Three-phase Hybrid Introduction MHT 4-20KW

www.solinteg.com

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INTEGRATE SOLAR INTELLIGENTLY

CONTENT

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01 Advantages & Highlights

MHT4-20K Advantages At A Glance

- A wide range of three-phase products 4/5/6/8/10/12kW@25A & 10/12/15/20kW@40A.
- Max charging & discharging power of up to 40A.
- Multi-function OLED display, easy operation and configuration.
- 110% Continuous AC overloading, up to 1.5 times DC/AC ratio.
- Plug & Play terminals for quick installation.
- 110% phase unbalanced output optimizes your energy yield.
- Advanced heat dissipation ensures long-life operation.
- Up to 200% Backup overloading for 60s, support big loads connection.
- Within 10ms UPS switching, ensuring energy security for critical loads.
- 15A PV inputs, 30A MPPT inputs, compatible with 182/210mm high-power panels.
- Support max 10 units paralleling connection and suitable for the residential and commercial applications.

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MHT4-20K Highlights

Integ M
MHT 4-20KW

15A PV INPUT
Compatible with 182/210mm PV panels
30A MPPT INPUT

Up to 40A/40A
Meet higher energy demands
CHARGING/DISCHARGING

Breathe Light
Inverter working status at a glance

＜10MS
On/off grid switching over, harmless to loads
UPS

10UNITS
Extend the application from residential to commercial
PARALLELING

135-750V
Wide battery voltage offers flexibility
BATTERY VOLT

110%
On/off grid switching over, harmless to loads
PHASE UNBALANCE

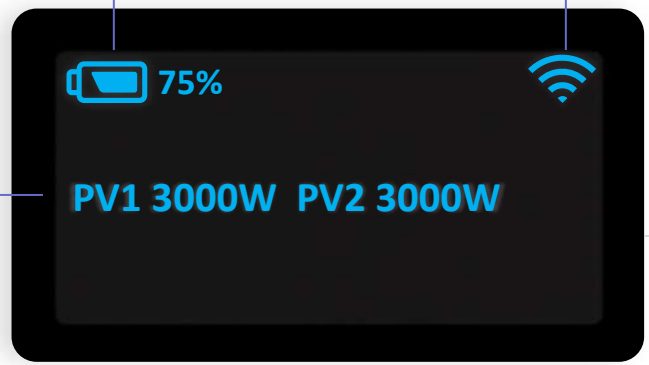
02 Appearance

Appearance

1. INTELLIGENT POWER & ALARM INDICATOR
2. GRID STATUS LED INDICATOR
3. COMMUNICATION INDICATOR
4. MULTI-FUNCTION OLED DISPLAY
5. OPERATION BUTTON
6. SOLINTEG LOGO

BATTERY LEVEL INDICATOR

SIGNAL STRENGTH



PARAMETER

Integ M
MHT 4-20KW

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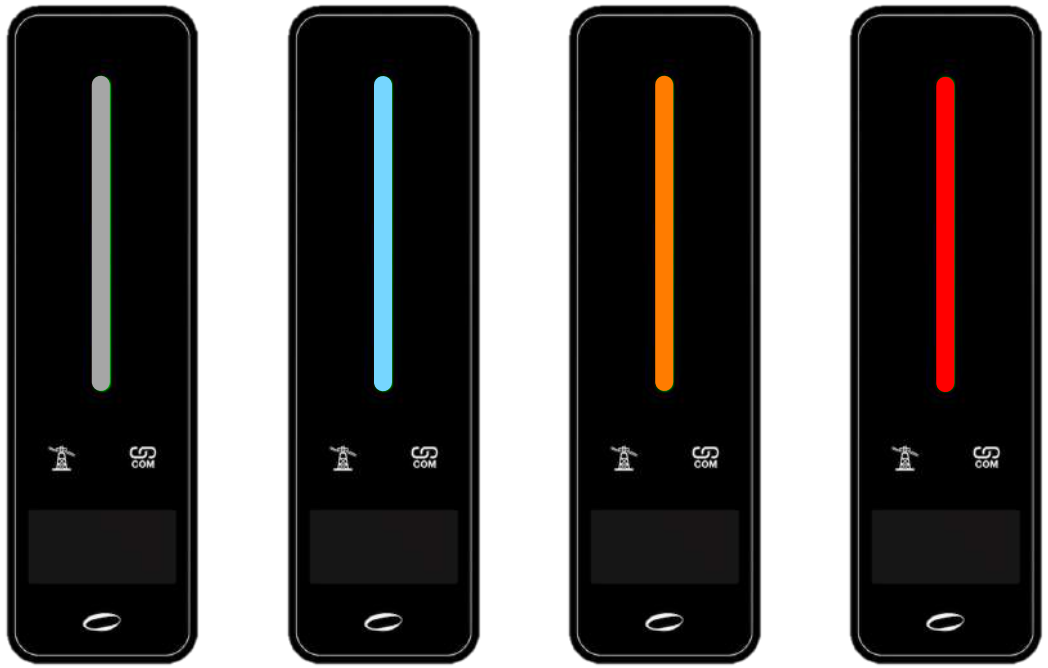
Appearance-Indicator



- NO AC OUTPUT POWER
- NORMAL
- LOW BATTERY WARNING
- FAULT OCCURS

Integ M
MHT 4-20KW

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Appearance-Right Side/Dimensions

Back Hanger

Installation Holder

Inverter Name Plate

External Grounding Terminal

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MHT 4-20KW

Weight：27kg

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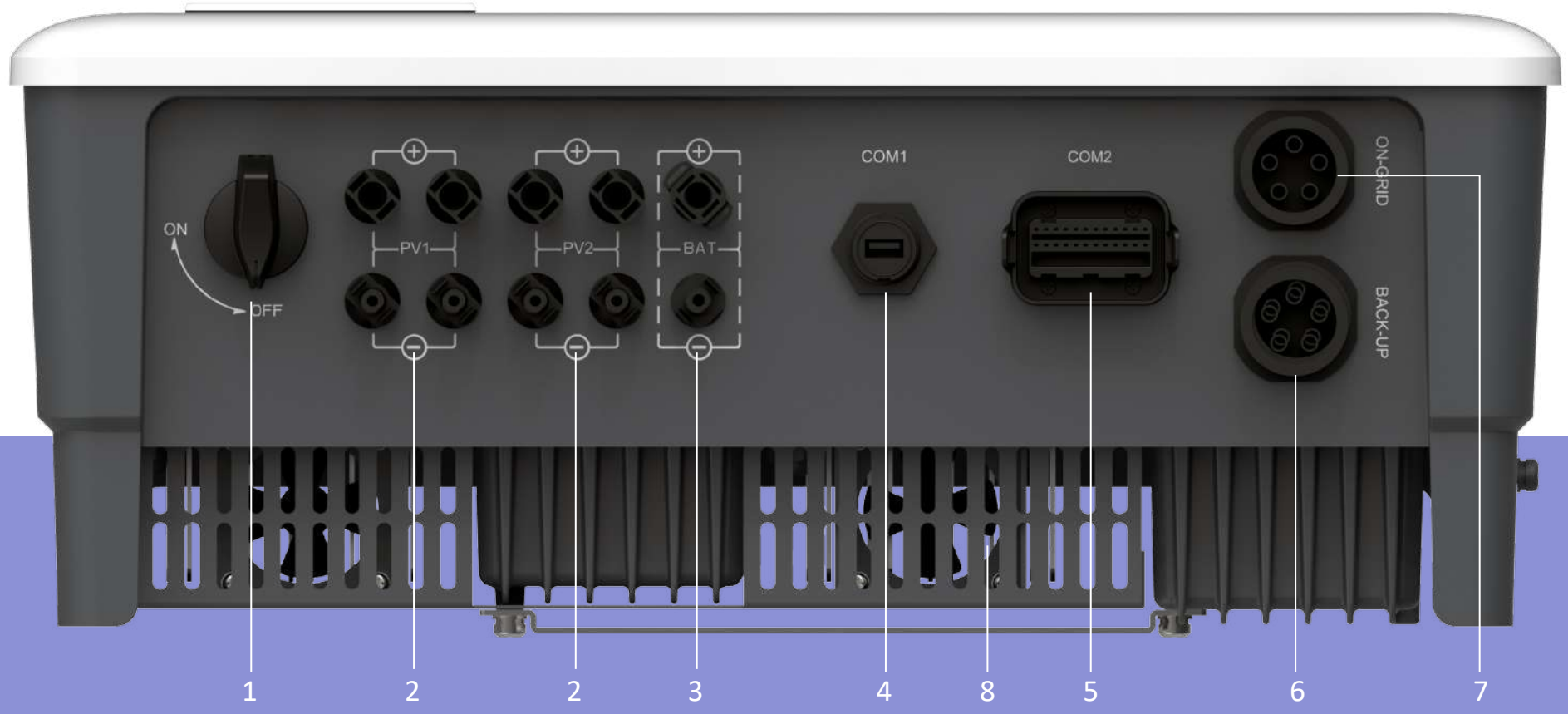
Appearance-Terminal



1 DC Switch(Optional) 2 PV Terminals 3 Battery Terminals 4 Communication Port(WiFi/LAN/4G)

5 Multi-function Connector(METER/BMS/RS485/DRED) 6 Back-up Connector 7 On-grid Connector 8 Fan

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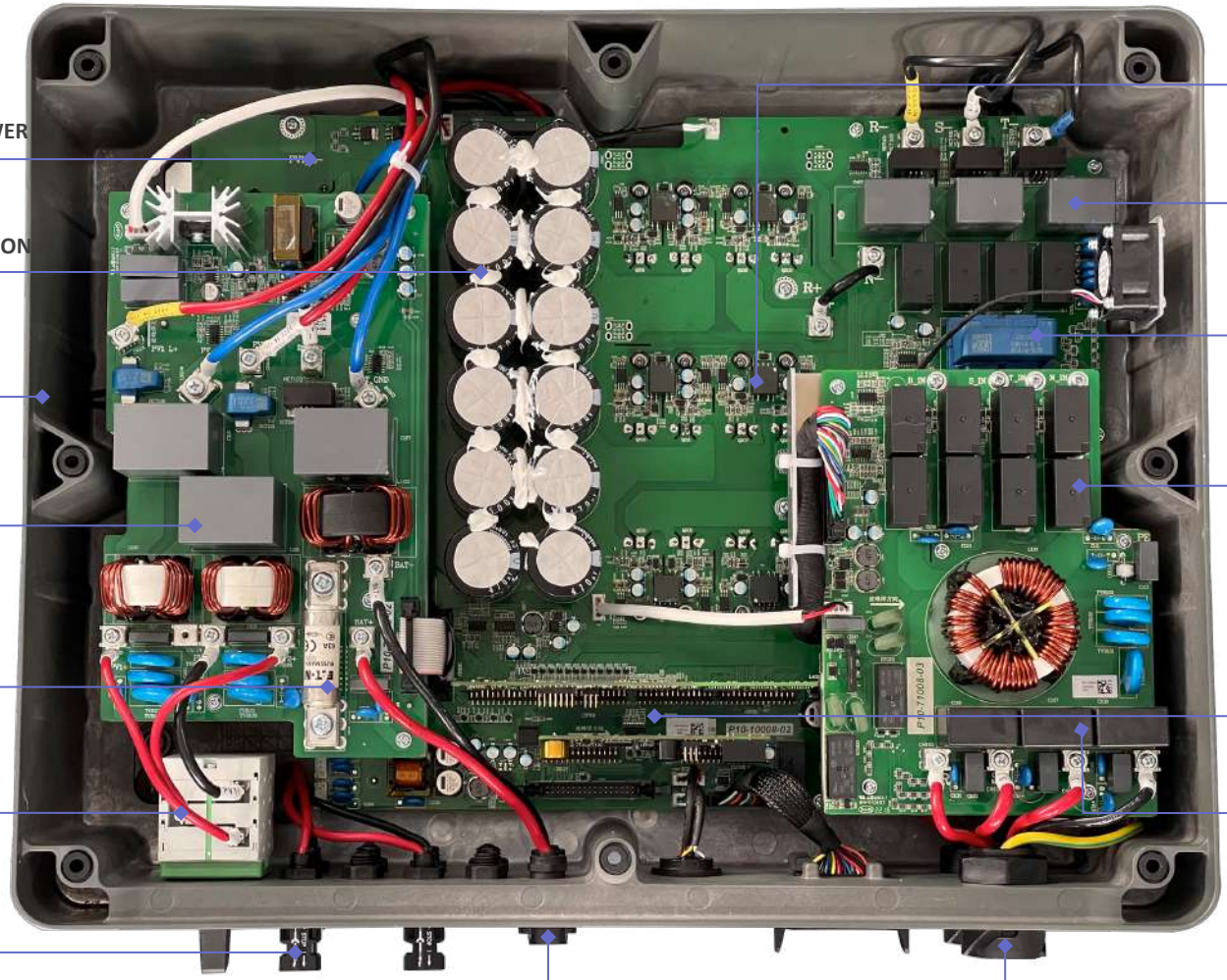
Our Strengths In Appearance Design

- Plug & Play terminals connection, convenient and time-saving on installation, avoid IP degree reduced by improper operation.
- Horizontal design, more space for wiring & maintenance, and shorter channel for quick heat dissipation.
- Aluminum alloy die-casting shell, high outlook consistency, good heat dissipation, and good sealing performance.
- 24Hours led indicators for important status grab at a glance, convenient and time-saving.
- An OLED multi-function display offers higher stability and frees you up from using the phone for everything.
- Rounded-edge structure meets the ergonomic design, elegant and friendly to install and carry.
- Customized side holders offer convenience during installation.
- Quiet operation with less than 25dB, suitable for indoor use.

