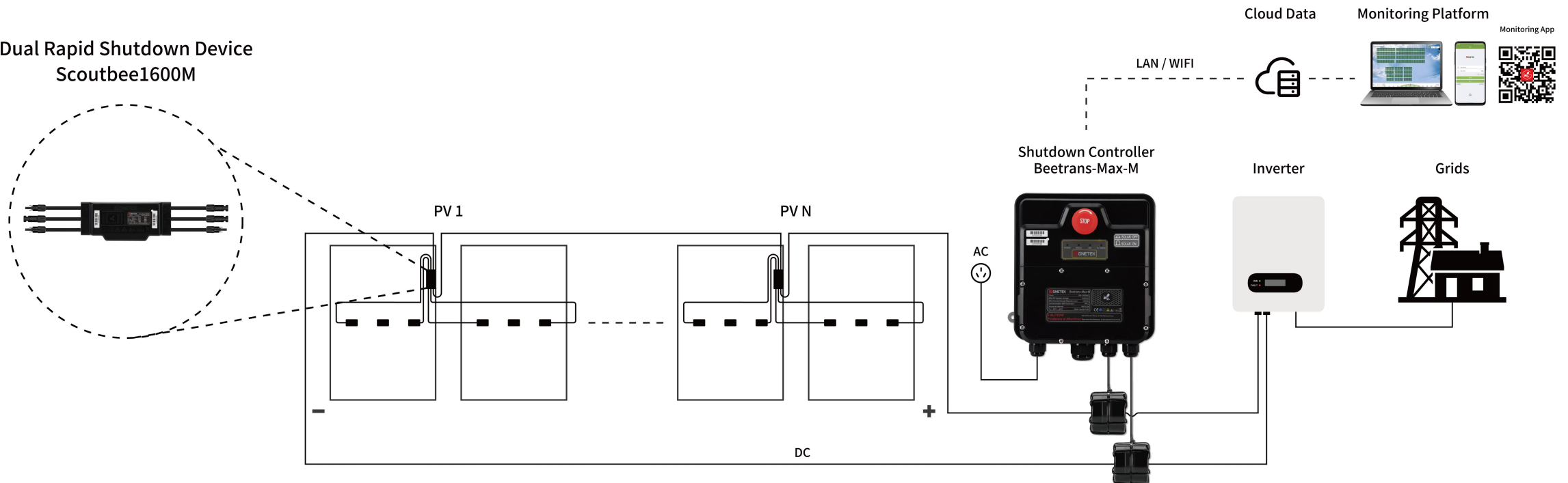
Model		Swarm
Basic Parameters		
Working Voltage		12 Vdc
Working Current		25 mA
Power Consumption		≤0.3 W
Installation Sprcification		
Connector		RS485*2
Wireless Range		20~50m
Wireless Band		868M/2.4G Hz
Max. No. of Bees		≤200
Size		124x99x32 mm
Weight		158 g
Working Temperature		-40~+85 °C
Ingress Protection		IP65
Standard / Certification		
CE		IEC/EN 62109-1:2010
REACH		REACH (EC) No 1907/2006 Compliant
WEEE		2012/19/EU ; EN 50419:2022
RoHS		2011/65/EU ; (EU) 2015/863

Rapid Shutdown Device System Diagram (PLC+Wireless Version)



Rapid Shutdown Device System Diagram (HPLC Version)

Dual Rapid Shutdown Device
Scoutbee1600M



GNE Monitoring Platform



Honeypot

Mobile APP Download



Android



Apple



Google

- **Remote Shutdown:** When a fire occurs, besides the on-site shutdown of the modules, users can also shut down remotely through APP or Web
- **Real-time Monitoring and Alarm:** Users can monitor the data of each module in real time. When a problem occurs, it will automatically alarm and quickly locate the faulty module
- **Data Management:** It is convenient for users to understand the current and historical operating status of every detail of each power station

Data Monitoring Platform



Real-time monitoring



Power station alarm

电站布局 电站曲线 设备报警 设备状态 电站报表 电站管理

报警 设置

未处理报警 报警历史

报警名称: 报警内容: 报警时间: 报警状态: 报警清除

日期/时间	等级	设备名称	设备编号	报警内容	报警状态
2015-03-19 19:00:33	一般	Honeybee	00001324	光伏电站运行正常	关闭
2015-03-19 19:00:33	一般	Honeybee	00001391	光伏电站运行正常	关闭
2015-03-19 19:00:33	一般	Honeybee	00001407	光伏电站运行正常	关闭
2015-03-19 19:00:33	一般	Honeybee	00001395	光伏电站运行正常	关闭
2015-03-19 19:00:33	一般	Honeybee	00001328	光伏电站运行正常	关闭
2015-03-19 19:00:33	一般	Honeybee	00001316	光伏电站运行正常	关闭
2015-03-19 19:00:33	一般	Honeybee	00001298	光伏电站运行正常	关闭
2015-03-19 19:00:33	一般	Honeybee	00001361	光伏电站运行正常	关闭

