

Typical Application Instruction for LXP 3-6k Hybrid

List

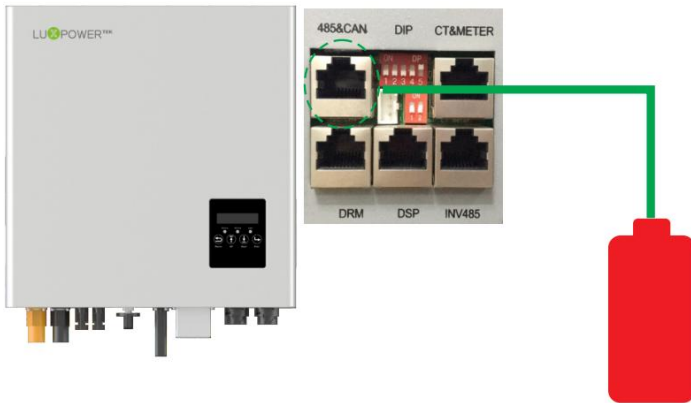
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1. Battery configuration

1.1 Lithium Battery

- Step1: Please make sure the battery input voltage is within the operation range:40-60Vdc;
- Step2: You can make sure the Lithium battery can be compatible with LXP 3-6K Hybrid ;
- Step3: Please make sure the PINs layout of both the inverter and battery are correct ;
- Step4: Please make sure the DIP configuration and comm cables among the batteries are correct ;
- Step5: Please select the correct battery brand option via the LCD of Inverter .

Connection between inverter and battery



RJ45 Terminal Configuration of Battery Communication

Red color switch		ON
Pin	Function Description	1 2
1	BAT 485 B	
2	BAT 485 A	
3	BAT CAN L	
4	BAT CAN H	
5	NC	
6	NC	
7	NC	
8	GND-S	

Blue color switch		ON
Pin	Function Description	1 2
1	BAT 485 B	
2	BAT 485 A	
3	NC	
4	BAT CAN H	
5	BAT CAN L	
6	GND-S	
7	NC	
8	NC	

Note: The new batch of inverter are with blue DIP ,and the PINs layout for the battery is different for the old batch with red DIP , just keep the correct PINs and re-make comms cable and disconnect the unused PINs if necessary .

1.2 Lead-acid Battery

Step1: Pleasemake sure the battery input voltage is within the operation range:40-60Vdc;

Step2: Please set as Lead-acid battery mode via the LCD of Inverter .

Step3: Please confirm the charge and discharge parameters via the APP or Webserver

The default settings show as below ,and you can change it according to the recommended value in the battery manual.

Lead-acid Battery Setting	
Charge Voltage for Lead-Acid Battery	56 Set
Charge Temperature Low Limit	0 Set
Charge Current Limit(A)	100 Set
Floating Voltage(V)	54 Set
Charge Temperature High Limit	40 Set
Lead-acid Battery Setting	
Discharge Cut-off Voltage(V) (?)	42 Set
Discharge Temperature Low Limit (?)	-20 Set
On Grid Discharge Derate Vbat	40 Set
Discharge Current Limit(A) (?)	100 Set
Discharge Temperature High Limit (?)	55 Set
Start Discharge P_import	100 Set

2. Working modes

2.1. Self-use mode: Default working mode ,the external CT or meter installation is required, and the PV power will be first used to supply load , and the excess power can be used to charge battery ,

◆ and if PV power > charge power+ load consumption, the excess part can be exported to grid;

◆ and if PV power < load consumption, the battery will discharge the insufficient part to take the load;

◆ and if PV power + battery discharge power < load consumption, the insufficient part will be drawn from grid;

◆ without the charge hours , the inverter will always work in self-use mode .

The default settings are shown as below:

AC Charge disable ,Charge Priority disable, Forced discharge disable;

Select station first Sn3K-12-Parallel 1132012007 Road

Charge Setting

System Charge Power Rate(%) (?) 100 Set Charge Last Enable Disable

Equalization Voltage(V) 0 Set Equalization Period(Days) 0 Set

Equalization Time(Hours) 0 Set

AC Charge

AC Charge Enable Enable **Disable**

AC Charge Power Rate(%) 100 Set AC Battery Charge Level(%) 100 Set

AC Charge Start Time 1 00 : 00 Set AC Charge Start Time 2 00 : 00 Set AC Charge Start Time 3 00 : 00 Set

AC Charge End Time 1 00 : 00 Set AC Charge End Time 2 00 : 00 Set AC Charge End Time 3 00 : 00 Set

