Introducing X1-Hybrid LV

Single-phase | 3 ~6 kW | Low Voltage | Hybrid Inverter

Version:

Dept.: Marketing

Date:

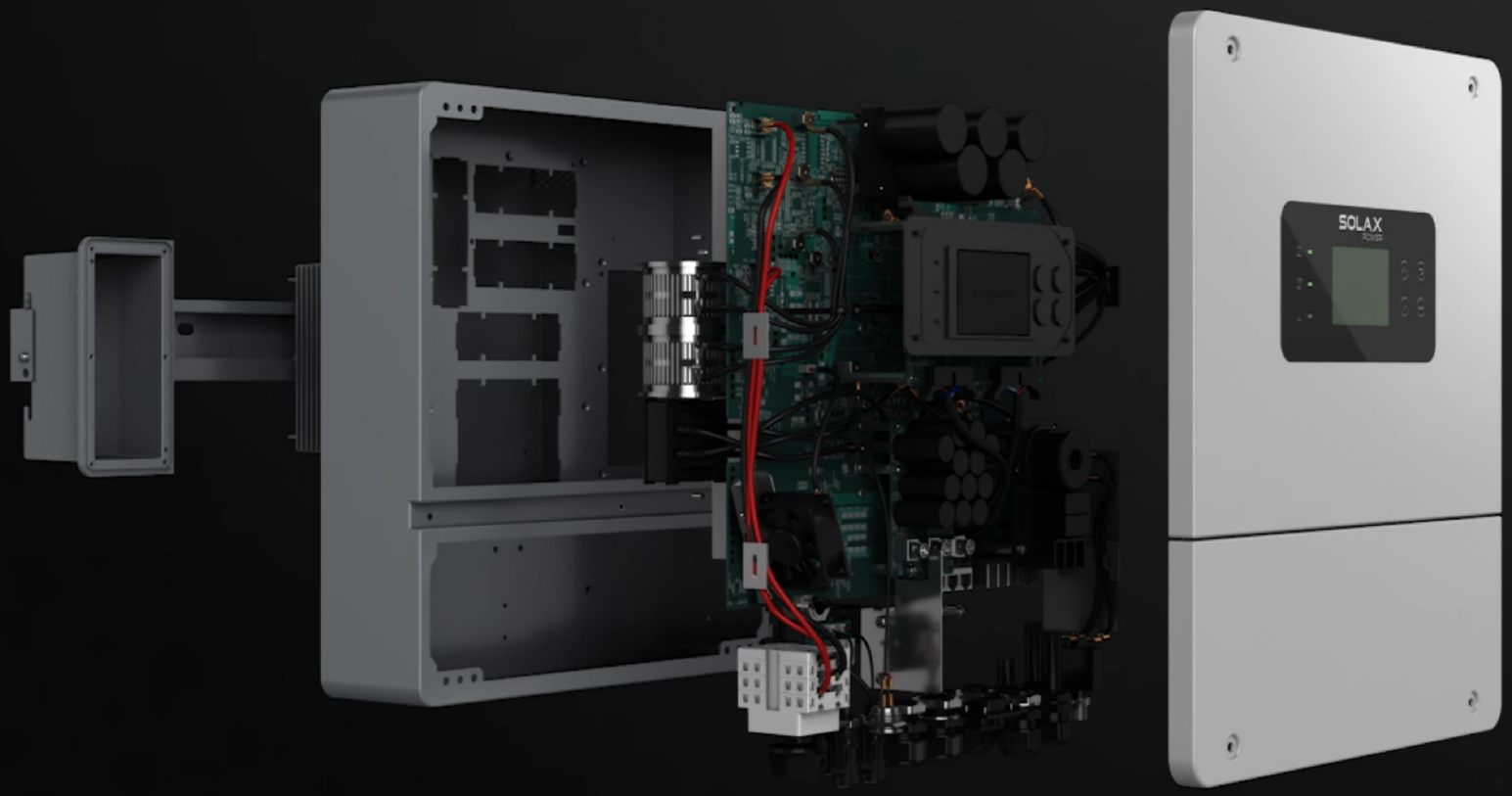
CATALOGUE

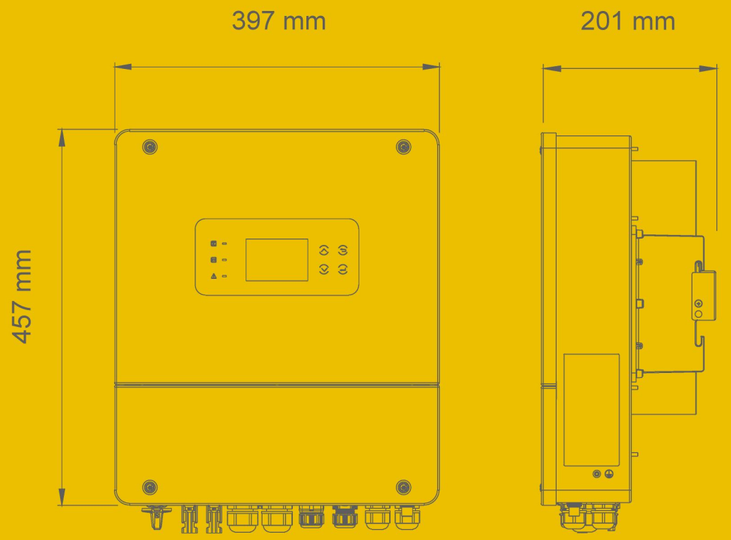
1

Overview

Overview

Internal product view





X1-Hybrid LV

Weight：15.7 kg

Overview

Scalability

Up to 10 units in parallel

Max. **60 kW / 588.8 kWh***

*If paired with SolaX LR 36 stackable batteries.（10*16 pcs)

Overview

X1-Hybrid LV

	X1-HYB-3.0-LV	X1-HYB-3.7-LV	X1-HYB-4.0-LV	X1-HYB-4.6-LV	X1-HYB-5.0-LV	X1-HYB-6.0-LV
DC INPUT						
Max. PV array power [Wp]	6000	7360	8000	9200	10000	12000
Max. PV input power (PV1+PV2) [Wp]	4500	5500	6000	6900	7500	9000
Max. PV input voltage [V]	550					
Start output voltage [V]	110					
Nominal input voltage [V]	360					
MPPT voltage range [V]	80 ~ 520					
No. of independent MPPT / strings per MPPT	2 / PV1: 1 ; PV2: 1					
Max. input current [A]	16 / 16					
Max. short circuit current [A]	20 / 20					
AC INPUT & OUTPUT						
Nominal AC output power [W]	3000	3680	4000	4600	5000	6000
Max. AC output apparent power [VA]	3300	3680	4400	4600 (Germany 4600)	5000	6000
Max. AC output current [A]	15	16	20	20.9 (Germany 20)	22.7	27.3
Max. AC input apparent power [VA]	6000	7360	8000	9200	9200	9200
Max. AC input current [A]	26.1	32	34.8	40	40	40
Nominal voltage [V], frequency [Hz]	220 / 230 / 240, 50 / 60					
Displacement power factor	0.8 leading ~ 0.8 lagging					
THDi (rated power) [%]	< 3					
BATTERY DATA						
Battery type	Lithium④ / Lead-Acid					
Max. charging / discharging current [A]	75				120	
Battery voltage range [V]	40 ~ 60					
Nominal battery voltage [V]	48					
EPS OUTPUT (WITH BATTERY)						
Nominal output apparent power [VA]	3000	3680	4000	4600	5000	6000
Peak apparent power [VA, s]④	6000, 10	7360, 10	8000, 10	9200, 10	10000, 10	12000, 10
Nominal output current [A]	13	16	17.4	20	21.7	26.1
Nominal voltage [V], frequency [Hz]	230, 50 / 60					
Switch time [ms]	< 10					

④ Depend on PV and battery capacity.

Overview

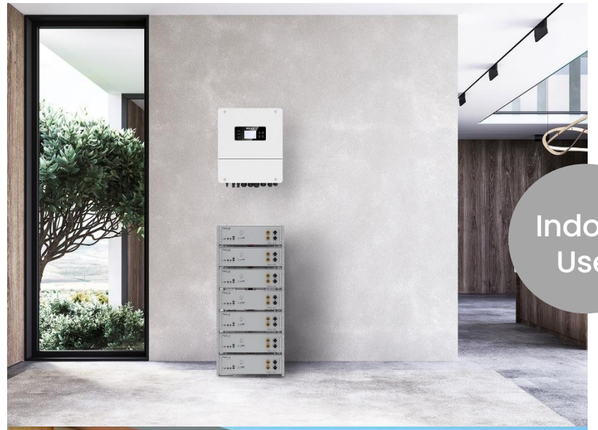
X1-Hybrid LV

	X1-HYB-3.0-LV	X1-HYB-3.7-LV	X1-HYB-4.0-LV	X1-HYB-4.6-LV	X1-HYB-5.0-LV	X1-HYB-6.0-LV
Efficiency						
MPPT Efficiency [%]	> 99.9					
Max. efficiency [%]	97.6					
Euro. efficiency [%]	97.0					
POWER CONSUMPTION						
Self consumption (night) [W]	Standby < 40, Shutdown < 10					
ENVIRONMENT LIMIT						
Degree of protection	IP65					
Operating temperature range [°C]	-25 ~ +60 (derating above +45)					
Relative humidity [%]	0 ~ 100 (condensing)					
Max. operation altitude [m]	< 3000					
Noise emission(typical) [dB]	< 39				< 50	
Storage temperature [°C]	-25 ~ +70					
GENERAL						
Dimensions (WxHxD) [mm]	397 × 490 × 201					
Net weight [kg]	16.5				17.3	
Cooling concept	Natural				Smart cooling	
Topology	Transformerless for PV side / HF for battery side					
HMI Interface	LED + LCD					
Communication interfaces	CAN, RS485, CT, Meter, USB, NTC, WiFi, LAN, 4G (Optional), WiFi+Lan (Optional), WiFi+4GM (Optional)					
Warranty [years]	5					
STANDARD						
Safety	EN IEC 62109-1 / -2					
EMC	BS EN 50065-1					
Certification	NRS 097-2-1, IEC 61727, IEC 62116, PEA, MEA, BIS					

① To be released in Q3 2023;
② & ③ To be released in Q4 2023;
④ Depend on PV and battery capacity.