Best Class Components Widely Used



Boost Circuit — INFINEON/ON/ST/NCEPOWER

Bus Capacitor — NIPPON/NICHICON/RUBYCON

Aluminum Alloy Die-casting

DC Filter Capacitor — PANASONIC/KEMET/FARA

Fuse — BUSSMANN

DC Switch — PROJOY

PV Terminals — STAUBLI

INFINEON/ON/ST — Invert Circuit

PANASONIC/KEMET/FARA — Output Filter Capacitor

SINOMAGS — GFCI Device

PANASONIC/HF — Relay

TI/ST/GIGADEVICE — DSP/ARM

KEMET/FARA — Safety Capacitor

VACONN — Battery Terminals

VACONN — AC Terminals

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03 Key Parameters

Key Parameters-DC Input

Model	MHT4K-25	MHT5K-25	MHT6K-25	MHT8K-25	MHT10K-25	MHT12K-25
Max Input Power (kW)[1)]	6.0	7.5	9.0	12.0	15.0	18.0
Start-up Voltage (V)[2)]	135	135	135	135	135	135
Max. DC Input Voltage (V)	1000	1000	1000	1000	1000	1000
Rated DC Input Voltage (V)	620	620	620	620	620	620
MPPT Voltage Range (V)[3)]	120-950	120-950	120-950	200-950	200-950	200-950
No. of MPP Trackers	2	2	2	2	2	2
No. of DC Inputs per MPPT	1/1	1/1	1/1	1/1	1/1	1/1
Max. Input Current (A)[4)]	15/15	15/15	15/15	15/15	15/15	15/15

Model	MHT10K-40	MHT12K-40	MHT15K-40	MHT20K-40
Max Input Power (kW)	15.0	18.0	22.5	30.0
Start-up Voltage (V)	135	135	135	135
Max. DC Input Voltage (V)*	1000	1000	1000	1000
Rated DC Input Voltage (V)	620	620	620	620
MPPT Voltage Range (V)	200-950	200-950	200-950	200-950
No. of MPP Trackers	2	2	2	2
No. of DC Inputs per MPPT[5)]	2/2	2/2	2/2	2/2
Max. Input Current (A)[6)]	30/30	30/30	30/30	30/30

1) Up to 150% high DC/AC power oversizing capability, more PV power to supply loads consumption and battery charging at same time.

2) Lower start-up voltage compared with similar products, PV module starts generation earlier and longer.

3) Wider MPPT voltage range, adaptability to various PV configurations, and more PV generations in the same installation condition.

4) Allow 182mm high-power panels connection, avoid PV energy limited by the low input current.

5) Multi PV inputs avoid power loss caused by PV mismatch, orientation differences and shade.

6) Max 30A MPPT input current allows 182mm & 210mm high-power panels connection for maximizing power generation.

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Key Parameters-AC Output

Model	MHT4K-25	MHT5K-25	MHT6K-25	MHT8K-25	MHT10K-25	MHT12K-25
Rated Output Power(kW)	4.0	5.0	6.0	8.0	10.0	12.0
Max Output Apparent Power(kVA)[1)]	4.4	5.5	6.6	8.8	11.0	13.2
Max Input Apparent Power(KVA)[2)]	8.0	10.0	12.0	16.0	16.5	16.5
Max Battery Charging Power(kW)	4.0	5.0	6.0	8.0	10.0	12.0
Rated AC Voltage(V)[3)]	3L/N/PE; 220/380V; 240/415V					
Rated AC Frequency(Hz)	50/60					
Max. Output Current (A)	6.7	8.3	10.0	13.3	16.5	20.0

Model	MHT10K-40	MHT12K-40	MHT15K-40	MHT20K-40
Rated Output Power (kW)	10.0	12.0	15.0	20.0
Max Output Apparent Power(kVA)	11.0	13.2	16.5	22.0
Max Input Apparent Power(KVA)	20.0	24.0	30.0	30.0
Max Battery Charging Power (kW)	10.0	12.0	15.0	20.0
Rated AC Voltage(V)	3L/N/PE; 220/380V; 240/415V			
Rated AC Frequency(Hz)	50/60			
Max. Output Current (A)	16.5	20	25.0	33.5

1) Support continuous 110% AC overloading, enable more power generations.

2) Allow up to 200% power importing from the grid to satisfy bigger backup loads and battery fast-charging.

3) Support three-phase output at 220V/380V/400V/415V, suitable for various power grids application.

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Key Parameters-Back-up Output

Model	MHT4K-25	MHT5K-25	MHT6K-25	MHT8K-25	MHT10K-25	MHT12K-25
Rated Output Power (kW)	4.0	5.0	6.0	8.0	10.0	12.0
Max Output Apparent Power(kVA)[1)]	4.4	5.5	6.6	8.8	11.0	13.2
Max. Output Current (A)	6.7	8.3	10.0	13.3	16.5	20.0
UPS Switching Time[2)]	<10ms	<10ms	<10ms	<10ms	<10ms	<10ms
Rated Output Voltage(V)	3L/N/PE; 220/380V; 240/415V					
Rated Output Frequency(Hz)	50/60					
Peak Output Apparent Power(kVA)[3)]	8, 60s	10, 60s	12, 60s	16, 60s	20, 60s	20, 60s

Model	MHT10K-40	MHT12K-40	MHT15K-40	MHT20K-40
Rated Output Power (kW)	10.0	12.0	15.0	20.0
Max Output Apparent Power(kVA)	11.0	13.2	16.5	22.0
Max. Output Current (A)	16.5	20.0	25.0	33.5
UPS Switching Time	<10ms	<10ms	<10ms	<10ms
Rated Output Voltage(V)	3L/N/PE; 220/380V; 240/415V			
Rated Output Frequency(Hz)	50/60			
Peak Output Apparent Power(kVA)	20, 60s	20, 60s	25, 60s	25, 60s

1) Support continuous 110% Backup output overloading, and one of three phases supports continuous 125% output overloading. Allow big loads connection when the power grid fails.

2) Less than 10ms UPS switching time, provide energy security for critical loads.

3) Support up to 200% backup overloading for 60s, enable big loads connection on the backup side and ensure energy security in the places where power outages frequently occur.

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Key Parameters-Battery & Efficiency

Model	MHT4K-25	MHT5K-25	MHT6K-25	MHT8K-25	MHT10K-25	MHT12K-25
Battery Type[1)]	Lithium Battery (With BMS)					
Battery Voltage Range (V)[2)]	135-750	135-750	135-750	135-750	135-750	135-750
Max. Charge/Discharge Current (A)	25/25	25/25	25/25	25/25	25/25	25/25
Max Efficiency[4)]	98.1%	98.1%	98.1%	98.2%	98.2%	98.2%
European Efficiency	97.3%	97.3%	97.3%	97.4%	97.4%	97.4%

Model	MHT10K-40	MHT12K-40	MHT15K-40	MHT20K-40
Battery Type	Lithium Battery (With BMS)			
Battery Voltage Range (V)	135-750	135-750	135-750	135-750
Max. Charge/Discharge Current (A)[3)]	40/40	40/40	40/40	40/40
Max Efficiency[4)]	98.4%	98.4%	98.4%	98.4%
European Efficiency	97.5%	97.5%	97.5%	97.5%

1) Compatible with Pylontech, Dyness, Alpha, Weco, Wattsonic, and Solinteg batteries. More brands are being tested for compatibility.

2) Wider battery voltage from 135-750V, offering flexible battery capacity configuration from 7-99.6kWh

3) Fast charging to meet bigger load consumption and enable quick charging and discharging.

4) Industry-leading efficiency maximizing system yield.

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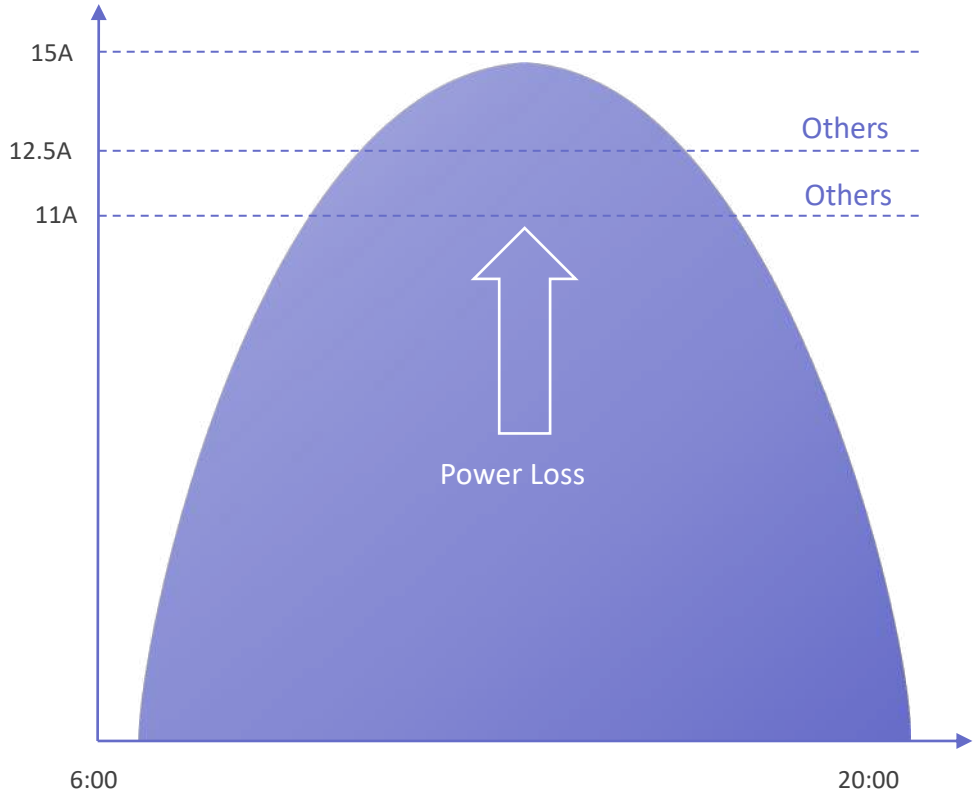
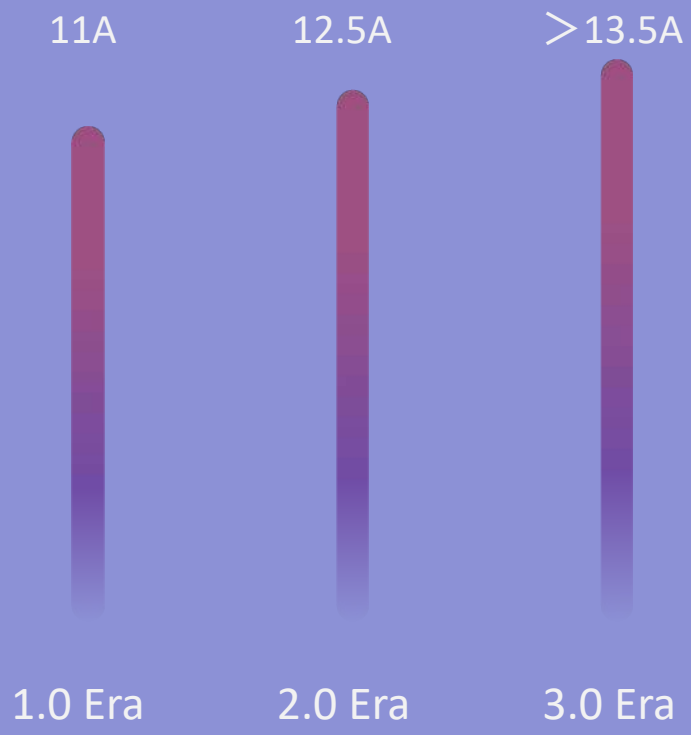
Key Parameters-15A PV Input



