

# HADEX HD0370 Parallel Board Installation Guide

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## HD0370 Parallel Board Installation Guide

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## Introduction

This inverter can be used in parallel with two different operation modes.

1. Parallel operation in single phase with up to 9 units.
2. Maximum 9 units work together to support three-phase equipment.

**NOTE:** If this unit is bundled with parallel cable, this inverter is default supported parallel operation. You may skip section 3. If not, please purchase parallel kit and install this unit by following instruction from professional technical personnel in local dealer.

## Package Contents

In parallel kit, you will find the following items in the package:



Parallel board

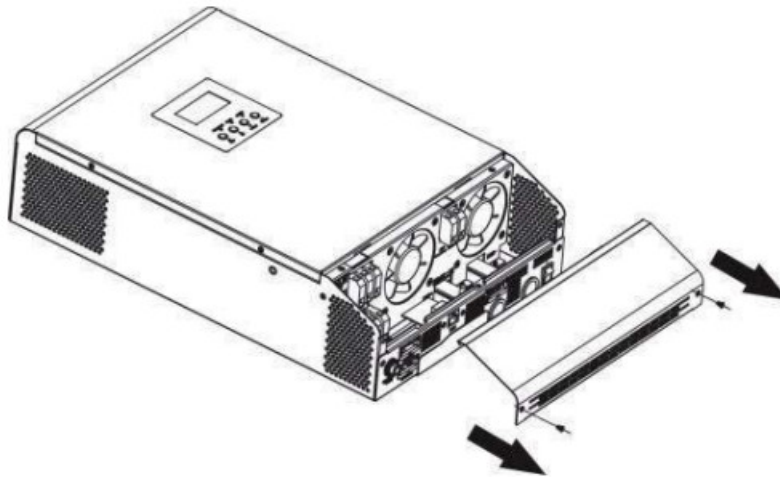
Parallel communication cable

cables between Parallel card and control board, main board

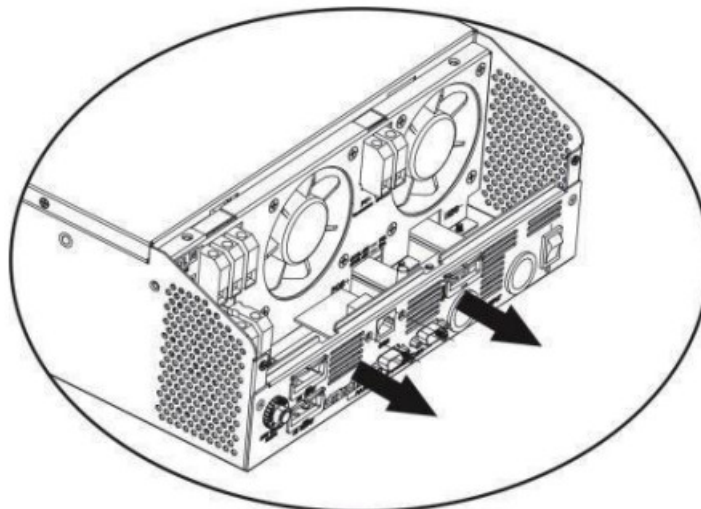
## Parallel board installation

This installation steps are only applied to 4K/5K models.

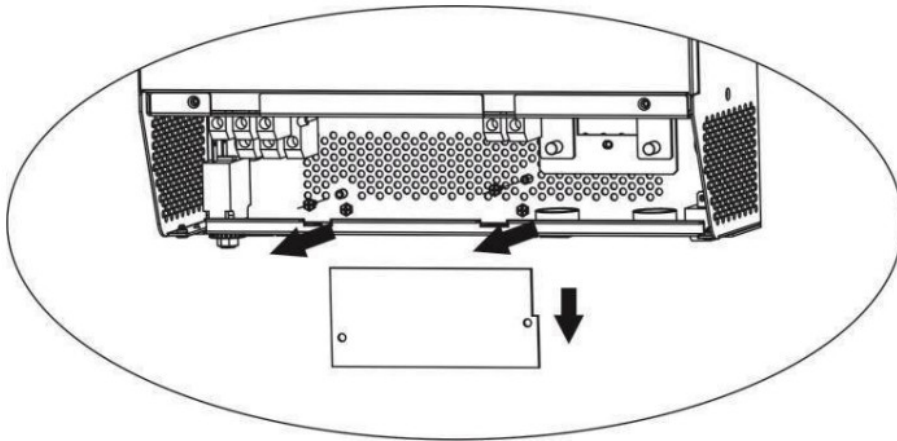
**Step 1:** Remove wire cover by unscrewing all screws.



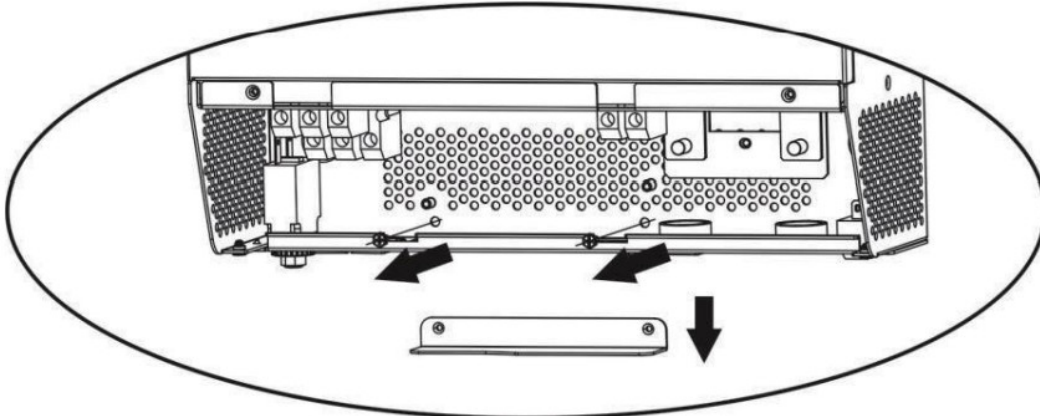
**Step 2:** Remove communication board by unscrewing two screws as below chart.



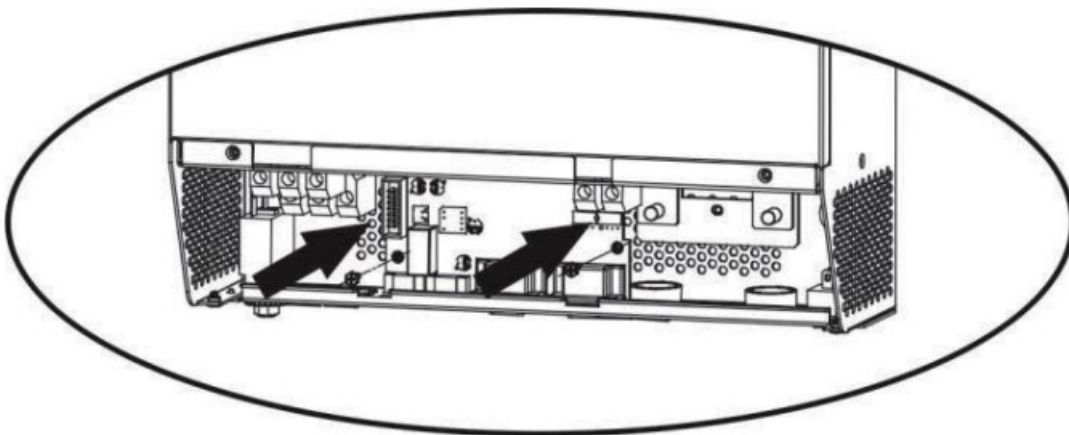
**Step 3:** Remove two screws as below chart and remove 2-pin and 14-pin cables. Take out the board under the communication board.



