CONTACT US





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PV MODULE-LEVEL POWER OPTIMIZATION & INTELLIGENT MANAGEMENT EXPERTS

Jiangsu GNE New Energy Technology Co., Ltd.



GNE specializes in developing and manufacturing solar optimization devices, rapid shutdown system and intelligent monitoring system. We provide an entire solution of module-level power optimization, rapid shutdown system, real-time data acquisition, module-level remote monitoring and big data analysis to revise or overcome the factors that lead to power-loss and efficiency-drop, consequently to achieve more power output, lower O&M cost and higher safety.

GNE takes innovation as a driving force for enterprise development. Based on customer demand and cutting-edge technology, GNE is always in the forefront of the industry, and leads the development of the industry. We have more than 50% of employees engaging in innovation, research and design, made dozens of inventions and patents, which has laid a solid foundation to become a world-class provider of intelligent optimization solution.

Now we have won the trust of customers and grow rapidly, starting from the domestic market sales, gradually expanding to Europe, America, Japan and other major PV markets, as an influential high-tech enterprise in the field of PV power optimization and intelligent management.

Intelligence is the trend of photovoltaic development. GNE creates the Internet of PV Things with own expertise of information and communication, to promote a comprehensive system of interconnected components of photovoltaic plants, improve the PV power generation efficiency, achieve intelligent operation and maintenance, promote the development of green energy and benefit mankind!



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expanding to Europe, America, Japan and

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Product Technical Parameters

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Cases

PV Power Optimizer

Wireless Optimizer System Diagram

LAN/WIFI

Cloud

Introduction to PV Power Optimizer



Sole Power Optimizer

Honeybee650 (~PLC)







Honeybee800

Dual Power Optimizer



• Optimize power generation: Optimizer tracking maximum power point in input of each module and adjust maximum output to boost energy yield. Perfectly solve the power loss caused by module shading, module variances and modules mismatch. • Real-time module-level monitoring: Optimizer collects current, voltage and temperature of each module in real-time and

- displays in monitoring system.
- Remote shutdown: Entire system can be remotely switch off by APP or web monitoring portal to prevent shock hazard. With data processing device(Beehive) sending "shutdown commands" to each optimizer to cut off power generation.



Swarm

Data Acquisition Unit

Beehive





Beebox-H

Optimizer Initiator



PLC Optimizer System Diagram

Rapid Shutdown (RSD)

Rapid Shutdown Device Introduction



• Optimize power generation: Optimizer tracking maximum power point in input of each module and adjust maximum output to boost energy yield. Perfectly solve the power loss cause by module shading, module variances and modules mismatch.

- Real-time module-level monitoring: Optimizer collects current, voltage and temperature of each module in real-time and displays in monitoring system.
- Rapid shutdown(PLC): This solution complies with NEC 2014, 2017, and 2020 690.12 requirements. The PLC optimizer is on standby mode, activated after receive "operate "signal from Beebox-H. Rapid shutdown entire system by stop sending

"operate "signal after press emerge button on Beebox-H to prevent shock hazard.



Scoutbee800(~M)

Sole Rapid Shutdown Device



Beebox-S Shutdown Initiator (EUR)





Scoutbee1600(~M)

Dual Rapid Shutdown Device



Beetrans Shutdown Initiator (US)

Rapid Shutdown System Diagram

Rapid Shutdown + Module Level Monitoring System Diagram



- GNE Rapid shutdown system: This solution complies with NEC 2014, 2017, and 2020 690.12 requirements.
- Rapid shutdown: Voltage limited to not more than 30 volts within 30 seconds of entire system after press emerge button on Beebox-H to prevent shock hazard.

- GNE Rapid shutdown system: This solution complies with NEC 2014, 2017, and 2020 690.12 requirements.
- button on Beebox-H to prevent shock hazard.
- Module-level monitoring: Rapid shutdown system achieve module-level monitoring accompanied by GNE monitoring device(swarm&beehive).



