

ON/OFF Grid High frequency Hybrid Solar Inverter

PH1000 Series (3.6-5KW)



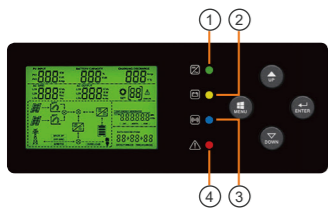
Features

- Wide range of MPPT voltage:120-550V
- Multiple operation modes: Grid-tie,off grid and grid-tie with back up
- Support LCD display&Smart LCD setting
- Available Export control CT sensor function
- Multiple communications:USB,RS485,GPRS and wifi etc
- Monitoring inverters freely via computers or mobile phones
- Full protection function:Over-voltage,over-frequency, over-current, over-temperature,and AC short-circuit automatic protection
- Intelligent BMS battery management function
- Fanless low-noise design
- IP65 Dust-proof and water-proof

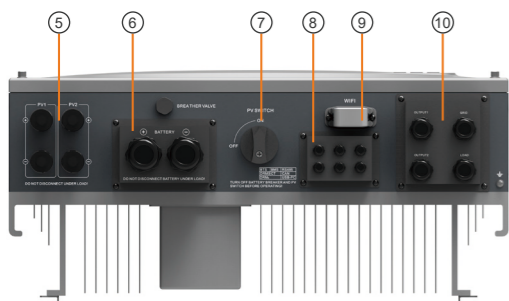
Introduction

This is a flexible and intelligent energy storage solar inverter with a wide range of MPPT Voltage. Combining functions of off grid and on grid. This hybrid solar inverter can power all kinds of appliances in home or office, and can also be used in power stations.

Back panel printing description

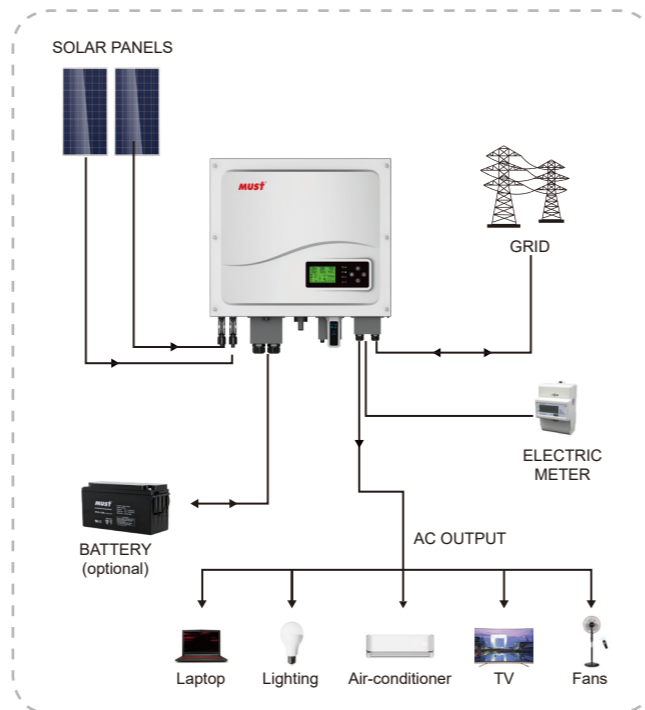


1. The inverter operation status indicator
2. Battery indicator
3. WiFi status indicator
4. Fault indicator



5. PV input terminals
6. Battery input terminals and cover
7. PV input switch
8. BTS terminals, BMS terminals, load monitor terminals, dry contact terminals, CAN communication terminals, USB terminal and cover
9. Wi-Fi commodule
- 10.AC output terminals and cover

