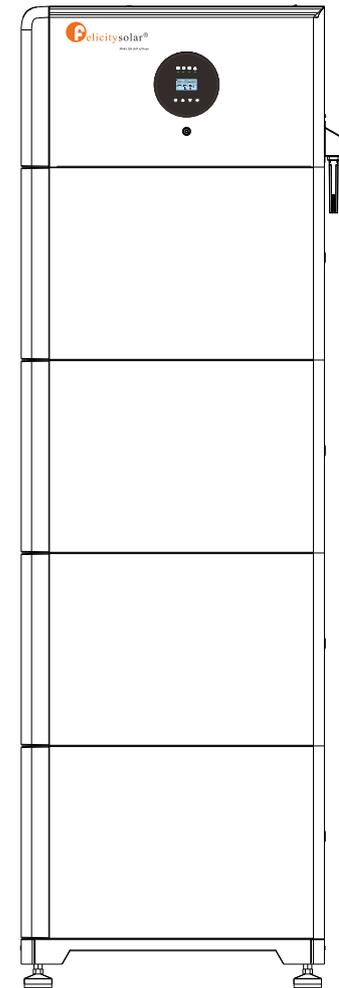




Make life full of hope

PARALLEL GUIDE

5KW ALL IN ONE Energy Storage System



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1. INTRODUCTION

This All-in one Energy Storage System can be used in parallel with two different operation modes.

1. Parallel operation in single phase with up to twelve units. The supported maximum output power is 60KW/60KVA.
2. Maximum twelve units work together to support three-phase equipment. Ten units support one phase maximum.

The supported maximum output power is 60KW/60KVA and one phase can be up to 50KW/50KVA.

NOTE 1: In parallel operation mode, the lithium battery must be connected to the inverter and all lithium batteries must be connected in parallel

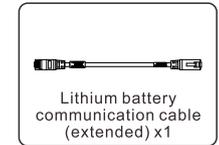
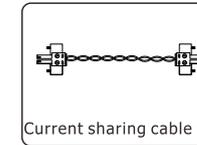
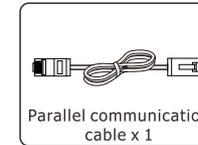
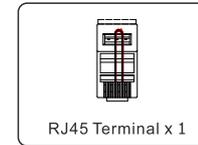
NOTE 2: Before starting the inverter, make sure that all negative (-) and positive (+) lines of the battery are connected together separately

NOTE 3: Do not connect the AC input Neutral (N) wire to the AC output Neutral (N) wire.

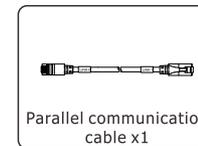
2. PACKAGE CONTENTS

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

AI100-5048 Inverter accessories



AI100-B5 Lithium battery accessories



Cable requirements

Recommended size of AC input/Output cable

Model	Gauge	Cable (mm ²)	Torque Value
5KVA	8~10AWG	8~5	1.4~ 1.6Nm

Recommended size of PV cable

Model	Cable Size	Cable (mm ²)	Torque
5KVA	9~11AWG	4~6	1.4~1.6 Nm

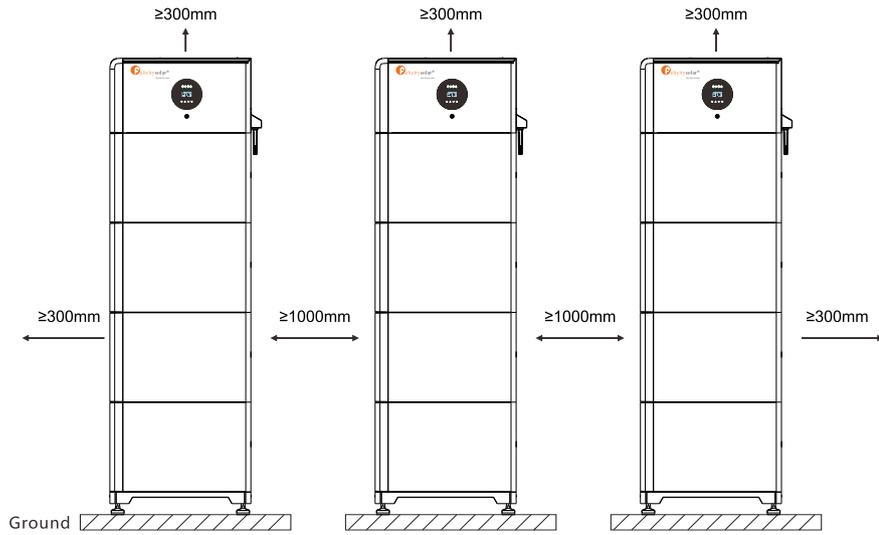
Recommended DC cable sizes

Model	Cable Size	Cable (mm ²)	Torque
5KVA	1~2AWG	35	2Nm

3. MOUNTING THE UNIT

When installing multiple units, please follow below chart.

Multiple AI100-5048 ESS diagrams



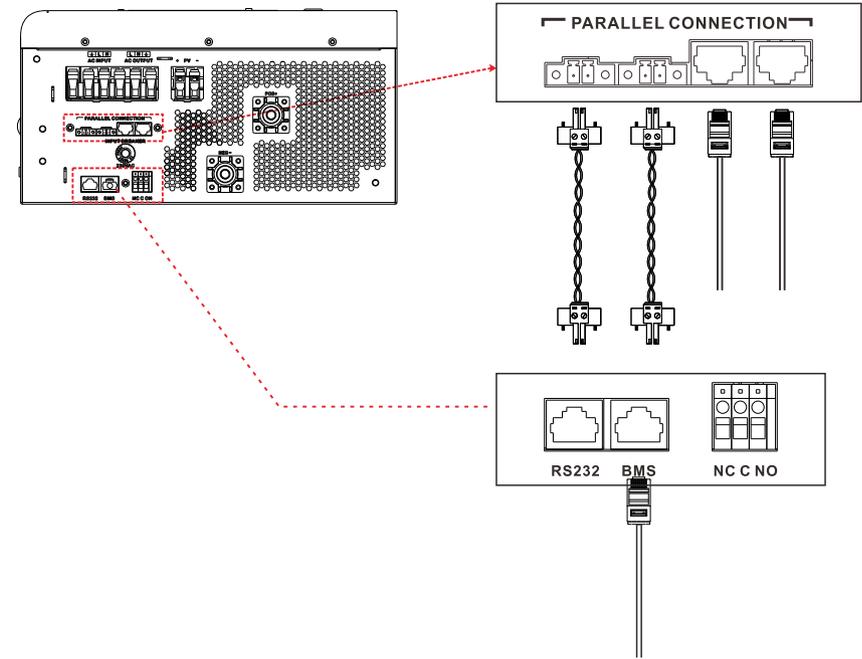
Note: In order to have enough air circulation to heat the system, the allowable horizontal clearance of each system is not less than 100CM. Please reserve a minimum height of 30CM at the top.
 Note: Make sure that each set of systems is installed on the same level.
 Note: Only inverters and lithium batteries of the same brand and model can be connected in parallel.

4. Communication interface description

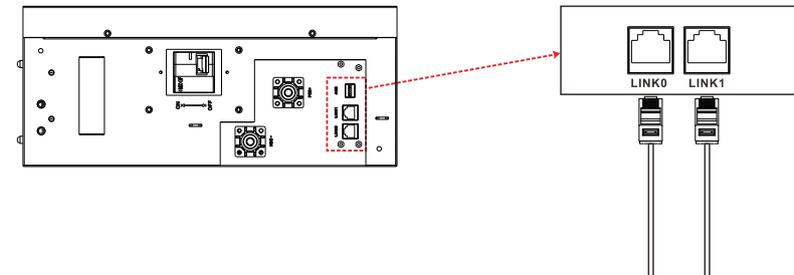
The following table lists the symbols and names of the components used in this document to connect parallel communication cables

1		Current sharing cable
2		Inverter parallel terminals
3		The inverter is connected to a parallel communication cable
4		Lithium battery and inverter communication cable

AI100-5048 Description of the communication ports



AI100-B5 Description of the communication port

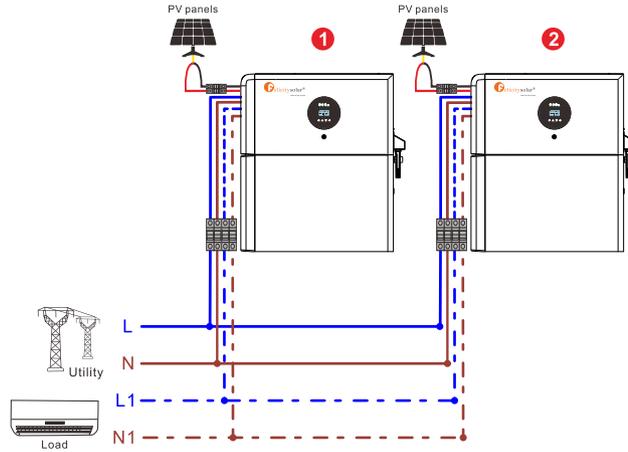


5. Single-phase multiple AI100-5048ESS in parallel

5.1 Two AI100-5048 ESS are connected in parallel

Step 1: Connect electrical cables

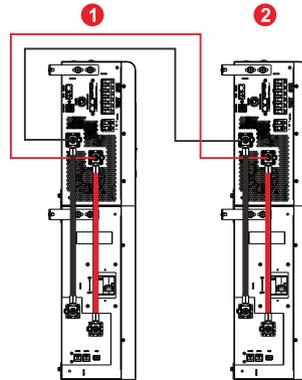
Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input a single AI100-5048ESS, it is prohibited to parallel multiple PV+ and PV- together!

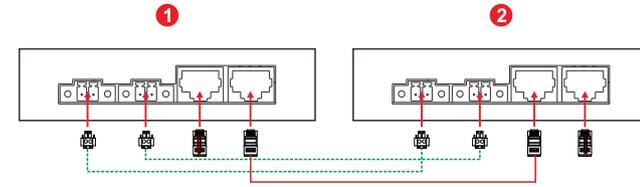
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



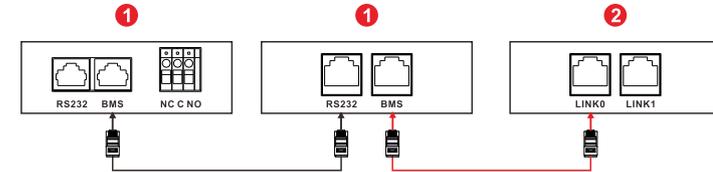
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS single-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

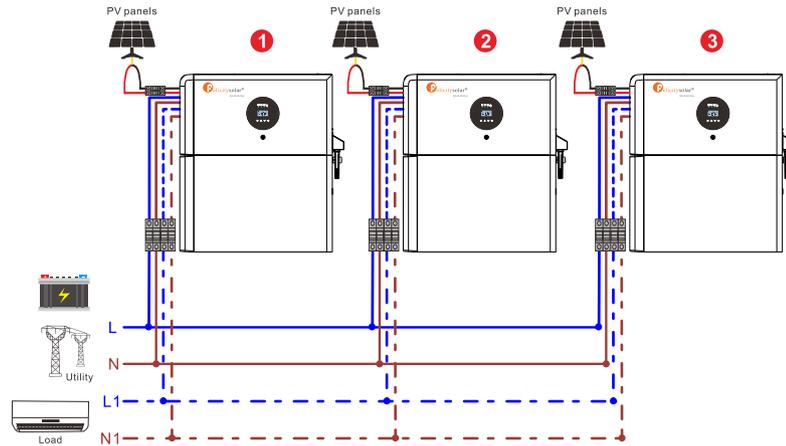
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

5.2 Three AI100-5048 ESS are connected in parallel

Step 1: Connect electrical cables

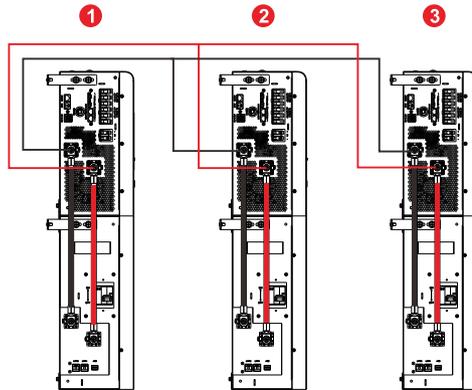
Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input a single AI100-5048ESS, it is prohibited to parallel multiple PV+ and PV- together!

