

Unit 12 Transit Industrial Park, Cnr Deodar and Constantia Street Pomona

Hybrid (Bi-direction) Solar Inverter EA3KHD



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 needs, even at night, it helps increase self-consumption and achieve greater energy self-sufficiency.

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 AC utility power source to provide loads with 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, EOD, floating voltage and charge current are settable.

High efficiency and safety

- Soft-switching technology, improving inverter efficiency
- DSP complete digital control technology
- Small size, light weight, easy installation
- Superior protection

Intelligent monitoring

- LCD, LED display real-time operating information
- Monitoring software display real-time operating information
- Monitoring software make operating modes programmed and control
- Various communications selectable via USB, RS232, RS485, SNMP



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Rated power 3000 W Operating mode Flexible setup via upper computer software or LCD interface VP INPUT 4500 W Max. input power 4500 W Rated input voltage 360 Vdc Max. input voltage 115 Vdc Initial feeding voltage 115 Vdc Max. input current 18 A PV short circuit current 18 A Number of MPPT 1 Battery toylage range 250 Vdc - 450 Vdc Statistery toylage range 260 Vdc - 450 Vdc Battery toylage range 1 Battery toylage range 1 Statistery toylage range 46.4 Vdc - 57.6 Vdc Battery toylage range 48 Vdc Voltage range 40 Vdc - 58 Vdc Battery capacity 100 Ah - 120 Ah optimized Rated voltage gover 1425 W Max. charging current 25 A (5 A / 10 A / 15 A / 20 A / 25 A settable) Charging current 25 A (5 A / 10 A / 15 A / 20 A / 25 A settable) Charging current 25 A (5 A / 10 A / 15 A / 20 A / 25 A settable) Charging current 25 A (5 A / 10 A / 15 A /	MODEL	EA3KHD
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Grid voltage range $170 \sim 280$ VacRated grid frequency 50 Hz / 60 HzAllowed grid frequency 50 ± 5 Hz / 60 ± 5 HzAC input power 5100 VA / 5100 WMax. input current 30 AAC OUTPUT (connect with load)Rated output power 3000 VA / 3000 WRated output voltage 230 Vac (208 / 220 / 240 Vac settable)Rated output voltage 13.0 A (14.4 A / 13.6 A / 12.5 A)Output voltage range 184 Vac ~ 264.5 VacRated output frequency 50 Hz / 60 HzOutput voltage range 184 Vac ~ 204.5 VacRated output frequency precision $\pm 1\%$ Power factor 0.9 leading ~ 0.9 laggingOutput voltage precision $\pm 1\%$ Transient recovery time ≤ 40 msPeak factor $3:1$ Linear load waveform distortion $\leq 3\%$	AC GRID INPUT	
Rated grid frequency $50 \text{ Hz} / 60 \text{ Hz}$ Allowed grid frequency $50 \pm 5 \text{ Hz} / 60 \pm 5 \text{ Hz}$ AC input power $5100 \text{ VA} / 5100 \text{ W}$ Max. input current 30 A AC OUTPUT (connect with load)Rated output power $3000 \text{ VA} / 3000 \text{ W}$ Rated output voltage $230 \text{ Vac} (208 / 220 / 240 \text{ Vac settable})$ Rated output current $13.0 \text{ A} (14.4 \text{ A} / 13.6 \text{ A} / 12.5 \text{ A})$ Output voltage range $184 \text{ Vac} \sim 264.5 \text{ Vac}$ Rated output frequency $50 \text{ Hz} / 60 \text{ Hz}$ Output voltage precision $\pm 1\%$ Power factor $0.9 \text{ leading} \sim 0.9 \text{ lagging}$ Output voltage precision $\pm 1\%$ Transient recovery time $\leq 40 \text{ ms}$ Peak factor $3:1$ Linear load waveform distortion $\leq 3\%$	AC start-up voltage	120 Vac