Emergency shutdown



Data Summary



Data Query



Data Report

电站布局 电站曲线 设备报警 设备状态 电站报表

Honeybee

报表管理

日报表	年: 2015	月: 8	日: 19
月报表	年: 2015	月: 8	
年报表	年: 2015		

➤ **Module-level rapid shutdown:**

1. **Actively press** the emergency button of the shutdown controller to shut down the RSD output within **1 second**.
2. When the power supply of the shutdown controller is disconnected (below 2V), all the RSDs will **automatically shut down** within 15 seconds.
3. The RSD will **automatically shut down** when the input is overvoltage, overcurrent, overpower, or the internal temperature exceeds 95°C.

➤ **Module-level monitoring:**

Real-time Monitoring / Power Station Alarm / Remotely Shutdown / Data Management

02 Installation

RSD Installation(Back clip/plate)



Installed on the frame of the module



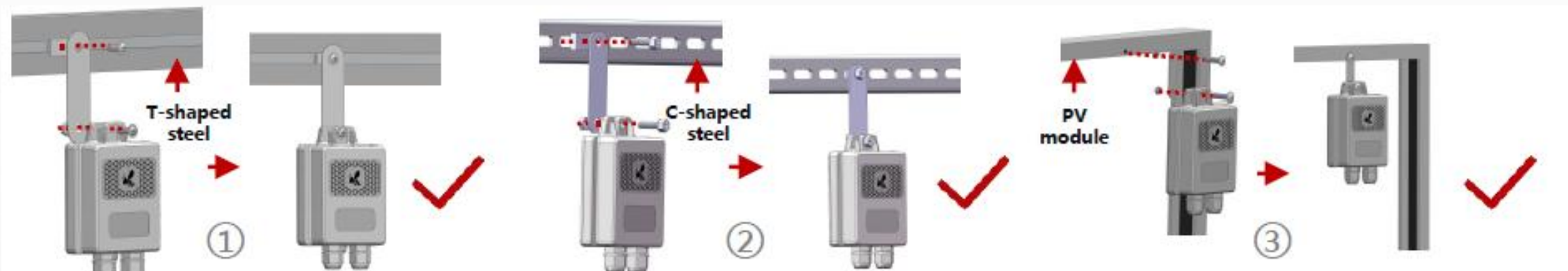
Installed on C-shaped steel



Installed on T-shaped steel

Data Collector Installation

- **Optimal location for Swarm installation** : It should be installed **at the center of the target RSDs array**, mounted on the higher horizontal bracket or at two-thirds height of the module, with **no metal or cement barriers** near it as much as possible.
- The Swarm is **waterproof** and can be installed outdoors. If only one end is connected, the other PG7 connector should be plugged tightly.