• Rapid shutdown: Voltage limited to not more than 30 volts within 30 seconds of entire system after press emerge

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Honeypot

Data Cloud Center







Product Features

- Dynamically display the status of entire PV
- power station and every module in real-time
- Promptly locate the system failure and inform user by email or short message
- Remotely deactivate the optimizers for maintenance or emergency purposes
- Multi-terminal login: PC, PAD and smart phon
- ④ Historical data query, big data analysis and automatical table report

1.Real time Monitoring



3.Generating Summary



5.Warning





2.Power Trends



4. Date Query



6.Emergency Shutdown



- **-** -

Honeybee400/650/850

Sole Power Optimizer



Product Features

Sole Power Optimizer	Honeybee400	Honeybee650	Honeybee850
INPUT			
Support Modules	450W	650W	850W
Max.Input Power	75VDC	75VDC	60VDC
Operating Voltage Range	12~75VDC	12~75VDC	14~60VDC
MPPT Voltage Range	12~75VDC	12~75VDC	14~60VDC
lsc	15A	16A	23A
Max.Input Current	13A	15A	21A
OUTPUT			
Max.Output Power	450W	650W	850W
Voltage Range	0 ~ 75VDC	0 ~ 75VDC	0 ~ 60VDC
Max.Output Current	13A	15A	21A
Max.Efficiency	99.50%	99.50%	99.50%
OTHERS			
Max.System Voltage	1500VDC	1500VDC	1500VDC
Operating Temperature Range	-40~+85 ℃	-40~+85 ℃	-40~+85 ℃
Relative Humidity	0~100%	0~100%	0~100%
Ingress Protection	IP67	IP68	IP68
Protective Class	II	Ш	II
Communication	868M/915M/2.4G/PLC	868M/915M/2.4G/PLC	868M/915M/2.4G/PLC
INSTALLATION SPECIFICATION			
Size	130.3x109.6x25mm	130.3x109.6x25mm	130.3x109.6x25mm
Weight	520g	520g	520g
Connector(Input/Output)	Compatible with MC4	Compatible with MC4	Compatible with MC4
STANDARD/ CERTIFICATION			
Cofety		IEC/EN 62109-1:2010	
Safety the Low Voltage Directive(2014/35/EU) EN 61000-6-1:2007 EN 61000-6-3:2007/+A1:2011		5/EU)	
		7/+A1:2011	
EMC	EN 61000-6-2:2005 EN 61000-6-4:2007/+A1:2011		
	the E	EMC Directive(2014/30/EU	J)
Certification		CE	
COMM	EN 50663: 2017, EN 62479: 2010		
	EN 301 489-1 V2.2.3,	EN 301 489-3 V2.1.1, EN	N 300 220–2 V3.1.1



LC and Honeypeesso-PLC working status can be customized (Default

Honeybee800/1300/1600

Dual Power Optimizer



Product Features

Dual Power Optimizer	Honeybee800	Honeybee1300	Honeybee1600	
INPUT				
Support Modules	2pcs	2pcs	2pcs	
Max. Input Power	450W/450W	650W/650W	800W/800W	
Max. Input Voltage	75VDC/75VDC	60VDC/60VDC	60VDC/60VDC	
Operating Voltage Range	13~75VDC/13~75VDC	13~60VDC/13~60VDC	13~60VDC/13~60VDC	
MPPT Voltage Range	13~70VDC/13~70VDC	13~60VDC/13~60VDC	13~60VDC/13~60VDC	
lsc	15A/15A	16A/16A	23A/23A	
Max. Input Current	13A/13A	15A/15A	20A/20A	
OUTPUT				
Max Output Power	900W	1300W	1600W	
Voltage Range	0~150VDC	0~120VDC	0~120VDC	
Max. Output Current	13A	15A	20A	
Max. Efficiency	99.60%	99.60%	99.50%	
OTHERS				
Max. System Voltage	1500VDC	1500VDC	1500VDC	
Operating Temperature Range	-40~+85℃	-40~+85℃	-40~+85℃	
Relative Humidity	0~100%	0~100%	0~100%	
Ingress Protection	IP67	IP67	IP68	
Protective Class	Ш	Ш	П	
Communication	868M/915M/2.4G	868M/915M/2.4G	868M/915M/2.4G/PLC	
INSTALLATION SPECIFICATION				
Size	129x130x25mm	129x130x25mm	144x130x26.8mm	
Weight	810g	810g	875g	
Connector(Input/Output)	Compatible with MC4	Compatible with MC4	Compatible withMC4	
STANDARD/ CERTIFICATION				
Safety		IEC/EN 62109-1:2010		
ourory	the Lo	w Voltage Directive(2014/	35/EU)	
	EN 61000-6-	-1:2007 EN 61000-6-3:20	007/+A1:2011	
EMC	EN 61000-6-2:2005 EN 61000-6-4:2007/+A1:2011			
	the EMC Directive(2014/30/EU)			
Certification		CE		
COMM	EN	50663: 2017, EN 62479:	2010	
	EN 301 489-1 V2.2.3	3, EN 301 489-3 V2.1.1,	EN 300 220-2 V3.1.1	



