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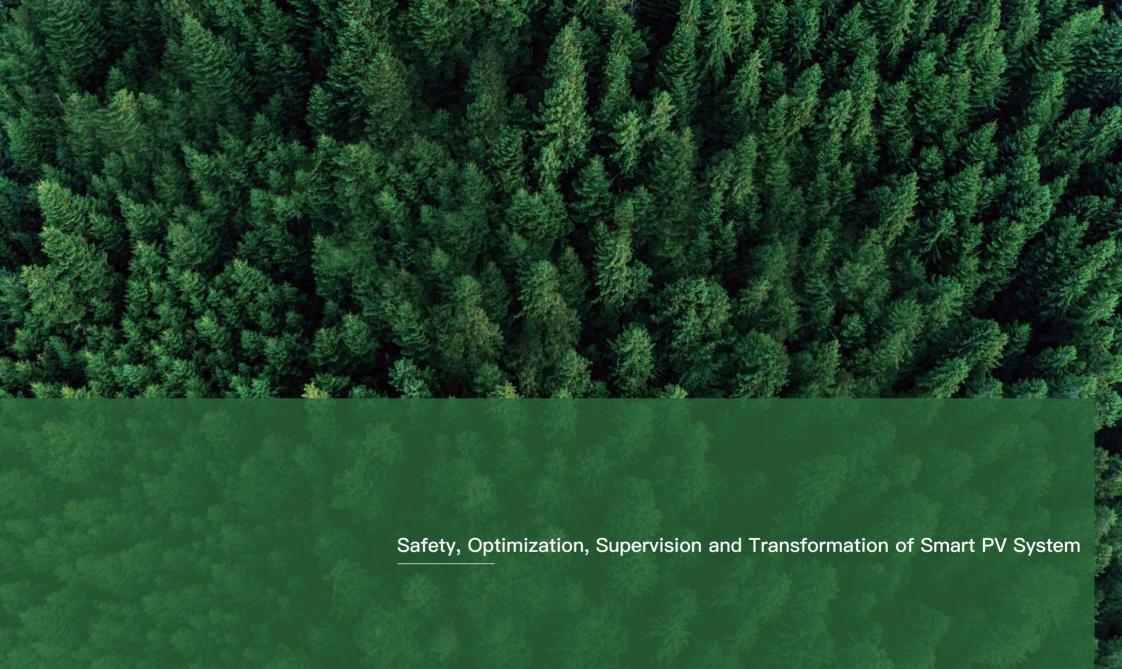
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### **About Us**

Jiangsu GNE New Energy Technology Co., Ltd (GNE) was founded in 2013, focusing on the R&D, production and sales of PV Energy Storage Systems, PV Module-Level Power Optimization Systems, Module-Level Rapid Shutdown Systems and Intelligent Monitoring Systems, and committed to providing global customers with complete solutions for PV ESS and MLPE (Module-Level Power Electronics) applications.

GNE has obtained more than 50 domestic and foreign inventions and patents, and has rich technical accumulation and practical experience in the field of PV power optimization and intelligent management. Our products include Hybrid inverters, PV power optimizers, rapid shutdown devices, module monitors, smart junction boxes, data processing equipment, and have been widely used in China, Europe, Japan, North America, South–East Asia, and other mainstream PV markets in the world, and has become a high–tech enterprise with international influence.

Mission

Bringing benefits to users, investors and employees, and contributing to the new energy business and energy-saving, environmental protection and low carbon society.

Vision

To be a global leading provider of new energy intelligent power optimization and security monitoring solutions.



#### Specializes

in developing and manufacturing solar optimization devices and intelligent monitoring system



#### Dozens

of Inventions and patents with independent ntellectual property rights



#### Gradually

expanding to Europe,America,Japan and other major PV markets

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# Base Station PV Optimization Solution

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#### **Data Cloud Center**

oneypot -----2

Cases ----- 29





- time
- nd parallel
- V systems
- generator

470.00		Supports up to 10 units in parallel (parallel of mode)
470.00	-238.00	Maximum charge/discharge current 190A
GNETEK	•     .	6 programmable charging and discharging ti periods
391.00		Supports lithium and lead-acid batteries and connection of multiple batteries
		Supports AC coupling to retrofit existing PV
173.00	•	Supports direct battery charging by diesel go
		Supports arc detection

