PMA-1000 POWER MANAGEMENT ADAPTER
INSTALLATION MANUAL

Powering your digital cinema experience

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1. Introduction

The PMA-1000 is a power management device designed especially for theatre projection rooms. It provides intelligent power supply management for theatre projection equipment, giving exhibitors the means to achieve a complete unmanned projection system.

● Retrofit installation means zero interference with the existing power supply system, making seamless integration possible for theatres under construction or currently in operation.

● Intelligent power supply management system monitors and controls power routed to a range of theatre equipment, including projectors, servers, audio systems and luminance equipment.

● Together with Theatre Management System (TMS) and Quality Management System (QMS), unmanned projection can be achieved, based on the foundation of automated projection.

2. Packing List

The PMA-1000 package includes two boxes: the main package and the accessories package. Details are shown below:

PMA-1000 Packing List			
Seq. No.	Description	Quantity	Photo
1	PMA-1000 Power Management Adapter	1	
2	10 mm^2 electrical wires (with crimped ring terminals)	4	

3	2.5 mm^2 electrical wires (with crimped ring terminals)	2	
4	International standard cables (with quick-connecting terminals)	6	
5	International standard power cord	1	
6	Metal conduits and plastic clips, rubber plugs, self-tapping screws and other supplementary parts	Several	

3. Hardware Installation

The PMA-1000 power management device adopts wall-mounted installation. It is usually installed adjacent to the power distribution cabinet in the projection room (as shown in the photo below). The device has four output ports at the bottom for cable connection and two on each side for backup.
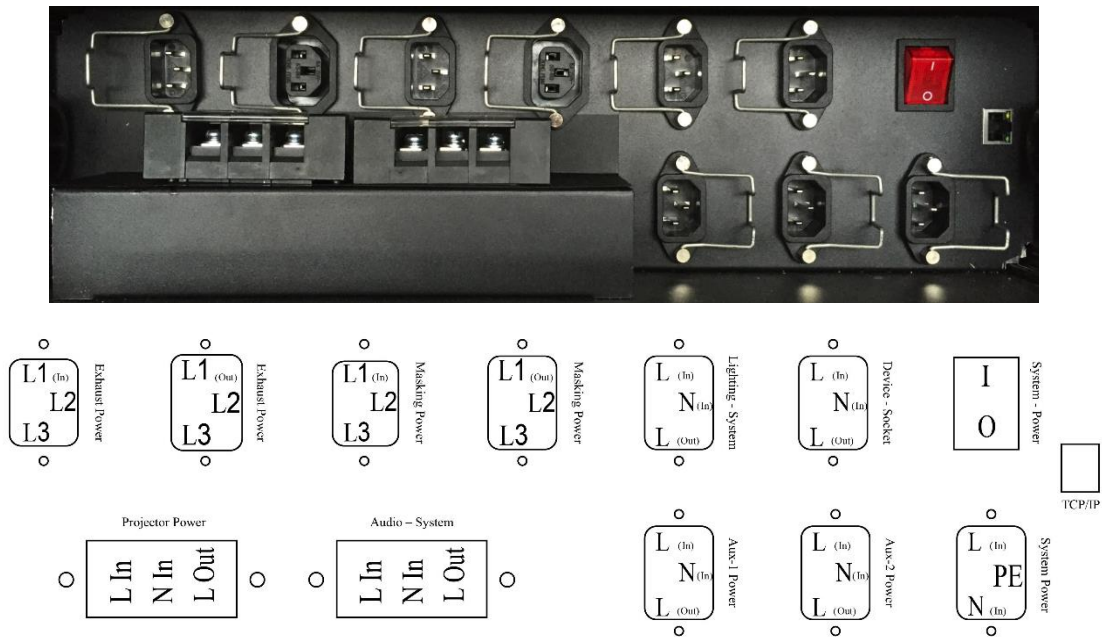

