

# HYBRID BI-DIRECTION SOLAR INVERTER

## MGEA3KHD / MGEA3.6KHD / MGEA5KHD

### PF1.0



Hybrid (Bi-direction) Solar Inverter is PV energy combined with energy storage systems. It utilizes solar power, AC utility and battery power to ensure continuous power supply, and users can store the unused energy produced during the day by PV system in the battery and use it whenever they need, even at night, it helps increase self-consumption and achieve greater energy self-sufficiency.

#### Features

##### Operating Flexibility

- Operating modes can be programmed flexibly
- On-grid operating, easy feed-in to the grid, backflow prevention, energy self-generation and self-consumption
- Off-grid operating, no worry about grid power failure
- Solar power, battery power and utility power source to ensure continuous power
- Even with grid or PV input only, inverter can still start working without battery
- Priority of PV, battery or grid power source can be programmed flexibly
- High efficiency of battery management system, settable EOD, floating voltage and charging current

##### High Efficiency & Safety

- Soft-switching technology, improving inverter efficiency

- DSP complete digital control technology
- Small footprint, light weight, simplified installation
- Superior protections

### Intelligent Monitoring

- LCD, LED display real-time operating information
- Real-time operating data monitoring
- Programmable operating modes
- Multi communication selectable

MODEL	MGEA3KHD	MGEA3.6KHD	MGEA5KHD
Rated power	3000 W	3600 W	5000 W
Operating modes	Flexible setting via upper computer software or LCD interface		
<b>PV INPUT</b>			
Max. input power	4500 W		5500 W
Max. input voltage	500 Vdc		550 Vdc
Rated input voltage	360 Vdc		
Start-up voltage	115 Vdc		
Initial feeding voltage	150 Vdc		
MPPT voltage range (Full load)	120 Vdc ~ 450 Vdc (250 Vdc ~ 450 Vdc)		120 Vdc ~ 530 Vdc (250 Vdc ~ 450 Vdc)
Max. input current	18 A		12 A
PV short circuit current	18 A		15 A
Number of MPPTs	1		2
<b>BATTERIES</b>			
Battery type	Li-ion battery		
Rated voltage	51.2 Vdc		
Voltage range	46.4 Vdc ~ 57.6 Vdc		
Battery type	Lead-acid battery		
Rated voltage	48 Vdc		
Voltage range	40 Vdc ~ 58 Vdc		
BMS communication	RS485		
Battery capacity	100 Ah ~ 120 Ah optimized		200 Ah optimized
Max. charger power	1500 W		2500 W
Max. charging current	25 A (5 A ~ 25 A settable)		50 A (10 A ~ 50 A settable)
Charging curve	3-Stage		
Max. charge efficiency	94%		
Rated discharge power	2000 W		2500 W
Max. discharge current	100 A		
Max. discharge efficiency	94%		
Reverse polarity protection	No		Yes
<b>AC OUTPUT</b>			
Rated AC power	3000 VA / 3000 W	3600 VA / 3600 W	5000 VA / 5000 W
Rated output voltage	230 Vac		
Rated output current	13.0 A	15.6 A	21.7 A

Output voltage range	170 Vac ~ 280 Vac	
Rated output frequency	50 Hz / 60 Hz	
Output frequency tolerance	50 ± 5 Hz / 60 ± 5 Hz	
Power factor	0.9 (leading) ~ 0.9 (lagging)	
THD	≤ 3%	
<b>EPS OUTPUT</b>		
Rated EPS power	3000 VA / 3000 W	2000 VA / 2000 W
Rated EPS voltage	230 Vac (208 / 220 / 240 Vac settable)	
Rated EPS current	13.0 A (14.4 A / 13.6 A / 12.5 A)	8.7 A (9.6 A / 9.1 A / 8.3 A)
EPS voltage range	184 Vac ~ 276 Vac	
Rated frequency	50 Hz / 60 Hz	
Frequency precision	± 1%	
Voltage precision	± 1%	
Crest factor	3 : 1	
Waveform distortion	≤ 3% (linear load)	
<b>TRANSFER TIME</b>		
EPS mode → On-grid mode	0 ms	
On-grid mode → EPS mode	10 ms	
<b>EFFICIENCY</b>		
MPPT efficiency	99%	
Max. PV efficiency	96%	
<b>GENERAL DATA</b>		
Communications	USB / RS485 (standard), SNMP / Wi-Fi / GPRS (optional)	
IP rating	IP20	
Operating temperature	0 ~ 40°C (> 40°C derating)	
Max. relative humidity	0 ~ 90%	
Max. altitude	< 1000 m (> 1000 m derating)	
Cooling	Forced ventilation	
Alarm	LED, buzzer	
Display	LED, LCD	
Noise	≤ 50 dB	
Topology	Transformerless (PV to Grid)	
Dimensions (W × D × H) (mm)	410 × 470 × 123	611 × 547 × 150
Packaged dimensions (W × D × H) (mm)	508 × 582 × 183	680 × 630 × 208
Net weight (kg)	14.4	22.3
Gross weight (kg)	16.6	25.0