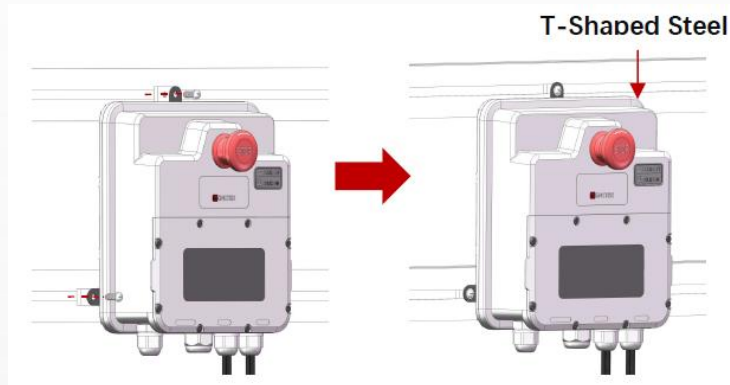
Installed on T-shaped steel

Installed on C-shaped steel

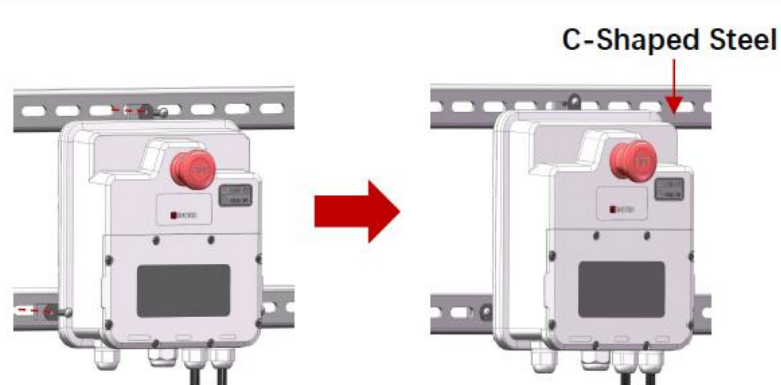
Installed on the frame of the module

Shutdown Controller Installation

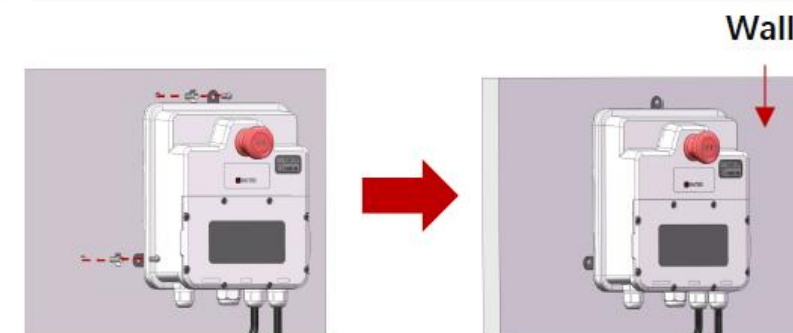
- The ingress protection level is IP65
- It is recommended to install next to the inverter.



