

WKS - Multisolar Inverter Setup SOP - Pylon Battery

1. Multisolar (InfiniSolar) - On-grid Solution

(1) Inverter Spec.:

InfiniSolar On-grid Inverter with Energy Storage Selection Guide

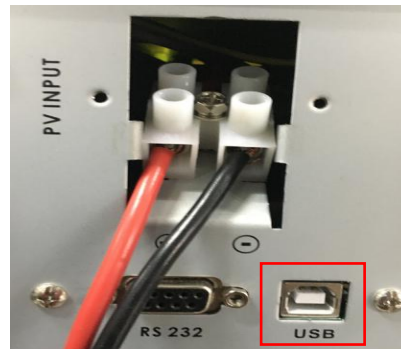
| MODEL | InfiniSolar 2KW | InfiniSolar Plus 3KW | InfiniSolar Plus 5KW | InfiniSolar 3P 10KW |
|--|--|-------------------------|-------------------------------------|---|
| PHASE | 1-phase In / 1-phase out | | | 3-phase In / 3-phase out |
| MAXIMUM PV INPUT POWER | 2250 W | 4500 W | 10000 W | 14850 W |
| RATED OUTPUT POWER | 2000 W | 3000 W | 5000 W | 10000 W |
| MAXIMUM CHARGING POWER | 1200 W | | 4800 W | 9600 W |
| GRID-TIE OPERATION | | | | |
| PV INPUT (DC) | | | | |
| Nominal DC Voltage / Maximum DC Voltage | 300 VDC / 350 VDC | 360 VDC / 500 VDC | 720 VDC / 900 VDC | 720 VDC / 900 VDC |
| Start-up Voltage / Initial Feeding Voltage | 80 VDC / 120 VDC | 116 VDC / 150 VDC | 225 VDC / 250 VDC | 320 VDC / 350 VDC |
| MPP Voltage Range | 120 VDC ~ 320 VDC | 250 VDC ~ 460 VDC | 260 VDC ~ 850 VDC | 400 VDC ~ 800 VDC |
| Number of MPP Trackers / Maximum Input Current | 1 / 1 x 16 A | 1 / 1 x 18 A | 2 / 2 x 10 A | 2 / 2 x 18.6A |
| GRID OUTPUT (AC) | | | | |
| Nominal Output Voltage | 101/110/120/127 VAC | 208/220/230/240 VAC | | 230 VAC (P-N) / 400 VAC (P-P) |
| Output Voltage Range | 88 - 127 VAC* | 184 - 265 VAC* | | 184 - 265 VAC* per phase |
| Nominal Output Current | 18 A | 13 A | 21 A | 14.5A per phase |
| Power Factor | > 0.99 | | | |
| EFFICIENCY | | | | |
| Maximum Conversion Efficiency (DC/AC) | 95% | | 96% | |
| European Efficiency@ Vnominal | 94% | | 95% | |
| OFF-GRID OPERATION | | | | |
| AC INPUT | | | | |
| AC Start-up Voltage/Auto Restart Voltage | 60 - 70 VAC / 85 VAC | 120 - 140 VAC / 180 VAC | | 120 - 140 VAC per phase / 180 VAC per phase |
| Acceptable Input Voltage Range | 80 - 130 VAC | 170 - 280 VAC | | 170 - 280 VAC per phase |
| Maximum AC Input Current | 30 A | | 40 A | |
| PV INPUT (DC) | | | | |
| Maximum DC Voltage | 350 VDC | 500 VDC | 900 VDC | 900 VDC |
| MPP Voltage Range | 150 VDC ~ 320 VDC | 250 VDC ~ 460 VDC | 250 VDC ~ 850 VDC | 400 VDC ~ 800 VDC |
| Number of MPP Trackers / Maximum Input Current | 1 / 1 x 15 A | 1 / 1 x 18 A | 2 / 2 x 10A | 2 / 2 x 18.6A |
