Changes for the Better

MITSUBISHI ELECTRIC

AIR CONDITIONERS CITY MULTI

Models **PQRY-200M-B-BM**
PQRY-250M-B-BM

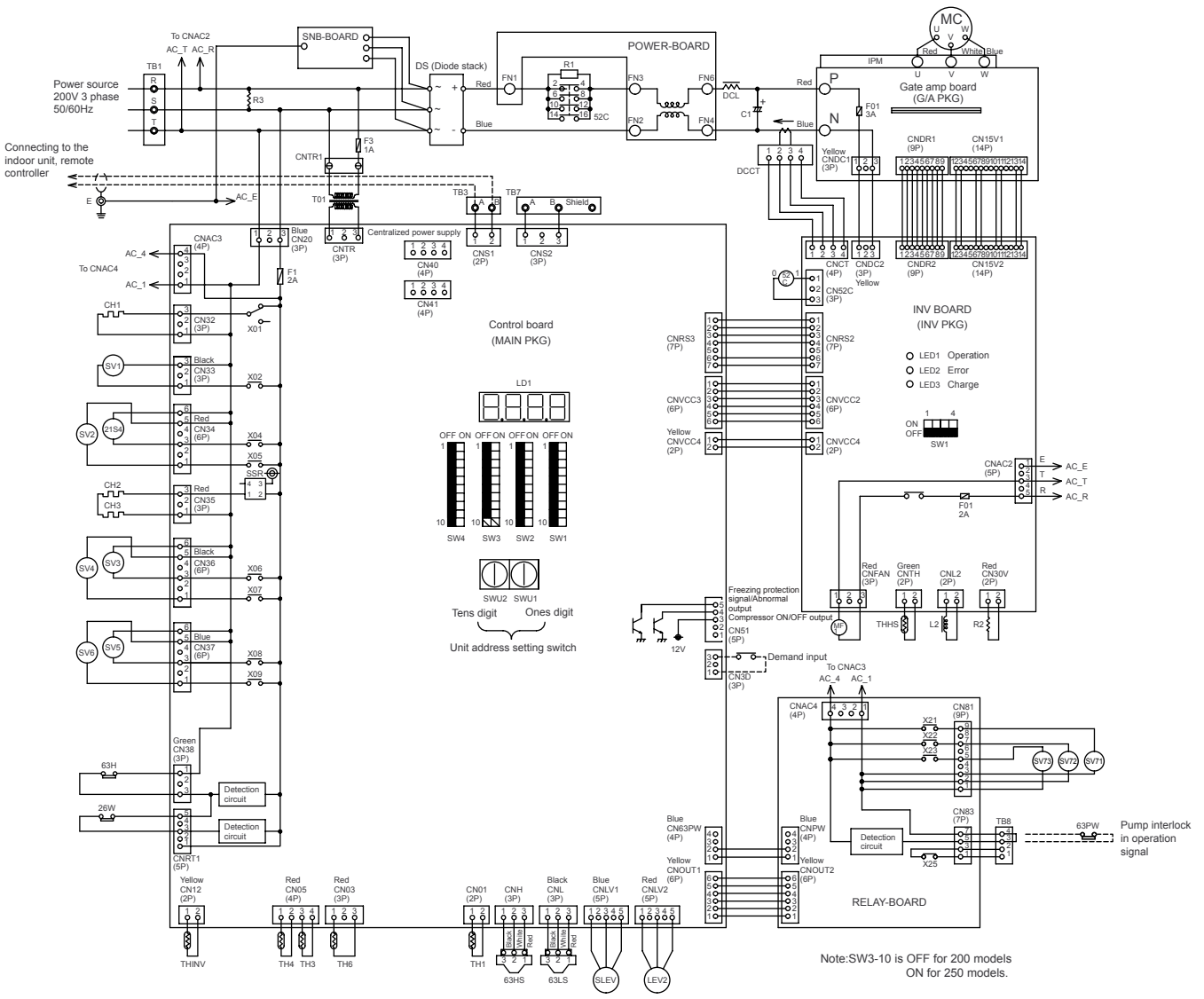
Service Handbook

CITY MULTI

CONTENTS

[Ⅰ Electrical Wiring Diagram]