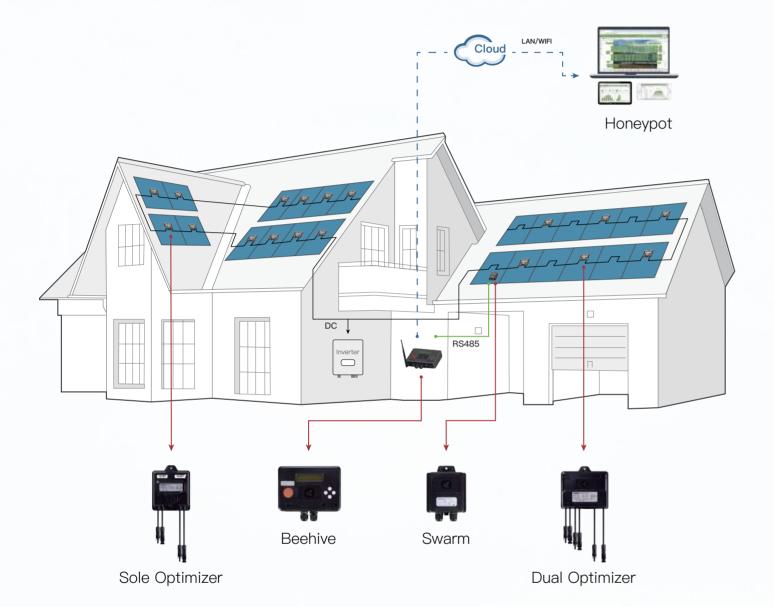
Model	Queenbee-1P8K	Queenbee-1P10K	
Battery Input Data			
Battery Type	Lead-acid or Lithium-ion	Lead-acid or Lithium-ion	
Battery Voltage Current (V)	40~60	40~60	
Nominal battery voltage [V]	48	48	
Max.Charging Current (A)	190	190	
Max.Discharging Current (A)	190	190	
Charging strategy for Li-lon Battery	Self-adaption to BMS	Self-adaption to BMS	
Number of Battery Input	1	1	
PV String Input Data			
Max.PV Input Power (W)	10400	13000	
Max.PV Input Voltage (V)	500	500	
Start-up Voltage (V)	125	125	
PV Input Voltage Range (V)	125~500	125~500	
MPPT Voltage Range (V)	150~425	150~425	
Full Load MPPT Voltage Range (V)	200~425	200~425	
Rated PV Input Voltage (V)	370	370	
Max.Operating PV Input Current(A)	32+32	32+32	
Max.Input Short-Circuit Current(A)	44+44	44+44	
No.of MPP Trackers/No.of Strings MPP Tracker	2/2+2	2/2+2	
Max.Inverter Backfeed Current to The Array	0	0	
AC Input/Output Data			
Rated AC Input/Output Active Power (W)	8000	10000	
Max.AC Input/Output Apparent Power(VA)	8800	11000	
Peak Power (off-grid)(W)	2 Times of rated power,10s	2 Times of rated power,10s	
Rated AC Input/Output Current(A)		45.5/43.5	
	36.4/34.8	·	
Max. AC Input/Output Current(A)	40/38.3	50/47.9	
Max.Continuous AC Passthrough (grid to load)(A)	50	50	
Max.Output Fault Current(A)	80	80	
Max.Output Overcurrent Protection(A)	145	145	
Rated Input/Output Voltage/Range(V)	220V/230V 0.8Un~1.1Un	220V/230V 0.8Un~1.1Un	
Grid Connection Form	L+N+PE	L+N+PE	
Rated Input/Output Grid Frequency/Range	50Hz/45Hz~55Hz 60Hz/55Hz~65Hz	50Hz/45Hz~55Hz 60Hz/55Hz~65Hz	
Power Factor Adjustment Range	0.8 leading~0.8 lagging	0.8 leading~0.8 lagging	
Total Current Harmonic Distortion THDi	<3% (of nominal power)	<3% (of nominal power)	
DC Injection Current	<0.5%ln	<0.5%ln	
Efficiency			
Max.Efficiency	97.60%	97.60%	
Euro Efficiency	96.50%	96.50%	
MPPT Efficiency			
	>99%  DC Polarity Reverse Connection Protection, AC Output Overcurrent Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, Thermal Protection, DC Terminal Insulation Impedance Monitoring, DC Component Monitoring, Ground Fault Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power Network Monitoring, Island Protection Monitoring, EarthFault Detection, DC Input Switch, Overvoltage Load Drop Protection, Residual Currrent(RCD) Detection, Surge Protection Level,		
Security Protection	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No.	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection,	
Security Protection  Interface	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power N DC Input Switch, Overvoltage Load Drop Protection, Residual Cu	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection,	
	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No.	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection,	
Interface	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power N DC Input Switch, Overvoltage Load Drop Protection, Residual Cu	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection urrrent(RCD) Detection, Surge Protection Level,	
Interface Display	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power N DC Input Switch, Overvoltage Load Drop Protection, Residual Cu LCD+LED	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection, urrrent(RCD) Detection, Surge Protection Level,  LCD+LED	
Interface Display Communication Interface	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power Nr DC Input Switch, Overvoltage Load Drop Protection, Residual Cu LCD+LED RS232,RS485,CAN	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection urrrent(RCD) Detection, Surge Protection Level, LCD+LED RS232,RS485,CAN	
Interface Display Communication Interface Monitor Mode	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power Nr DC Input Switch, Overvoltage Load Drop Protection, Residual Cu LCD+LED RS232,RS485,CAN	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection urrrent(RCD) Detection, Surge Protection Level, LCD+LED RS232,RS485,CAN	
Interface Display Communication Interface Monitor Mode General Data	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power Nr DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection urrrent(RCD) Detection, Surge Protection Level,  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power Nr DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection urrent(RCD) Detection, Surge Protection Level,  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating 0~100%	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity Permissible Altitude	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power Nr DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection, urrent(RCD) Detection, Surge Protection Level,  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating 0-100% 2000m	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity Permissible Altitude Noise	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m  <30dB	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection urrent(RCD) Detection, Surge Protection Level,  LCD+LED RS232,RS485,CAN GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating 0~100% 2000m <30dB	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity Permissible Altitude Noise Ingress Protection(IP)Rating	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m  <30dB  IP 65	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection, surrent(RCD) Detection, Surge Protection Level,  LCD+LED RS232,RS485,CAN GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating 0~100% 2000m <30dB IP 65	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity Permissible Altitude Noise Ingress Protection(IP)Rating Inverter Topology	