More Power Generation

Compatible with high-power PV panels



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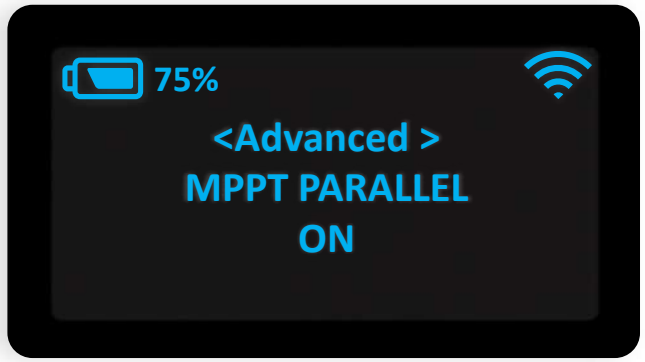
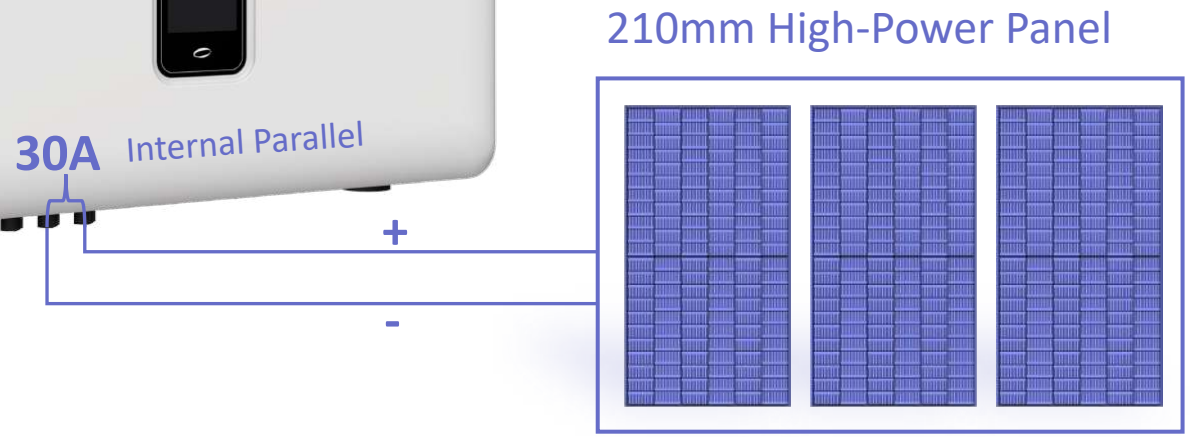
Key Parameters-DC 2in1 Up To 30A

MHT10-20K-40 Big Current Solution





Compatible With High Power PV Panels

MHT10-20K-40
Connect the 210mm PV string to one of the PV inputs in each MPPT.

MHT4-12K-25
Use a Y connector to split one PV string into two to connect the inverter and turn on the MPPT parallel on the inverter display.

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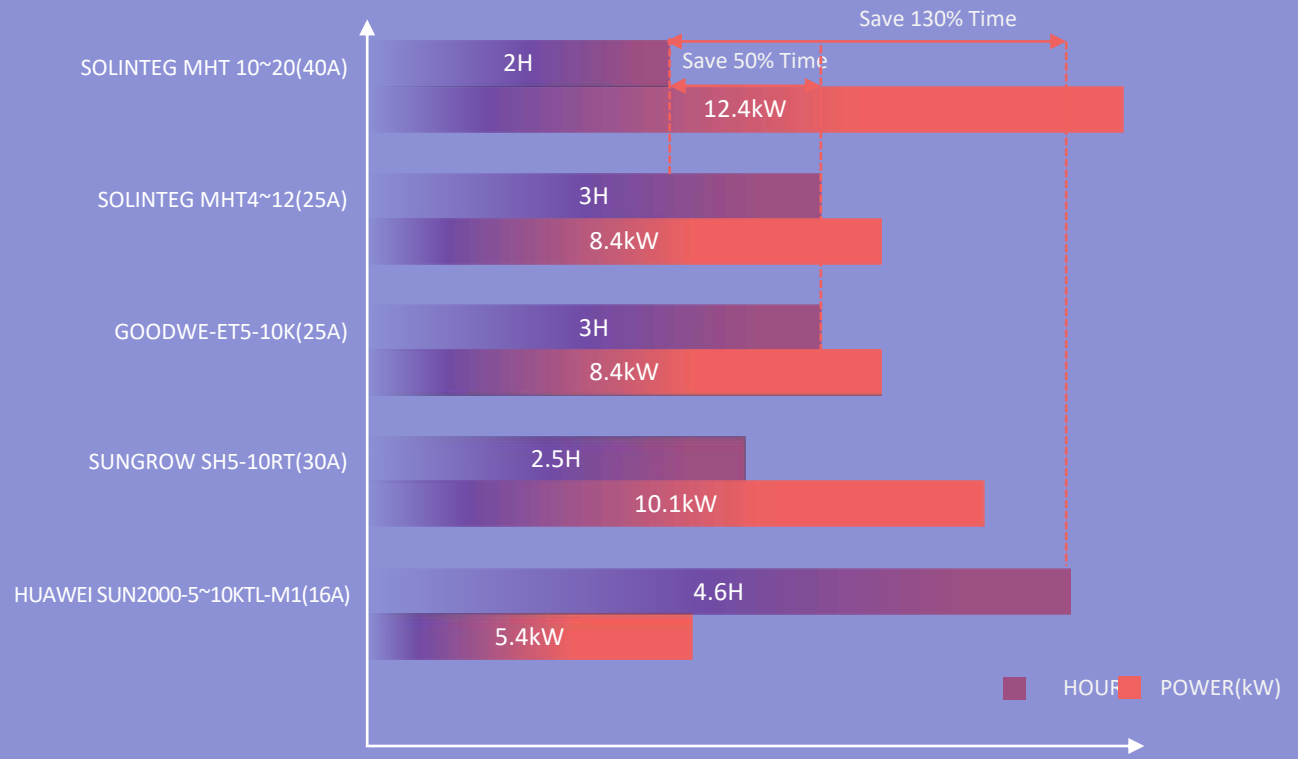
Key Parameters-40A Max Charging Current

PYLONTECH

Basic Parameters	FORCE H1 (336V74AH)
Battery Module	FH48074
Battery Module Voltage(Vdc)	48
Battery Module Capacity(Ah)	74
Battery Module Qty.(Optional)	3~7 Pcs
Battery System Capacity(kWh)	24.86
Battery System Voltage(V)	336
Charge/Discharge Current(A)	37

Meet Big Loads' Consumption



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Highlights-Full Protection

Integrated full protection for equipment, house loads and people, ensure your electrical safety.

DC Reverse Polarity Protection	Battery Input Reverse Connection Protection
Insulation Resistance Protection	Surge Protection
Over-temperature Protection	Residual Current Protection
Islanding Protection	AC Over-voltage Protection
Overload Protection	AC Short-circuit Protection

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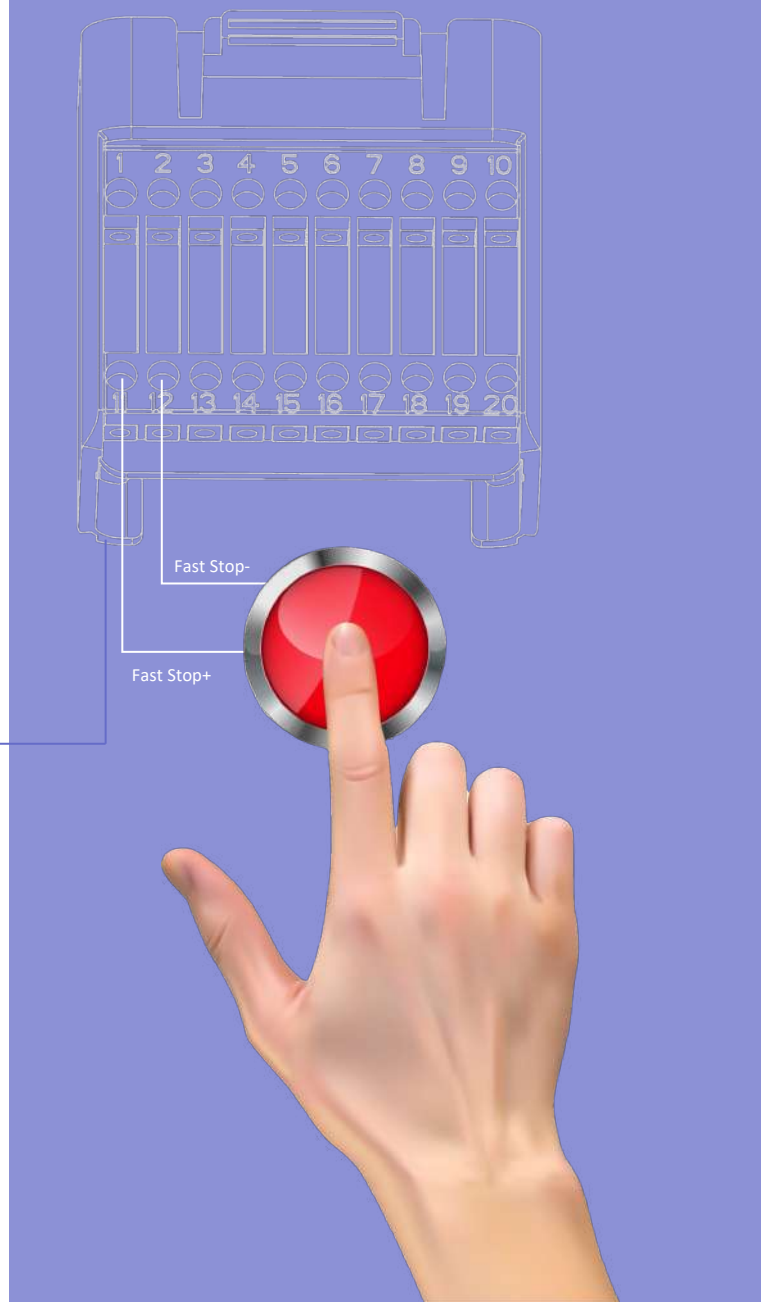
Highlights-Fast Stop

Increase System Safety

Solinteg hybrid inverter comes to stand with a fast stop function which can stop the inverter with a press when an accident occurs and avoid system damage being enlarge.