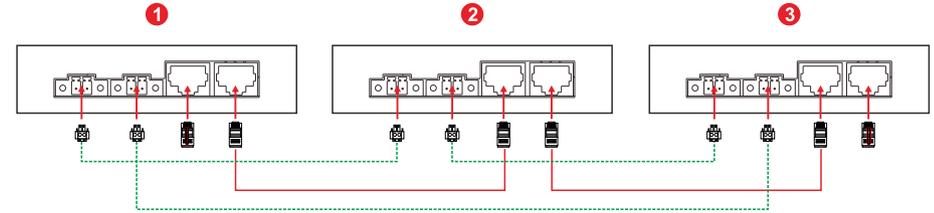
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



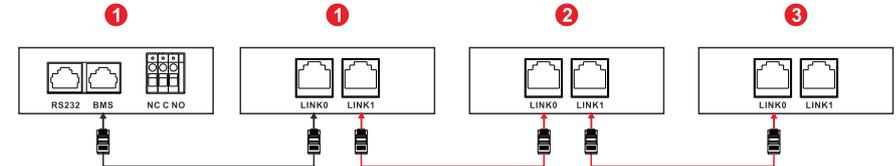
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS single-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

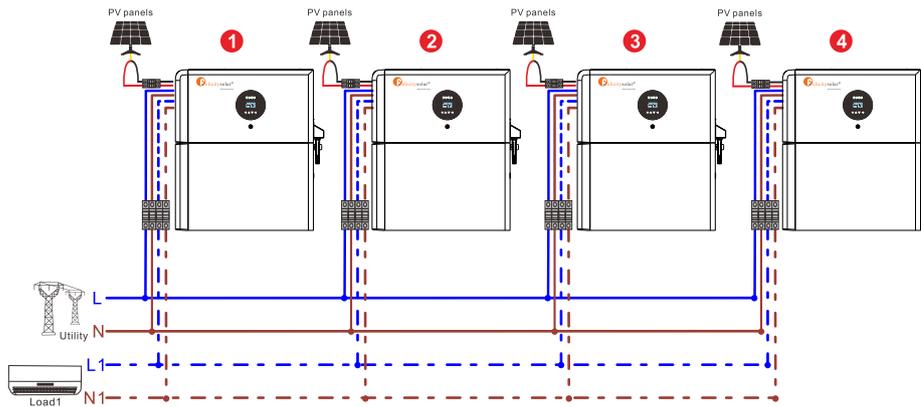
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

5.3 Four AI100-5048 ESS are connected in parallel

Step 1: Connect electrical cables

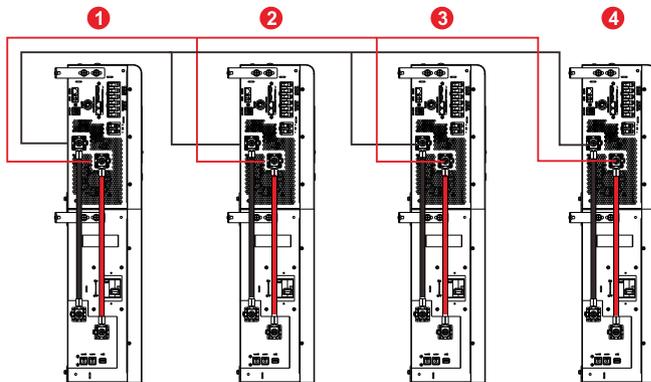
Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input a single AI100-5048ESS, it is prohibited to parallel multiple PV+ and PV- together!

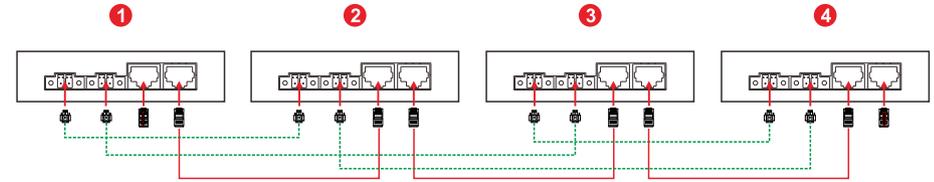
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



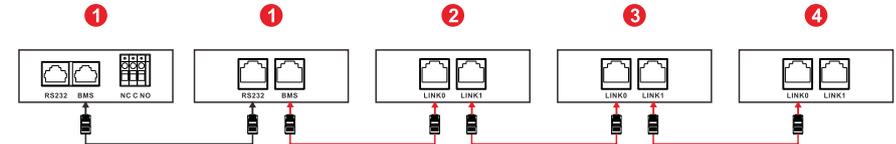
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS single-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

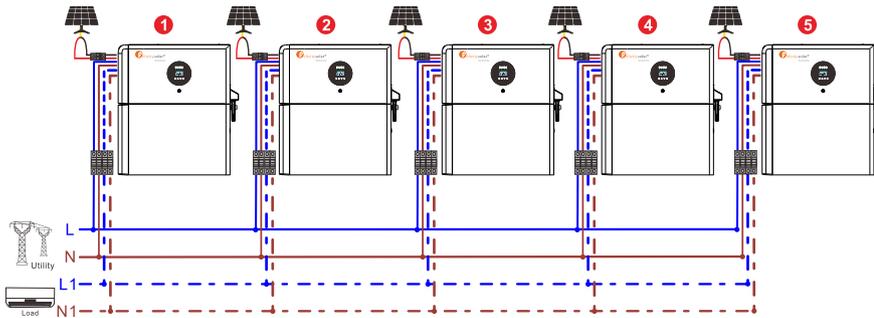
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

5.4 Five AI100-5048 ESS are connected in parallel

Step 1: Connect electrical cables

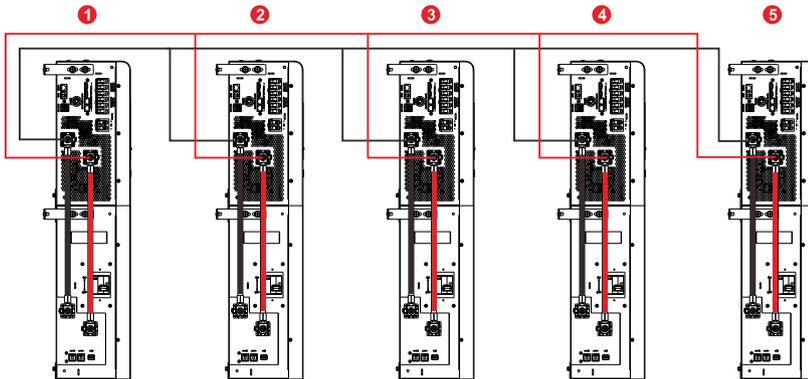
Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input a single AI100-5048ESS, it is prohibited to parallel multiple PV+ and PV- together!

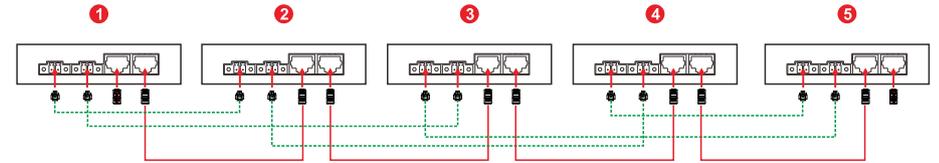
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



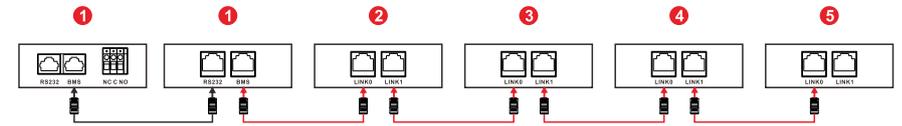
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS single-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

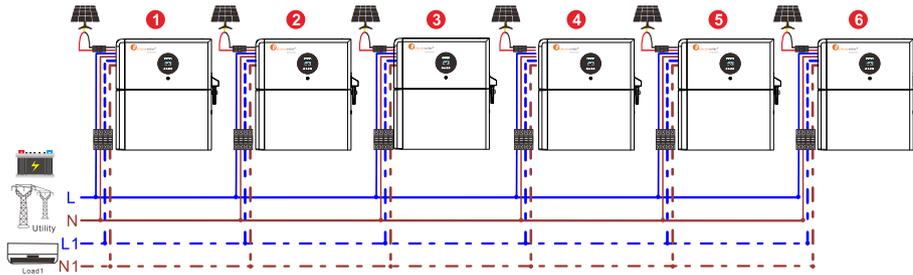
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

5.5 Six AI100-5048 ESS are connected in parallel

Step 1: Connect electrical cables

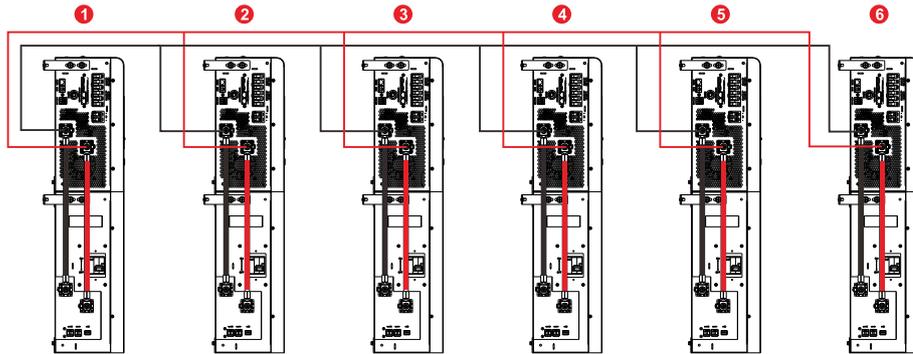
Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input a single AI100-5048ESS, it is prohibited to parallel multiple PV+ and PV- together!

