



Hybrid Inverter Products

GNE New Energy Technology Co., Ltd.

Hybrid Inverter Series



- Supports up to 10 units in parallel
- 6 programmable charging and discharging time periods
- Supports lithium and lead-acid batteries and parallel connection of multiple batteries
- Supports AC coupling to retrofit existing PV systems
- Supports direct battery charging by diesel generator

Model	Queenbee-1P3K	Queenbee-1P3.6K	Queenbee-1P5K	Queenbee-1P6K
Battery Input Data				
Battery Type	Lead-acid or Lithium-Ion			
Battery Voltage Range (V)	40-60			
Max.Charge/ Discharge Current (A)	190			
BMS Communication Method	CAN,RS485			
PV String Input Data				
Max.PV Input Power (W)	3900	4780	6500	7800
Maximum Input Voltage	500	500	500	500
Startup Voltage (V)	125	125	125	125
Rated PV Input Voltage (V)	370	370	370	370
MPPT Voltage Range (V)	150-425	150-425	150-425	150-425
Number of MPPTs	2	2	2	2
String Quantity per MPPT	1/1	1/1	1/1	1/1
Max.Operating PV Input Current(A)	20/20	20/20	20/20	20/20
Max.Input Short-Circuit Current(A)	27/27	27/27	27/27	27/27
AC Parameters (Grid-Tied Side)				
Rated AC Input/Output Active Power (W)	3000	3600	5000	6000
Max.AC Input/Output Apparent Power(VA)	3300	3960	5500	6600
Rated AC Input/Output Current(A)	13.7/13.1	16.4/15.7	22.8/21.8	27.3/26.1
Max. AC Input/Output Current(A)	15/14.4	18/17.3	25/24	30/28.7
Rated Voltage(V)	220/230,L+N+PE			
Rated Frequency	50/60			
Power Factor Adjustment Range	0.8 leading to 0.8 lagging			
Total Harmonic Distortion of Current (THDi)	<3@Rated Power			
AC Parameters (Off-Grid Side)				
Maximum Output Power (W)	3000	3600	5000	6000
Maximum Output Current (A)	15/14.4	18/17.3	25/24	30/28.7
Apparent Power at Peak Output (10s) (VA)	3900	4680	6500	7800
Rated Voltage (V)	220/230,L+N+PE			
Rated Frequency (Hz)	50/60			
Switching Time between on-Grid and Off-Grid (ms)	<10			
Efficiency				
Max.Efficiency	97.80%			
Euro Efficiency	97.10%			
MPPT Efficiency	97.00%			
Protect				
Integration	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, Earth/Fault Detection, DC Input Switch, Overvoltage Load Drop Protection, Residual Current (RCD) Detection, Surge Protection Level.			
Monitoring				
Monitoring	App, Monitoring Platform			
General Data				
Operating Temperature Range	-25~60°C, Derating above 45°C			
Cooling Method	Intelligent Air Cooling			
Noise(dB)	<30dB			
Dimensions(mm)	485*420*238 mm (excluding connectors and hangers)			
Weight(kg)	21.5 kg			
Ingress Protection Rating	IP65			
Installation Method	Wall-mounted			
Warranty Period	5 Years			
Standard/Certification				
EMC	IEC 61000-6-1:2016 ; EN 61000-6-1:2019 ; IEC 61000-6-3:2020 ; EC 61000-6-3:2020 EN 61000-6-3:2021			
Safety Regulation	IEC 62109-1:2010 ; IEC 62477-1:2022 ; EN 62109-1:2010 ; IEC 62109-2:2011 ; EN 62109-2:2011			
Grid Regulation	IEC 61727:2004 ; IEC 62116:2014			
Energy Efficiency	IEC 61883:1999			