Solar system connection



Specification

| MODEL | PH10-3648A | PH10-4248A | PH10-4648A | PH10-5048A |
|--------------------------------|---|--------------------------------------|------------|------------|
| RATED POWER(W) | 3600 | 4200 | 4600 | 5000 |
| Nominal Battery System Voltage | 48 | 48 | 48 | 48 |
| PV INPUT(DC) | Maximum recommended DC power(W) | 4100 | 4800 | 5300 |
| | Nominal DC operating voltage(V) | 360 | | |
| | Maximum DC voltage(V) | 550 | | |
| | MPPT voltage range(V) | 120~550 | | |
| | Maximum input current(A) | 11\11 | | |
| | Maximum short circuit current(A) | 15\15 | | |
| | No.of MPP tracker | 2 | | |
| | Strings per MPP tracker | 1 | | |
| INVERTER OUTPUT(AC) | Nominal AC output power(W) | 3600 | 4200 | 4600 |
| | Nominal output voltage(V);range(V) | 220\230\240;180-280 | | |
| | AC grid frequency(Hz);range(Hz) | 50\60;45~55\55-65 | | |
| | Nominal output current(A) | 15.7 | 18.3 | 20.0 |
| | Maximum output current(A) | 16.4 | 19.1 | 21.0 |
| | Total harmonic distortion i(THDi) | <3% | | |
| | Power factor at rated power | 1 | | |
| | Displacement power factor | 0.8leading ~ 0.8lagging | | |
| BATTERY MODE OUTPUT(AC) | Output Rated Power | 2300 | | |
| | Nominal output voltage(V);accuracy range | 230±1% | | |
| | Output frequency(Hz);accuracy range | 50/60(optional)±0.2% | | |
| | Output rated current(A) | 10 | | |
| | Output waveform | Pure sine wave | | |
| | Total harmonic distortion v (linear load) | <3% | | |
| BATTERY & CHARGER | Battery type | Lead-acid battery \ Lithium battery | | |
| | Battery voltage(V) | 48 | | |
| | Battery voltage range(V) | 40~60 | | |
| | Charging curve | 3-stage adaptive with maintenance | | |
| | Over-current protection / Over-temperature protection | Yes \ Yes | | |
| | Maximum charging/discharging power(W) | 2500 \ 2500 | | |
| EFFICIENCY | Maximum efficiency | 97.3% | | |
| | Euro-efficiency | 96.8% | | |
| PROTECTION DEVICES | MPPT efficiency | 99.9% | | |
| | DC switch rating for each MPPT | Yes | | |
| | Grid monitoring | Yes | | |
| | Output over current protection | Yes | | |
| | Output overvoltage protection-varistor | Yes | | |
| | Ground fault monitoring | Yes | | |
| GENERAL | Integrated all-pole sensitive leakage current | Yes | | |
| | Dimension(W/H/D)(mm) | 480*420*215 | | |
| | Net weight (kg) | 25 | 25 | 27 |
| | DC connection | H4 \ MC4 | | |
| | AC connection | Terminal Block | | |
| | Display | LED+LCD | | |
| | Communication interfaces | Wi-Fi \ USB \ GPRS \ RS485 | | |
| | Ingress protection rating | IP65 | | |
| | Humidity | 0~95% RH(No condensing) | | |
| | Operating temperature range | -20°C +60°C With derating above 45°C | | |
| Cooling concept | Natural | | | |
| Altitude | <3000m | | | |

High Frequency On/Off Hybrid Solar Inverter

PH1800 Plus Series (2KW-5.5KW)



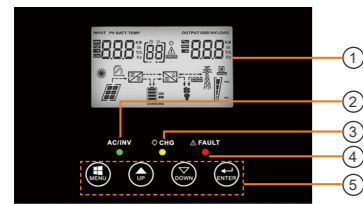
Features

- Rated Power 2KW-5.5KW
- Pure sine wave output
- Self-consumption and Feed-in to the grid
- Programmable supply priority for PV, Battery or Grid
- User-adjustable battery charging current suits different types of batteries
- Programmable multiple operation modes: Grid-tie, off-grid and grid-tie with backup
- Monitoring software & Wifi Kit for real-time status display and control
- Support parallel operation up to 3 units

Introduction

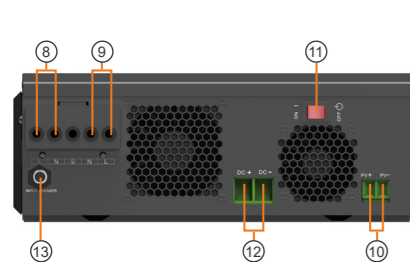
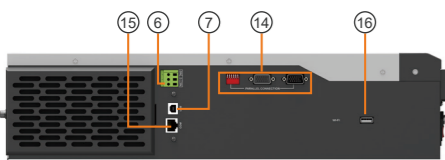
PH1800 Plus series hybrid solar inverter, it can realize self-consumption and feed-in to the grid from solar energy with best solution according to your setting. During the daytime solar power can run your home appliances and if there is extra solar power it will feed-in to the grid or you can choose to save them on the battery to backup when power failure or nighttime.