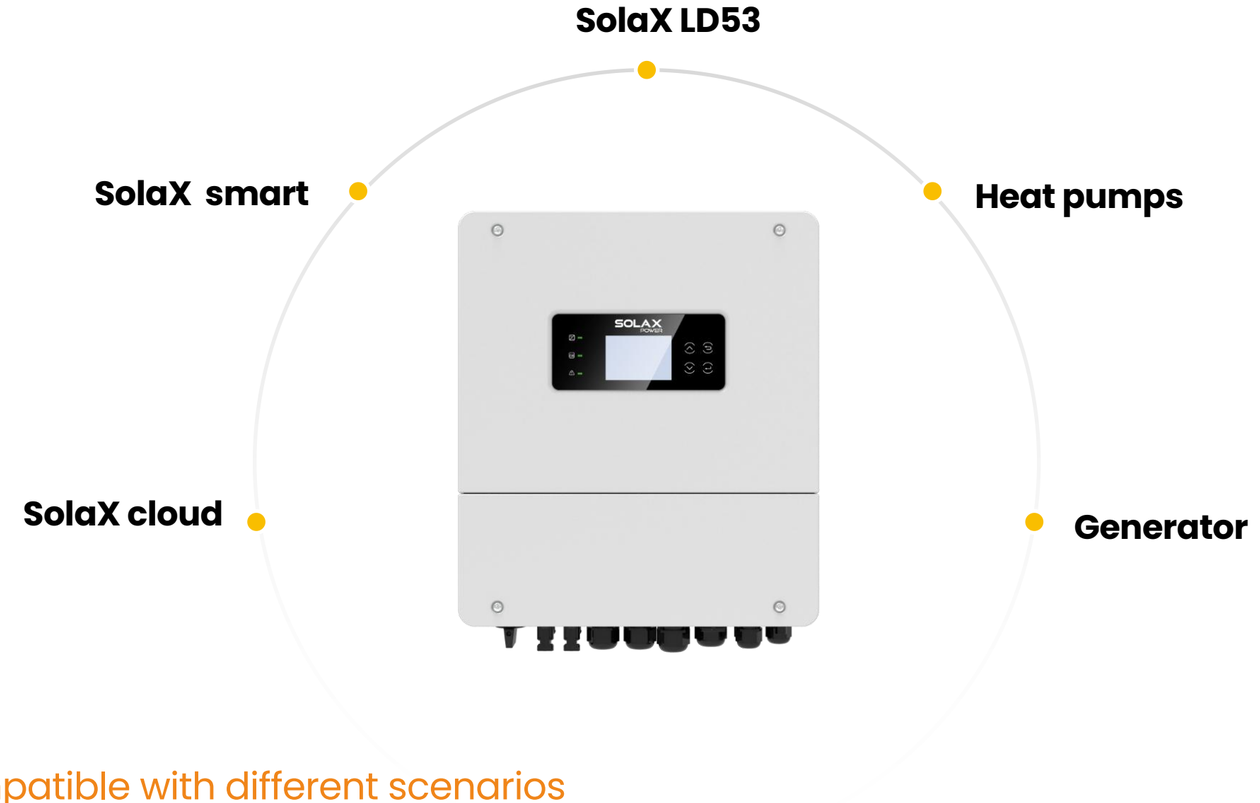
Overview

Rated IP65

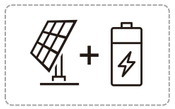


Indoor Use

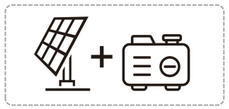
Outdoor Use



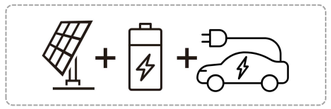
Compatible with different scenarios



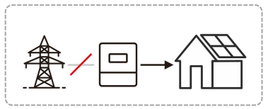
PV+ Energy Storage system



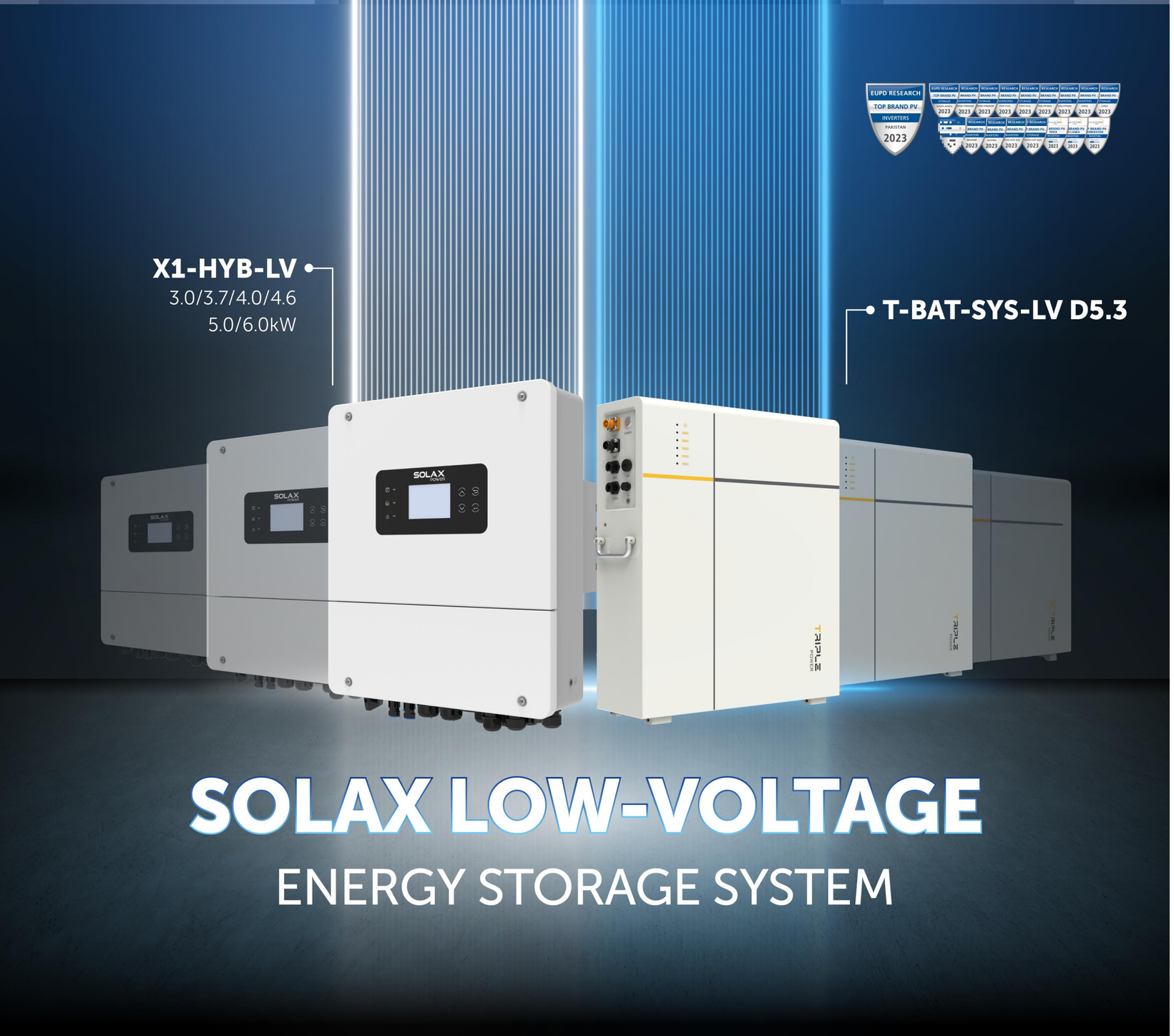
PV+ Generator system



PV+ Energy Storage + EV Charging system



Microgrid system



Overview

- Special work mode designed for Pakistan's energy needs
- Battery or battery-less operation supported
- Single or three-phase synchronisation
- Optimised UI design
- Dual PV input and dual load output
- Compatible with all type of batteries
- Seamlessly connect to generators for reliable backup power
- Intelligent grid management to avoid peak time bills
- Support up to 10 parallel units
- Garanteed 5-year warranty on the inverter and 10-year warranty on the battery

2

Key Features

Key Features

High Yield & Utiliazation

- 200% PV oversizing
- Max. 150% PV input
- Max. 16A DC input per MPPT
- Low startup voltage
- Built-in shadow tracking

Robust Backup

- <4ms UPS level s switchover time
- 200% EPS overload for 10 sec
- Diesel generator supported
- Micro-grid function

User Friendly

- LCD color screen & touch keys
- 10 delightful colorful cases
- Light & compact

Flexiblity & Scalability

- Compatible with multiple brands& battery types: LFP, lead acid and etc.
- Up to 10 units in parallel
- Single-phase to three-phase grouping supported

AI-driven Energy Management

- User Consumption Patterns
- Weather-based
- Dynamic pricing models

High Reliability

- AFCI optional
- Type III SPD on AC&DC side
- Battery temperature detection
- Passed over 140 professional tests
- IP65
- RSD（optional)

Key Features

High Yield & Utilization

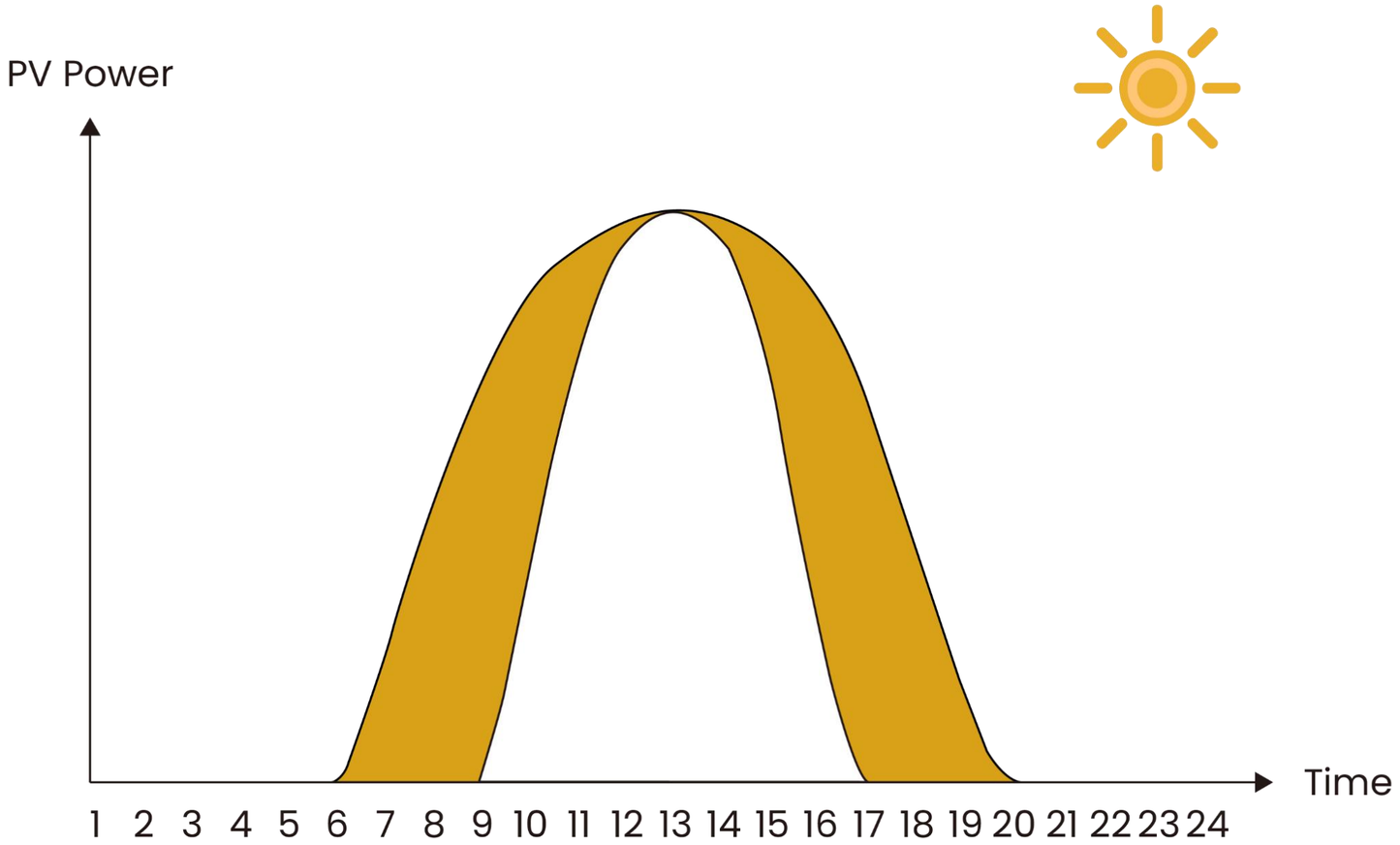
- **200% PV oversizing,**
  maximizing ROI with double electricity generated.
- **Max. 16A input current per string,**
  compatible with high power panels.
- **Max. 150% PV input ,**
  in addition to 100% for AC output, the extra 50% can be stored in the battery for future use.

Key Features

Lower Start-up Voltage

A lower start-up voltage allows the inverter to start generation earlier and stop generation later, effectively —

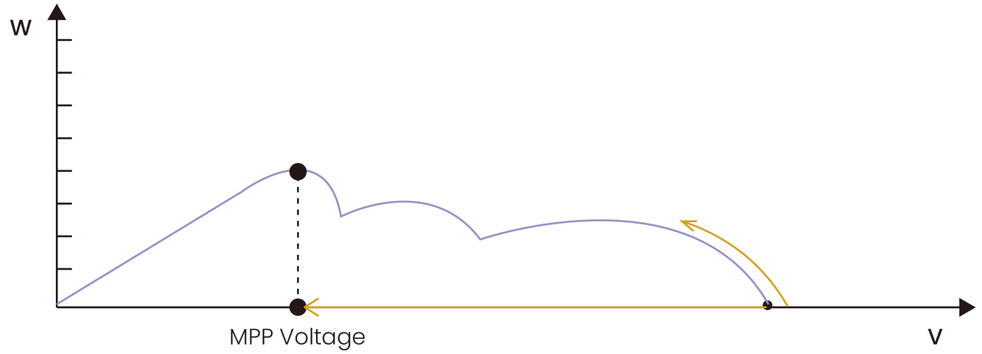
- Extending generation hours
- Enhancing energy harvesting
- Maximizing self-consumption



Key Features

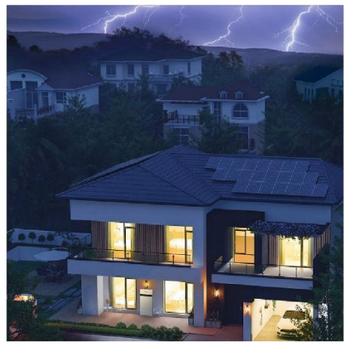
Build-in Shadow Tracking

Adjusting output according to the shading conditions , which will effectively improve energy production and efficiency.



