Installation and Operation Manual

Repeater REPE-01

Read this manual carefully before using the product, and keep it handy for future reference.

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Operating Instructions

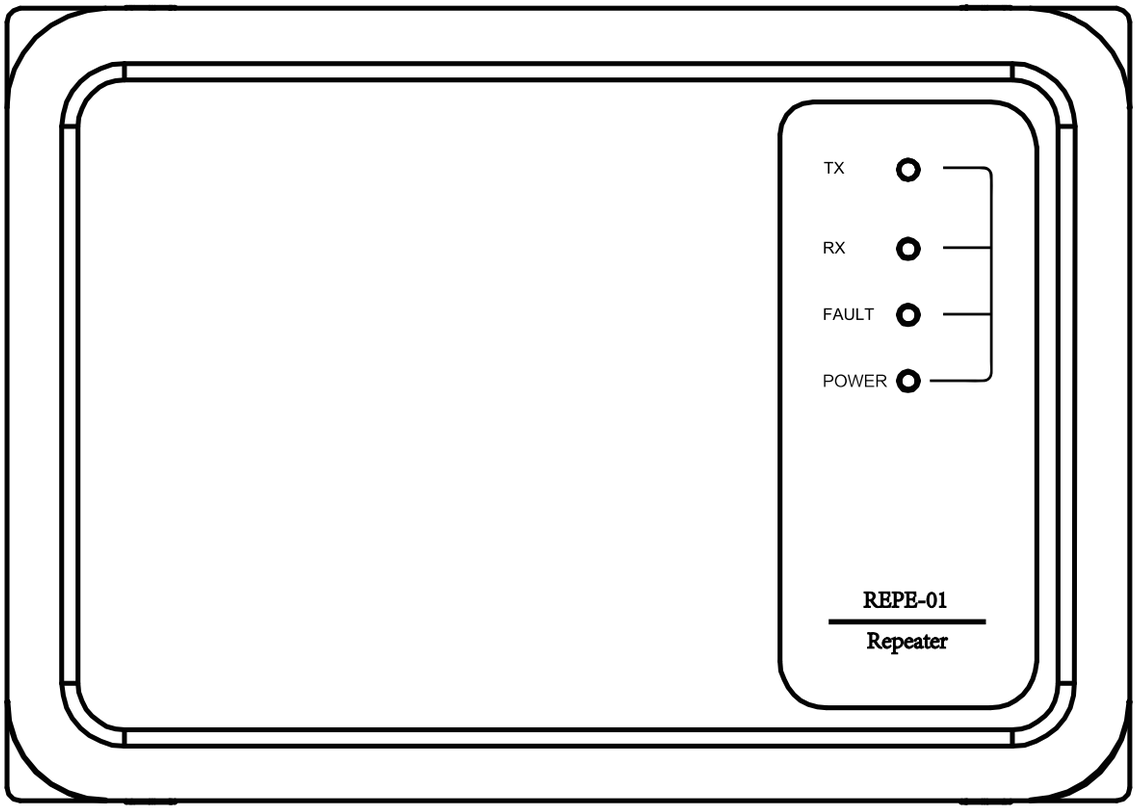
⚠ Precautions

- Entrust a qualified local technician to perform installation. Do not try to install the unit by yourself.
- Before cleaning or maintenance, ensure the power supply is cut off. Do not use water for washing to prevent electric shocks.
- Do not operate with wet hands to avoid electric shocks.
- Do not use pesticides, disinfectants, or flammable directly on the controller as they may damage the device or cause fires.
- When the IDUs are powered separately and the number of IDUs to be connected is more than 10 or the communication distance is larger than 200, repeaters are required.

Main Parameters

Name	REPE-01
Rated Voltage	220-240V ~ 50HZ
Operating environment temperature	-5℃ ~ 43℃
Operating environment humidity	≤RH90%