Back panel printing description

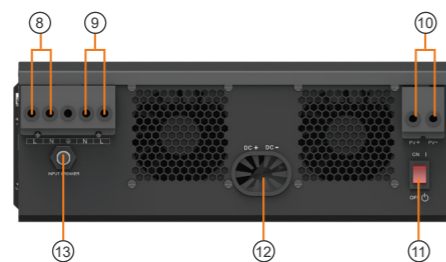


1. LCD Display
2. Status Indicator
3. Charging Indicator
4. Fault Indicator
5. Function Buttons
6. Dry contact
7. USB

8. AC Input
9. AC Output
10. PV Input
11. Power On/Off Switch
12. Battery Input
13. Circuit breaker
14. Parallel connection port
15. RS-485 Communication port
16. USB WIFI

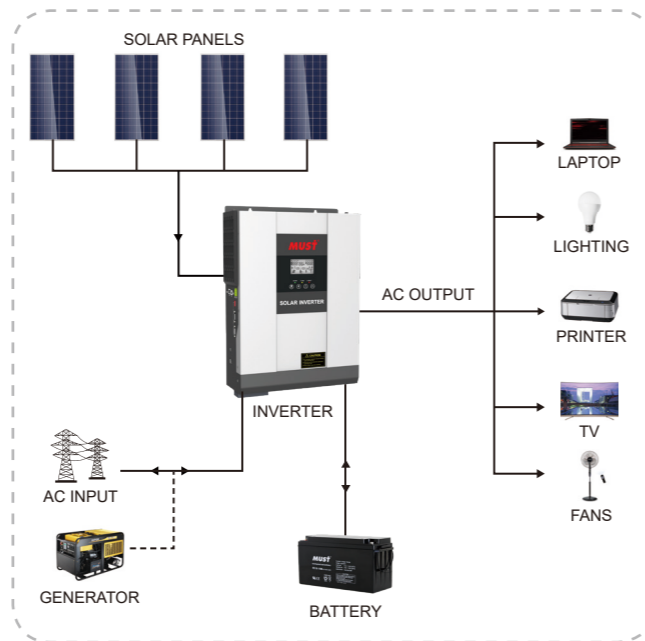


(2KW-3KW)



(3KW-5.5KW)

Solar system connection



Specification

| MODEL | PH18-2024 Plus | PH18-3024 Plus | PH18-3048 Plus | PH18-4048 Plus | PH18-5048 Plus | PH18-5548 Plus |
|--------------------------------|---------------------------------------|--|-----------------|----------------|----------------|----------------|
| Nominal Battery System Voltage | 24VDC | | 48VDC | | | |
| INVERTER OUTPUT | Rated Power | 2000W | 3000W | 3000W | 4000W | 5500W |
| | Surge Power | 4000W | 6000W | 6000W | 8000W | 11000W |
| | Waveform | Pure Sine Wave | | | | |
| | AC Voltage Regulation (Batt.Mode) | 220VAC~240VAC(setting) | | | | |
| | Electric Current | 8.7A | 13A | 17.4A | 21.7A | 23.9A |
| | Inverter Efficiency(Peak) | 93% | | | | |
| | Transfer Time | 10ms(UPS \VDE4105) 20ms(APL) | | | | |
| AC INPUT | Voltage | 230VAC | | | | |
| | Selectable Voltage Range | 170~280VAC(UPS), 90~280VAC(APL), 184~253VAC(VDE4105) | | | | |
| | Frequency Range | 50Hz \ 60Hz (Auto Sensing) | | | | |
| BATTERY | Normal Voltage | 24VDC | 48VDC | | | |
| | Floating Charge Voltage | 27.4VDC | 54.8VDC | | | |
| | Overcharge Protection | 30VDC | 60VDC | | | |
| SOLAR CHARGER & AC CHARGER | Maximum PV Array Open Circuit Voltage | 145VDC | | | | |
| | PV Array MPPT Voltage Range | 30~130VDC | 64~130VDC | | | |
| | Standby Power Consumption | 2W | | | | |
| | Maximum PV Array Power | 2000W | 4000W | | | |
| | Maximum Solar Charge Current | 80A | | | | |
| | Maximum Efficiency | 98% | | | | |
| | Maximum AC Charge Current | 60A | | | | |
| Maximum Charge Current | 140A | | | | | |
| MECHANICAL SPECIFICATIONS | Machine Dimensions (W*H*D) | 272*355*100 mm | 297.5*468*125mm | | | |
| | Net Weight(KG) | 7.4 | 10 | | | |
| | Package Dimensions(W*H*D) | 570*405*246mm | 610*405*241mm | | | |
| | Gross Weight(KG) | 10 | 12.6 | | | |
| OTHER | Humidity | 5% to 95% Relative Humidity (Non-condensing) | | | | |
| | Operating Temperature | 0°C ~55°C | | | | |
| | Storage Temperature | -15°C ~60°C | | | | |

