MITSUBISHI ELECTRIC

Changes for the Better

SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

March 2007
No. OCB413

TECHNICAL & SERVICE MANUAL

Series PLFY Ceiling Cassettes R410A / R407C / R22

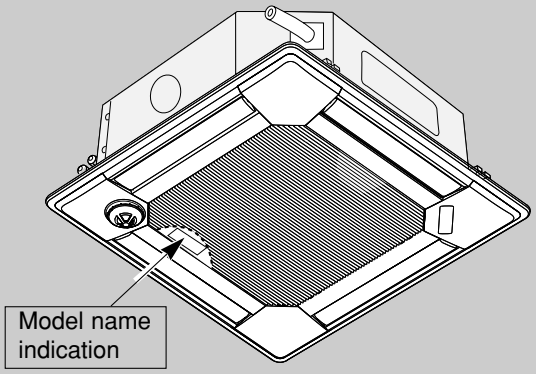
Indoor unit [Model names]

PLFY-P32VBM-E
PLFY-P40VBM-E
PLFY-P50VBM-E
PLFY-P63VBM-E
PLFY-P80VBM-E
PLFY-P100VBM-E
PLFY-P125VBM-E

[Service Ref.]

PLFY-P32VBM-E.UK
PLFY-P40VBM-E.UK
PLFY-P50VBM-E.UK
PLFY-P63VBM-E.UK
PLFY-P80VBM-E.UK
PLFY-P100VBM-E.UK
PLFY-P125VBM-E.UK

Note:
- This manual does not cover outdoor units. When servicing them, please refer to the outdoor unit's service manual.
- RoHS compliant products have <G> mark on the spec name plate.



INDOOR UNIT

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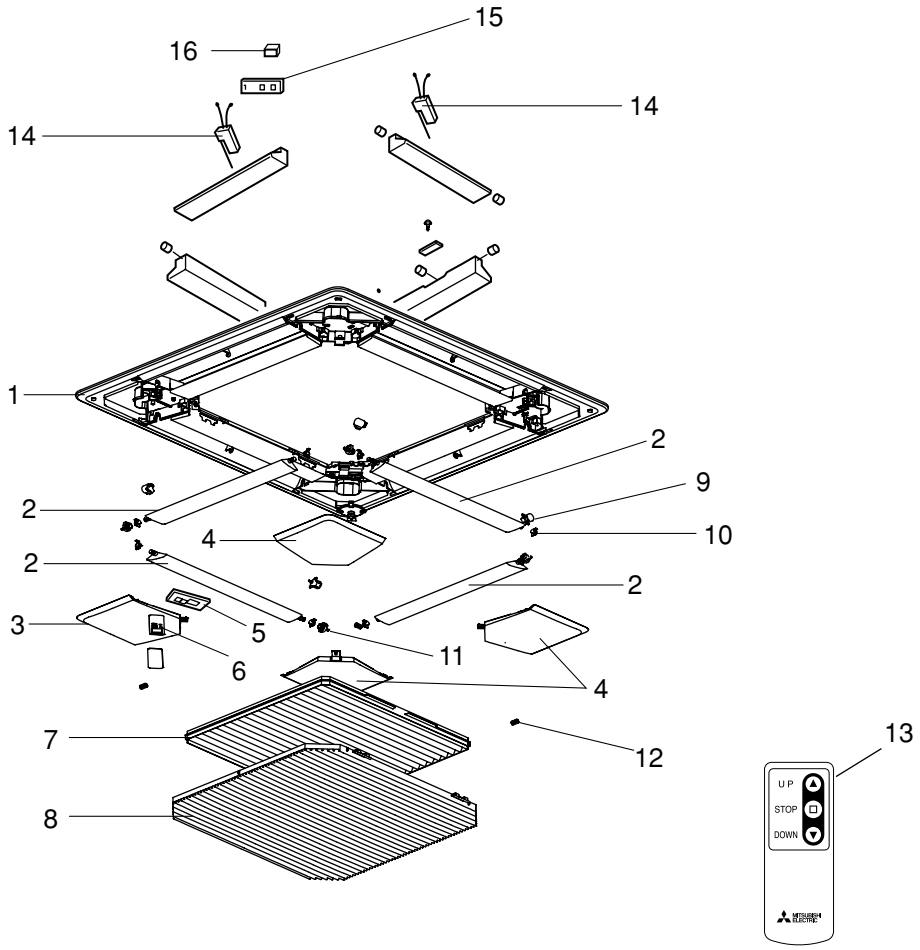
SERVICE MANUAL (OCH413)