Installed on T-shaped steel

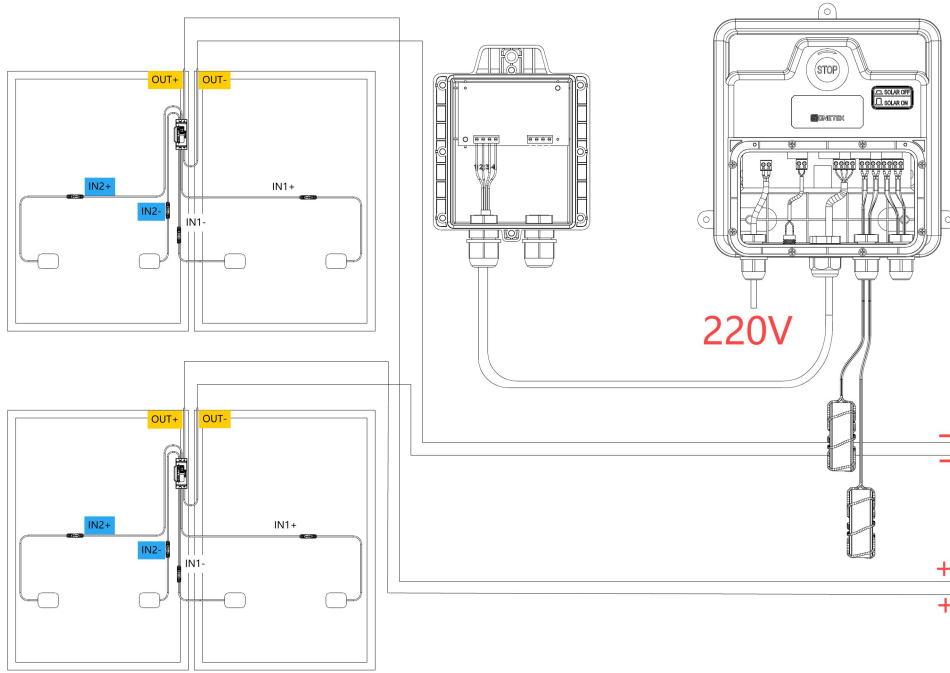


Installed on C-shaped steel

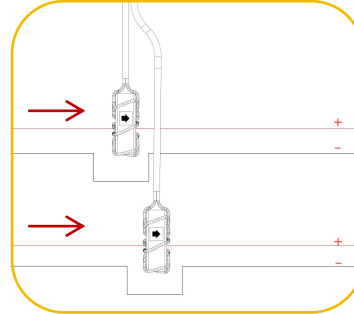


Installed on the wall

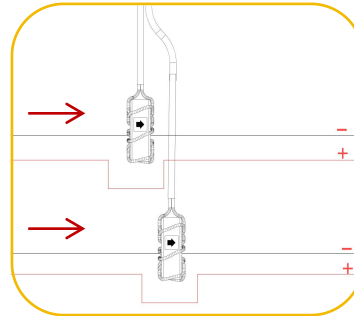
Installation



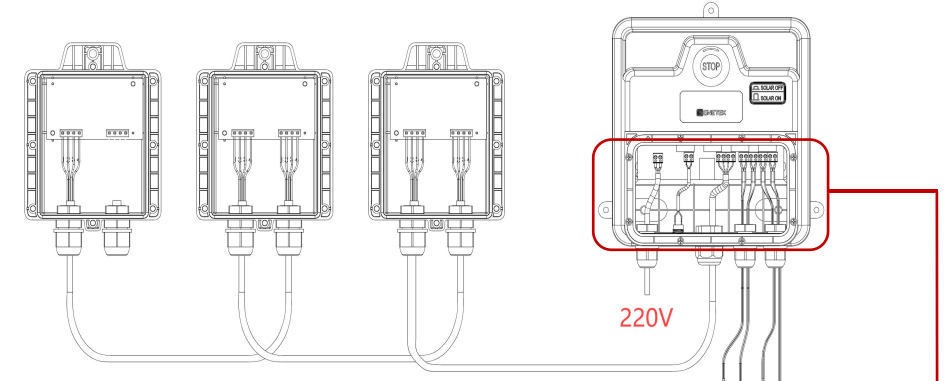
Shutdown controller connects to single Swarm



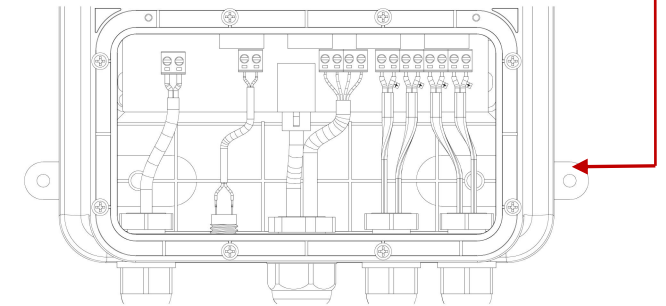
The positive pole of all strings pass through the magnetic ring



The negative poles of all strings pass through the magnetic ring



Shutdown controller connects to multiple Swarms



Shutdown controller internal wiring details

The negative or positive output pole of the RSD string passes through the magnetic core of the shutdown controller and then connects to the input of the inverter.

* Multiple strings need to have the same positive or negative pole of the string and pass through the magnetic core uniformly.

Set Online Power Station

GNE Monitoring Site Operation Manual

Overview

Station List

Layout

Module Data

Alarm

Station Management

Power On/Off

Setup

Status

System Management

Jiangsu GNE New Energy Technology Co., Ltd. | test

Languages

Station Management / Setup

1

Station Information

2

Inverter & Module

3

Data Devices

4

Optimizer/RSD

5

Layout

Mode A

Mode B

Switch Mode

Optimizer/RSD

Click on pictures to see examples.
The pictures show the location of the MAC ID on the device.

Add honeybee

String A String-1

Switch string

Delete string

Add new string

Honeybee *****	* MAC ID: *****	* Module PV_1(450W)
Honeybee *****	* MAC ID: *****	* Module PV_1(450W)
Honeybee *****	* MAC ID: *****	* Module PV_1(450W)
Honeybee *****	* MAC ID: *****	* Module PV_1(450W)

Notes:
Fields marked with “*” are required, others are optional.

When all the fields with “*” are completed, click “Save” to proceed to the next step.

Save

Delete honeybee

Add honeybee

Delete

Insert

Delete

Insert

Delete

Insert

Delete

Insert



Asia:

- China
- Japan
- South Korea
- India
- Pakistan
- Bangladesh
- Thailand
- Malaysia
- Singapore
- Indonesia
- Philippines
- Vietnam

Europe:

- United Kingdom
- Ireland
- France
- Germany
- Italy
- Spain
- Portugal
- Belgium
- Netherlands
- Luxembourg
- Switzerland
- Austria
- Czech Republic
- Slovakia
- Hungary
- Poland
- Romania
- Bulgaria
- Greece
- Turkey
- Norway
- Denmark
- Sweden
- Finland

Africa:

- Morocco
- Algeria
- Tunisia
- South Africa
- Kenya

America:

- United States
- Canada
- Mexico

Oceania:

- Australia
- New Zealand

Why choose GNE?

Leading Position

The first optimizer and RSD manufacturer in China, with the largest domestic shipment volume, exceeding 6 million units.

Global Certification

Passed UL, CE and other international certifications, deeply trusted by customers.