Pure Sine wave High Frequency solar Inverter(450V)

PH1800 PRO Series (3KW, 5.2KW)



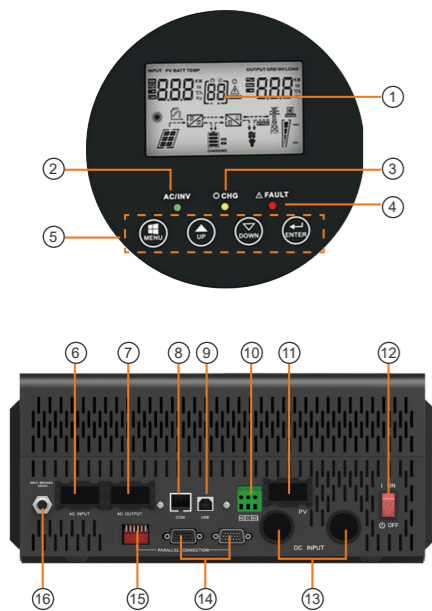
Features

- Pure sine wave output
- Smart LCD setting (Working modes, Charge Current, Charge Voltage, etc.)
- MAX PV Array Open Circuit Voltage: 450V
- Can provide the power to the load without battery
- Combining solar system, AC utility, and battery power source to supply continuous power
- Overload, short circuit and Deep discharge protection
- Cold start function
- Support USB, RS485 monitoring function
- WIFI remote monitoring (optional)
- Compatible to generator

Introduction

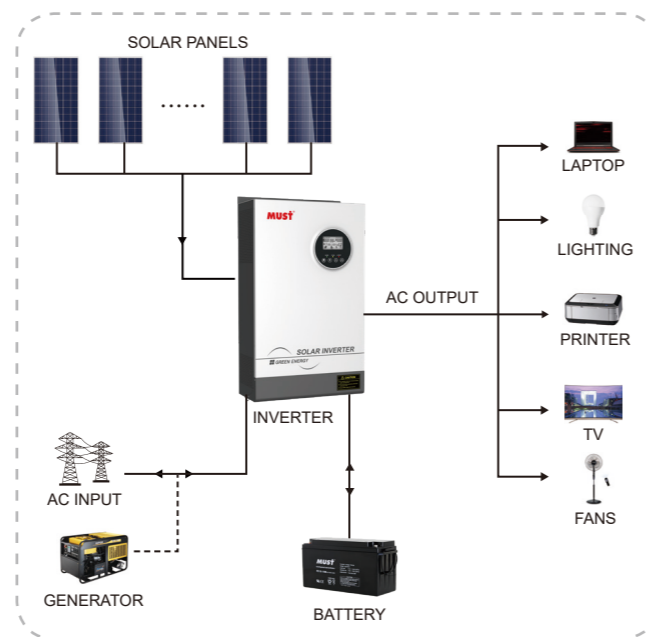
PH1800 PRO is a multi-function inverter/charger, combining functions of inverter, MPPT solar charger and battery charger to offer uninterruptible power support in portable size. PH1800 PRO Series can run without battery. The Maximum PV array open circuit voltage can reach 450V and MPPT voltage is 150~430V, which can help customers make full use of solar energy.