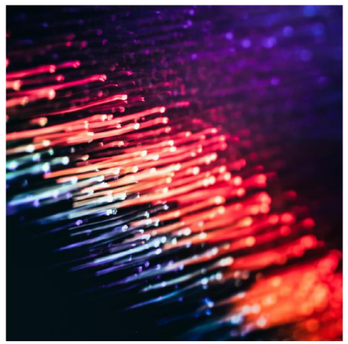
Key Features

Robust Back up



No Worries for Power Breakdown

< 4 milliseconds switchover time



Effortlessly handling surge load scenarios

200% EPS overload for 10 sec

Generater compatible

The generator output port can connect to inverter Gen port directly

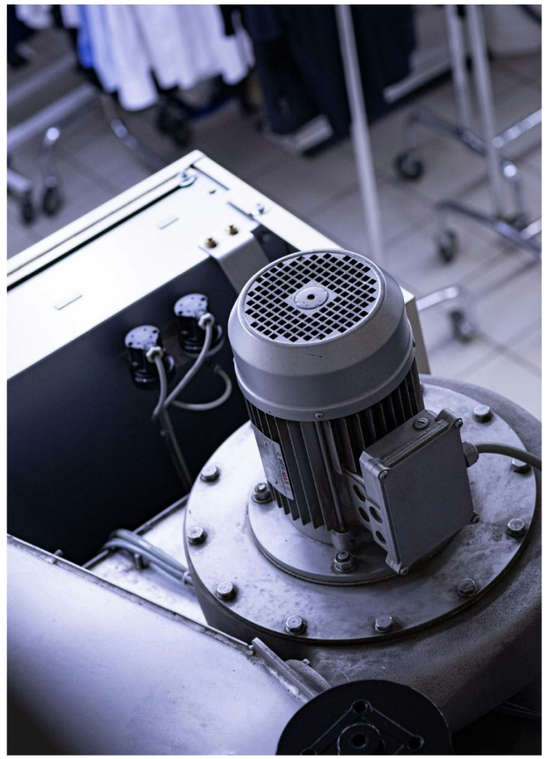
Micro-grid solution

Compare with grid-tie inverter to create a Micro-grid system and power your loads during outages

Key Features

200% EPS overload for 10 seconds

200% EPS overload，able to supply 12kW power for 10 seconds when off-grid , make it possible to drive small water pumps (<2HP), small motors (<2HP), 1.5 PH air conditioners and other inductive loads.



Key Features

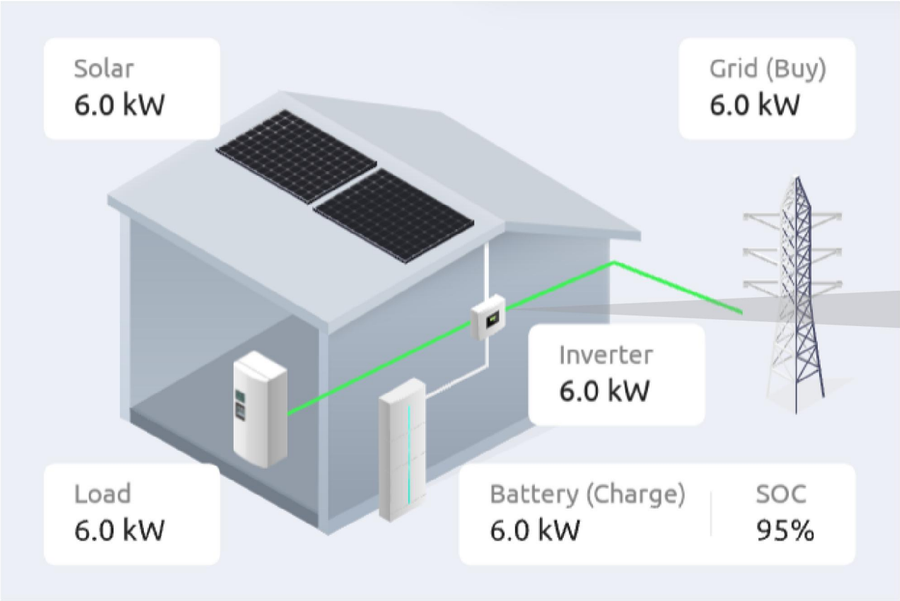
User friendly-Illuminate your life

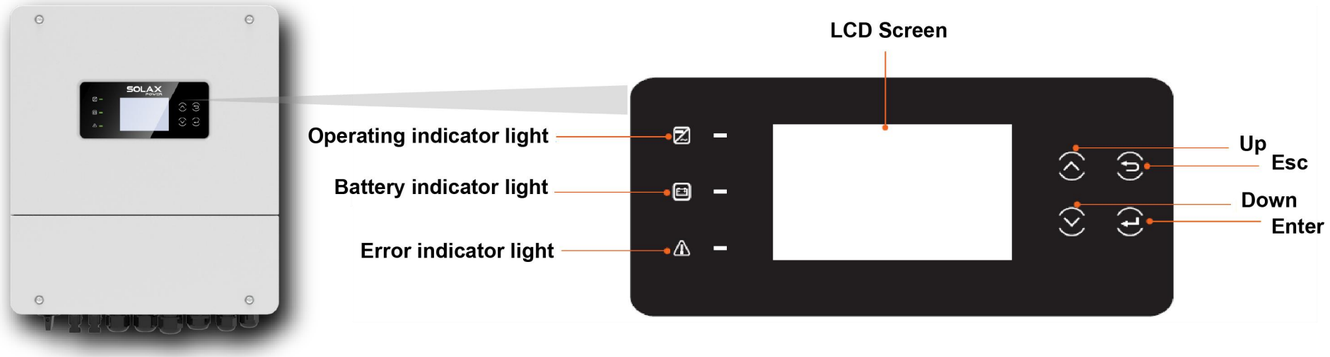
LCD color screen & touch keys

- 3.5-inch
- 480*320 resolution

Light & compact

- Easy to install
- Space-saving



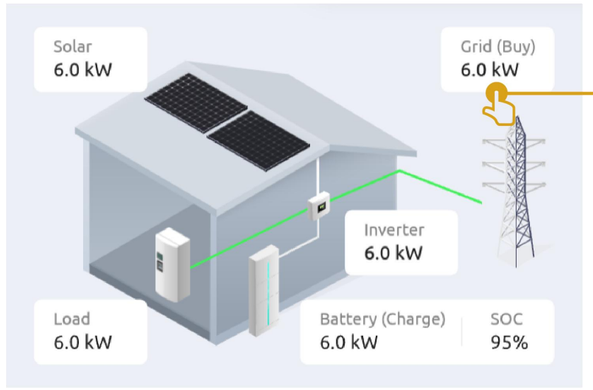


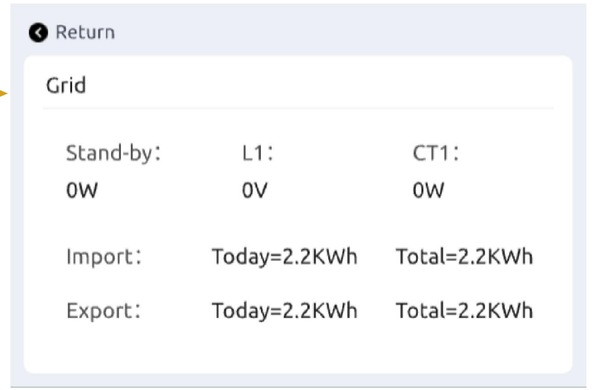
Key Features

Touchable Screen

Easy to view

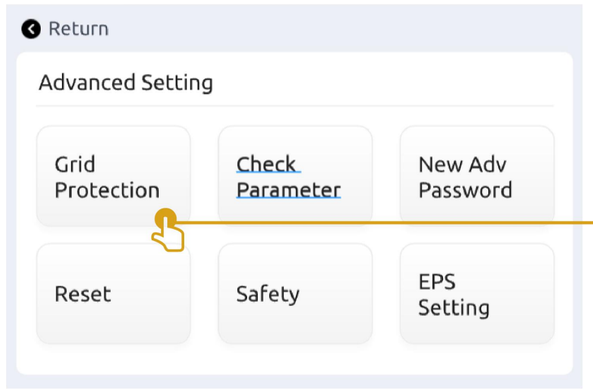
Touch the corresponding module on the screen to view specific data

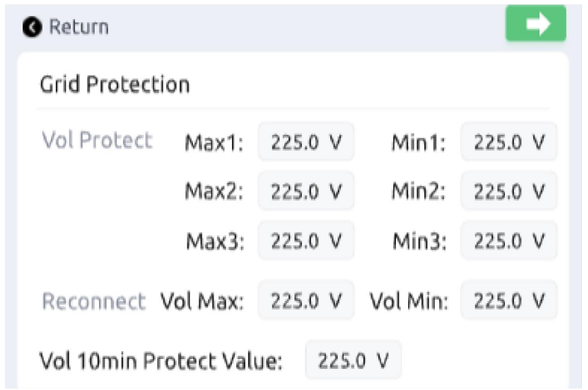




Simple to set up

Touch the corresponding module on the screen to set up parameters





MULTI-PLATFORM SUPPORTED

SolaX Cloud - Your One-Stop Power Management Platform

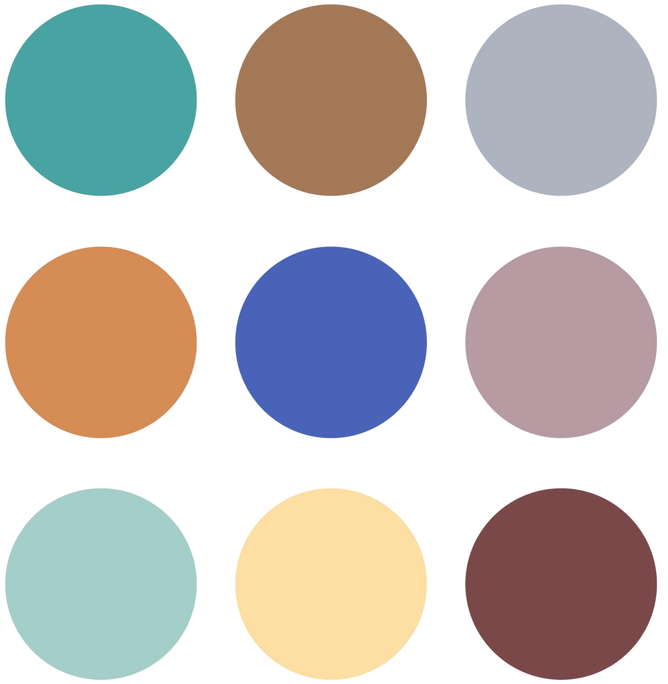
PC
Mobile APP
Laptop

Key Features

Variety of Colors Available

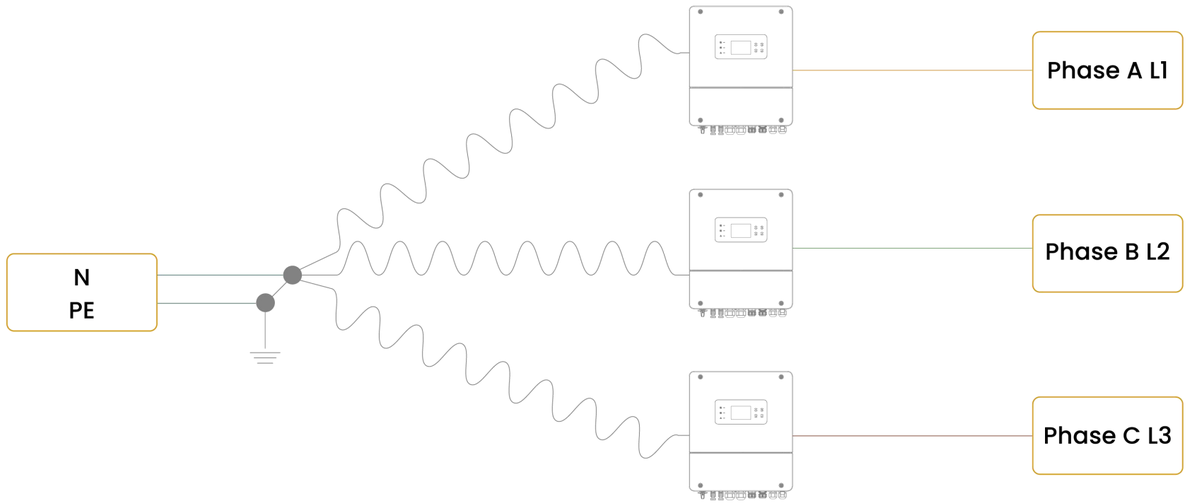
10 delightful colorful cases

- Adding a touch of color to your daily life
- well blends to your decor



Key Features

Scalability



- Single-phase to three-phase grouping supported
- Up to 10 units in parallel，No parallel box or DIP switch required

Key Features

Intelligent Loads Management

SolaX Cloud intelligent loads management model , driven by :

- User Consumption Patterns
- Weather-based
- Dynamic pricing models

Control the heat pump through the adapter box.