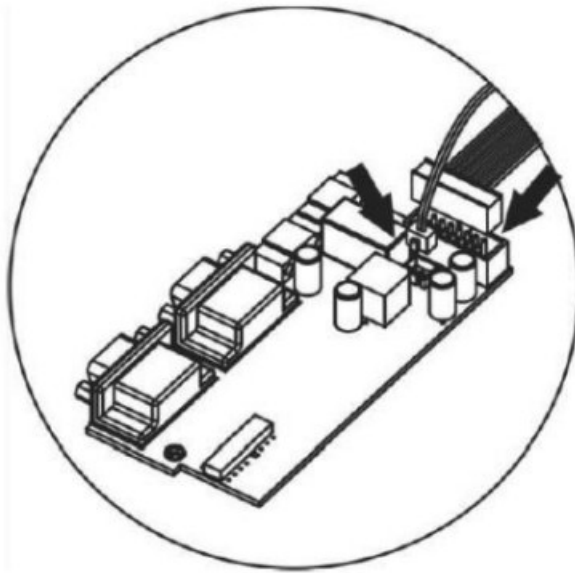
**Step 4:** Remove two screws as below chart to take out cover of parallel communication.



**Step 5:** Install new parallel board with 2 screws tightly.

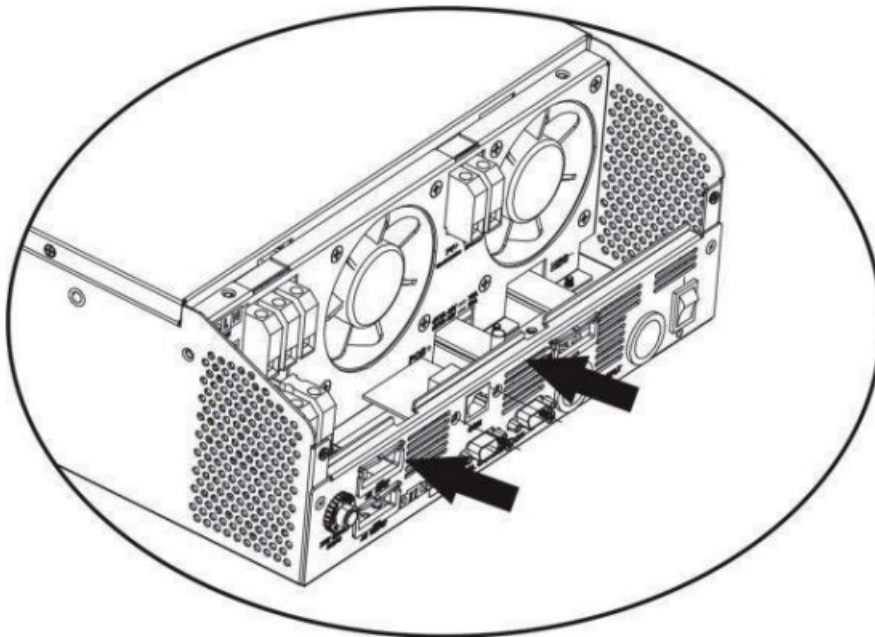


**Step 6:** Re-connect 2-pin and 14-pin to original position.  
Parallel board



Parallel board CN1	Main board CN16,17,18
Parallel board CN4	Control board CN5

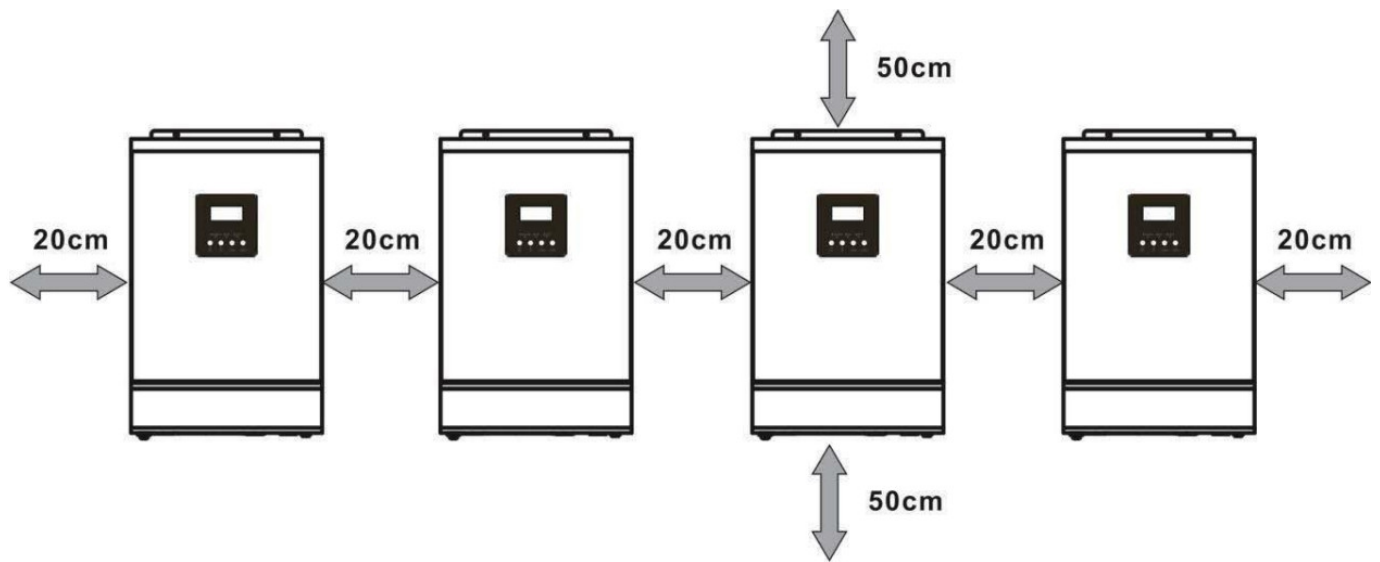
**Step 7:** Put communication board back to the unit.



**Step 8:** Put wire cover back to the unit. Now the inverter is providing parallel operation function.

## Mounting the Unit

When installing multiple units, please follow below chart.



**NOTE:** For proper air circulation to dissipate heat, 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.

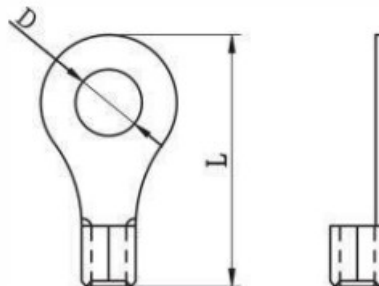
## Wiring Connection

The cable size of each inverter is shown as below:

Recommended battery cable and terminal size for each inverter:

Model	Wire Size	Rin9 Terminal			Torque value
		Cable mm2	Dimensions		
			D(mm)	L(mm)	
3 2KVA	1*4AWG	22	6.4	33.2	2- 3 Nm
	2*8AWG	14	6.4	29.2	
5.SKVA	1*4AWG	22	6.4	33.2	2- 3 Nm
	2*8AWG	14	6.4	29.2	

## Ring terminal:



**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:**

Model	AWG no.	Torque
3.2KVA	10 AWG	1.4rvl.6Nm
5.5KVA	8 AWG	1.4rvl.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 AC input and output, please also follow the same principle.

**CAUTION!!** Please install the breaker at the battery and AC input side. This will ensure the inverter can be securely disconnected during maintenance and fully protected from over current of battery or AC input. The recommended mounted location of the breakers is shown in the figures in 5-1 and 5-2.

#### Recommended breaker specification of battery for each inverter:

Model	1 unit*
3.2KVA	80A/60VDC
5.5KVA	100A/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 1 unit. "X" indicates the number of inverters connected in parallel.

#### Recommended breaker specification of AC input with single phase:

Model	2 units	3 units	4 units	5 units	6 units
3.2KVA	80A/230VAC	120A/230VAC	160A/230VAC	200A/230VAC	240A/230VAC
5.5KVA	100A/230VAC	150A/230VAC	200A/23VAC	250A/23VAC	300A/23VAC

**Notel:** Also, you can use 40A breaker (50A for 5KVA) for only 1 unit, and each inverter has a breaker at its AC input.

**Note2:** Regarding three phase system, you can use 4 poles breaker, the rating is up to the current of the phase which has the maximum units. Or you can follow the suggestion of note 1.