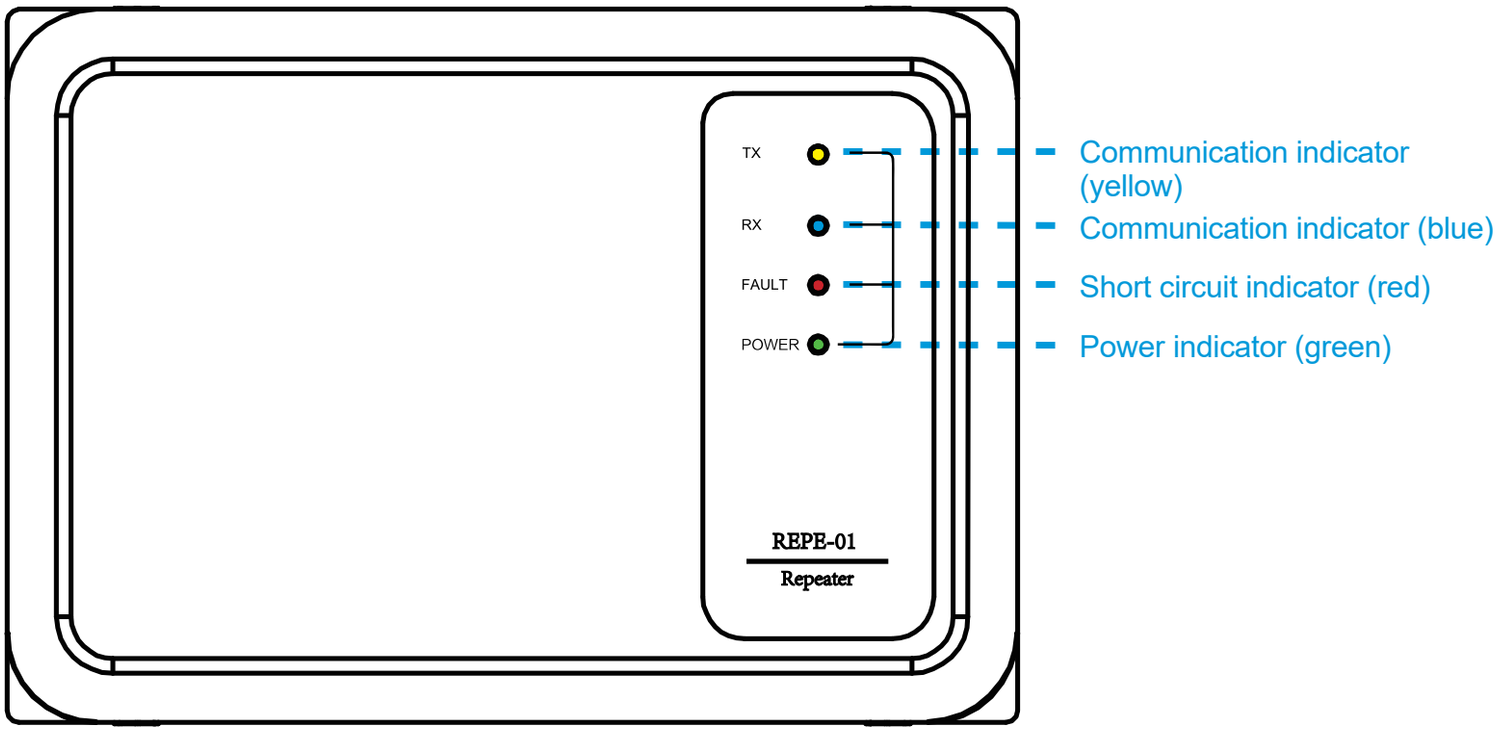
Product Overview



A repeater is a connector working on the physical layer, with the following features:

- Signal repeater: re-transmits or forwards data signals to extend the network transmission distance.
- Power supply repeater: compensates the voltage drop caused by communication wire resistance to increase the bus voltage.

Descriptions on Indicators



Indicator	Normal	Abnormal	Remarks
Communication indicator	Blinking	On/off	Abnormal communication
Communication indicator	Blinking	On/off	Abnormal communication
Short circuit indicator	Off	On	Short circuit of communication bus downstream the repeater
Power indicator	On	Off	Abnormal power supply for the main board

Installation Instructions

⚠ Precautions

- To ensure correct installation, read the "Installation Instructions" section of this manual.
- All the warnings provided here are important for safety and must be followed.

⚠ Warning

- Entrust the local distributor or local service agent to appoint a qualified technician to perform the installation. Do not try to install the unit by yourself.
- Do not connect the communication wire when the power is on. Otherwise, the circuit board will be damaged.
- Do not connect the power cable (high voltage) to the communication (low voltage) terminal. Otherwise, the circuit board will be damaged.
- Do not connect M1M2 with the PQ of IDU. Otherwise, the circuit board will be damaged.
- Note the distinction between the communication port of the upstream IDU and that of the downstream IDU. Be careful not to make them confused. Otherwise, communication failure will occur.
- Use the specified cables as the communication wires.The wires should be fixed with clamps to avoid stress on the terminal block.
- Do not install the repeater in any corrosive, flammable or explosive environment or place with oil mist (such as a kitchen).
- Do not install the repeater outdoor or in a wet place and avoid direct sunlight.
- Do not knock, throw, or disassemble the wired controller.
- Please install the repeater after painting the wall to prevent water, lime and sand from entering the repeater.
- When installing the equipment, all requirements of the mentioned standard must be fulfilled. And when necessary, suitable enclosure and type of supply connection should be provided by end system.