Manage devices like your EV charger without additional devices directly

Key Features

Intelligent Loads Management

Solax Cloud intelligent loads management model , driven by :

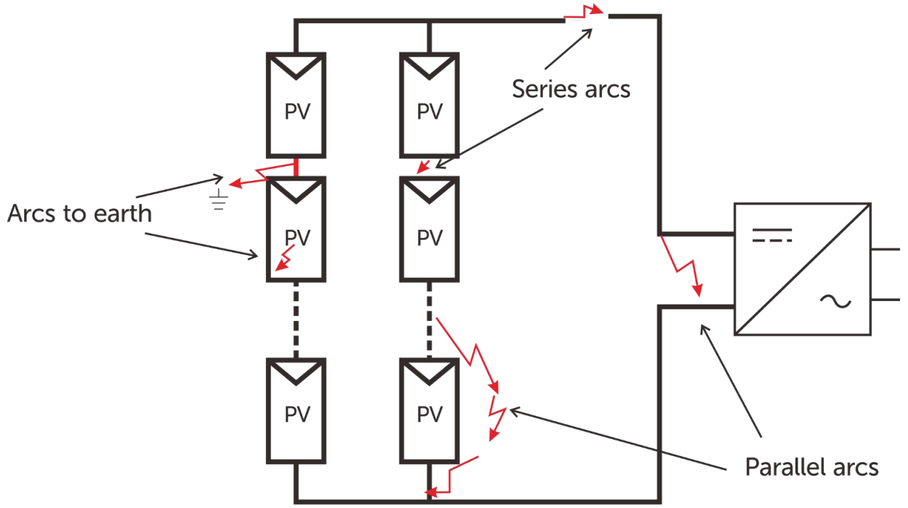
User Consumption Patterns

Weather-based

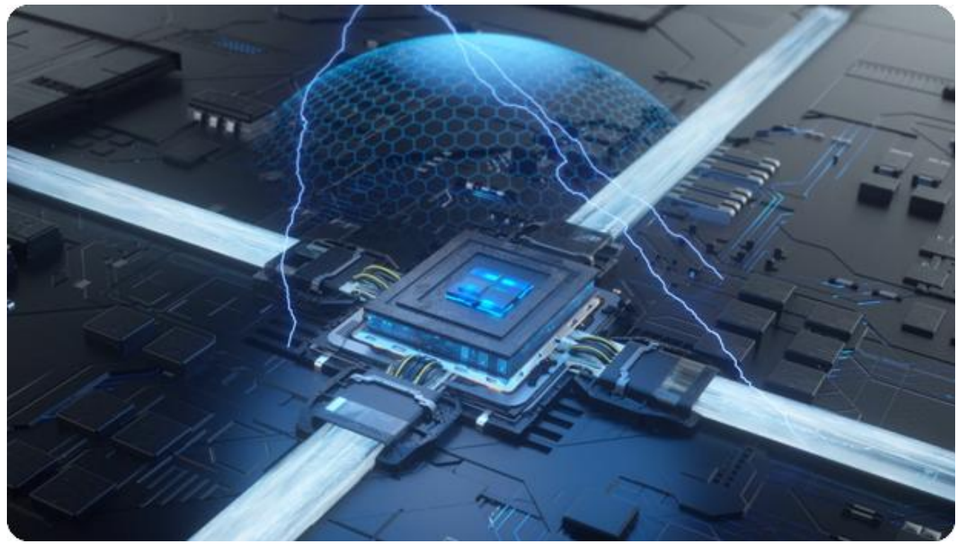
Dynamic pricing models

Key Features

Safety & Reliability-AFCI（optional）



- The Arc-Fault Circuit-Interrupter (AFCI) provides reliable protection for electrical safety. By identifying the characteristic signals of arc faults in the circuit, the AFCI will disconnect the power before the arc fault causes serious consequence.

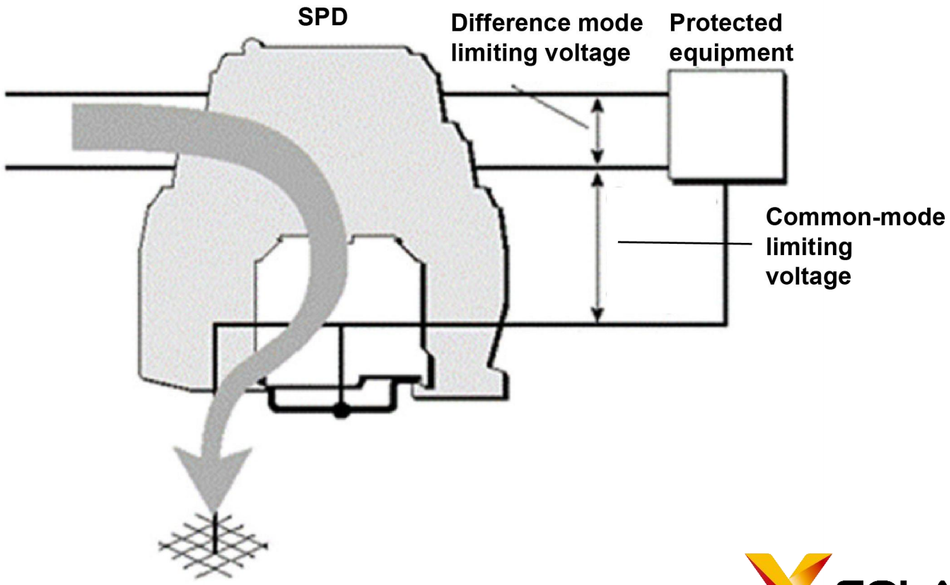


Key Features

Safety & Reliability-SPD

- **Type III SPD on AC&DC side**

Surge Protective Device (SPD) is designed to limit and divert transient voltages that occur on a protected circuit, which will provide protection against transient voltage surges caused by factors like lightning strikes, power grid fluctuations, or switching operations.



Key Features

Safe & Reliability-Battery temperature Detection

- The temperature sensor communicates with the inverter battery charger to make sure the batteries are not under charged or overcharged based on the battery temperature, which will extend your battery life.
- Easy installation , just bolt on the sensor at the battery terminal and plug in the connector directly to the inverter port.

Key Features

Rapid Shutdown（RSD）

XRSD-1C

(1 connection)

XRSD-2C

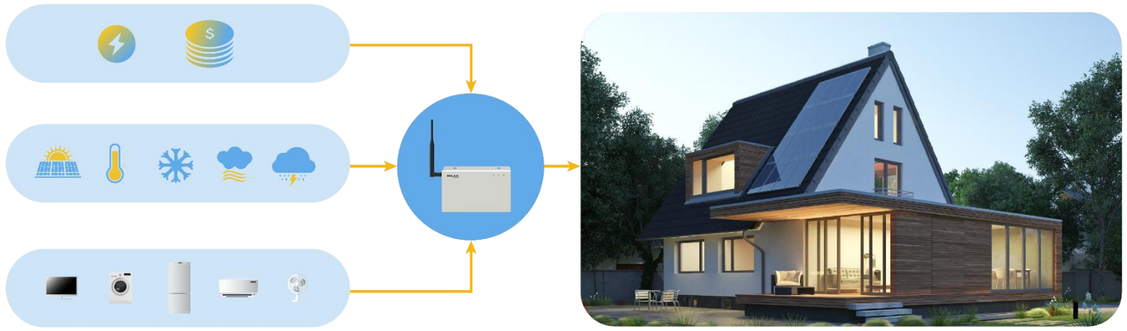
(2 connection)

The rapid shutdown devices — XRSD series offers a module-level solution for both new and existing PV systems.

The RSD function refers to the Reverse Current Suppression Device , mainly used to prevent reverse current flow , which can effectively protect the solar panels and the inverter, extend the service life, and improve the stability of the photovoltaic system.

AI-driven Energy Management

Smart Schedule



Auto tune to an optimal working mode based on deep-learning weather forecasting, usage habits, and electricity pricing in order to maximize energy efficiency.

*The above functions can be realized in tandem with DataHub 1000.

Intelligent Loads Management

You can directly manage devices like your EV charger without additional devices, and control the heat pump through the adapter box.

AI-driven Energy Management

Smart Scene

Smart Scene innovatively **offers a customizable set of IF-THEN conditions and actions**, allowing users to create intelligent scenarios like automatically charging/discharging the battery based on preset conditions, making your life easier.

✓ Efficient

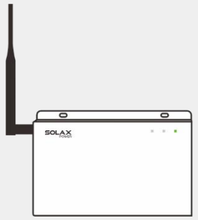
✓ Automatic

✓ Money saving

Example

What you SET

IF condition is set at 2 AM, and the weather forecast predicts rain within the next 8 hours.



Forecasted raining tomorrow

What you GET

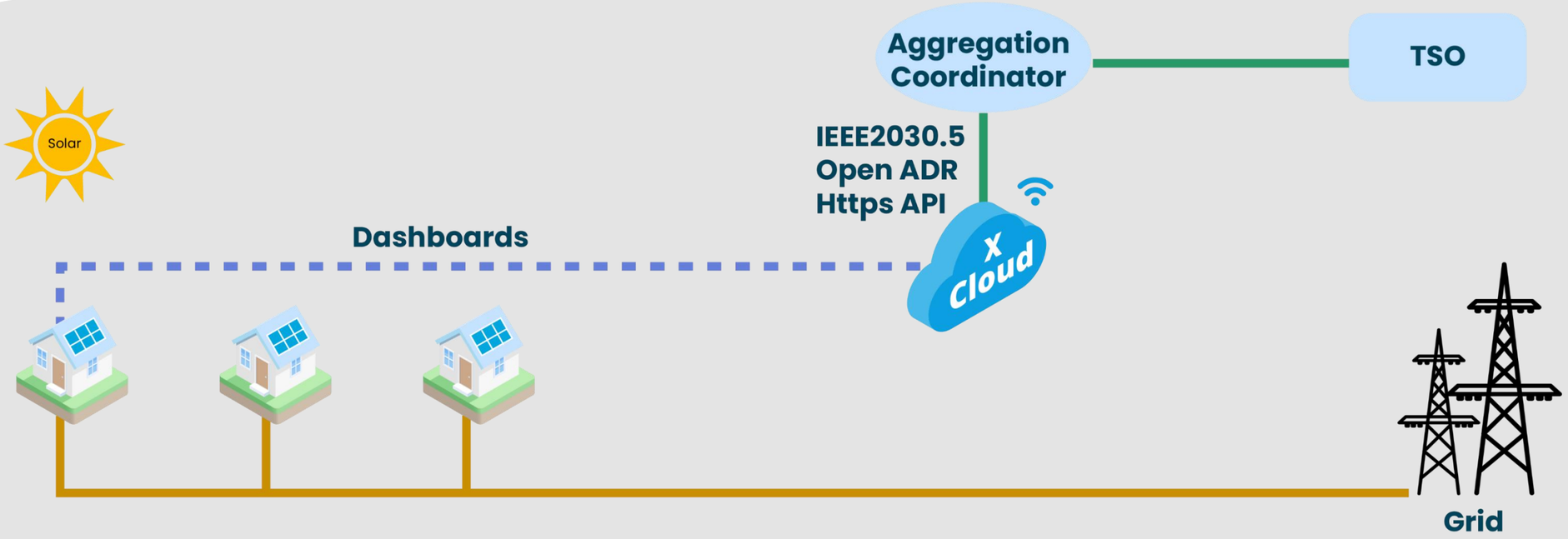
In response to this condition, the THEN action is programmed to charge the battery to 100% at 2 am, when the electricity price is typically lower.