Swarm & Beehive

Data Processing Device





Product Features

INPUT 12 V Working Voltage 25 mA Working Current ≤0.3 W Power Consumption Installation Specification RS485*2 Connector (Swarm to Honeybee)≤30m Wireless Range 868M/915 M/2.4G Hz Wireless Band Max No. of Bees ≤200 Pcs 124 x 99 x 32 mm Size 155 g Weight -40°C~+85℃ Working Temperature IP65 Ingress Protection EN 62368-1:2020+A11:2020 Safety Standards EN 50663: 2017, EN 62479: 2010 Communication EN 301 489-1 V2.2.3, EN 301 489-3 V2.1.1, EN 300 220-2 V3.1.1 INPUT 12 V Working Voltage 250 mA Working Current ≤3 W Power Consumption Installation Specification RS485*2、RJ45、USB2.0 Connector ≤1000 Pcs No. of connectable Honeybees ≤5 Pcs No. of connectable Swarms 158 x113 x 36.8 mm Size 300 g Weight -20°C~+60°C Working Tempearture

Ingress Protection

Safety Standards



IP20

EN 62368-1:2020+A11:2020

Beebox-H

Optimizer Initiator





Product Features

INPUT

Maximum · input Current Per String

Support Strings

Maximum System Voltage

Voltage & Frequency

INSTALLATION SPECIFICATION

Connector

Size

Weight

Working Temperature

Ingress Protection

FUNCTION

Default Internet Access

Local Rapid Shutdown Function

Remote Rapid Shutdown Function

Open Circuit Voltage

Automatic Shutdown After Power Failure

DC arc Detection Function

Communication Method to Optimizers

Support Production Type

Data Transmission Frequency

STANDARD/ CERTIFICATION

Regulations

Safety

EMC

Certification



20 A

2Strings

1000V / 1500V

100~240Vac; 50/60Hz; 1Aac

Compatible with MC4

220 x 210 x 65 mm

880 g

-20 ~ +60°C

IP65

LAN+WIFI

Yes

Yes

Yes (Optional)

Yes (Optional)

No

Yes(PLC)

PLC optimizers(Honeybee 400–PLC,650–PLC,850–PLC,1600–PLC

5Minutes

NEC 2017 690.12

IEC/EN 62109-1:2010

the Low Voltage Directive(2014/35/EU)

EN IEC 61000-6-2:2019

EN 61000-6-3:2007/+A1:2011

the EMC Directive(2014/30/EU)

CE

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Scoutbee800/Scoutbee800M

Sole Rapid Shutdown Device



Product Features

- Module-level shutdown to shut off the source high voltage of string, completely eliminating the risk of personal shock
- Default shutdown state to ensure safety of personnel for installation and maintenance
- PLC communication, no need of additional communication cable, and convenient for installation
- Safe and reliable, with function of output short circuit protection, no risk of high temperature for any component failure
 25 years lifespan, perfectly matching solar
- 25 years mespan, perfectly matching solar
 modules