| BATTERY MODE OUTPUT (AC) | | | | |
| Nominal Output Voltage | 101/110/120/127 VAC | 202/208/220/230/240 VAC | 202/208/220/230/240 VAC | 230 VAC (P-N) / 400 VAC (P-P) |
| Output Waveform | Pure Sinewave | | | |
| Efficiency (DC to AC) | 90% | 93% | | 91% |
| HYBRID OPERATION | | | | |
| PV INPUT (DC) | | | | |
| Nominal DC Voltage / Maximum DC Voltage | 300 VDC / 350 VDC | 360 VDC / 500 VDC | 720 VDC / 900 VDC | 720 VDC / 900 VDC |
| Start-up Voltage / Initial Feeding Voltage | 80 VDC / 120 VDC | 116 VDC / 150 VDC | 225 VDC / 250 VDC | 320 VDC / 350 VDC |
| MPP Voltage Range | 150 VDC ~ 320 VDC | 250 VDC ~ 460 VDC | 250 VDC ~ 850 VDC | 400 VDC ~ 800 VDC |
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| GRID OUTPUT (AC) | | | | |
| Nominal Output Voltage | 101/110/120/127 VAC | 202/208/220/230/240 VAC | 202/208/220/230/240 VAC | 230 VAC (P-N) / 400 VAC (P-P) |
| Output Voltage Range | 88-127 VAC* | 184 - 264.5 VAC* | | 184 - 264.5 VAC* per phase |
| Nominal Output Current | 18 A | 13 A | 21 A | 14.5 A per phase |
| AC INPUT | | | | |
| AC Start-up Voltage / Auto Restart Voltage | 60 - 70 VAC / 85 VAC | 120 - 140 VAC / 180 VAC | | 120 - 140 VAC per phase / 180 VAC per phase |
| Acceptable Input Voltage Range | 80 - 130 VAC | 170 - 280 VAC | | 170 - 280 VAC per phase |
| Maximum AC Input Current | 30 A | | 40 A | |
| BATTERY MODE OUTPUT (AC) | | | | |
| Nominal Output Voltage | 101/110/120/127 VAC | 202/208/220/230/240 VAC | 202/208/220/230/240 VAC | 230 VAC (P-N) / 400 VAC (P-P) |
| Efficiency (DC to AC) | 90% | 93% | | 91% |
| BATTERY & CHARGER | | | | |
| Nominal DC Voltage | 48 VDC | | | |
| Maximum Charging Current | Default 25A, 5A - 25A (Adjustable) | | Default 60A, 5A - 100A (Adjustable) | Default 80A, 10A - 200A (Adjustable) |
| GENERAL | | | | |
| PHYSICAL | | | | |
| Dimension, D X W X H (mm) | 107 x 438 x 480 | | 204.2 x 460 x 600 | 167.5 x 500 x 622 |
| Net Weight (kgs) | 15.5 | | 29 | 45 |
| INTERFACE | | | | |
| Communication Port | RS-232/USB | | RS-232/USB and CAN Interface | |
| Intelligent Slot | Optional SNMP, Modbus and AS-400 cards available | | | |
| ENVIRONMENT | | | | |
| Humidity | 0 ~ 90% RH (Non-Condensing) | | | |
| Operating Temperature | 0 to 40°C | | -10 to 55°C | |
| Altitude | 0 ~ 1000 m** | | | |