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m  <30dB  IP 65  Non-Isolated	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection, surrent(RCD) Detection, Surge Protection Level,  LCD+LED RS232,RS485,CAN GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating 0~100% 2000m <30dB IP 65 Non-Isolated	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity Permissible Altitude Noise Ingress Protection(IP)Rating Inverter Topology Over Voltage Category	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m  <30dB  IP 65  Non-Isolated  OVC III(DC),OVC III(AC)	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection Jurrent(RCD) Detection, Surge Protection Level,  LCD+LED RS232,RS485,CAN GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating 0~100% 2000m <30dB IP 65 Non-Isolated OVC II(DC),OVC III(AC)	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity Permissible Altitude Noise Ingress Protection(IP)Rating Inverter Topology	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m  <30dB  IP 65  Non-Isolated  OVC III(DC),OVC III(AC)	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection urrent(RCD) Detection, Surge Protection Level,  LCD+LED RS232,RS485,CAN GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating 0~100% 2000m <30dB IP 65 Non-Isolated	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity Permissible Altitude Noise Ingress Protection(IP)Rating Inverter Topology Over Voltage Category	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m  <30dB  IP 65  Non-Isolated  OVC III(DC),OVC III(AC)	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection Jurrent(RCD) Detection, Surge Protection Level,  LCD+LED RS232,RS485,CAN GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating 0~100% 2000m <30dB IP 65 Non-Isolated OVC II(DC),OVC III(AC)	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity Permissible Altitude Noise Ingress Protection(IP)Rating Inverter Topology Over Voltage Category Cabinet size(W*H*D)[mm]	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m  <30dB  IP 65  Non-Isolated  OVC III(DC),OVC III(AC)	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection urrent(RCD) Detection, Surge Protection Level,  LCD+LED RS232,RS485,CAN GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating 0~100% 2000m <30dB IP 65 Non-Isolated OVC II(DC),OVC III(AC)	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity Permissible Altitude Noise Ingress Protection(IP)Rating Inverter Topology Over Voltage Category Cabinet size(W*H*D)[mm] Weight	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m  <30dB  IP 65  Non-Isolated  OVC II(DC),OVC III(AC)  470*565*238 (Exculud)  5 Years/10 Years the Warranty Period Depends the Final Insertice Acceptance of the control of the con	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection, surrent(RCD) Detection, Surge Protection Level,  LCD+LED RS232,RS485,CAN GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating 0~100% 2000m <30dB IP 65 Non-Isolated OVC II(DC),OVC III(AC)	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Antitude Noise Ingress Protection(IP)Rating Inverter Topology Over Voltage Category Cabinet size(W*H*D)[mm] Weight Warranty	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No DC Input Switch, Overvoltage Load Drop Protection, Residual Cu  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m  <30dB  IP 65  Non-Isolated  OVC II(DC),OVC III(AC)  470*565*238 (Exculud)  5 Years/10 Years the Warranty Period Depends the Final Insertice Acceptance of the control of the con	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection, urrent(RCD) Detection, Surge Protection Level,  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m  <30dB  IP 65  Non-Isolated  OVC II(DC),OVC III(AC)  ling connectors and brackets)  30 kg  stallation Site of Inverter,More Info Please Refer to Warranty Policy	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity Permissible Altitude Noise Ingress Protection(IP)Rating Inverter Topology Over Voltage Category Cabinet size(W*H*D)[mm] Weight Warranty Type of Cooling	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No DC Input Switch, Overvoltage Load Drop Protection, Residual Culture Switch, Overvoltage Load Drop Protection, Residual Culture Switch, Overvoltage Load Drop Protection, Residual Culture Switch S	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection, surrent(RCD) Detection, Surge Protection Level,  LCD+LED RS232,RS485,CAN GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating 0~100% 2000m <30dB IP 65 Non-Isolated OVC II(DC),OVC III(AC) ling connectors and brackets) 30 kg stallation Site of Inverter,More Info Please Refer to Warranty Policy	
Interface Display Communication Interface Monitor Mode General Data Operating Temperature Range Permissible Ambient Humidity Permissible Altitude Noise Ingress Protection(IP)Rating Inverter Topology Over Voltage Category Cabinet size(W*H*D)[mm] Weight Warranty Type of Cooling Standard/Certification	Current Monitoring, Arc Fault Circuit Interrupter (AFCI), Power No DC Input Switch, Overvoltage Load Drop Protection, Residual Culture Switch, Overvoltage Load Drop Protection, Residual Culture Switch, Overvoltage Load Drop Protection, Residual Culture Switch S	npedance Monitoring, DC Component Monitoring, Ground Fault letwork Monitoring, Island Protection Monitoring, EarthFault Detection, urrent(RCD) Detection, Surge Protection Level,  LCD+LED  RS232,RS485,CAN  GPRS/WIFI/Bluetooth/4G/LAN(optional)  '-40~+65°, >45°Derating  0~100%  2000m  <30dB  IP 65  Non-Isolated  OVC II(DC),OVC III(AC)  ling connectors and brackets)  30 kg stallation Site of Inverter,More Info Please Refer to Warranty Policy ent Air Cooling	



