A1-ESS-G2

ULTRA-THIN DESIGN

FEATURES & COMPONENTS

Safe & Reliable

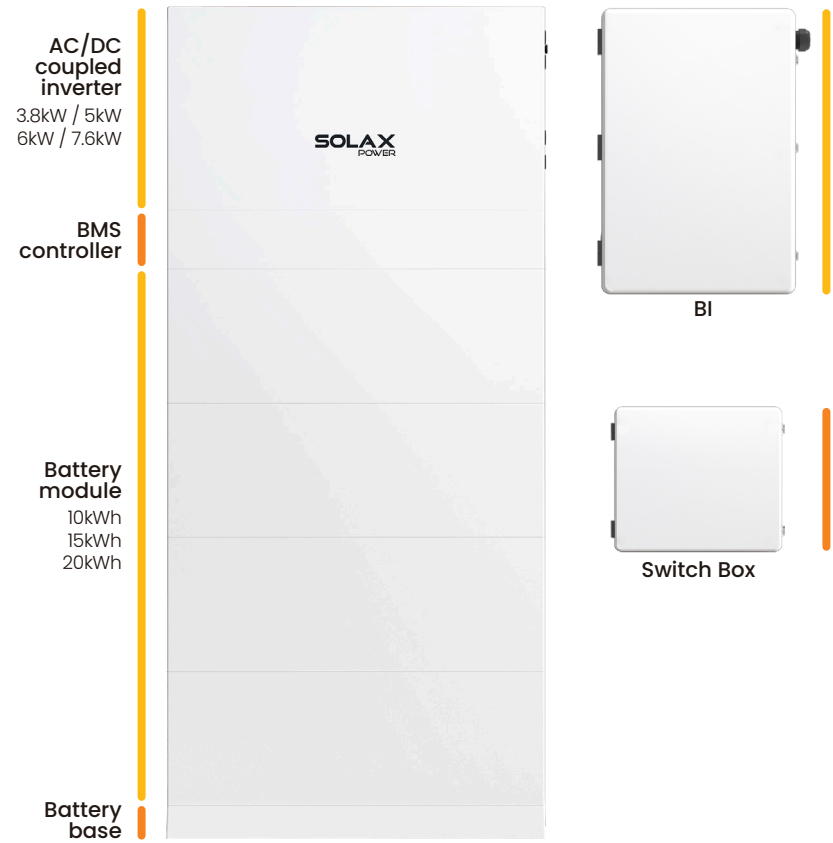
- Integrated ARC fault protection and rapid shutdown transmitter
- AC&DC SPD type II, always guarding the inverter
- NEMA 4X protection level①
- Automatic black start function

Suprior Performance

- Stacked installation, saving installation costs
- Up to 3 MPPTs
- Up to 200% oversizing allowed
- Maximum 16A PV input current, support high power solar panel
- Peak efficiency: 98%
- Up to 4 ESS in parallel
- Support Maximum 200A main panel

Multi-function Integrated

- 63A generator supported
- Smart load management
- Micro-grid ready, supporting real-time power balance
- Support multiple power distribution solutions (Partial or Whole Home)
- VPP ready, SolaX cloud support resource aggregator (IEEE 2030.5, OpenADR)



① For inverters and batteries.

SYSTEM OVERVIEW

System schematic

Rated Output Power [kW]	3.8 / 5.0 / 6.0 / 7.6		
Components	A1-G2 + TBMS-MCS60060 + 2*TP-HS50	A1-G2 + TBMS-MCS60060 + 3*TP-HS50	A1-G2 + TBMS-MCS60060 + 4*TP-HS50
Nominal Capacity [kWh]①	10	15	20
Usable Energy [kWh]②	9	13.5	18
Degree of Protection	NEMA 4X		
Net Weight [lb/kg]	345 / 156.5	464 / 210.5	583.1 / 264.5
Deimension (W x H x D) [in / mm]	33.5 x 49.7 x 5.8 / 850 x 1263 x 148	33.5 x 61.5 x 5.8 / 850 x 1563 x 148	33.5 x 73.3 x 5.8 / 850 x 1863 x 148
Altitude [ft / m]	9843 / 3000 MAX		
Cooling	Natural convection		
Topology	Transformerless		
Communication interfaces	RS485, CAN, WIFI (optional) / 4G (optional), Dry Contact		
Warranty	12 years③		