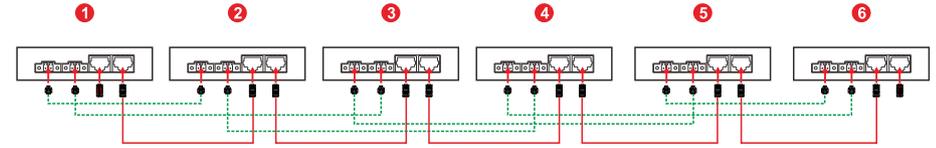
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



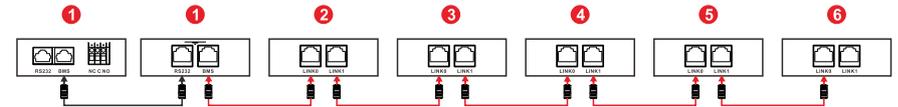
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS single-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

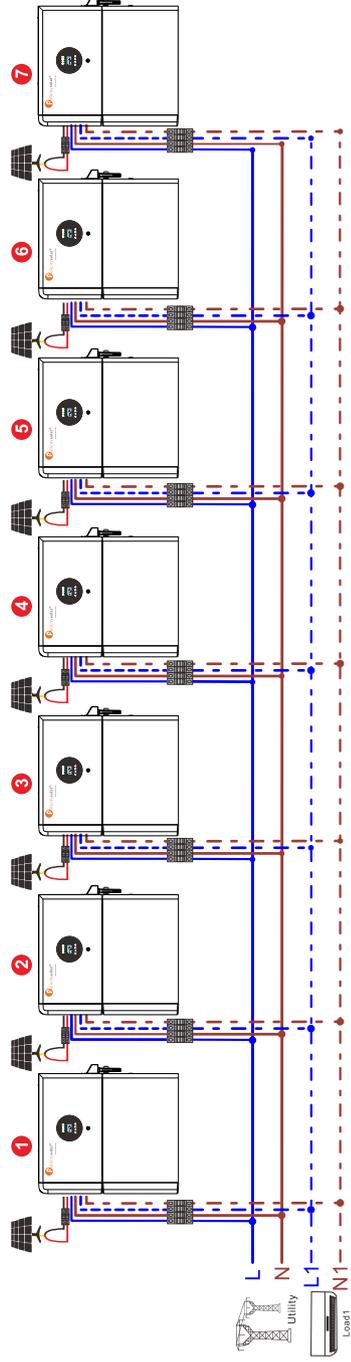
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

5.6 Seven AI100-5048 ESS are connected in parallel

Step 1: Connect electrical cables

Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



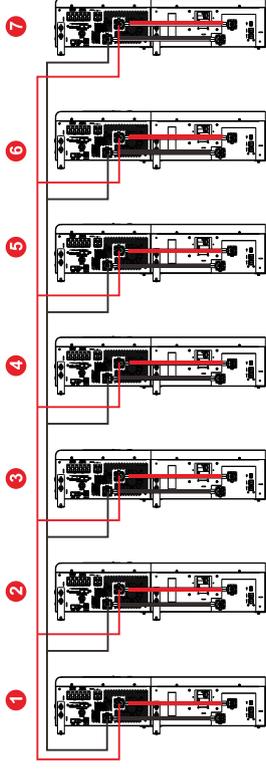
14



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input a single AI100-5048ESS, it is prohibited to parallel multiple PV+ and PV- together!

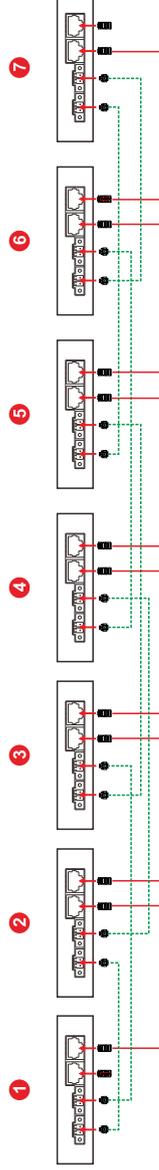
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



Step 3 Connect the AI100-5048 in parallel with communication cables

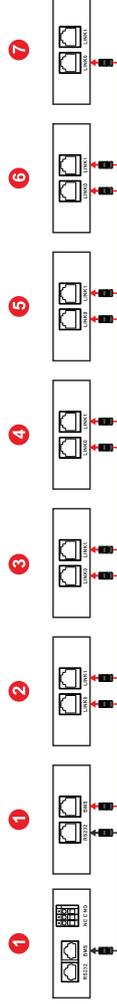
Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



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Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS single-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

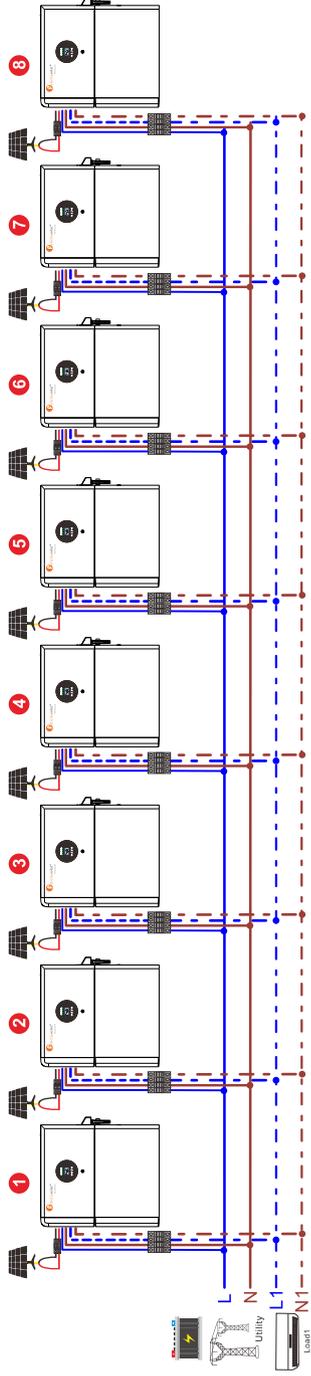
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

5.7 Eight AI100-5048 ESS are connected in parallel

Step 1: Connect electrical cables

Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



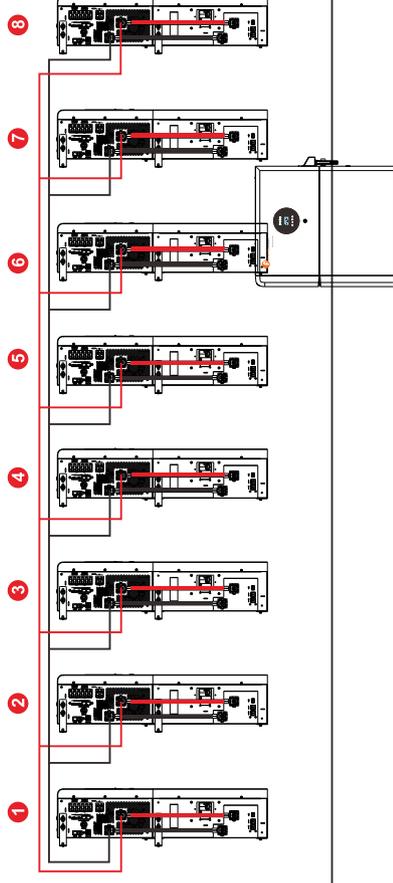
16



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input a single AI100-5048ESS, it is prohibited to parallel multiple PV+ and PV- together!

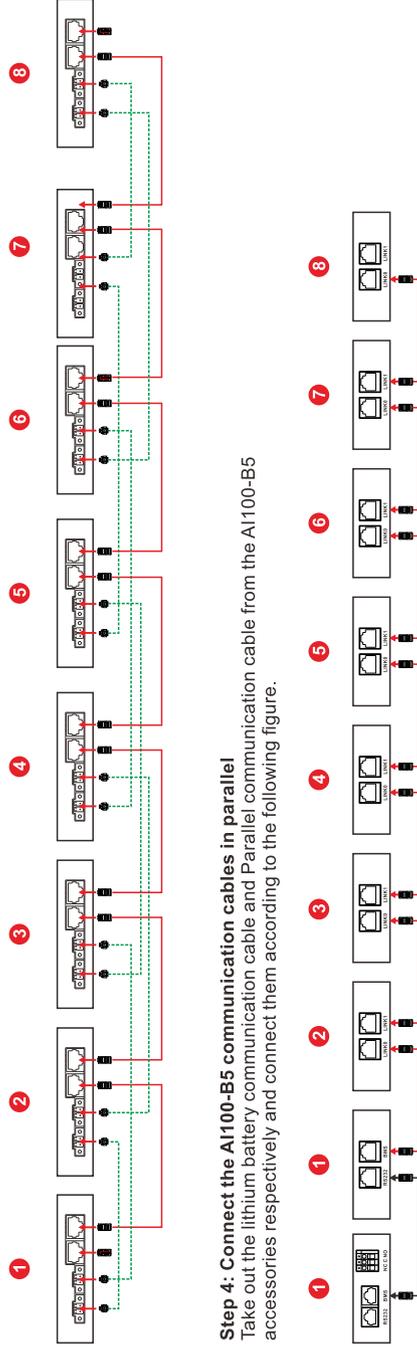
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



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Attention! When multiple AI100-5048 ESS single-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

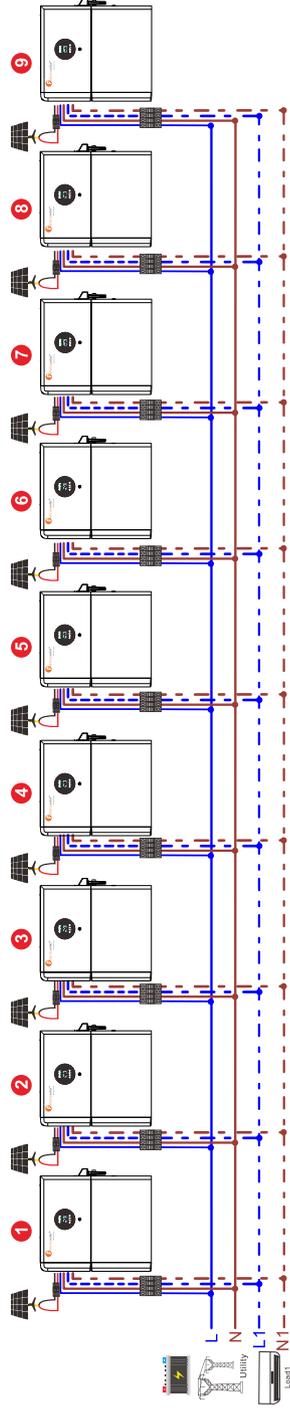
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

5.8 Nine AI100-5048 ESS are connected in parallel

Step 1: Connect electrical cables

Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding

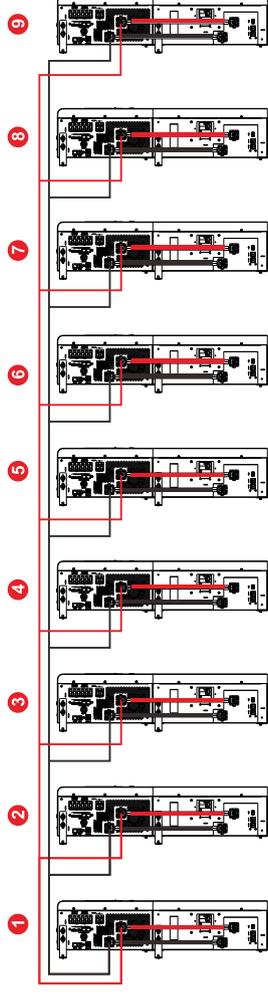


18

Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input a single AI100-5048ESS, it is prohibited to parallel multiple PV+ and PV- together!