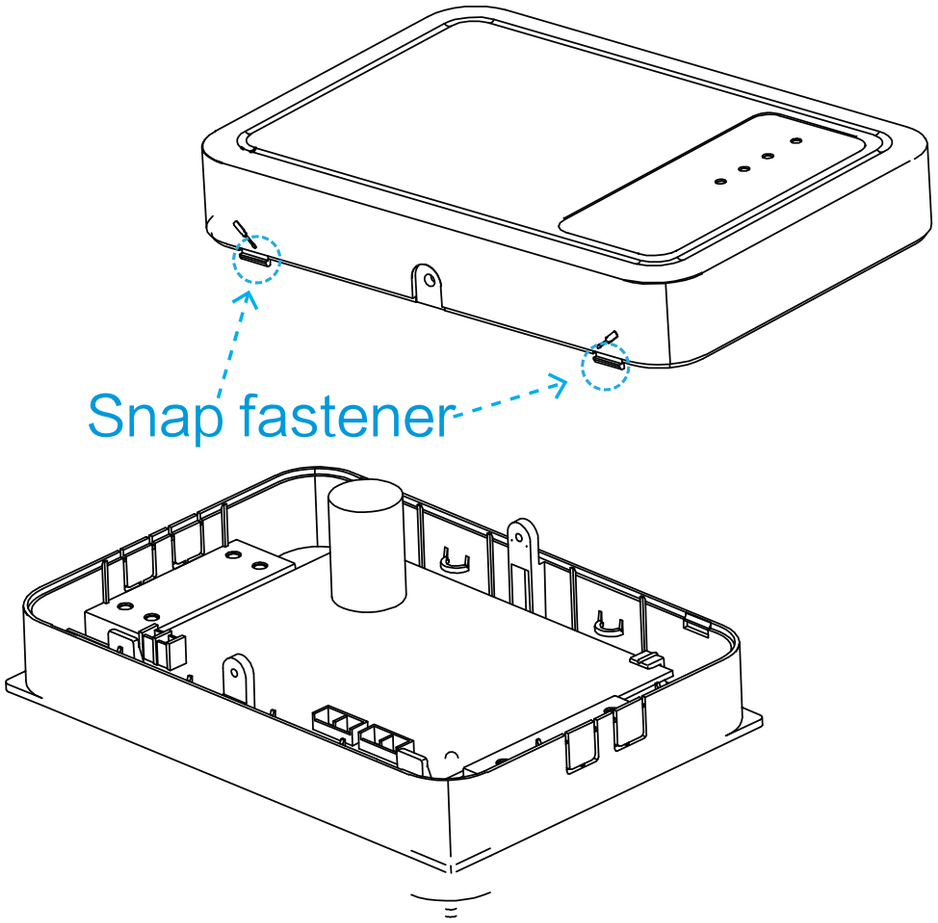
Product List

Please make sure if segments below are complete.

No.	Description	Quantity	Remarks
1	REPE-01 repeater	1	Used to increase bus voltage
2	Installation and Operation Manual	1	Providing instructions on repeater installation
3	Philips head screw	4	Used to fix the pedestal
4	White plastic expansion pipe	4	Used to fix the pedestal
5	Crimp clamp	4	Used to fix the wire
6	Cross recessed pan head tapping screw (ST3.9*10)	8	Used to fix the crimp clamp
7	Cross recessed pan head tapping screw (ST2.9*8)	2	Used to fix the box cover and pedestal after installing

Repeater Installation

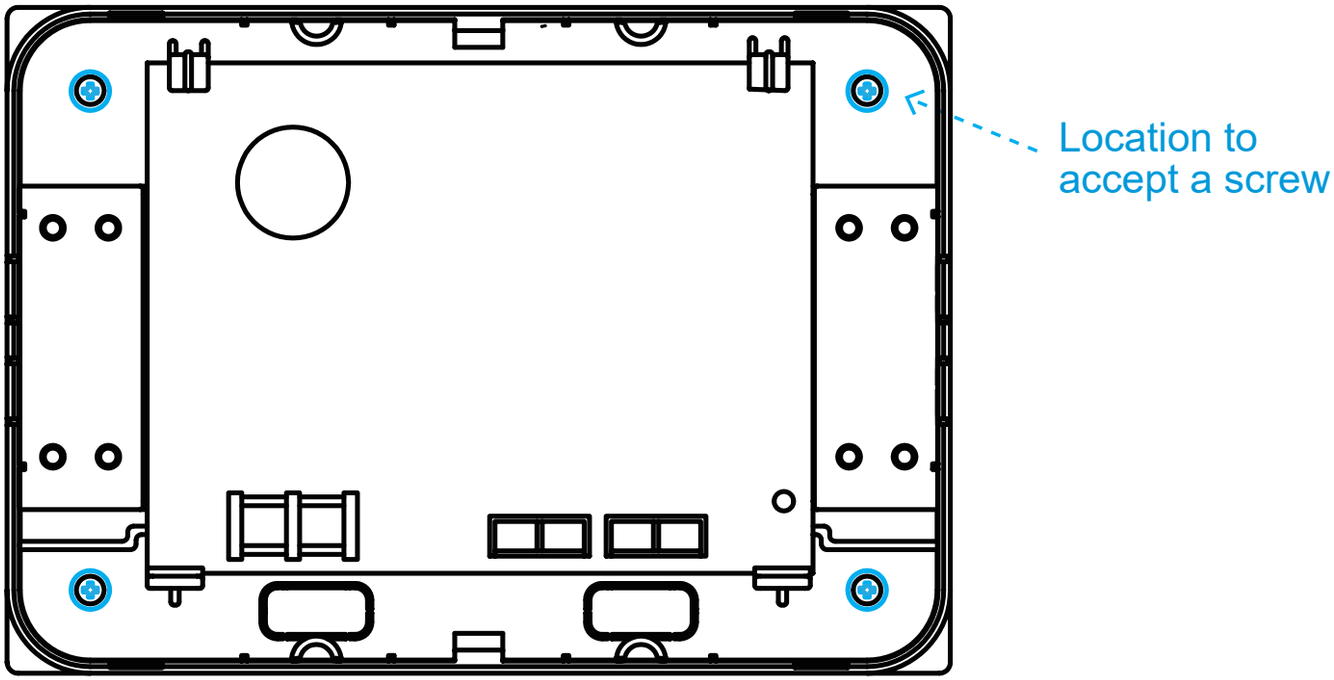
Ⅰ. Push the cover hard on the screwdriver icon till snap fasteners of the cover seperate from the base, then open the cover. Install the power cables and communications wires properly according to the wiring diagram.