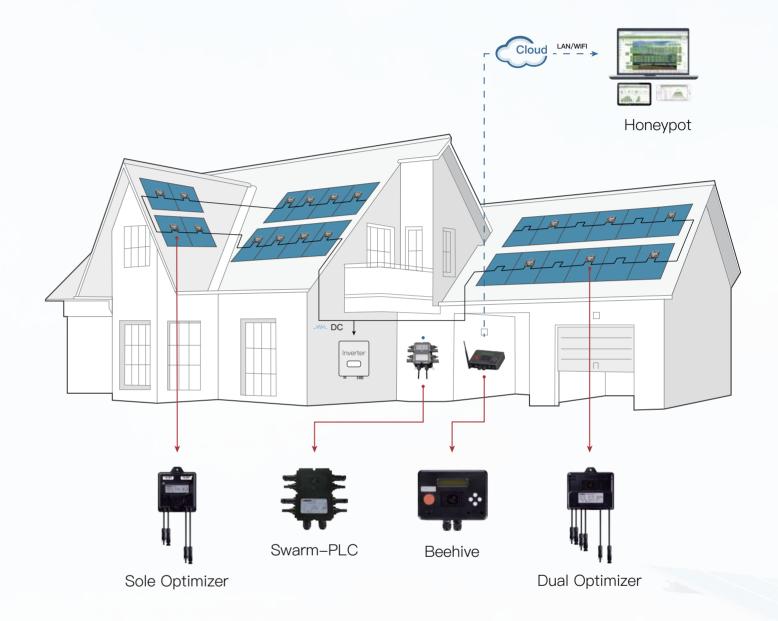




### RF Communication Monitoring



### PLC Communication Monitoring



#### Flexible Networking Convenient Installation

- Significantly improve the power generation of the entire PV power station, effectively track the maximum power of the module, and perfectly solve the power generation loss caused by the shadow, mismatch, module difference, etc.
- Module-level monitoring of the entire PV power station, including power, voltage, current, temperature, and other
- Module-level rapid shutdown remotely or on site through GNE APPs or website monitoring platform, effectively preventing the risk of electric shock and improving the convenience and safety of Operation and Management.

#### Easy Wiring Stable Communication High Reliability

- Significantly improve the power generation of the entire PV power station, effectively track the maximum power of the module, and perfectly solve the power generation loss caused by the shadow, mismatch, module difference, etc.
- Module-level monitoring of the entire PV power station, including power, voltage, current, temperature, and other
- Module-level rapid shutdown remotely or on site through GNE APPs or website monitoring platform, effectively preventing the risk of electric shock and improving the convenience and safety of Operation and Management.

## Sole Power Optimizer





#### **Functions & Features**



- Increase Efficiency: Module-level MPPT tracking to increase system power generation by 5-30%
- Safe and Reliable: Functions with over-voltage, over-current, and over temperature protection, module level shutdown with one click to eliminate the danger of high voltage
- Precise Positioning: Real-time monitoring of each module and the entire station, timely failure detection and accurate positioning
- Convenient Installation: It can be directly connected to the existing PV power system without changing the
- Ultra-long Life: 25-year lifespan, match PV modules

Model	Honeybee650	Honeybee700	Honeybee850	
Input				
Max. Input Power	650 W	700 W	850 W	
Max. Input Voltage	75 VDC	75 VDC	75 VDC	
Operating Voltage Range	12~75 VDC	12~75 VDC	12-75 VDC	
MPPT Voltage Range	12~60 VDC	12~60 VDC	12-65 VDC	
Isc	16 A	20 A	25 A	
Max. Input Current	15 A	18 A	22 A	
Output				
Max. Output Power	650 W	700 W	850 W	
Voltage Range	0~75 VDC	0~75 VDC	0-75 VDC	
Max. Output Current	15 A	18 A	22 A	
Max. Efficiency	99.50%	99.50%	99.50%	
Others				
Max. System Voltage		1500 VDC		
Operating Temperature Range		-40∼+85 °C		
Relative Humidity		0~100%		
Ingress Protection		IP68		
Protective Class		II		
Communication	868M/915M 2.4G/PLC	2.4G	2.4G/PLC/HPLC	
Installation Sprcification				
Cable length	Input: 160 mm *2 Output: 1000 mm *2 (or Customizable)	Input: 800mm, 200mm Output: 1000 mm *2 (or Customizable)	Input: 1000mm, 400mm Output: 1000 mm *2 (or Customizable)	
Size		130.3x109.6x25 mm		
Weight		500 g		
Connector (Input/Output)	Compatibl	e with Staubli MC4 or Co	ustomizable	
Standard / Certification				
CE		IEC/EN 62109-1:2010		
RoHs		2011/62EU 2015/863E	U	
REACH	EU REACH Regulation No 1907/2006 Article 33			
WEEE		EN 50419:022		

\*The working status of PLC optimizers can be customized (Default on or off)









# Honeybee1400/1600

## **Dual Power Optimizer**





#### **Functions & Features**



- Increase Efficiency: Module-level MPPT tracking to increase system power generation by 5-30%
- Safe and Reliable: Functions with over-voltage, over-current, and over temperature protection, module level shutdown with one click to eliminate the danger of high voltage
- Precise Positioning: Real-time monitoring of each module and the entire station, timely failure detection and accurate positioning
- Convenient Installation: It can be directly connected to the existing PV power system without changing the
- Ultra-long Life: 25-year lifespan, match PV modules

