

Building Air Conditioning Control System

Power supply unit Model: PAC-SC50KUA

Installation Manual

Contents

1. Safety precautions	1
2. Product feature	2
1. Specification	2
2. Appearance	2
3. Installation	3
1. Parts prepared at site	3
2. Installation space and the direction	3
3. Unit installation	4
4. Wiring	4
1. Cover Removal and Installation	4
2. Power line	5
3. DC Power Supply and M-NET Transmission Line	5
5. Allowable length of M-NET transmission lines	6

Before using the controller, please read this Installation Manual carefully to ensure correct operation. Store this Installation Manual in a location that is easy to find.



This manual describes the installation of the PAC-SC50KUA Power supply unit and wiring to the central controller and the air conditioner units. For the information about how to install the central controller or the air conditioner units, see the installation manual for them.

For your safety, first be sure to read (1 Safety precautions) described below thoroughly and then install the PAC-SC50KUA correctly. After reading this installation manual, keep it in a location that is easy to find, If the PAC-SC50KUA Power supply unit is going to be operated by another person, make sure that this manual is given to them.


1 Safety precautions


Before installing this unit, make sure you read all the “Safety Precautions”. The “Safety Precautions” provide very important points regarding safety. Make sure you follow them.

Symbols and Terms

 WARNING	Statements identify condition or practices that could result in personal injury or loss of life.
 CAUTION	Statements identify condition or practices that could result in damage to the unit or other property.

Specific Precautions

 WARNING	
<p>Ask your dealer or technical representative to install. Any deficiency caused by your own installation may result in an electric shock and fire.</p>	<p>Ensure that installation work is done correctly following this installation manual. Any deficiency caused by installation may result in an electric shock or fire.</p>
<p>Install in a place which is strong enough to withstand the weight of the unit. Any lack of the strength may cause the unit to fall down, resulting in a personal injury.</p>	<p>All electrical work must be performed by a licensed technician, according to local regulations and the instructions given in this manual. Any lack of electric circuit or any deficiency caused by installation may result in an electric shock or fire.</p>
<p>Wire and connect using the desired cables securely so that any external force from the cable is not imparted to the terminal connections. Imperfect connection and fixing may result in heating or fire.</p>	<p>Do not move and re-install the unit yourself. Any deficiency caused by installation may result in an electric shock or fire. Ask your distributor or special vender for moving and installation.</p>
<p>Never modify or repair the unit by yourself. Any deficiency caused by your modification or repair may result in an electric shock or fire. Consult with your distributor for repair.</p>	<p>This appliance must be earthed. Make sure to install a protective earth (PE) line. Do not connect the protective earth line to gas or water pipes, lighting conductors or telephone grounding lines. Improper grounding may cause an electric shock.</p>
<p>Make sure that the unit is powered by a dedicated line. Other appliances connected to the same line could cause an overload.</p>	
<p>Make sure that there is a main power switch. A ready accessible breaker for power source line helps reduce the risk of electric shocks. Installation of a breaker is mandatory in same area.</p>	

 CAUTION	
<p>Do not install any place exposed to flammable gas leakage. Flammable gases that accumulates around the body of the unit may caused an explosion.</p>	<p>Do not install in any steamy place such as bath room or kitchen. Avoid any place where moisture is condensed into dew. Doing so may cause an electric shock or a malfunction.</p>
<p>Do not use in any special environment. If use in any place exposed to oil (including machine oil), steam and sulfuric gas may degrade performances significantly or damage the component parts.</p>	<p>Do not install in any place where acidic or alkaline solution or special spray are often be used. Doing so may cause an electric shock or malfunction.</p>
<p>Wire so that it does not received any tension. Tension may caused wire breakage, heating or fire.</p>	<p>Use standard wires in compliance with the current capacity. A failure to this may result in an electric leakage, heating or fire.</p>
<p>Do not wash with water. Doing so may cause an electric shock or malfunction.</p>	<p>Do not touch any PCB (Printed Circuit Board) with your hand or tools. Do not allow dust to collect on the PCB. Doing so may cause fire or an electric shock.</p>
<p>Do not install in any place at a temperature of more than 40°C or less than 0°C or exposed to direct sunlight.</p>	
<p>Use only a fuse of specified capacity. A fuse of large capacity or a steel or copper wire could cause a malfunction or fire.</p>	