Auto Charging

VPP Ready

VPP, also known as Virtual Power Plant, is a network of decentralized energy-generation systems, like solar systems, that are linked together and managed by a VPP operation platform.

With support for API / IEEE2030.5 and Open ADR, our product can easily integrate with VPP operation platforms. This functionality is currently being utilized in certain countries.



Strong Ability Against Unstable Grid

Half-wave loads supported

When the power is down, and you are using a half-wave load* device, it will be like...

With
Half-wave loads supported

Without
Half-wave loads supported

***Q: what does “half-wave loads” mean?**

Some small household appliances may utilize half-wave loads, such as hair dryers, portable electric fans, electric blankets, and decorative lights.

To sum up, we've got you covered with **all types of loads**, including but not limited to **inductive loads, surge loads, half-wave loads and more.**

This ensures uninterrupted power supply even in off-grid conditions, regardless of the types of devices being used.

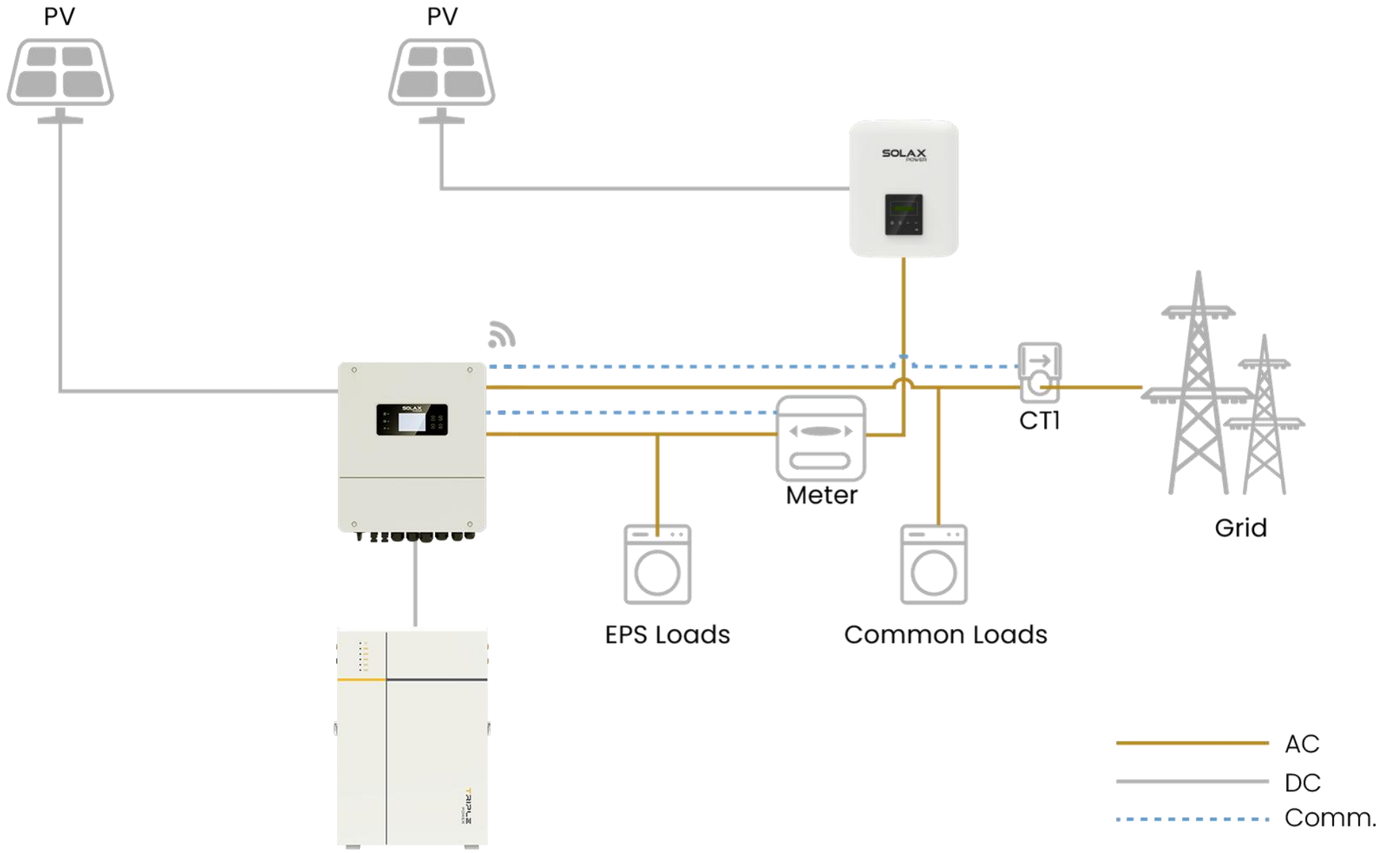
SOLAX POWER

Micro-grid Ready

There are numerous traditional string inverters available in the market.

However, due to the Islanding Effect, these string inverters cannot function during off-grid situations causing users to lose the PV energy generated by the string inverter when off-grid.

The micro-grid function allows the hybrid inverter to simulate the grid and activate the string inverter during off-grid periods. By connecting the string inverter to the hybrid inverter's EPS port, the hybrid inverter can utilize PV or battery energy to activate the string inverter when utility power is lost.



*Note: X1-Hybrid-LV is compatible with single-phase string inverters

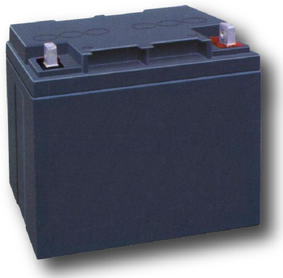
3

Compatible battery

Compatible battery

Compatible with multiple battery types

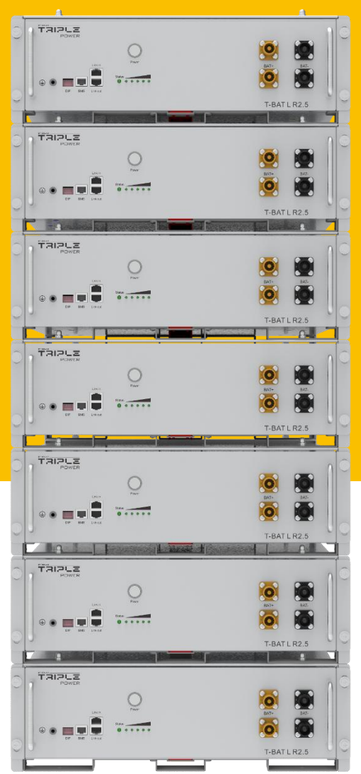
LFP



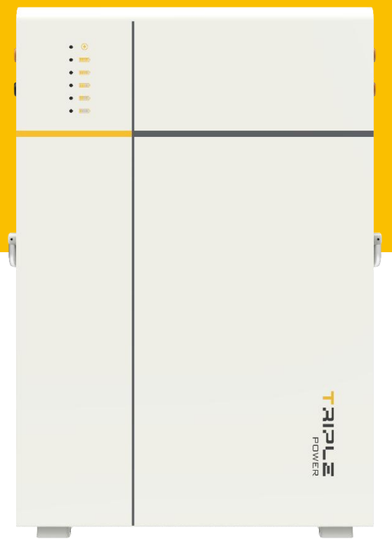
Lead Acid

Others

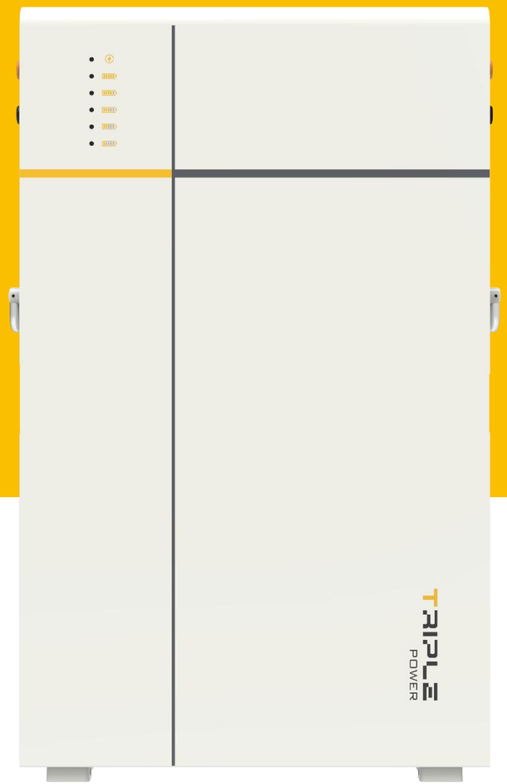
SOLAX RECOMMENDATION BATTERY



LR25/36



LD50



LD153

Lead Carbon Battery

4

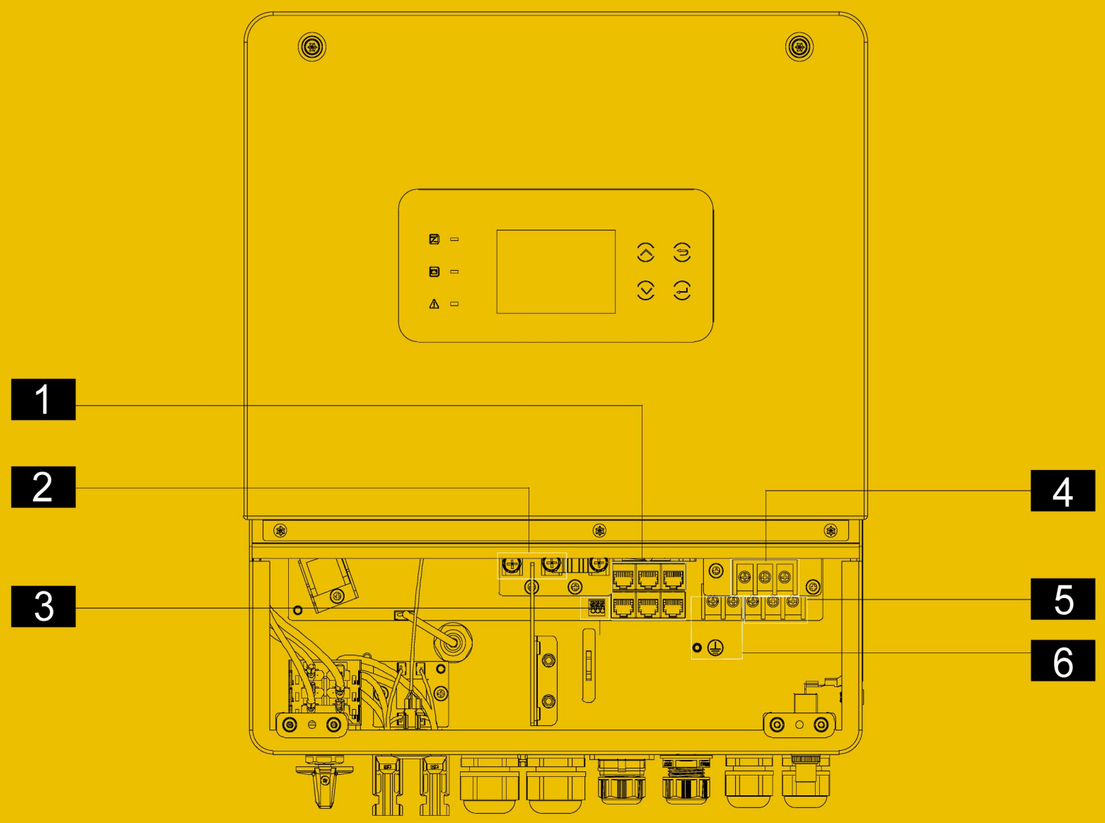
System Solutions

- Terminals
- Parallel Connection
- Generator
- Micro-grid
- Intelligent Load Connection