Model	Honeybee1400	Honeybee1600	
Input			
Support Modules	2	2	
Max. Input Power	700W/700W	800W/800W	
Max. Input Voltage	60VDC/60VDC	60VDC/60VDC	
Operating Voltage Range	13~60VDC/13~60VDC	13~60VDC/13~60VDC	
MPPT Voltage Range	13~55VDC/13~55VDC	13~55VDC/13~55VDC	
Isc	20A/20A	23A/23A	
Max. Input Current	18A/18A	20A/20A	
Ooutput			
Max. Output Power	1400 W	1600 W	
Voltage Range	0~120 VDC	0~120 VDC	
Max. Output Current	18 A	20 A	
Max. Efficiency	99.50%	99.50%	
Others			
Max. System Voltage	1500 VDC		
Operating Temperature Range	-40~+85 °C		
Relative Humidity	0~100%		
Ingress Protection	IP68		
Protective Class	II		
Communication	2.4G/HPLC		
Installation Sprcification			
Cable length (Input/Output)	Input 1: In1- 200 mm / In1+ 900 mm Input 2: In2- 1100 mm / In2+ 300 mm Output: Out- 2800 mm / Out+ 200 mm		
Size	144x130x26.8 mm		
Weight	100	00 g	
Connector (Input/Output)	Compatible with Staubli MC4 or Customizable		
Standard / Certification			
CE	IEC/EN 62°	109–1:2010	
RoHs	2011/62EU 2015/863EU		
REACH	EU REACH Regulation No 1907/2006 Article 33		
WEEE	EN 50419:022		

\*The working status of PLC optimizers can be customized (Default on or off)









# Swarm & Beehive

## **Data Processing Device**









- Diverse combination: Intelligent dynamic networking and unnetworking, network self-healing
- Multiple Internet Access: Supports LAN/WiFi connection
- One-click Remote Shutdown: Intelligent monitoring management platform, remotely turn off the output of modules with one click
- Strong Anti-interference: Support data resumption, solve data packet loss problem

Model		Swarm		
Basic Parameters				
Working Voltage		12 Vdc		
Working Current			25 mA	
Power Consumpt	ion		≤0.3 W	
Installation Spro	cificati	on		
Connector			RS485*2	
Wireless Range		(S	warm to Honeybee)≤30m	
Wireless Band			868M/915M/2.4G Hz	
Max. No. of Bees	-		≤200	
Size			124x99x32 mm	
Weight			150 g	
Working Tempera	ature		-40∼+85 °C	
Ingress Protection	n		IP65	
Standard / Certification				
CE	IEC/EN 62109-1:2010			
WEEE	EN 50419:022			
RoHS	2011/62EU 2015/863EU			
Model		Beehive		
Basic Paramet	ers			
Working Voltage 12 \		12 Vdc		
Working Current			250 mA	
Power Consumpt	ion		≤3 W	
Installation Spro	cificati	on		
Connector			RS485*2、RJ45、USB2.0	
No. of connectab	le Bee	S	≤1000 Pcs	
No. of connectab	le Swa	ırms	≤5 Pcs	
Size	Size		158x113x36.8 mm	
Weight	Weight		400 g	
Working Temperature		-20~+60 °C		
Ingress Protection IP20		IP20		
Standard / Cer	tificat	ion		
CE			IEC/EN 62109-1:2010	
WEEE		EN 50419:022		
RoHS		2011/62EU 2015/863EU		

Model	Swarm-PLC			
Basic Parameters				
Support String	js	4		
Maximum input Current Per Stri	ing	20 A		
Maximum Syste Voltage	·m	1000V / 1500V		
Voltage & Frequ	uency	12 Vdc		
Installation S	Sprcifi	cation		
Connector		Compatible with Staubli MC4		
Size		140x99x50.4 mm		
Weight		504 g		
Working Tempe	rature	-40∼+85 °C		
Ingress Protec	tion	IP65		
Function				
Communicatio	n	RS485		
Local Rapid Shutdown Func	tion	Support		
Remote Rapid Shutdown Func	tion	Support		
Open Circuit Vo	oltage	Support		
Automatic Shute After Power Fai		Support		
Support Produc Models	ction	Honeybee650/850/1600 (PLC Version)		
Standard / Certification				
CE	IEC/EN 62109-1:2010			
WEEE	EN 50419:022			
RoHS	201	11/62EU 2015/863EU		













# Shutdown Controller

Beetrans-Max-M

#### Description

Achieve module-level monitoring and rapid shutdown functionality by collecting data via HPLC or sending shutdown/upgrade commands to HPLC optimizers.

Beetrans-Max-M can be equipped with 4 pairs of magnetic rings and supports up to 32 strings of up to 500 Optimizers.

Pressing the red "Emergency Button" or disconnecting AC power to the Beetrans-Max-M will shut off the output of each Optimizer.