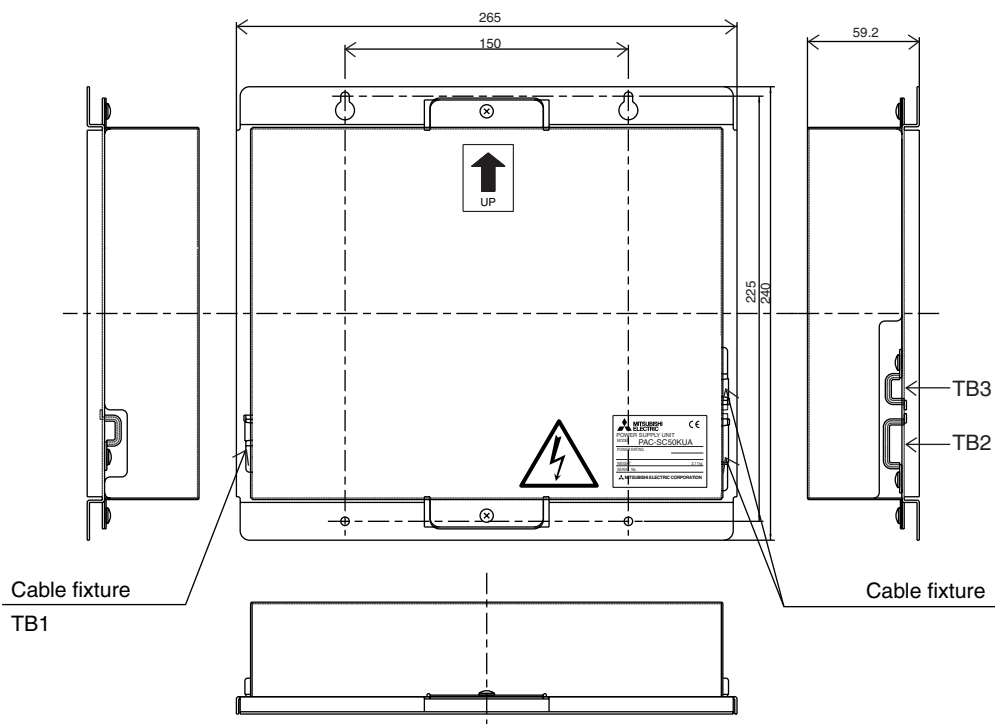
2 Product feature

This unit supplies DC power to the central controller G-50A by means of the central controller system M-NET transmission line and DC power line.

1. Specification

Source power requirement	Input voltage	AC220V~AC240V; 0.2A (Maximum loading) /50, 60Hz Single-phase	
	Fuse	2.0A Time-delay type (IEC127-2 S.S.5)	
Output voltage/current	M-NET	DC22V~24V 0.45A (Maximum loading)	
	DC power supply	DC12V 0.9A (Maximum loading)	
Load capacity	Number of the loading unit	G-50A Central Controller 1 unit	
Environmental condition	Temperature	Operating	0~40°C
		Non operating	-20~60°C
	Humidity	30~90%RH (No condensation)	
Dimensions	240 (High) X265 (Width) X59.2 (Depth)		
Weight	2.1kg		
Installation Environment	Indoor		

2. Appearance



3 Installation

1. Parts prepared at site

Please prepare the following parts before installation of the unit.