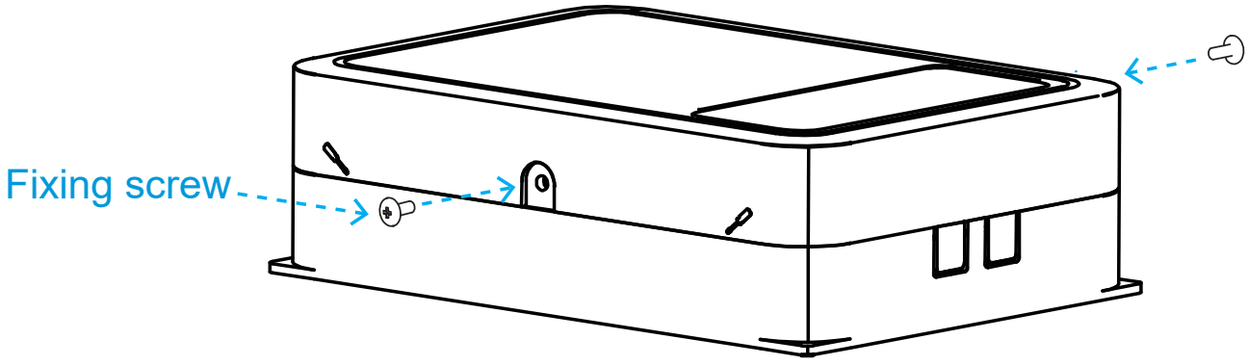
⚠ Warning

- Make sure the power is off when operating.
- Do not raise the upper cover with excessive force to avoid damage to the cover or the circuit board.

Ⅱ. Fix the repeater base on the wall or a proper location with a screwdriver. Four positions need to be fixed with screws.



Ⅲ. Finally, close the upper cover and the bottom cap of the repeater and tighten them with two fixing screws.



⚠ Warning

- Make sure that no cables are clamped when buckling the upper cover and bottom cap of the repeater.

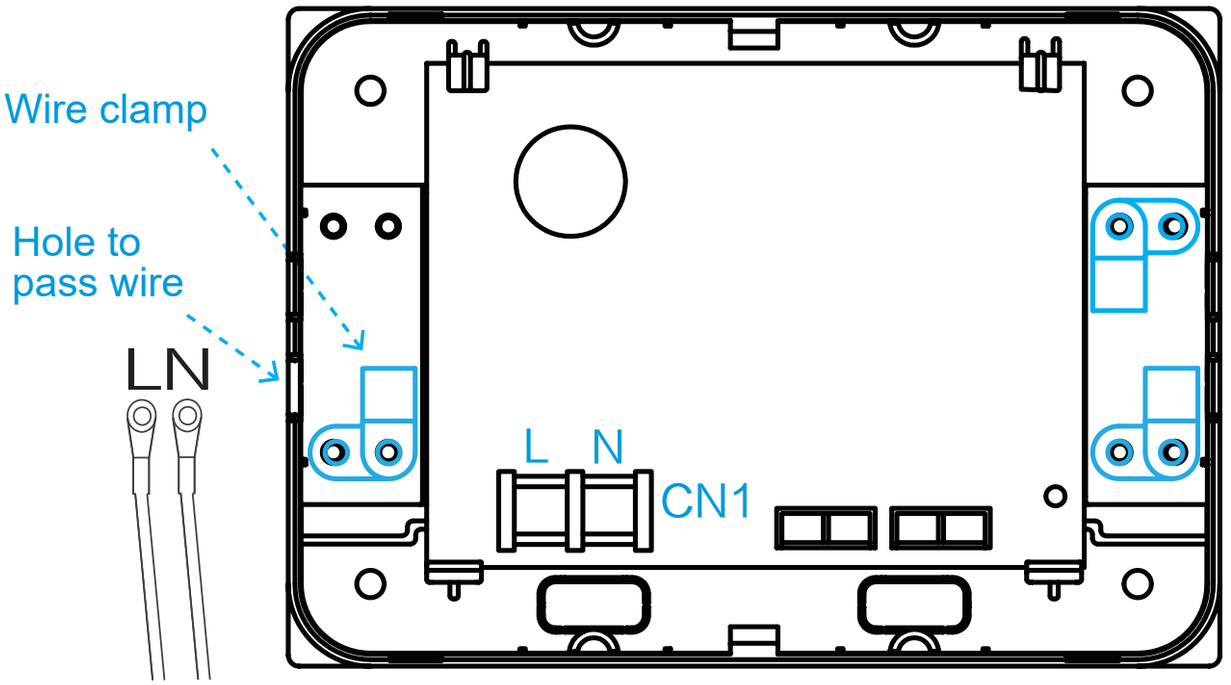
Power Cable Connection

⚠ Warning

- The power supply of the repeater cannot be cut off separately. It needs to be always powered on or switched on and off with the ODU power supply.
- Use round-type terminals with correct specifications to connect the power cable. The power cables must be a 2×1.0mm^2 copper core cable.
- Connect the power cable with the terminals L and N.