Back panel printing description



- | | |
|------------------------------|---------------------------------|
| 1. LCD Display | 9. USB |
| 2. Status Indicator | 10. Dry Contact |
| 3. Charging Indicator | 11. PV Input |
| 4. Fault Indicator | 12. Power On/Off Switch |
| 5. Function Buttons | 13. Battery Input |
| 6. AC Input | 14. Parallel communication port |
| 7. AC Output | 15. Parallel switch |
| 8. RS-485 Communication port | 16. Circuit breaker |

Solar system connection



Specification

| Model | PH18-3024 PRO | PH18-5248 PRO |
|---------------------------------------|--|----------------|
| Nominal Battery System Voltage | 24VDC | 48VDC |
| INVERTER OUTPUT | | |
| Rated Power | 3000VA \ 3000W | 5200VA \ 5200W |
| Surge Power | 6000W | 10400W |
| Waveform | Pure sine wave | |
| AC Voltage Regulation (Batt.Mode) | 230VAC±5%(Setting) | |
| Inverter Efficiency(Peak) | 90%~93% | |
| Transfer Time | 10ms (UPS \ VDE4105) 20ms (APL) | |
| AC INPUT | | |
| Voltage | 230VAC±5% | |
| Selectable Voltage Range | 170~280VAC(UPS) \ 90~280VAC(APL) | |
| Frequency Range | 50Hz/60Hz(Auto sensing) | |
| BATTERY | | |
| Normal voltage | 24VDC | 48VDC |
| Floating Charge Voltage | 27.4VDC | 54.8VDC |
| Overcharge Protection | 30VDC | 60VDC |
| SOLAR CHARGER & AC CHARGER | | |
| Maximum PV Array Open Circuit Voltage | 450VDC | |
| Maximum PV Array Power | 5000W | |
| PV Array MPPT Voltage Range | 150~430 VDC | |
| Maximum Solar Charge Current | 80A | |
| Maximum AC Charge Current | 60A | |
| Maximum Charge Current | 80A | |
| MECHANICAL SPECIFICATIONS | | |
| Machine Dimensions (W*H*D)(mm) | 289*414*124.5 | 330*488*119 |
| Package Dimensions (W*H*D)(mm) | 393*488*251 | 396*638*241 |
| Net Weight(kg) | 8 | 14 |
| Gross Weight(kg) | 9.5 | 16.4 |
| OTHER | | |
| Humidity | 5% to 95% Relative humidity (Non-condensing) | |
| Operating Temperature | -10°C ~50°C | |
| Storage Temperature | -15°C ~60°C | |

Low Frequency On/Off Grid Hybrid Solar Inverter

PH3000 Series (3KW-4KW)



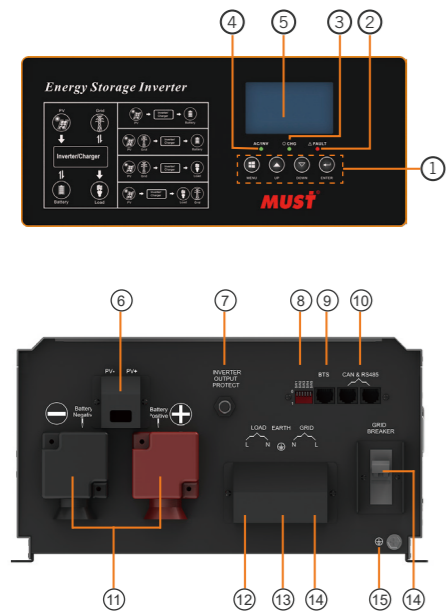
Features

- Rated power 3KW to 4KW
- Smart LCD setting(Working modes, Charge Current, Charge Voltage, etc.)
- MPPT Efficiency max 98%
- Combining solar system, AC utility, and battery power source to supply continuous power
- Multiple operations: basic Grid-tie, Off-Grid, Grid-Interactive
- Parallel operation with up to 3 units
- Support CAN, RS485 monitoring function