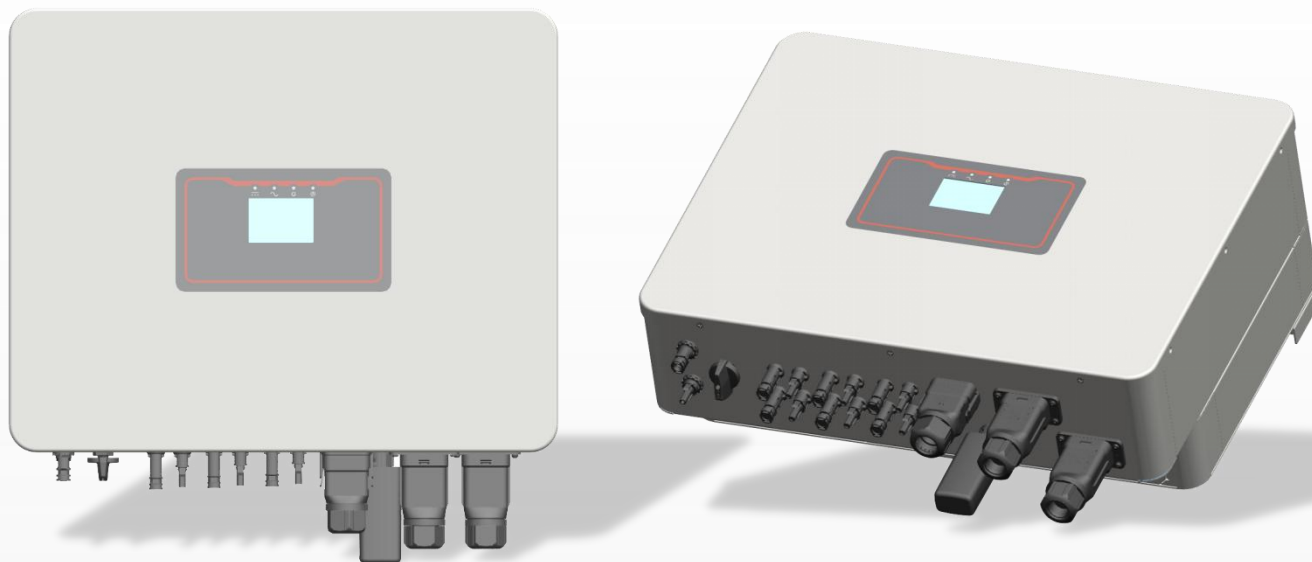
Hybrid Inverter Series



- Supports up to 10 units in parallel
- Maximum charge/discharge current 190A
- 6 programmable charging and discharging timeperiods
- Supports lithium and lead-acid batteries and parallelconnection of multiple batteries
- Supports AC coupling to retrofit existing PV systems
- Supports direct battery charging by diesel generator
- Supports arc detection