3.1 Introduction of Front Panel and Ports

The upper half of the device to designed to be a manual control panel and a status display area. The buttons themselves are status light indicators. Illuminated indicator means that the device is powered-up, while non-illuminated indicator means that the device is not powered. Due to safety considerations, pressing the individual button will not execute power supply connection/disconnection, unless it is pressed concurrently with the 'unlock button' located at the top right corner, to achieve manual control. The control buttons are arranged in the order from left to right: projector, exhaust, audio, lights, devices, masking, aux-a, aux-b.
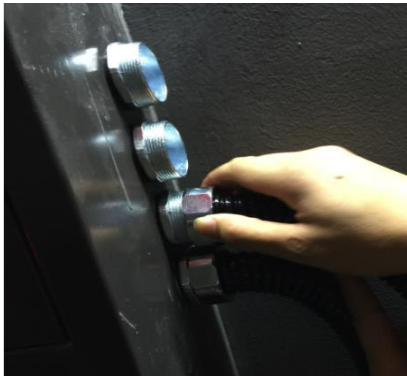
The lower half of the device consists of the connecting terminal of the corresponding control buttons, quick-connecting sockets, network connectors and the power switch for the device. The projector and the audio system have a higher rated power, and thus they are connected via the connecting terminals. The ventilation system and screen masking system usually have 380V power loading, and thus they are connected via two male & female quick-connecting sockets. The lighting system, device sockets, aux-a and aux-b have regular 220V power loading, and thus they are connected via one quick-connecting socket. The PMA-1000 is a device with 220V input voltage.

Detailed connector arrangement sequence and illustrations are shown below:

3.2 Device Installation and Cabling

1. Drill 4 circular holes with a 32mm drill bit on the suitable positions of the power distribution cabinet for cabling.	2. Attach 4 nuts onto the drilled holes to secure the metal conduits.
3. Mount the PMA-1000 on the wall with a suitable distance from the power distribution cabinet.	4. Secure one end of the conduit onto the power distribution cabinet.
5. Label the cable plugs and insert them into their corresponding ports on the PMA. Connect the other ends of the cables to the power distribution cabinet via the conduits.	6. Once all the cables are connected, tighten the conduits at the bottom of the PMA, then use the clips to secure the conduits neatly on the wall.

3.3 Power Supply Connection to the Projector

The projector is connected to the live wire via 10 mm^2 electrical wires (with crimped ring terminals), and the neutral wire via 2.5 mm^2 electrical wires