Allowed grid frequency $50 \pm 5 \text{ Hz} / 60 \pm 5 \text{ Hz}$ AC input power $5100 \text{ VA} / 5100 \text{ W}$ Max. input current 30 A AC OUTPUT (connect with load)Rated output power $3000 \text{ VA} / 3000 \text{ W}$ Rated output voltage $230 \text{ Vac} (208 / 220 / 240 \text{ Vac settable})$ Rated output voltage $13.0 \text{ A} (14.4 \text{ A} / 13.6 \text{ A} / 12.5 \text{ A})$ Output voltage range $184 \text{ Vac} \sim 264.5 \text{ Vac}$ Rated output frequency $50 \text{ Hz} / 60 \text{ Hz}$ Output frequency precision $\pm 1\%$ Power factor $0.9 \text{ leading} \sim 0.9 \text{ lagging}$ Output voltage precision $\pm 1\%$ Transient recovery time $\leq 40 \text{ ms}$ Peak factor $3:1$ Linear load waveform distortion $\leq 3\%$	Grid voltage range	170 ~ 280 Vac
AC input power $5100 VA / 5100 W$ Max. input current $30 A$ AC OUTPUT (connect with load)Rated output power $3000 VA / 3000 W$ Rated output voltage $230 Vac (208 / 220 / 240Vac settable)$ Rated output voltage $13.0 A (14.4 A / 13.6 A / 12.5 A)$ Output voltage range $184 Vac \sim 264.5 Vac$ Rated output frequency $50 Hz / 60 Hz$ Output frequency precision $\pm 1\%$ Power factor 0.9 leading ~ 0.9 laggingOutput voltage precision $\pm 1\%$ Transient recovery time $\leq 40 ms$ Peak factor $3: 1$ Linear load waveform distortion $\leq 3\%$	Rated grid frequency	50 Hz / 60 Hz
Max. input current30 AAC OUTPUT (connect with load)Rated output power $3000 VA / 3000 W$ Rated output voltage $230 Vac (208 / 220 / 240Vac settable)$ Rated output voltage $230 Vac (208 / 220 / 240Vac settable)$ Rated output current $13.0 A (14.4 A / 13.6 A / 12.5 A)$ Output voltage range $184 Vac \sim 264.5 Vac$ Rated output frequency $50 Hz / 60 Hz$ Output frequency precision $\pm 1\%$ Power factor 0.9 leading ~ 0.9 laggingOutput voltage precision $\pm 1\%$ Transient recovery time $\leq 40 ms$ Peak factor $3:1$ Linear load waveform distortion $\leq 3\%$	Allowed grid frequency	50 ± 5 Hz / 60 ± 5 Hz
AC OUTPUT (connect with load)Rated output power $3000 VA / 3000 W$ Rated output voltage $230 Vac (208 / 220 / 240Vac settable)$ Rated output voltage range $13.0 A (14.4 A / 13.6 A / 12.5 A)$ Output voltage range $184 Vac \sim 264.5 Vac$ Rated output frequency $50 Hz / 60 Hz$ Output frequency precision $\pm 1\%$ Power factor $0.9 \text{ leading } \sim 0.9 \text{ lagging}$ Output voltage precision $\pm 1\%$ Transient recovery time $\leq 40 \text{ ms}$ Peak factor $3:1$ Linear load waveform distortion $\leq 3\%$	AC input power	5100 VA / 5100 W
Rated output power $3000 VA / 3000 W$ Rated output voltage $230 Vac (208 / 220 / 240Vac settable)$ Rated output current $13.0 A (14.4 A / 13.6 A / 12.5 A)$ Output voltage range $184 Vac \sim 264.5 Vac$ Rated output frequency $50 Hz / 60 Hz$ Output frequency precision $\pm 1\%$ Power factor 0.9 leading ~ 0.9 laggingOutput voltage precision $\pm 1\%$ Peak factor $3:1$ Linear load waveform distortion $\leq 3\%$	Max. input current	30 A
