

LVX6048WP Parallel Installation Guide

Introduction

This inverter can be used in parallel with maximum 6 units. The supported maximum output power is 36KW/36KVA.

Parallel cable

You will find the following items in the package:

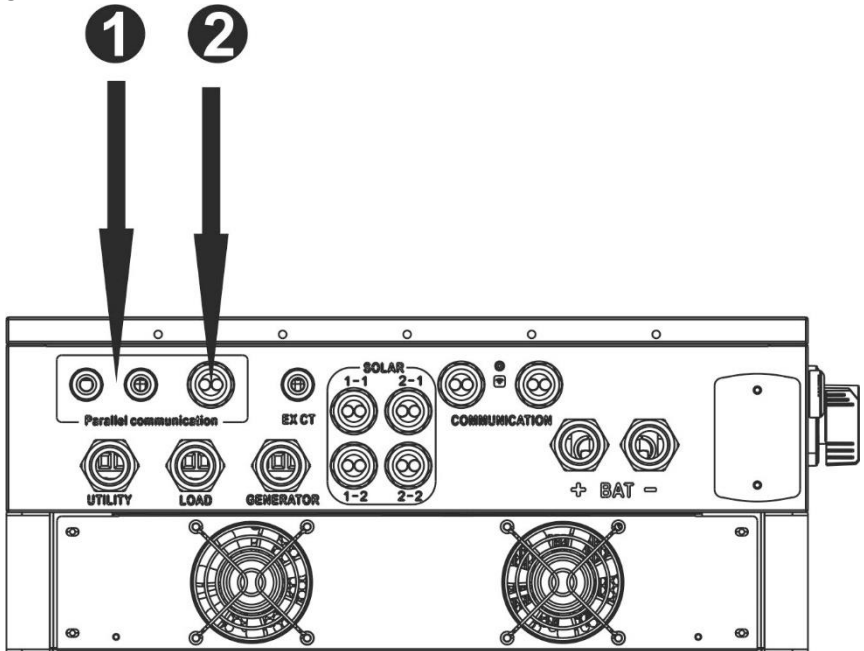


Parallel communication cable



Current sharing wires

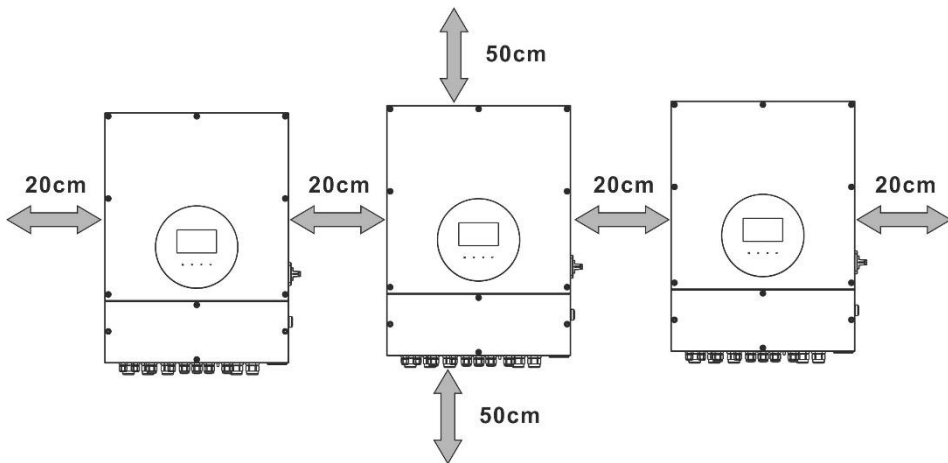
Overview



1. Current sharing port
2. Parallel communication port

Mounting the Unit

When installing multiple units, please follow below chart.

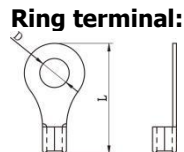


NOTE: For proper air circulation to dissipate heat, it's necessary to allow a clearance of approx. 20 cm to the side and approx. 50 cm above and below the unit. Be sure to install each unit in the same level.

Wiring Connection

The cable size of each inverter is shown as below:

Recommended battery cable and terminal size for each inverter:



Wire Size	Ring Terminal			Torque value
	Cable mm ²	Dimensions		
		D (mm)	L (mm)	
2	33.6	8.4	42.5	7~12 Nm

WARNING: Be sure the length of all battery cables is the same. Otherwise, there will be voltage difference between inverter and battery to cause parallel inverters not working.

