All-in-one Residential ESS



X3-IES

4kW / 5kW / 6kW / 8kW / 10kW / 12kW / 15kW

Smart Management

- AI ready, forecasting solar generation and home consumption for smart energy management strategy control*
- VPP ready with a variety of compatibility(OpenADR, IEEE2030.5, FCAS, API)**
- Smart loads management (e.g., heat pump, smart EV charger)
- Micro-grid support for real-time grid/off-grid balancing
- Wireless meter compatibility
- Global MPP scan for optimal energy harvest

Assured Reliability

- IP66 protection degree
- Type II SPD on AC&DC side
- AFCI protection (optional)
- Up to 200% EPS output for 10s
- UPS-level switchover time <10ms

High Performance

- Max. 50A charge/discharge current
- 200% oversizing and 200% PV input power
- Low start-up voltage for longer operation
- Cycle life > 6000 times

Flexible Adaptability

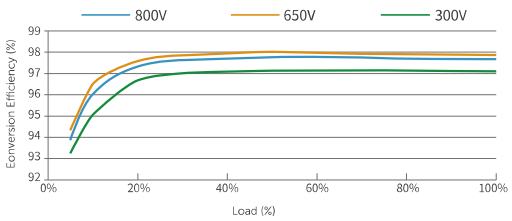
- All-in-one, plug-and-play design
- Max. 20A DC input current for high power solar panel

**Additional Datahub1000 required*
***Feature to be upgraded in the future*

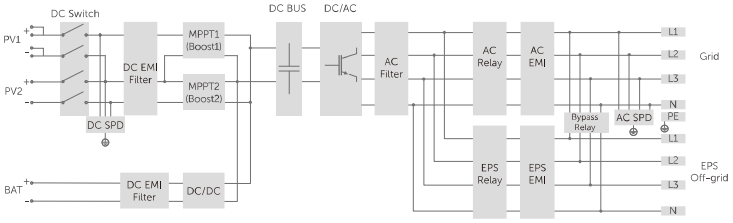
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Efficiency Curve



Circuit Diagram



SYSTEM OVERVIEW

System schematic



Rated output power	4 / 5 / 6 / 8 / 10 / 12 / 15 kW				
Number of batteries	2	3	4	5	6
Nominal capacity①	10.2 kWh	15.3 kWh	20.4 kWh	25.6 kWh	30.7 kWh
Usable energy②	9.2 kWh	13.8 kWh	18.4 kWh	23.0 kWh	27.6 kWh
Max. charge / discharge power③	10.2 kW	15.0 kW	15.0 kW	15.0 kW	15.0 kW
Degree of protection	IP66				
Operating temperature range	-30 ~ 53°C				
Allowable relative humidity range	5 ~ 95% (No condensation)				
Max. operating altitude	3000 m				
Net weight④	144.2 kg	191.2 kg	144.2 kg / 100.5 kg	144.2 kg / 147.5 kg	191.2 kg / 147.5 kg
Dimension (W x H x D)	730 × 1281 × 209.5 mm	730 x 1599 x 209.5 mm	730 × 1281 × 209.5 mm / 730 × 809 × 150 mm	730 × 1281 × 209.5 mm / 730 × 1127 × 150 mm	730 × 1599 × 209.5 mm / 730 × 1127 × 150 mm
Display	LCD				
Cooling concept	Natural cooling				
Topology	Non-isolated				
Communication	RS485, Pocket-X, USB, CAN, DO, DI				

① Test conditions: 25°C, 100% depth of discharge (DoD), 0.2C charge & discharge
② System usable energy may vary with inverter different setting
③ The max.charge/discharge power must not exceed the rated output power (the table takes the maximum power inverter as an example)
④ Different inverter models have different weights. The heaviest one is taken as an example