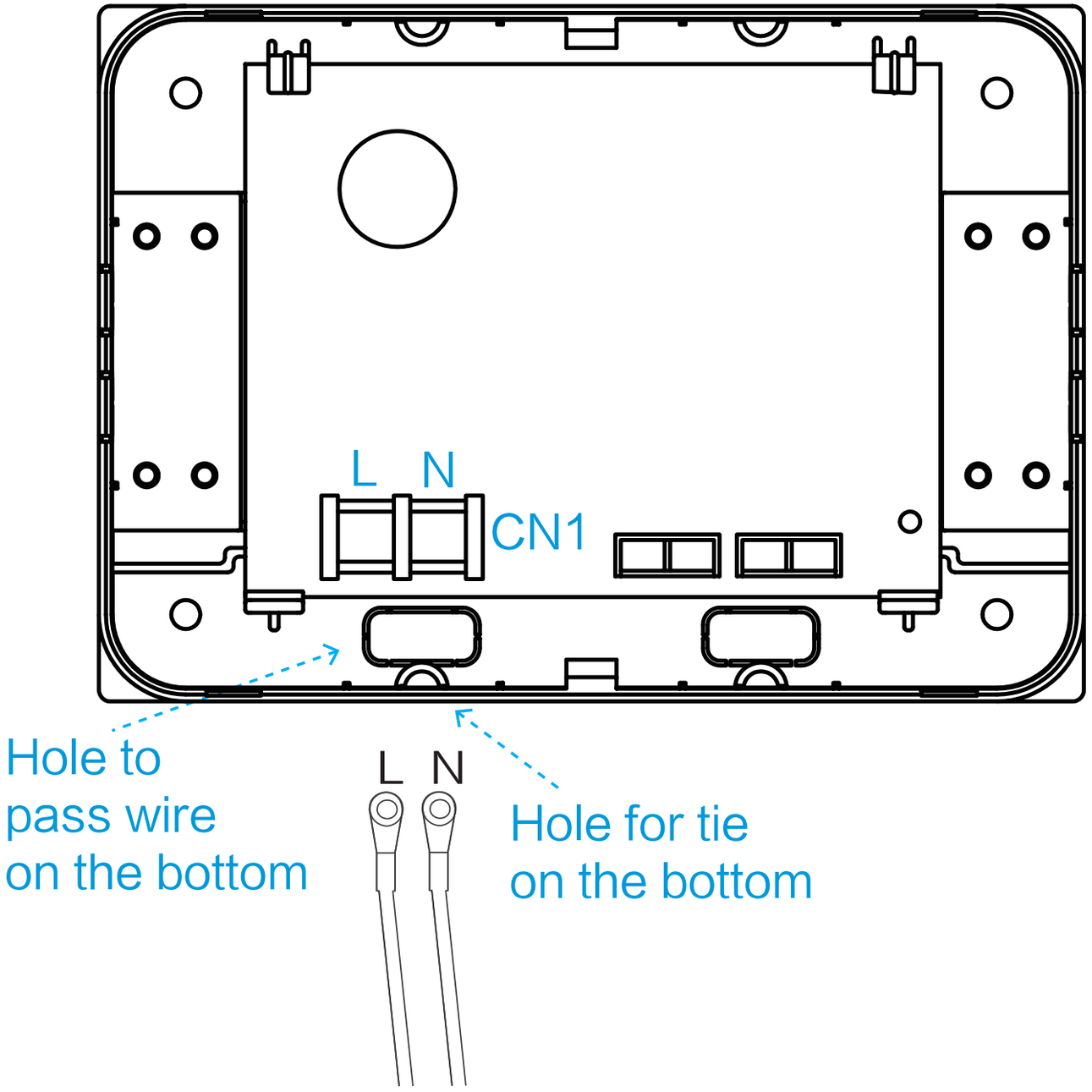
Connection of the power cable

First wiring method: Let the power cable through the hole on the left side of the repeater to the CN1 power supply terminal (L N). Fix the wires with clamps to avoid stress on the terminal block.



Connection of the power cables

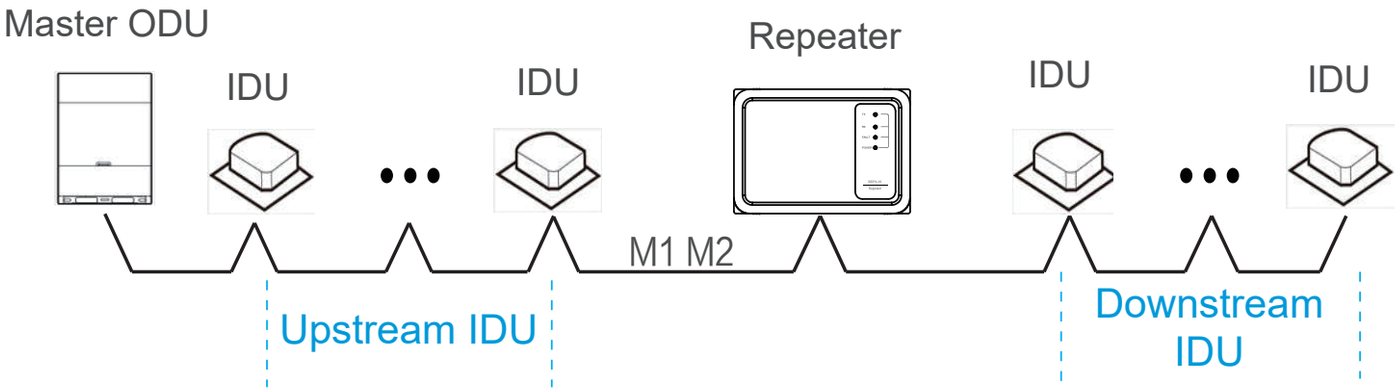
Second wiring method: Let the power cable through the hole on the bottom side of the repeater to the CN1 power supply terminal (L N). Fix the wires with tie to avoid stress on the terminal block.