On the PMA, connect "**live wire in", "neutral wire in", "live wire out"** to **"projector power supply"**.
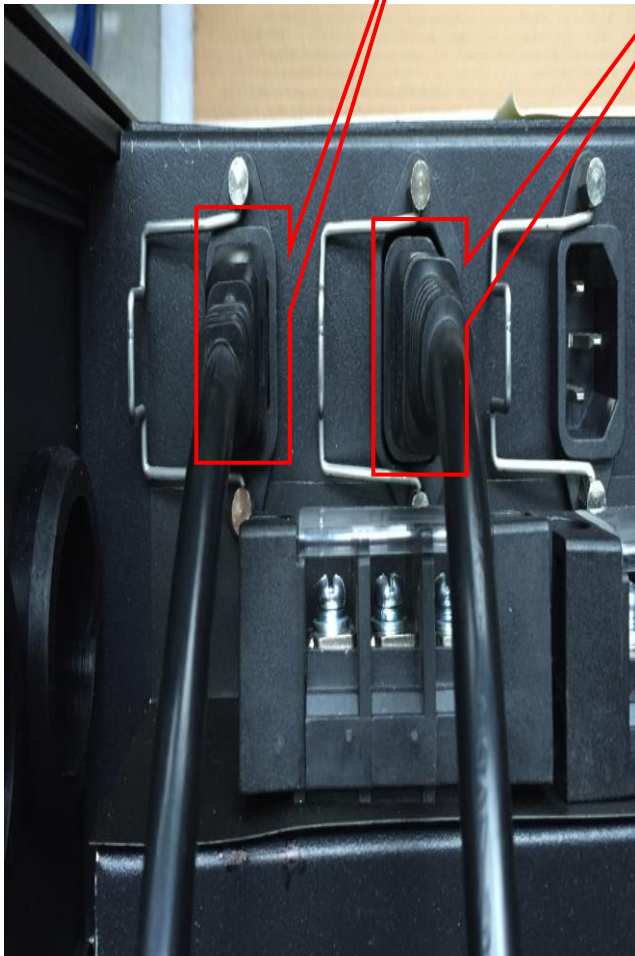
Projector circuit breaker connection diagram
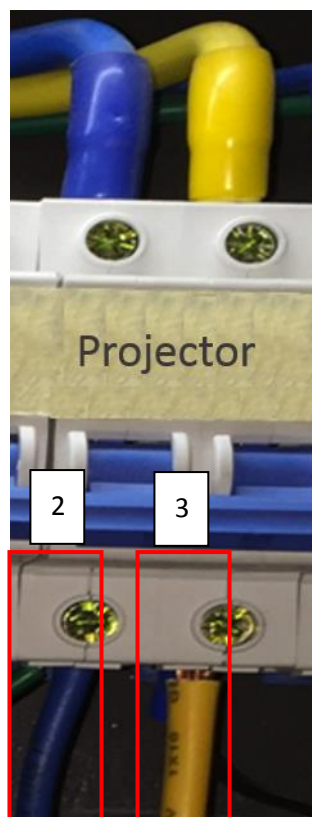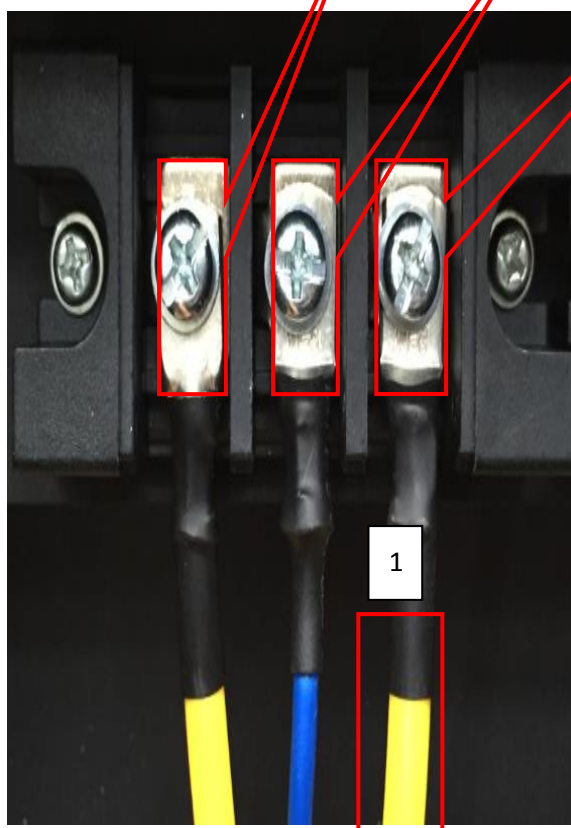
1. Connect the **"live wire out"** from the PMA to the existing live wire underneath the projector circuit breaker

2. Connect the **"neutral wire in"** from the PMA to the existing neutral wire underneath the projector circuit breaker, and then connect both to the circuit breaker.

3. Connect the **"live wire in"** from the PMA to the live wire port underneath the projector circuit breaker.

3.4 Power Supply Connection to the Ventilation System

The ventilation system uses a 380V power supply. It requires the connection of three live wires at the same time for control. Thus a set of male & female international standard cables (with quick-connecting terminals) will be used.
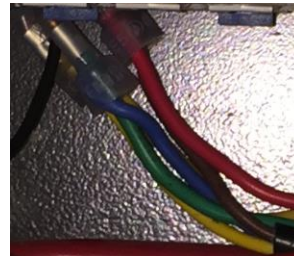
On the PMA, connect **"three live wires in"** and **"three live wires out"** to **"ventilation system power supply"**.

