Galaxy

Cellcronic 6G | Residential Hybrid Inverters Advantages

| Clean Power for You

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introduce

6th Generation Hybrid Inverter Technology
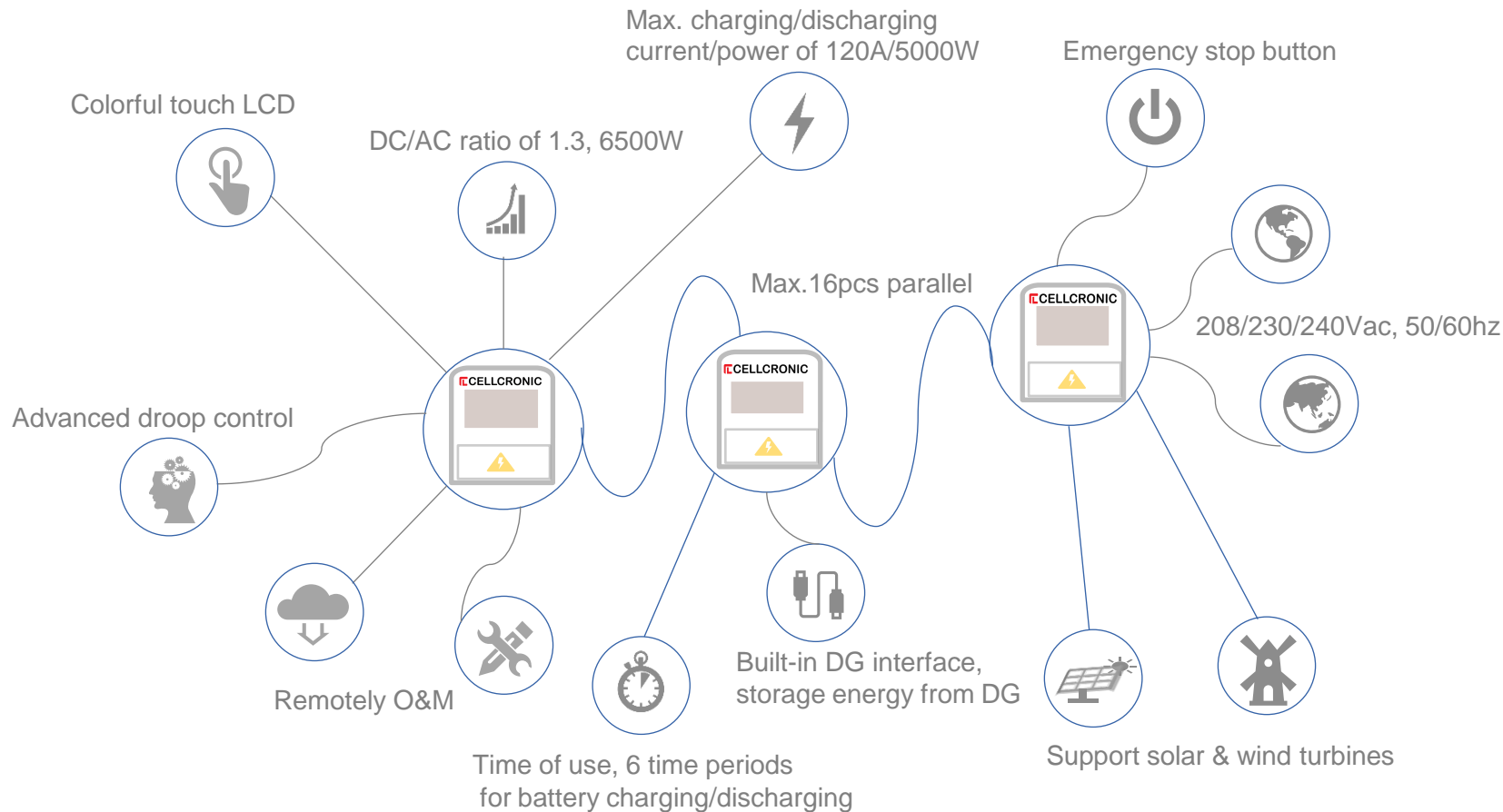
Specification Comparison

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Specificaitons	Galaxy 6G 5KW EU (SINGLE PHASE)	Galaxy 6G 8KW EU (SINGLE PHASE)	Galaxy 6G 8kw EU (THREE PHASE)	Galaxy 6G 12KW EU (THREE PHASE)
Battery Voltage Range (V)	40-60	40-60	40-60	42-60
Max. Charging Current (A)	120A	190A	190A	240A
Max. Discharging Current (A)	120A	190A	190A	240A
Charging Curve	Three-stage	Three-stage	Three-stage	Three-stage
External Temperature Sensor	yes	yes	yes	yes
Charging Strategy for Li-Ion Battery	Self-adaption to BMS	Self-adaption to BMS	Self-adaption to BMS	Self-adaption to BMS
Max. DC Input Power (W)	6500	10400W	9880W	15000W
Max.PV Input Voltage (V)	500	500	500V	500
MPPT Range (V)	125-425	125-425	150-425	150-425
Start-up Voltage (V)	125	150	150	150
PV Input Current (A)	11A+11A	22A+22A	12.5A+12.5A	22A+12.5A
No. of MPPT Trackers	2	2	2	2
No. of Strings per MPPT Tracker	1	2	1	2+1
Rated AC Output	6500W	8800W	8800W	13000W
Max. AC Current(A)	25A	35	11.6A (PER PHASE)	17.4A (PER PHASE)
Output Frequency and Voltage	50/60Hz; 230&208/240Vac	50/60Hz，230Vac	50/60Hz，230Vac	50/60Hz，230Vac
Current harmonic distortion	THD<3%(Linear load<1.5%)	THD<3%	THD<3%	THD<2%
UPS Power (W)	5500W	8000W	8000W	12000W
Peak Power(off grid)	2*5000,10S	16000,10S	16000,10S	24000, 10S
AC Output Rated Current(A)	21.7A	35A	35A	48A
Off-grid mode,Output Frequency/ Voltag	50/60Hz; 230V&208/240Vac	56/60Hz，230Vac	56/60Hz，230Vac	56/60Hz，230Vac
communication interface	RS485;WIFI;CAN	USB2.0; RS485;WIFI;CAN	R232，WIFI，RS485	CAN，RS485，WIFI
weight	20.5KG	30KG	30KG	17KG
size	580*330*217mm	516*440*184	547*516*170mm	333*505*249mm
Protection Degree	IP65	IP65	IP 65	IP65
Max. Efficiency	97.6	97.6	97.6	97.5
Euro Efficiency	97	97	97.1	96.8
MPPT Efficiency	99.9	99.9	99.9	97.5

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➢ Cellcronic hybrid inverter advantages at a glance

➢ Max. DC input power of 6500W, the DC/AC ratio of 1.3.

➢ More higher charging and discharging power of 120A & 5000W. In off-grid mode, the peak instantaneous power is 10000W@10S.

➢ Independent backup load port, don't need additional ATS device.

➢ Built-in DG control interface, and support DG charges the battery ensuing the system works within 7*24H.

➢ Compatible with solar panel and wind turbine as well.

➢ 2 kinds of AC couple method to update existing solar system to energy storage system.

➢ Support max. 16 units paralleled and three-phase application.

➢ "Time of use" function, support 6 different time periods for charging and discharging battery.