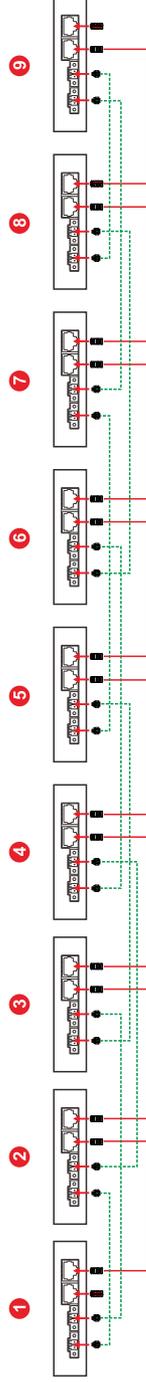
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



Step 3 Connect the AI100-5048 in parallel with communication cables

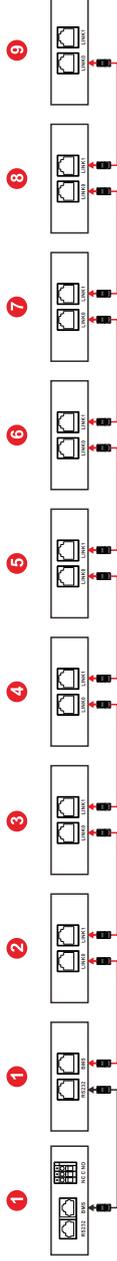
Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



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Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS single-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

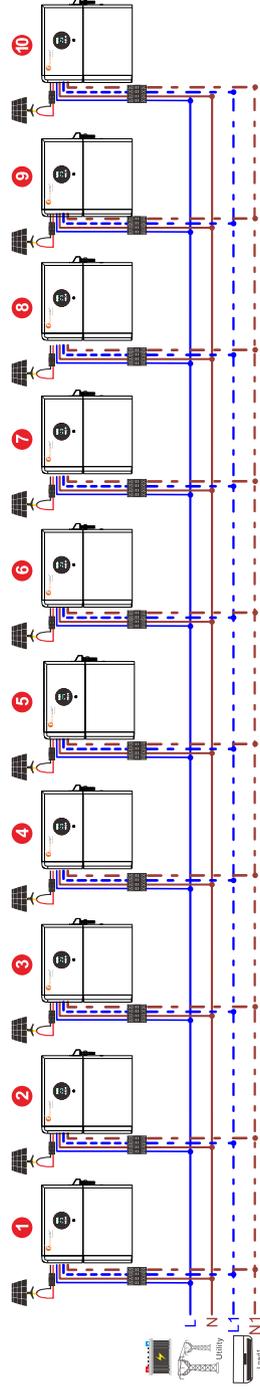
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

5.9 Ten AI100-5048 ESS are connected in parallel

Step 1: Connect electrical cables

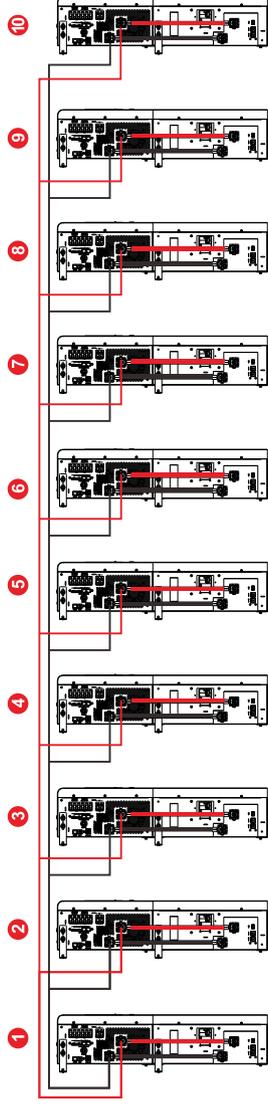
Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input a single AI100-5048ESS, it is prohibited to parallel multiple PV+ and PV- together!

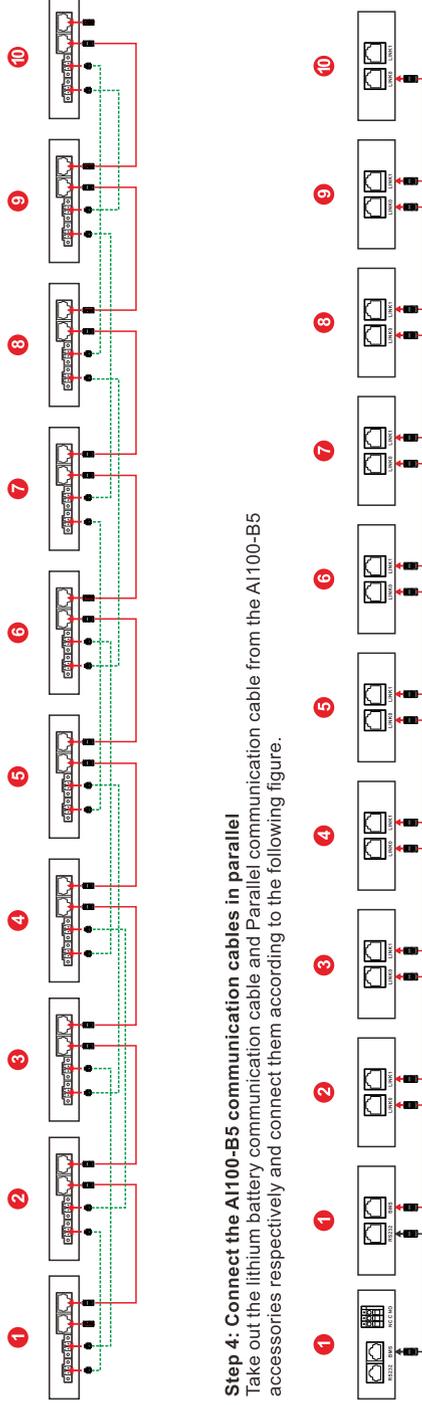
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



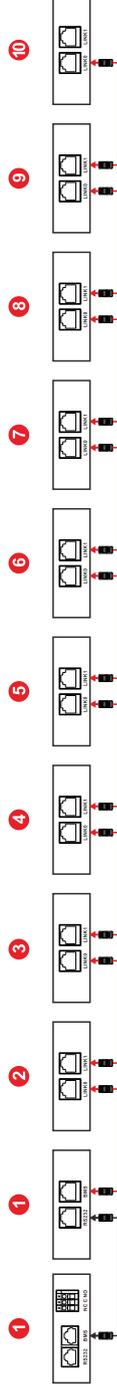
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out the Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS single-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

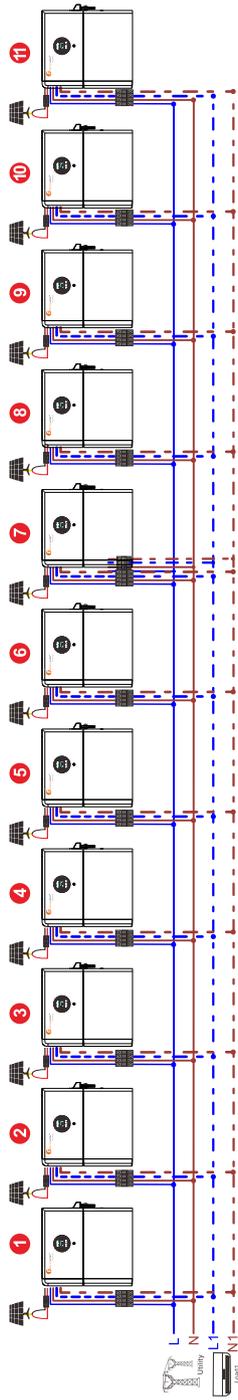
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

5.10 Eleven AI100-5048 ESS are connected in parallel

Step 1: Connect electrical cables

Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input a single AI100-5048ESS, it is prohibited to parallel multiple PV+ and PV- together!

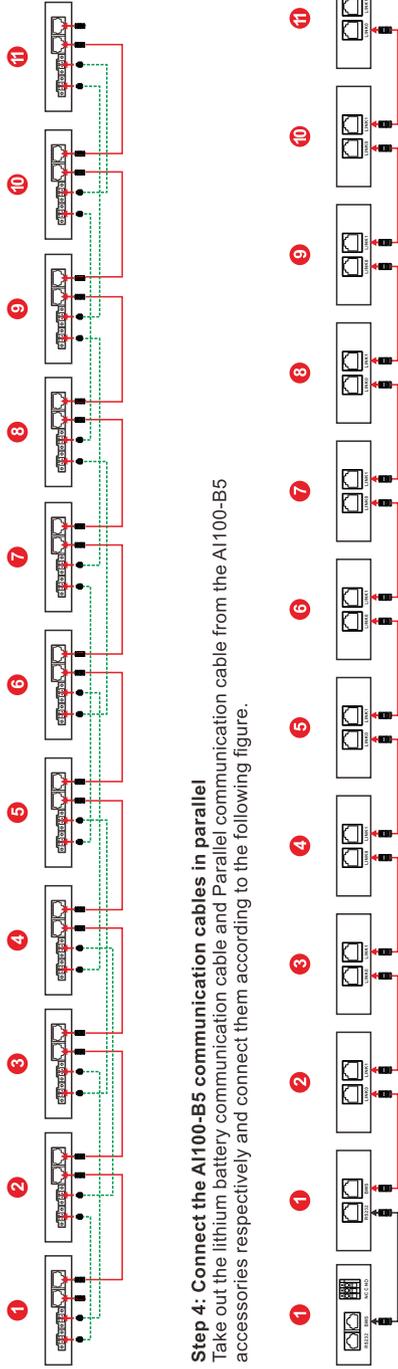
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



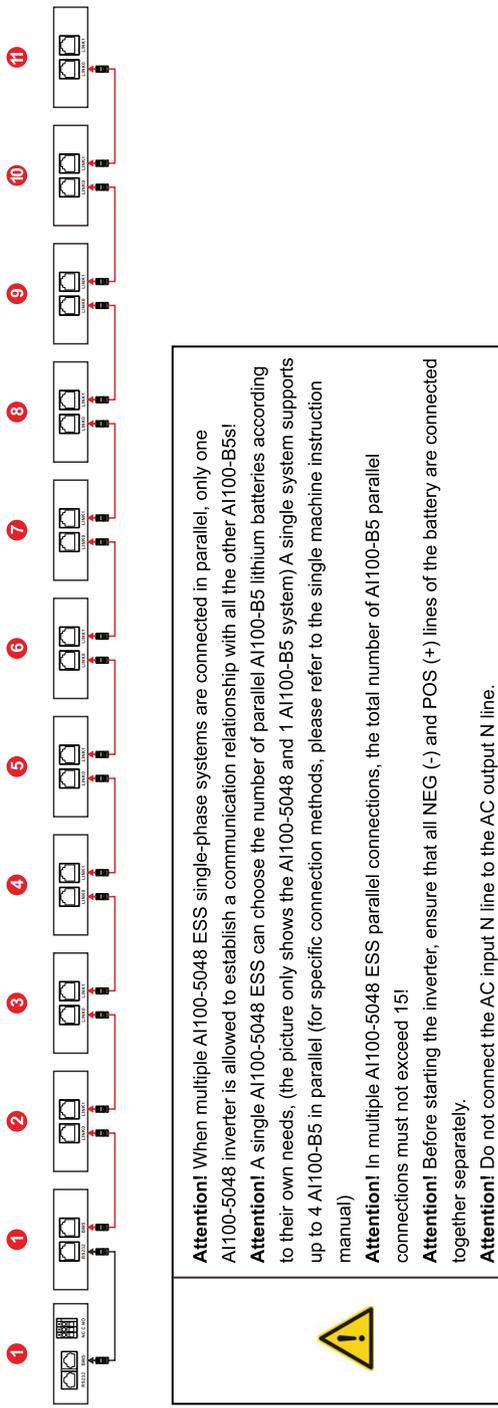
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out the lithium battery communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.