#### Recommended battery capacity

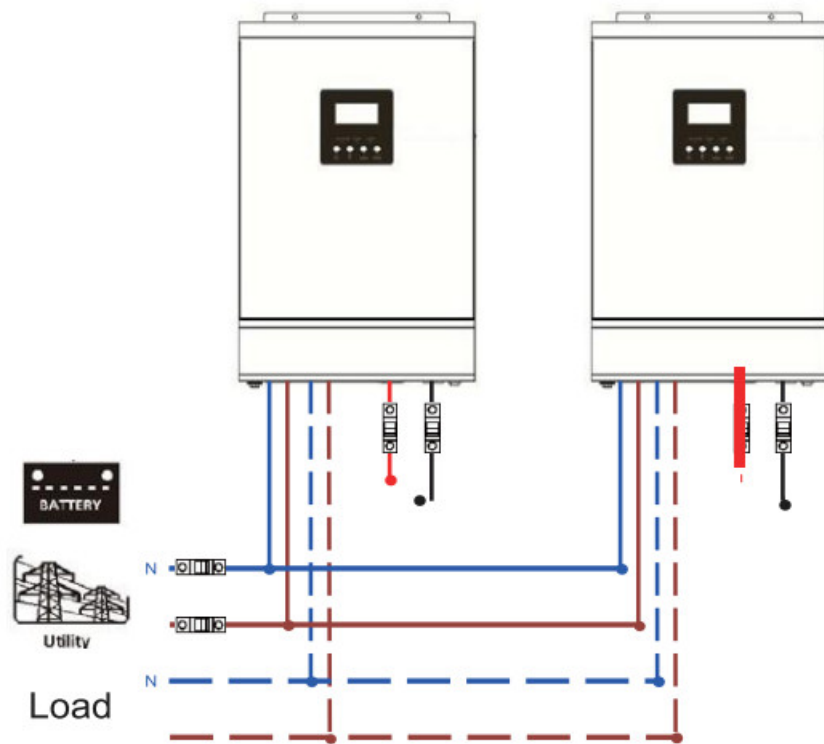
Inverter parallel numbers	2	3	4	5	6
Battery Capacity	400AH	600AH	800AH	1000AH	1200AH

**WARNING!** Be sure that all inverters will share the same battery bank. Otherwise, the inverters will transfer to fault mode.

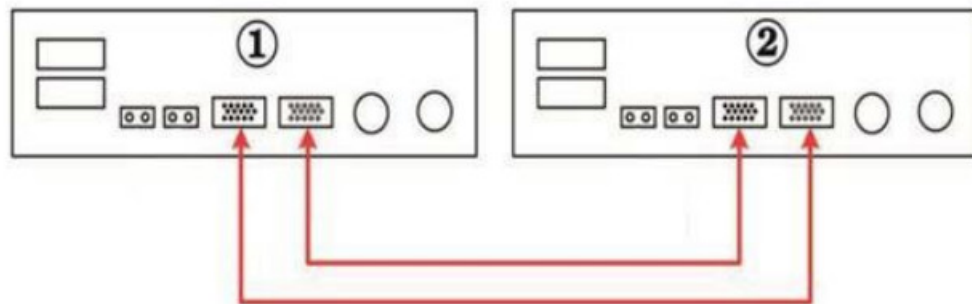
#### 5-1. Parallel Operation in Single phase

Two inverters in parallel:

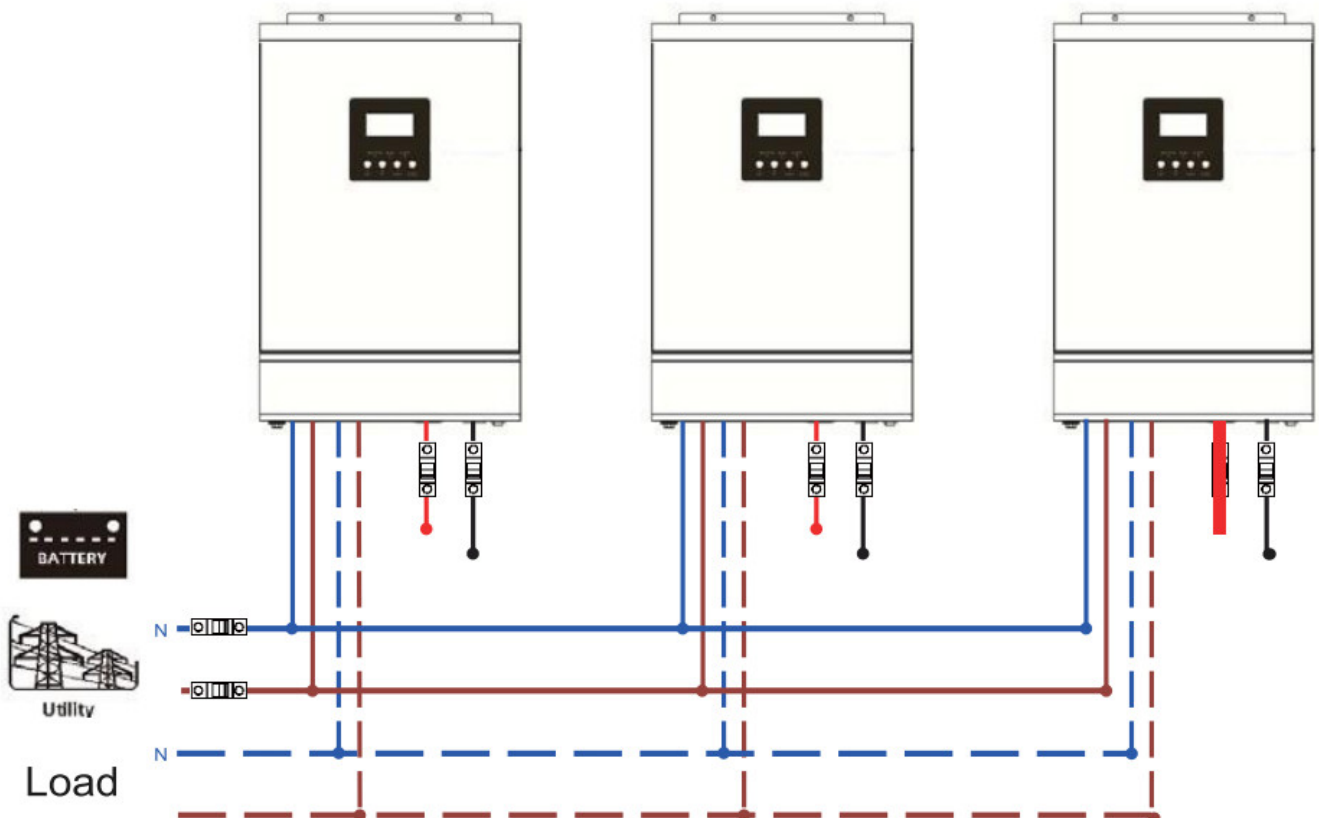
##### Power Connection



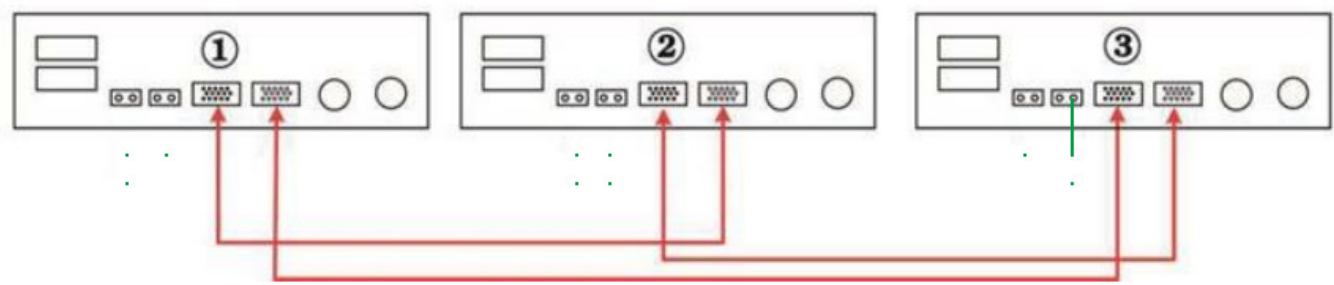
### Communication Connection



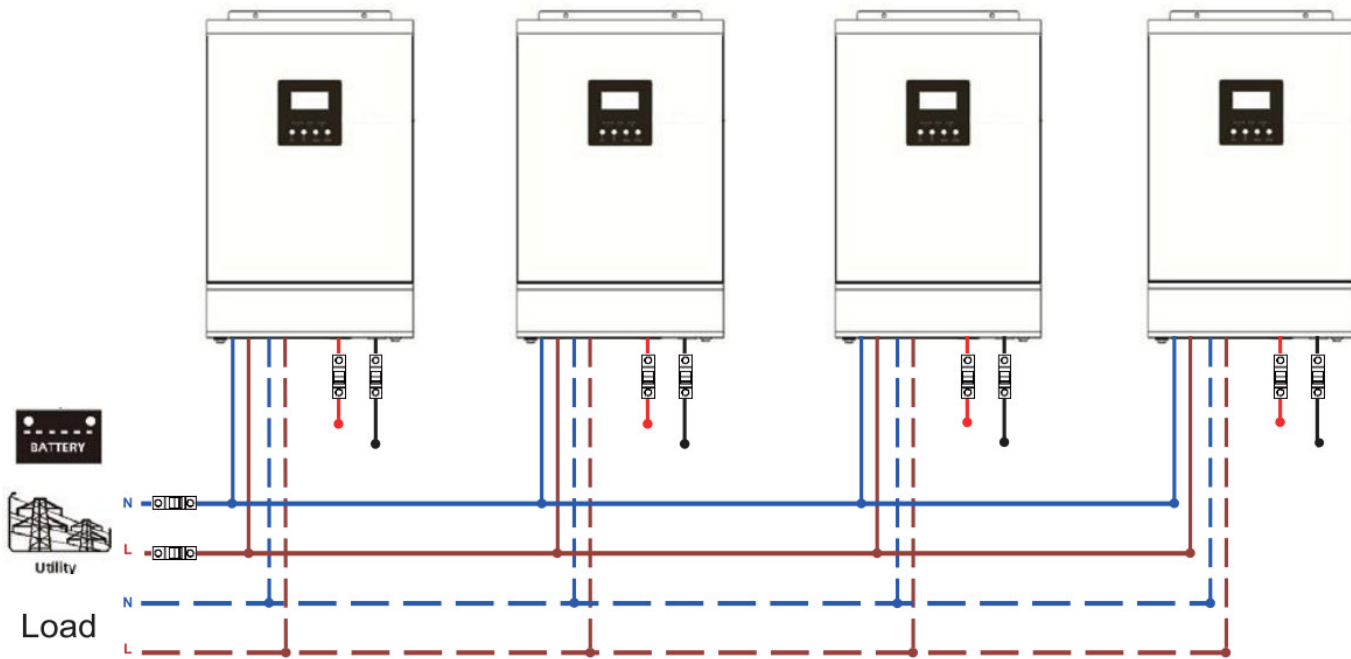
### Three inverters in parallel: Power Connection



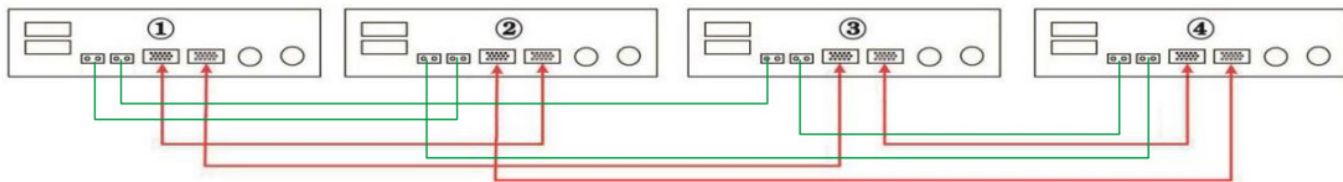
Communication Connection



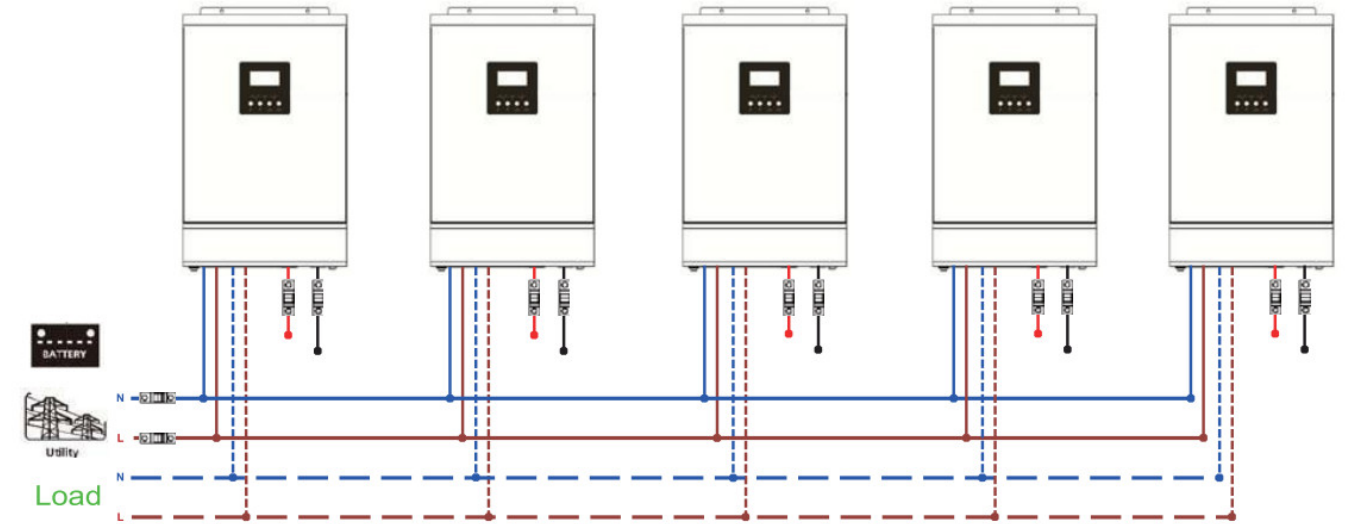
Four inverters in parallel:  
Power Connection



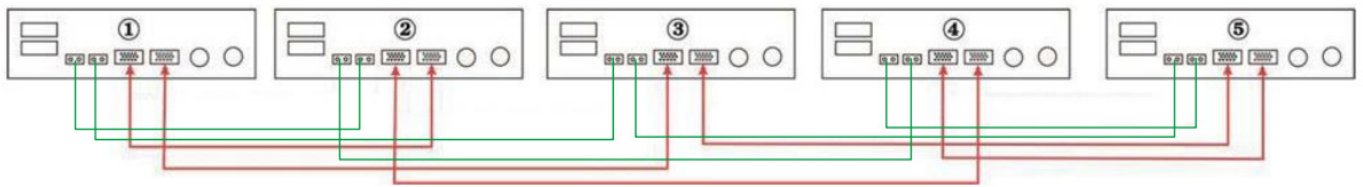
Communication Connection



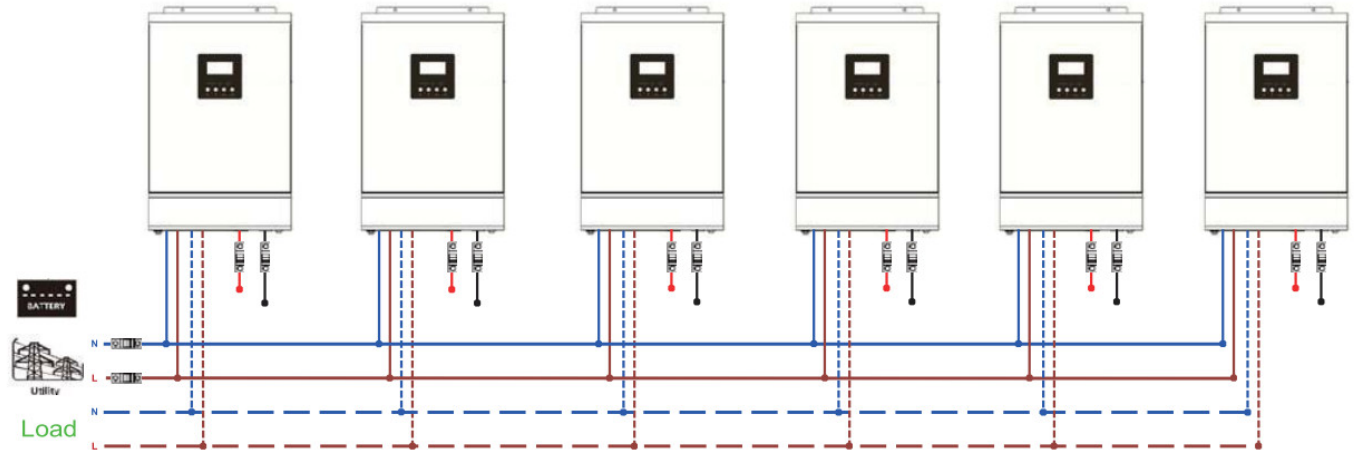
Five inverters in parallel:  
Power Connection