[1] Electrical Wiring Diagram

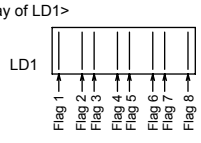


Symbol	Name	Symbol	Name	Symbol	Name	Symbol	Name
TB1	Terminal block for power supply	C1	Main capacitor (smooth)	63H	High pressure switch	THINV	Thermistor (Outlet of heat of cooling at the inverter)
TB3	Terminal block for transmission line (For indoor series)	52C	Electro-magnetic contactor (Inverter main circuit)	26W	Thermo (Freezing protection)	63HS	High pressure sensor
TB7	Terminal block for transmission line (For centralized administration)	MC	Motor for compressor	TH1	Thermistor (Discharge piping temp. detection)	63LS	Low pressure sensor
TB8	Terminal block (Operation ON signal, pump interlock)	MF1	Motor Fan (Radiator plate)			SLEV	Electronic expansion valve (Oil return)
E	Earth terminal	CH1	Crank case heater (Compressor)	TH3	Thermistor (Liquid level detection of accumulator, lower)	L2	Choke coil (Transmission)
		CH2,CH3	Code heater (Liquid level detection of accumulator)	TH4	Thermistor (Liquid level detection of accumulator, upper)		
DCCT	DC Current Sensor (Direct Current)	21S4	Four-way valve	TH6	Thermistor (OA temp. detection)		
R1	Resistance of rush current prevention	SV1,SV2	Solenoid valve (Discharge-suction bypass)				
R2	Bleeder resistance	SV3~SV6	Solenoid valve (Heat exchanger capacity control)				
R3	Resistance	SV71~SV73	Solenoid valve (Heat exchanger capacity control)	THHS	Thermistor (Radiator plate)		

< Operation of SW1 (Self-diagnose switch) on Control Board and Displayed Contents on LD1>

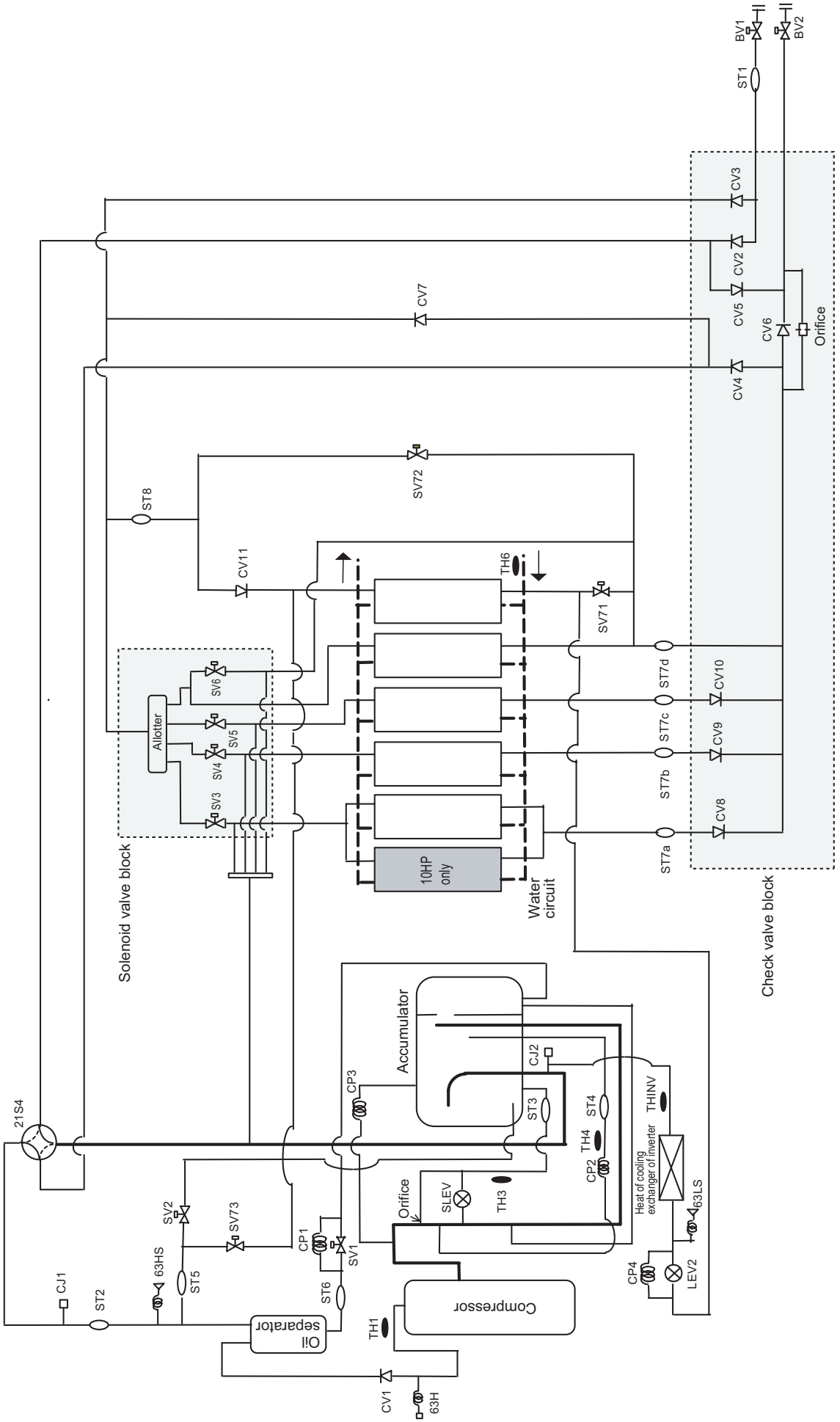
Operation of SW1	Contents	Displayed contents when LD1 lit (blink)								Remarks
		Flag 1	Flag 2	Flag 3	Flag 4	Flag 5	Flag 6	Flag 7	Flag 8	
ON OFF 1 2 3 4 5 6 7 8 9 10 Factory default	Display of Relay output 1 (Light ON)	Compressor in operation	Crank case heater	21S4	SV1	SV2	SV3	SV4	Always Light ON	Flag 8 stays lit while power supply of the microcomputer is turned on
	Display of Check 1 (Blink)	Error code display Error address and the error code are displayed alternately. Example: Error address 51, Discharge temp. error (Error code 1102)								
ON OFF 1 2 3 4 5 6 7 8 9 10		SV5	SV6	SV71	SV72	SV73		SSR		

