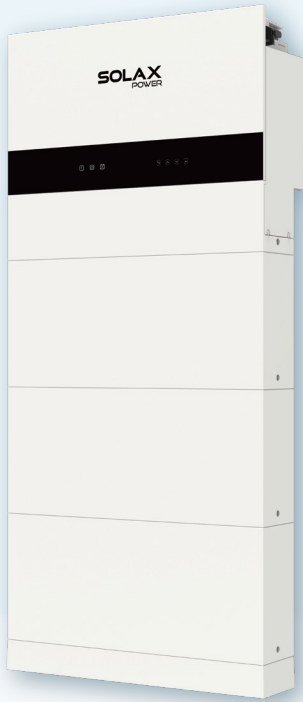


All-in-one Residential ESS



X1-IES

2.5kW / 3.0kW / 3.7kW / 5.0kW /
6.0kW / 8.0kW



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



High Performance

- Max. 50A charge/discharge current
- 200% oversizing and 200% PV input power
- Up to 200% EPS output for 10s
- Low start-up voltage for longer operation
- Cycle life > 6000 times



Assured Reliability

- IP66 protection degree
- Type II SPD on AC&DC side
- AFCI protection (optional)
- UPS-level switchover time <10ms

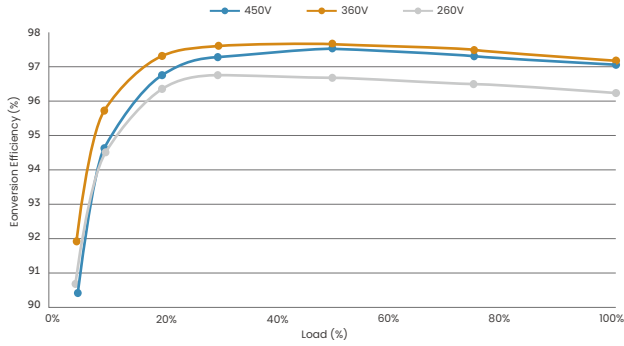


Flexible Adaptability

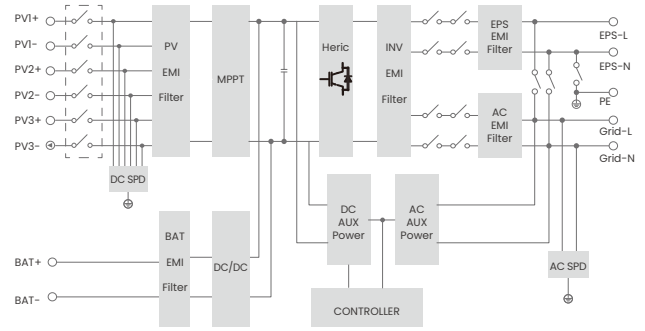
- All-in-one, plug-and-play design
- Max. 20A DC input current for high power solar panel

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

Efficiency Curve



Circuit Diagram



SYSTEM OVERVIEW

System schematic



Rated output power	2.5 / 3.0 / 3.7 / 5.0 / 6.0 / 8.0 kW			
Number of batteries	1	2	3	4
Nominal capacity ^①	5.1 kWh	10.2 kWh	15.3 kWh	20.4 kWh
Usable energy ^②	4.6 kW	9.2 kW	13.8 kW	18.4 kW
Max. charge / discharge power ^③	5.1 kW	8.0 kW	8.0 kW	8.0 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 weight ^④	87.2 kg	134.2 kg	181.2 kg	134.2 kg / 99.2 kg
Dimension (W x H x D)	730 x 908 x 210 mm	730 x 1226 x 210 mm	730 x 1544 x 210 mm	730 x 1226 x 210 mm / 730 x 809 x 150 mm
Display	LCD			
Cooling concept	Natural cooling			
Topology	Non-isolated			
Communication	RS485, Pocket-X, 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

PV INPUT						
Max. recommended PV array power	5.0 kWp	6.0 kWp	7.4 kWp	10.0 kWp	12.0 kWp	16.0 kWp
Max. PV input voltage ^①	600 V					
Nominal PV input voltage	360 V					
MPPT voltage range ^②	40 ~ 560 V					
Start-up voltage	50 V					
No. of MPP trackers / Strings per MPP tracker	2 / (1 / 1)			3 / (1 / 1 / 1)		
Max. input current per MPPT (MPPT1/2/3)	20 A / 20 A			20 A / 20 A / 20 A		
Max. input short circuit current per MPPT (MPPT1/2/3)	30A / 30A			30A / 30A / 30 A		
AC INPUT & OUTPUT (ON-GRID)						
Rated output power	2500 W	3000 W	3680 W	5000 W (4600 for VDE4105, 4999 for AS4777)	6000 W	8000 W
Rated output current	10.9 A	13.1 A	16.0 A	21.8 A	26.1 A	34.8 A
Max. output apparent power	2500 VA	3300 VA	3680 VA	5000 VA (4600 for VDE4105, 4999 for AS4777, 5000 for C10/11)	6600 VA	8000 VA
Max. output continuous current	10.9 A	14.4 A	16.0 A	21.8 A	28.7 A	34.8 A
Nominal AC voltage	1 / N / PE, 220 / 230 / 240 V					
Max. AC input apparent power	6300 VA	6300 VA	7360 VA	9200 VA	9200 VA	9200 VA
Max. AC input current	27.4 A	27.4 A	32.0 A	40.0 A	40.0 A	40.0 A
Nominal AC frequency	50 Hz / 60 Hz					
AC frequency range ^③	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	80 ~ 480 V					
Communication interfaces	CAN / RS485					
BMS module	TBMS-MCS0800E					
Battery module	TP-HS50E					
Composition	TBMS-MCS0800E + TP-HS50E × n + Base Dimensions + Series Box (Required for two columns)					
Battery type	Li-ion (LFP)					
Nominal capacity / Nominal capacity ^④	5.1 kWh / 50 Ah					
Usable energy ^⑤	4.6 kWh					
Standard power	3 kW					
Max power	5.1 kW					
Max. charge / discharge current ^⑥	50 A					
Cycle life	> 6000 cycles					
Warranty	10 years					
Safety	CE, RCM, TUV (IEC62619), RoHS, REACH					
TBMS-MCS0800E dimensions (W × H × D) / Weight	730 × 165 × 150 mm / 9.3 kg					
TP-HS50E dimensions (W × H × D) / Weight	730 × 318 × 150 mm / 47 kg					
Base dimensions (W × H × D) / Weight	730 × 75 × 150 mm / 3.9 kg					

BATTERY						
Series box dimensions (W × H × D) / Weight	167 × 91.5 × 121 mm/ 1.3 kg					
EPS (OFF-GRID) OUTPUT (WITH BATTERY)						
Rated EPS output voltage, frequency	220 V, 230 V, 240 V, 50 Hz / 60 Hz					
Rated EPS output power	2500 VA	3000 VA	3680 VA	5000 VA	6000 VA	8000 VA
Peak EPS output power	2 times of rated power, 10 s					
Switchover time	< 10 ms					
EFFICIENCY						
Max. efficiency	97.6%					
European efficiency	97.0%					
ENVIRONMENT LIMIT						
Ingress protection	IP66					
Operating ambient temperature range ^⑦	-35 ~ 60°C (derating at 45°C)					
Max. operating altitude	3000 m					
Relative humidity	0 ~ 100% RH (condensing)					
GENERAL						
Dimensions (W × H × D)	717 × 350 × 210 mm					
Net weight	26.2 kg			26.4 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					
Active anti-islanding method	Frequency shift					
Surge protection (DC / AC)	DC: Type II, AC: Type II					

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°C and 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