- Module-level rapid shutdown within 2 seconds.
- Complied with NEC 2017&2020 690.12 requirements and UL1741/UL3741 regulations
- HPLC communication with Optimizers Honeybee850/1600HPLC for rapid shutdown function
- Advanced crosstalk prevention solution
- Weatherproof outdoor enclosure
- Easy to install and operate

Code	Beetrans-Max-M			
Specification				
Maximum No. of Core equiped	4pairs			
Maximum No. of String supported		4*8 str	ings	
Maximum String Voltage		1500	V	
Maximum No.of Optimizer Controlled		500	)	
Communication method		HPL	С	
Access to Internet		LAN /	WiFi	
Application				
Working temperature range		-25~+6	65 ℃	
Relative Humidity range		0~10	0%	
Ingress Protection	NEMA Type3R / IP65			
Certification				
Regulations	NEC 2017&2020 690.12			
CE	NEC2017/2020 690.12B			
ETL	UL1741 / UL3741			
RoHS	CSA C22.2 No.330			
Structure				
Size	220x	210x65 mm (excl	uding cable length	)
Weight	850 g			
Power supply parameters	85–264VAC			
Magnetic Ring Parameters				
Inside diameter / Outside diameter	29mm / 65mm			
Maximum current per ring	160A			
Number of strings supported by each ring	8			
Corresponding to the outer diameter of the string cable	Ф5.9mm Ф6.35mm Ф7mm Ф8.6mm			

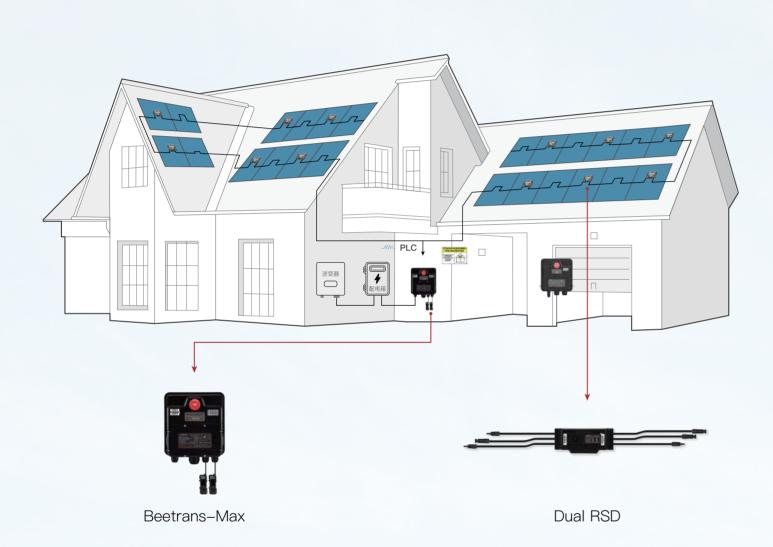








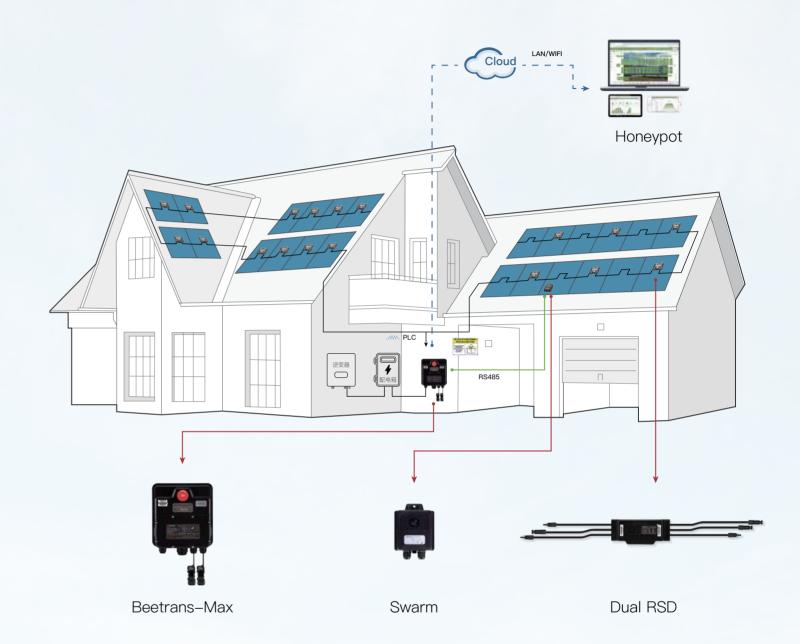
### On-Site Rapid Shutdown Solutions



#### Convenient Cabling Easy installation Efficient Solution

- Safety Regulations: Meets the requirements of NEC 2017 & 2020 (690.12), ul1741 and ul3741.
- Rapid Shutdown: Each module will be shut down and the string voltage will drop to the safe voltage range (< 30V)</li> within 30 seconds after pressing the emergency button to prevent the risk of electric shock.

### Rapid Shutdown and Monitoring Solutions



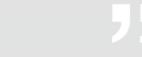
#### Flexible Configuration Easy Networking Remote Monitoring

- Safety Regulations: Meets the requirements of NEC 2017 & 2020 (690.12), ul1741 and ul3741.
- Rapid Shutdown: Each module will be shut down and the string voltage will drop to the safe voltage range (< 30V) within 30 seconds after pressing the emergency button to prevent the risk of electric shock.
- Remote Monitoring: Module-level monitoring and accurate failure positioning for convenient maintenance and operation.