	X3-IES-4K	X3-IES-5K	X3-IES-6K	X3-IES-8K	X3-IES-10K	X3-IES-12K	X3-IES-15K
PV INPUT							
Max. recommended PV array power	8 kWp	10 kWp	12 kWp	16 kWp	20 kWp	24 kWp	30 kWp
Max. PV input voltage①	1000 V						
Nominal PV input voltage	600 V						
Operating voltage range	90 ~ 950 V						
MPPT voltage range②	110 ~ 950 V						
Start-up voltage	140 V						
No. of MPP trackers / Strings per MPP tracker	2 / (1 / 1)			2 / (2 / 1)			
Max. input current per MPPT (MPPT1/2)	20 A / 20 A			32 A / 20 A			
Max. input short circuit current per MPPT (MPPT1/2)	25 A / 25 A			40 A / 25 A			
AC INPUT & OUTPUT (ON-GRID)							
Rated output power	4000 W	5000 W	6000 W	8000 W	10000 W (AS4777 9999)	12000 W	15000 W
Rated output current	5.8 A	7.3 A	8.7 A	11.6 A	14.5 A	17.4 A	21.8 A
Max. output apparent power	4000 VA	5500 VA	6600 VA	8800 VA	10000 VA (AS4777 9999)	13200 VA	16500 VA
Max. output continuous current	5.8 A	8.0 A	9.6 A	12.8 A	14.5 A	19.2 A	24.0 A
Nominal AC voltage	3 / N / PE, 220 / 380 V 3 / N / PE, 230 / 400 V						
Max. AC input apparent power	10 kVA	10 kVA	12 kVA	16 kVA	20 kVA	20 kVA	20 kVA
Max. AC input current	16.1 A	16.1 A	19.3 A	25.8 A	32.0 A	32.0 A	32.0 A
Nominal AC frequency	50 Hz / 60 Hz						
AC frequency range③	50 ± 5 Hz / 60 ± 5 Hz						
Adjustable power factor range	~ 1 (0.8 lagging to 0.8 leading)						
THDi (rated power)	< 3%						
BATTERY							
Battery voltage range	160 ~ 800 V						
Communication interfaces	CAN / RS485						
BMS module	TBMS-MCS0800E						
Battery module	TP-HS50E						
Composition	TBMS-MCS0800E + TP-HS50E x n + Base Dimensions + Series Box（Required for two columns）						
Battery type	Li-ion (LFP)						
Nominal capacity / Nominal capacity④	5.1 kWh / 50 Ah						
Usable energy⑤	4.6 kWh						
Standard power	3 kW						
Max power	5.1 kW						
Max. charge / discharge current⑥	50 A						
Cycle life	> 6000 cycles						
Warranty	10 years						
Safety	CE, RCM, TUV (IEC62619), RoHS, REACH						
TBMS-MCS0800E dimensions (W x H x D) / Weight	730 × 165 × 150 mm / 9.3 kg						
TP-HS50E dimensions (W x H x D) / Weight	730 × 318 × 150 mm / 47 kg						
Base dimensions (W x H x D) / Weight	730 × 75 × 150 mm / 3.9 kg						
Series box dimensions (W x H x D) / Weight	167 × 91.5 × 121 mm / 1.3 kg						

	X3-IES-4K	X3-IES-5K	X3-IES-6K	X3-IES-8K	X3-IES-10K	X3-IES-12K	X3-IES-15K
EPS (OFF-GRID) OUTPUT (WITH BATTERY)							
Rated EPS output voltage, frequency	230 V / 400 V, 50 Hz / 60 Hz						
Rated EPS output power	4 kVA	5 kVA	6 kVA	8 kVA	10 kVA	12 kVA	15 kVA
Peak EPS output power	2 times of rated power, 10s						
Switchover time	< 10 ms						
EFFICIENCY							
Max. efficiency	98.0%						
European efficiency	97.7%						
ENVIRONMENT LIMIT							
Ingress protection	IP66						
Operating ambient temperature range⑦	-35 ~ 60°C (derating at 45°C)						
Max. operating altitude	3000 m						
Relative humidity	0 ~ 100% RH (condensing)						
Overvoltage Category	Mains: Ⅲ, Battery: Ⅱ, PV: Ⅱ						
GENERAL							
Dimensions (W × H × D)	717 × 405 × 209.5 mm						
Net weight	37 kg						
Cooling concept	Nature cooling						
Communication interfaces	RS485, Pocket-X, CAN, DO, DI						
Power consumption (night)	< 40 W for hot standby, < 5 W for cold standby						
Topology	Non-isolated						
Certificates and approvals	IEC62109-1 / IEC62109-2, VDE 0126-1-1 A1:2012 / VDE-AR-N 4105 / G98 / G99 / AS4777 / EN50549 / CEI 0-21						
PROTECTION							
Protections	Over voltage protection, DC reverse-polarity protection, Residual current detection, Over temperature protection, DC isolation protection, Grid monitoring, DC injection monitoring, Back feed current monitoring						
Active anti-islanding method	Frequency shift						
Surge protection (DC / AC)	DC: Type Ⅱ, AC: Type Ⅱ						
Arc-fault circuit interrupter (AFCI)	Optional						

① The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage the inverter
② Input voltage exceeding the MPPT voltage range may trigger inverter protection
③ The AC frequency range may vary from different country codes
④ Test conditions: 25°C, 100% depth of discharge (DoD), 0.2C charge & discharge
⑤ System usable energy may vary with inverter different settings
⑥ Discharge: In case of the battery cell's temperature range of -20°C~10°Cand 45°C~53 °C, the discharge current will be reduced; Charge: In case of the battery cell's temperature range of 0°C~25°C and 45°C~53°C, the charge current will be reduced. Product charge or discharge power depends on the actual temperature of the battery pack
⑦ Derating above +45°C