Rated output voltage $230 \text{ Vac } (208 / 220 / 240 \text{Vac settable})$ Rated output current $13.0 \text{ A} (14.4 \text{ A} / 13.6 \text{ A} / 12.5 \text{ A})$ Output voltage range $184 \text{ Vac} \sim 264.5 \text{ Vac}$ Rated output frequency $50 \text{ Hz} / 60 \text{ Hz}$ Output frequency precision $\pm 1\%$ Power factor $0.9 \text{ leading} \sim 0.9 \text{ lagging}$ Output voltage precision $\pm 1\%$ Peak factor $3:1$ Linear load waveform distortion $\leq 3\%$	AC OUTPUT (connect with load)	
Rated output current $13.0 \text{ A} (14.4 \text{ A} / 13.6 \text{ A} / 12.5 \text{ A})$ Output voltage range $184 \text{ Vac} \sim 264.5 \text{ Vac}$ Rated output frequency $50 \text{ Hz} / 60 \text{ Hz}$ Output frequency precision $\pm 1\%$ Power factor $0.9 \text{ leading} \sim 0.9 \text{ lagging}$ Output voltage precision $\pm 1\%$ Transient recovery time $\leq 40 \text{ ms}$ Peak factor $3:1$ Linear load waveform distortion $\leq 3\%$	Rated output power	3000 VA / 3000 W
Output voltage range $184 \text{ Vac} \sim 264.5 \text{ Vac}$ Rated output frequency $50 \text{ Hz} / 60 \text{ Hz}$ Output frequency precision $\pm 1\%$ Power factor $0.9 \text{ leading} \sim 0.9 \text{ lagging}$ Output voltage precision $\pm 1\%$ Transient recovery time $\leq 40 \text{ ms}$ Peak factor $3:1$ Linear load waveform distortion $\leq 3\%$	Rated output voltage	230 Vac (208 / 220 / 240Vac settable)
Output voltage range $184 \text{ Vac} \sim 264.5 \text{ Vac}$ Rated output frequency $50 \text{ Hz} / 60 \text{ Hz}$ Output frequency precision $\pm 1\%$ Power factor $0.9 \text{ leading} \sim 0.9 \text{ lagging}$ Output voltage precision $\pm 1\%$ Transient recovery time $\leq 40 \text{ ms}$ Peak factor $3:1$ Linear load waveform distortion $\leq 3\%$	Rated output current	13.0 A (14.4 A / 13.6 A / 12.5 A)
Rated output frequency $50 \text{ Hz} / 60 \text{ Hz}$ Output frequency precision $\pm 1\%$ Power factor $0.9 \text{ leading} \sim 0.9 \text{ lagging}$ Output voltage precision $\pm 1\%$ Transient recovery time $\leq 40 \text{ ms}$ Peak factor $3:1$ Linear load waveform distortion $\leq 3\%$	Output voltage range	
Output frequency precision $\pm 1\%$ Power factor0.9 leading ~ 0.9 laggingOutput voltage precision $\pm 1\%$ Transient recovery time $\leq 40 \text{ ms}$ Peak factor $3:1$ Linear load waveform distortion $\leq 3\%$	Rated output frequency	
Power factor 0.9 leading ~ 0.9 lagging Output voltage precision ± 1% Transient recovery time ≤ 40 ms Peak factor 3 : 1 Linear load waveform distortion ≤ 3%	Output frequency precision	
Output voltage precision ± 1% Transient recovery time ≤ 40 ms Peak factor 3 : 1 Linear load waveform distortion ≤ 3%	Power factor	
Transient recovery time< 40 msPeak factor3 : 1Linear load waveform distortion< 3%	Output voltage precision	
Peak factor 3 : 1 Linear load waveform distortion ≤ 3%		
Linear load waveform distortion ≤ 3%	Peak factor	
	Short circuit current	45 A (100 ms)



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Unit 12 Transit Industrial Park, Cnr Deodar and Constantia Street Pomona

TRANSFER TIME	
Off-grid mode \rightarrow On-grid mode	0 ms
On-grid mode \rightarrow Off-grid mode	10 ms
EFFICIENCY	
MPPT efficiency	99%
Max. PV efficiency	96%
OTHERS	
Communications	RS232 / USB / RS485 / SNMP (optional)
Protection rating	IP20
Operating temperature	$0 \sim 40^{\circ}$ C (> 40°Cderating)
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
Dimensions (W×D×H) (mm)	410×123×470
Packaged dimensions (L×W×H) (mm)	582 ×508 ×183
Net weight (kg)	14.42
Gross weight (kg)	16.40