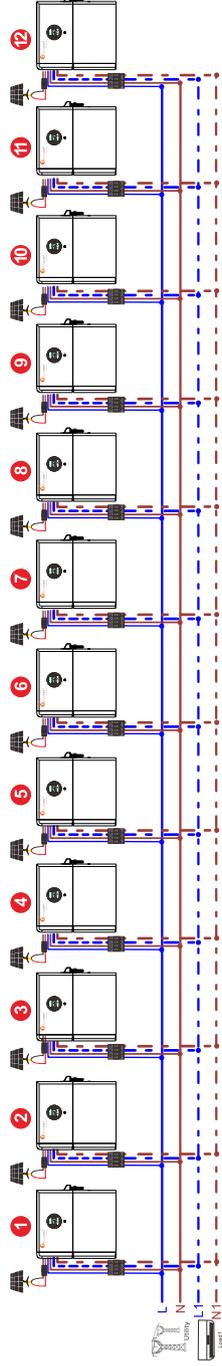


Attention! When multiple AI100-5048 ESS single-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!
Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)
Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.
Attention! Do not connect the AC input N line to the AC output N line.

5.11 Twelve AI100-5048 ESS are connected in parallel

Step 1: Connect electrical cables

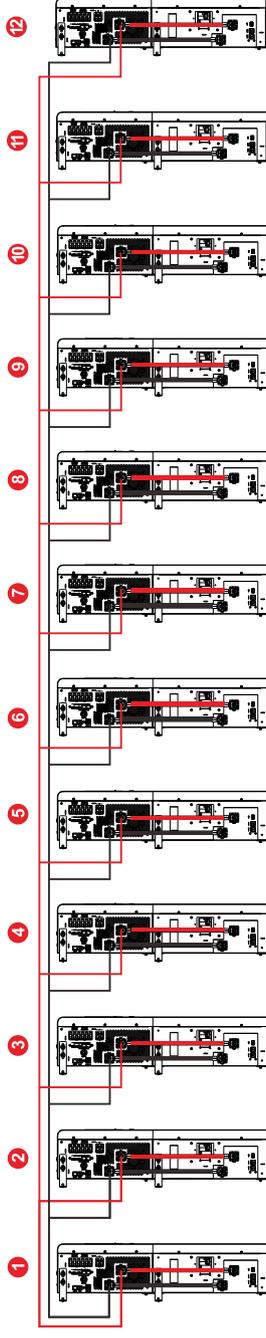
Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input a single AI100-5048ESS, it is prohibited to parallel multiple PV+ and PV- together!

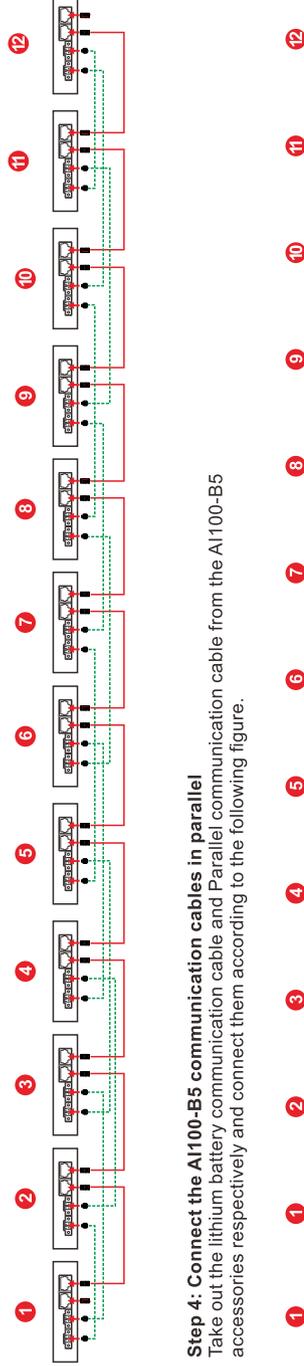
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



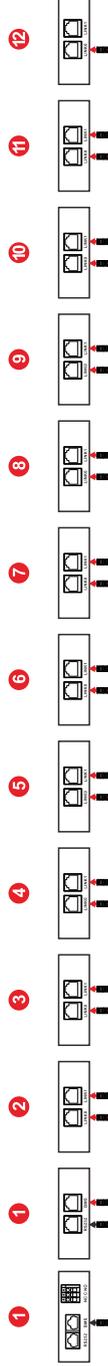
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS single-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

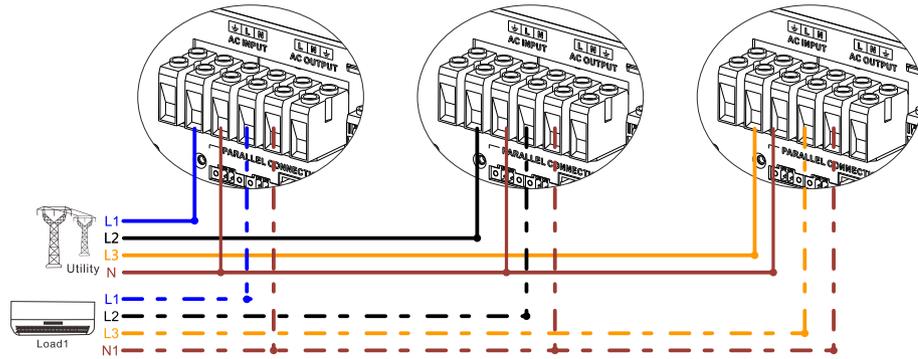
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

6. phase multiple AI100-5048 ESS in parallel

6.1 Support 3-phase equipment

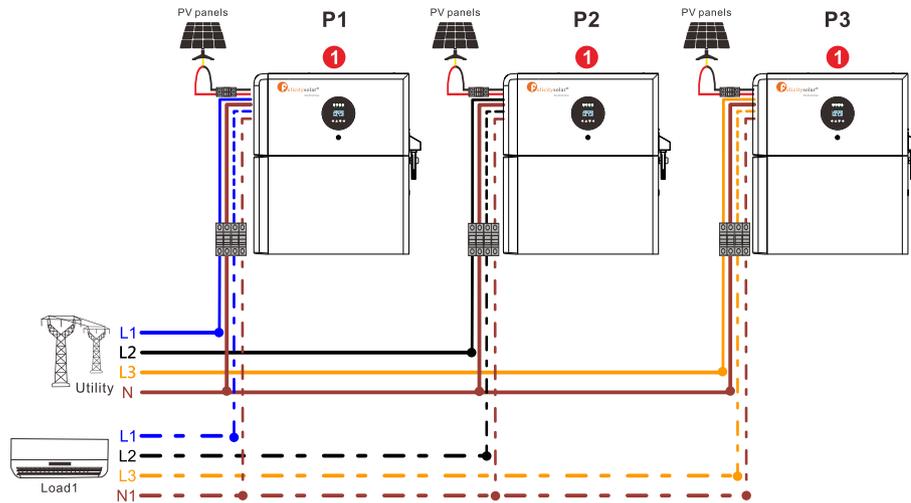
Internal wiring diagram



6.2 One AI100-5048 ESS in parallel for each phase

Step 1: Connect electrical cables

Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



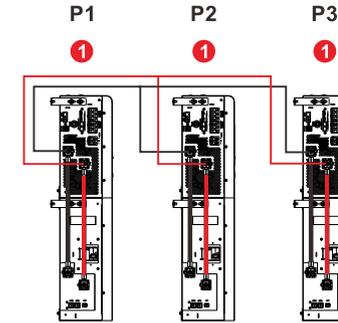
Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input to a single AI100-5048ESS, and multiple PV+ and PV- are prohibited in parallel

Attention! No equalizing cable is allowed between AI100-5048 with different phases. Otherwise, the inverter may be damaged

Attention! P1:L1-phase,P2:L2-phase, P3: L3-phase

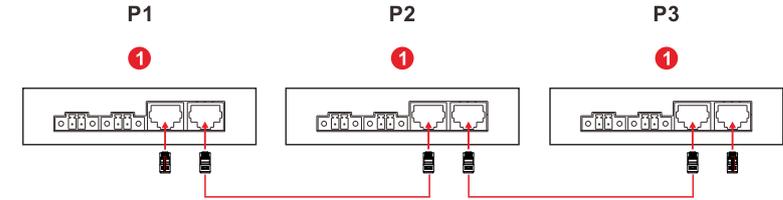
Step 2: Connect lithium battery DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



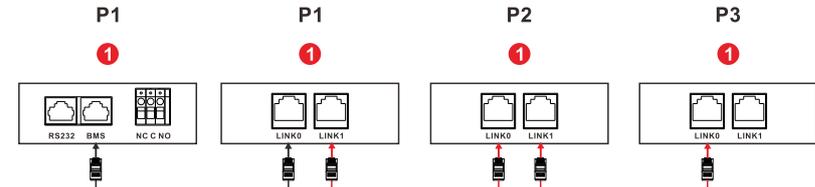
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS three-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

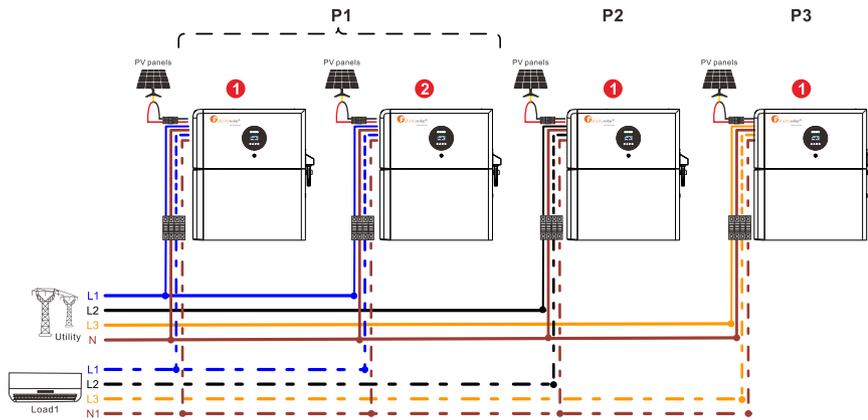
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