Introduction

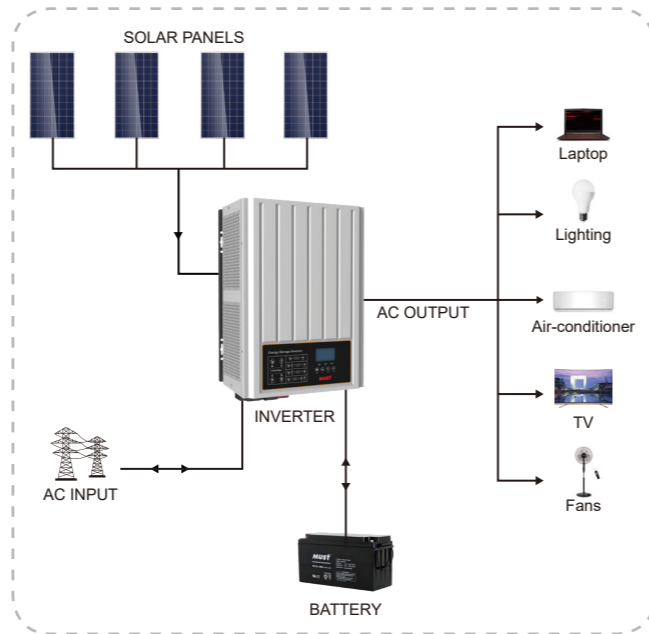
PH3000 series Energy Storage Inverter has capacity of 3KW and 4KW, it is multi-functional, combining functions of inverter, On-Grid, MPPT solar charger and battery charger to offer uninterruptible power support with portable size. Its comprehensive LCD display offers user-configurable and easy-accessible button operation such as battery charging current, AC/solar charger priority, and acceptable input voltage based on different applications.

Back panel printing description



- | | |
|----------------------------|----------------------------------|
| 1. Function Buttons | 9. BTS |
| 2. Fault Indicator | 10. CAN&RS485 communication port |
| 3. Charging Indicator | 11. Battery input |
| 4. Status Indicator | 12. Load |
| 5. LCD Display | 13. Earth |
| 6. PV input | 14. Grid |
| 7. Inverter output protect | 15. Earth |
| 8. Switch | |

Solar system connection




Specification

| MODEL | PH30-3048 | PH30-4048 | |
|--|------------------------------------|---|---------------|
| Nominal Battery System Voltage | 48VDC | | |
| INVERTER OUTPUT | Rated capacity | 3750VA | 5000VA |
| | Rated output power | 3000W | 4000W |
| | Rated output voltage and frequency | 230Vac / 50Hz or 60Hz | |
| | Rated output current | 13A | 17.4A |
| | Output voltage precision | 230Vac ± 1% | |
| | Output frequency precision | 50Hz ± 0.1% | |
| | THD (Linvar loads) | Off grid ≤ 2% | |
| | | Grid discharge ≤ 3% | |
| | | Grid charge ≤ 3% | |
| | Dynamic response speed | 20ms | |
| | Power factor | Grid discharge 99.9% & Grid charge 99.9% | |
| | Overload capability | 30 minutes @ 100%<load≤110% | |
| | | 1 minutes @ 100%<load≤125% | |
| | | 30 seconds @ 125%<load≤150% | |
| 10 seconds @ 150%<load≤200% | | | |
| 5 seconds @ load>200% | | | |
| | 5 seconds @ short circuit | | |
| Grid / Off grid change time | < 10ms | | |
| Output wave | Sine wave | | |
| Inverting efficiency 80% resistive loads | ≥93% | ≥93% | |
| AC INPUT | AC input maximum current | 26A | 34.8A |
| | Acceptable input voltage range | Defaults 186Vac ~253Vac; Narrow 174Vac ~272Vac; Wide 95Vac ~272Vac | |
| | AC Input frequency | 47.5Hz ~ 51.5Hz | |
| BATTERY | Rated input voltage | 48VDC | |
| | Allowed input DC voltage range | 40VDC~62VDC | |
| | Low voltage alarm | 42VDC | |
| | High voltage alarm | 60VDC | |
| SOLAR CHARGER & AC CHARGER | PV Open Circuit Voltage | 145VDC | |
| | Max Solar Charging Current | 60A | 60A |
| | Max AC Charging Current | 60A | 80A |
| DISPLAY & PROTECTION FUNCTION | LED indication | Systematic operation, indication of charge and discharge, indication of fault | |
| | LCD display | output voltage, output current, grid voltage, grid current, voltage of storage battery, load power, chart of capacity | |
| | Protection Function | Input LV protection | |
| | | Input OV protection | |
| Output overload protection | | | |
| | Output short circuit Protection | | |
| MECHANICAL SPECIFICATIONS | Mounting | Wall mounted | |
| | Machine Dimensions (W*H*D)(mm) | 337*462*183mm | 370*462*183 |
| | Package Dimensions (W*H*D)(mm) | 476*602*325mm | 476*602*325mm |
| | Net Weight (kg) | 29.5 | 35 |
| | Gross Weight (kg) | 33 | 38.5 |
| OTHER | Communication terminal | RS485 / CAN bus | |
| | Operation Temperature Range | 0°C~ +50°C | |
| | Environmental Protection Rating | Indoor(IP20) | |
| | Ambient humidity | 0~90% relative humidity (non-condensing) | |
| | Altitude | ≤3000m | |