➢ Adopt P/F & Q/V droop control to ensure micro system stable and reliable.

➢ Colorful touch screen and buttons, easy operation and maintenance.

➢ Integrating emergency stop button, ensuing system safety in the shortest time.

➢ 208/240Vac(-US model) output suitable to US market.
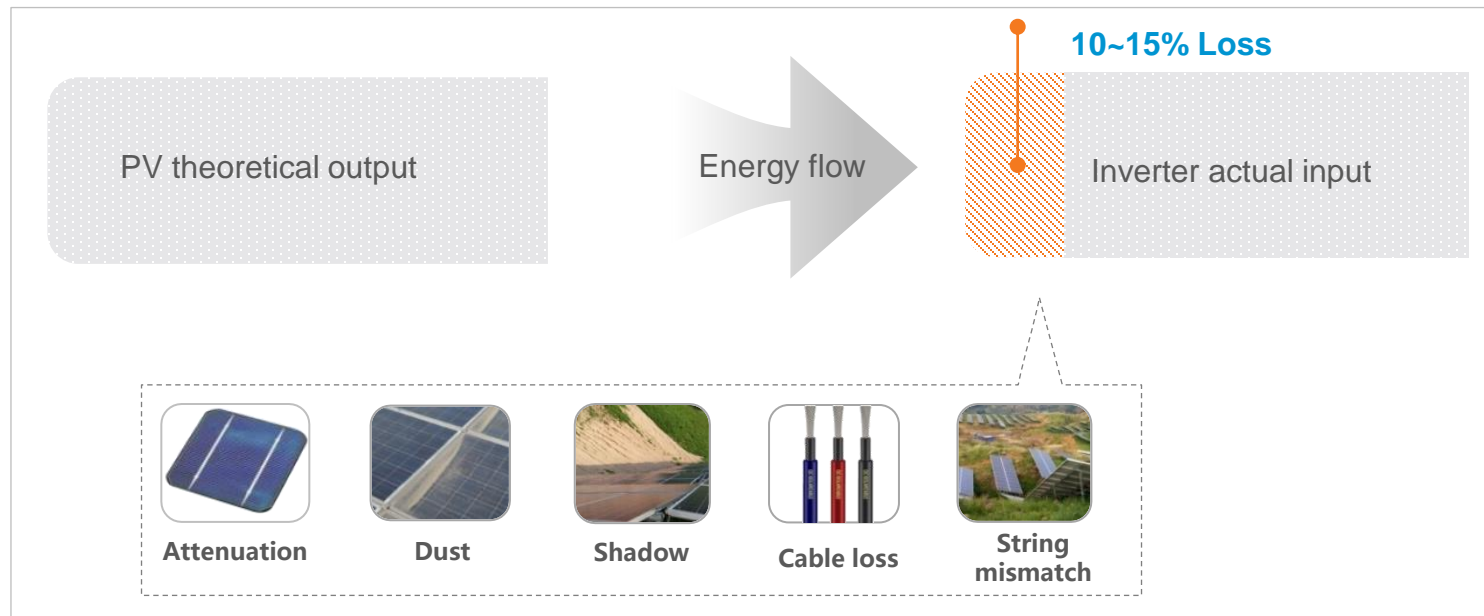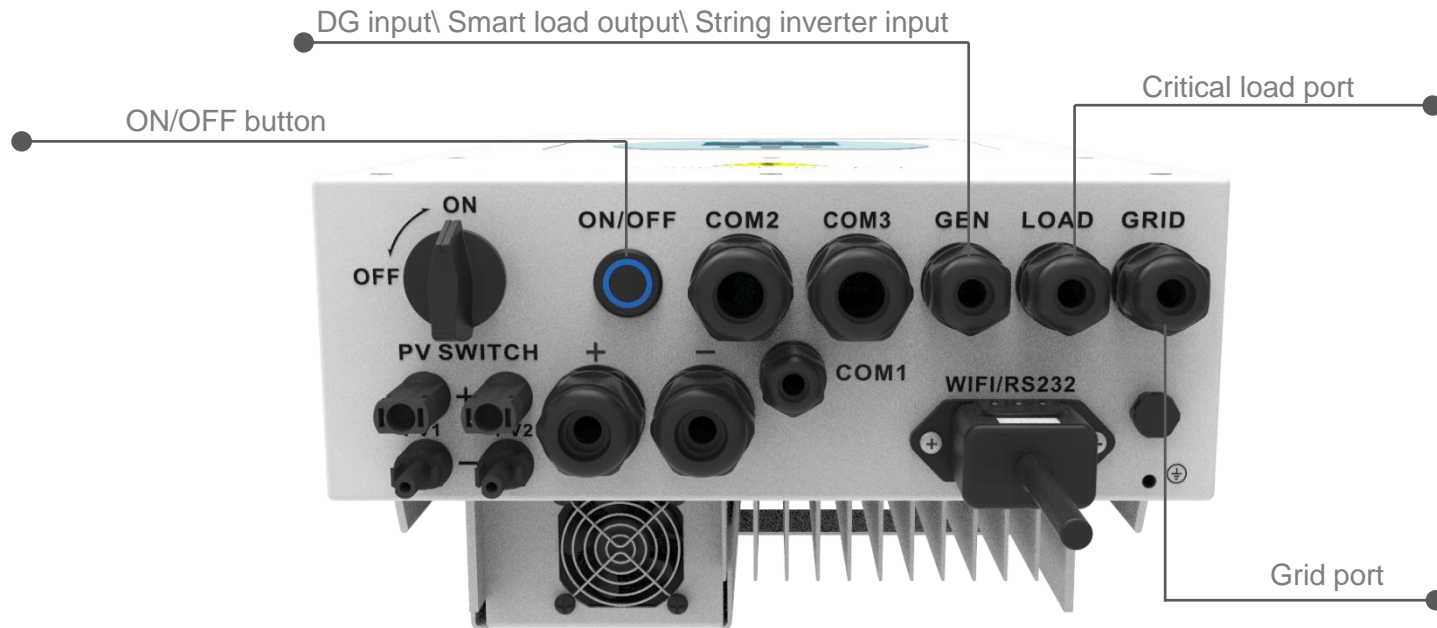
5KW Hybrid Inverter Features

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Colorful touch LCD

DC/AC ratio of 1.3, 6500W

Max. charging/discharging current/power of 120A/5000W

Emergency stop button

Max.16pcs parallel

208/230/240Vac, 50/60hz

Advanced droop control

Remotely O&M

Time of use, 6 time periods for battery charging/discharging

Built-in DG interface, storage energy from DG

Support solar & wind turbines

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DC/AC ratio up to 1.3, saving equipment investment

- Completely compatible with double-side solar panel, flexible choose different kinds PV modular
- Under some special conditions such as low irradiation, more solar panel connected will efficiently increase power generation.

PV theoretical output	Energy flow	10~15% Loss Inverter actual input

Attenuation	Dust	Shadow	Cable loss	String mismatch

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- Integrating independent backup load port, don't need additional ATS device for users, more reliable and lower cost.

- Built-in ON/OFF switch, easily cuts off output when emergency situation, more safe and reliable.