Communication Wire Connection

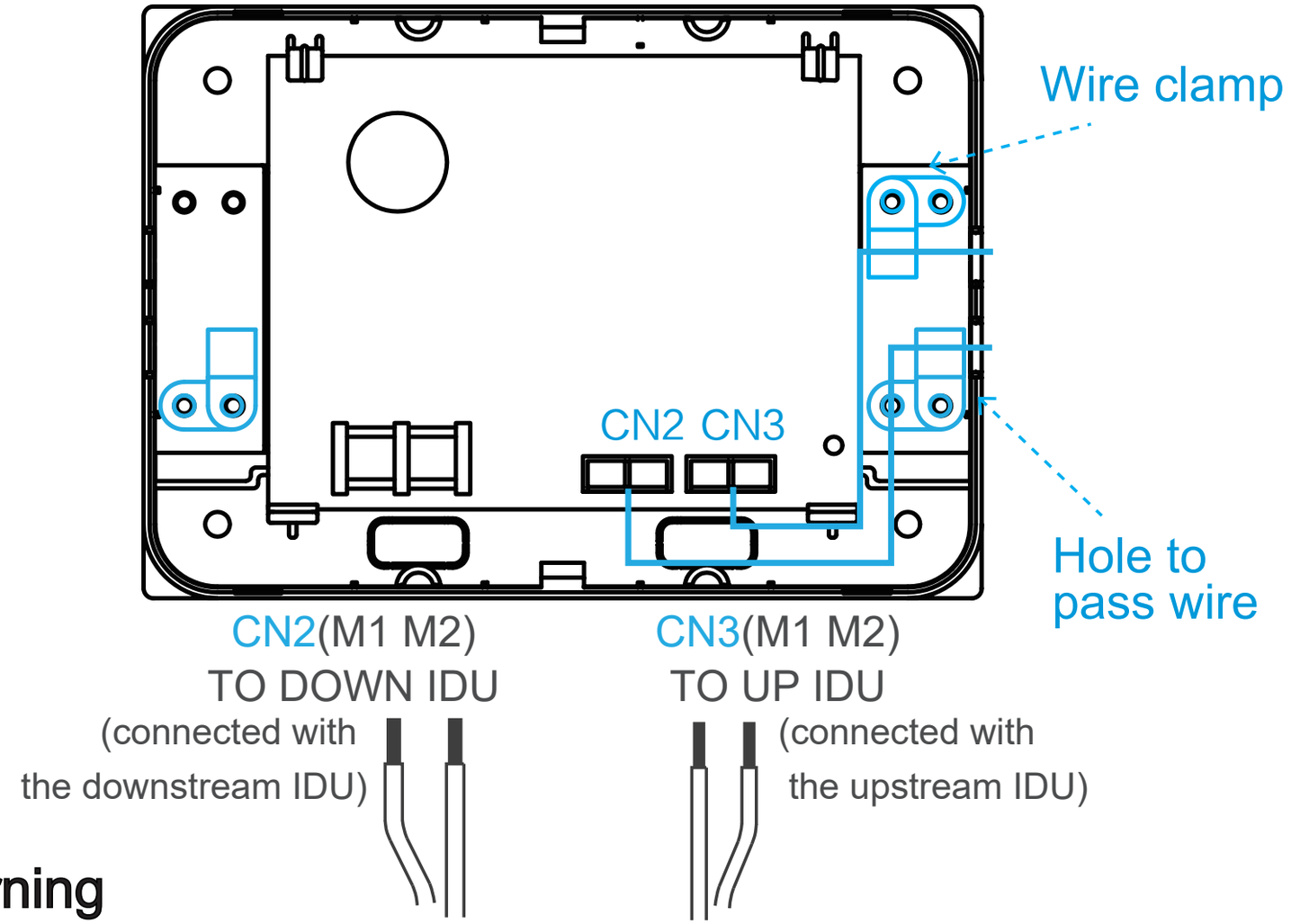
⚠ Warning

- Do not connect M1M2 with the IDU's PQ, D1D2 or X1X2 or any other different communication network. Otherwise, the circuit board will be damaged.
- If the total communication distance between IDU and ODU exceeds 200m or more than 10 IDUs are configured, use a repeater to increase the bus voltage.
- A maximum of 2 repeaters can be installed in the same refrigerant system.
- Use 2×1.5mm^2 PVC sheathed flexible cords in compliance with GB/T5023 (DC resistance ≤ 1.33Ω/100m) as communication cables.
- Note the distinction between the communication port of the upstream IDU and that of the downstream IDU. Be careful not to make them confused. Otherwise, communication failure will occur.
- Connect the port of TO UP IDU with the upstream IDU. The upstream IDU is located in front of the repeater and near the ODU.
- Connect the port of TO DOWN IDU with the downstream IDU. The downstream IDU is located behind the repeater and away from the ODU.