Product Code	Scout
INPUT	
Max. Input Power	
Max. Input Voltage	
Operating Voltage Range	
Max. Input Current	
OUTPUT	
Voltage Range	
Max. Output Current	
Max. Output P0wer	
Shutdown Voltage	
Efficiency	
Default Working State	
ShutdownTime	
COMMUNICATION	
Rapid Shutdown	
Real-time Monitoring	
OTHERS	
Temperature range	
Relative humidity range	
Ingress Protection	
Protective Class	
INSTALLATION SPECIFICATION	4
Max. No. of Modules per String	9
Input Cable Length	
Output Cable Length	
Size	
Weight	
Connector (Input/Output)	
STANDARD/ CERTIFICATION	
Regulations	
Safety	
Galety	t
EMC	
Certification	



ee800

Scoutbee800M

800W

80VDC

12 ~ 80VDC

20A

12~80VDC 20A 800W 0.8~1VDC >99.8%

Shutdown

15Seconds

PLC (Power Line Communication) Wireless(868M/915M/2.4G)

-40 ~ +85 ℃ 0~100 % IP68 II

30Pcs 200mm 1000mm 107×82×20mm 360g Compatible with MC4

NEC 2017 (690.12) IEC/EN 62109–1:2010 the Low Voltage Directive(2014/35/EU) EN IEC 61000–6–2:2019 EN 61000–6–3:2007/+A1:2011 the EMC Directive(2014/30/EU) CE - - -

Scoutbee1600/Scoutbee1600M

Dual Rapid Shutdown Device



Product Features

- Module-level shutdown to shut off the source high voltage of string, completely eliminating the risk of personal shock
- Default shutdown state to ensure safety of personnel for installation and maintenance
- PLC communication, no need of additional communication cable, and convenient for installation
- Safe and reliable, with function of output short circuit protection, no risk of high temperature for any component failure
- 25 years lifespan, perfectly matching solar
 modules

Product Code	Scoutbe
INPUT	
Number Of Module	Input#1
Max. Input Power	800 W
Max. Input Voltage	
Operating Voltage Range	
Max. Input Current	
OUTPUT	
Voltage Range	
Max. Output Current	
Max. Output Power	
Shutdown Voltage	
Efficiency	
Default Working State	
ShutdownTime	
COMMUNICATION	
Rapid Shutdown	F
Real-time Monitoring	
OTHERS	
Temperature range	
Relative humidity range	
Ingress Protection	
Protective Class	
INSTALLATION SPECIFICATION	Ν
Max. No. of Modules per String	g
Input Cable Length	
Output Cable Length	
Size	
Weight	
Connector (Input/Output)	
STANDARD/ CERTIFICATION Regulations	I
Safety	the
Certification	



61000	OCOULDEE	
	2Pcs	
Input#2	Input#1	Input#2
800 W	800 W	800 W
80VDC	C / 80VDC	
12~80VDC	; / 12~80VDC	
204	A / 20A	
0~1	60VDC	
	20A	
10	600W	
1.6	~2VDC	
>6	99.8%	
Shu	utdown	
158	Seconds	
PLC (Power Lir	ne Communication)	
Wireless(868	3M/915M/2.4G)	
-40	~ +85 °C	
0~	100 %	
	P68	
	II	
0		
000mm	0PCS	
2001111	00mm	
101~9	26x20mm	
12120	530a	
Compatik	ole with MC4	
Oompatik		
NEC 20	17 (690,12)	
IFC/FN 6	2109-1:2010	
Low Voltage D)irective(2014/35/El	(ل
EN IEC 610	000-6-2:2019	
EN 61000-6-	3:2007/+A1:2011	
the EMC Direc	tive(2014/30/EU)	
	CE	