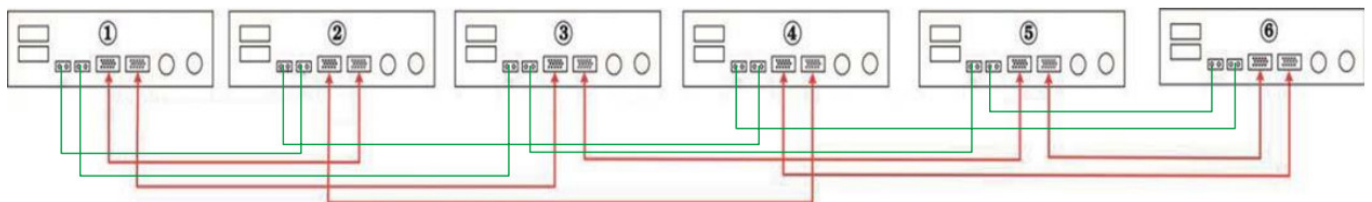
Communication Connection



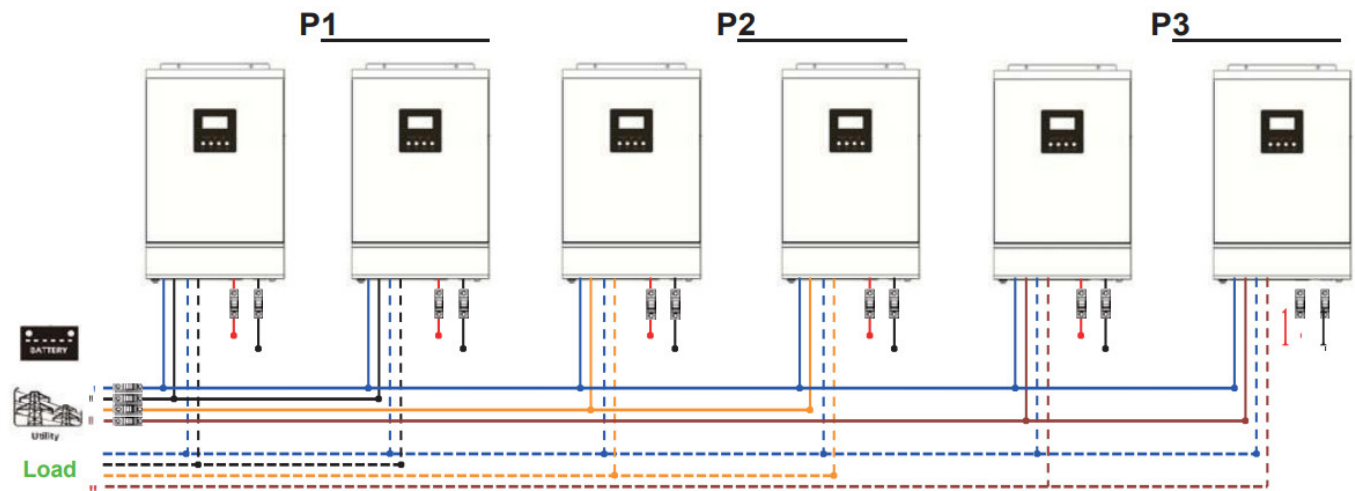
## Six inverters in parallel: Power Connection



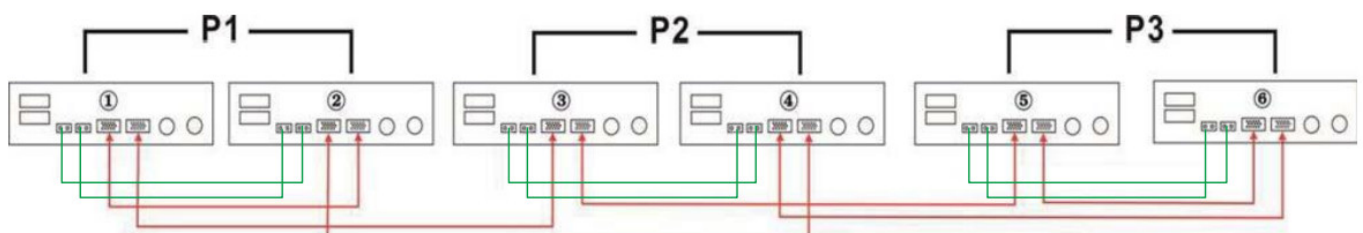
## Communication Connection



## 5-2. Support 3-phase equipment Two inverters in each phase: Power Connection

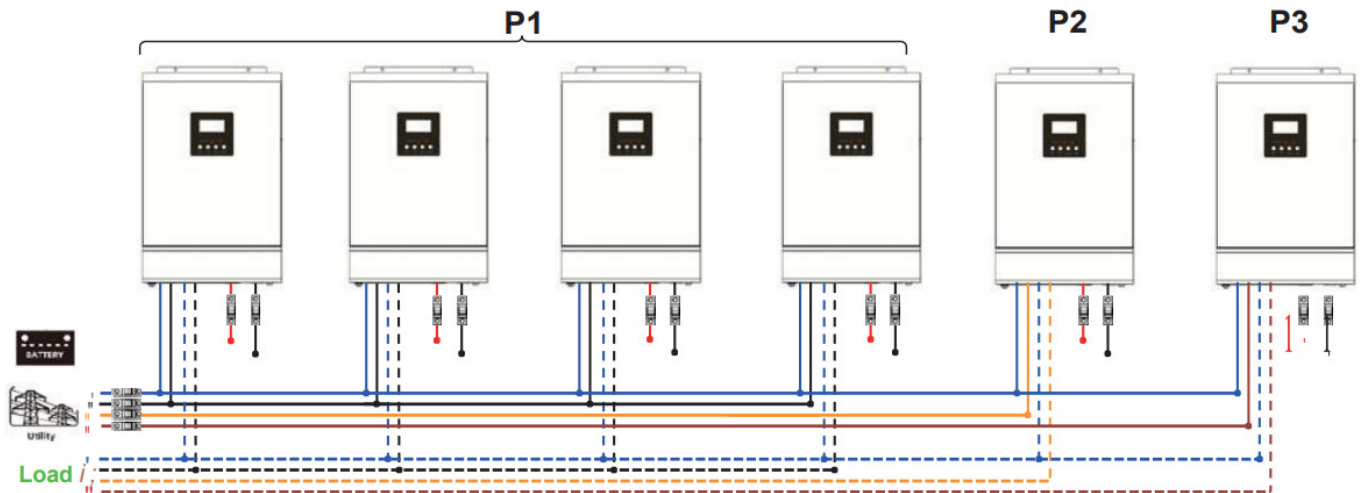


## Communication Connection



Four inverters in one phase and one inverter for the other two phases:

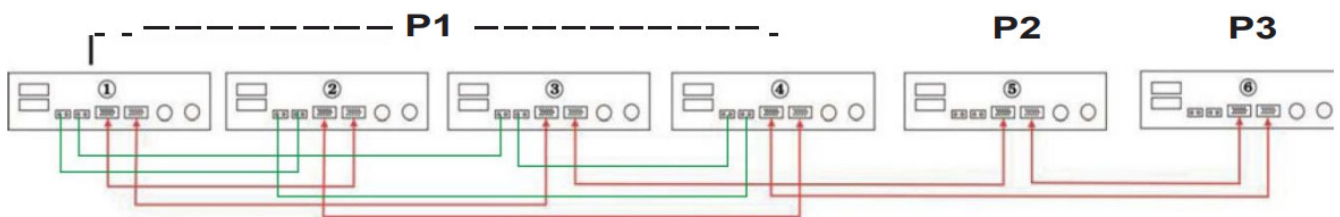
## Power Connection



Note: It's up to customer's demand to pick 4 inverters on any phase.