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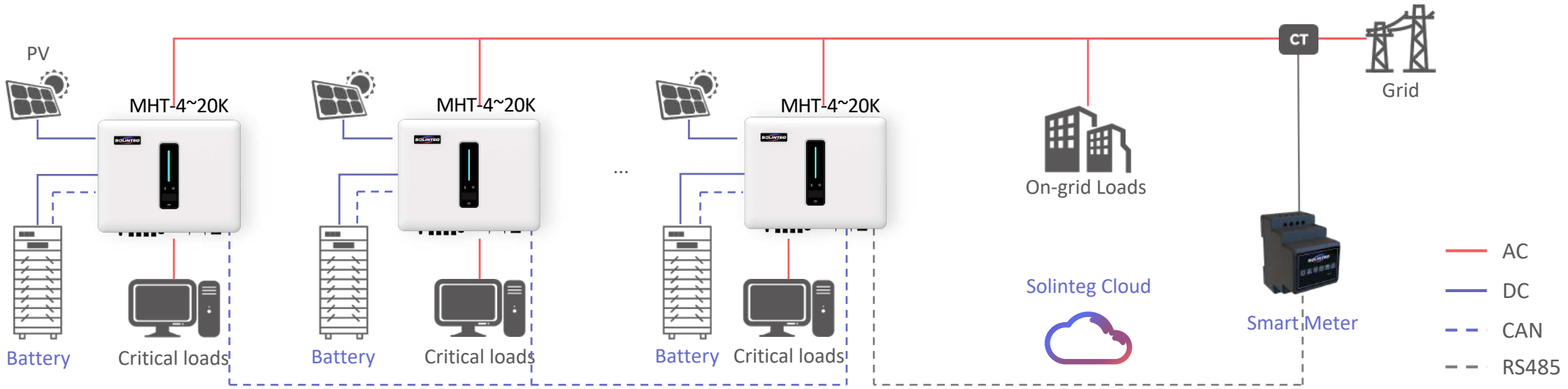
Highlights-Paralleling Up To 10 Units



Meet Various Applications Residential To Commercial

Solinteg hybrid inverter offers up to 10 units of paralleling connection with master-slave controlling technology, which can expand a hybrid system from 20kW to 200kW with a wide battery capacity from 7.1kWh to 248.6*kWh, suitable for residential and small commercial projects.

Up to 200kW

* Calculated on Pylontech Force H1&H2

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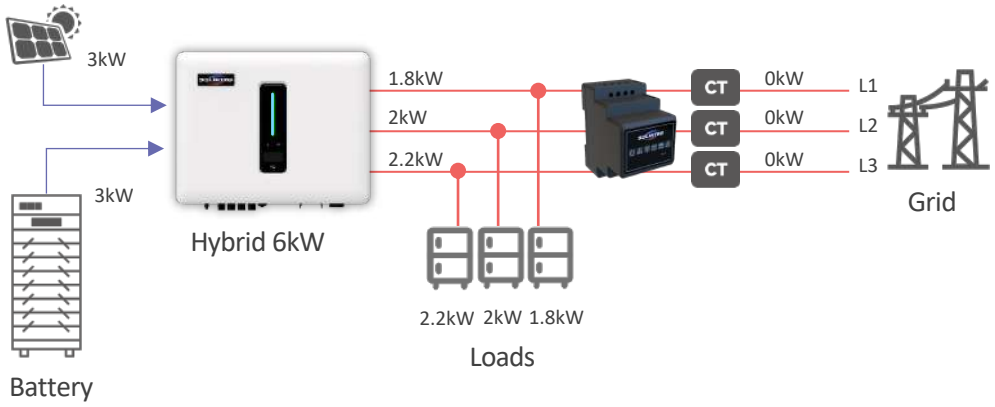
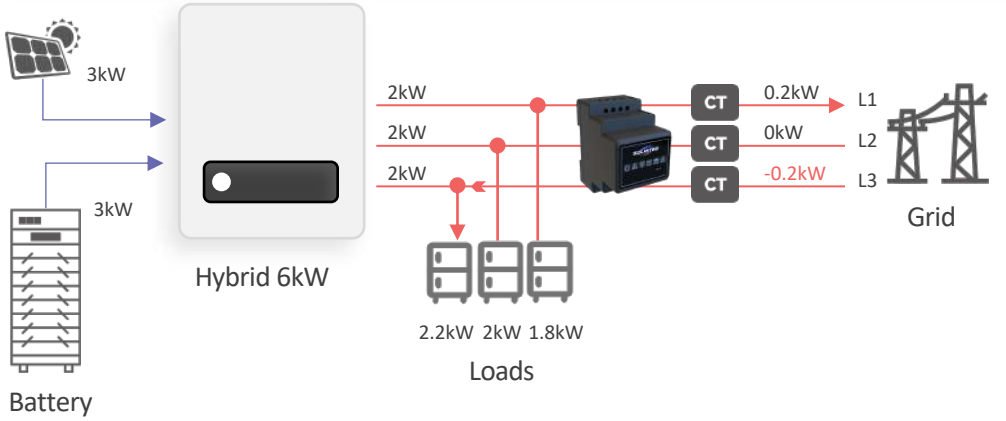
Highlights-110% Phase Unbalance

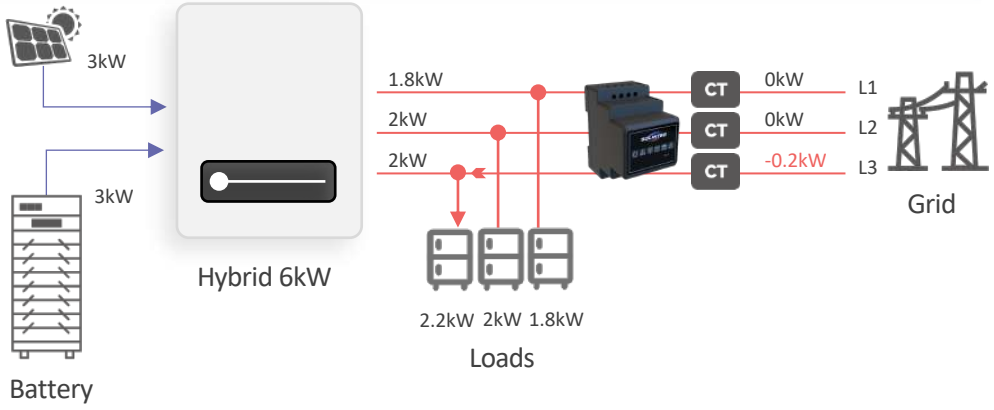
With 110% unbalanced output



Without unbalanced output



With 100% unbalanced output



Avoid PV Energy Waste,
Critical In Czech Republic

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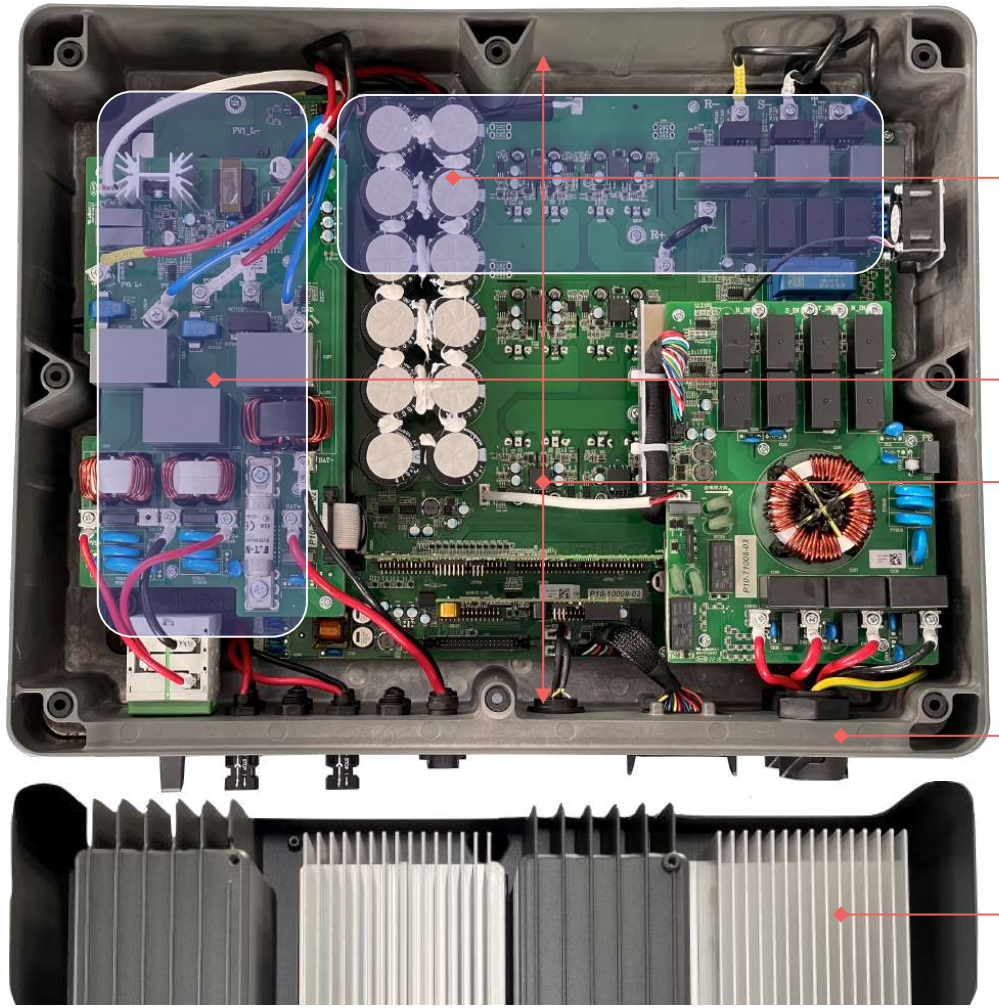
Excellent Heat Dissipation



Major heat dissipation components such as inductors, capacitors and power devices are located near the edge of the inverter shell, which can directly dissipate heat through the heat sink and inverter housing.

Shorter heat dissipation channel is good for heat quickly dissipated.

Aluminum alloy die-casting shell + Al heat sink offers up to 200 W/(m.K) thermal conductivity.

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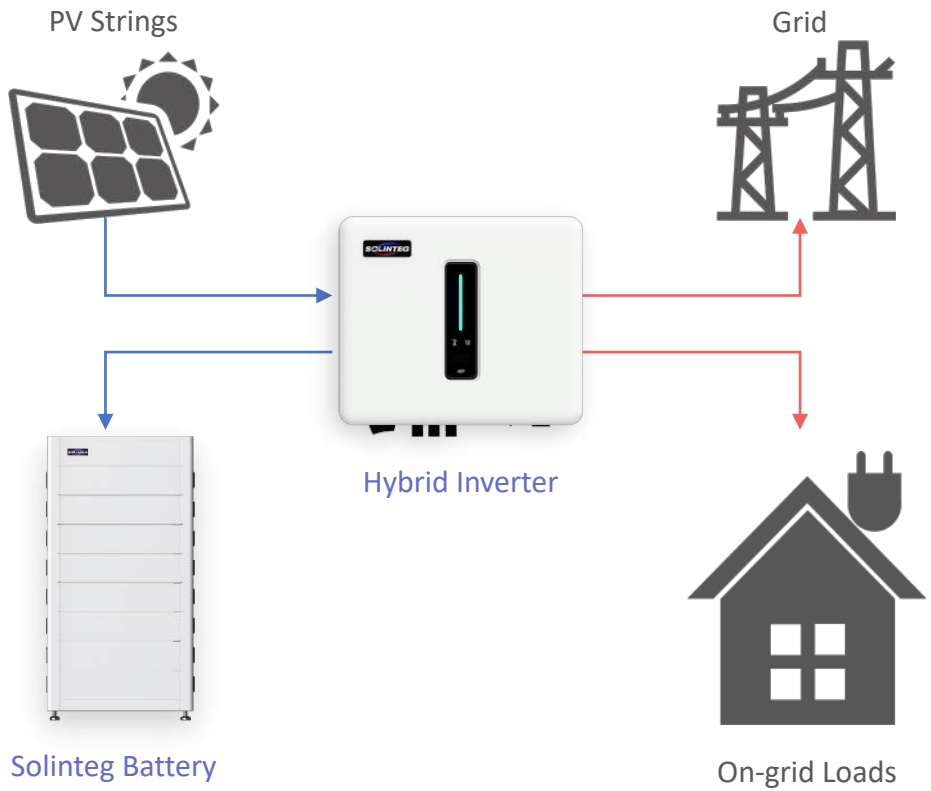
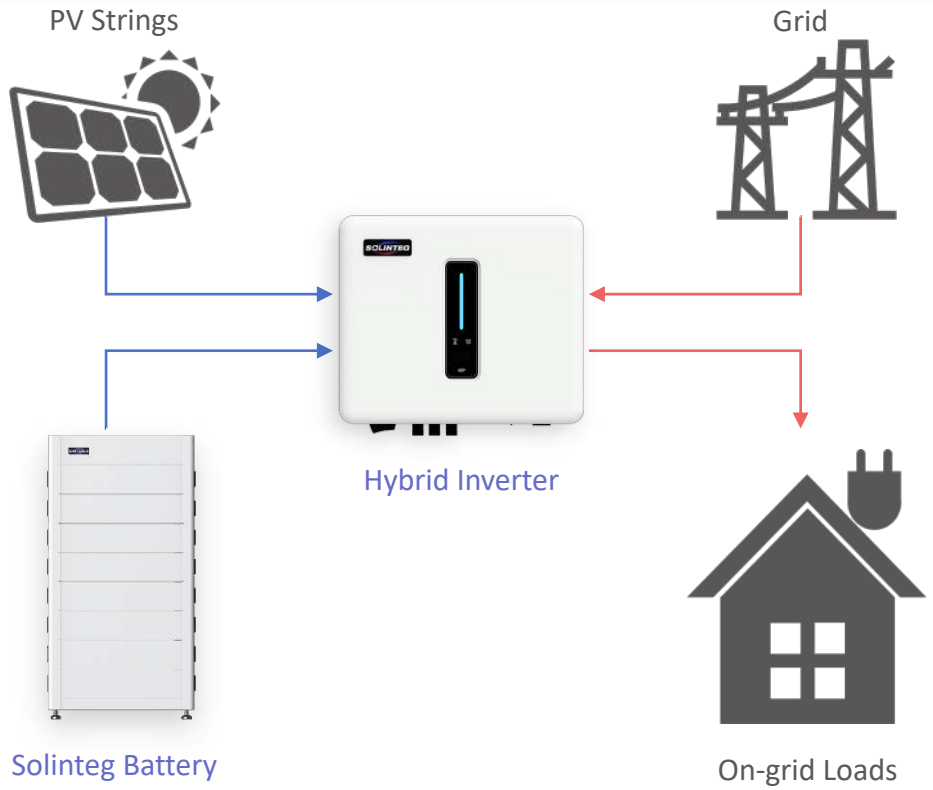
04 Work Modes