DG input\ Smart load output\ String inverter input

Critical load port

ON/OFF button

Grid port

Supports diesel generator charges battery

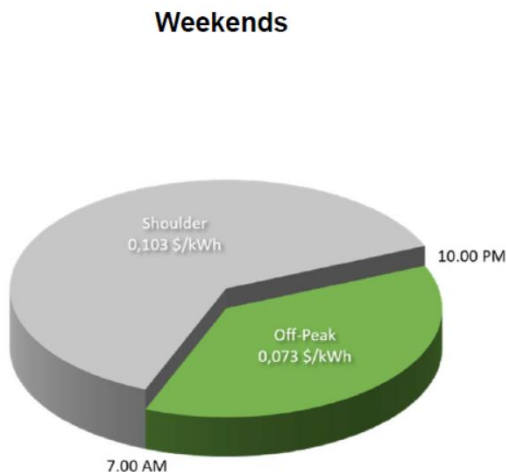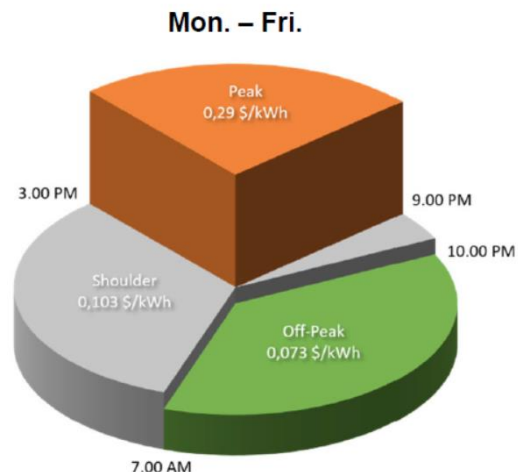- When utility grid cuts off, the hybrid inverter is able to start DG to supply load and charge battery.

DG

PV module

Grid

Hybrid inverter
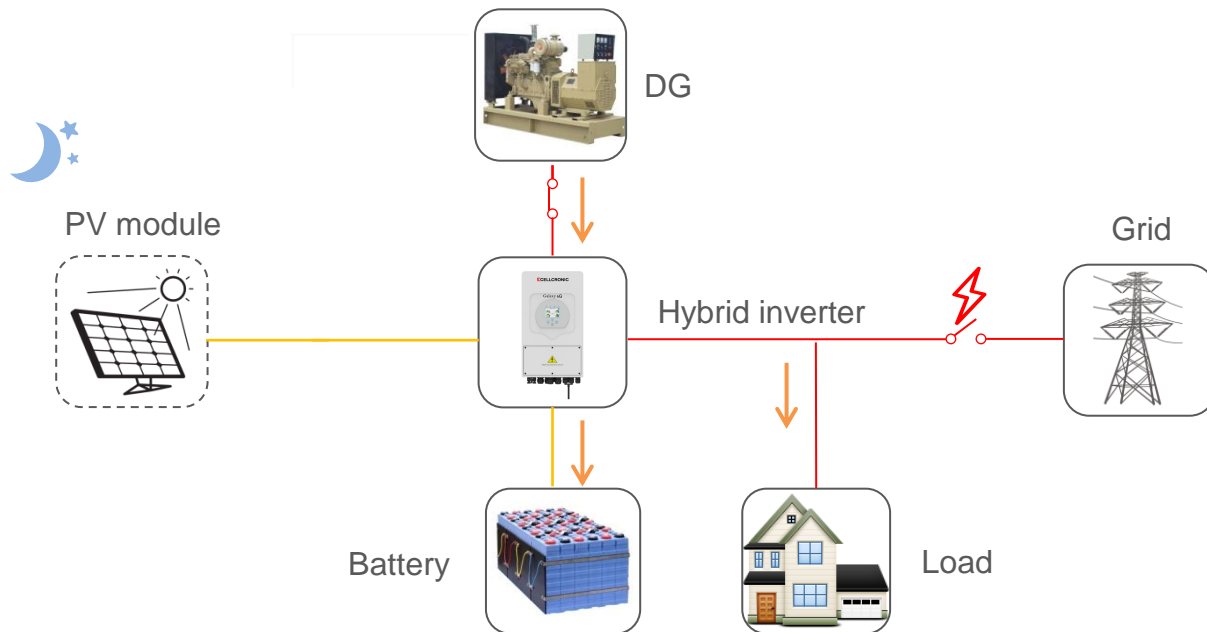
Battery

Load

Supports control diesel generator automatically

■ Built-in DG control interface, the hybrid inverter is able to start or stop DG to supply load and charge battery.

#1		Battery " + "	#2'		Gen. Signal line	#4		Switch of Fuel
#2		Battery " - "	#3		Start	#13		Gen. Signal line
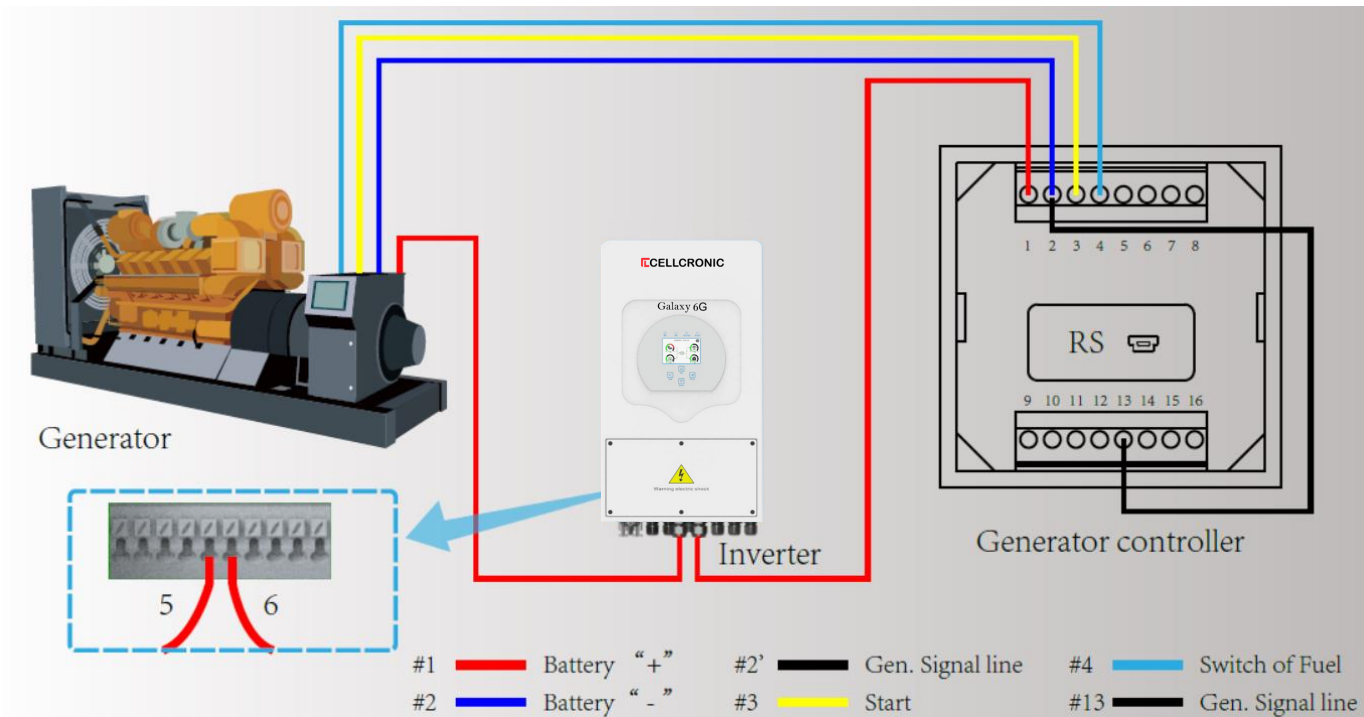
- "Time of use", time-dependent electricity tariffs, customers pay different prices for their energy consumption at different times of the day. Below figure shows typical time-of-use tariffs applied in United State America.

