Changes for the Better

MITSUBISHI ELECTRIC

SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

October 2012

No.OC229

REVISED EDITION-A

TECHNICAL & SERVICE MANUAL

Series PKH Wall Mounted R22

Indoor unit

[Model names]	[Service Ref.]
PKH-1.6GKL	PKH-1.6GKL
PKH-1.6GKLH	PKH-1.6GKLH
PKH-2GKL	PKH-2GKL
PKH-2GKLH	PKH-2GKLH

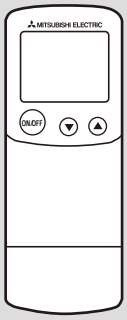
Revision :
- The indicated No. of CORNER COVER (page 62) has been corrected in REVISED EDITION-A.
- Some descriptions have been modified.

- Please void OC229.

Note :
- This manual does not cover the following outdoor units. When servicing them, please refer to the service manual No.OC128 REVISED EDITION-A and this manual in a set.

[Service Ref.]
PUH-1.6VKA2
PUH-2VKA2

Indoor unit



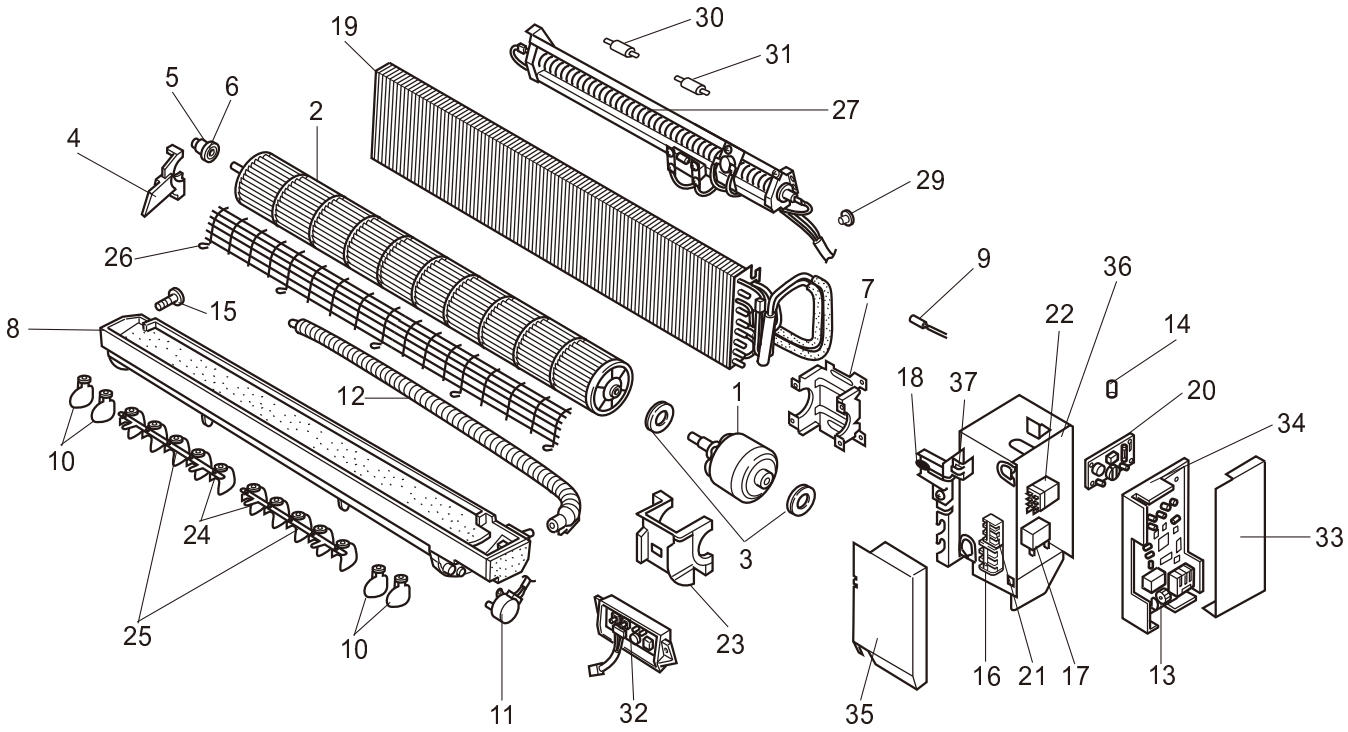
Remote controller

CONTENTS

Mr.SLIM™

12 PARTS LIST (non-RoHS compliant)

ELECTRICAL PARTS
PKH-1.6GKL / PKH-1.6GKLH
PKH-2GKL / PKH-2GKLH