Model	Queenbee-1P8K	Queenbee-1P10K
Battery Input Data		
Battery Type	Lead-acid or Lithium-ion	
Battery Voltage Range (V)	40-60	
Max.Charge/ Discharge Current (A)	190	
BMS Communication Method	CAN\RS485	
PV String Input Data		
Max.PV Input Power (W)	10400	13000
Maximum Input Voltage	500	500
Startup Voltage (V)	125	125
Rated PV Input Voltage (V)	370	370
MPPT Voltage Range (V)	150-425	150-425
Number of MPPTs	2	2
String Quantity per MPPT	2/2	2/2
Max.Operating PV Input Current(A)	32/32	32/32
MaxInput Short-Circuit Current(A)	44/44	44/44
AC Parameters (Grid-Tied Side)		
Rated AC Input/Output Active Power (W)	8000	10000
Max.AC Input/Output Apparent Power(VA)	8800	11000
Rated AC Input/Output Current(A)	36.4/34.8	45.5/43.5
Max. AC Input/Output Current(A)	40/38.3	50/47.9
Rated Voltage(V)	220/230L+N+PE	
Rated Frequency	50/60	
Power Factor Adjustment Range	0.8 leading to 0.8 lagging	
Total Harmonic Distortion of Current (THDi)	<3@Rated Power	
AC Parameters (Off-Grid Side)		
Maximum Output Power (W)	8000	10000
Maximum Output Current (A)	40/38.3	50/47.9
Apparent Power at Peak Output (10s) (VA)	10400	13000
Rated Voltage (V)	220/230L+N+PE	
Rated Frequency (Hz)	50/60	
Switching Time between on-Grid and Off-Grid (ms)	<10	
Efficiency		
Max.Efficiency	97.30%	
Euro Efficiency	97.00%	
MPPT Efficiency	96.50%	
Protect		
Integration	DC Relativity 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, Earth Fault Detection, DC Input Switch, Overvoltage Load Drop Protection, Feedback Current(DC) Detection, Surge Protection Level	
Display and Monitoring		
Display	LCD Screen	
Monitoring	App, Monitoring Platform	
General Data		
Operating Temperature Range	-25-60°C, Derating above 45°C	
Cooling Method	Intelligent Air Cooling	
Noise(dB)	<30dB	
Dimensions(mm)	470x565x238 mm (excluding connectors and hangers)	
Weight(kg)	30 kg	
Ingress Protection Rating	IP65	
Installation Method	Wall-mounted	
Warranty Period	5 Years	
Standard/Certification		
EMC	IEC 61000-6-1:2016 ; EN 61000-6-1:2019 ; IEC 61000-6-3:2020 ; EC 61000-6-3:2020 EN 61000-6-3:2021	
Safety Regulation	IEC 62109-1:2010 ; IEC 62477-1:2022 ; EN 62109-1:2010 ; IEC 62109-2:2011 ; EN 62109-2:2011	
Grid Regulation	IEC 61727:2004 ; IEC 62116:2014	
Energy Efficiency	IEC 61683:1999	

Hybrid Inverter Series



- Wide high-voltage DC input range, compatible with high-voltage modules and battery packs
- High conversion efficiency, with peak efficiency $\geq 97\%$
- Multi-channel MPPT design to improve power 1.1x AC continuous overload capacity and 1.5x DC over-sizing capability
- Supports grid-tied / off-grid / energy storage
- IP66 or higher protection rating, suitable for outdoor
- Comprehensive protection against overvoltage, overcurrent, short circuit, lightning strike, and islanding

Model		Queenbee-3P30K
DC Input		
Maximum DC Input Power		45 kW
Maximum Input Voltage		1000 V
Rated Input Voltage		700 V
Startup Voltage		200 V
MPPT Voltage Range		180 V ~ 980 V
Maximum Input Short-Circuit Current (A)		45A/45A/45A
Number of MPPTs		3
Maximum Number of PV Strings		2x2+2
Battery		
Battery Type		Lithium-Ion Battery
Battery Voltage Range		180 ~ 800 V
Maximum Charge/Discharge Power		30 kW
Maximum Charge/Discharge Current		50 A
Communication Interface		CAN / RS485
AC Output		
Rated Output Power		30 kW
Maximum Output Apparent Power		33 kVA
Maximum AC Output Active Power		33 kW
		3L/N/PE
Rated Grid Voltage		220V/230V
		230V/400V
Rated Grid Output Current		45.5/43.5 A
Maximum Output Current		50A/47.9A
Power Factor (PF)		> 0.99 at rated power, adjustable from 0.8 leading to 0.8 lagging
Total Current Harmonic Distortion (THD)		< 3% (with linear load < 1.5%)
AC Output (Off-grid Side)		
Maximum Output Apparent Power		45 kVA, 10s
Grid-tie / Off-grid Switch Time		< 10 ms
Residual Current Protection (RCD)		Yes
DC Switch		Yes
Overvoltage Protection		Yes
DC Reverse Polarity Protection		Yes
Surge Protection (DC Side / AC Side)		DC Type II / AC Type II
DC Arc Fault Circuit Interrupter (AFCI)		Optional
Basic Parameters		
Dimensions (W x H x D) (mm)		625 x 505 x 250 mm
Weight (kg)		41 kg
Night-time Self-consumption		< 30 W
Ingress Protection (IP) Rating		IP66
Typical Noise Level (dB)		45.5 dB
Cooling Method		Intelligent Forced Air Cooling
Maximum Operating Altitude (m)		4,000 m (derating above 2,000 m)
Grid-connection Standards		IEC 61727:2004, IEC 62116:2014
Safety / EMC Standards		IEC 62109-1:2010, EN 62109-1:2010, IEC 62109-2:2011, EN 62109-2:2011 IEC 61000-6-1:2016, EN 61000-6-1:2019, IEC 61000-6-3:2020, EN 61000-6-3:2021
Certifications and Approvals		IEC 61727:2004, IEC 62116:2014
Features		
Display Screen		LCD Display
Communication Interface		RS485 / CAN / 4G / 5G (Optional) / 4G (Optional) / LAN (Optional)