- For this situation, Cellcronic hybrid inverter allows users to set time windows for charging and discharging the energy storage system. In this way, the behavior of the hybrid inverter can be adjusted in line with the time-dependent electricity tariffs, reducing electricity bills.

Time of use interface

Mon. – Fri.

Peak 0,29 $/kWh
Shoulder 0,103 $/kWh
Off-Peak 0,073 $/kWh
3.00 PM
9.00 PM
10.00 PM
7.00 AM

Weekends

Shoulder 0,103 $/kWh
Off-Peak 0,073 $/kWh
10.00 PM
7.00 AM

System Work Mode

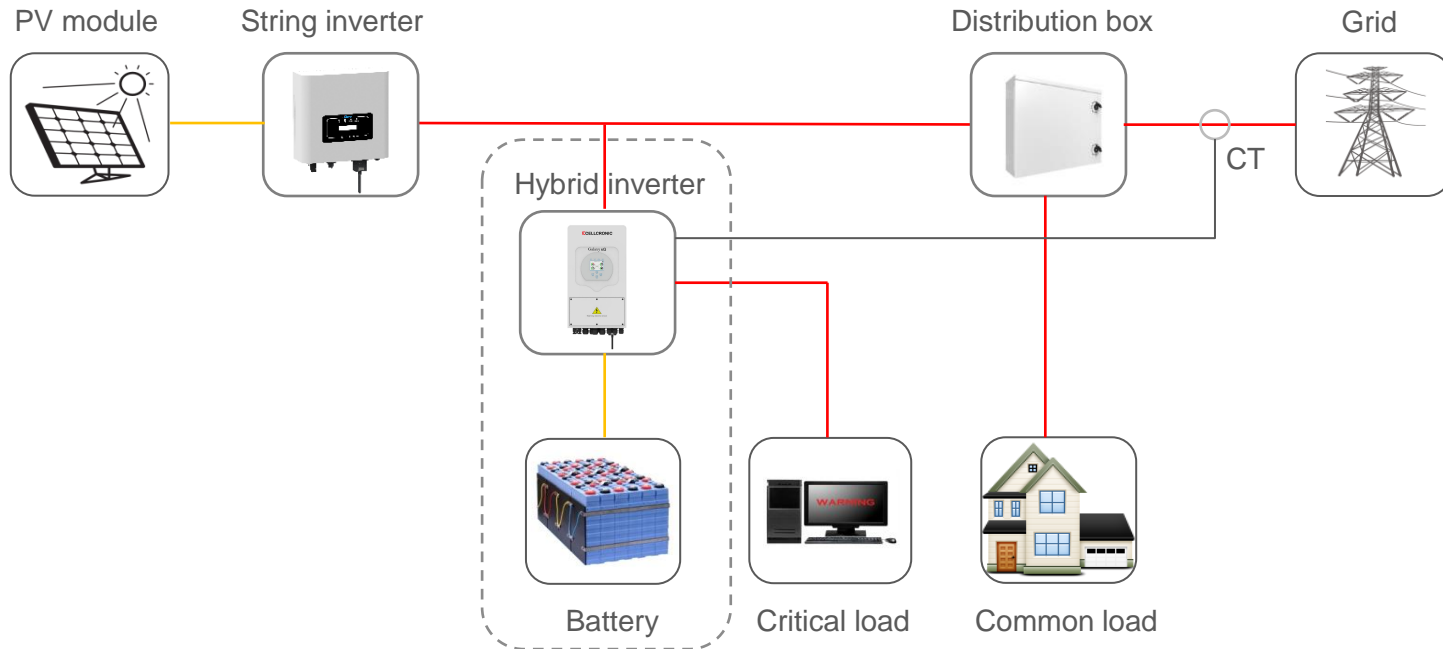| Grid Charge	Gen	Time Of Use Time		Batt	
☐	☐	01:00 ~	5:00	80%	Work Mode2
☐	☐	05:00 ~	9:00	80%	
☐	☐	09:00 ~	13:00	80%	
☐	☐	13:00 ~	17:00	80%	
☐	☐	17:00 ~	21:00	80%	
☐	☐	21:00 ~	01:00	80%	

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- Compatible with wind turbine as well. Also, it supports 1st MPPT connects PV module and the other MPPT connects wind turbines. For others, they can only use solar panel as DC input energy.
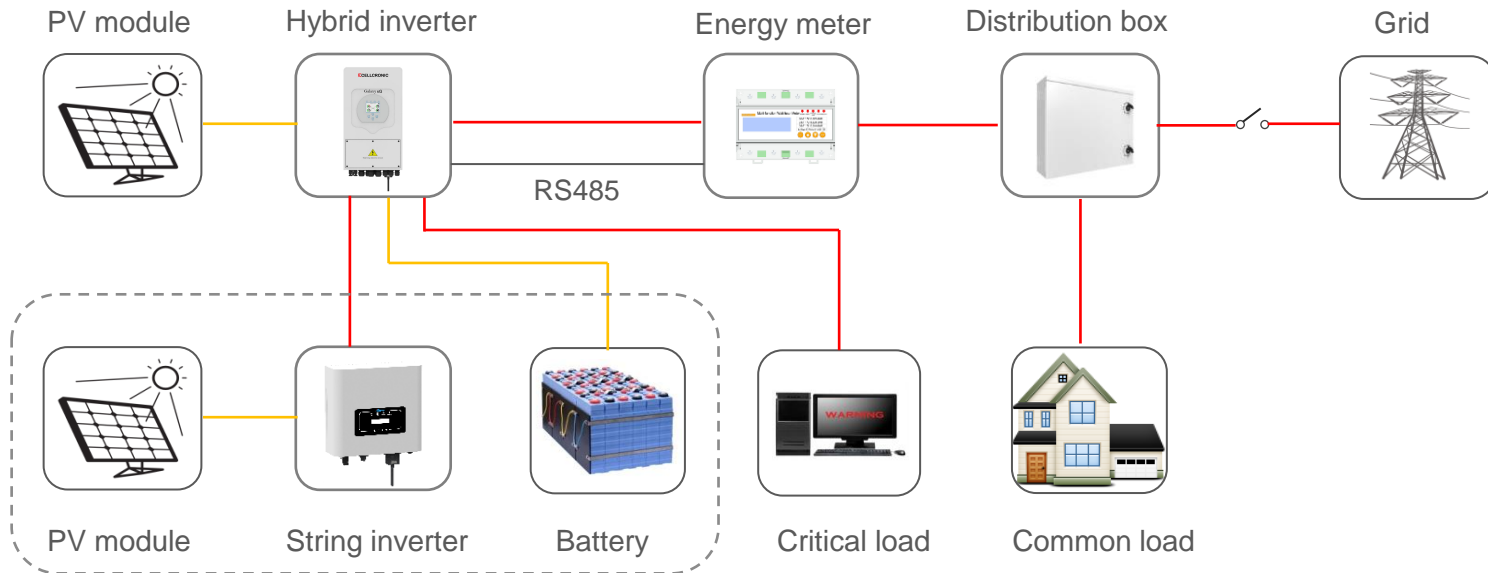- In the off-grid mode, the peak output power is up to 10000W@10S