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

Step 1: Connect electrical cables

Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



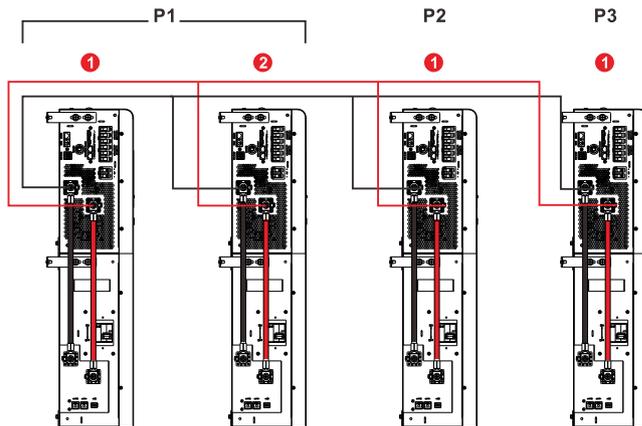
Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input to a single AI100-5048ESS, and multiple PV+ and PV- are prohibited in parallel

Attention! No equalizing cable is allowed between AI100-5048 with different phases. Otherwise, the inverter may be damaged

Attention! P1:L1-phase,P2:L2-phase, P3: L3-phase

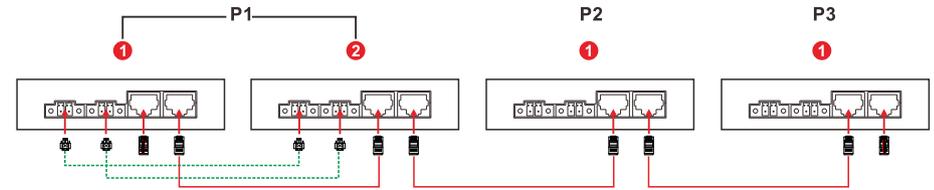
Step 2: Connect lithium battery DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



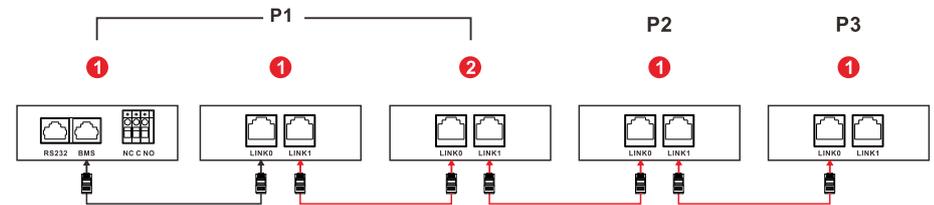
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS three-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

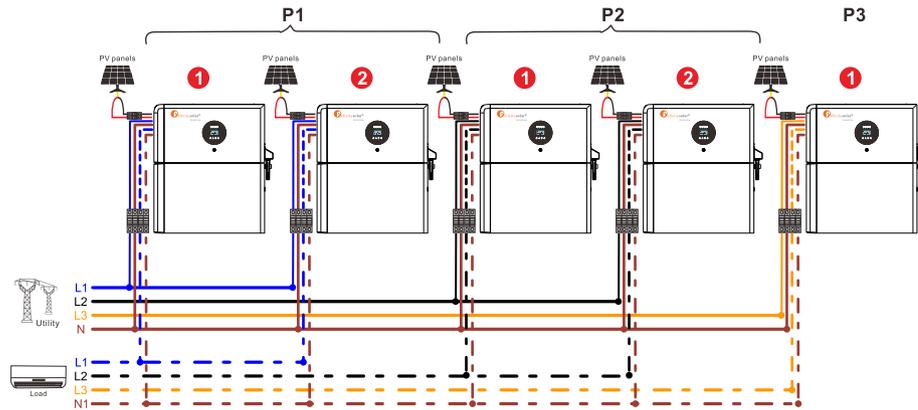
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

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

Step 1: Connect electrical cables

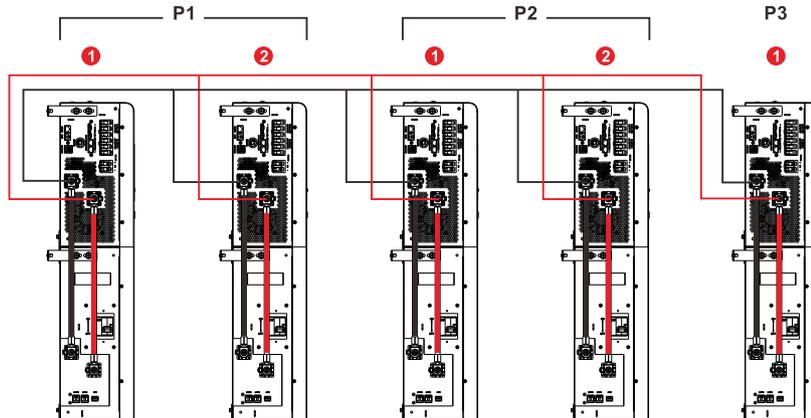
Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input to a single AI100-5048ESS, and multiple PV+ and PV- are prohibited in parallel
Attention! No equalizing cable is allowed between AI100-5048 with different phases. Otherwise, the inverter may be damaged
Attention! P1:L1-phase,P2:L2-phase, P3: L3-phase

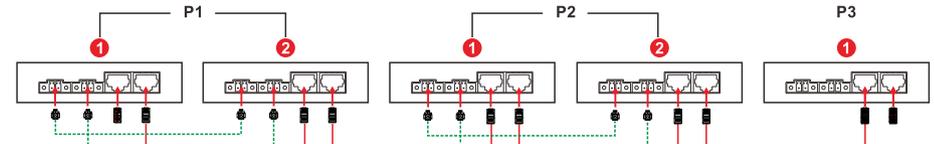
Step 2: Connect lithium battery DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



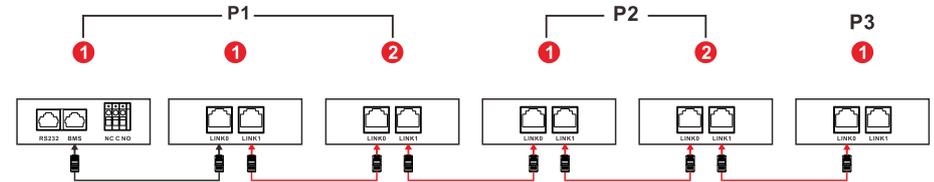
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.

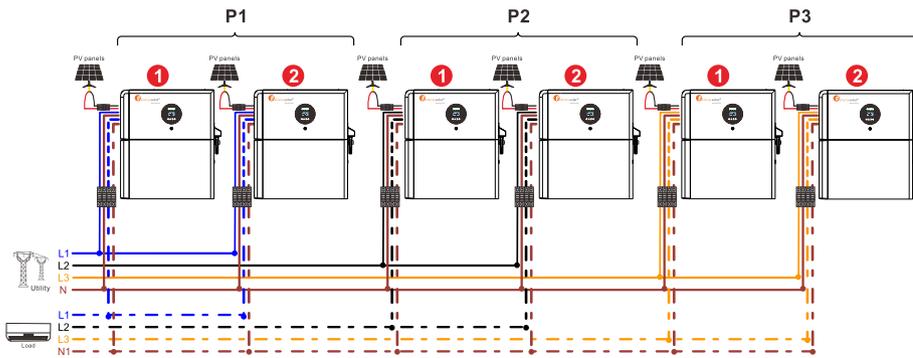


Attention! When multiple AI100-5048 ESS three-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!
Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)
Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.
Attention! Do not connect the AC input N line to the AC output N line.

6.5 Two inverters in each phase:

Step 1: Connect electrical cables

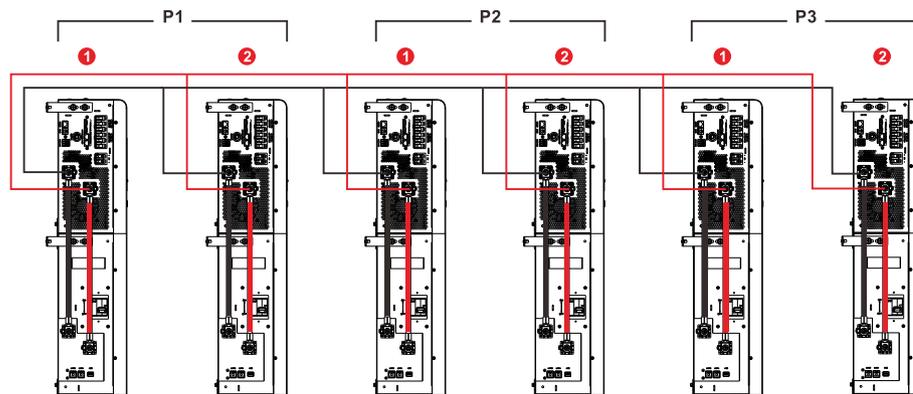
Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input to a single AI100-5048ESS, and multiple PV+ and PV- are prohibited in parallel
Attention! No equalizing cable is allowed between AI100-5048 with different phases. Otherwise, the inverter may be damaged
Attention! P1:L1-phase,P2:L2-phase, P3: L3-phase

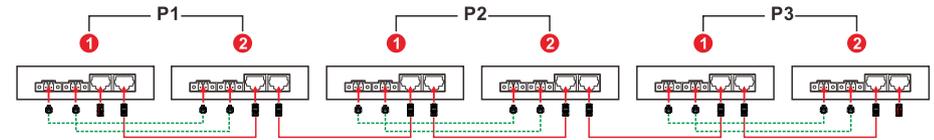
Step 2: Connect lithium battery DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



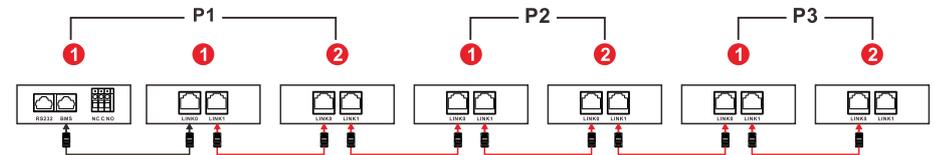
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.

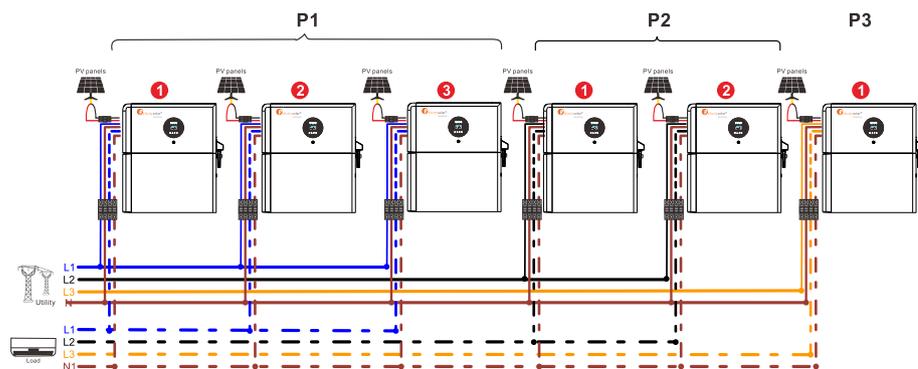


Attention! When multiple AI100-5048 ESS three-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!
Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)
Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.
Attention! Do not connect the AC input N line to the AC output N line.