No.	Parts No.	Parts Name	Specifications	PKH-				Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty
				1.6 GKL	2 GKL	1.6 GKLH	2 GKLH			
1	T7W A01 762	FAN MOTOR	PM4V30-K	1	1	1	1		MF	
2	R01 09Y 114	LINE FLOW FAN				1	1			
	R01 07Y 114	LINE FLOW FAN		1	1					
3	R01 07Y 105	RUBBER MOUNT		2	2	2	2			
4	R01 07Y 106	BEARING SUPPORT		1	1	1	1			
5	R01 005 103	SLEEVE BEARING		1	1	1	1			
6	R01 07Y 102	BEARING MOUNT		1	1	1	1			
7	R01 07Y 130	MOTOR SUPPORT		1	1	1	1			
8	T7W E13 530	NOZZLE		1	1	1	1			
9	T7W E06 202	PIPE TEMPERATURE THERMISTOR		1	1	1	1		RT2	
10	R01 09Y 038	GUIDE VANE		4	4	4	4			
11	T7W E13 223	VANE MOTOR		1	1	1	1		MV	
12	R01 07Y 527	DRAIN HOSE		1	1	1	1			
13	T7W E12 310	INDOOR CONTROLLER BOARD		1	1	1	1		I.B	
14	T7W 520 239	FUSE	250V 6.3A	2	2	2	2		F1, F2	
15	R01 07Y 524	DRAIN PLUG		1	1	1	1			
16	T7W 521 716	TERMINAL BLOCK	3P (L, N, ⏚)	1	1	1	1		TB2	

To be continued on the next page.

PARTS LIST (non-RoHS compliant)

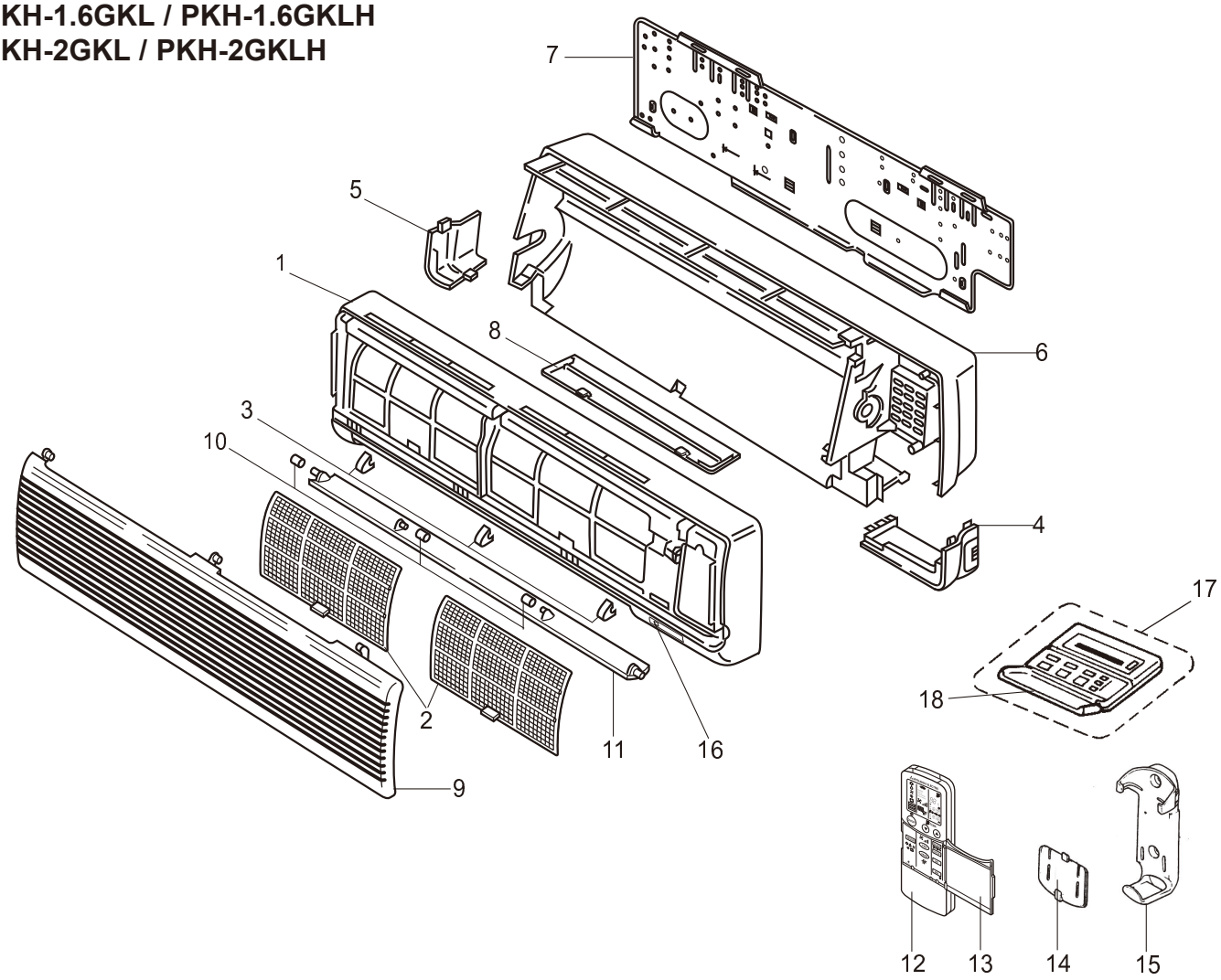
From the preceding page.