Heat Pump
EV Charger
Gen port

System Solutions

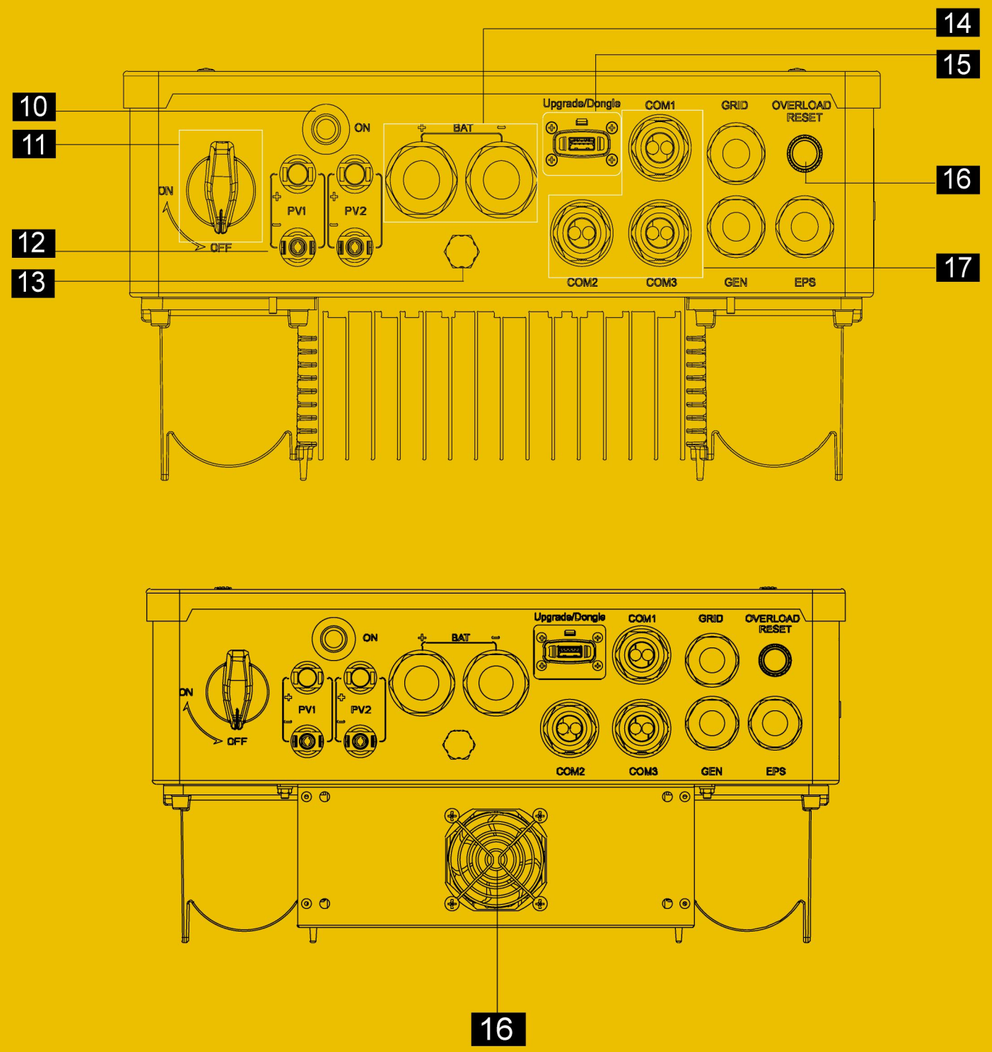
Terminals | Frontal



Object	Description
1	Communication ports
2	Battery input connectors
3	Dry-contact output
4	Grid
5	EPS
6	Generator input

System Solutions

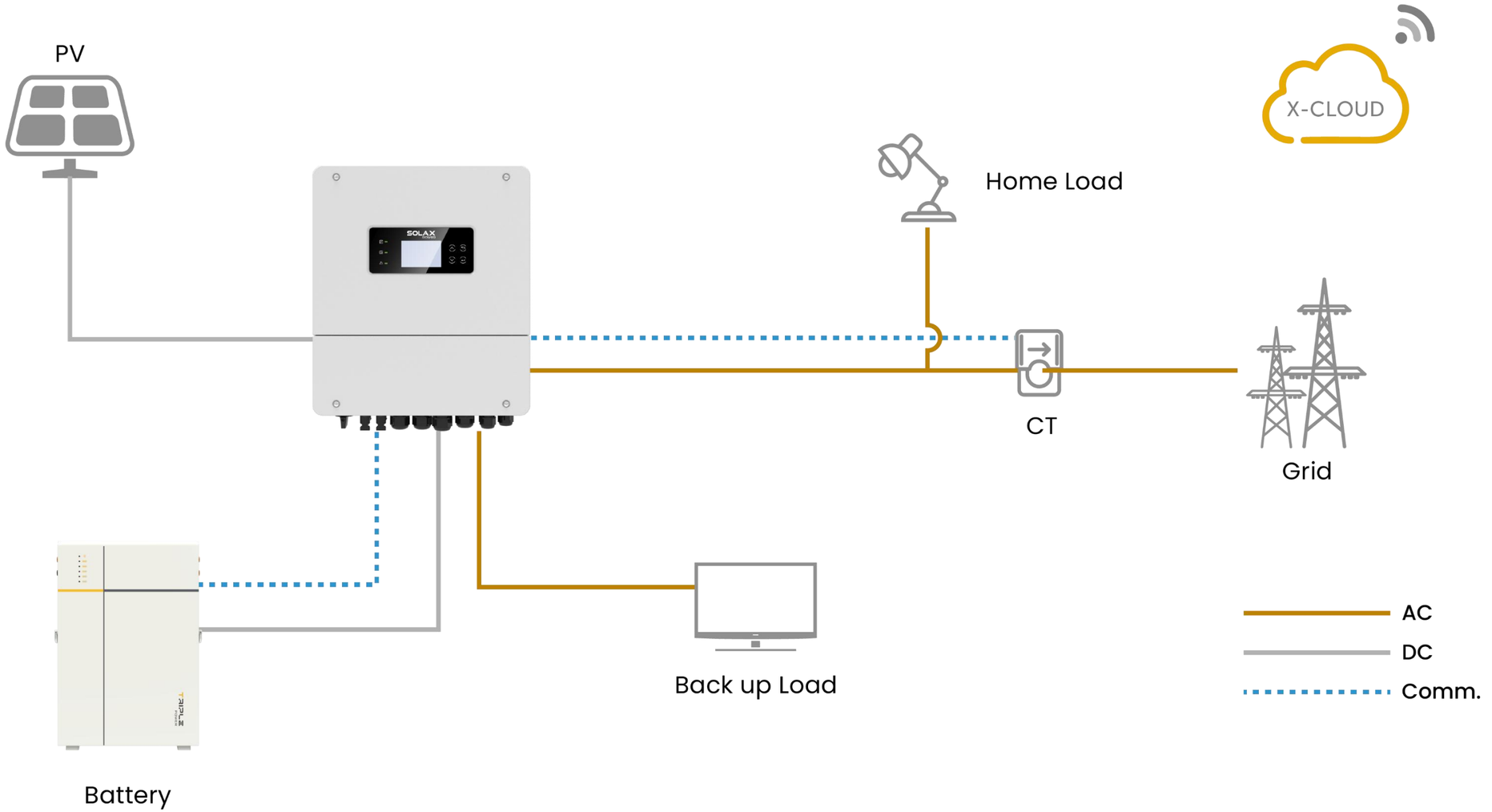
Terminals | Bottom



Object	Description
10	Battery power on button
11	DC Switch
12	PV input with two MPPT
13	Waterproof valve
14	BAT+/BAT-
15	USB port for upgrading/External monitoring connection port
16	Overload reset button
17	COM1/COM2/COM3 (for communication connection)
16	Fan (Only for X1-Hybrid-5.0-LV and X1-Hybrid-6.0-LV)