Preparation parts	Specification
Unit fixing screw	M4 screw × 4pcs
Power cable/ Protective earth cable	Please prepare the power cable in compliance with your applicable technical standard with consideration to the power requirement of the unit. * Recommend type; $\phi 1.5\text{mm} \sim \phi 2.0\text{mm}$ (Example: H03VV-F, H03VVH2-F, H05VV-F, H05VVH2-F)
Main power switch (Circuit breaker)	Qty.: 1pc Type: 250VAC, Single-phase 50Hz, 3A * Recommend type; CP30-BA series (MITSUBISHI ELECTRIC) or equivalent.
Transmission cable	Type of the cable; Sheathed vinyl cords or cable which comply with the following specifications or equivalent. <ul style="list-style-type: none"> • CPEVS $\phi 1.2\text{mm} \sim \phi 1.6\text{mm}$ • CVVS $1.25\text{mm}^2 \sim 2\text{mm}^2$ * CPEV; PE insulated PVC jacketed shielded communication cable * CVVS; PVC insulated PVC jacketed shielded control cable Cable length: Please refer to section (5 Allowable length of M-NET transmission line)
DC power cable	The DC power cable should comply with both local standards as well as the power requirement of the unit. Recommended type: $0.75\text{mm}^2 \sim 2.0\text{mm}^2$ Cable length: Within 10m

2. Installation space and the direction

PAC-SC50KUA Power supply unit is not waterproof. Therefore this unit shall be installed in a control panel box or similar. Please prepare the control panel box with consideration given to installation space as shown in the Fig.3-1.

The unit should be also installed in vertical direction also indicated by the arrow marking on the cover as shown in the Fig.3-1

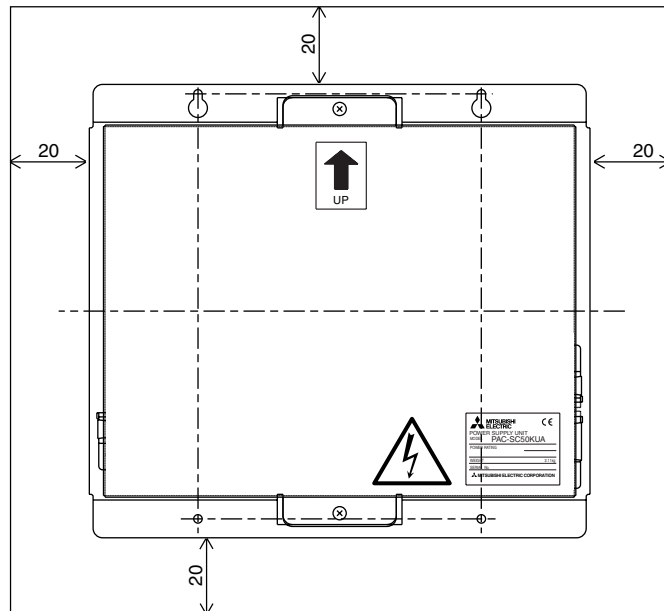


Fig.3-1

3. Unit installation

Fix the unit to the control panel box using M4 screw as shown in the Fig.3-2.

⚠ CAUTION

The unit should be fixed with 4 positions to prevent from unit falling down.

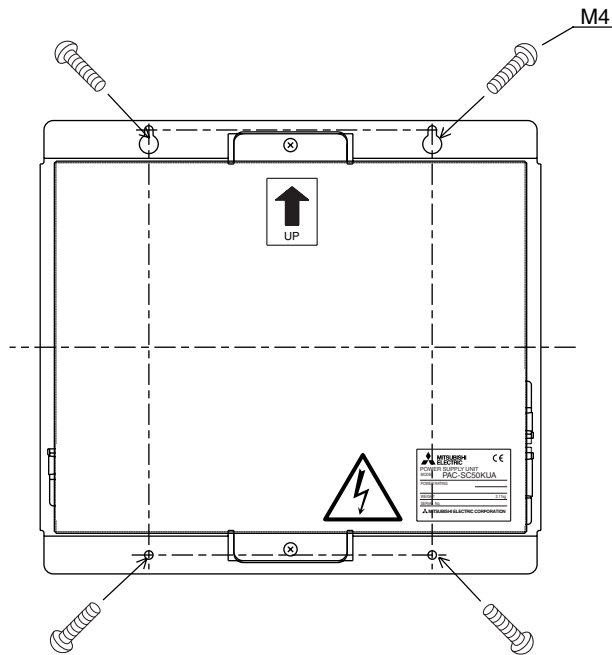


Fig.3-2

4 Wiring

⚠ WARNING

- All electric work must be performed according to local regulations. Improper electrical work may result in electric shock or fire.
- Be sure to shut off the power source of the unit and the all other unit to be connected to the power supply unit before wiring.