① Test Conditions: 0.2C charge & discharge at + 25 °C.
② System usable energy may vary with inverter di erent setting.
③ The 12-year warranty is valid only in North America. [not include Switch Box]

A1-HYB/AC-G2	A1-HYB/AC-3.8K-G2	A1-HYB/AC-5.0K-G2	A1-HYB/AC-6.0K-G2	A1-HYB/AC-7.6K-G2
INPUT PV (HYB only)				
Maximum recommended PV power [W]	7600	10000	10000	15200
Maximum DC voltage [V]①	550			
Nominal DC operating voltage [V]	360			
Maximum input current [A]	A: 16 / B: 16			A: 16 / B: 16 / C: 16
Maximum short circuit current [A]	A: 20 / B: 20			A: 20 / B: 20 / C: 20
MPPT voltage range [V]②	90-500			
Start input voltage [V]	120			
No. of MPP trackers, Strings per MPP tracker	2, 1 / 1			3, 1 / 1 / 1
DC disconnection switch	YES			
INPUT/OUTPUT AC				
Nominal / Maximum apparent AC power [VA]	3816 / 3816	5016 / 5016	6000 / 6000	7608 / 7608
Peak apparent AC power [VA] (10s, off-grid/backup)③	7632 / 7632	10032 / 10032	12000 / 12000	13680 / 13680
Nominal AC voltage [V] / Nominal AC frequency [Hz]	240 / 50 , 60			
Nominal AC current [A]	15.9	20.9	25	31.7
Displacement power factor	0.8 leading to 0.8 lagging			
Total harmonic distortion (THD, rated power)	< 3%			
INPUT/OUTPUT BAT				
Maximum output power [W]	3816	5016	6000	7600
Maximum charge / discharge current [A]	54			
Reverse-polarity protection	YES			
ADDITIONAL FEATURES				
AFCI④	YES			
Revenue Grade Metering, ANSI C12.20	Optional			
Rapid shutdown transmitter④	Integrated PLC controller to RSD			
EFFICIENCY				
CEC weighted efficiency④	97.50%			
Maximum inverter efficiency	98.00%			
POWER CONSUMPTION				
Nighttime power consumption [W]	< 3			
STANDARD				
Safety	UL1741, UL1741 SA, UL1699B, CSA - C22.2 No. 107.1-01, Canadian AFCI according to T.I.L. M-07			
Emissions	FCC Part 15 Class B			
Grid connection standards	IEEE1547, Rule 21, Rule14 (HI)			
INSTALLATION SPECIFICATIONS				
Protection class	NEMA 4X			
Operating temperature range [°F / °C]	–13 to +140 / –25 to +60			
De-rating start temperature [°F / °C]	113 / 45 or above			
Storage temperature range [°F / °C]	–13 to +167 / –25 to +75			
Relative humidity [%]	0 to 95			
Typical noise emission [dBA]	< 30			
Over voltage category	IV (electric supply side), II (PV side)④			
GENERAL				
Dimensions (W x H x D) [in / mm]	33.5 x 17.9 x 5.8 / 850 x 455 x 148			
Weight [lb / Kg]	75 / 34			
Communication interfaces	RS485, CAN, WIFI (optional) / 4G (optional), Dry Contact			

① The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.
② Any DC input voltage beyond the operating voltage range may result in inverter improper operating.
③ It is necessary to use the V2 version of the inverter and battery, and with different numbers of batteries, the peak power is also different.
④ The parameters on the PV side take effect only for HYB models.