Ventilation system circuit breaker connection diagram
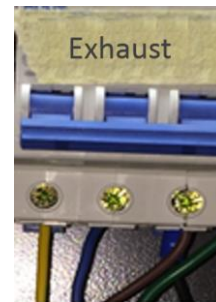
1. Connect the **"three live wires in"** from the PMA to the three live wire ports underneath the ventilation system circuit breaker.

2. Connect the **"three live wires out"** from the PMA to the existing three live wire connections underneath the ventilation system circuit breaker.

Note: The connection sequence of these three live wires must be consistent. If not, electrical inversion may occur.

3.5 Power Supply Connection to the Audio System

The audio system is connected to the live wire via 10 mm^2 electrical wires, and the neutral wire via 2.5 mm^2 electrical wires.

On the PMA, connect the **"live wire in", "neutral wire in", "live wire out"** to the **"audio system".**
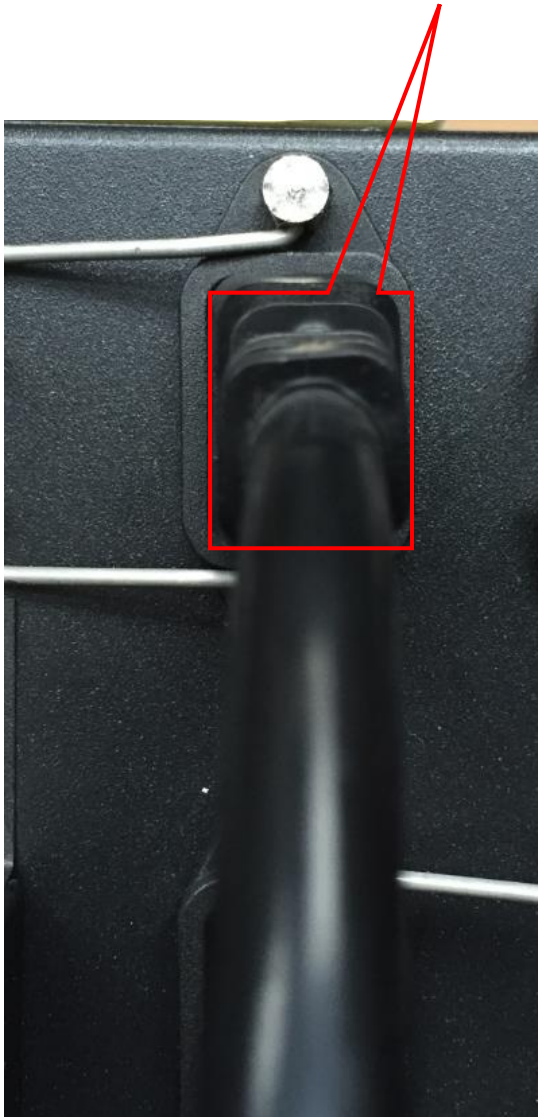
Audio System circuit breaker
connection diagram
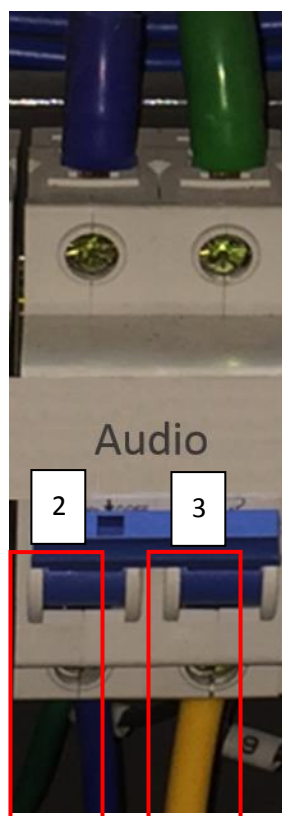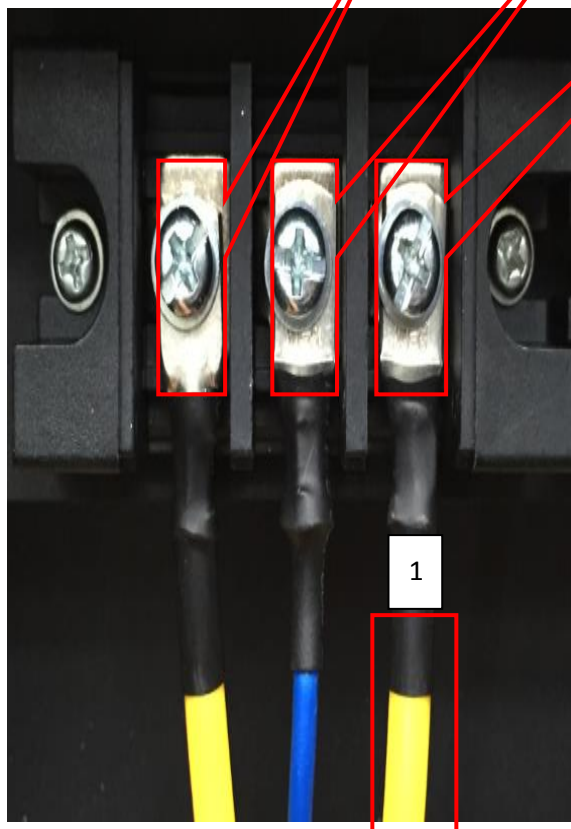
1. Connect the **"live wire out"** from the PMA to the existing live wire underneath the audio system circuit breaker