1 RoHS PARTS LIST

PANEL PARTS
PLP-6BA
PLP-6BAJ

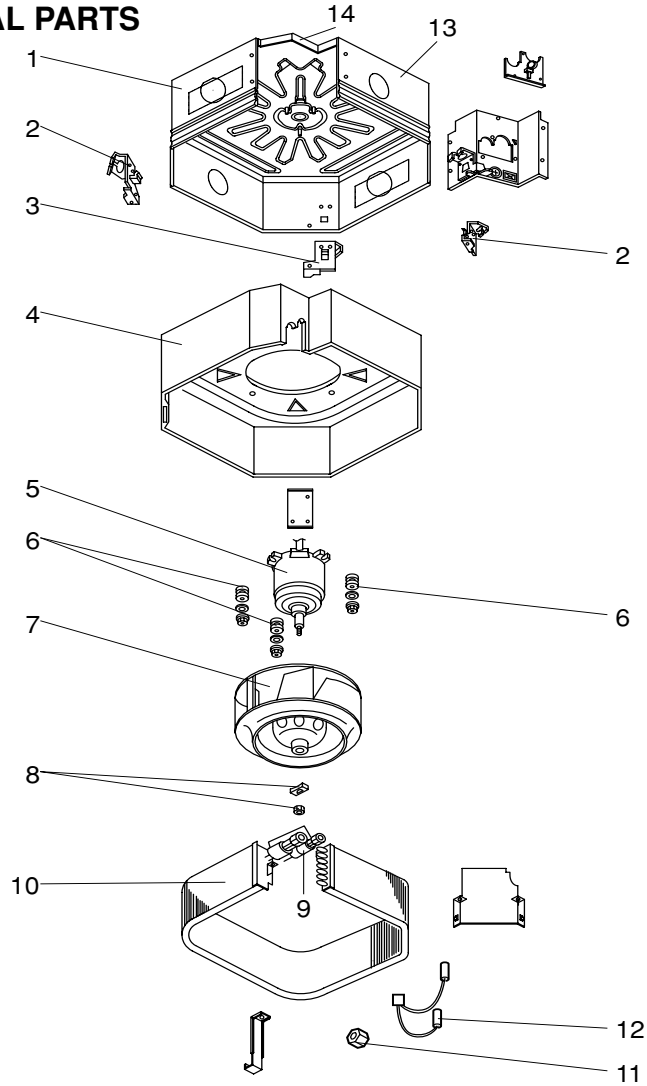


Part numbers that are circled are not shown in the illustration.