Hybrid Inverter Series



Hybrid Inverter

Supports lithium and lead-acid batteries
Supports direct battery charging
and load powering by diesel generator

Queenbee-IP 3~6K

1. Customer Needs and Solutions

Hybrid inverters for households, stores and light industrial users who need a **Stable supply of electricity + a high return** on investment:

- ✓ **Photovoltaic self-generation and self-use** → Reduced electricity costs
- ✓ **Power outage without stopping the electricity** → offline spare
- ✓ **Peak-to-valley arbitrage** → Energy storage charge/discharge scheduling

2. Full-Featured Details

① Dual-mode intelligent operation

- **On-grid mode:** PV prioritizes power supply and sells the remaining power back to the grid (in policy-supporting areas).
- **Off-grid mode:** when the power grid is disconnected, switch to PV+battery power supply in 0 seconds, and the critical loads will not be disconnected.

② Efficient Power Generation Design

- **Dual MPPT:** Adapt to modules with different orientations, reduce mismatch loss (harvest 5%~15% more electricity than single MPPT).
- **10kW high power:** support air conditioner, water pump and other high load equipment to run simultaneously.

③ Flexible Energy Storage Management

- **190A high current charging and discharging:** rapid charging and discharging, can charge 9.6kWh electricity (48V battery system) in 1 hour.
- **6 time slots:** customized peak and valley tariffs, automatic charging in valley period and discharging in peak period.
- **Multi-battery compatibility:** lithium/lead-acid batteries can be used, support parallel expansion (maximum 10 units).

④ Multi-energy integration

- **Diesel generator access:** when the battery is insufficient on cloudy and rainy days, the generator is automatically started to make up for the power.
- **Existing system remodeling:** through AC coupling, direct access to the original photovoltaic system.

Hybrid Inverter Series



Hybrid Inverter

Supports lithium and lead-acid batteries,
Supports direct battery charging
and load powering by diesel generator

Queenbee-IP 8~10K

3. Typical Application Scenarios

- **Households:** PV power supply during the day, battery discharge at night, saving 70%+ on electricity bills.
- **Stores:** Peak and valley arbitrage + power outage backup, investment return of 3~5 years.
- **Factories:** 10 units in parallel to support production line power consumption, reduce electricity costs.