2. Connect the **"neutral wire in"** from the PMA to the existing neutral wire underneath the audio system circuit breaker and then connect both to the circuit breaker.

3. Connect the **"live wire in"** from the PMA to the live wire port underneath the audio system circuit breaker

3.6 Power Supply Connection to the Lighting System

The lighting system uses a regular 220V power supply. Thus only a three-pin international standard cable (with quick-connecting terminals) is required.

On the PMA, connect a **"three-pin power cord"** to the **"lighting system".**

Lighting system circuit breaker connection diagram

1. Connect the red wire to the existing live wire above the lighting system circuit breaker.

2. Connect the blue wire to the top part of the lighting system circuit breaker (if many lights are connected, it can be jumpered on top of the lighting system circuit breaker).


3. Connect the yellow and green wire to any public neutral port.

Note: If a leakage protection switch is in use, the neutral wire can only be connected to this specific neutral wire port on circuit breaker. It cannot be connected to the public neutral wire port, or else the circuit breaker will be triggered.
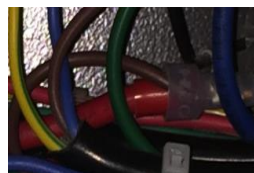
3.7 Power Supply Connection to the Device Dockets

The device socket uses a regular 220V power supply. Thus only a three-pin international standard cable (with quick-connecting terminals) is required.

On the PMA, connect a **"three-pin power cord''** to the **"device sockets''.**
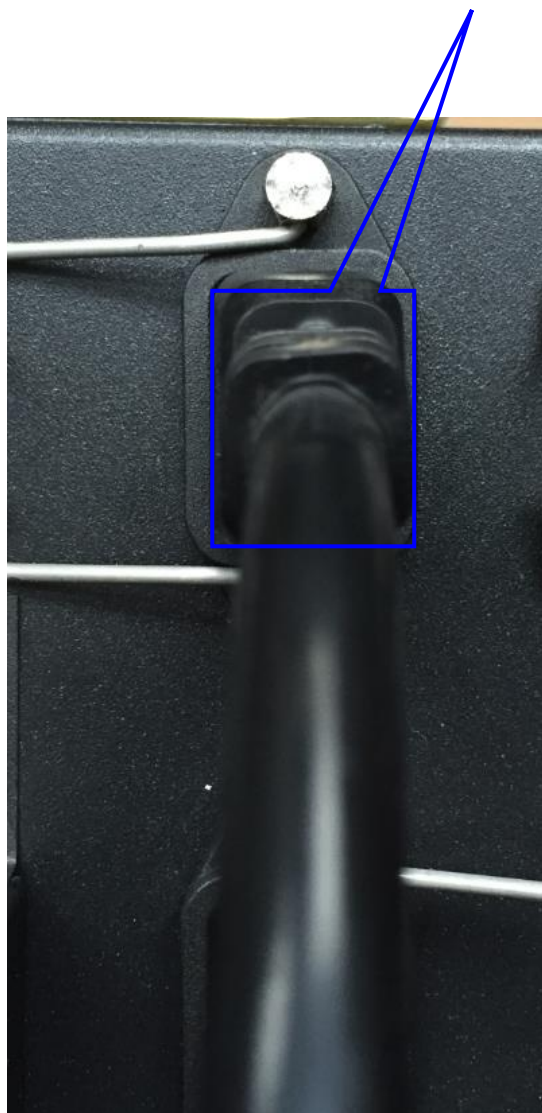
Device socket circuit breaker connection diagram