Work Modes-General Mode

In general mode, when the PV power is sufficient, power from the PV will firstly supply loads, then excess power charge battery, and any surplus power will be fed to the grid.



In general mode, when the PV power is insufficient to satisfy loads, the battery will discharge power to fill the power gap, and the grid will join in if it's still not enough.



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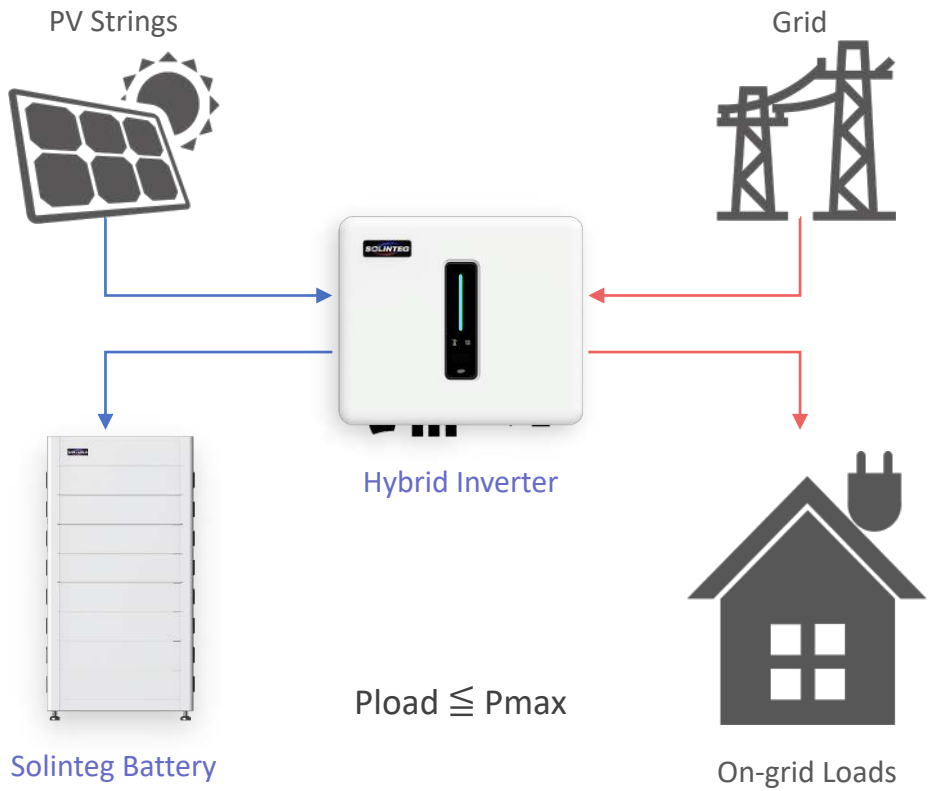
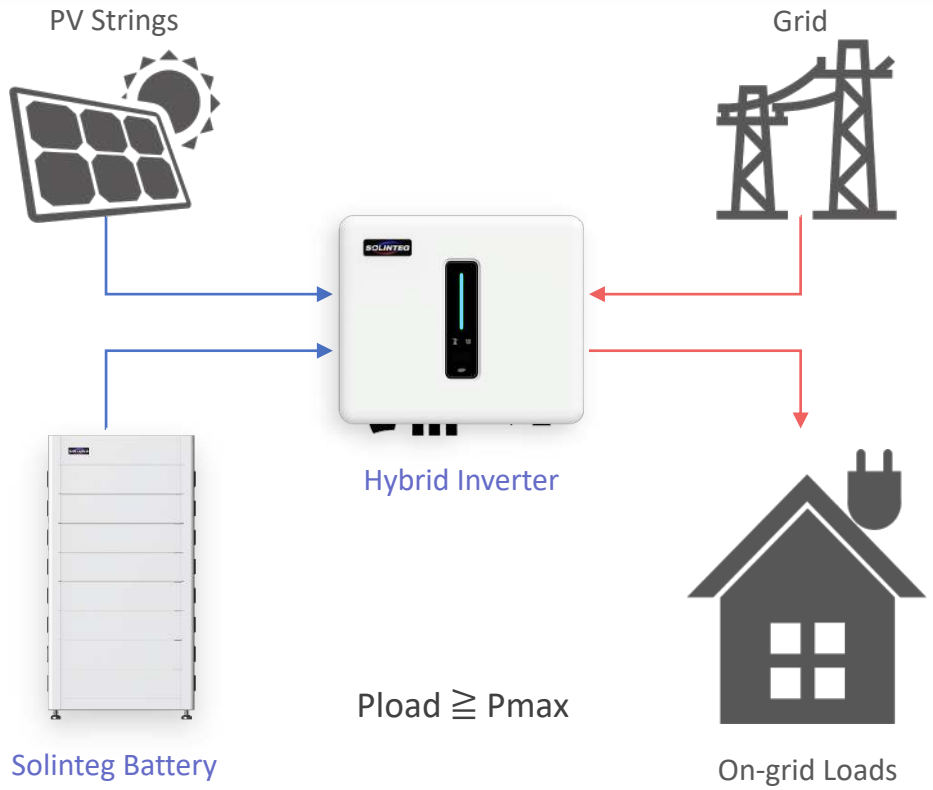
Work Modes-Peak Load Shifting

When the Pload ≦ Pmax(Power contracted with the grid), PV power will charge battery first and the load is supplied by the grid; when the battery is full, PV will supply the load together with grid while battery doesn't.



When the Pload ≧ Pmax(Power contracted with the grid), the inverter will take power from PV and battery to offset the gap power between Pmax and Pload.



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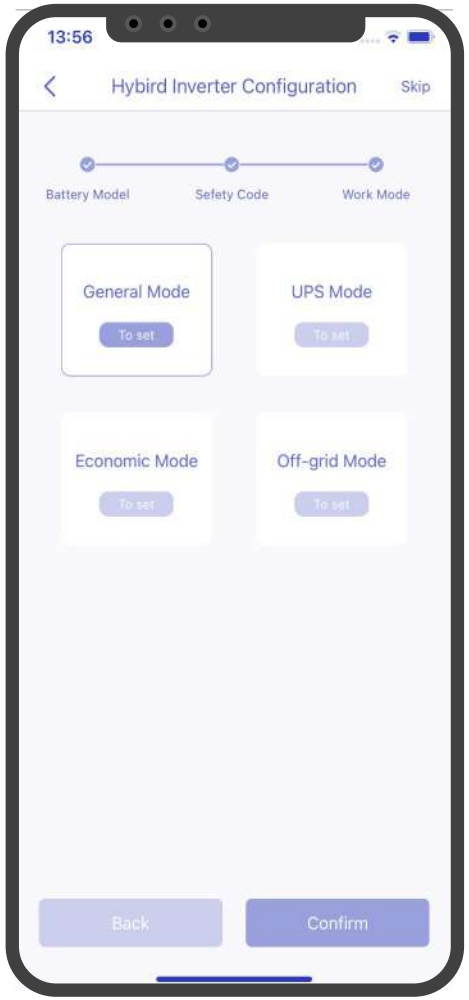
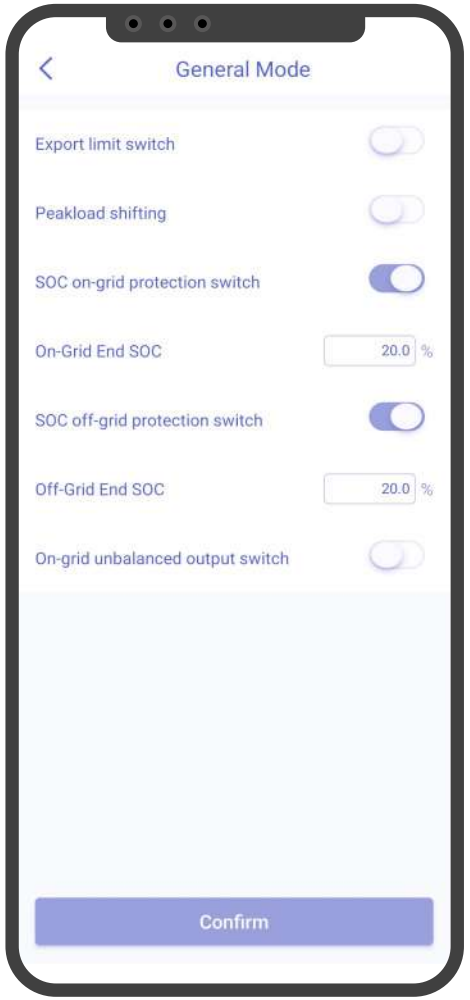
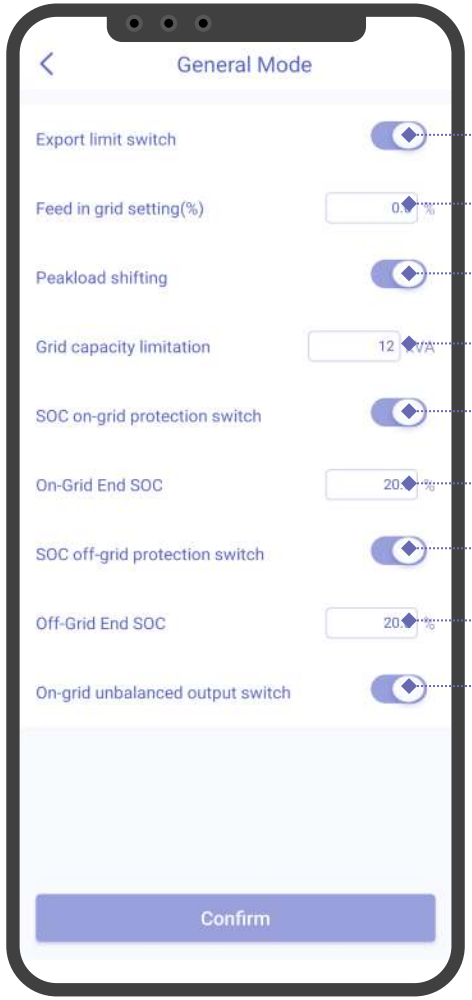
General Mode Settings On The App







- Export limit function ON/OFF switch
- Set the percentage of power allow exported to the grid
- Peak load shifting function ON/OFF switch
- Set the max power that signed with the grid
- On-grid SOC ON/OFF switch
- On-grid SOC percentage setting
- Off-grid SOC ON/OFF switch
- Off-grid SOC percentage setting
- Three-phase unbalanced output ON/OFF switch