No.	RoHS	Parts No.	Parts Name	Specification	Qty/unit		Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price	
					PLP-6					Unit	Amount
					BA	BAJ					
1	G	S70 E20 003	AIR OUTLET GRILLE		1	1					
2	G	S70 E20 002	VANE ASSY		4	4					
3	G	S70 E30 638	CORNER PANEL (L)		1						
	G	S70 E40 638	CORNER PANEL (L)			1					
4	G	S70 E20 638	CORNER PANEL		3	3					
5	G	S70 E20 317	WIRELESS ADAPTER			1		W.B			
6	G	S70 E50 658	RECEIVER			1		RU			
7	G	S70 E20 500	L. L. FILTER-A		1	1					
8	G	S70 E20 691	GRILLE ASSY		1						
	G	S70 E30 691	GRILLE ASSY			1					
9	G	S70 E00 223	STEPPING MOTOR		4	4		MV			
10	G	S70 E00 063	VANE BUSH-A		8	8					
11	G	S70 E00 040	GEAR (Vane)		4	4					
12	G	S70 E01 040	GEAR (S/M)		4	4					
13	G	S70 E60 714	REMOTE CONTROLLER			1	for Auto Grille				
14	G	S70 0B0 213	MOTOR BOX			2		UK1			
15	G	S70 0B6 310	CONTROLLER BOARD			1		U.B			
16	G	S70 0B0 521	LIMIT SWITCH			1		LS1			
⑰	G	S70 E20 305	CABLE ASSY			1	for W.B.				
⑱	G	S70 E20 673	SCREW ASSY		1	1	Accessory				

STRUCTIONAL AND FUNCTIONAL PARTS

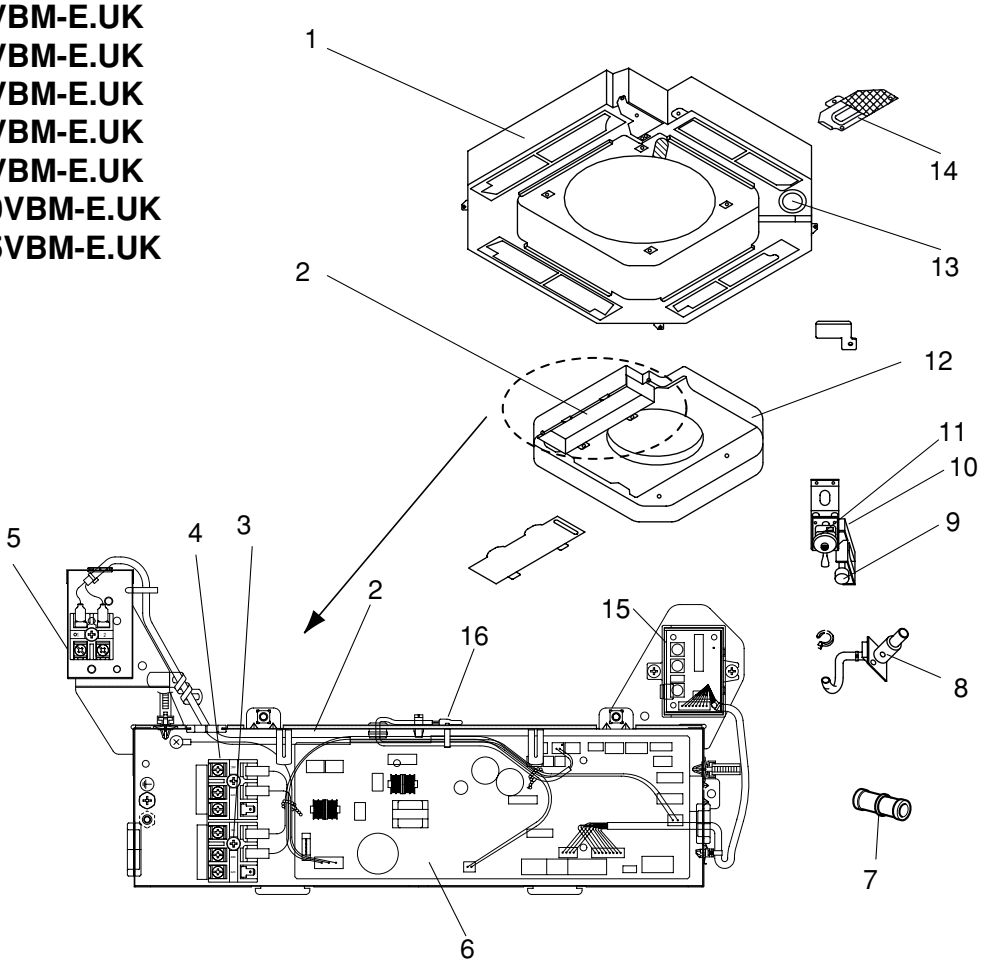
PLFY-P32VBM-E.UK
PLFY-P40VBM-E.UK
PLFY-P50VBM-E.UK
PLFY-P63VBM-E.UK
PLFY-P80VBM-E.UK
PLFY-P100VBM-E.UK
PLFY-P125VBM-E.UK