### Scoutbee1600M

## **Dual Rapid Shutdown Device**







- Module-level Rapid Shutdown: Reduce and eliminate the risk of electric shock, improve the safety of the power station
- Safe and reliable: With functions of overcurrent, overvoltage, and overheating protection
- Automatic Shutdown: The default shutdown state to ensure the personal safety of installation and maintenance
- Convenient Installation: It can be directly connected to the existing PV power system without changing the original line
- Ultra-long Life: 25-year lifespan,matching PV modules

Product Code	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: Power Line Communication		
Real-time Monitoring	2.4 G		
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- 260 mm / in1+ 1160 mm Input 2: in2- 1160 mm / in2+ 260 mm Output: out- 2760 mm / out+ 160 mm		
Size	121×86×20 mm		
Weight	700 g		
Connector (Input/Output)	Compatible with MC4,Staubli		
Standard / Certification			
regulations	NEC 2017&2020 690.12		
CE	IEC/EN 62109-1:2010		
RoHs	2011/62EU 2015/863EU		
REACH	EU REACH Regulation No 1907/2006 Article 33		
ETL	UL1741 / UL3741		
WEEE	EN 50419:022		















## Shutdown Controller

Beetrans-Max

#### Description

As part of GNE rapid shutdown solution, the shutdown controller Beetrans-Max is designed to work with GNE RSD for module-level shutdown.

Beetrans-Max continuously sends turn-on signals to GNE RSD to activate normal power output.

Beetrans–Max can be equipped with 4 magnetic rings and supports up to 60 strings of up to 30 PV modules

Pressing the red "Emergency Button" or disconnecting AC power to the Beetrans-Max will shut off the output

- 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
- Weatherproof outdoor enclosure
- Easy to install and operate

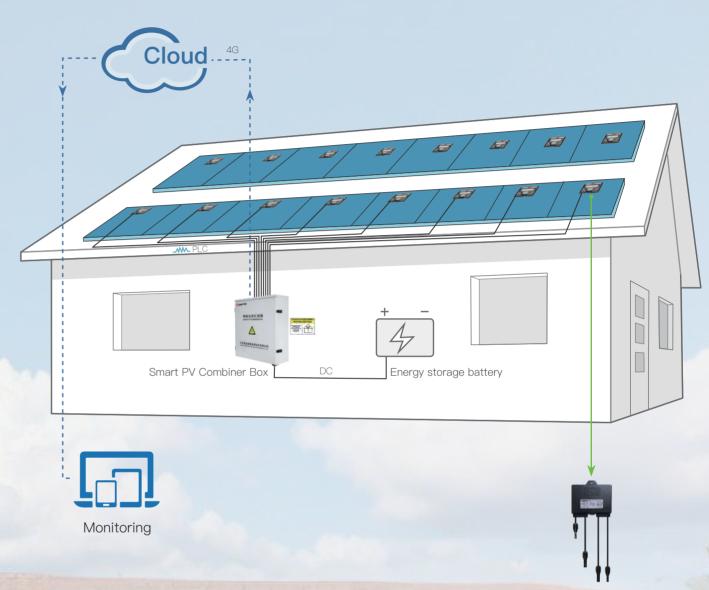
Code	Beetrans-Max				
Specification					
Maximum No. of Core equiped		4			
Maximum No. of String supported		4*15 st	trings		
Maximum String Voltage		1000 / 1	500 V		
Maximum No.of Panels Controlled		180	00		
Communication method		PLC	C		
Access to Internet		LAN /	WiFi		
Application					
Working temperature range		-25~+	65 ℃		
Relative Humidity range		0~10	00%		
Ingress Protection		NEMA Type3R / IP65			
Certification					
Regulations	NEC 2017&2020 690.12				
CE	IEC/EN 62109-1:2010a				
ETL	UL1741 / UL3741				
RoHS		2011/62EU 2015/863EU			
Structure					
Size	220:	220x210x65 mm (excluding cord length)			
Weight		850 g			
Power supply parameters	85–264VAC				
Magnetic Ring Parameters					
Inside diameter / Outside diameter	29mm / 65mm				
Maximum current per ring	160A				
Single magnetic ring supports the number of string combinations	8				
Corresponding to the outer diameter of the string cable	Ф5.9mm Ф6.35mm Ф7mm Ф8.6mm				







## Base Station PV Optimization Solution



Honeybee700B Base-station optimizer

#### Parallel System

Safety, Optimization, Supervision and Transformation of Smart PV System

#### Increasing Voltage

#### Security Intelligence

- GNE smart combiner box working together with GNE PV optimizer Honeybee700B are used in the base station PV
- The base-station optimizers Honeybee700B are connected to the PV modules, tracking the maximum power point of the modules and connected in parallel to the combiner box. The combiner box monitors the operating data and status of the optimizers in real time, and can adjust the output voltage range of each optimizer.
- The combiner box is connected to the DC busbar in the server room, prioritizing the use of PV power to supply power to the base station.

# Honeybee700B

## **Base Station Optimizer**



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- Increase Efficiency: Module-level MPPT tracking to increase system power generation by 5–30%
- Safe and Reliable: Functions with over-voltage, over-current, and over temperature protection, module level shutdown with one click to eliminate the danger of high voltage
- Precise Positioning: Real-time monitoring of each module and the entire station, timely failure detection and accurate positioning
- © Convenient Installation: Applied to off-grid PV power station with energy storage batteries
- Ultra-long Life: 25-year lifespan, match PV modules