Rich Experience

Successfully applied to PV power stations of different scales and types in more than 60 countries around the world.

One-stop Service

Provide optimizer/rapid shutdown device + inverter + monitoring platform.

Why Choose RSD?

Module-level Monitoring

- Every detail of the power station can be monitored in real time. When a problem occurs, it will automatically trigger an alarm and precisely locate the faulty module.

Module-level Rapid Shutdown

- Meeting **2017/2020 NEC 690.12(B), UL1741/UL3741**.
- Default shutdown status to ensure the personal safety of installation and maintenance personnel;
- Once fire occurs, users can remotely shut down the RSDs to facilitate the spraying.

Big Data Management

- It can generate data collection of each module in real time and upload to the server, support data analysis, historical data query, etc.

03

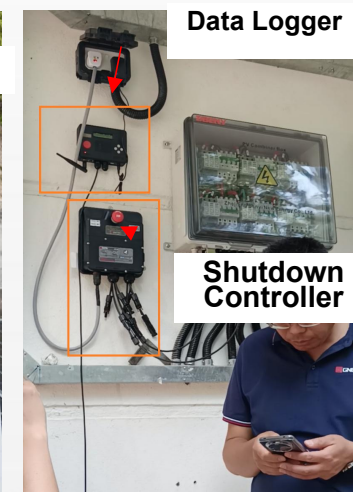
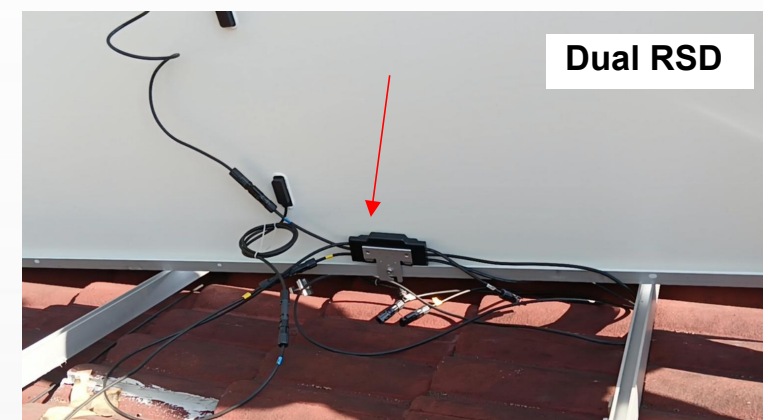
Cases

■ Case 1

GNE RSD Project in UKM Malaysia

44pcs Scoutbee1600M installed in February 2025

Solis Inverter + Jinko 580w Panel



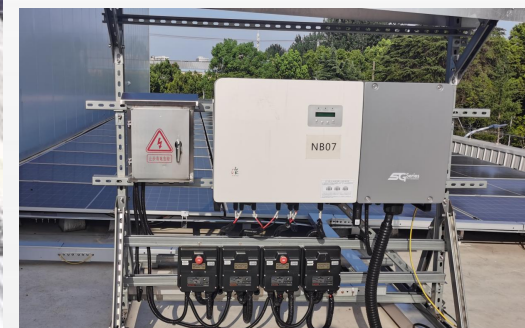
Case 2

Schneider Electric Shanghai Kangqiao Factory 669.9kWp PV Station

582 pcs Scoutbee1600M, installed in June 2024

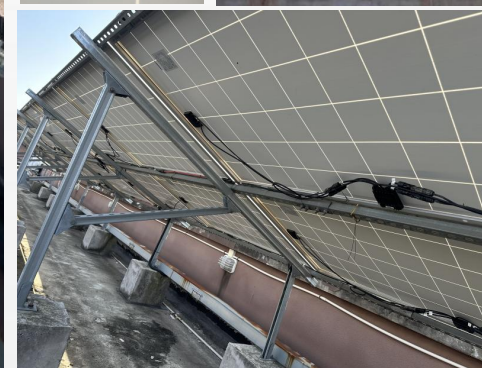
Solis inverter 7pcs (110kW*4, 80kW*2, 40kW*1)

Jinko 580W Panel 1155pcs



Case 3

Shanghai AFVT College 60kWp PV Station
Scoutbee1600M 110 pcs, installed in March 2024
Huawei inverter, 30kW 2pcs
GCL 275W module 220pcs



Case 4

Project: Three Gorges Group Yangzhou 50MW Ground PV Plant

GNE Dual RSD 2200pcs, installed in March, 2025

Huawei 300kW Inverter 7pcs;

Risen 575W Module 4400pcs



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