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

Step 1: Connect electrical cables

Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



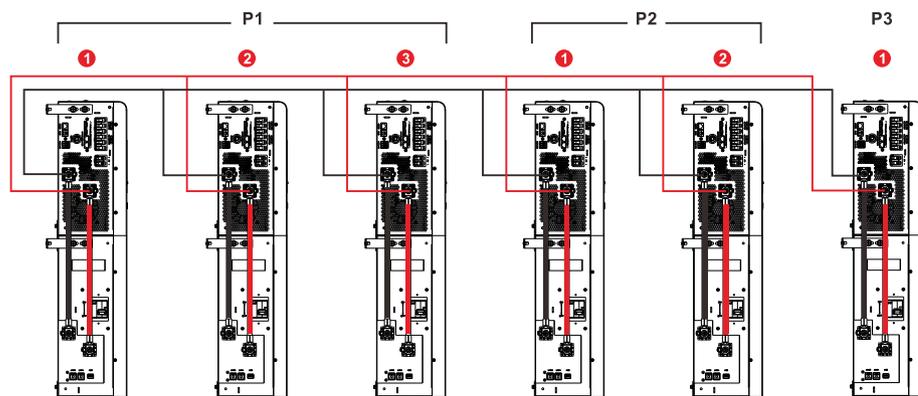
Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input to a single AI100-5048ESS, and multiple PV+ and PV- are prohibited in parallel

Attention! No equalizing cable is allowed between AI100-5048 with different phases. Otherwise, the inverter may be damaged

Attention! P1:L1-phase,P2:L2-phase, P3: L3-phase

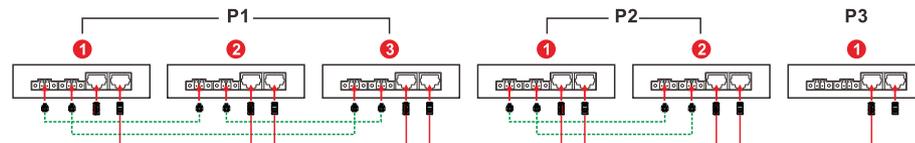
Step 2: Connect lithium battery DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



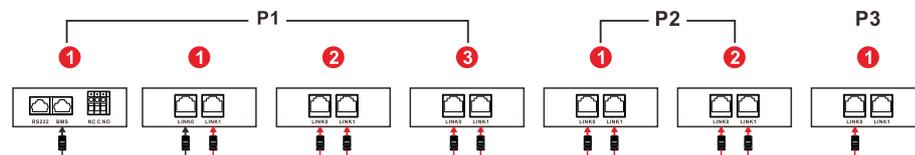
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



Attention! When multiple AI100-5048 ESS three-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

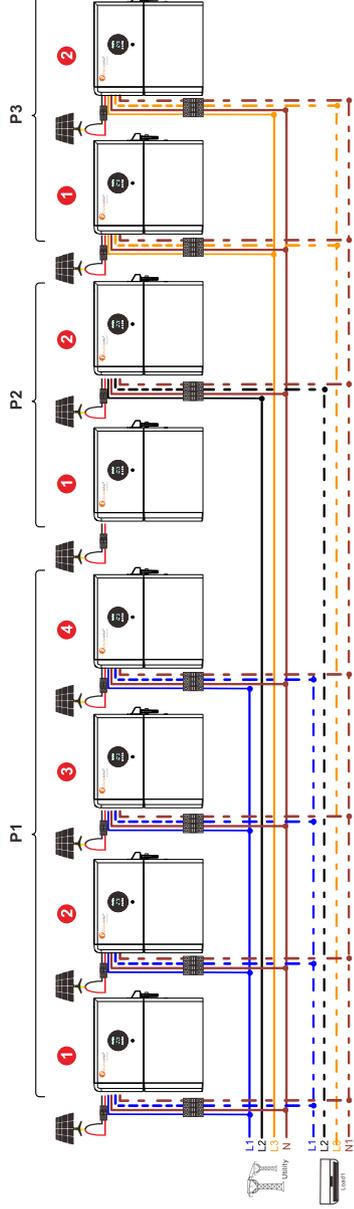
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

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

Step 1: Connect electrical cables

Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



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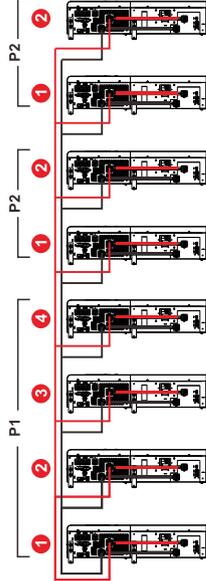
Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input to a single AI100-5048ESS, and multiple PV+ and PV- are prohibited in parallel

Attention! No equalizing cable is allowed between AI100-5048 with different phases. Otherwise, the inverter may be damaged

Attention! P1: L1-phase, P2: L2-phase, P3: L3-phase

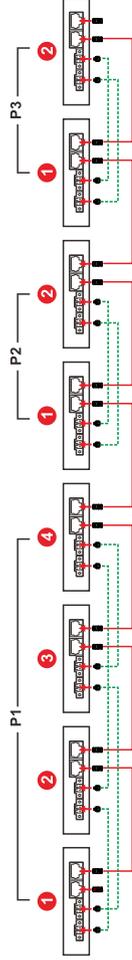
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



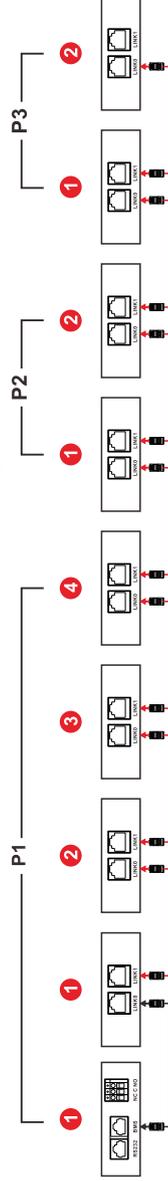
Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



Step 4: Connect the AI100-B5 communication cables in parallel

Take out the lithium battery communication cable and Parallel communication cable from the AI100-B5 accessories respectively and connect them according to the following figure.



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Attention! When multiple AI100-5048 ESS three-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

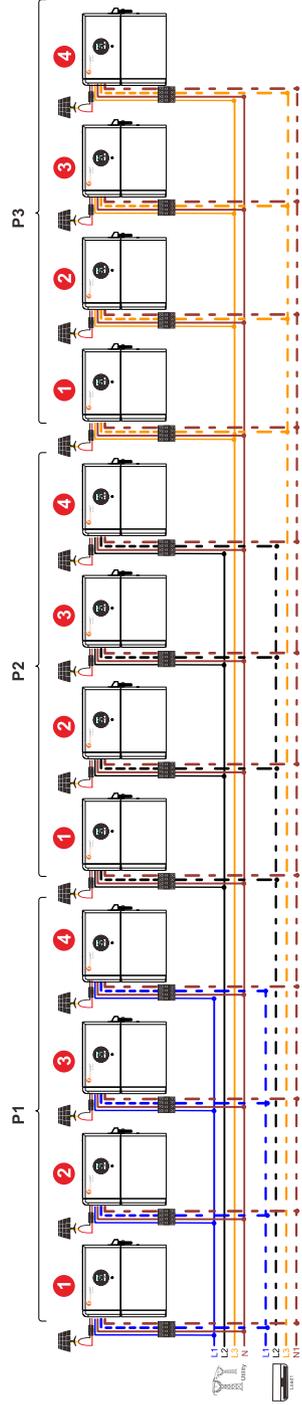
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

6.8 Four inverters in each phase :

Step 1: Connect electrical cables

Please refer to the following figure, AC input, AC output, PV solar photovoltaic panel input interface to connect the corresponding



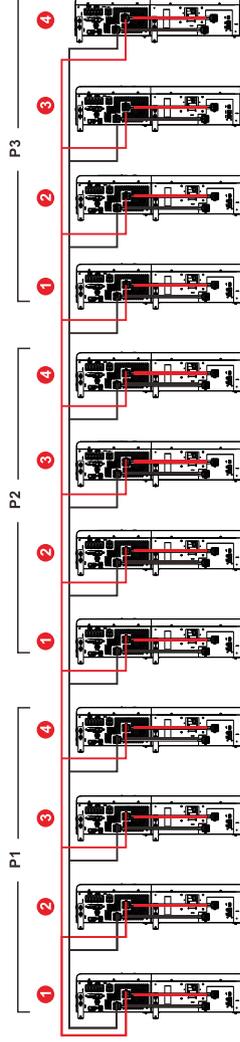
38



Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input to a single AI100-5048ESS, and multiple PV+ and PV- are prohibited in parallel
Attention! No equalizing cable is allowed between AI100-5048 with different phases. Otherwise, the inverter may be damaged
Attention! P1: L1-phase, P2: L2-phase, P3: L3-phase

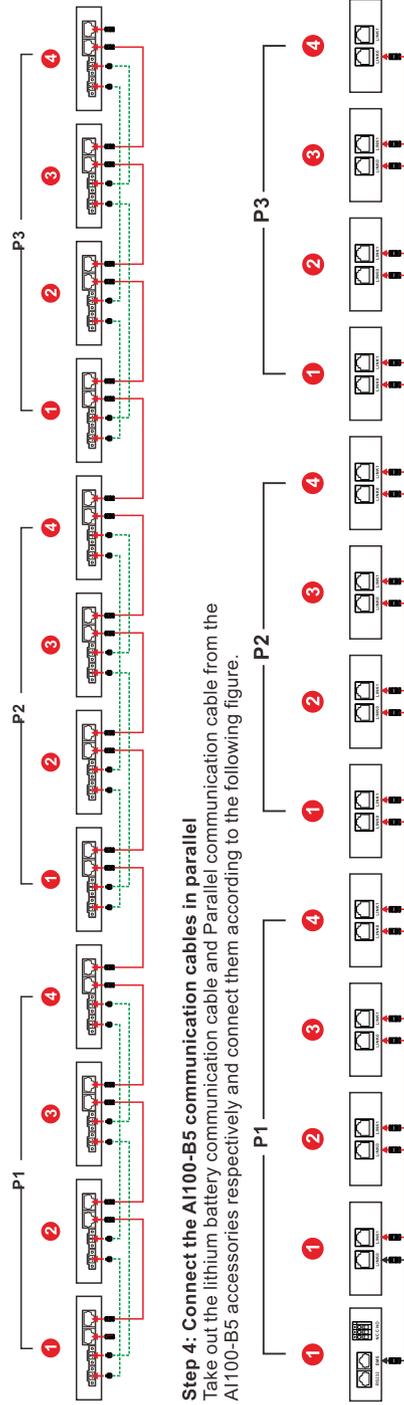
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



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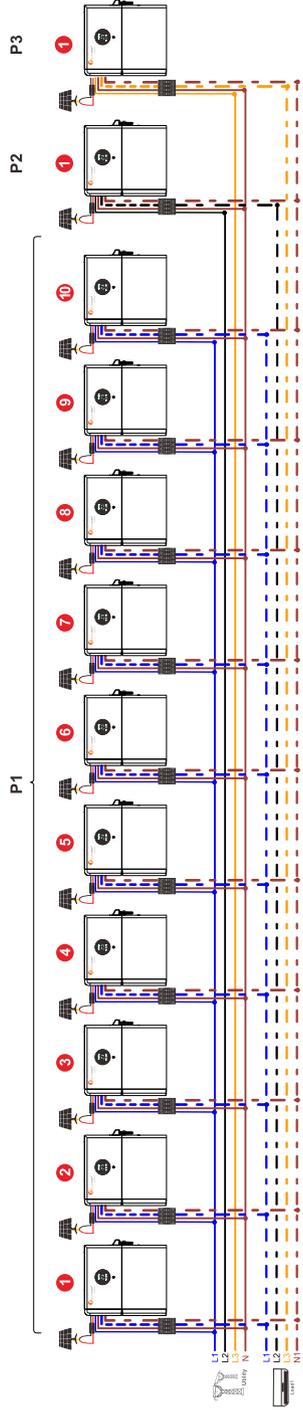


Attention! When multiple AI100-5048 ESS three-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!
Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)
Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!
Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.
Attention! Do not connect the AC input N line to the AC output N line.