Part numbers that are circled are not shown in the figure.

No.	Parts No.	Parts Name	Specifications	PKH-				Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty
				1.6 GKL	2 GKL	1.6 GKLH	2 GKLH			
17	RO1 588 255	CAPACITOR	20μF ×440V	1	1	1	1		C	
18	T7W E05 202	ROOMTEMPERATURE THERMISTOR		1	1	1	1		RT1	
19	T7W E68 480	HEAT EXCHANGER		1		1				
	RO1 16Y 480	HEAT EXCHANGER			1		1			
20	T7W E02 313	POWER BOARD		1	1	1	1		P.B	
21	T7W 517 716	TERMINAL BLOCK	3P(1, 2, 3)	1	1	1	1		TB4	
22	RO1 71G 215	HEATER CONTACTOR				1	1		88H	
23	RO1 07Y 135	MOTOR COVER		1	1	1	1			
24	RO1 07Y 038	GUIDE VANE		10	10	10	10			
25	RO1 07Y 059	ARM		2	2	2	2			
26	T7W A00 675	FAN GUARD		1	1	1	1			
27	T7W E13 300	HEATER ELEMENT	800W			1	1		H1	
(28)	RO1 20J 303	INSULATOR				1	1			
29	RO1 64K 700	HEATER THERMAL SWITCH	60°C OFF 40°C ON			1	1		26H	
30	RO1 208 706	THERMAL FUSE	84°C 10A			1	1		FS2	
31	RO1 986 706	THERMAL FUSE	104°C 10A			1	1		FS1	
32	RO1 50J 317	WIRERLESS ADAPTER CONTROLLER BOARD		1	1	1	1		W.B	
33	—	CONTROLLER COVER		1	1	1	1	(BG02V194H05)		
34	—	CONTROLLER CASE		1	1	1	1	(BG25B573H05)		
35	—	TERMINAL COVER		1	1	1	1	(BG02V195H10)		
36	—	ELECTRICAL PARTS COVER		1	1	1	1	(BG00V196G20)		
37	—	SENSOR HOLDER		1	1	1	1	(RG25C546H06)		
(38)	RO1 KV6 246	TERMINAL BLOCK		1	1	1	1		TB5	

PARTS LIST (non-RoHS compliant)