⚠ CAUTION

Do not connect the AC power line to the M-NET and POWER (DC12V) terminal blocks of this device. Otherwise, the unit may fail.

1. Cover Removal and Installation

When removing the cover, remove the 2 mounting screws and remove the cover.

When installing the cover, install the cover by tightening the 2 screws.

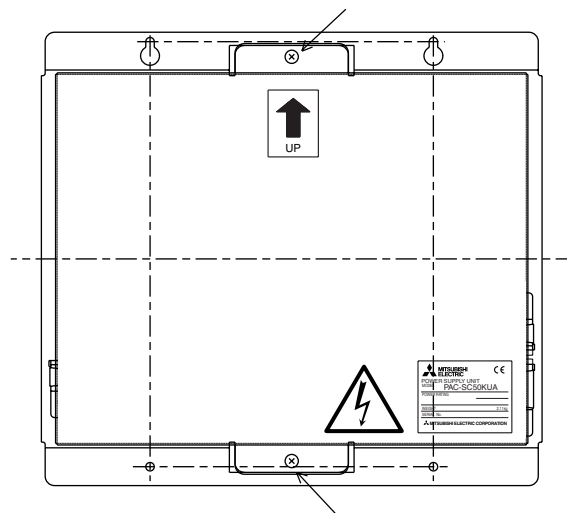


Fig.4-1

2. Power line

Wire the power cable and protective earth cable to L,N and the earth line terminals on the TB1 as shown in the Fig.4-2.