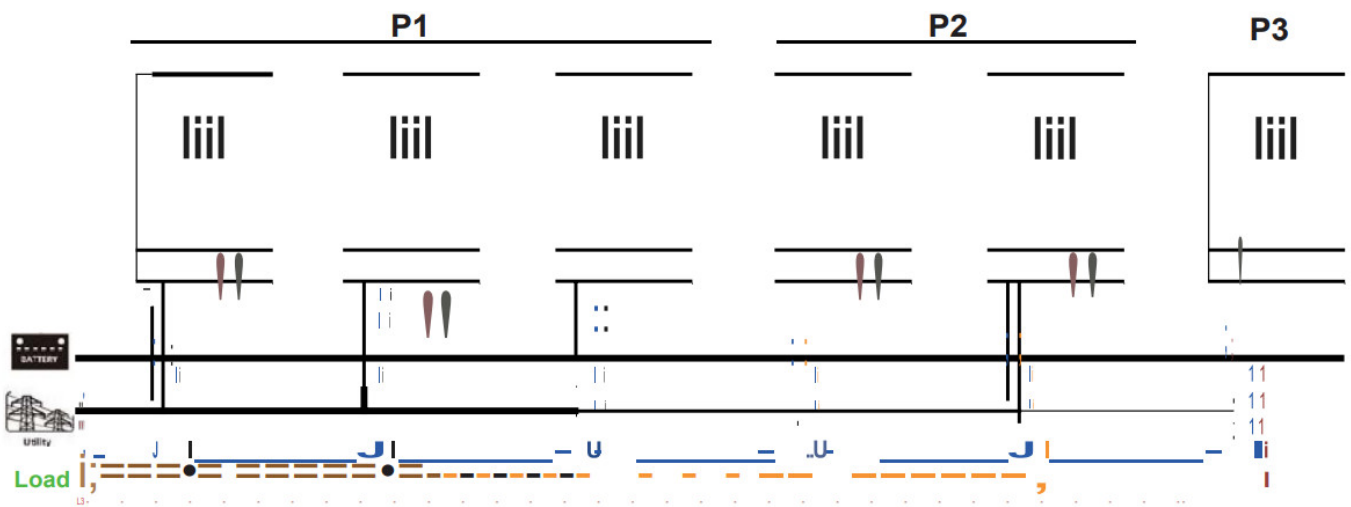
P1: L1-phase, P2: L2-phase, P3: L3-phase.

## Communication Connection



Three inverters in one phase, two inverters in second phase and one inverter for the third phase:

## Power Connection

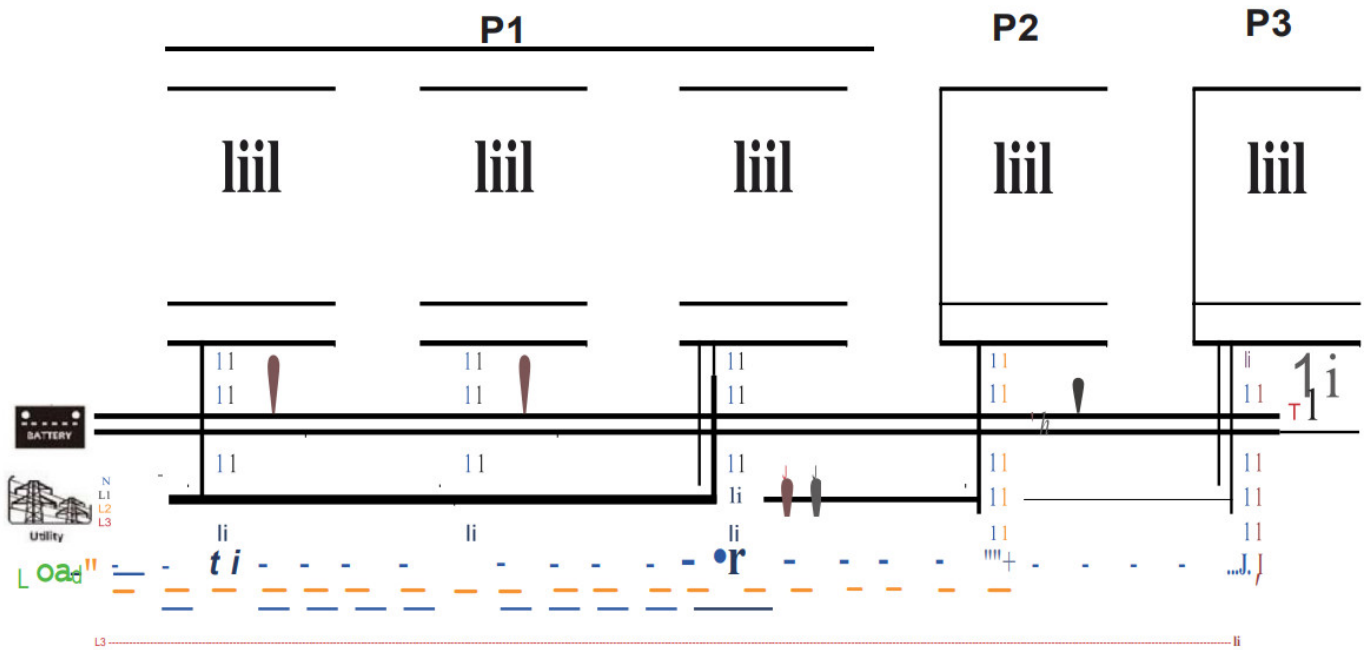


## Communication Connection

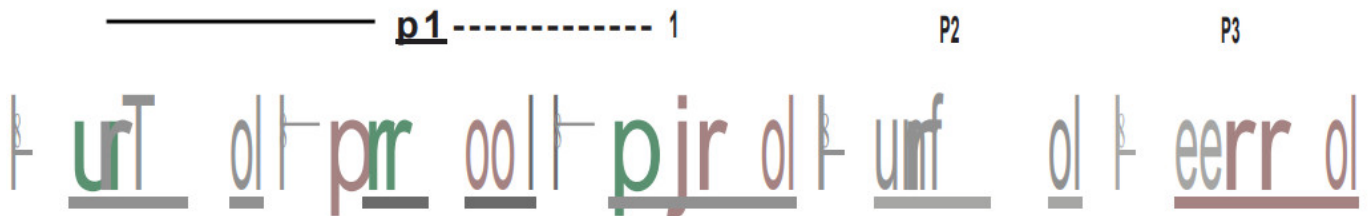


Three inverters in one phase and only one inverter for the remaining two phases:

## Power Connection

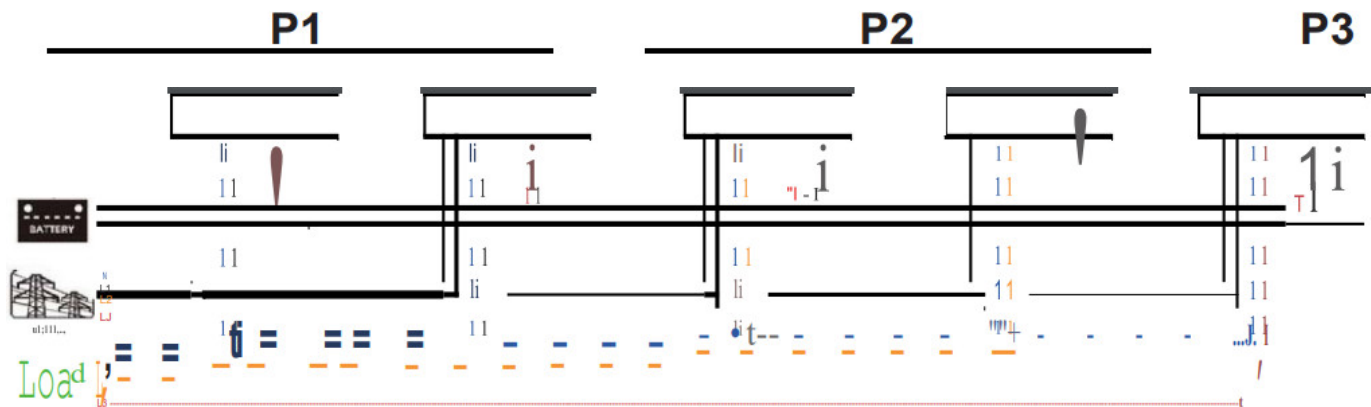


Communication Connection

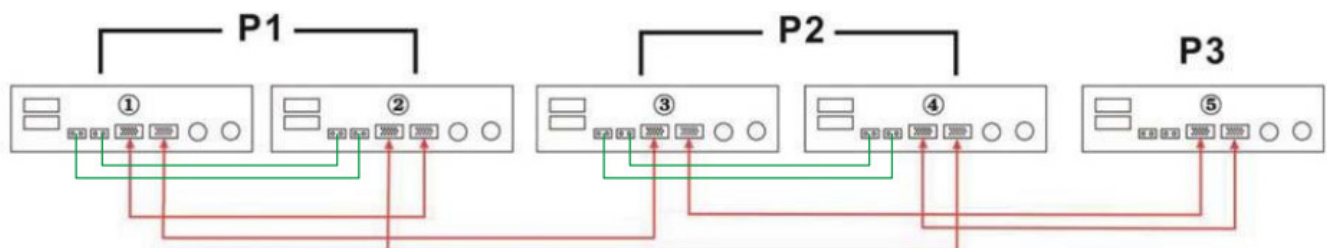


Two inverters in two phases and only one inverter for the remaining phase:

Power Connection

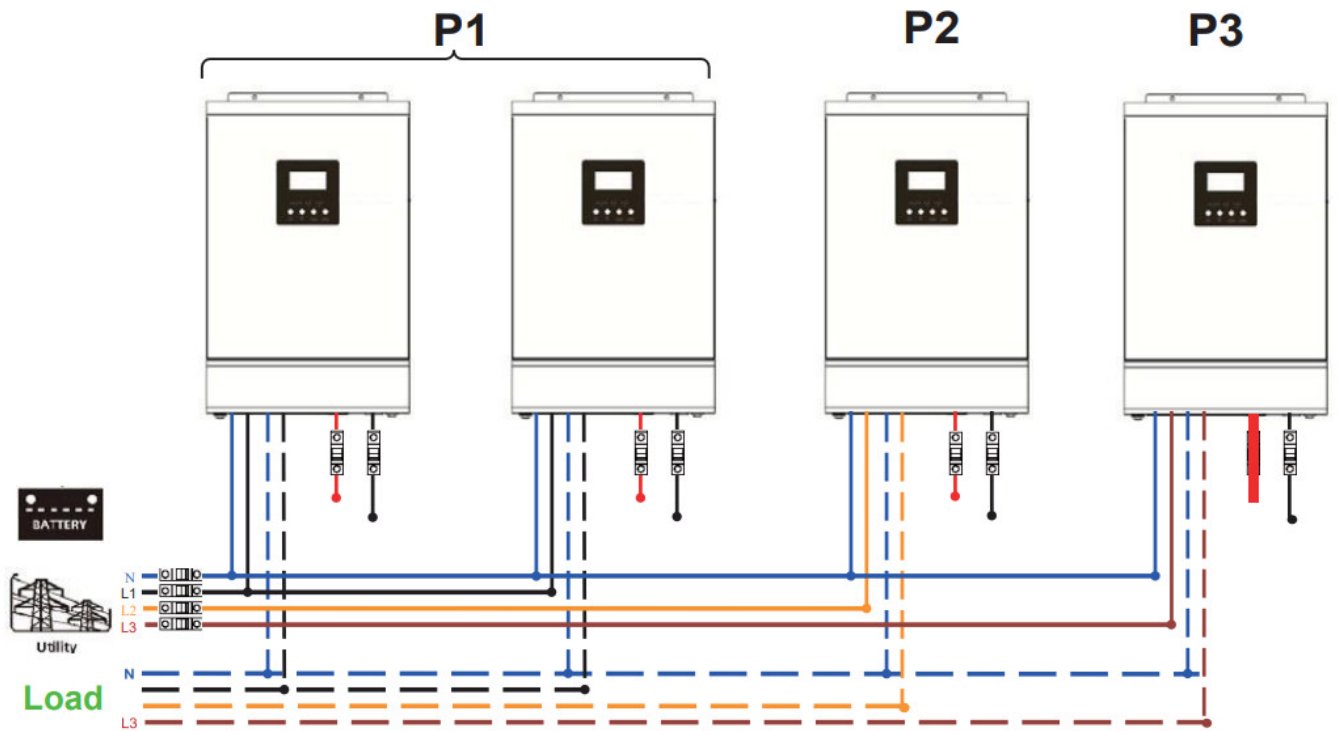


Communication Connection

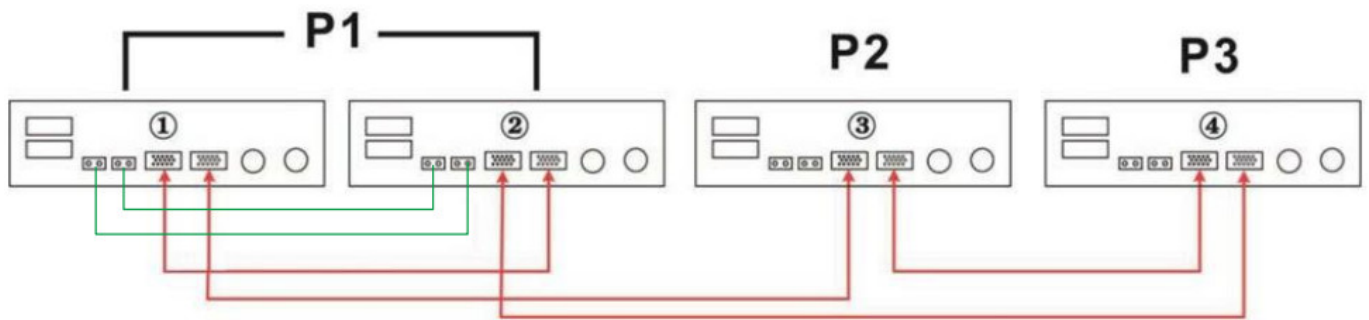


Two inverters in one phase and only one inverter for the remaining phases:

Power Connection

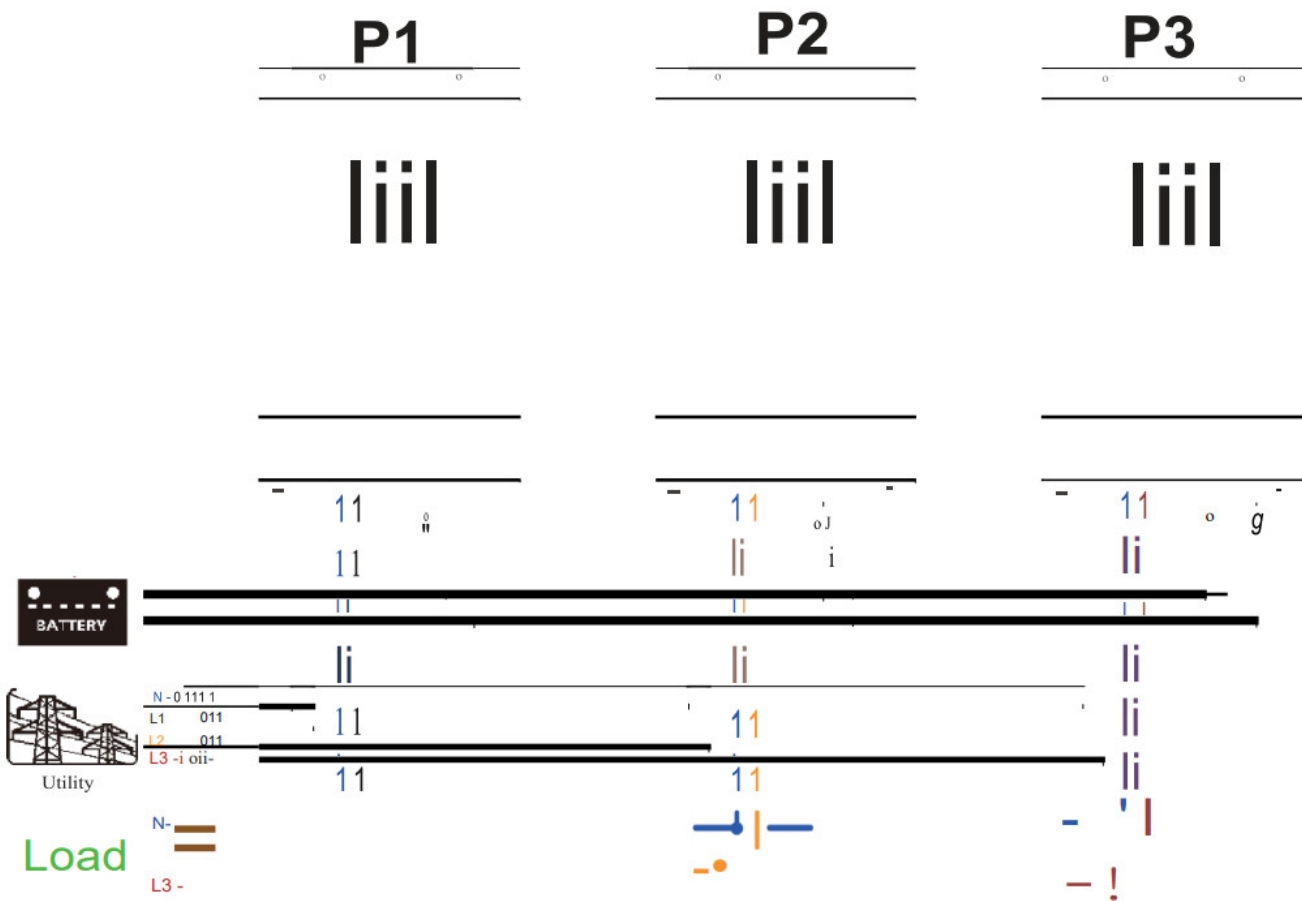


Communication Connection



One inverter in each phase:

Power Connection



Communication Connection

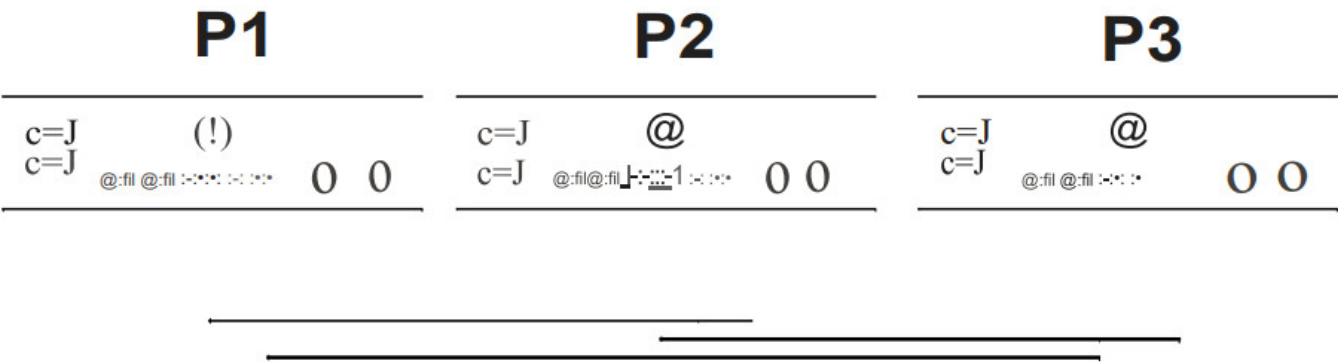
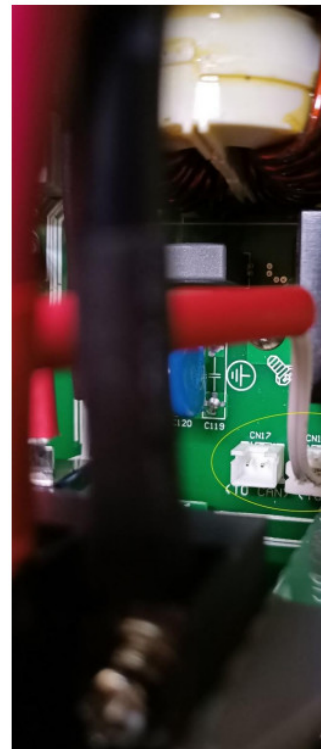
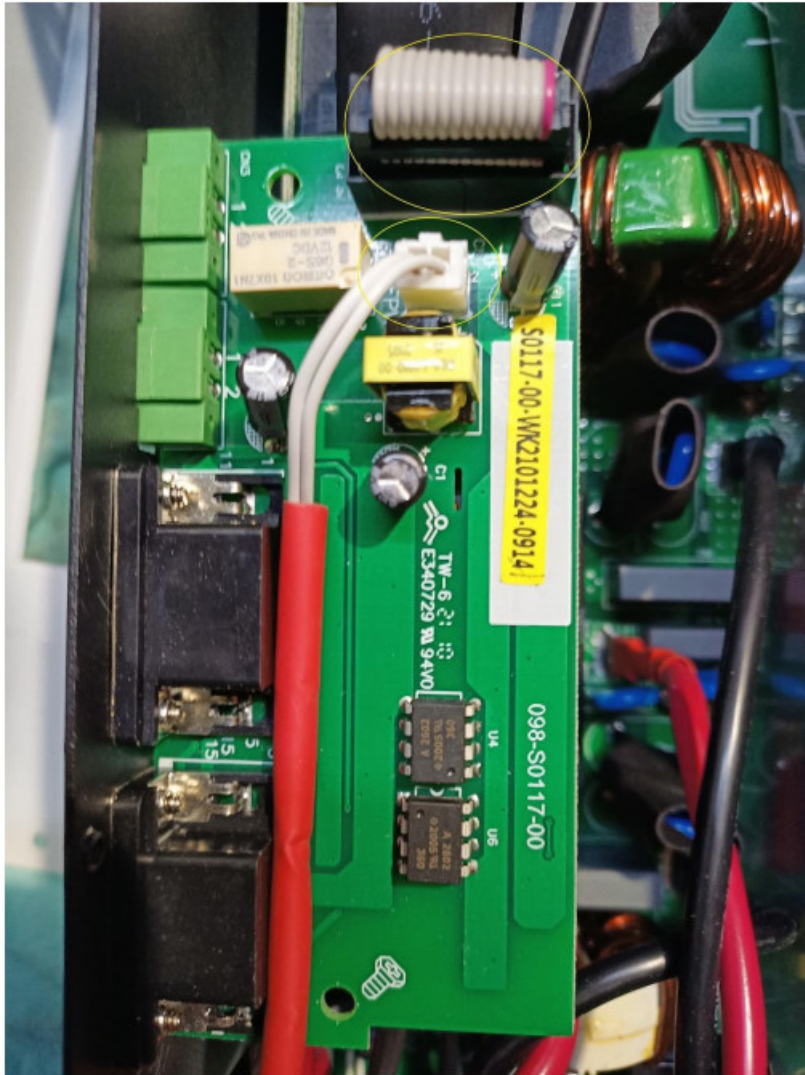
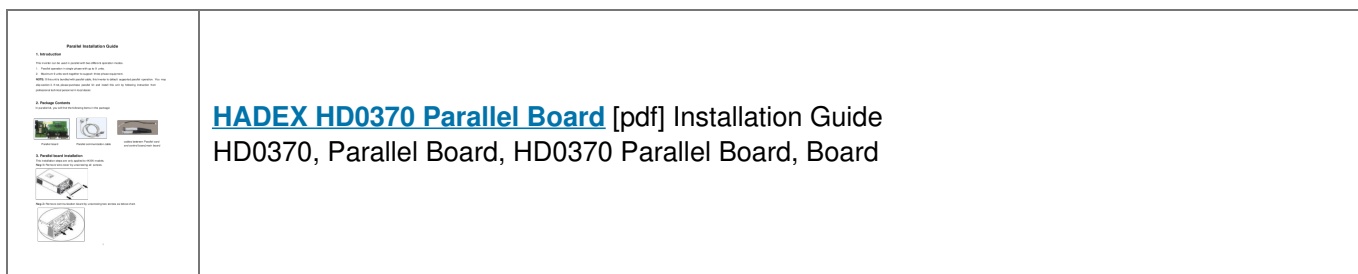


Photo of the connection





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HD0370, Parallel Board, HD0370 Parallel Board, Board