T-BAT-SYS-HV-5.0

	T-BAT H 10.0	T-BAT H 15.0	T-BAT H 20.0
MODEL			
Battery type	100Ah Lithium (LFP)		
Component	TBMS-MCS60060 + 2*TP-HS50	TBMS-MCS60060 + 3*TP-HS50	TBMS-MCS60060 + 4*TP-HS50
NOMINAL CHARACTER			
Voltage [V]	102.4	153.6	204.8
Operating voltage range [V]	90 - 116	135 - 174	180 - 232
Total energy [kWh]	10	15	20
Usable energy [kWh]①	9	13.5	18
Battery roundtrip efficiency [%]②	95%		
Maximum power [kW]	5.5	8.3	11.1
Maximum charge / discharge current [A]	54		
Cycle life (90% DOD)	6000 cycles		
INSTALLATION SPECIFICATIONS			
Charge / Discharge temperature range [°F / °C]	Charge: 32 to 127.4 / 0 to 53, Discharge: 14 to 127.4 / -10 to 53		
Storage temperature range [°F / °C]	6 months: 86 to 122 / 30 to 50, 1 year: -4 to 86 / -20 to 30		
Relative humidity [%]	0 to 100		
STANDARD			
Certification	UN38.3, UL1973, UL9540, UL9540A		
Hazardous materials classification	Class 9		
GENERAL			
Dimensions (WxHxD) [in / mm] - MCS60060 (BMS)	33.5 x 5.2 x 5.8 / 850 x 133 x 148		
Dimensions (WxHxD) [in / mm] - TP-HS50(BAT)	33.5 x 23.6 x 5.8 / 850 x 600 x 148	33.5 x 35.4 x 5.8 / 850 x 900 x 148	33.5 x 47.2 x 5.8 / 850 x 1200 x 148
Dimensions (WxHxD) [in / mm] - Base	33.5 x 3.0 x 5.8 / 850 x 75 x 148		
Weight [lb / kg]	TBMS-MCS60060: 22 / 10 +2*TP-HS50: 238 / 108 +Base: 10 / 4.5	TBMS-MCS60060: 22 / 10 +3*TP-HS50: 357 / 162 +Base: 10 / 4.5	TBMS-MCS60060: 22 / 10 + 4* TP-HS50: 476 / 216 +Base: 10 / 4.5

① Test Conditions: 90% DOD, 0.2C charge & discharge at + 25 °C.
② Maximum Charge/Discharge power may be variant with different inverter models.

A1-BI-200-G2

	BI (Backup interface)
GRID INPUT	
Nominal AC input voltage [V]	120 / 240
Nominal AC frequency [Hz]	50 / 60
Maximum continuous AC input current [A]	160
OUTPUT TO MAIN PANEL IN GRID TIED OPERATION	
Nominal AC output voltage [V]	120 / 240
Maximum continuous AC input current [A]	160
OUTPUT TO MAIN PANEL IN BACKUP OPERATION	
Nominal AC output voltage [V]	120 / 240
Imbalance compensation in backup operation [VA]	5000
Split phase imbalance output current [A]	41.7
INPUT FROM INVERTER	
Maximum AC power [W]	7600
Maximum continuous input current @240V [A]	31.7
Maximum inverter input AC circuit breaker [A]	40 (optional)
GENERATOR	
Maximum AC power [W]	15000
Maximum continuous input current [A]	63
Auto generator start	Yes

	BI (Backup interface)
GENERAL	
Dimensions (H x W x D) [in / mm]	27.8 x 17.7 x 5.9 / 706 x 450 x 151
Weight [lb / kg]	69.4 / 31.5
Energy meter accuracy	1%
Communication interfaces	RS485, CAN, Dry Contact
Cooling	Fan
Warranty	12 years
STANDARD	
Safety	UL1741, CSA 22.2 NO.107
Emissions	FCC part 15 Class B
INSTALLATION SPECIFICATIONS	
Altitude [ft / m]	9843 / 3000 MAX
Operating temperature range [°F / °C]	–13 to +140 / –25 to +60
Protection class	NEMA 3R
Typical noise emission [dB]	< 50