STRUCTURAL PARTS
PKH-1.6GKL / PKH-1.6GKLH
PKH-2GKL / PKH-2GKLH



No.	Parts No.	Parts Name	Specifications	PKH- 1.6GKL 2GKL	PKA- 1.6GKLH 2GKLH	Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty
1	R01 89Y 651	FRONT PANEL		1	1			
2	R01 A16 500	AIR FILTER		2	2			
3	R01 07Y 096	SCREW CAP		3	3			
4	R01 10Y 658	CORNER COVER (R)		1	1			
5	R01 08Y 658	CORNER COVER (L)		1	1			
6	R01 09Y 635	BOX ASSEMBLY			1			
	R01 07Y 635	BOX ASSEMBLY		1				
7	R01 07Y 808	BACK PLATE		1	1			
8	R01 07Y 623	UNDER COVER		1	1			
9	R01 07Y 691	FRONT GRILLE		1	1			
10	R01 07Y 092	VANE SLEEVE		1	1			
11	R01 07Y 002	AUTO VANE		1	1			
12	T7W E04 714	WIRELESS REMOTE CONTROLLER		1	1			
13	T7W E01 049	WIRELESS REMOTE CONTROLLER DOOR		1	1			
14	R01 07Y 050	BATTERY COVER		1	1			
15	R01 07Y 075	WIRELESS REMOTE CONTROLLER HOLDER		1	1			
16	R01 24K 658	RECEIVING UNIT		1	1		RU	
17	T7W E04 713	REMOTE CONTROLLER		1	1		R.B	
18	T7W E03 049	REMOTE CONTROLLER COVER		1	1			

13 OPTIONAL PARTS

1. REFRIGERANT PIPES

Service Ref. : PKH-1.6GKL / PKH-2GKL
: PKH-1.6GKLH / PKH-2GKLH

Part No	PAC-05FFS-E	PAC-07FFS-E	PAC-10FFS-E	PAC-15FFS-E
Pipe length	5m	7m	10m	15m
Pipe size O.D.	Liquid: ϕ9.52 Gas: ϕ15.88			
Connection method	Indoor unit: Flared Outdoor unit: Flared			

Note 1. How to connect refrigerant pipes.
Factory supplied optional refrigerant pipings contain refrigerant at the above atmospheric pressures. As long as the connection takes no more than 5 minutes, no air will enter, and there will be no need for air purging. Remove the blind caps and make the connections within 5 minutes. After the connections for the indoor and outdoor units are made, open the stop valve on the outdoor unit to allow refrigerant gas to flow.
If piping length exceeds 30m, an additional charge of refrigerant is needed.

Note 2. The following main parts are contained in the optional refrigerant piping kit.
Heat insulating cover, vinyl tapes, nipples, sleeve and flange (for wall hole).

2. TIMER

When using a program timer, PAC-SC32PTA, a program timer adapter (PAC-825AD) is also needed.

Service Ref.	PKH-1.6/2GKL PKH-1.6/2GKLH
Part No	PAC-SC32PTA (with set back function)
Model Name	Program timer

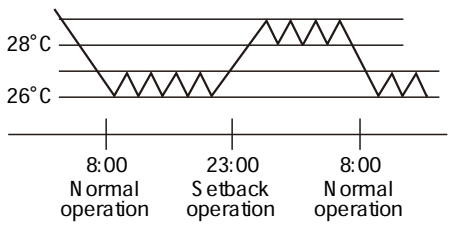
2-1 Program timer specifications

Service Ref.	PKH-1.6/2GKL PKH-1.6/2GKLH
Part name	Program timer
Part No.	PAC-SC32PTA
Exterior dimensions (inch)	5-4/32 × 4-23/32 × 23/32 (130×120×18mm)
Installation	Wall mount
Type of clock	Quartz
Clock accuracy	50 seconds/month at 25°C
Display-Time	Liquid crystal display
-Week	Liquid crystal display
-Timer setting unit	Liquid crystal display
Program cycle	24 hours
Timer setting unit	30 minutes
No. of set points	48/day
Power rating	5V DC 5% (Supplyed by Remote Controller)
Set back function	Provided

2-2 Feature of program timer

(1) Daily timer function
Daily timer can be set in 30 minutes units for up to 24 hours.
Each unit can be set for unit ON, unit OFF, or setback operation.

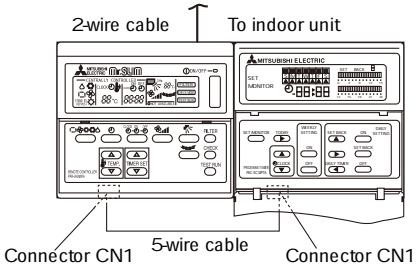
(2) Setback operation (PAC-SC32PTA)
Set back operation is useful for reducing running costs
e.g. At a hotel with a 24-hour system
8:00~23:00 Cooling operation with set temperature at 26°C
23:00~8:00 Setback operation with 2 degrees of setback
As shown in the chart on the right, the set temperature rises 2 degrees automatically during the setback operation. When the setback operation ends, normal operation will begin.