System Solutions

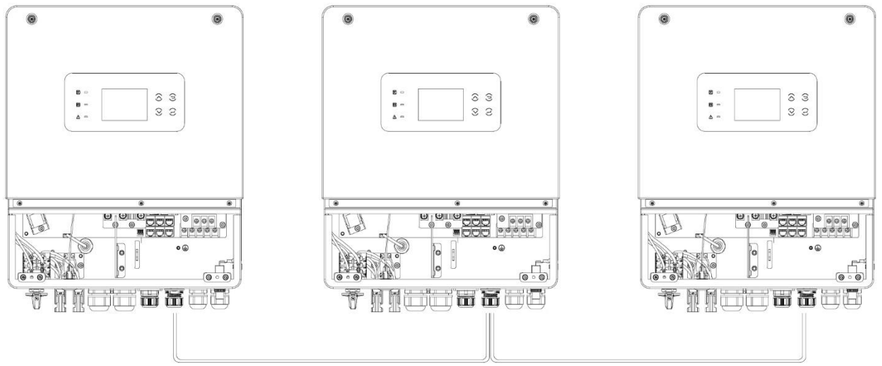
Basic solution



System Solutions

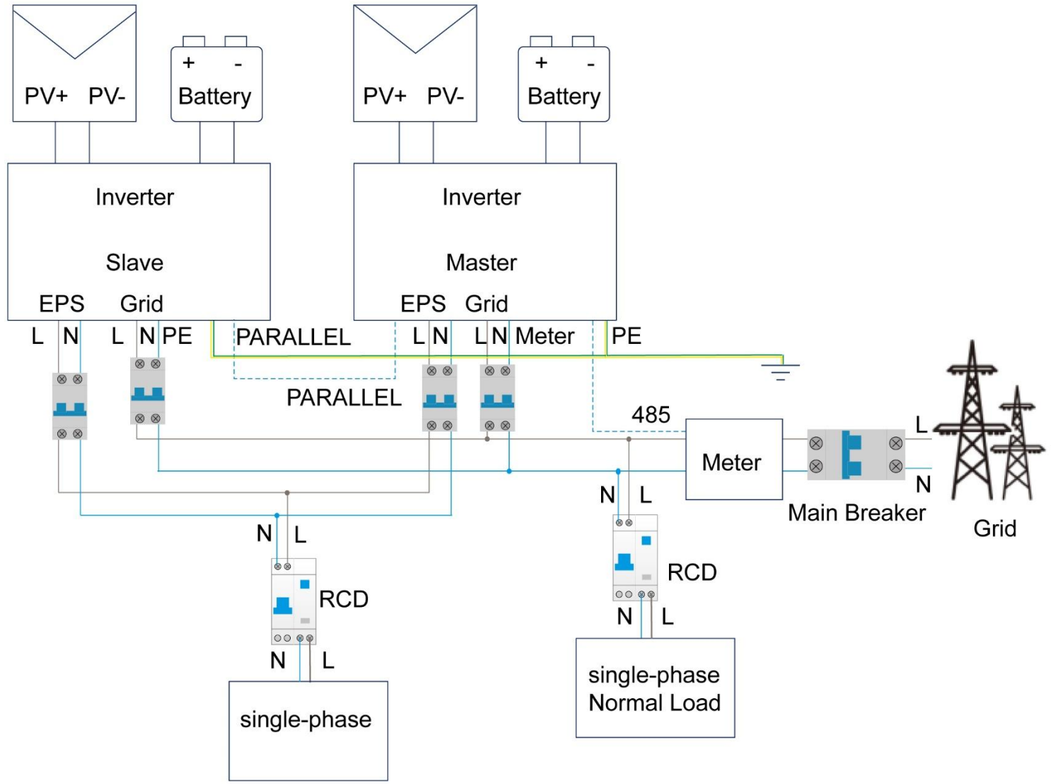
Parallel Connection

1：Parallel connection Diagram



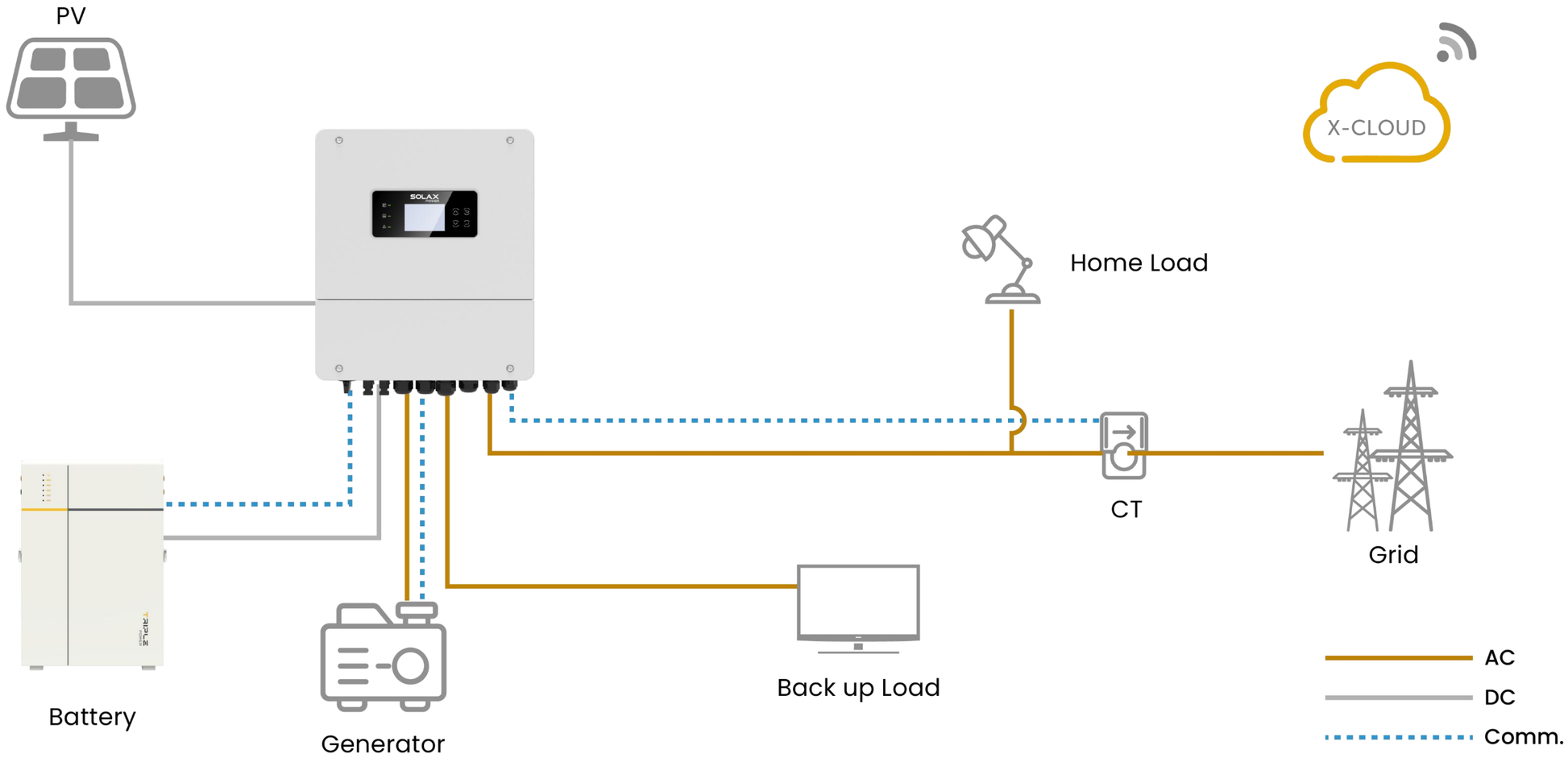
- Up to 10 units in parallel
- No parallel box required
- No need for a DIP switch