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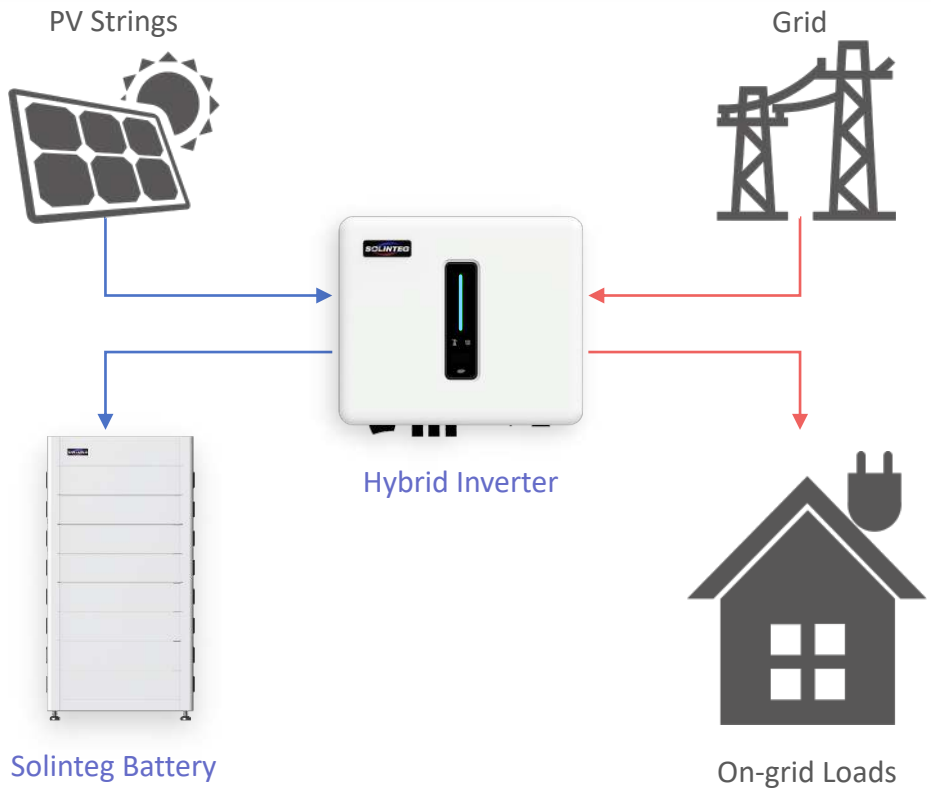
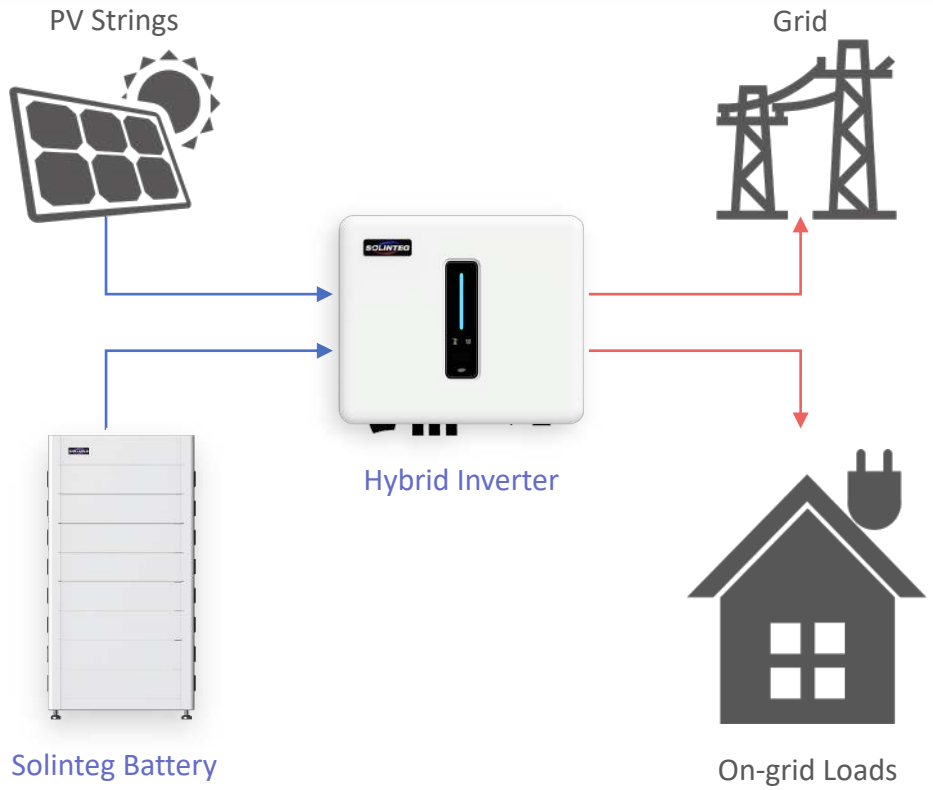
Work Modes-Economic Mode

This mode usually uses in the places where has peak and valley electricity prices to help customers optimize their energy cost. Customer can charge power from grid or PV in valley hours by setting on the App.



Customer can also discharge power in peak hours by setting on the App, and in this case, battery will discharge power to supply loads or feed to grid.



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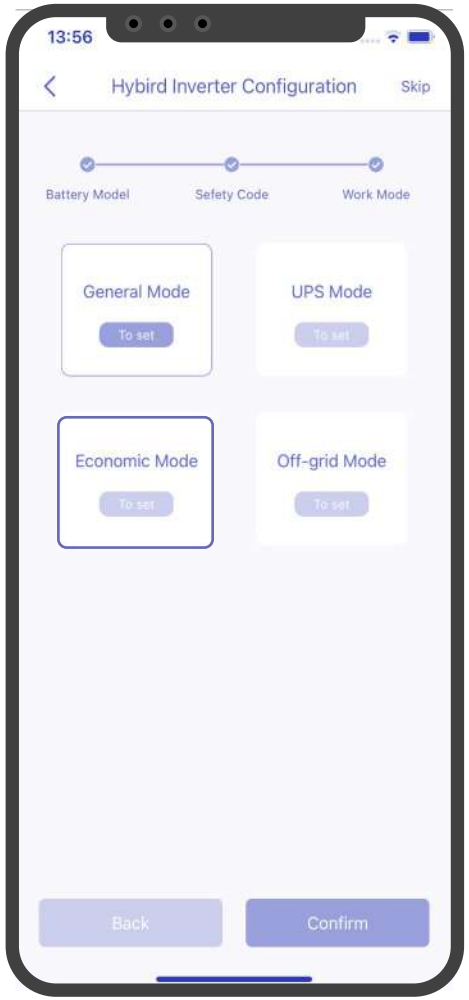
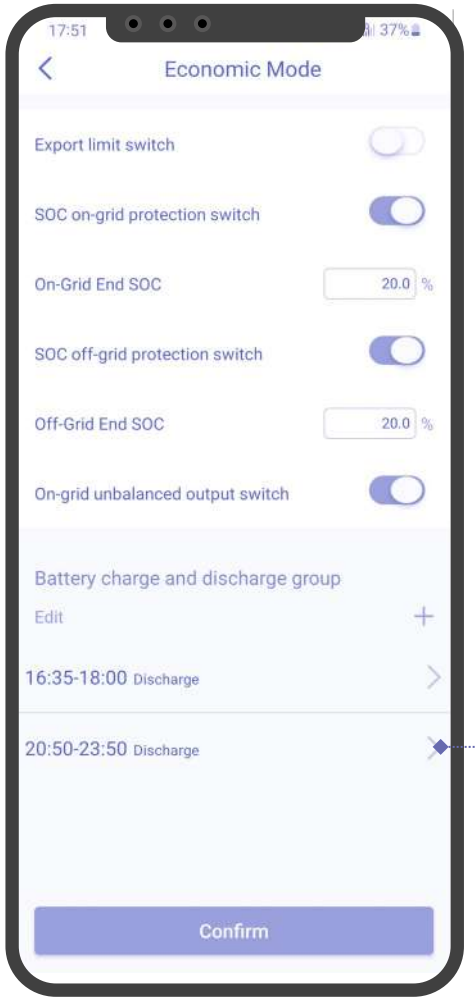
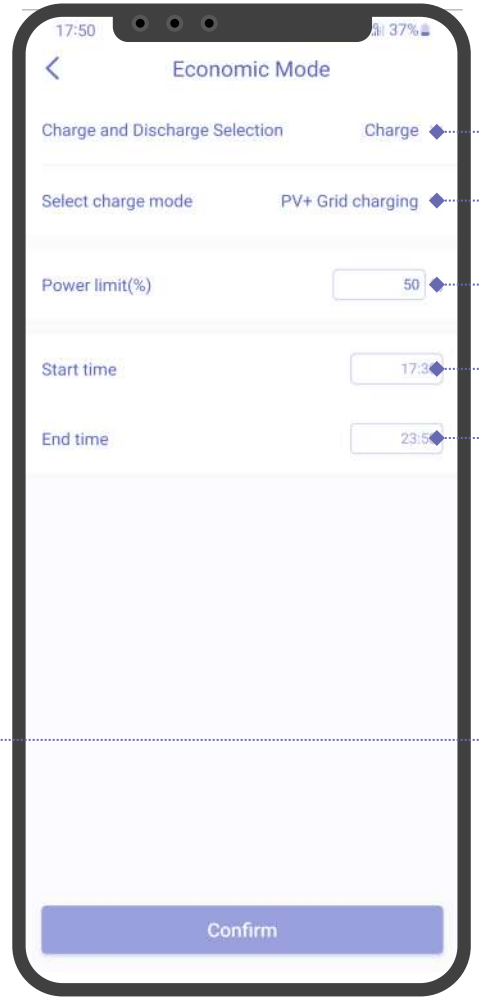
Economic Mode Settings On The App







Select charge or discharge to set the detail param.

Select battery charge sources

Set the max charge power percentage (calculated on the inverter rated output power)

Set the force charge ends time

Note: The end time must bigger than the start time. Eg. The start time from 17:30, the end time must less than 23:59, if you want to continue charge the battery, you can set a new charge period from 0:00 to a new end time.

You can set up to 6 charging & discharging periods in total.