PV module

Hybrid inverter

Grid

Wind turbines

Battery

Load

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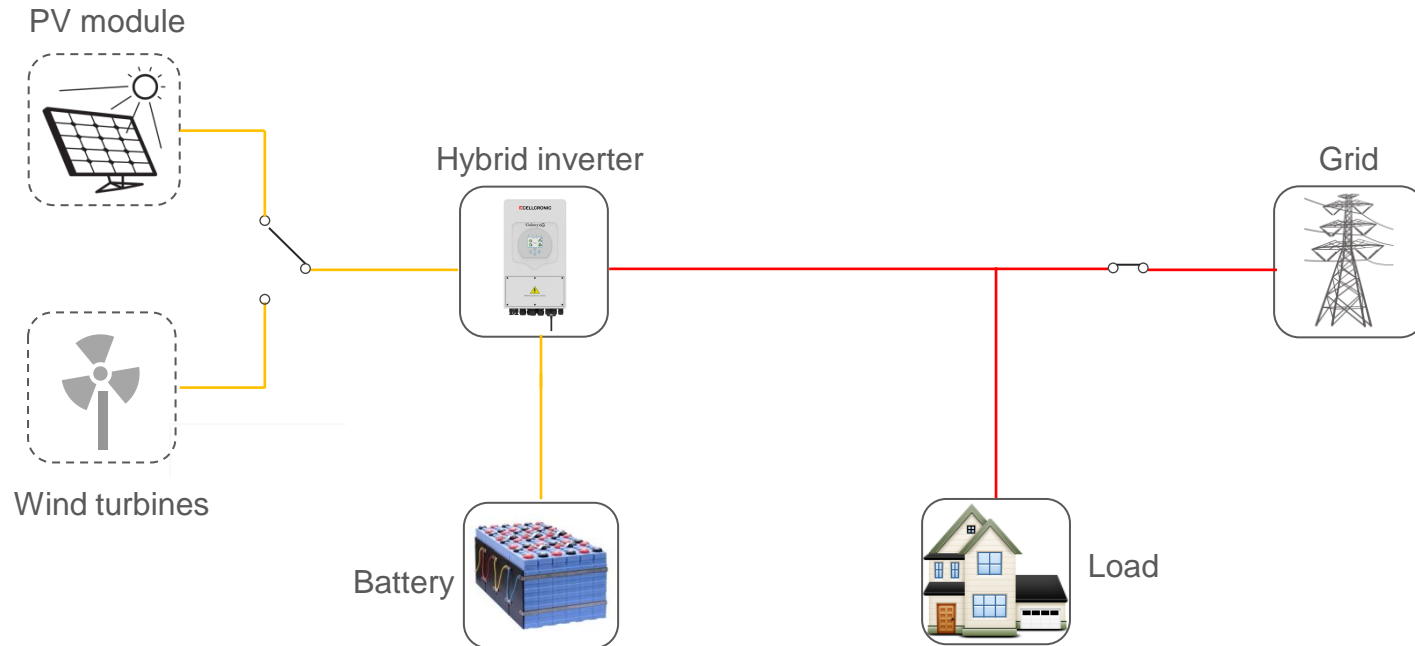
- Update the existing solar system to energy storage system, which is applicable to area with low FIT and high energy price, and the hybrid inverter working as battery charge controller in the system.
- In this mode, an external CT is needed to detect energy flow direction.

PV module · String inverter · Distribution box · Grid · CT · Hybrid inverter · Battery · Critical load · Common load

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- Update the existing solar system to energy storage system. This solution is more flexible even during the grid is not present, the whole system is still able to run.

- System allows string inverter output energy to charge the battery or supply load.

PV module   Hybrid inverter   Energy meter   Distribution box   Grid

RS485

PV module   String inverter   Battery   Critical load   Common load

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- In the above microgrid system (islanding mode), hybrid inverter adopts droop control to establish and regulate system V/f.

- At the same time, the string inverter works in PQ mode. If needed, the hybrid inverter is capable of disconnecting from the string inverter to keep system reliable.
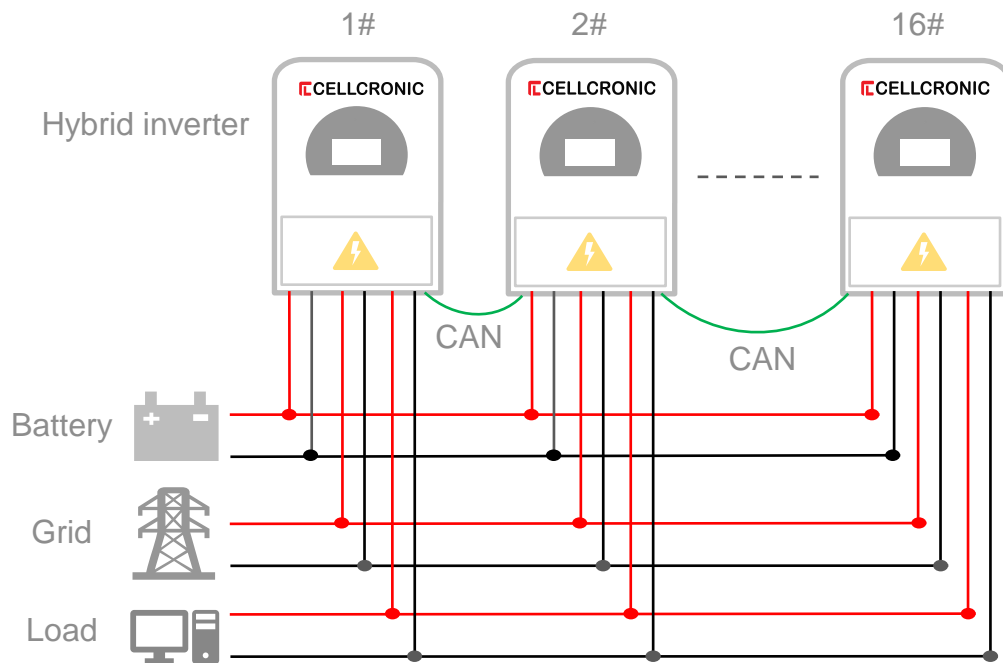