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

Step 1: Connect electrical cables

Please refer to the following figure, AC input, AC output, AC output, PV solar photovoltaic panel input interface to connect the corresponding



40



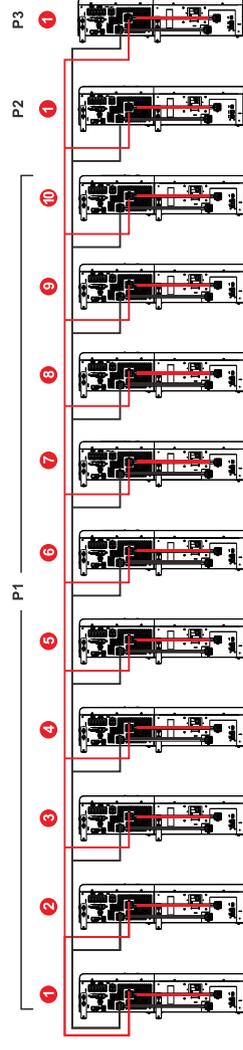
Attention! Multiple AI100-5048ESS PV solar panels in parallel are independently input to a single AI100-5048ESS, and multiple PV+ and PV- are prohibited in parallel

Attention! No equalizing cable is allowed between AI100-5048 with different phases. Otherwise, the inverter may be damaged

Attention! P1: L1-phase, P2: L2-phase, P3: L3-phase

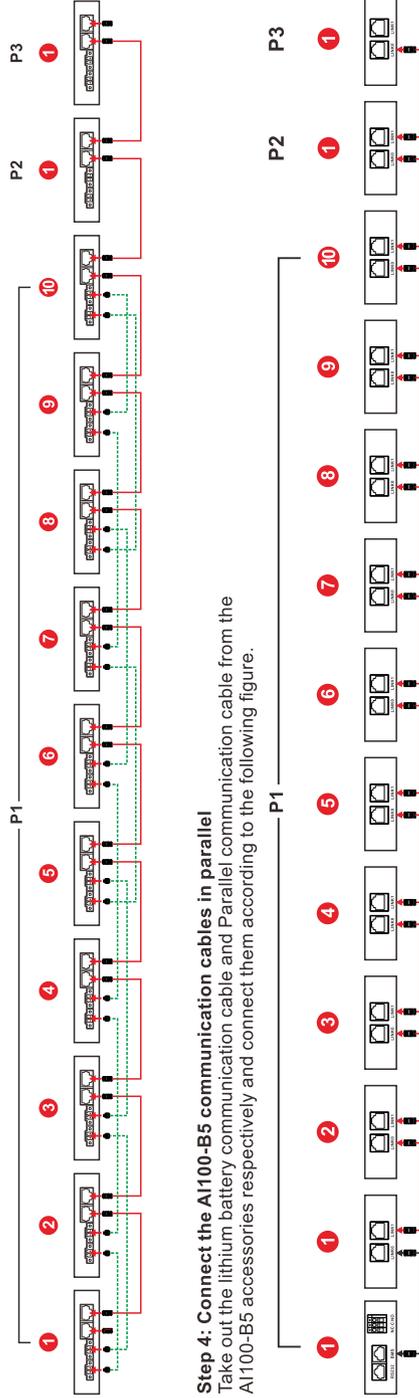
Step 2: Connect DC cables

Connect DC cables in parallel by referring to the figure. Prepare the required extension cables by referring to the DC cable specifications provided in the operating instructions of the single machine.



Step 3 Connect the AI100-5048 in parallel with communication cables

Take out Parallel communication cable and Current sharing cable from AI100-5048 accessories respectively and connect them according to the following figure



41



Attention! When multiple AI100-5048 ESS three-phase systems are connected in parallel, only one AI100-5048 inverter is allowed to establish a communication relationship with all the other AI100-B5s!

Attention! A single AI100-5048 ESS can choose the number of parallel AI100-B5 lithium batteries according to their own needs, (the picture only shows the AI100-5048 and 1 AI100-B5 system) A single system supports up to 4 AI100-B5 in parallel (for specific connection methods, please refer to the single machine instruction manual)

Attention! In multiple AI100-5048 ESS parallel connections, the total number of AI100-B5 parallel connections must not exceed 15!

Attention! Before starting the inverter, ensure that all NEG (-) and POS (+) lines of the battery are connected together separately.

Attention! Do not connect the AC input N line to the AC output N line.

7. PV CONNECTION

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

CAUTION: Each inverter should connect to PV modules separately

8. LCD SETTING AND DISPLAY

Setting Program:

28	AC output mode	Single 	<p>When the units are used in parallel with single phase, please select "PAL" in program 28.</p> <p>It is required to have at least 3 inverters or maximum six inverters to support three-phase equipment.</p> <p>It's required to have at least one inverter in each phase or it's up to four inverters in one phase.</p> <p>Please select "3P1" in program 28 for the inverters connected to L1 phase, "3P2" in program 28 for the inverters connected to L2 phase and "3P3" in program 28 for the inverters connected to L3 phase.</p> <p>Do NOT connect share current cable between units on different phases.</p> <p>Before starting up inverters, please connect all N wires of AC output together.</p>
		Parallel 	
		L1 Phase 	
		L2 Phase 	
		L3 Phase 	

9. COMMISSIONING

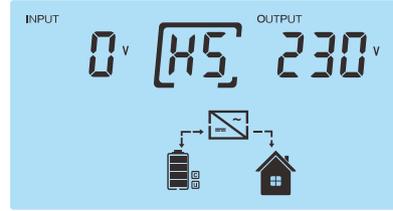
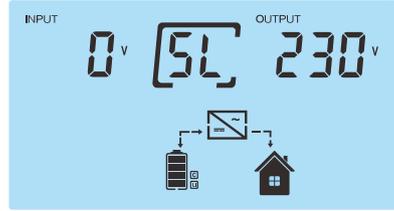
Parallel in single phase

Step 1: Check the following requirements before commissioning:

- Correct wire connection.
 - Ensure all breakers in Line wires of load side are open and each Neutral wires of each unit are connected together.
- Step 2: Turn on each unit and set "PAL" in LCD setting program 28 of each unit. And then shut down all units.

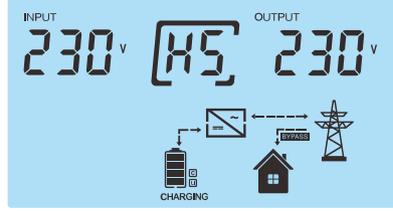
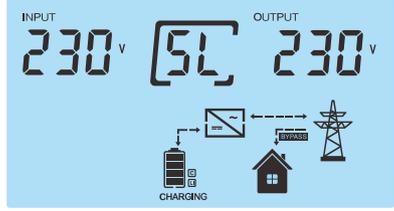
NOTE: To be safe, it's better to turn off switch when setting LCD program.

Step 3: Turn on each unit. If all inverters are configured correctly, one unit will show "HS" in LCD display, and others are "SL". Otherwise, please double check the procedure of Step1 and Step 2.

LCD display in Master unit	LCD display in Slave unit
	

NOTE: Master and slave units are randomly defined.

Step 4: Switch on all AC breakers of Line wires in AC input. It's better to have all inverters connect to utility at the same time. However, these inverters will automatically restart. If detecting AC connection, they will work normally.

LCD display in Master unit	LCD display in Slave unit
	

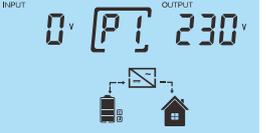
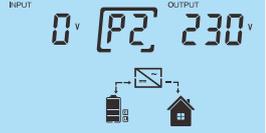
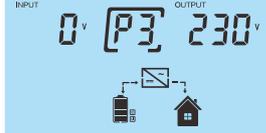
Support three-phase equipment

Step 1: Check the following requirements before commissioning:

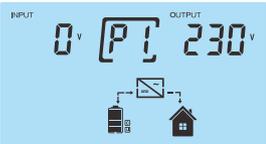
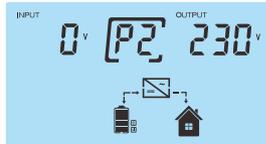
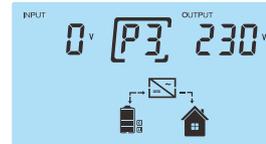
- Correct wire connection
 - Ensure all breakers in Line wires of load side are open and each Neutral wires of each unit are connected together.
- Step 2: Turn on all units and configure LCD program 28 as P1, P2 and P3 sequentially. And then shut down all units.

NOTE: To be safe, it's better to turn off switch when setting LCD program.

Step 3: Turn on all units sequentially.

LCD display in L1-phase unit	LCD display in L2-phase unit	LCD display in L3-phase unit
		

Step 4: Switch on all AC breakers of Line wires in AC input. If AC connection is detected and three phases are matched with unit setting, they will work normally. Otherwise, the AC icon  will flash and they will not work in line mode.

LCD display in L1-phase unit	LCD display in L2-phase unit	LCD display in L3-phase unit
		

Step 5: If there is no more fault alarm, the system to support 3-phase equipment 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.

Note 1: To avoid overload occurring, before turning on breakers in load side, it's better to have whole system in operation first.

Note 2: Transfer time for this operation exists. Power interruption may happen to critical devices, which cannot bear transfer time.

10. FAULT CODE TABLE

When fault event happens, inverter will cut off output, and the fault LED is solid on. At the same time, fault code, icon



and **ERROR** are shown on the LCD screen.

Fault Code	Fault information	Trouble Shooting
40	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.
41	Host data loss	
42	Synchronization data loss	
43	Current feedback into the inverter is detected.	<ol style="list-style-type: none"> 1. Restart the inverter. 2. Check if L/N cables are not connected reversely in all inverters. 3. For parallel system in single phase, make sure the sharing cables are connected in all inverters. For supporting three-phase system, make sure the sharing cables are connected in the inverters in the same phase, and disconnected in the inverters in different phases. 4. If the problem remains, please contact your installer.
44	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. Check the version of each inverter via LCD setting and make sure the CPU versions are same. If not, please contact your installer to provide the firmware to update. 3. After updating, if the problem still remains, please contact your installer.
45	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.
46	AC output mode setting is different.	<ol style="list-style-type: none"> 1. Switch off the inverter and check LCD setting program 28. 2. For parallel system in single phase, make sure no 3P1, 3P2 or 3P3 is set on program 28. For supporting three-phase system, make sure no "PAL" is set on program 28. 3. If the problem remains, please contact your installer.