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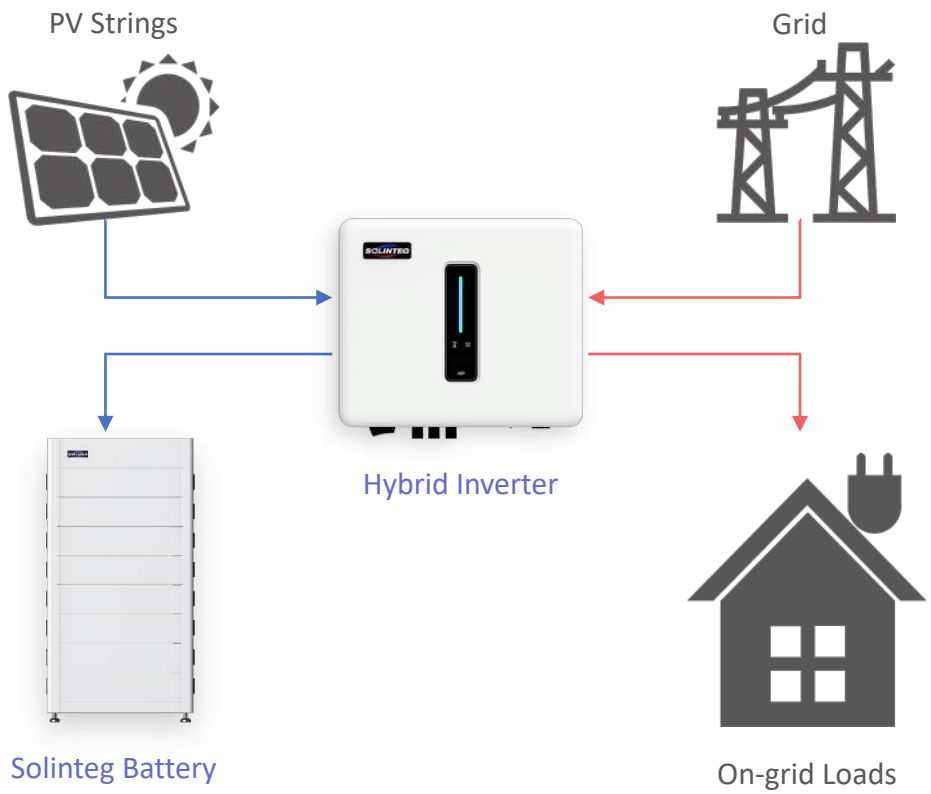
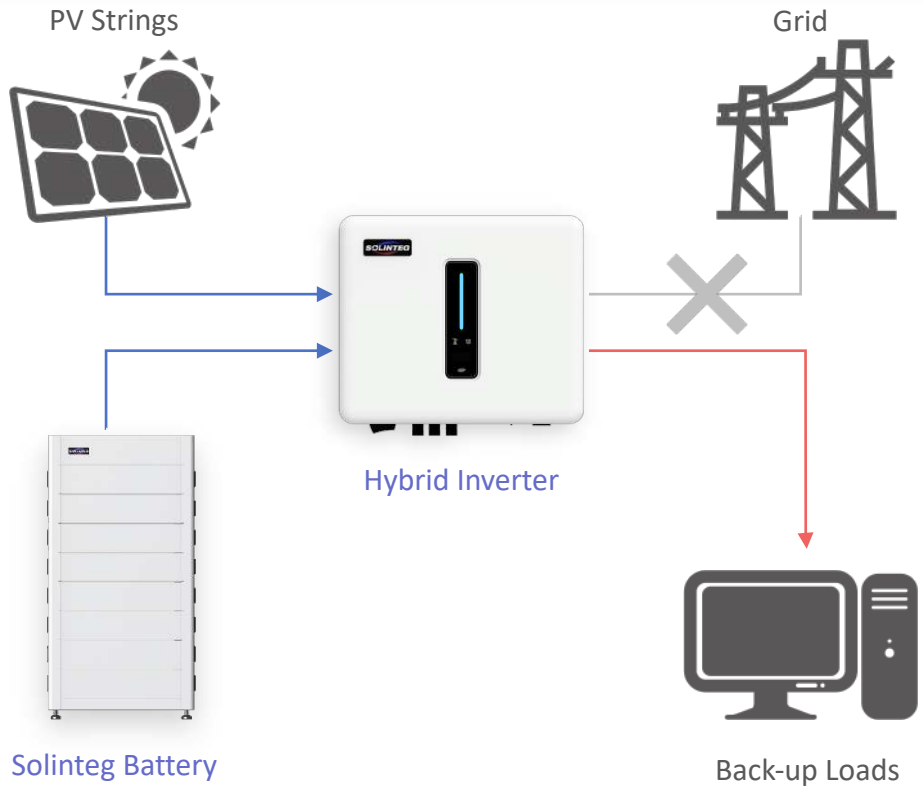
Work Modes-UPS Mode

In this working mode, power from PV will firstly charge the battery until it‘s full, and loads will be supplied by the grid during charging period. Battery will not discharge power as long as grid is connected.



When the grid fails, and PV power is insufficient to meet the loads' consumption, the battery will take part in discharging power to supply loads connected to the back-up port.



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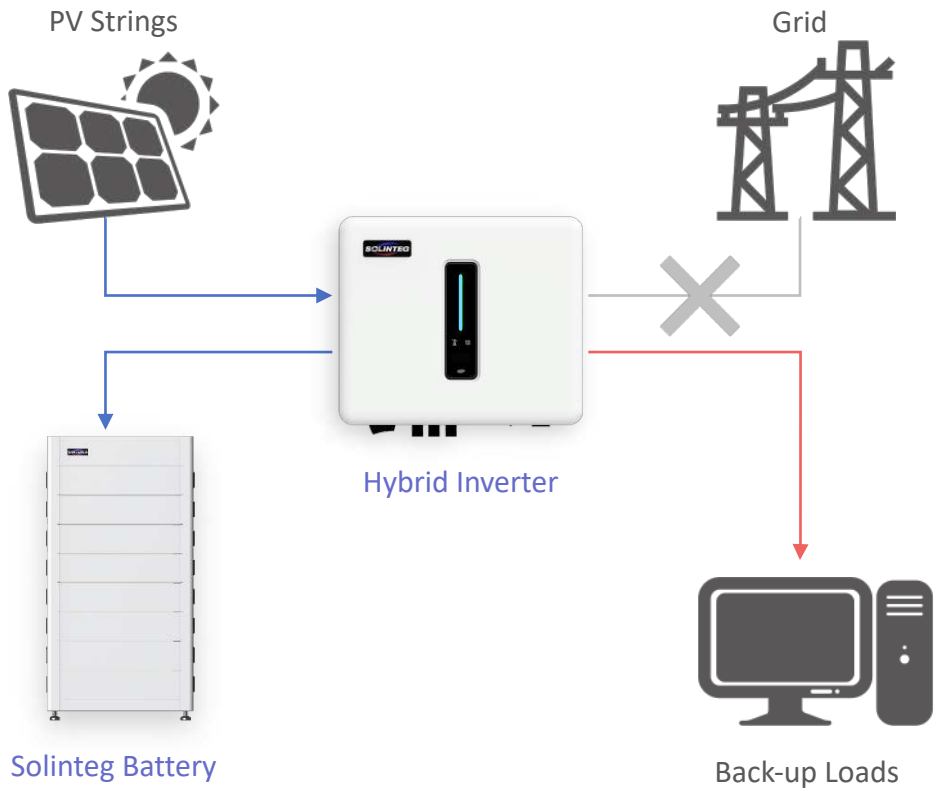
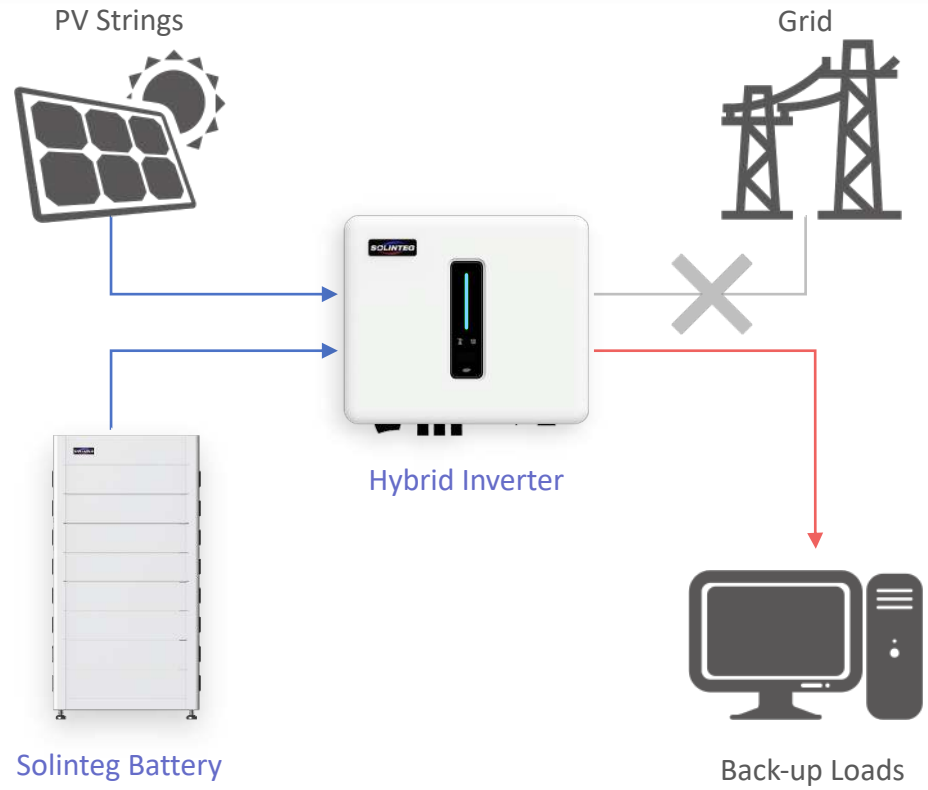
Work Modes-Off-grid Mode

In the purely off-grid mode, power from PV will supply the back-up loads first and then charge the battery if there's surplus power.



When the power from PV isn't enough, the battery will discharge to supply back-up loads together with PV.



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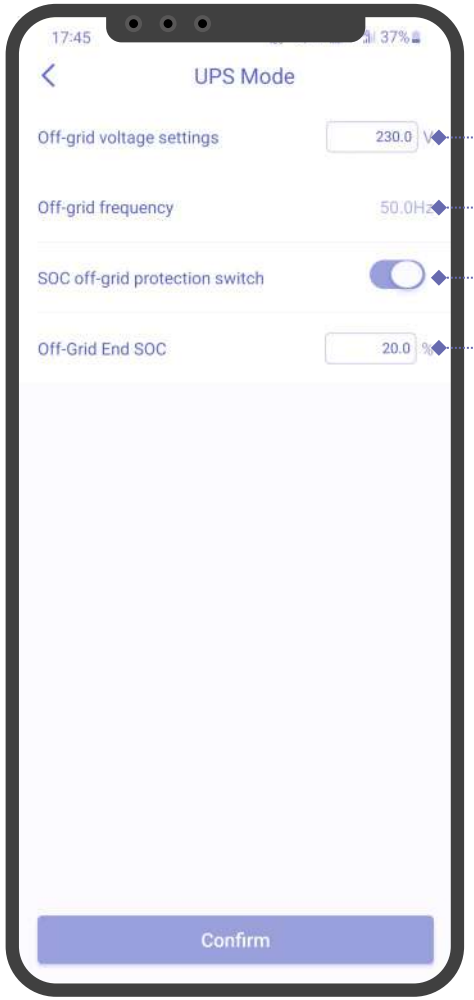
UPS & Off-grid Modes Setting On The App



Set the output voltage according to the local grid regulation

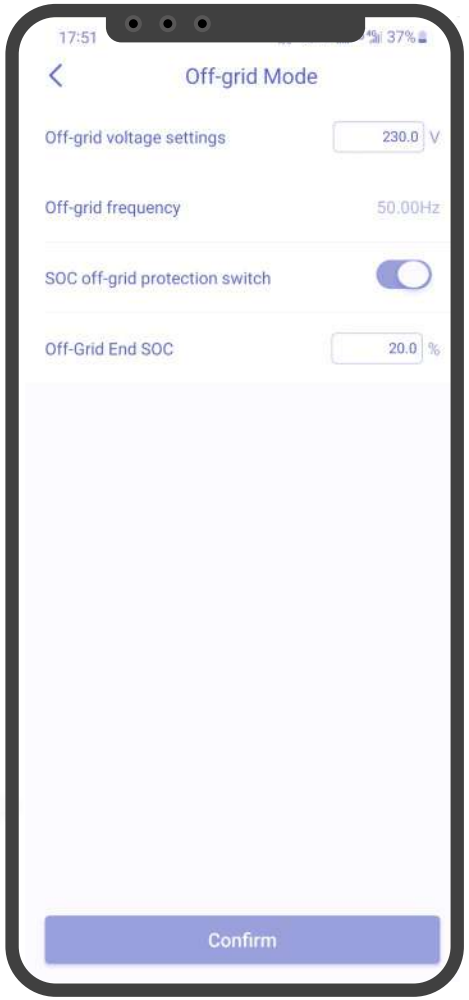
Set the output frequency according to the local grid regulation

Off-grid SOC ON/OFF switch

Off-grid SOC percentage setting

Did you know?

Off-grid settings are the same as UPS mode settings, and the difference is their working logic. For the UPS mode, it is usually used in the situation grid connected but power outages always occur. The battery is used as backup power only discharging when grid fails. Off-grid mode usually suits for a long time with no power grid.