System voltage and current response waveforms
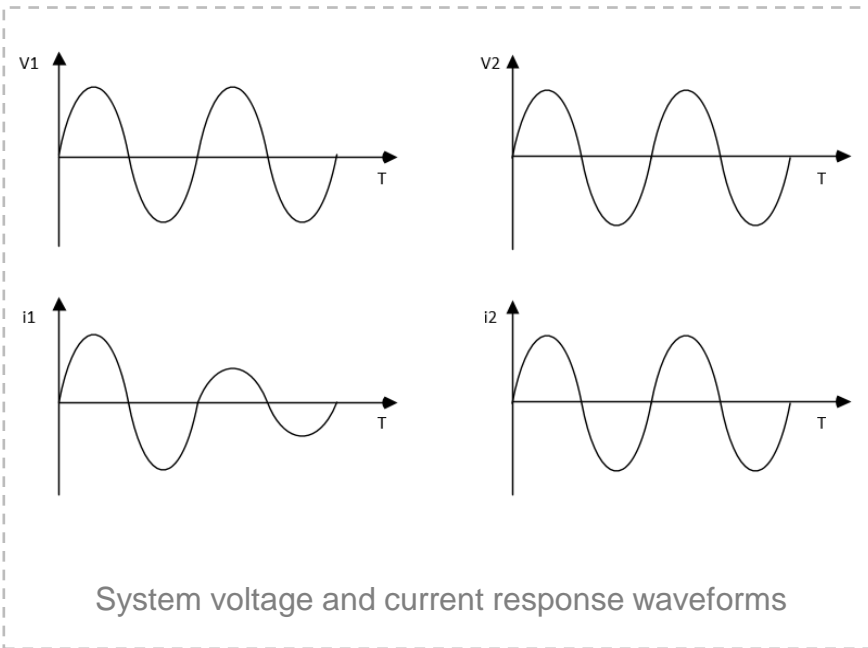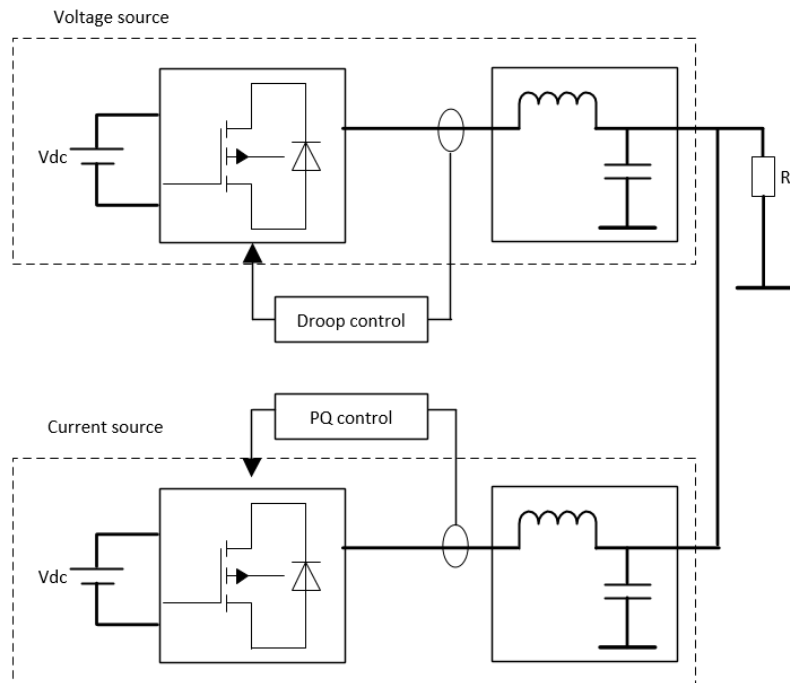
- In the parallel system, the master hybrid inverter measure and calculate Uref/Iref and send to slave inverters by communication cable.

- With this feature, it ensures each hybrid inverter has same output power in parallel system, and makes system more stable and reliable.
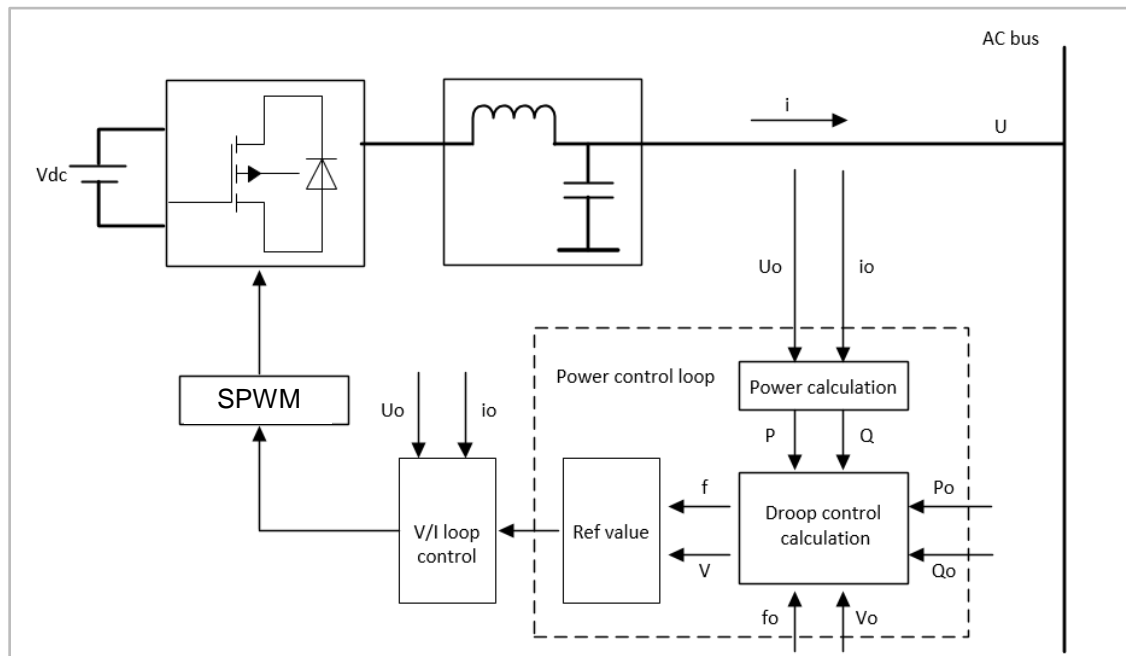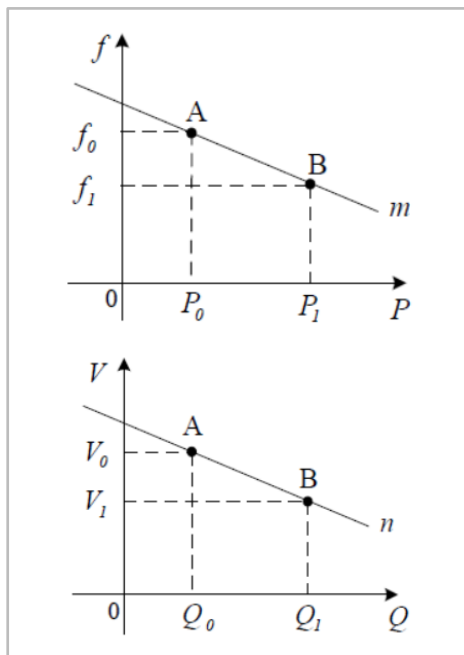
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■ **Support Max. number of parallel of 16pcs**