(3) Weekly timer function
Daily timer function can apply to each day of the week.

2-3. How to connect program timer

(1) Install the program timer next to the remote controller the same way as the remote controller is installed.
(2) Connect the program timer and the remote controller with a 6-wire cable as shown in the figure below



NOTE: While the program timer is connected to the remote controller, the 24hour ON/OFF timer on the remote controller will not operate.

2-4 Names and functions

<PAC-SC32PTA>

WEEKLY TIMER SETTING DISPLAY

Used for selection of if or not the day operation pattern set by PATTERN SETTING is to be applied in weekly day unit, setting.

CURRENT TIME DISPLAY

During MONITOR status,current time is display.
During Daily timer setting, a time desire for timer setting is displayed.

SET BACK DISPLAY

Indicates the setting set back range.

DAILY TIMER SETTING DISPLAY

24 hours is divided into 48 blocks and each block express 30 minutes.
The block display consists of 3 pattern.

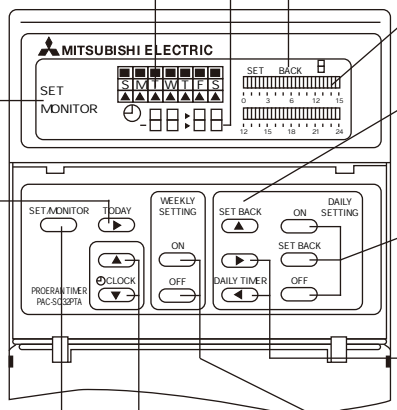
Set back can be done in the range of 1,2,4,6 and 8°C.

SET BACK SETTING SW

Used for set back setting.

SET/MONITOR DISPLAY

During SET is display, clock adjustment, change of weekly day, daily and weekly timer setting can be performed.
During MONITOR is display, all switches except SET/MONITOR SW are invalidated.
This is normal status.



ON/SET BACK/OFF SW

Used to specify the time setting pattern.

WEEK DAY SETTING SW

Used for week day setting.

DAILY TIMER SW

Used for timer setting in 30 minutes unit.

MODE SELECTOR SW

Using this switch select "MONITOR" or "SET" Mode.

"MONITOR" :Indicates the current timer setting. All switch expect MODE SELECTOR SW are invalidated then. This is the normal status.
"SET": Set to "SET" mode for clock adjustment, charge of week day, daily and weekly timer setting.

CLOCK ADJUSTMENT SW

Used for adjustment of the current time.

Push ▲ SW to advance the time. Each time the button is pushed the time advance by 1 minute, pushing continuously advances by 1 minute at 0.5 second interval, and when the lower digit of minute becomes 0 indication advances in 10 minutes unit.
▼ SW is used for reversing the time. Each time the button is pushed the time reverses by 1 minute, pushing continuously reverses the time by 1 minute at 0.5 second interval, and when the lower digit of minute becomes 0 indication reverses in 10 minutes unit.

WEEKLY TIMER SW

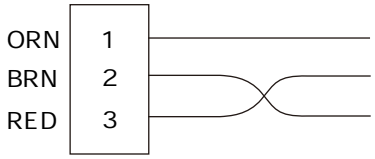
Used for setting timer in day of week unit.

Pushing ▶ SW moves the week day light display in order of
S → M → T → W ···
enabling to set the week day.

3. TIMER ADAPTER

This adapter is needed for system control and for operation via external contacts. Adapter connection is described on page 53.

Part No.	PAC-SA89TA-E



4. MULTIPLE REMOTE CONTROLLER ADAPTER

This adapter is needed for remote indication (operation/check). Adapter connection is described on page 55.