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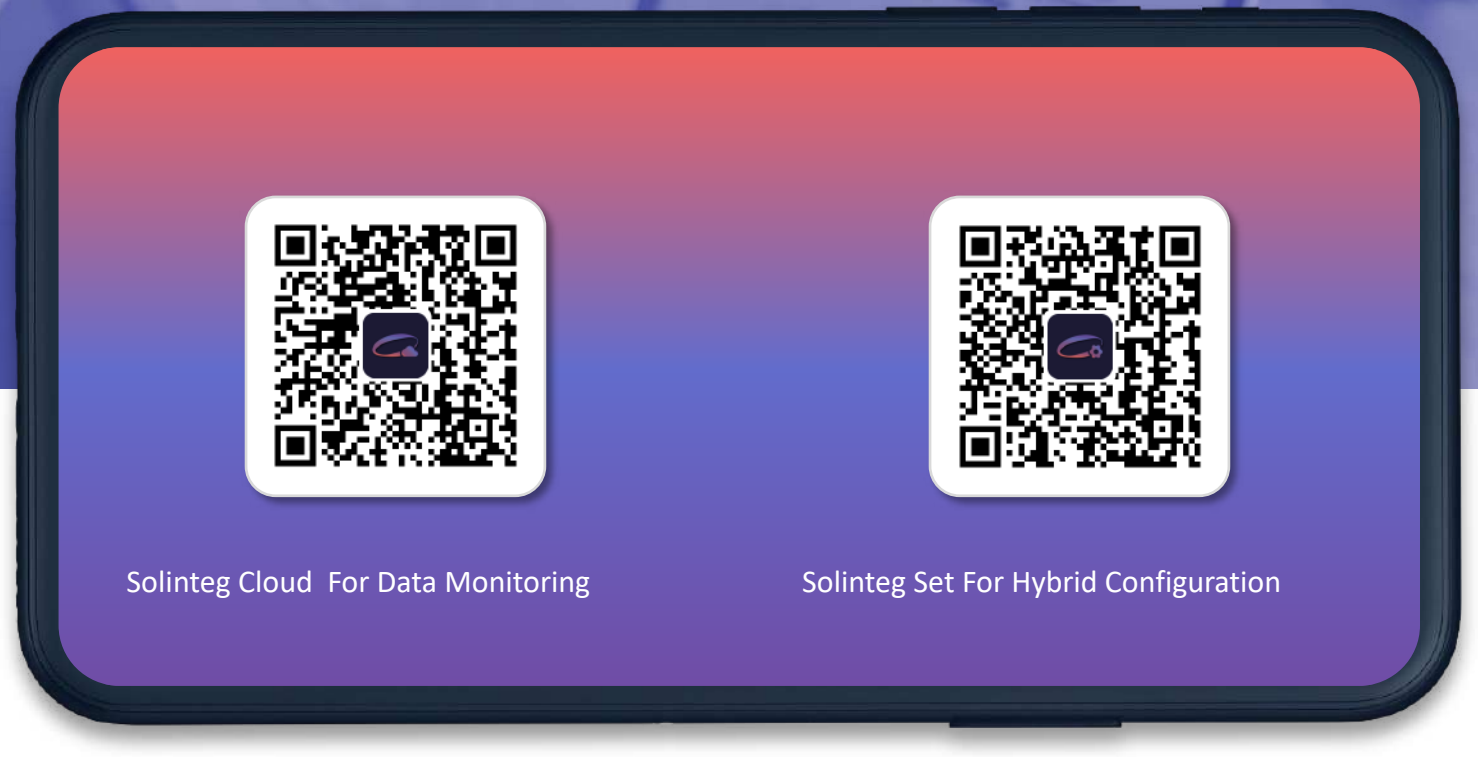
Solinteg Energy Management Platform

Web Monitoring Portal

www.solinteg-cloud.com



Solinteg Cloud For Data Monitoring

Solinteg Set For Hybrid Configuration

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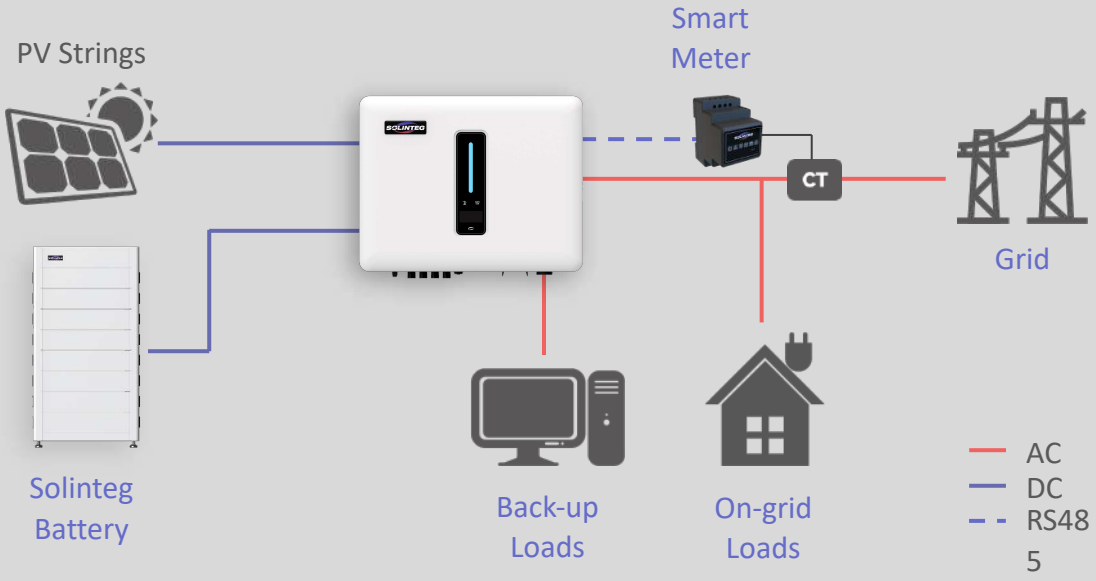
05 Application Scenarios

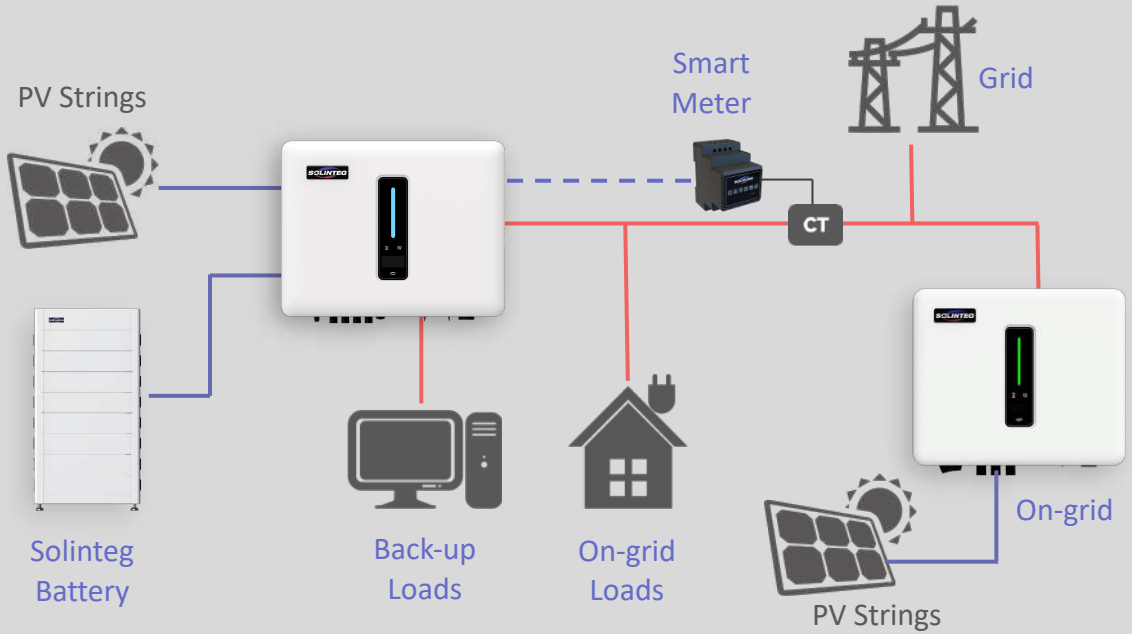
Application Scenarios

NEW INSTALLATION

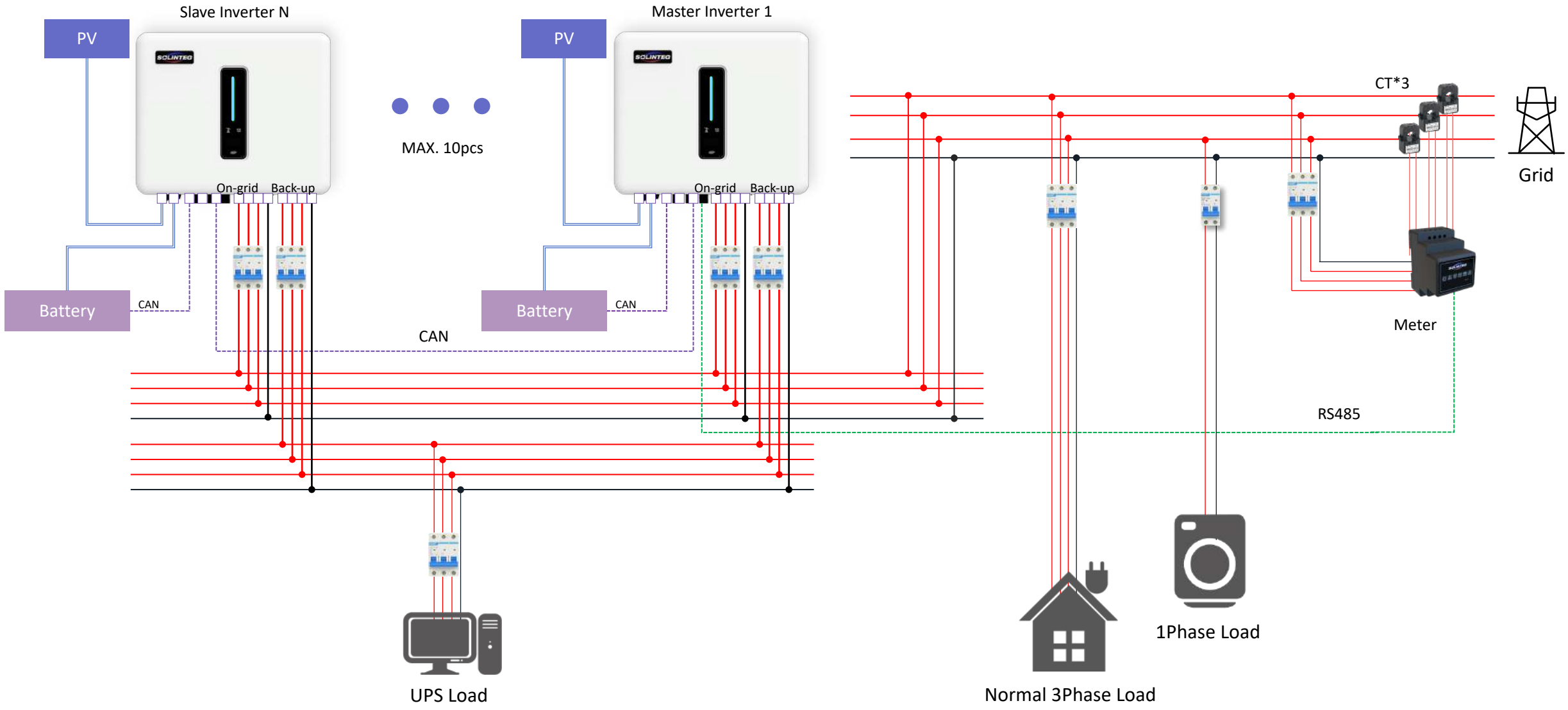


EXISTING INSTALLATION

Suitable For New Or Existing Installation



Paralleling Connection-Master Slave Controlling



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06

Compatible Batteries

Model MHT4-20K Compatible Battery

SOLINTEG	PYLONTECH	DYNESS
EBS-5150-7	Force H1 4-7pcs	Tower Series T10-T21
EBS-5150-10	Force H2 2-4pcs	H3 Series 7.1-24.85kWh
EBS-5150-12	Powercube-X1	H2 Series 4-16kWh
EBS-5150-15	Powercube-H1	RACK H3-7~H3-24
EBS-5150-17	Powercube-H2	Powercube H3-7~H3-17
EBS-5150-20	Powercube-M1	
	Powercube-M2A-180	
	Powercube-M3A-100	

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THANK YOU

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