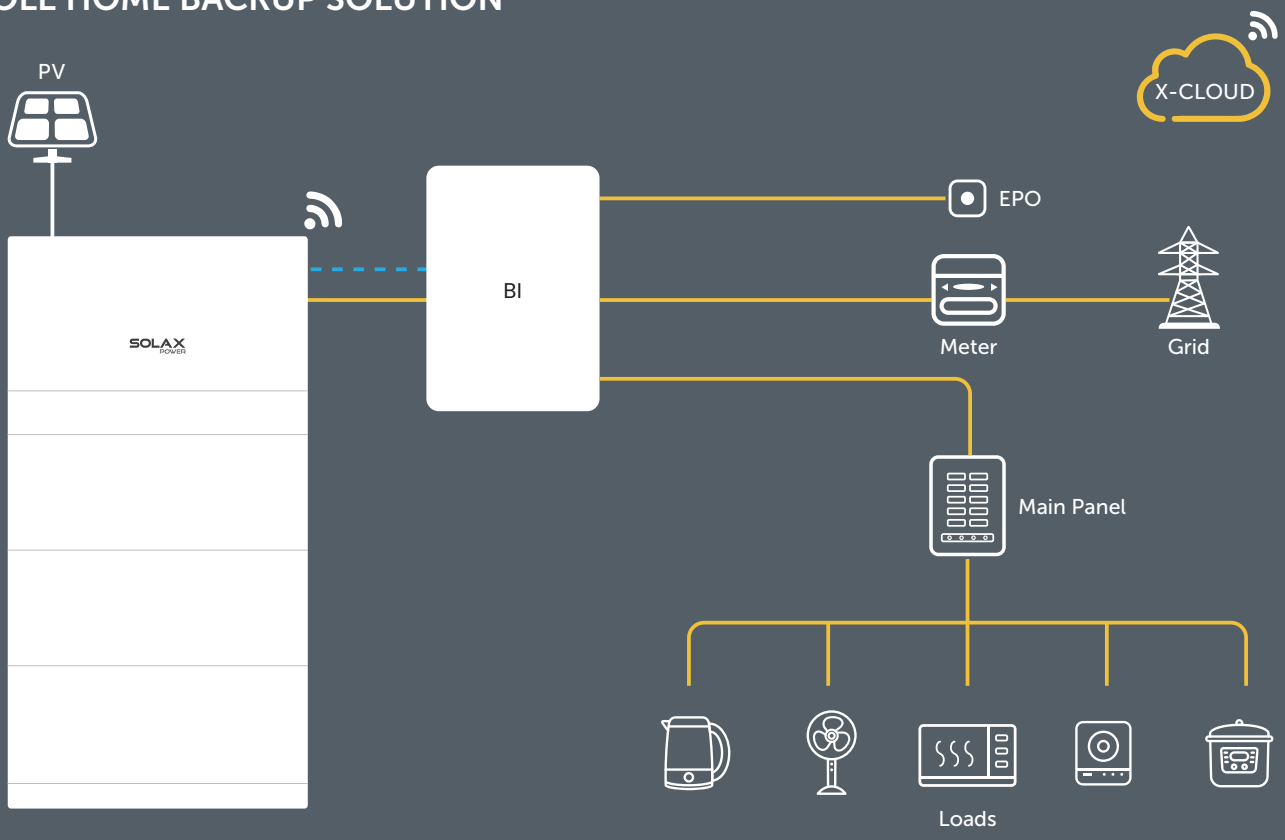
SWITCH BOX

	SW-80-G2
INPUT AC(Grid)	
Nominal voltage [V]	120 / 240
Frequency [Hz]	60
Maximum number of input [240V + 120V / 240V]①	5 / 3
Maximum overcurrent protection device [A]	80
Maximum continous output current rating [A]	64
OUTPUT AC (Load)	
Nominal voltage [V]	120 / 240
Frequency [Hz]	60
Maximum number of output [240V + 120V / 240V]①	5 / 3
Maximum continous output current rating [A]②	64 / 32
STANDARD	
Safety	UL1741, CSA - C22.2 No. 107.1-01
EMC	FCC part15 class B ICES003
ENVIRONMENT LIMIT	
Protection class	NEMA 3R
Operating temperature range [°F (°C)]	–13 to +113 (–25 to +45)
Storage temperature range [°F (°C)]	–13 to +167 (–25 to +75)
Relative humidity	0% – 95%