ee1600

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Beetrans/Beebox-S

Shutdown Initiator





Product Features

Product Code	Beetrans	Beebox-S
INPUT		
Maximum input Current Per String	15A	20A
Support Strings	2Sti	rings
Cascade control	YES	N/A
Maximum number of cascading	9	N/A
Maximum System Voltage	1000V / 1500V	
Voltage & Frequency	12Vdc	100~240Vac; 50/60Hz; 1Aac
INSTALLATION SPECIFICATION		
Connector	Compatible with 3/4 Inch EMT 3pcs	Compatible with MC4
Size	220 x 210	0 x 65 mm
Weight	88	30g
Working Temperature	-20 ~ +6	℃ 00
Ingress Protection	IP	65
FUNCTION		
Default Internet Access	N/A	LAN+WIFI
Local Rapid Shutdown Function	YE	ES
Remote Rapid Shutdown Function	YE	S
Open Circuit Voltage	YE	ES
Automatic Shutdown After Power Fai	lure YE	S
DC arc Detection Function	NO	YES
Support Production Models	Scoutbee800/800M, Scoutbe	ee1600/1600M, Scoutbox450
Data Transmission Frequency	N/A	5 Minutes(PV Status)
STANDARD/ CERTIFICATION		
Regulations	NEC 2017 690.12	
Safety	UL1741,CSA C22.2 No. 330,UL	IEC/EN 62109-1:2010
,	1703,ULC1703-01	the Low Voltage Directive(2014/35/E
	FCC Part15 ClassB	EN IEC 61000-6-2:2019
EMC	IEC61000-6-2 / IEC61000-6-3	EN 61000-6-3:2007/+A1:2011
	EN61000-6-2 / EN61000-6-3	the EMC Directive(2014/30/EU)
Certification	CSA	CE



Smartbee600/Smartbee600S

Integrated Power Optimizer



Product Features

- Ø Module level Maximum Power Point Tracking (MPPT), 5–25% more power yield
- Real-time module level monitoring, timely warning and positioning the problem
- Secure solar system, remote shutdown,
 elimination of high voltage danger
- Simplify the design scheme of the power station and make full use of the roof or floo area
- ③ Flexible system design for maximum space utilization
- 25 years lifespan, perfectly matching solar modules

Product Code

INPUT

Max Output Power Max Output Current Output Voltage Range MPPT Voltage Range

System Voltage

EFFICIENCY

Max Conversion Efficiency European Efficiency

CEC Efficiency

INSTALLATION SPECIFICATION

Size

Weight

Output Connector

Working Temperature

Ingress Protection

Relative Humidity

STANDARD COMPLIANCE

EMC Safety Regulations Overvoltage Category

Product Code

INPUT

Max Output Power Cell-string MPPT Voltage Range PV Module MPPT Voltage Range Max Output Current Output Voltage Range System Voltage

EFFICIENCY

Max Conversion Efficiency European Efficiency CEC Efficiency

INSTALLATION SPECIFICATION

Size Weight Output Connector Working Temperature Ingress Protection Relative Humidity

STANDARD COMPLIANCE

EMC Safety Regulations Overvoltage Category



Smartbee600

600 W 15 A 0 V~ 75 V 12 V ~ 75 V 1000 V/1500 V

> 99.60% 98.50% 98.30%

152 x 133 x 25.9 mm 540g Compatible with MC4 -40~+85°C IP68 0~100%

IEC61000-6-2,IEC61000-6-3 IEC62109-1(Class II safety) III

Smartbee600S

600 W 7 V~20 V 16 V~ 60 V 15 A 0 V ~60 V 1000 V/1500 V

> 99.5% 98.3% 98.2%

148.6x 127.6x 27mm 580g Compatible with MC4 -40 ~+85°C IP68 0~100%

IEC61000-6-2, IEC61000-6-3 IEC62109-1 (Class I1 safety)

Cases

MW PV





Station in Three Gorges New Energy

5MW Floating Project in Bangkok, Thailand <

Optimized 1MW PV Station in Xinjiang, China

875KW PV Station in Takasaki, Japan

▶ 30KW Rooftop PV Station in Sofia, Bulgaria

▶ 10.08KW Rooftop PV Station in Poland