Low Frequency On/Off Grid Hybrid Solar Inverter

PH3000 Series (10-12KW)



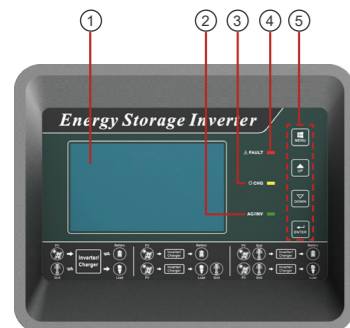
Features

- Rated power 10KW to 12KW
- Smart LCD setting(Working modes, Charge Current, Charge Voltage, etc.)
- Built-in MPPT 180A solar charge controller
- MPPT Efficiency max 98%
- Combining solar system, AC utility, and battery power source to supply continuous power
- Multiple operations: basic Grid-tie, Off-Grid, Grid-Interactive
- Support CAN, RS485 monitoring function

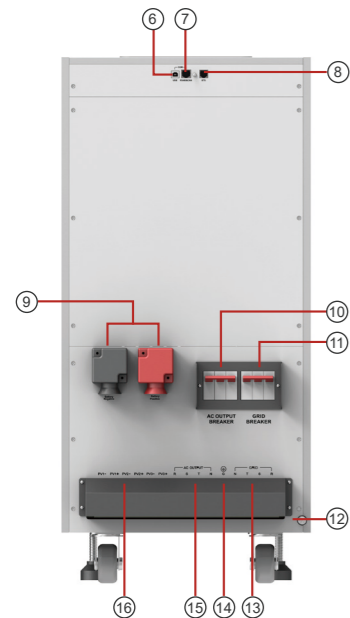
Introduction

This model PH3000 Three-phase is a flexible and intelligent energy storage inverter which utilizes solar power, utility power, and battery power source to supply continuous power. This is a multi-functional hybrid inverter which can power all kinds of appliances in home or office environment, including motor-type appliances such as tube light, fan, refrigerator and air conditioner. The system generates electricity when it has sufficient sunshine, supplying power to your home and feeding any surplus power back to the Grid.