Altitude [ft (m)]	9843 (3000) MAX
Noise emission (typical) [dB]	< 30
Mounting options	Wall mount (Indoors / Outdoors)
GENERAL	
Dimensions with safety switch (W x H x D) [in / mm]	15.2 x 13.1 x 5.5 / 387 x 334 x 140
Weight with safety switch [lb / Kg]	15.2 / 6.9
Warranty [Years]	5

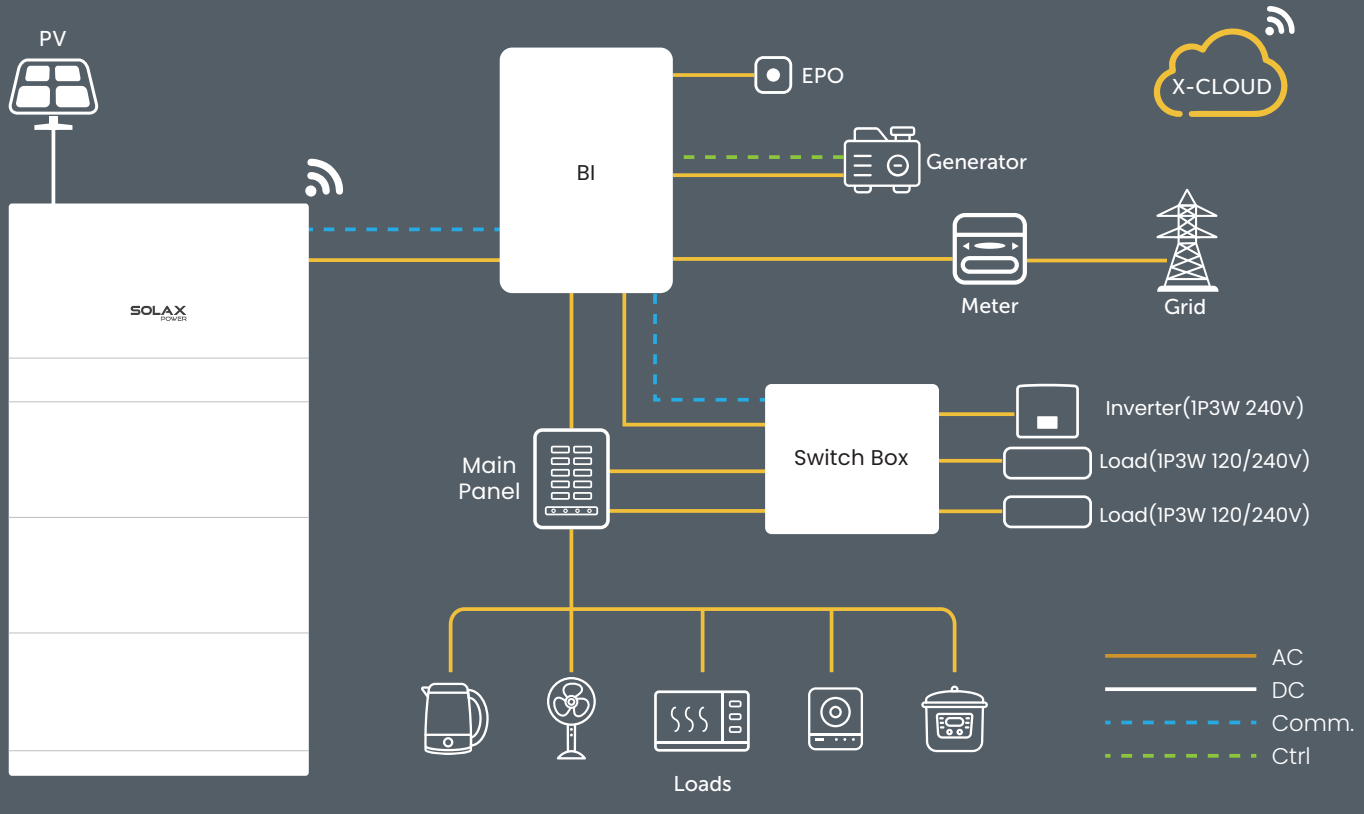
①:
Number 5 means the Switch box can drive four 120V loads and one 240V load;
Number 3 means the maximum number of 240V load Switch box can drive is 3;
The 240V port splited to two 120V ports, however, these two ports cannot be controlled separately.
②:
The maximum continous output current rating for resistive load is 64A ;
The maximum continous output current rating for inductive load is 32A .