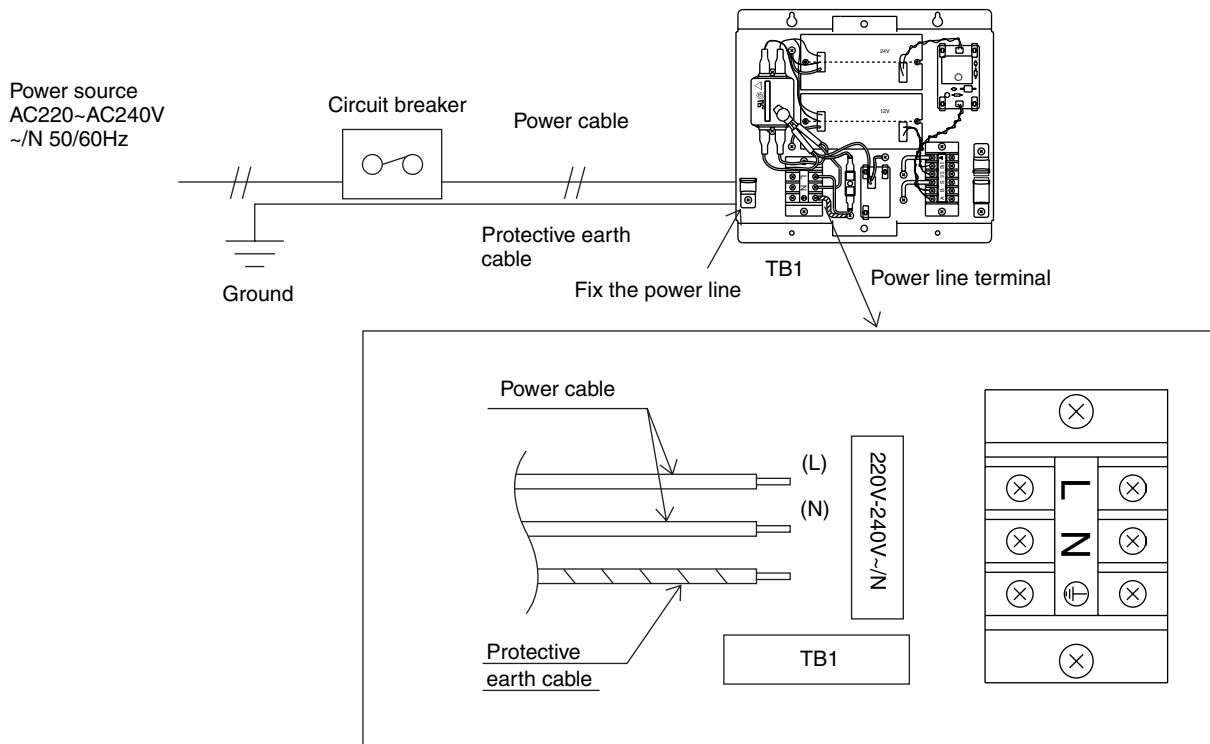


Fig.4-2

3. DC Power Supply and M-NET Transmission Line

The DC power line and M-NET transmission line connect as shown in Fig. 4-3. The DC power line has a 12VDC and a GND polarity. Connect it to the terminals in accordance with the polarity. Connect the M-NET transmission line to the A, B (non-polarity) and S (shield) terminal block.

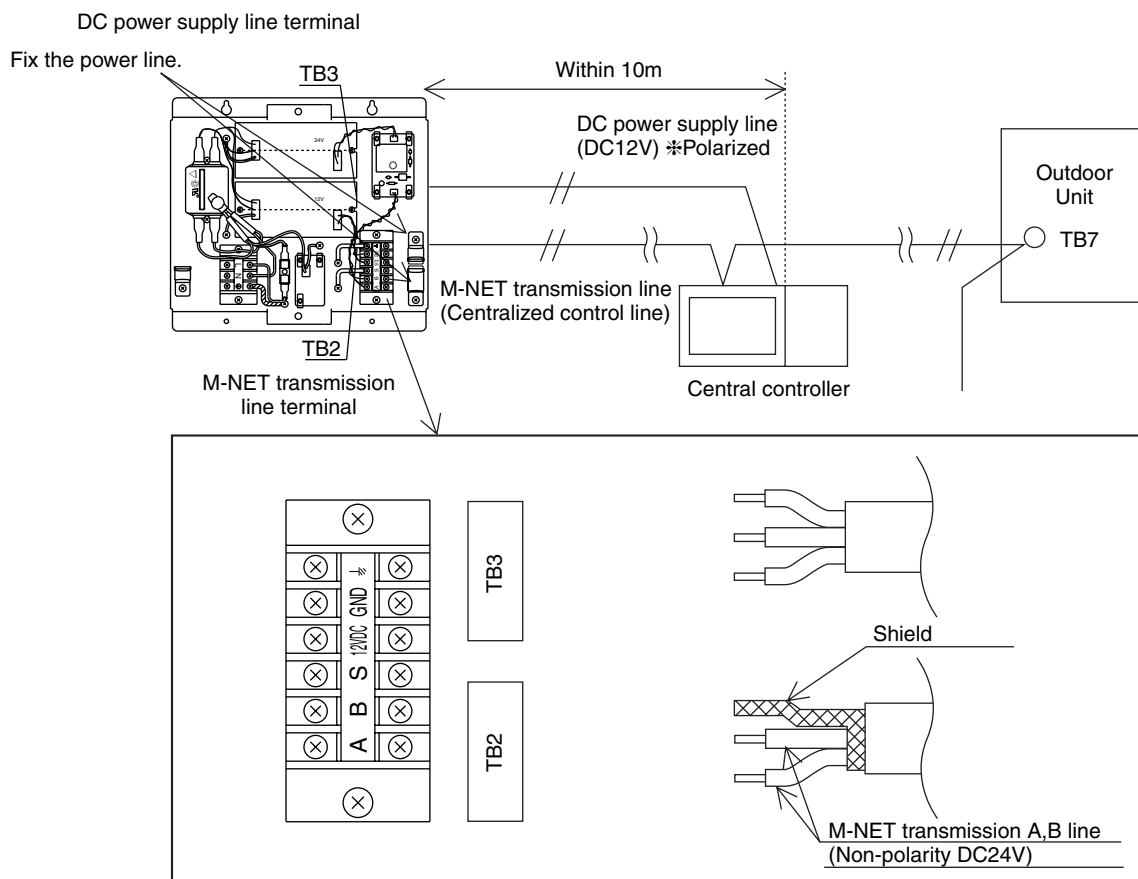


Fig.4-3

CAUTION

- Both of PAC-SC50KUA and Outdoor unit can supply DC power to the M-NET transmission line.
Set the outdoor unit central control system transmission line power supply to the factory setting CN41 (no supply). For further details, refer to the installation manual of the outdoor unit. Not doing so may cause unit failure or fire.