No.	RoHS	Parts No.	Parts Name	Specification	Qty/unit PLFY-P·VBM-E.UK 32	40	50	63	80	100, 125	Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price Unit	Amount
1	G	S70 0B3 688	DRUM 2 ASSY		1	1	1	1	1						
	G	S70 0B4 688	DRUM 2 ASSY							1					
2	G	S70 0B2 130	LEG 1A		2	2	2	2	2	2					
3	G	S70 0B1 130	LEG 1B		1	1	1	1	1	1					
4	G	S70 0B1 659	INNER COVER ASSY - S		1	1	1	1	1						
	G	S70 0B2 659	INNER COVER ASSY - L							1					
5	G	S70 0B1 762	FAN MOTOR		1	1	1	1	1			MF			
	G	S70 0B2 762	FAN MOTOR							1		MF			
6	G	S70 0B1 105	MOTOR MOUNT		3	3	3	3	3	3					
7	G	S70 0B1 114	TURBO FAN		1	1	1	1	1						
	G	S70 0B2 114	TURBO FAN							1					
8	G	S70 08K 097	SPL WASHER / NUT		1	1	1	1	1	1					
9	G	S70 0B1 401	LINEAR EXPANSION VALVE		1	1	1	1				LEV			
	G	S70 0B2 401	LINEAR EXPANSION VALVE						1	1		LEV			
10	G	S70 0C1 480	HEAT EXCHANGER		1										
	G	S70 0C2 480	HEAT EXCHANGER			1									
	G	S70 0C3 480	HEAT EXCHANGER				1								
	G	S70 0C4 480	HEAT EXCHANGER					1							
	G	S70 0C5 480	HEAT EXCHANGER						1						
	G	S70 0C6 480	HEAT EXCHANGER							1					
11	G	S70 E17 097	FLARE NUT	3/8"			1								
	G	S70 E15 097	FLARE NUT	5/8"			1								
	G	S70 E16 097	FLARE NUT	3/4"						1					
12	G	S70 0B2 202	THERMISTOR		1	1	1	1	1	1		TH22/TH23			
13	G	S70 0B1 688	DRUM 1 ASSY		1	1	1	1	1						
	G	S70 0B2 688	DRUM 1 ASSY							1					
14	G	S70 0B1 687	BASE		1	1	1	1	1	1					

FUNCTIONAL AND ELECTRICAL PARTS

PLFY-P32VBM-E.UK
PLFY-P40VBM-E.UK
PLFY-P50VBM-E.UK
PLFY-P63VBM-E.UK
PLFY-P80VBM-E.UK
PLFY-P100VBM-E.UK
PLFY-P125VBM-E.UK



No.	RoHS	Parts No.	Parts Name	Specification	Qty/unit	Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price	
					PLFY-P·VBM-E.UK				Unit	Amount
					32/40/50/63/80/100/125					
1	G	S70 0B2 529	DRAIN PAN		1					
2	G	S70 0B6 501	ELECTRIC CONTROL BOX		1					
3	G	S70 B02 716	TERMINAL BLOCK	3P (M1,M2,S)	1		TB5			
4	G	S70 0B4 716	TERMINAL BLOCK	3P (L, N, ⏚)	1		TB2			
5	G	S70 512 716	TERMINAL BLOCK	2P (1,2)	1		TB15			
6	G	S70 0B5 310	INDOOR CONTROLLER BOARD		1		I.B			
7	G	S70 29H 523	DRAIN SOCKET		1	ACCESSORY				
8	G	S70 0B1 527	DRAIN HOSE ASSY		1					
9	G	S70 0B1 266	DRAIN SENSOR (Float Switch)		1		FS			
10	G	S70 0B1 533	DRAIN SENSOR HOLDER		1					
11	G	S70 0B1 355	DRAIN PUMP		1		DP			
12	G	S70 0B2 502	BELLMOUTH		1					
13	G	S70 A41 524	DRAIN PLUG		1					
14	G	S70 0B1 663	CORNER COVER		1					
15	G	S70 0B1 313	ADDRESS BOARD		1		A.B			
16	G	S70 0B1 202	ROOM TEMP. THERMISTOR		1		TH21			