Single-phase system diagram

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■ **Three-phase system diagram**
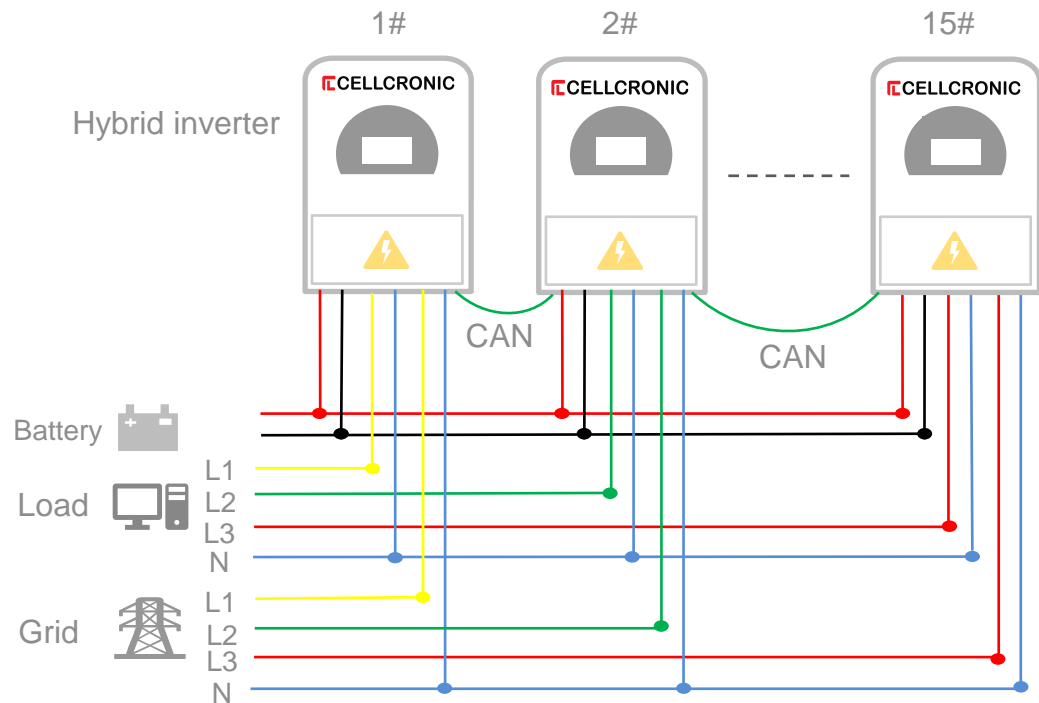
■ **Support set parameters and FW update remotely**

FW update command

Management platform

Communication base station

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Received command

Data logger
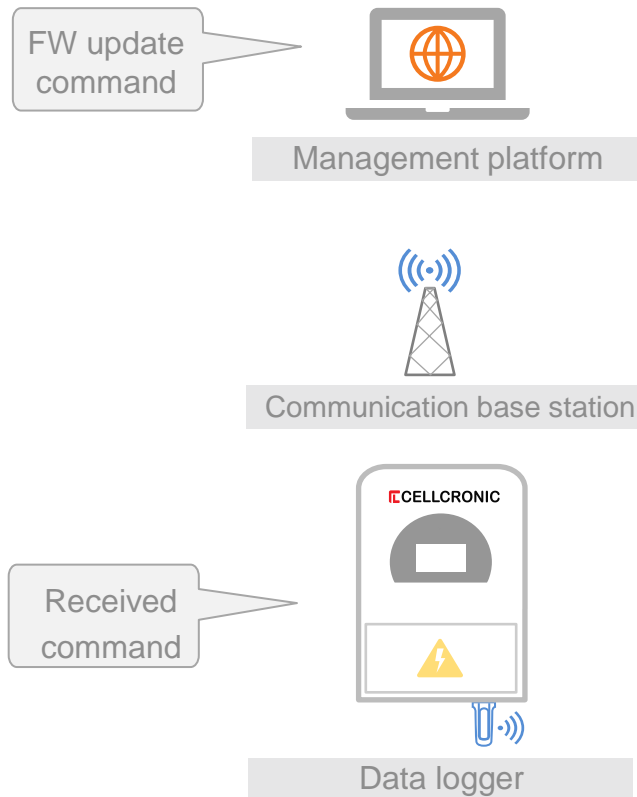
Short time for FW update

- Remotely inverter parameter setting and software upgrade within 20 minutes

Save

Save time, save cost

- Not need O&M engineer on site to check and operation

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- Check your solar station by your mobile phone and PC at any time and any where.
- For distributor and installer, they can find and fix problems before end user complaint

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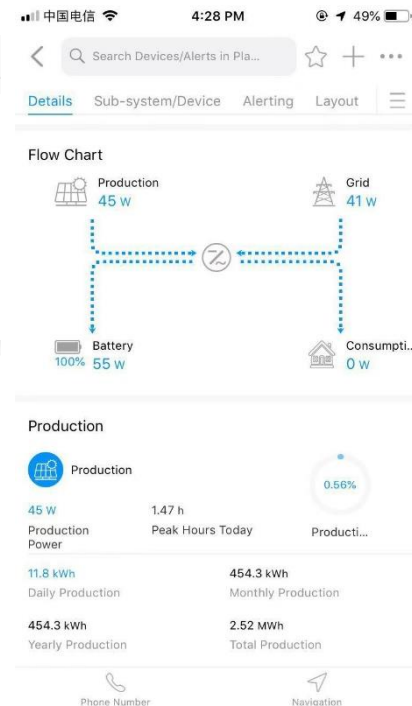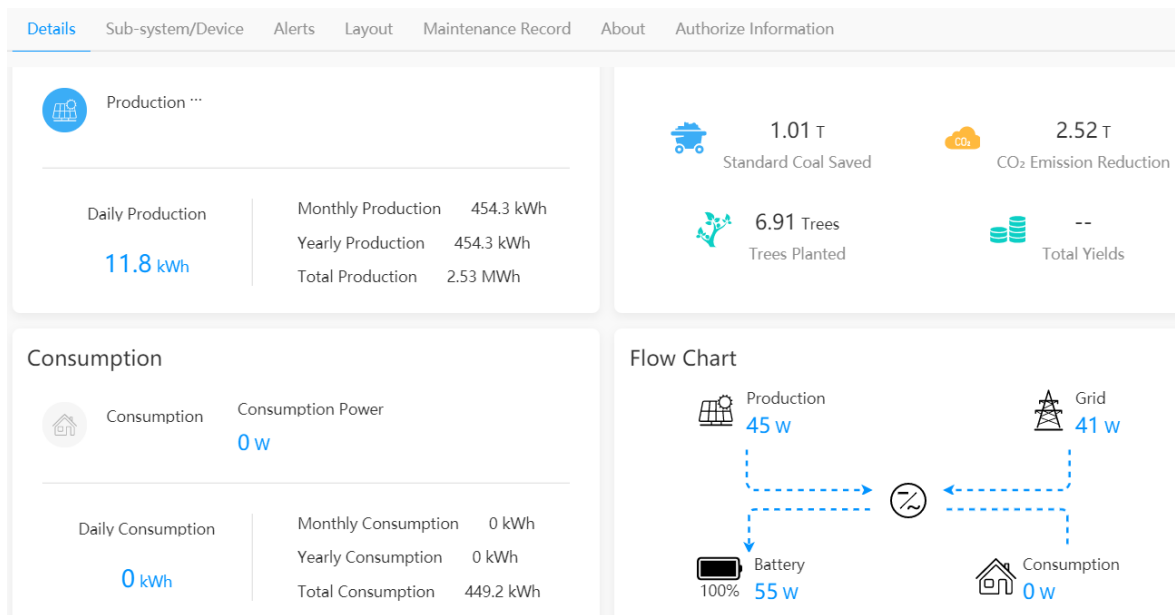
- Record fault codes with date, also check and set parameters remotely.