Part No.	PAC-SA88HA-E

1	BRN
2	RED
3	ORN
4	YLW
5	GRN

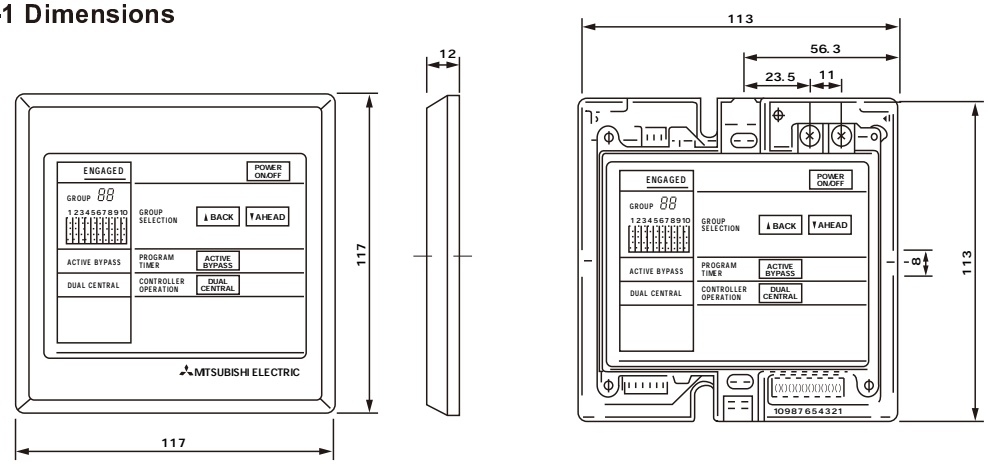
5. CENTRALIZED REMOTE CONTROLLER

Allows individual or combined control of up to 16 units. When using the PAC-805RC, the program timer adapter (PAC-825AD) is also needed. See page 55.

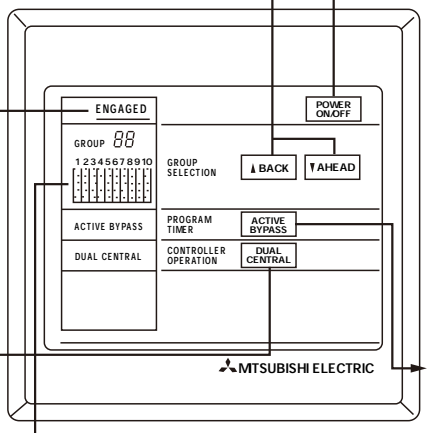
Part No.	PAC-805RC

5-1 Dimensions

Unit : mm



5-2 Functions



"ENGAGED" indicator
When this indicator is lit, transmission is in progress and all switches are inoperative.

DUAL/CENTRAL switch
This change-over switch governing the operation of the accessory remote controller.

"DUAL"
Instructions from both the accessory remote controller and the centralized remote controller are valid. (Priority given to the last instruction received.)

"CENTRAL"
ON/OFF switching by the accessory remote controller is invalidated. Control is by the centralized remote controller only.
Initial setting is "DUAL".

LCD Matrix Display
This display indicates the operational status of all connected units either by steady lighting or by flashing.

POWER ON/OFF switch
Operation ON/OFF switch.

▲BACK ▼AHEAD buttons
These buttons are used to designate the attached unit(s). (They designate the unit that is centrally controlled.)

- When group "00" is designated; collective ON/OFF instruction is sent to all units.
- When group "01"-"16" is designated; ON/OFF instruction is sent to the designated units only.

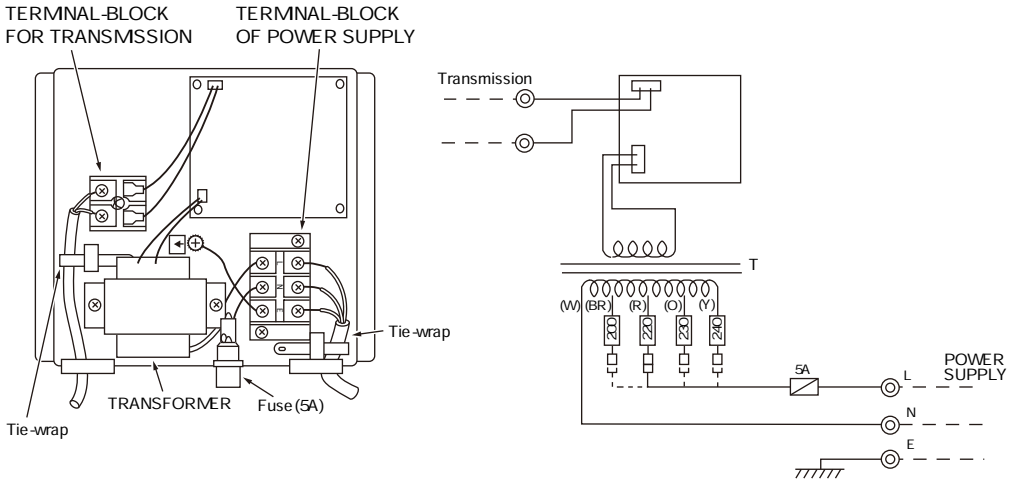
ACTIVE/BYPASS switch
This is a change-over switch for the program timer.
(It selects timer operation on the program timer.)
Use "BYPASS" when a program timer is not connected.
"ACTIVE"
The switch turns ON/OFF operational instructions from the program timer automatically.
"BYPASS"
ON/OFF Operation is by the centralized remote controller only.
Initial setting is "BYPASS".