2 OPTIONAL PARTS

2-1. OPTIONAL PARTS LIST

2-1-1. MULTI FUNCTION CASEMENT

Part No.	PAC-SH53TM-E

2-1-2. AIR OUTLET SHUTTER PLATE

Part No.	PAC-SH51SP-E

2-1-3. HIGH EFFICIENCY FILTER (PAC-SH53TM-E is required in using this optional part.)

Part No.	PAC-SH59KF-E

2-1-4. i-SEE SENSOR CORNER PANEL

Part No.	PAC-SA1ME-E

2-1-5. AUTOMATIC FILTER ELEVATION PANEL

Part No.	PLP-6BAJ

2-1-6. SPACE PANEL

Part No.	PAC-SH48AS-E

2-1-7. FLANGE FOR FRESH AIR INTAKE

Part No.	PAC-SH65OF-E

2-1-8. WIRELESS SIGNAL RECEIVER (CORNER PANEL)

Part No.	PAR-SA9FA-E

2-1-9. WIRELESS REMOTE CONTROLLER

Part No.	PAR-FL32MA

2-1-10. WIRED REMOTE CONTROLLER (MA REMOTE CONTROLLER)

Part No.	PAR-21MAA

2-1-11. WIRED REMOTE CONTROLLER (ME REMOTE CONTROLLER)

Part No.	PAR-F27MEA

2-1-12. DECORATION PANEL

Part No.	PLP-6BA

2-2. AUTOMATIC FILTER ELEVATION PANEL

2-2-1. OPERATION (AUTOMATIC FILTER ELEVATION PANEL : PLP-6BAJ)

(1) Normal operation

① UP/ DOWN

Air intake grille is raised/ lowered by instructions of “UP” and “DOWN”.
Air intake grille does not move under the state of no-load detection or obstacle detection.
Air intake grille stops automatically at the set lowering distance from the ceiling level.

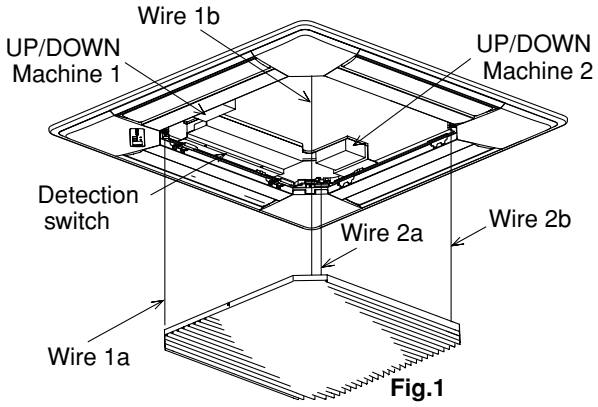


Fig.1

② STOP

It stops in the cases below :
•When it reaches at the set lowering distance from the ceiling level.
It automatically stops based on the calculation at distance from the time taken to lower.
•When it is stored in the panel.
Air intake grille is judged to be stored in the panel when storage detection switch is pressed for 3 seconds continuously.
•When receiving instructions of “STOP”, “DOWN” while moving up and “UP” while moving down.
“STOP” button is only for the remote controller for Automatic Filter Elevation Panel.
As for wired remote controller, it takes several seconds to stop due to transmission speed.
•When both wire 1b and wire 2b are no-loaded.
Only the wire b in each UP/DOWN Machine has tension detection switch.