Recommended AC input and output cable size for each inverter:

AWG no.	Conductor cross-section	Torque
10~8 AWG	5.5~10 mm ²	1.4~1.6Nm

You need to connect the cables of each inverter together. Take the battery cables for example. You need to use a connector or bus-bar as a joint to connect the battery cables together, and then connect to the battery terminal. The cable size used from joint to battery should be X times cable size in the tables above. "X" indicates the number of

inverters connected in parallel.

Regarding cable size of AC input and output, please also follow the same principle.

CAUTION!! Please install a breaker at the battery side. This will ensure the inverter can be securely disconnected during maintenance and fully protected from overcurrent of battery.

Recommended breaker specification of battery for each inverter:

One unit*
200A/60VDC

*If you want to use only one breaker at the battery side for the whole system, the rating of the breaker should be X times current of one unit. "X" indicates the number of inverters connected in parallel.

Recommended battery capacity

Inverter parallel numbers	2	3	4	5	6
Battery Capacity	400AH	600AH	800AH	1000AH	1200AH

CAUTION! Please follow the battery charging current and voltage from battery spec to choose the suitable battery. The wrong charging parameters will reduce the battery lifecycle sharply.

Approximate back-up time table

Load (W)	Backup Time @ 48Vdc 400Ah (min)	Backup Time @ 48Vdc 600Ah (min)	Backup Time @ 48Vdc 800Ah (min)	Backup Time @ 48Vdc 1000Ah (min)	Backup Time @ 48Vdc 1200Ah (min)
12000	90	140	180	240	280
18000	60	90	120	160	180
24000	40	70	90	120	140
30000	35	55	75	90	110
36000	30	50	60	80	100

PV Connection

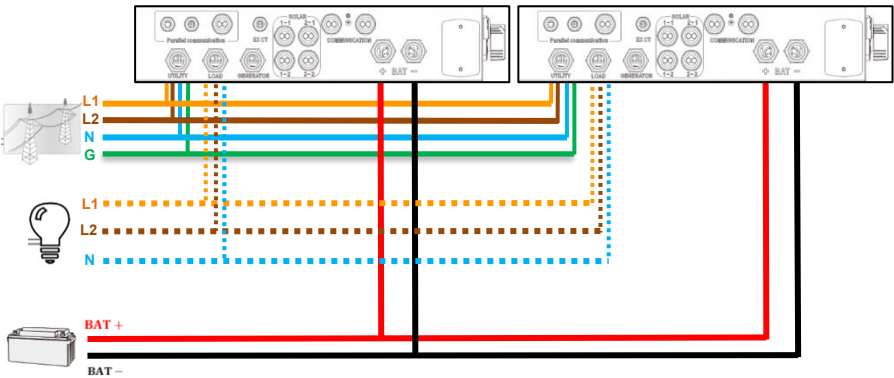
Please refer to user manual of single unit for PV Connection.

CAUTION: Each inverter should connect to PV modules separately.

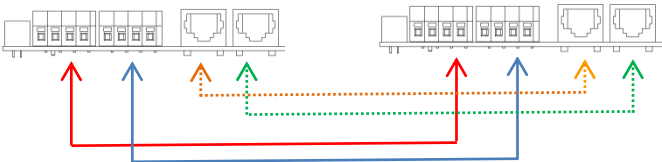
Inverters Configuration

Two inverters in parallel:

Power Connection

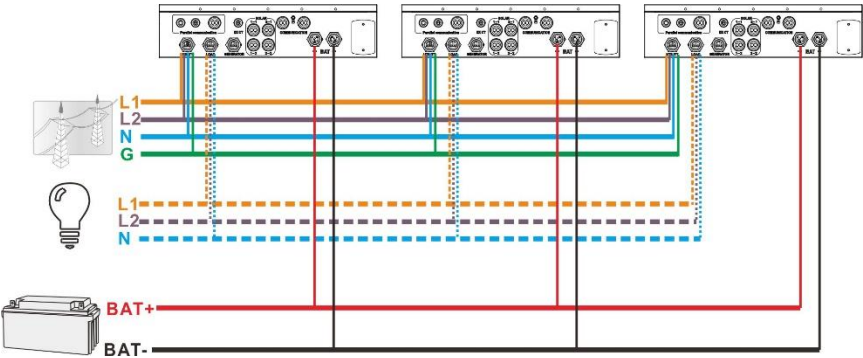


Communication Connection



Three inverters in parallel:

Power Connection

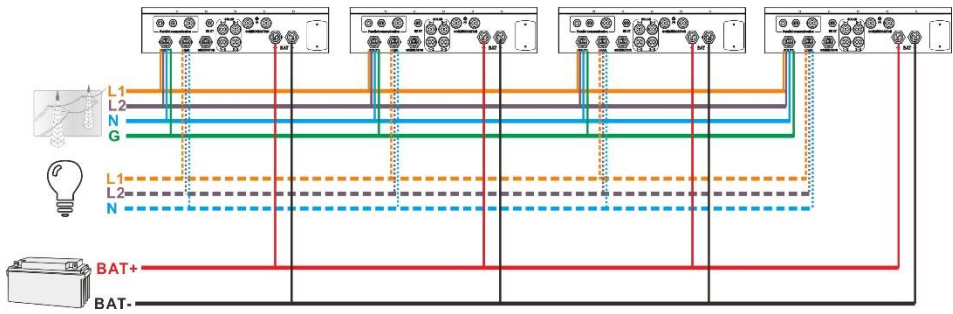


Communication Connection



Four inverters in parallel:

Power Connection

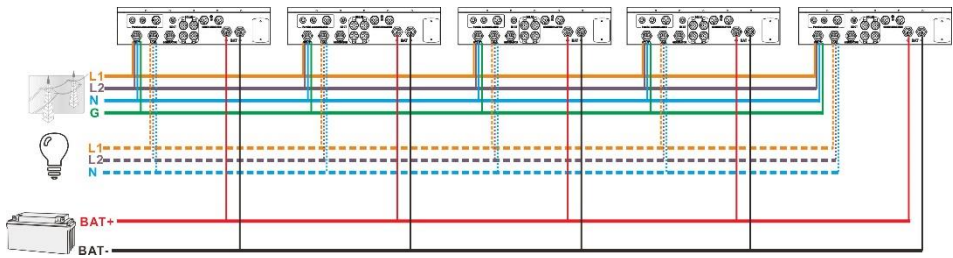


Communication Connection

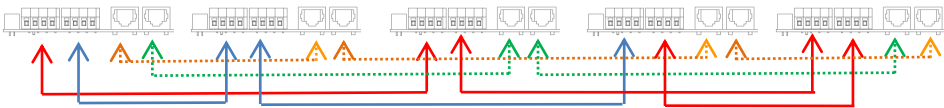


Five inverters in parallel:

Power Connection

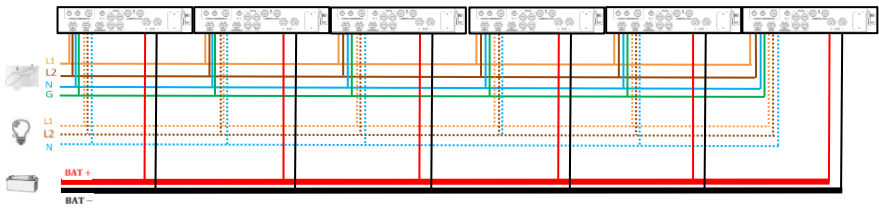


Communication Connection

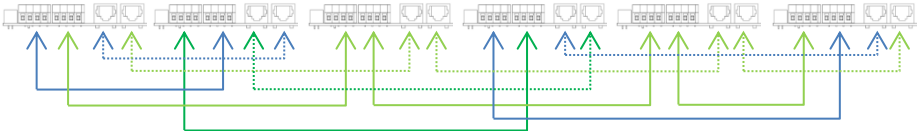


Six inverters in parallel:

Power Connection



Communication Connection



Setting and LCD Display

Setting Program:

The parallel function setting is only available in SolarPower or SolarPower Pro software. Please install software in your PC first.

For setting, you can set the inverter one by one through USB port.

- Use USB to synchronize the parameters:

Parallel for output: Enable/Disable

The screenshot shows the 'Parameters setting' window with the following settings:

- Max. AC charging current: 5 A
- Bulk charging voltage(C.V. voltage): 54 V
- Floating charging voltage: 54 V
- Start LCD screen-saver after: 60 Sec
- Max. battery discharge current in hybrid mode: 10 A
- Feeding grid power calibration R: 0 W
- Feeding grid power calibration S: 0 W
- Feeding grid power calibration T: 0 W
- Mute buzzer alarm: Enable (selected), Disable
- Mute the buzzer in the Standby mode: Enable (selected), Disable
- Mute alarm in battery mode: Enable (selected), Disable
- Activate Li-Fe battery while commissioning: Yes (selected), No
- Generator as AC source: Enable (selected), Disable
- Wide AC input range: Enable (selected), Disable
- Parallel for output: Enable (selected), Disable** (highlighted with a red box)
- Output Neutral line grounding in battery mode: Enable (selected), Disable
- BMS battery connect: Enable (selected), Disable

When float charging current is less than X (A) and continued T (Min), then charger off, when battery voltage is less than Y (V), then charger on again.