Connection of communication wires

First wiring method: The communication wire should pass through the wire clamp on the right side of the repeater. The communication wire of the upstream IDU should be connected with CN3 (TO UP IDU) terminal block(M1 M2) while the communication wire of the downstream IDU connected with CN2 (TO DOWN IDU) terminal block(M1 M2). The wires should be fixed with clamps to avoid stress on the terminal block.

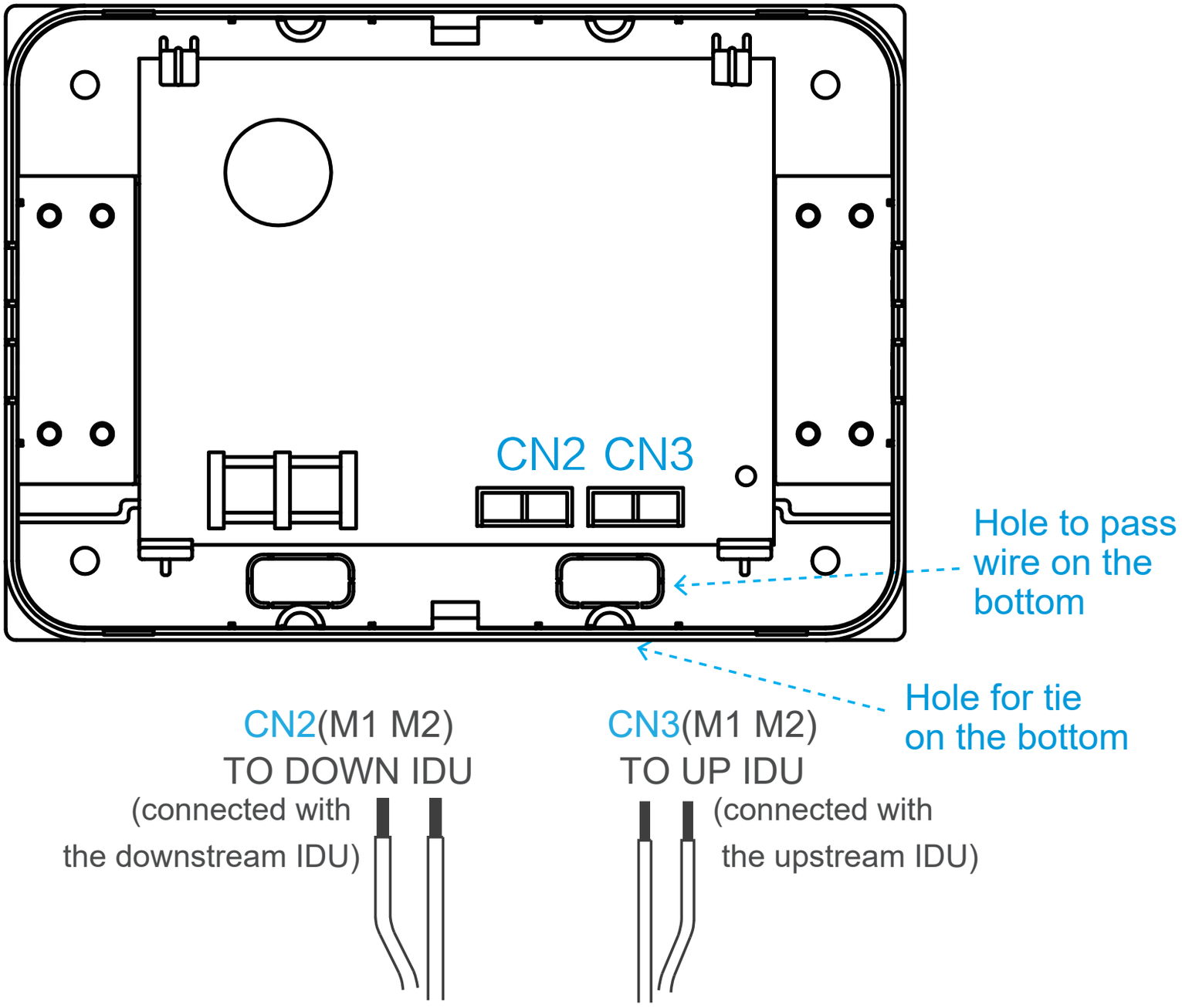


⚠ Warning

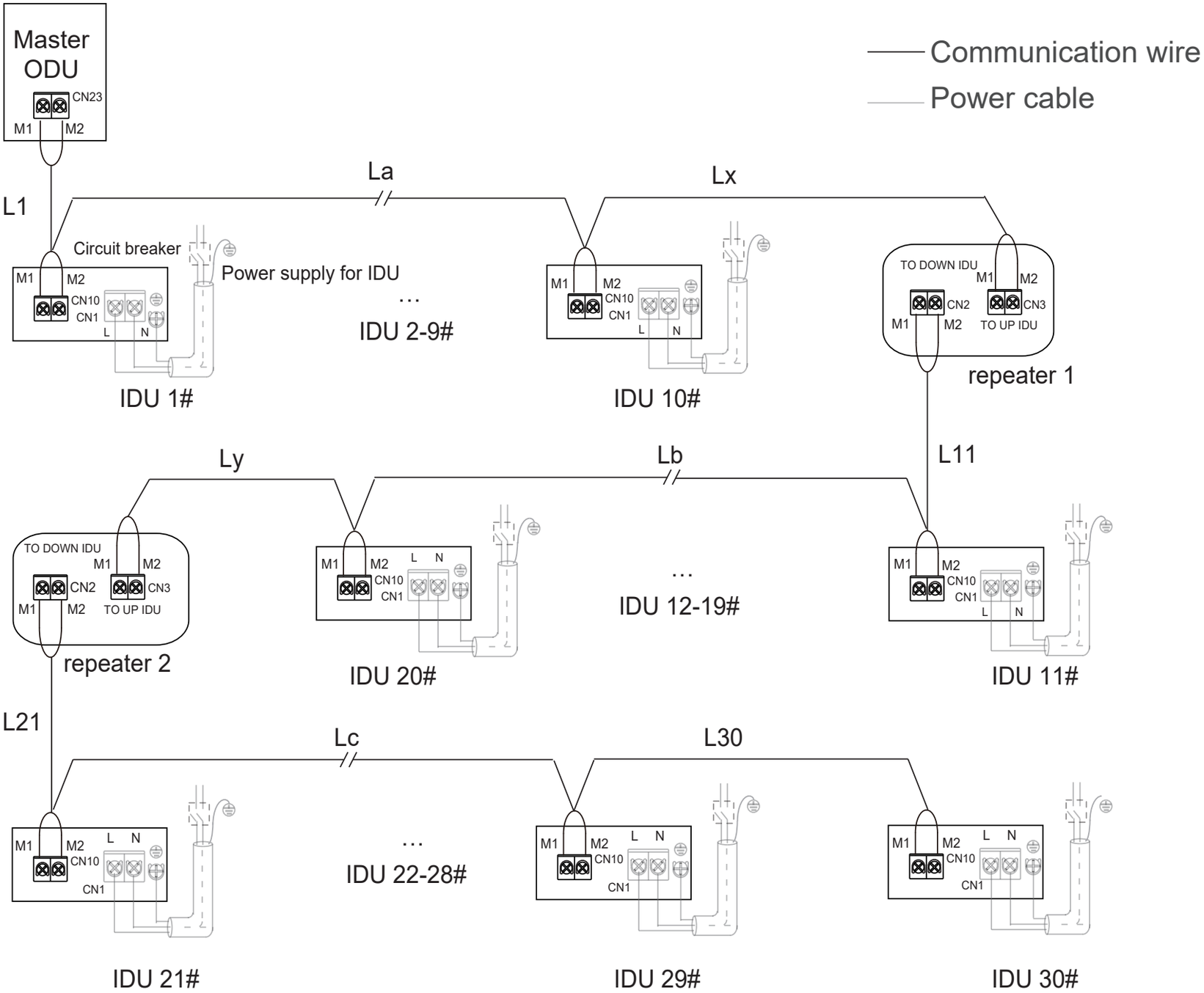
- Do not connect the communication wire when the power is on, or the circuit board will be damaged.
- Note the distinction between the upstream IDU and the downstream IDU. Be careful not to make them confused. Otherwise, communication failure will occur.
- Please follow the path shown in the figure. The path cannot touch the components on the motherboard

Connection of communication wires

Second wiring method: The communication wire should pass through the wire clamp on the bottom side of the repeater. The communication wire of the upstream IDU should be connected with CN3 (TO UP IDU) terminal block(M1 M2) while the communication wire of the downstream IDU connected with CN2 (TO DOWN IDU) terminal block (M1 M2). The wires should be fixed with tie to avoid stress on the terminal block.