(2) Special operation

① Re-storing operation

Case : Catch of grille or malfunction of storage detection switch
Re-storing operation will be done when storage detection switch is not pressed with air intake grille raised by the set distance. And operation below will be repeated up to 4 times.
10cm down → 30cm up → ···· → 10cm down → 30cm up

② No-load detection

Case : “UP/DOWN” instruction without grille.
When both wire 1b and wire 2b are no-loaded, grille does not move.

③ Obstacle detection

Case : Making contact with something while lowering.
When both wire 1b and wire 2b is no-loaded by making contact with something while lowering, it stops and is raised by 10cm and stops again.

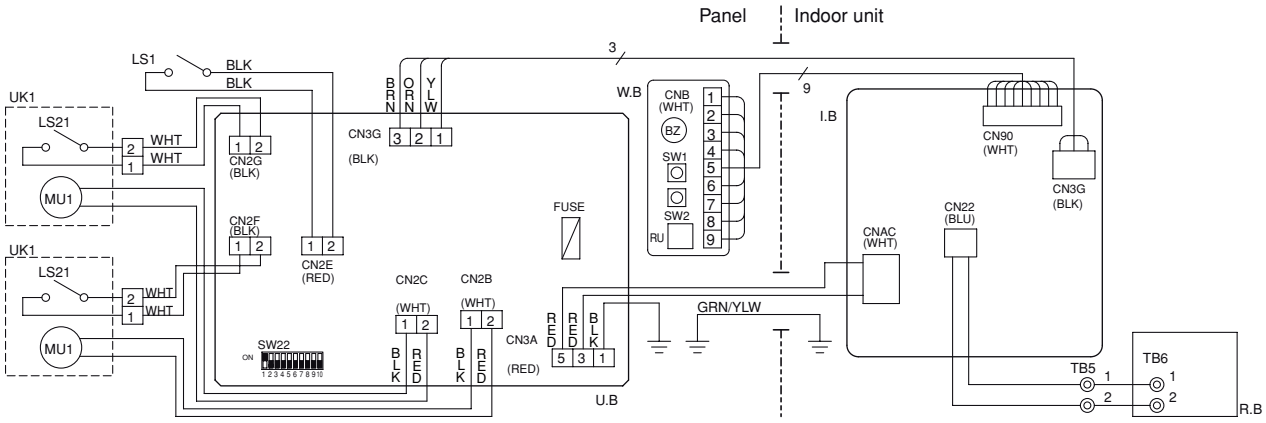
[Emergency operation]

• When the wireless remote controller cannot be used (in the case of battery discharge, misplacing of the wireless remote controller, malfunctioning and so on), the emergency switch on the sensor can be used as an alternative.
* When doing this, particular caution must be taken not to fall.
To lower the air intake grille : Press the button once.
(For emergency heating operation, press this button.)
To raise the air intake grille : Press the button once.
(For emergency cooling operation, press this button.)
• To stop the air intake grille from moving, use the opposite buttons to those used to initiate movement.
(To stop it from lowering, press the “UP” button; To stop it from rising, press the “Down” button.)
• When up/down machine is out of order, fix air intake grille temporarily and indoor can be operated.
※ For details, refer to installation manual for grille.