Charge Priority

Charge Priority (?) Enable **Disable**

Priority Charge Rate(%) 100 Set Priority Charge Level(%) (?) 100 Set

Charge First Start Time 1 00 : 00 Set Charge First Start Time 2 00 : 00 Set Charge First Start Time 3 00 : 00 Set

Charge First End Time 1 00 : 00 Set Charge First End Time 2 00 : 00 Set Charge First End Time 3 00 : 00 Set

Lead-acid Battery Setting

Charge Voltage for Lead-Acid Battery 350 Set Floating Voltage(V) 0 Set

Charge Temperature Low Limit 0 Set Charge Temperature High Limit 40 Set

Charge Current Limit(A) 12 Set

Discharge Setting

System Discharge Power Rate(%) (?) 100 Set On-grid Discharge Cut-off SOC (?) 10 Set Off-grid Discharge Cut-off SOC 0 Set

Forced Discharge

Forced Discharge Enable Enable **Disable**

Forced Discharge Power Rate(%) 100 Set Forced Discharge Battery Level(%) 20 Set

Forced Discharge Start Time 1 00 : 00 Set Forced Discharge Start Time 2 00 : 00 Set Forced Discharge Start Time 3 00 : 00 Set

Forced Discharge End Time 1 00 : 00 Set Forced Discharge End Time 2 00 : 00 Set Forced Discharge End Time 3 00 : 00 Set

Lead-acid Battery Setting

Discharge Cut-off Voltage(V) (?) 300 Set Discharge Current Limit(A) (?) 12 Set

Discharge Temperature Low Limit (?) -20 Set Discharge Temperature High Limit (?) 55 Set

On Grid Discharge Derate Vbat 0 Set Start Discharge P_import 0 Set

You can also adjust the DOD of the battery by changing “On-grid discharge cut-off SOC”, It is 10% and DOD is 90% as default (DOD=100% - On-grid discharge cut-off SOC) . For example, if you want the DOD to be 80% , you can just set “On-grid discharge cut-off SOC” to 20%

Discharge Setting

System Discharge Power Rate(%) (?) 100 Set **On-grid Discharge Cut-off SOC (?) 20 Set** Off-grid Discharge Cut-off SOC 0 Set

Forced Discharge

Forced Discharge Enable Enable **Disable**

Forced Discharge Power Rate(%) 100 Set Forced Discharge Battery Level(%) 20 Set

Forced Discharge Start Time 1 00 : 00 Set Forced Discharge Start Time 2 00 : 00 Set Forced Discharge Start Time 3 00 : 00 Set

Forced Discharge End Time 1 00 : 00 Set Forced Discharge End Time 2 00 : 00 Set Forced Discharge End Time 3 00 : 00 Set

2.2. Charge first mode: If you need to make sure the PV power can be used to charge battery first while the grid power is on ,but you don't want to use grid power to charge the battery , you can set Charge Priority enable

- ◆ and if PV power < Charge power, then the load will draw power from the grid;
- ◆ and if PV power > charge power, but PV power < Charge power + Load consumption , the insufficient part will be drawn from grid;
- ◆ and if PV power > Charge power + Load consumption , the excess part can be exported to grid;
- ◆ within the charge hours , the battery won't discharge power to take loads .

The settings should be like this:

Charge Priority enable, Charge hours , Priority charge rate and Priority charge Level;

Charge Setting

System Charge Power Rate(%) (?) 100 Set

Charge Last Enable **Disable**

Equalization Voltage(V) 0 Set

Equalization Period(Days) 0 Set

Equalization Time(Hours) 0 Set

AC Charge

AC Charge Enable Enable **Disable**

AC Charge Power Rate(%) 100 Set

AC Battery Charge Level(%) 100 Set

AC Charge Start Time 1 00 : 00 Set

AC Charge Start Time 2 00 : 00 Set

AC Charge Start Time 3 00 : 00 Set

AC Charge End Time 1 00 : 00 Set

AC Charge End Time 2 00 : 00 Set

AC Charge End Time 3 00 : 00 Set

Charge Priority

Charge Priority (?) Enable **Disable**

Priority Charge Rate(%) 100 Set

Priority Charge Level(%) (?) 100 Set

Charge First Start Time 1 08 : 00 Set

Charge First Start Time 2 00 : 00 Set

Charge First Start Time 3 00 : 00 Set

Charge First End Time 1 18 : 00 Set

Charge First End Time 2 00 : 00 Set

Charge First End Time 3 00 : 00 Set

That means the PV power will prioritize to charge the battery during the charge hours: 08:00-18:00, and if the battery SOC reaches priority charge level(100%) in advance, the PV power will be used to take loads ,and battery won't discharge power to take loads during the charge hours even though the PV power is insufficient .