Connection mode



- L1+La+Lx≤200m, L11+Lb+Ly≤200m, L21+Lc+L30≤200mm, communication wire: 2×1.5mm^2.
- The above figure shows a connection in series. See the Technical Manual or consult a technician for the topology of other connections.

⚠ Warning

- If the total communication distance does not exceed 200m and no more than 10 IDUs are configured, the units are powered by the master ODU and no repeaters are required.
- If the total communication distance exceeds 200m or more than 10 IDUs are configured, repeaters are required.
- The repeaters shall have the same load capacity as the ODUs, connecting with up to 10 IDUs, with a communication distance of no greater than 200m.
- A maximum of two repeaters can be installed in the same refrigerant system.
- A maximum of 30 IDUs can be installed in the same refrigerant system by using repeaters.

Communication and Power Supply Capacity of Equipment			
Equipment	Wire diameter	Distance	Number of nodes
Master ODU	1.5mm^2	≤200m	10
Repeater	1.5mm^2	≤200m	10

16127000004491 V.C

印刷技术要求

材质	80g双胶纸
规格	100*100 (双面)
颜色	黑白
其他	/

设计更改记录表（仅做说明用，不做菲林）

版本升级	更改人	更改日期	更改主要内容	涉及更改页面（印刷页码）
A-C	陈家朗	22.10.26	删除附件中的束紧带	P5、封底