1. Connect the red wire to the existing live wire underneath the socket circuit breaker.

2. Connect the blue wire to the live wire port underneath the socket circuit breaker.


3. Connect the yellow and green wire to the neutral wire port underneath the socket (the leakage protection switch).

3.8 Power Supply Connection to the Screen Masking System

The screen masking system uses a 380V power supply. It requires the connection of three live wire at the same time for control. Thus a set of male & female international standard cables (with quick-connecting terminals) will be used.
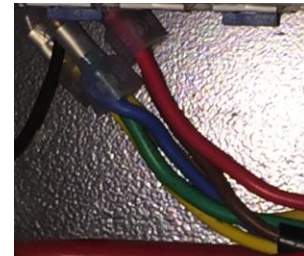
On the PMA, connect **"three live wires in"** and **"three live wires out"** to the **"screen masking system power supply".**
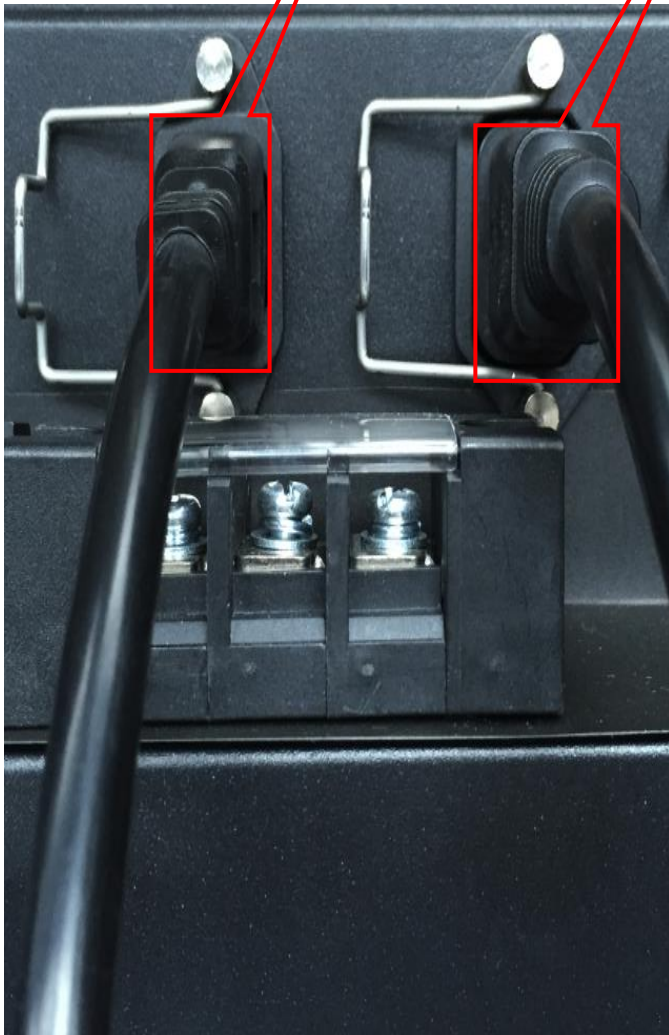
Screen masking system circuit breaker connection diagram

1. Connect the **"three live wires in"** from the PMA to the three live wire ports underneath screen masking system circuit breaker.