(2) General Compatible Condition:

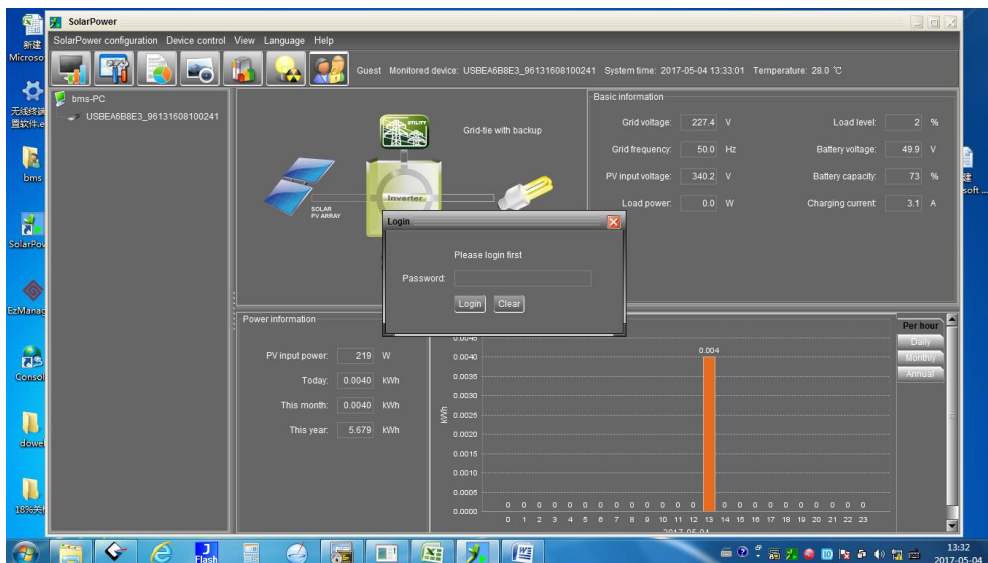
| | | | |
|--------------------------|--|----------------------|---|
| Battery Type | US2000B/Phantom-S | | |
| Inverter Type | Infinisolar 2kW | Infinisolar Plus 3kW | Infinisolar Plus 5kW Infinisolar 3P 10kW |
| Recommend battery Amount | According to load requirement and inverter rated power. Battery Amount N = Load power/1200W | | |
| Communication | Not required, but need finish the setting on Inverter software | | |
| DOD | 80% | | |
| Working Temp. | 0 - 50°C (Indoor operation) | | |
| Charge/Discharge Current | N*25, N = Battery amount | | |
| Warranty | 5yrs | | |

(3) Inverter set up:

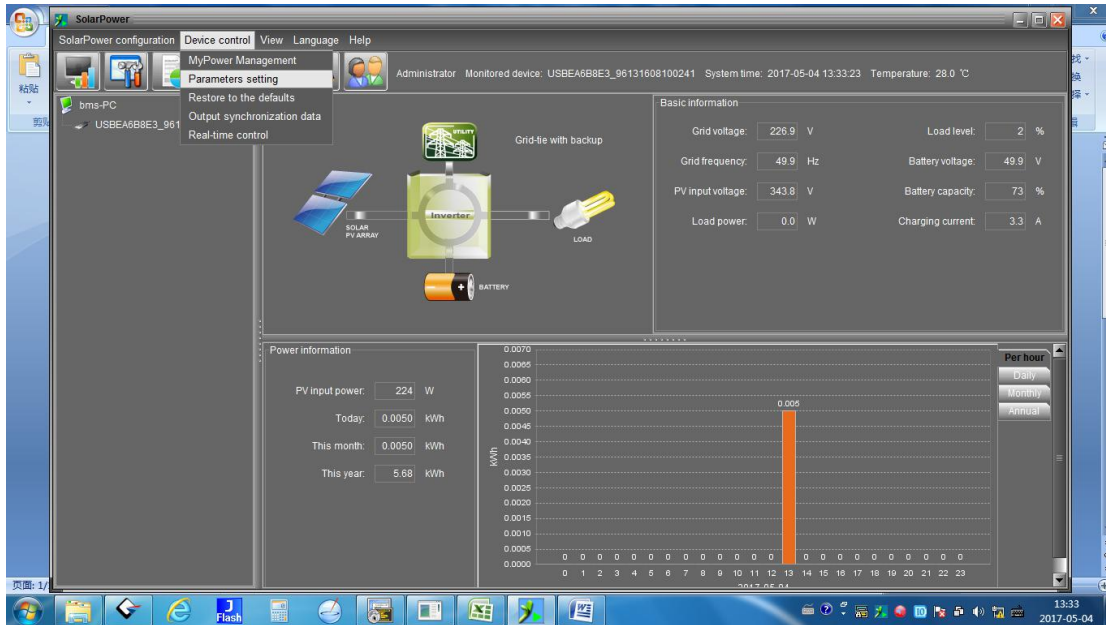
(a) Connect PV or Grid power to wake up inverter; Connect the communication cable from Inverter to computer.