NOTE

The shield wire of M-NET transmission line shall be grounded by one point similar to earthing method.
The shield wire shall be connected to the S terminal of only one unit on the common transmission line.

After connection for the each cable, fasten each cable with the cable fixture.

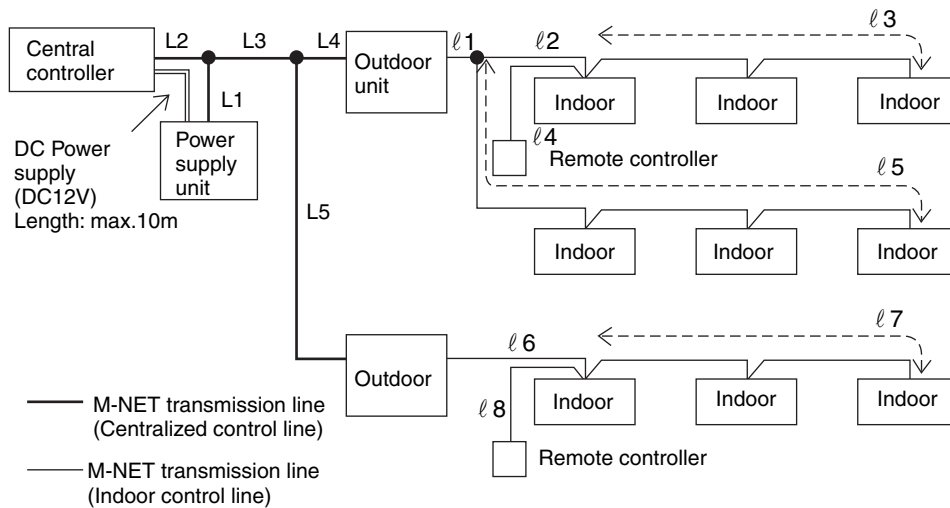
5 Allowable length of M-NET transmission lines

- Maximum length of M-NET transmission $\leq 500\text{m}^*1$
- Maximum power feeding length $\leq 200\text{m}^*1$

NOTE

* 1: Not including the remote control cables up to 10m in length. If the remote control cable exceeds 10m, the excess must be added to the total length in order to avoid exceeding the maximum length.

Example



1) Maximum length of M-NET transmission

- ① $L2+L3+L4+ l1+ l2+ l3 (l4) \leq 500\text{m}$
- ② $L2+L3+L4+ l1+ l5 \leq 500\text{m}$
- ③ $L2+L3+L5+ l6+ l7 (l8) \leq 500\text{m}$
- ④ $l3 (l4) + l2+ l1+L4+L5+ l6+ l7 (l8) \leq 500\text{m}$
- ⑤ $l5+ l1+L4+L5+ l6+ l7 (l8) \leq 500\text{m}$

2) Maximum power feeding length for the indoor control line

- ① $l1+ l2+ l3 (l4) \leq 200\text{m}$
- ② $l1+ l5 \leq 200\text{m}$

3) Maximum power feeding length for the centralized control line

- ① $L1 +L2 \leq 200\text{m}$
- ② $L1 +L3+L4 (L5) \leq 200\text{m}$

NOTE

If the remote control cable ($l4, l8$) do not exceed 10m in length, the length for $l4, l8$ may not consider to the total length.

This product is designed and intended for use in the residential,
commercial and light -industrial environment.

The product at hand is
based on the following
EU regulations:

- Low Voltage Directive 73/23/EEC
- Electromagnetic Compatibility Directive 89/
336/EEC