2：System Diagram



System Solutions

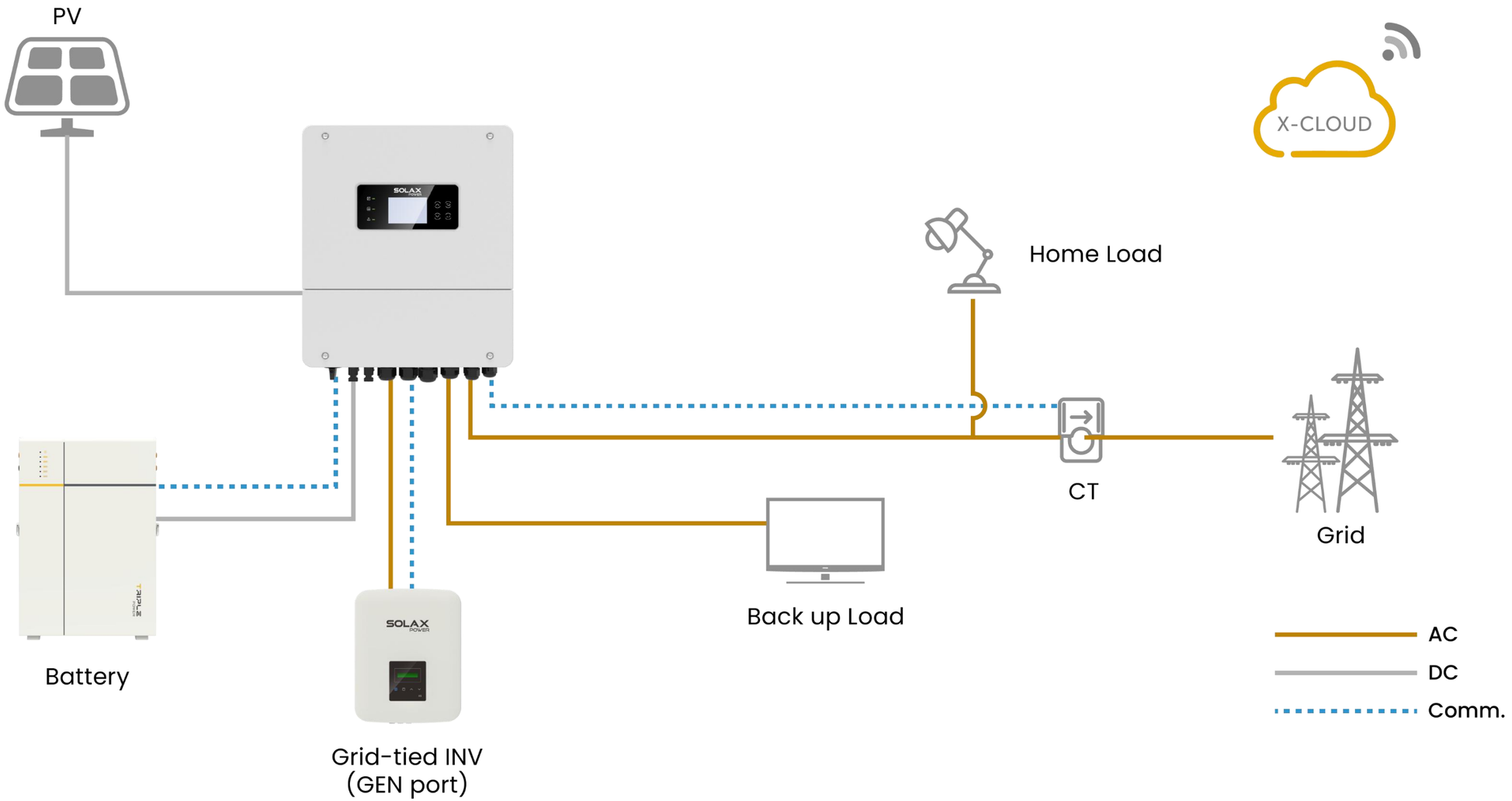
Generator



- Built-in Gen interface
- Dry contact control

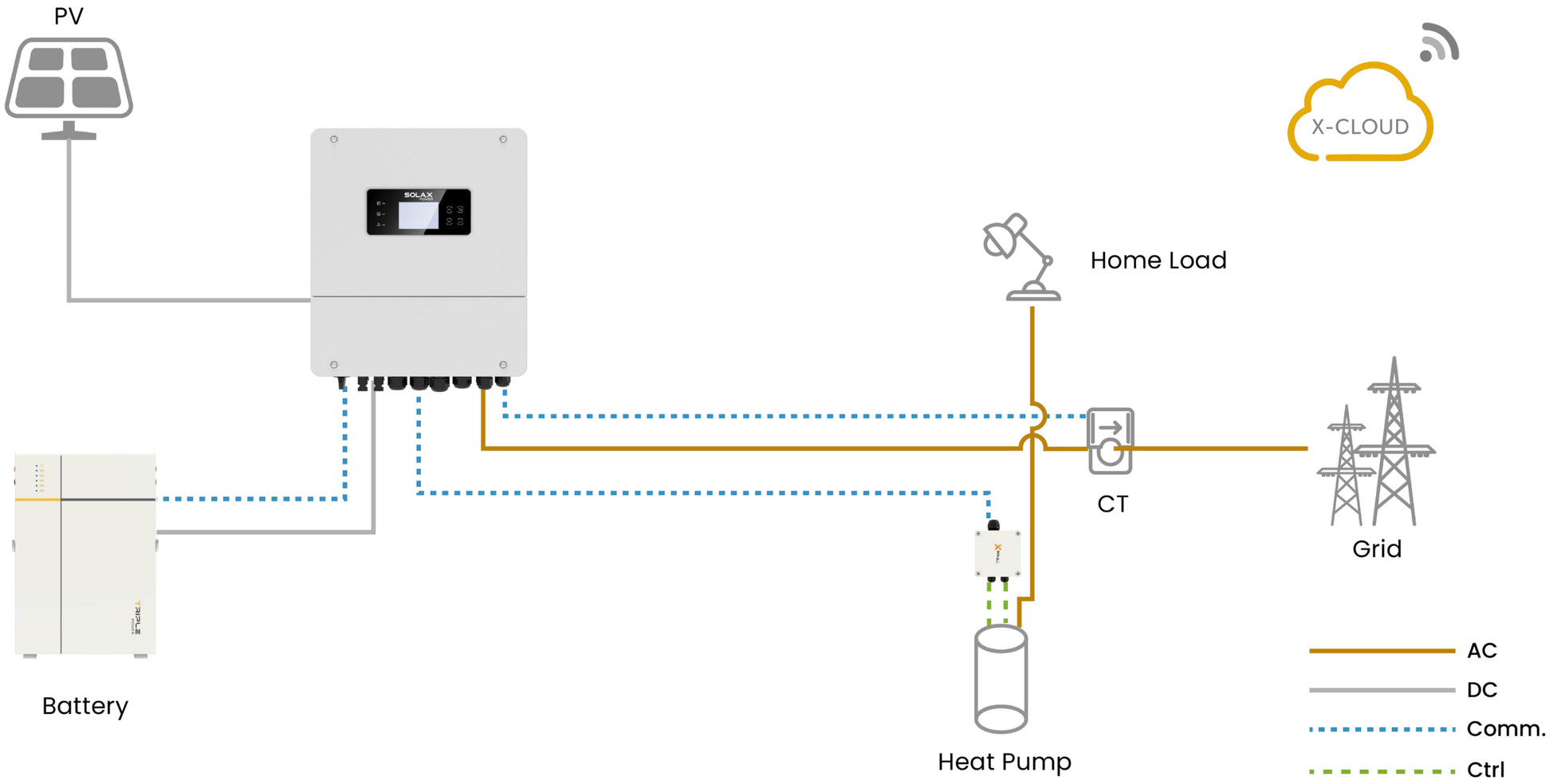
System Solutions

Micro-grid



System Solutions

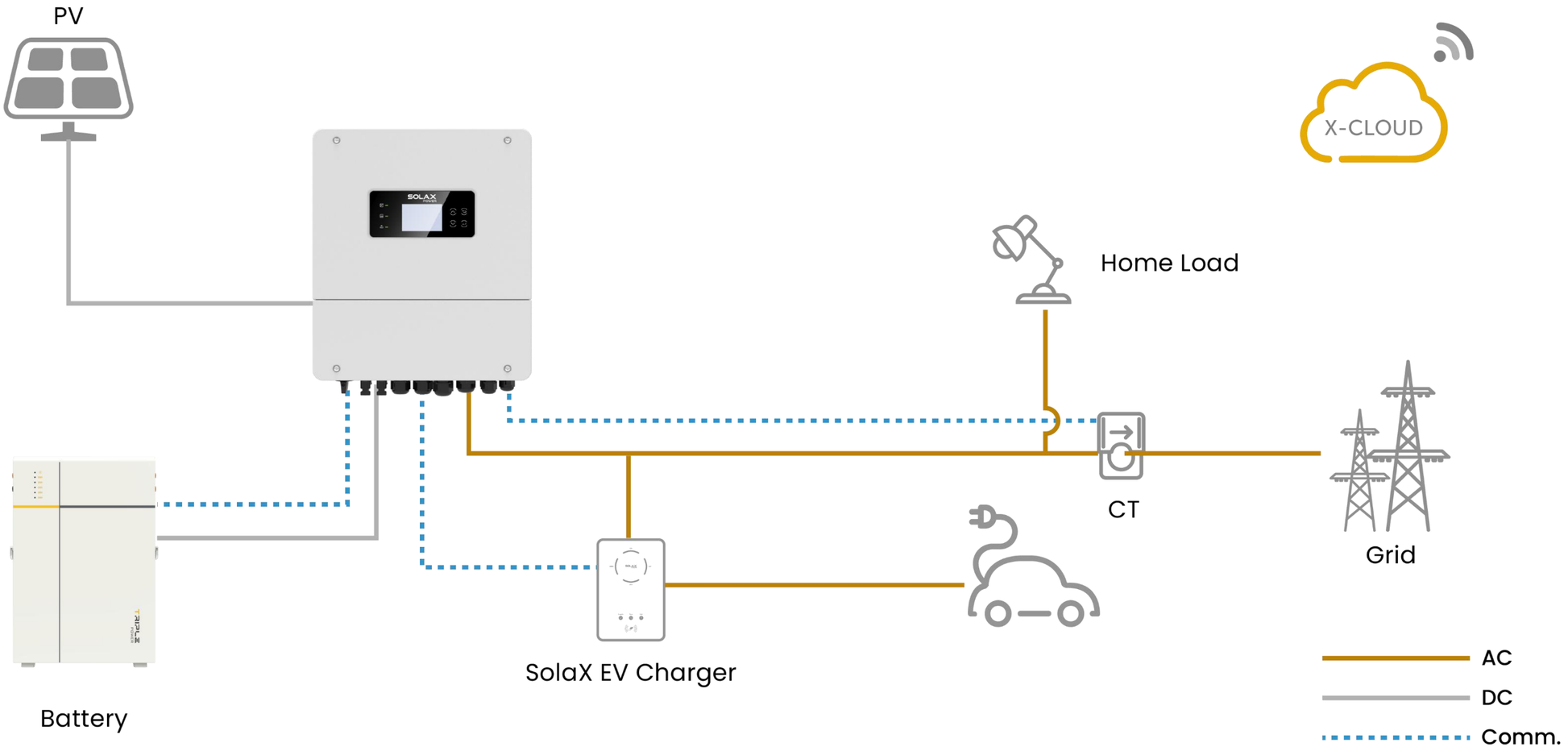
Intelligent Load | Heat Pump



- SG Ready Heat Pump
- SolaX adapt box control

System Solutions

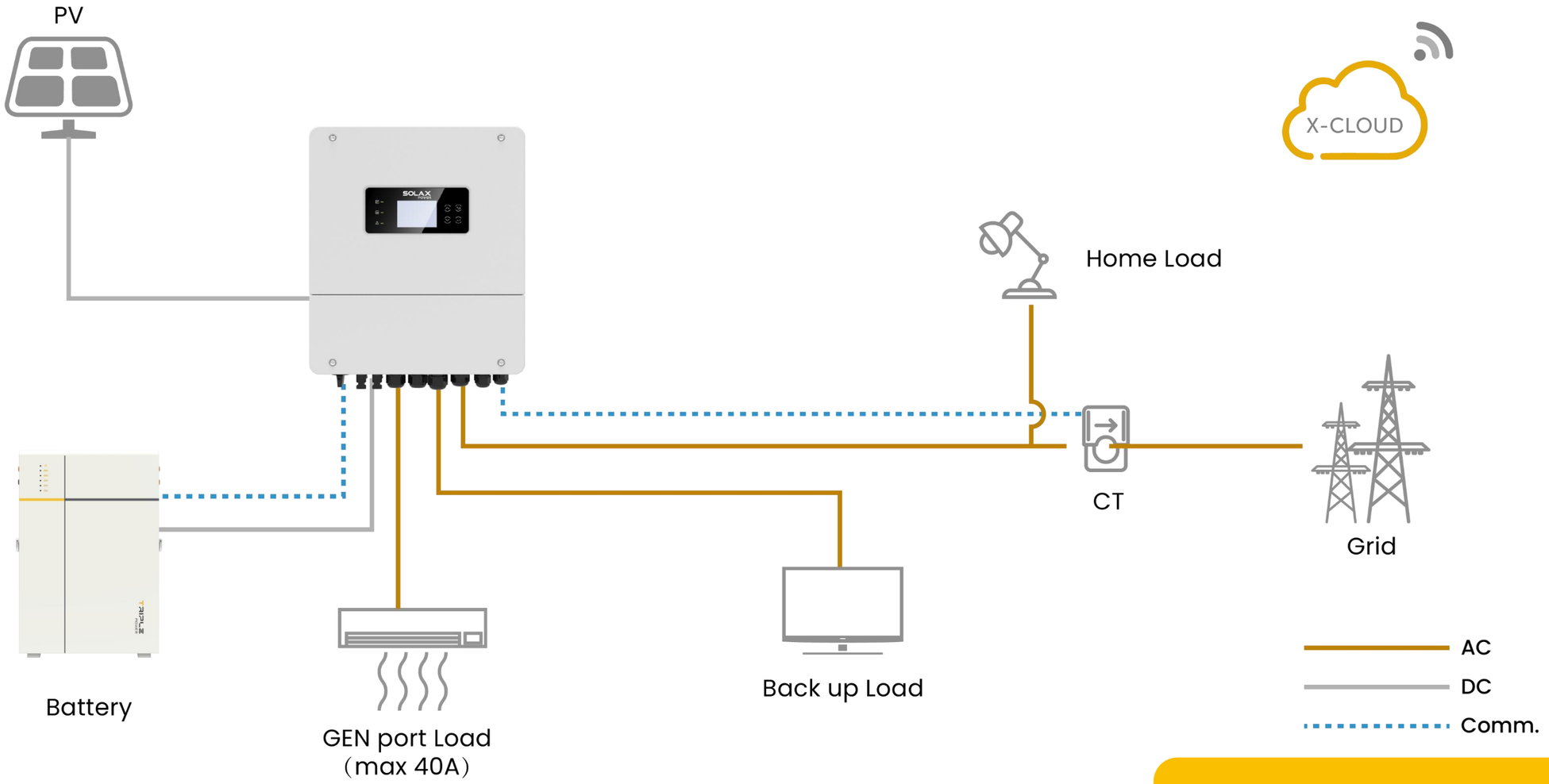
Intelligent Load | EVC



- EVC as a pure load at grid port
- EVC is SolaX 1P 7.2kW EVC

System Solutions

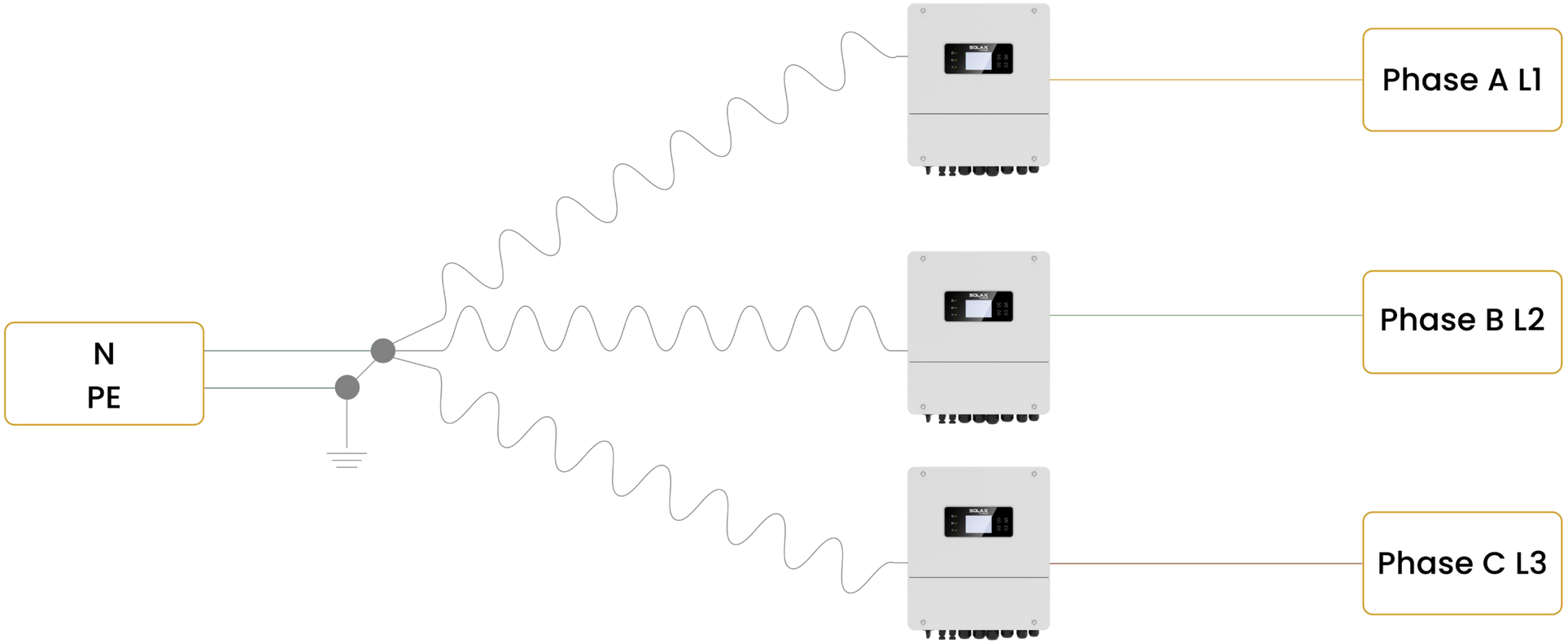
Intelligent Load | Connected at GEN port



The Gen port can also function as a smart load management port.

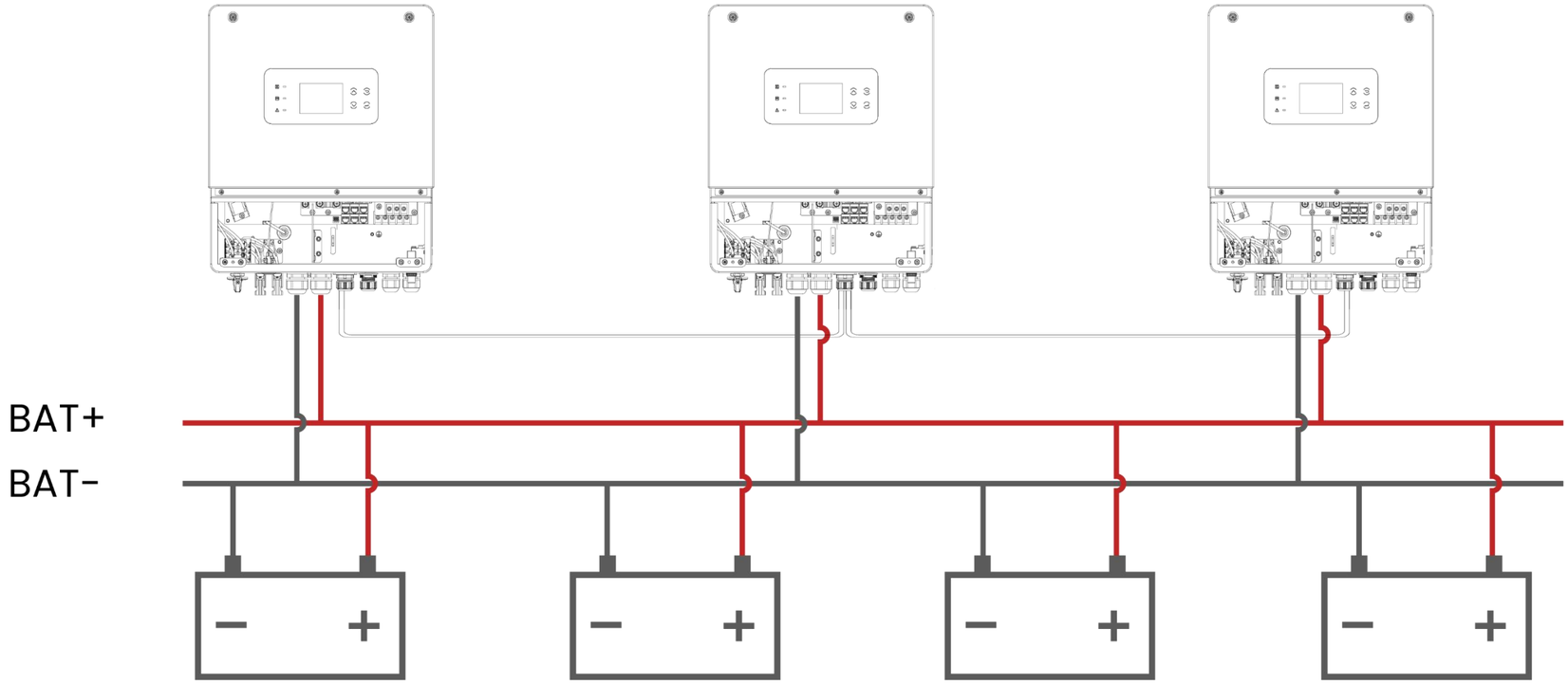
System Solutions

3 single phase inverters make up a three-phase system



System Solutions

A group of lead-acid batteries supply power to Multiple inverters



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