X: 0 A, T: 60 Min, Y: 53 V

Any schedule change will affect the power generated and shall be conservatively made.

System time: 2021-08-19, 10:44:18

Fault code display:

Fault Code	Fault Event	Icon on
60	Power feedback protection	F60 FAULT
61	Relay board driver loss	F61 FAULT
62	Relay board communication loss	F62 FAULT
71	Firmware version inconsistent	F71 FAULT
72	Current sharing fault	F72 FAULT
80	CAN fault	F80 FAULT
81	Host loss	F81 FAULT
82	Synchronization loss	F82 FAULT

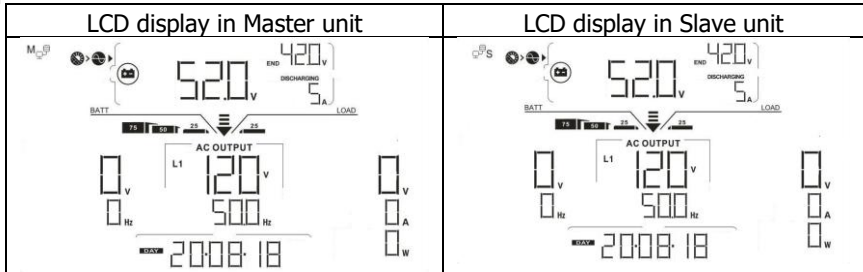
Commissioning

Step 1: Check the following requirements before commissioning:

- Make sure all wires correctly connected.
- Ensure all breakers in Line wires of load side are open and each Neutral wire of each unit is connected together.

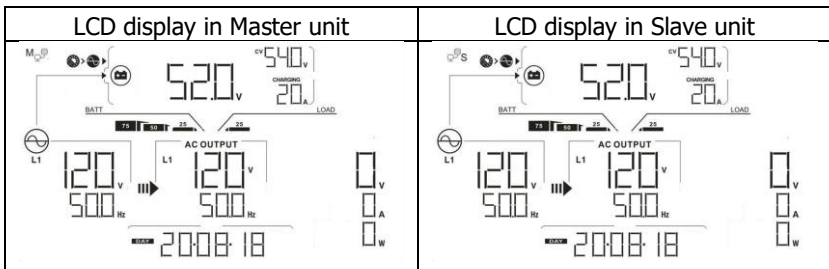
Step 2: Turn on each unit and set "enable parallel for output" on SolarPower or SolarPower Pro. And then, shut down all units.

Step 3: Turn on each unit.



NOTE: Master and slave units are randomly defined. Warning 02 is AC GRID voltage low.

Step 4: Switch on all AC breakers of Line wires in AC input. It's better to have all inverters connected to utility at the same time. If not, it will display fault 82 in the slave inverters. However, these inverters will automatically restart. If detecting AC connection, they will work normally.



Step 5: If there is no more fault alarm, the parallel system is completely installed.

Step 6: Please switch on all breakers of Line wires in load side. This system will start to provide power to the load.

Trouble shooting

Situation		Solution
Fault Code	Fault Event Description	
60	Current feedback into the inverter is detected.	<ol style="list-style-type: none"> 1. Restart the inverter. 2. Check if L1/L2/N cables are not connected with wrong sequence in all inverters. 3. Make sure the sharing cables are connected to all inverters. 4. If the problem remains, please contact your installer.
61	Relay board driver loss	<ol style="list-style-type: none"> 1. Disconnect all of power source. 2. Only connect AC input and press Enter key to let it working in bypass mode. 3. Check if the problem happens again or not and report the result to your installer.
62	Relay board communication loss	
71	The firmware version of each inverter is not the same.	<ol style="list-style-type: none"> 1. Update all inverter firmware to the same version. 2. After updating, if the problem still remains, please contact your installer.
72	The output current of each inverter is different.	<ol style="list-style-type: none"> 1. Check if sharing cables are connected well and restart the inverter. 2. If the problem remains, please contact your installer.
80	CAN data loss	<ol style="list-style-type: none"> 1. Check if communication cables are connected well and restart the inverter. 2. If the problem remains, please contact your installer.
81	Host data loss	
82	Synchronization data loss	