Back panel printing description

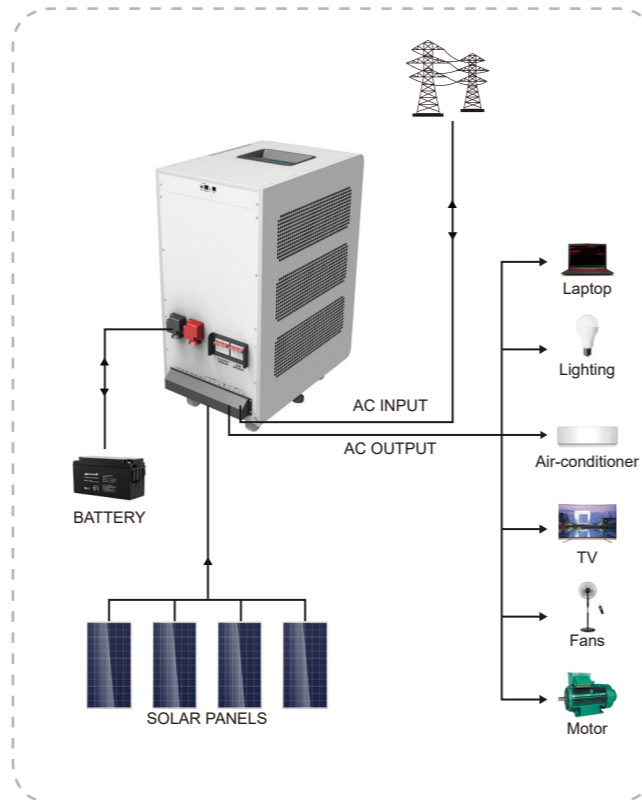


1. LCD Display
2. Status Indicator
3. Charging Indicator
4. Fault Indicator
5. Function Buttons
6. USB communication port
7. CAN/RS485 communication



8. BTS
9. Battery input
- 10.AC output breaker
- 11.Grid breaker
- 12.Grounding
- 13.Grid
- 14.Grounding
- 15.AC output
- 16.PV input

Solar system connection



Type of Battery

PH3000 series can be used with lithium battery pack or lead-acid battery, to keep your appliances running for days.



Wall-mounted lithium battery



Rack-mounted lithium battery

Specification

| MODEL | | PH30-10048-T | PH30-12048-T |
|--------------------------------|---|---|-----------------|
| Nominal Battery System Voltage | | 48VDC | |
| INVERTER OUTPUT | Rated output power | 10000W | 12000W |
| | Output wave | Pure sine wave | |
| | Nominal output voltage | 230 VAC (P-N) / 400 VAC (P-P) | |
| | Nominal output current | 14.3A per phase | 17.4A per phase |
| | Nominal output frequency | 50 Hz / 60 Hz | |
| | Rate of wave distortion(THD)(Linearity loads) | Off grid≤2%; Grid discharge ≤3%; Grid charge ≤3% | |
| | Peak efficiency | ≥93% | |
| Overload capability | 100%<load≤110%,30 minutes; 110%<load≤125%,1 minutes; 125%<load≤150%,30 seconds; load<150%,10 seconds; Short circuit,5 seconds | | |
| AC INPUT | AC input maximum current | 26.0A per phase | 34.8A per phase |
| | Nominal frequency | 50Hz / 60Hz | |
| | Acceptable input voltage range | Defaults 186Vac ~253Vac per phase;Narrow 174Vac ~272Vac per phase; Wide 95Vac ~272Vac per phase | |
| BATTERY | Type of Battery | Lithium battery or lead-acid battery | |
| | Nominal Voltage | 48VDC | |
| | Low Voltage Protection Point | Charger 34.0VDC; Inverter 40.0VDC | |
| | Absorption Voltage | 50.0VDC | |
| | Refloat Voltage | 54.8VDC | |
| Float Voltage | 57.2VDC | | |
| SOLAR CHARGER & AC CHARGER | PV Open Circuit Voltage | 145VDC | |
| | Max Solar Charging Current | 60A per channel | |
| | Max AC Charging Current | 60A per phase | 80A per phase |
| | Max Charging Current | 120A per phase | 140A per phase |
| MECHANICAL SPECIFICATIONS | Mounting | Vertical | |
| | Machine Dimension, W*H*D(mm) | 392*828*629 | |
| | Package Dimensions (W*H*D)(mm) | 513*1031*700 | |
| | Net Weight (kg) | 133 | 140 |
| | Gross Weight (kg) | 128 | 160 |
| OTHER | Communication terminal | RS485 / CAN bus | |
| | Operation Temperature Range | 0°C ~ +50°C | |
| | Environmental Protection Rating | IP20 | |
| | Ambient humidity | 0 -- 90% relative humidity (non-condensing) | |
| | Altitude | ≤2000m | |

The technical specifications of this document are subject to change without any notice