2.3. Charge and discharge according to the price at different time period:

If you need to charge the battery when grid electricity price is low , and discharge power when grid electricity price is high

The settings could be like this:

For example , Low price time period: 00:00-04:00, 12:00-16:00, and High price time period: 04:00-12:00, 16:00-19:00

That means the grid power is allowed to charge the battery during time period 00:00-04:00 and 12:00-16:00, and when the PV power is available , the PV power can be used to charge battery first , but the battery won't discharge during the charge hours . And out of the charge hours , the battery will discharge based on the load consumption, but if you want discharge power to the grid with a certain power , you can enable “ Forced discharge”function

Charge Setting

System Charge Power Rate(%) (?) 100 Set

Charge Last Enable **Disable**

Equalization Voltage(V) 0 Set

Equalization Period(Days) 0 Set

Equalization Time(Hours) 0 Set

AC Charge

AC Charge Enable **Enable** Disable

AC Charge Power Rate(%) 100 Set

AC Battery Charge Level(%) 100 Set

AC Charge Start Time 1 00 : 00 Set

AC Charge Start Time 2 12 : 00 Set

AC Charge Start Time 3 00 : 00 Set

AC Charge End Time 1 04 : 00 Set

AC Charge End Time 2 16 : 00 Set

AC Charge End Time 3 00 : 00 Set

Charge Priority

Charge Priority (?) **Enable** Disable

Priority Charge Rate(%) 100 Set

Priority Charge Level(%) (?) 100 Set

Charge First Start Time 1 12 : 00 Set

Charge First Start Time 2 00 : 00 Set

Charge First Start Time 3 00 : 00 Set

Charge First End Time 1 16 : 00 Set

Charge First End Time 2 00 : 00 Set

Charge First End Time 3 00 : 00 Set

2.4. Zero export: If you don't want to export the excess PV power , you can set “ Feed in grid disable”, and if the export power should be 0 W strictly , you can set “Fast zero export enable” .

Application Setting

EPS Frequency Set(Hz) (?) 50 Set

Power Backup (?) Enable **Disable**

Micro-Grid Enable **Disable**

Feed-in Grid Enable **Disable**

Fast Zero Export **Enable** Disable

Seamless EPS switching Enable **Disable**

PV Grid Off (?) Enable **Disable**

Feed-in Grid Power(%) 0 Set

Normal / Standby **Normal** Standby

Battery Shared Enable **Disable**

Set System Type (?) 1 Phase Primary Set

Set Composed Phase (?) Phase R Phase R Set

Max. AC Input Power 65535 Set

With this solution , the external CT should be installed .

If you just set “Feed in grid disable” , there may be small export power when the load consumption suddenly changes. And if you enable “Fast zero export “ function ,the export power can be 0Watt strictly , but sometimes there may be small import power when the load changes suddenly.

2.5. Power back-up: If the grid power is available but unstable , you can enable Power back function , so there will be EPS output at EPS port when the grid power is out .

Application Setting

EPS Frequency Set(Hz) (?) 50 Set

Power Backup (?) **Enable** **Disable**

Micro-Grid Enable **Disable**

Feed-in Grid **Enable** **Disable**

Fast Zero Export Enable **Disable**

Seamless EPS switching Enable **Disable**

PV Grid Off (?) Enable **Disable**

Feed-in Grid Power(%) 100 Set

Normal / Standby **Normal** Standby

Battery Shared Enable **Disable**

Set System Type (?) Subordinates Set

Set Composed Phase (?) Phase R Phase R Set

Max. AC Input Power 65535 Set

The default output voltage is 230Vac , so you can test before connecting the loads to EPS port.

2.6. Micro-grid mode: If the grid power is unavailable and it is totally an off-grid system, you can enable “ Power backup” and at the same time please enable “Micro-grid” function , so when the generator is on , the battery will get charged automatically

Application Setting

EPS Frequency Set(Hz) (?) 50 Set

Power Backup (?) **Enable** **Disable**

Micro-Grid **Enable** **Disable**

Feed-in Grid Enable **Disable**

Fast Zero Export Enable **Disable**

Seamless EPS switching Enable **Disable**

PV Grid Off (?) Enable **Disable**

Feed-in Grid Power(%) 100 Set

Normal / Standby **Normal** Standby

Battery Shared Enable **Disable**

Set System Type (?) Subordinates Set

Set Composed Phase (?) Phase R Phase R Set

Max. AC Input Power 65535 **Set**

If the capacity of the generator is not powerful enough and you need to limit the input power ,then the external CT is needed to connect, or you can also just limit the charge power.

Tips: If you need to read more of Generator Auto-start function ,you can refer to the

“ Guidance for Auto Starting Generator”