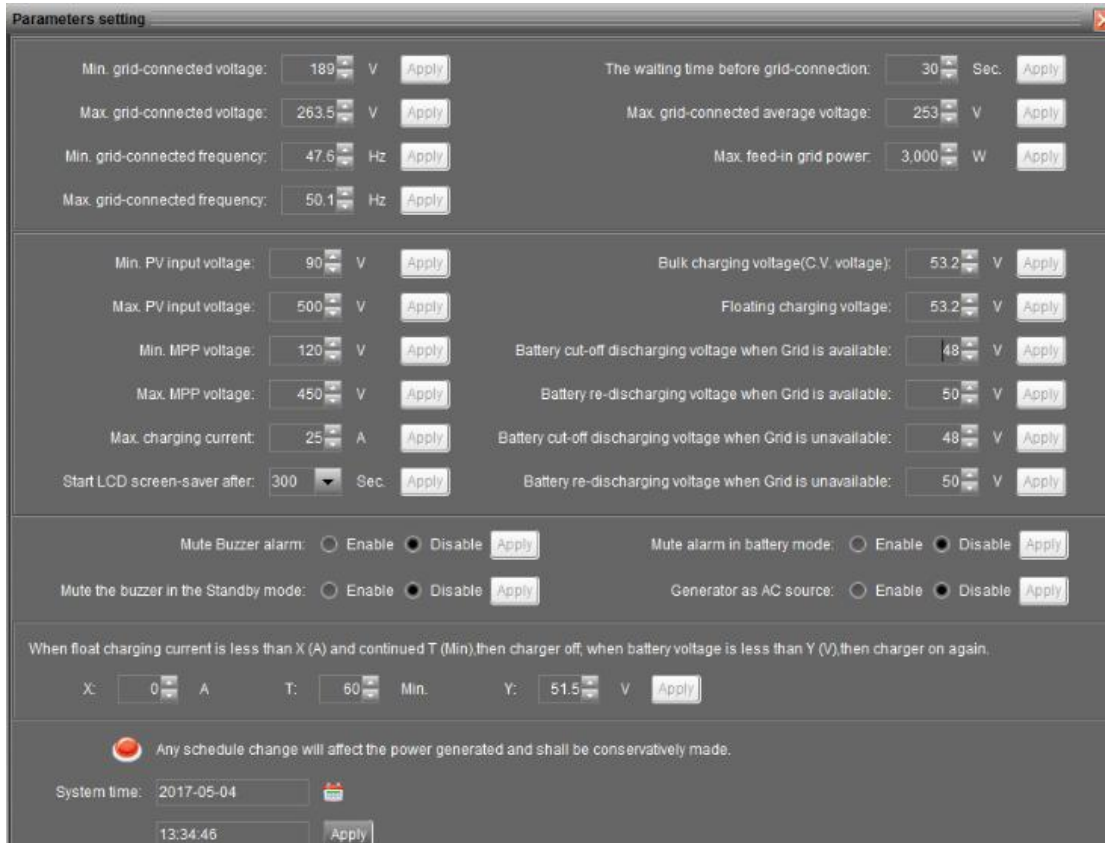
(b) Open 'Solarpower.exe'(the inverter set up software), Log in .



(c) Press 'Parameters Setting'.



(d) Set the parameter according to below recommendation, the max. charge current refer to the specific battery amount of real application. Then click 'Apply'. According to the inverter limitation, for 2kW&3kW inverter max. is 25A, for 5kW max. is 100A, for 10kW max. is 200A.



2. WKS (Axpert) - Off-grid Solution

(1) Inverter Spec.:

| MODEL | Axpert MKS 1K-24 | Axpert MKS 1K-48 | Axpert MKS 2K-24 | Axpert MKS 3K-24 | Axpert MKS 3K-48 | Axpert MKS 4K | Axpert MKS 5K |
|---------------------------------------|--|------------------|------------------|------------------|------------------|-----------------|---------------|
| Rated Power | 1000VA/800W | 1000VA/1000W | 2000VA/1600W | 3000VA/2400W | 3000VA/2400W | 4000VA/3200W | 5000VA/4000W |
| INPUT | | | | | | | |
| Voltage | 230 VAC | | | | | | |
| Selectable Voltage Range | 170-280 VAC (For Personal Computers) 90-280 VAC (For Home Appliances) | | | | | | |
| Frequency Range | 50 Hz/60 Hz (Auto sensing) | | | | | | |
| OUTPUT | | | | | | | |
| AC Voltage Regulation (Batt. Mode) | 230VAC ± 5% | | | | | | |
| Surge Power | 2000VA | 4000VA | 6000VA | 8000VA | 10000VA | | |
| Efficiency (Peak) | 90% - 93% | | 93% | | | | |
| Transfer Time | 10 ms (For Personal Computers); 20 ms (For Home Appliances) | | | | | | |
| Waveform | Pure sine wave | | | | | | |
| BATTERY | | | | | | | |
| Battery Voltage | 24 VDC | 48 VDC | 24 VDC | 24 VDC | 48 VDC | 48 VDC | |
| Floating Charge Voltage | 27 VDC | 54 VDC | 27 VDC | 27 VDC | 54 VDC | 54 VDC | |
| Overcharge Protection | 31 VDC | 62 VDC | 31 VDC | 31 VDC | 62 VDC | 60 VDC | |
| SOLAR CHARGER & AC CHARGER | | | | | | | |
| Maximum PV Array Power | 600W | 900W | 600W | 600W | 900W | 4000W | |
| MPPT Range @ Operating Voltage | 30VDC ~ 66VDC | 60VDC ~ 88VDC | 30VDC ~ 66VDC | 30VDC ~ 66VDC | 60VDC ~ 88VDC | 60VDC ~ 115VDC | |
| Maximum PV Array Open Circuit Voltage | 75VDC | 102VDC | 75VDC | 75VDC | 102VDC | 145 VDC | |
| Maximum Solar Charge Current | 25A | 18A | 25A | 25A | 18A | 80 A | |
| Maximum AC Charge Current | 20A | 15A | 30A | 30A | 15A | 60 A | |
| Maximum Charge Current | 45A | 33A | 55A | 55A | 33A | 140 A | |
| Maximum Efficiency | 98% | | | | | | |
| Standby Power Consumption | 2 W | | | | | | |
| PHYSICAL | | | | | | | |
| Dimension, D x W x H (mm) | 100 x 272 x 355 | | | | | 120 x 295 x 488 | |
| Net Weight (kgs) | 6.8 | 7.0 | 7.4 | | | | 11 |
| OPERATING ENVIRONMENT | | | | | | | |
| Humidity | 5% to 95% Relative Humidity (Non-condensing) | | | | | | |
| Operating Temperature | 0°C - 55°C | | | | | | |
| Storage Temperature | -15°C - 60°C | | | | | | |

(2) General Compatible Condition:

| | | | | |
|--------------------------|--|------------------|---------------|---------------|
| Battery Type | US2000B/Phantom-S | | | |
| Inverter Type | Axpert MKS 1K-48 | Axpert MKS 3K-48 | Axpert MKS 4K | Axpert MKS 5K |
| Max. charge current | 33A | 33A | 140A | 140A |
| Recommend battery Amount | According to load requirement and inverter rated power. Battery Amount N = Load power/1200W | | | |
| Communication | Not required, but need finish the setting on Inverter. | | | |
| DOD | 80% | | | |
| Working Temp. | 0 - 50°C (Indoor operation) | | | |
| Charge/Discharge Current | N*25, N = Battery amount | | | |
| Warranty | 5yrs | | | |

(3) Inverter set up:

(a) Connect Inverter with battery, wake up inverter.



(b) Press 'Enter' for 5s, to enter into the setting.



(c) Press 'Up' and 'Down' to choose the setting item No., press 'Enter' to enter into the detailed setting parameter, when finish press 'Enter' again. The following setting items need to be set follow the recommended value:

| Item No. | Setting Value |
|------------|--------------------------------|
| Program 02 | Set to N*25A, N=battery amount |
| Program 05 | Set to USE |
| Program 12 | Set to 48V |
| Program 13 | Set to 51V |
| Program 26 | Set to 53.2V |
| Program 29 | Set to 47.5V |



Note: Axpert Inverter can only be waked up via battery, if the battery is turned off due to over-discharge, over temp. or other reasons, in order to wake up the inverter you need turn on the battery manually.

Any further questions to this SOP please contact us via service@pylontech.com.cn