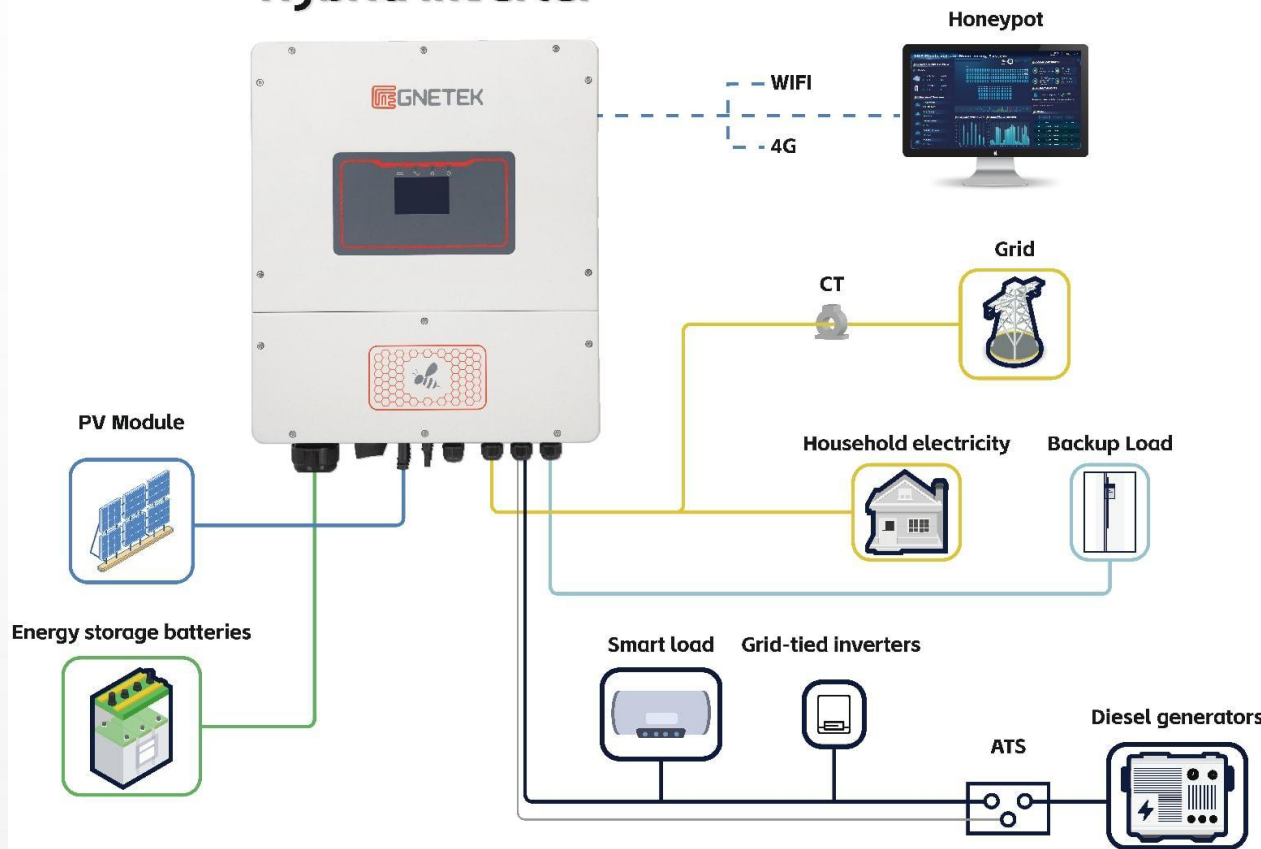
4. Summary: A single machine that integrates power generation, storage, use and conservation is the best choice for pursuing energy independence and cost reduction.

Hybrid Inverter Series



[Link to GNE
Monitoring Platform](#)

Hybrid Inverter



- 1** **【10kW High Power Output】 :**
Suitable for home, commercial and light industrial scenarios, supporting high load access.
- 2** **【Dual MPPT Design】 :**
Adaptation of PV modules with different orientations/angles to improve power generation efficiency
- 3** **【Supports off-grid + on-grid dual mode operation】 :**
Equipped with automatic switching capability, seamless transition in case of grid outage.
- 4** **【Support 48V energy storage system】 :**
Compatible with mainstream lithium and lead-acid batteries, flexible battery configuration.
- 5** **【Maximum charging and discharging current up to 190A】 :**
Suitable for large-capacity battery packs, fast charging and powerful discharging.
- 6** **【Multi-energy access capability】 :**
Supports mixed access of photovoltaic, grid, battery and diesel generator, flexible energy scheduling.



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.

Abundant Cases

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.

Contact us



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