Independent "DUAL / CENTRAL" and "ACTIVE / BYPASS" setting of all the groups is possible. When the power supply to the centralized remote controller is cut due to power failure, all settings will return to original "DUAL" and "BYPASS".

5-3 Connection method

(1) Connections in the power supply cord.

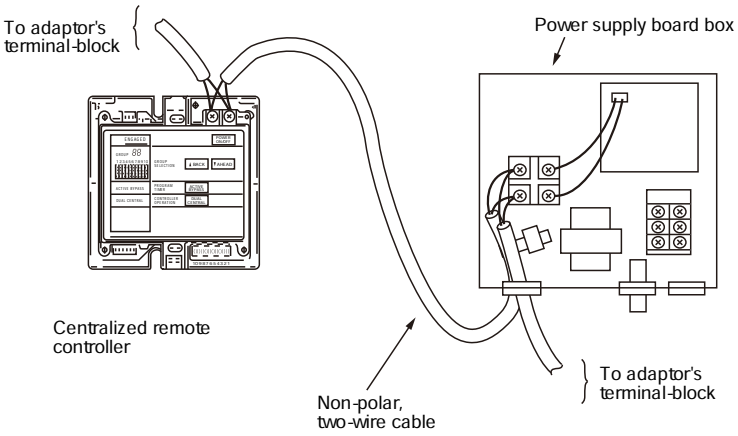
1. Connect the power supply cord to the power supply terminal-block and fix it in-place with a tie-wrap.
   Connect a single phase 200V AC (220, 230, 240V) to Ⓐ Ⓝ.
   As Ⓔ is the GND terminal, be sure to ground the earth wire.
2. Connect the transmission line to the transmission terminal-block and fix it in-place with a tie-wrap. Use a Ø1.6 (AWG 14) or above two-wire cable for the transmission line.
   CAUTION : Never connect the power supply cord to the transmission terminal-block.



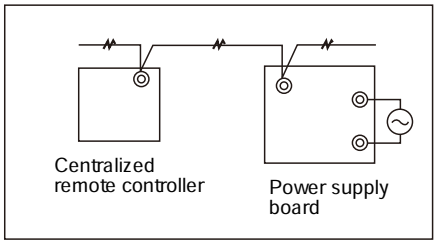
Wiring has to be changed when
a 200, 230 or 240V power is used.

(2) Connection method of centralized remote controller and power supply board.

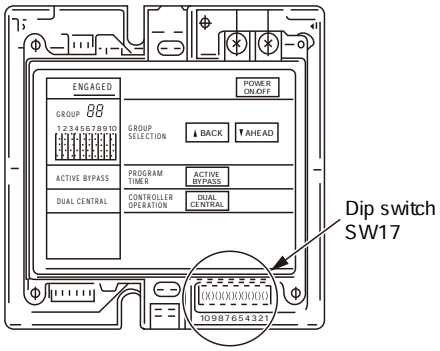
1. Connect the centralized remote controller and power supply board with a non-polar, two-wire cable.