APPLICATION SCENARIO

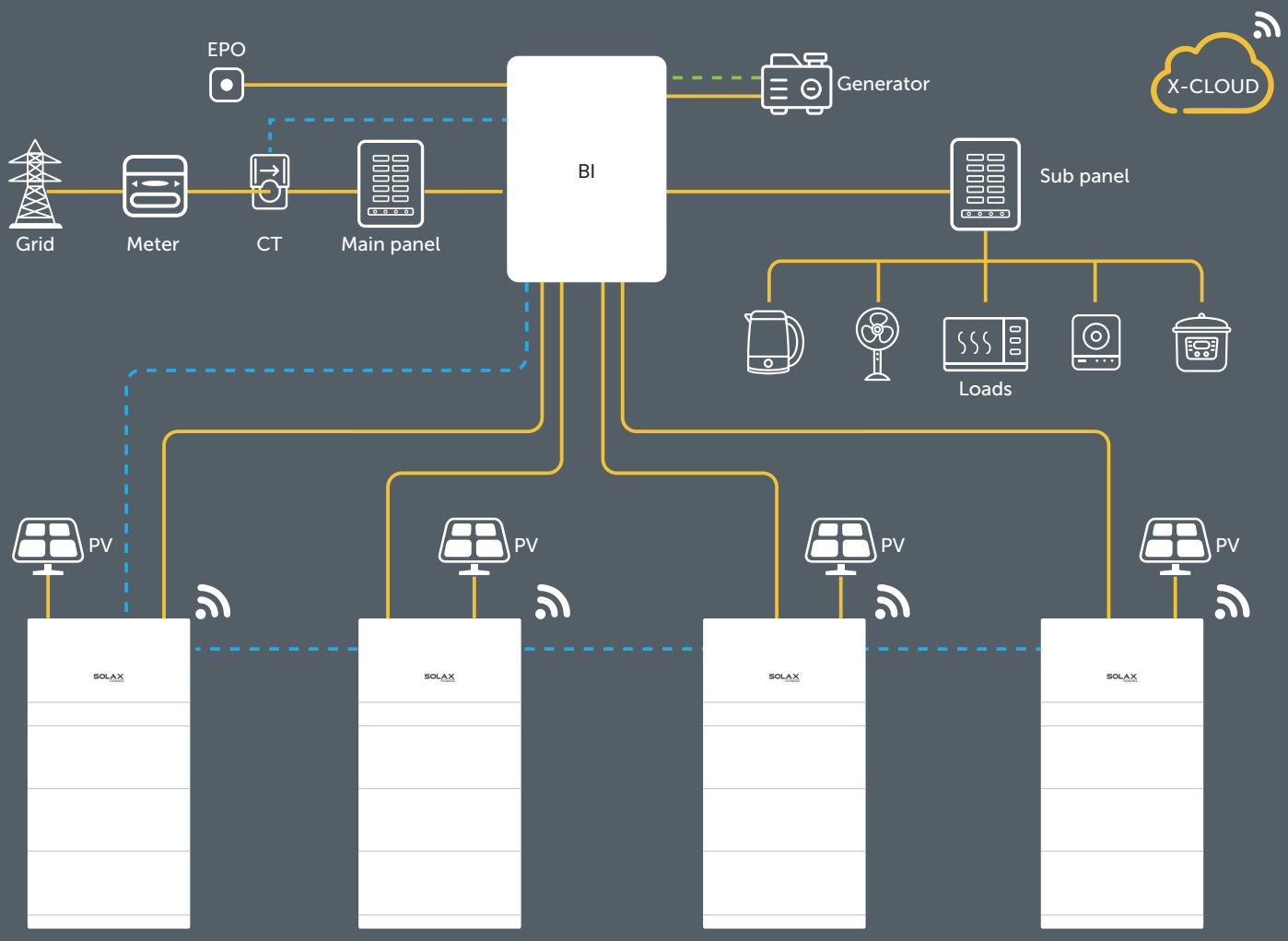
WHOLE HOME BACKUP SOLUTION



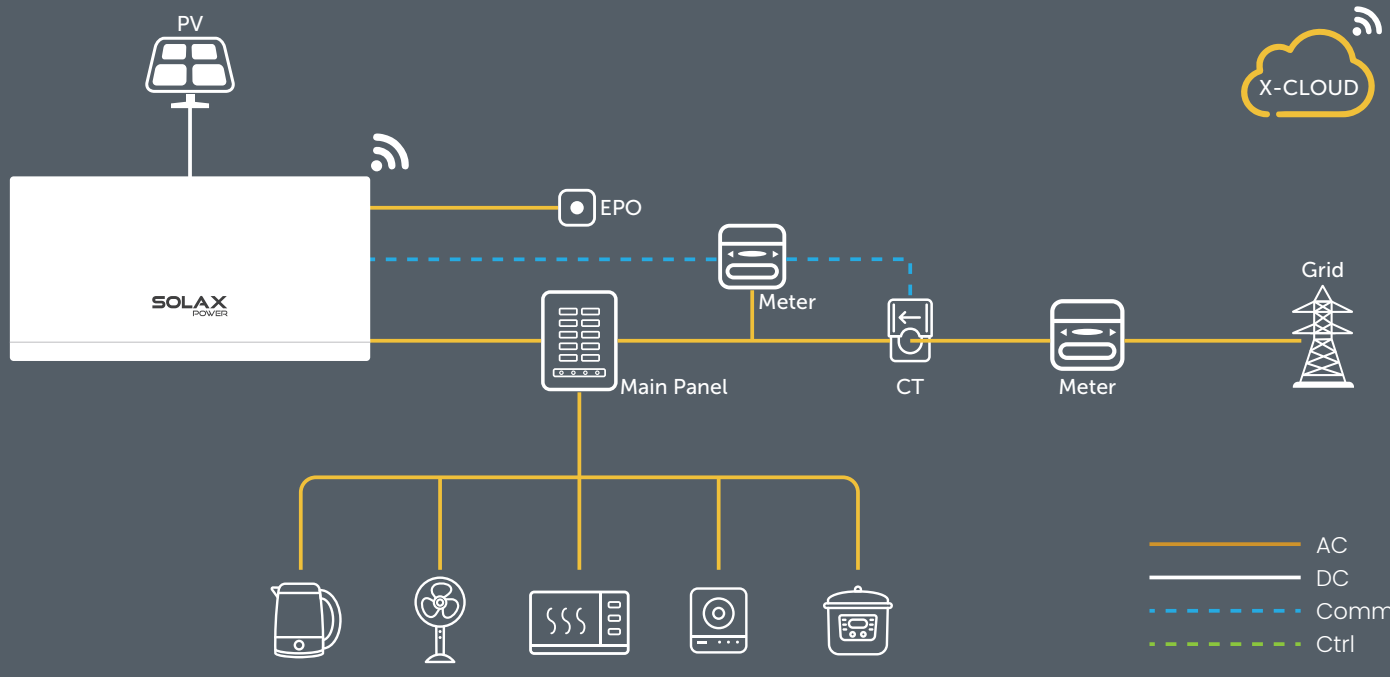
ESS WITH SWITCH BOX



ENERGY STORAGE SYSTEM (PARALLEL OPERATION)



PV-ONLY



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