8KW solar energy s... ⌄

Edit Tags

✓ Normal Communication   ⊘ No Alerts   2019/12/31 16:19:52 UTC+08:00

| Details | Sub-system/Device | Alerts | Layout | Maintenance Record | About | Authorize Information |

Total 1 Alert(s)   [This Month ⌄] ? [Please enter alert name 🔍] ▽

Alert Name	Type	Plants	Device	Importance ⇕	Influence	Last Trigger Time ⇕
-- /ID 795	Protocol Alert	8KW solar energy storage plant	Inverter 1905044002	Warnings	Influence Prod...	18:01:49 2019/12/09 UTC+08:0

Parameter Read&Write   Customized Command

Last Command Record   →

Command Name: Read Battery CV Charge Voltage Send time: 2019/12/24 18:54:31 UTC+08:00   Command State: ✓ Succeeded

Feedback Time: 2019/12/24 18:54:36 UTC+08:00   Read Result: 57.6 V

Select Command

Command Name: [Please Select   ⌄]

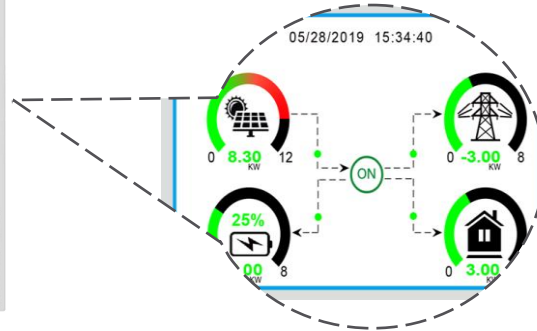| Read ON-OFF Enable |
| Set ON-OFF Enable |
| Read Restore Factory Settings |
| Set Restore Factory Settings |

Timeout: [10] Minute ?   **Send Command**

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- **Local colorful touch LCD screen** with buttons, more reassurance after seeing the data

- Graphic shows the system energy flow direction real-time, easy understand.

PV Status　　　　**Grid Status**　　　　**Battery Status**　　　　**Load Status**
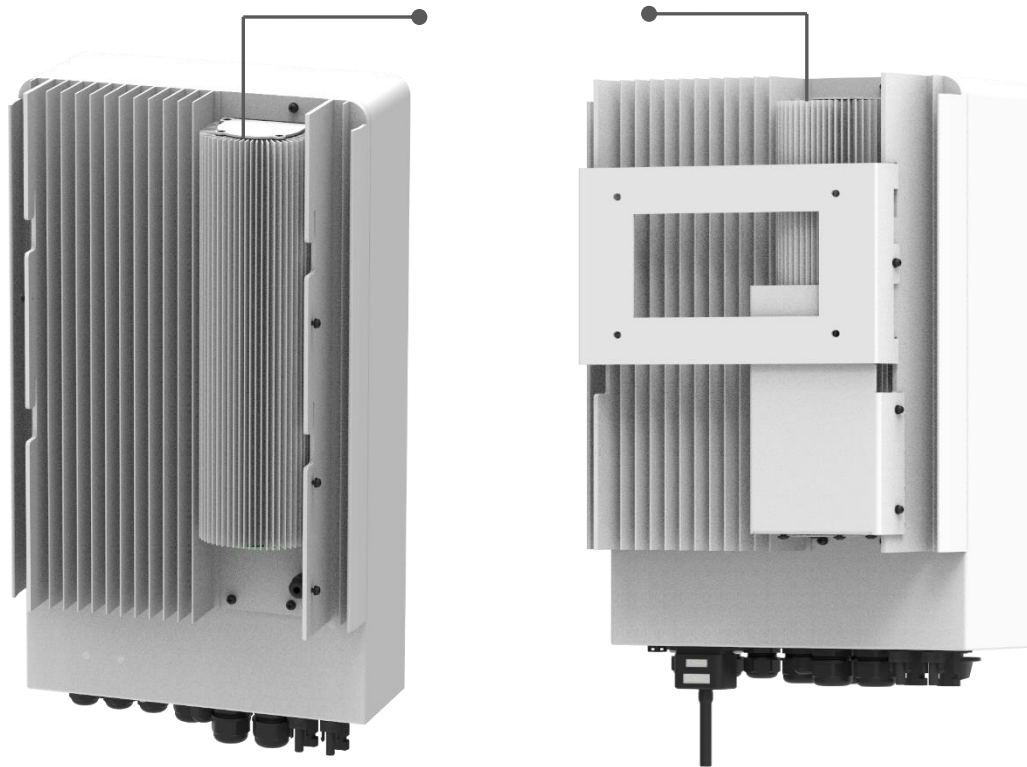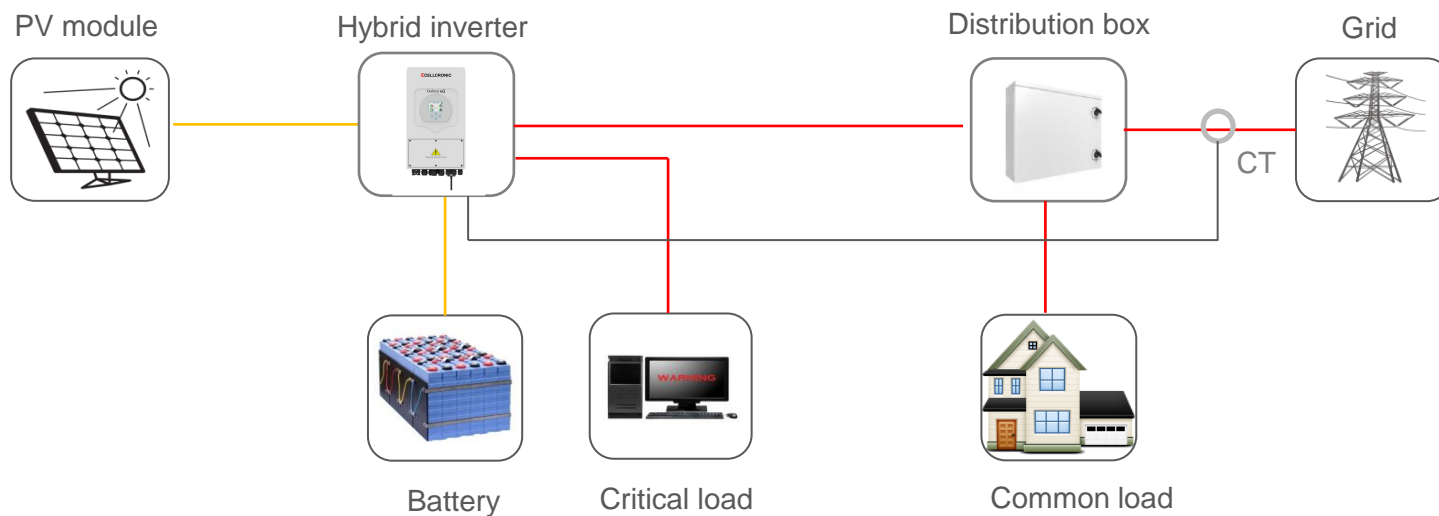
■ Full series IP65 protection degree, sufficient heat dissipation, adapt to harsh environment, high reliability.

External fully enclosed glue-filled inductor, greatly inducing heat and noise from inductor

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Export output control—intelligent adjust output power 0-100%, meeting different requirements.

PV module   Hybrid inverter   Distribution box   Grid

CT

Battery   Critical load   Common load