2. Wiring diagram



3. Be sure to set the maximum address number with the dip switch SW17 on the centralized remote controller.

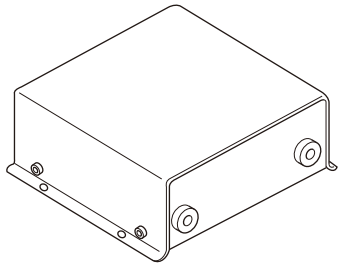
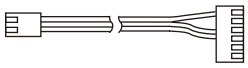
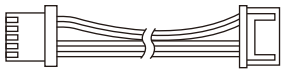


6. PROGRAM TIMER ADAPTER

This adapter is needed when a program timer (PAC-SC32PTA) or a centralized remote controller (PAC-805RC) is used.

Part No.	PAC-825AD

6-1 Parts included

① ADAPTER 1P	② 3-core cable 1P	③ 3-core cable 1P
	 Length : 2m (6' 7")	 Length : 2m (6' 7")
	④ 4-core cable 1P	⑤ 5-core cable 1P
	 Length : 2m (6' 7")	 Length : 2m (6' 7")

6-2 Connection method

Connection and wiring methods differ with the type of the indoor unit used. Confirm the type before carrying out the work.

(1) Connections in the adapter box

1. Connect the power supply cord to the terminal-block and fix it in-place with a tie-wrap.
   Connect a single phase 200V AC(220, 230, 240V) to Ⓛ Ⓝ.
   As Ⓔ is the GND terminal, be sure to ground the earth wire.
2. Connect the transmission line to the transmission terminal-block and fix it in-place with a tie-wrap (when a centralized remote controller is being used).
   CAUTION : Never connect the power supply cord to the transmission terminal-block

Fig-1

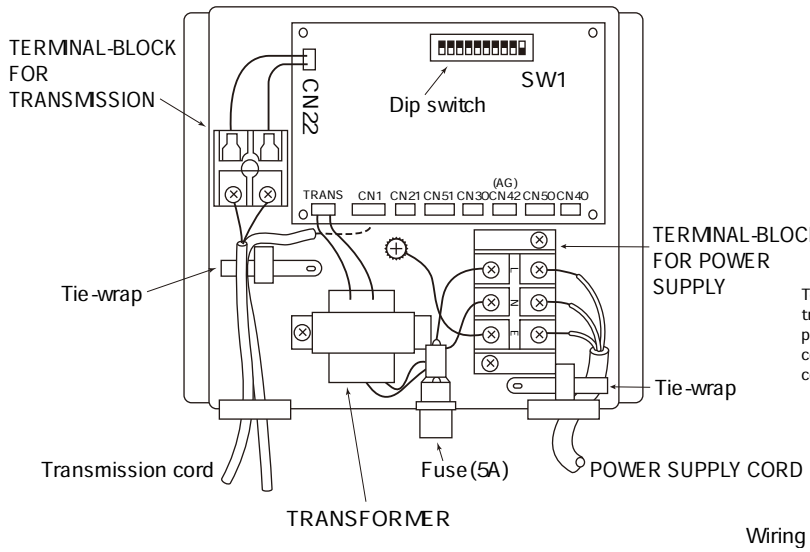
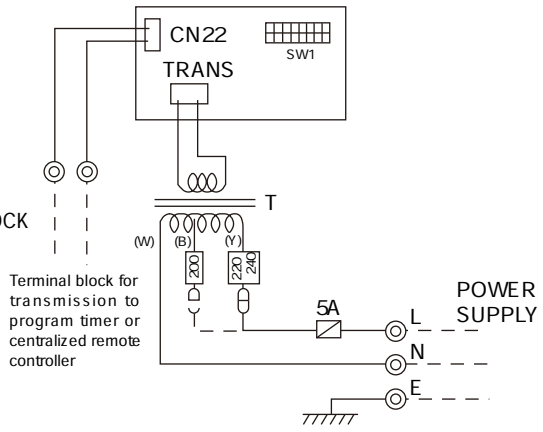


Fig-2



Wiring has to be changed when 200V power supply is used.

(2) When the centralized remote controller is used, set the address number with the dip switch SW1 of the program timer adapter.

7. Wired Remote Controller (with terminal block)

Part No.	PAR-JA240KAT-E

8. Program Timer

Part No.	PAC-SC32PTA

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE : TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU TOKYO 100-8310, JAPAN

Distributed in Oct. 2012 NO.OC229 REVISED EDITION-A
Distributed in Aug. 2000 NO.OC229 525
Made in Japan

New publication, effective Oct. 2012
Specifications are subject to change without notice.