SW22 (Lowering distance Set Up)							
Lowering distance	1.2 m	Lowering distance	1.6 m (Factory default specification)	Lowering distance	2.0 m	Lowering distance	2.4 m
Rough Indication of the Ceiling Height	- 2.4 m	Rough Indication of the Ceiling Height	2.4 m - 2.8 m	Rough Indication of the Ceiling Height	2.8 m - 3.2 m	Rough Indication of the Ceiling Height	3.2m - 3.6m
Configuration	ON OFF 1 2 3 4 5 6 7 8 9 10	Configuration	ON OFF 1 2 3 4 5 6 7 8 9 10	Configuration	ON OFF 1 2 3 4 5 6 7 8 9 10	Configuration	ON OFF 1 2 3 4 5 6 7 8 9 10
Lowering distance	2.8 m	Lowering distance	3.2 m	Lowering distance	3.6 m	Lowering distance	4.0 m
Rough Indication of the Ceiling Height	3.6 m - 4.0 m	Rough Indication of the Ceiling Height	4.0 m - 4.4 m	Rough Indication of the Ceiling Height	4.4 m - 4.8 m	Rough Indication of the Ceiling Height	4.8 m - 5.2 m
Configuration	ON OFF 1 2 3 4 5 6 7 8 9 10	Configuration	ON OFF 1 2 3 4 5 6 7 8 9 10	Configuration	ON OFF 1 2 3 4 5 6 7 8 9 10	Configuration	ON OFF 1 2 3 4 5 6 7 8 9 10

2-2-2. ELECTRICAL CIRCUIT

(1) Wiring diagram (Panel)



Symbol		Name	Symbol		Name
U.B		Auto grille controller board	W.B		Wireless remote controller board
	FUSE	Fuse (3.15A)		BZ	Buzzer
				RU	Receiver
	SW22	switch (Lowering distance set up)		SW1	Emergency switch (heating/down)
UK1		Up/down machine		SW2	Emergency switch (cooling/up)
	MU1	Motor (Up/down)	LS1		Limit switch (storage detection)
	LS21	Limit switch (tension detection)	R.B		Wired remote controller
I.B		Indoor controller board			

(2) Check point of trouble

<LED display>

Turn OFF : No power supply
Blink : Storage detection switch ON (short)
One blink : Storage detection switch OFF (open)
Two blinks : Tension detection switch OFF (open)

<controller board>

Check item	Check point	Normal	Remarks
Up/down controller P.C. board supply voltage	CN3A (between 3-5)	AC198~264V	
Up/down machine supply voltage	CN2B,CN2C	DC10~12V	Check when instructing up/down with LED blinking once.

<Up/down machine>

Check item	Check point	Normal	Check contents
Storage detection switch	CN2E	open or short	Check if it is short when pressing push switch.
Tension detection switch	CN2F,CN2G	open or short	Check if it is short when wire b is tensioned.
Motor	CN2B,CN2C	5~20Ω	Check if it is not open or short.
Entwining wires	Pull wire	Retension : about 2kgf	Check if wire is drawn out by pulling with 3kgf.

2-2-3. Troubleshooting

• Check the following points.

Problem	Possible Reason	Corrective Action
Air intake grille does not function with operation of the wireless remote controller.	Air-conditioner is running.	Stop running the air-conditioner and try again.
	Power failure	After recovering from power failure, try again.
	Batteries are not inserted into the wireless remote controller. Or battery power is running low.	Install or replace the battery.
	There is something on the air intake grille. Or something is stuck in the air intake grille.	Remove the objects or obstacles from the air intake grille. Or, remove the stuck object.
Air intake grille cannot be fixed in place.	There is something on the air intake grille.	Remove the objects or obstacles from the air intake grille.
	Filter is not properly installed.	Lower the air intake grille again and check whether the filter is installed in the correct position.
	Air intake grille is not hung with all four hooks.	Lower the air intake grille again and hook on the air intake grille.
Air intake grille stops lowering. (Air intake grille would not lower any further.)	The air intake grille has finished lowering to the auto-stop position.	This is normal.
Noises are made during up/down operation. (While air intake grille is moving up/down.)	This is the noise made when the wire is winded and unwound.	This is normal.
Noises are made while putting the air intake grille into place.	This is the operational noise for putting the air intake grille into place.	
Air intake grille repeats rising and lowering several times while being put into place.	This is the operation for putting the air intake grille into place.	
Air intake grille leans toward one side during the up/down operation.	The speeds of winding/unwinding wires are slightly different for each wire.	

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