2. Connect the **"three live wires out"** from the PMA to the existing three live wire connections underneath the screen masking system circuit breaker.

Note: The connection sequence of these three live wires must be consistent. If not, electrical inversion may occur.
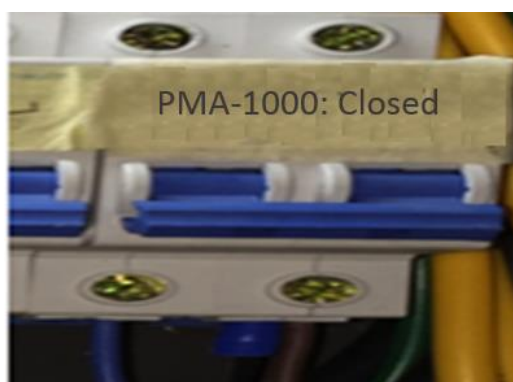
3. HARDWARE INSTALLATION

3.9 Power Supply Connection to the PMA-1000

The PMA-1000 uses a regular 220V power supply. Thus only a three-pin international standard cable (with quick-connecting terminals) is required.

On the PMA, connect a **three-pin cable** to the **"system power supply".**
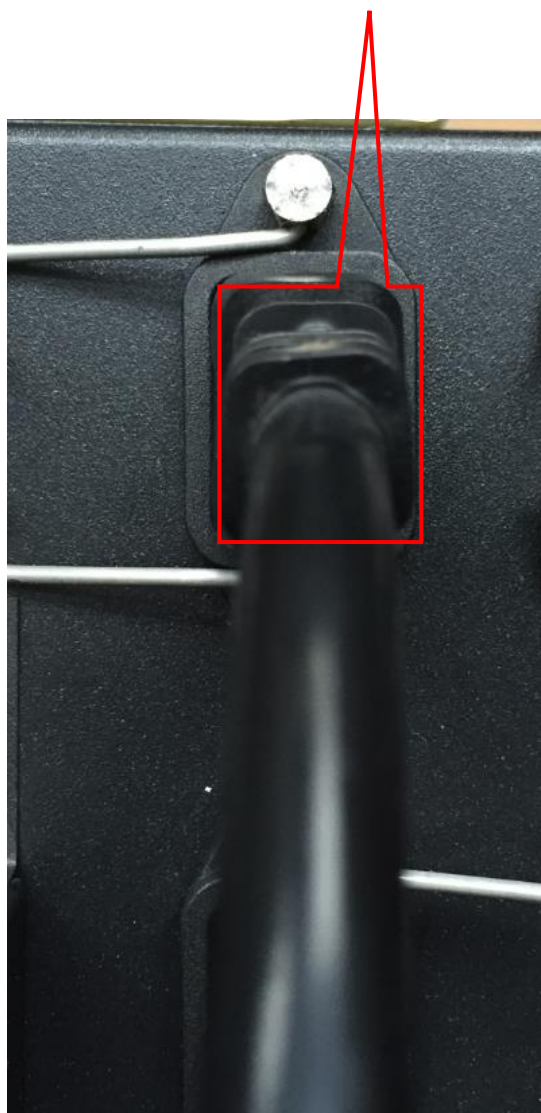
PMA circuit breaker connection diagram

1. Connect the red and blue wires to the live wire port and neutral wire port respectively underneath the backup circuit breaker.

2. Connect the yellow and green wire to the public ground wire port in the power distribution cabinet.

Note: Since the PMA requires continuous power supply, the corresponding circuit breaker should remain in the closed position.