Model	Honeybee700B			
Input				
Max. Input Voltage	60 V			
Max. Input Current	20 A			
Max. Input Power	700 W			
MPPT Voltage Range	25~55 V			
Output				
Voltage Range	42~58 V			
Max. Output Current	17 A			
Max. Output Power	700 W			
Max. Efficiency	99.60%			
Protection Function				
Input Overvoltage	Yes			
Input Overvoltage Recovery	Yes			
Input Undervoltage	Yes			
Input Undervoltage Recovery	Yes			
Input Overcurrent	Yes			
Input Overcurrent Recovery	Yes			
Input Overload	Yes			
Input Overload Recovery	Yes			
Output Overvoltage	Yes			
Output Overvoltage Recovery	Yes			
Output Overcurrent	Yes			
Output Overcurrent Recovery	Yes			
Overtemperature	Yes			
Others				
Operating Temperature Range	-40∼+85 °C			
Relative Humidity	0~100%			
Ingress Protection	IP68			
Protective Class	II.			
Communication	PLC(Power Line Communication)			
Installation Specification				
Size	130×122.9×28 mm			
Input/Output Cable Length	Input: 1000 mm *2; Output: 160 mm *2 (or Customizab			
Connector(Input/Output)	Compatible with Staubli MC4 or Customizable			
Standard/Certification				
CNAP	NB/T 42143-2018			
CIVAL	NEC 690.12-2017			

<sup>\*</sup>The optimizer can be set to off when Input: Overvoltage/Undervoltage/Overcurrent/Overload, Output: Overvoltage/Overcurrent/Overtemperature.

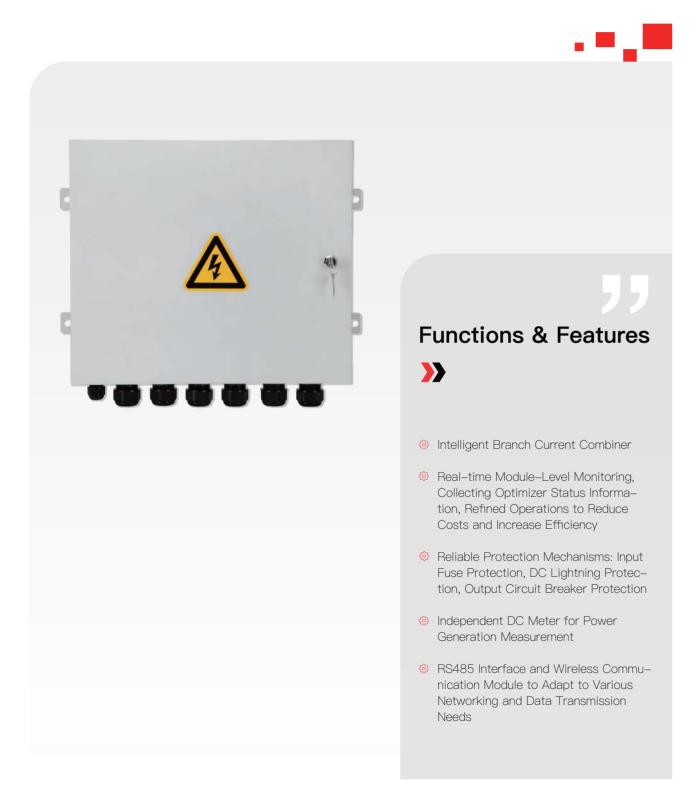






# Hornet08/Hornet16

### **Combiner Box**



Model	Hornet08	Hornet16	
Input			
Standby Power Consumption	≤4 W	≤6 W	
Maximum Input Current	145 A	290 A	
Maximum DC Voltage	60	V	
Input Voltage Range	40~	60 V	
Performance Parameters			
DC Meter	Inte	rnal	
Number of Input/Output Circuits	8/1	16/2	
Fusing Capacity per Circuit	20	А	
Insulation Resistance	≥2	ΜΩ	
Surge Protection	Maximum Discharge Current: 40KA		
Grounding Resistance	≤0.1 Ω		
Emergency Stop Switch	Disconnect Combiner Output and Busbar		
Communication			
Communication Methods	PLC/RS485		
Monitoring Methods	4G/Ethernet		
Other Parameters			
Installation Method	wall-m	ounted	
Product Dimensions	340x330x109.5 mm		
Product Weight	7.5 kg	9.2 kg	
Temperature Range	-40°C-60°C		
Relative Humidity Range	≤95% (Non-condensing)		
Altitude	≤3000m		
Protection Rating	IP(	66	
Standard/Certification	NB/T 42143-2018 ; NEC 690 GB/T34936-2017		







# Honeypot

### **Data Cloud Center**







#### website:

https://gne.gnetek.com/#/login

#### **Functions & 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
- Historical data query, big data analysis and automatical table report

#### 1. Real time Monitoring



#### 2. Power Trends



#### 3. Generating Summary



4. Date Query



#### 5. Warning



#### 6. Emergency Shutdown



#### 29 30

# Cases

#### ► Colgate 1.25MW PV Rooftop Station in Guangzhou, China









#### ► 265MW PV Station in Tongchuan China









#### 50KW PV Station in Ibaraki, Japan ◀









5MW Floating Project in Bangkok, Thailand <











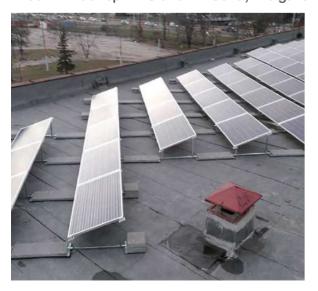
▶ 54.5KW PV Station in Nantong, China



▶ 875KW PV Station in Takasaki, Japan



▶ 30KW Rooftop PV Station in Sofia, Bulgaria



▶ 10.08KW Rooftop PV Station in Poland





# Optimizers bring more benefits to PV stations