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4. Software Configuration

4.1 Setting up IP Address

The default IP address for the PMA-1000 is 192.168.3.201. To change the IP, the laptop network port must first be modified to that of the PMA network port, then connected directly to the PMA with a LAN cable. Run the IP configuration software (IP & MAC Config V2.1.1.exe) on the laptop, click 'Advanced', followed by 'Search', the current IP address of the PMA-1000 will be shown, as well as the current IP of the laptop. Only when both IPs are on the same network port, the IP of the PMA will appear in black, otherwise it will appear in grey, which implies the inaccessibility to the IP modification main interface.
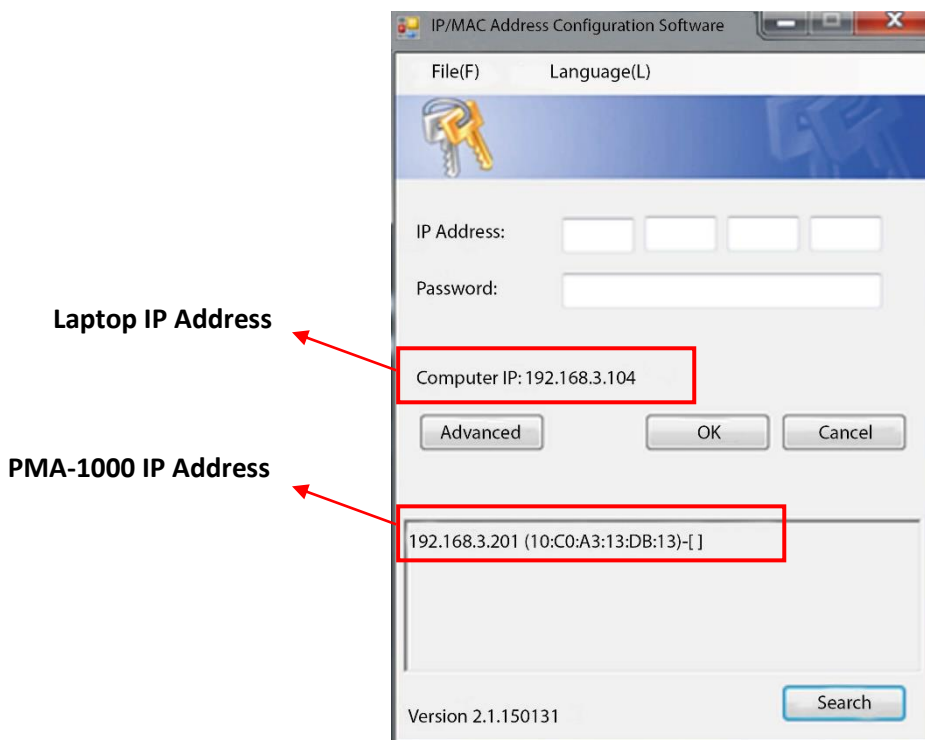
Enter the IP address of the PMA-1000 in the 'IP address' field and leave the 'Password' field blank. Click 'OK' to enter the IP modification page. After accessing to the page, first modify the gateway address, click 'Update' to save. Then modify the IP address, and click 'Update' to save. The program will return back to the login interface. Click 'Advanced', followed by 'Search', users can verify if the IP address has been modified successfully.

Step 2: Modify the IP address

Step 1: Modify the gate address

Note: The network between PMA-1000 and TMS (Theatre Management System) must be in connection sustainably, to ensure that TMS can control the PMA at any time.

4.2 Adding a new device

PMA-1000 can be added and configured at the Screen tab of TMS software. Click 'Automation' under 'Device' tab. A window will pop up. Select the device model, fill in the device information, IP address and select the located Hall number.

Click 'Manage Channel'. Then select the channel to be managed and modify the channel name. At last, click 'Save' and exit.

4.3 Remote Control of Power Connection/Disconnection

Click the [icon] icon at the Monitoring tab, and the Automated Management window will pop up. Select the 'PMA-1000 Controls' subtab, individual power supply circuit can then be controlled.

Note: The blue timeline represents the screening period. If the current time is within the screening period, only power connection operation is available and power disconnection operation is invalid.

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