<Display of LD1>



[II Refrigerant Circuit]

[1] Refrigerant Circuit Figure



[1] Functions and Factory Settings of the Dipswitches

1. Heat source unit

(1) Main board

Switch		Function	Function according to switch setting		Switch setting timing	
			OFF	ON	ON	OFF
SWU	1-2	Unit address setting	Set to 00 or 51-100 with the dial switch (Note 2)		Before power on	
SW1		For self diagnosis/ operation monitoring	Refer to the LED monitor display on the heat source unit board.			
SW2	1	Centralized control switch	Without connection to the centralized controller	With connection to the centralized controller	Before power on	
	2	Deletion of connection information	Normal control	Deletion	Before power on	
	3	Deletion of error history SW	Storage of IC/ OC error history	Deletion of IC/ OC error history	Anytime after power on	
	4	Refrigerant amount adjustment	Normal control	Refrigerant amount adjustment mode	Disabled after 2 hours since the compressor started.	Anytime after power on
	5	-	-	-	Set the switch to OFF	
	6	-	-	-	Set the switch to OFF	
	7	Output switching of operation ON signal	Thermo-ON	Thermo-ON and Thermo-OFF	Anytime after power on	
	8	Pump interlock failure disabled	Normal control	Failure disabled	Anytime after power on	
	9	-	-	-	-	
	10	-	-	-	Set the switch to OFF	
SW3	1	SW 3-2 enabled/ disabled	SW3-2 disabled	SW3-2 enabled	Anytime after power on	
	2	Test run mode: ON/OFF	Stops all ICs	Sends a test-run signal to all ICs	After power on and when SW3-1 is on.	
	3	Output switching of CN51-3/5 signal	Water heat exchanger freezing protection	Heat source unit error signal	Anytime after power on	
	4	Operation of water heat exchanger freezing protection (Note 3)	Disabled	Enabled	Anytime after power on	
	5	Cooling Tcm	0°C [32°F]	–3°C [27°F]	Anytime after power on	
	6	Pump down operation	Normal control	Pump down operation	While the compressor stops after power on	
	7	Heating Tcm	52°C [126°F]	54°C [129°F]	Anytime after power on	
	8	-	-	-	-	
	9	-	-	-	Set the switch to OFF	
	10	Unit model selection	Model 200	Model 250	Before power on	
SW4	1	-	-	-	-	
	2	-	-	-	-	
	3	-	-	-	-	
	4	-	-	-	Set the switch to OFF	
	5					
	6					
	7					
	8					
	9					
	10					

Note 1: SWU 1-2 is set to 00 and SWU 3-10 is set in every model, and other SWUs are set to OFF at factory shipment.
Note 2: When the heat source unit address is set to 100, set the address setting switch to any one of 01-50.
Note 3: When the water temperature (TH6) is below 5°C [41°F], while the compressor stops, the cooling operation starts to prevent freezing.
This control will be finished when it fails into one of the occasions. The water temperature (TH6) is above 10°C [50°F], 2 hours has passed since the operation started, or it received the normal operation demand.

(2) INV board

Switch		Function	Function according to switch setting		Switch setting timing	
			OFF	ON	ON	OFF
SW1	1	IDC sensor failure condition switching	• 20A or over just before starting • 10A or less after 5 seconds from starting	• 20A or over just before starting (10A or less after 5 seconds from starting is disabled)	Anytime after power on	
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	Serial communication	Communicated	No communication	Anytime after power on	

Note 1: At factory default, all switches are set to OFF.

[1] Standard Operation Data (Reference Data)

1. PQRY

(1) Cooling operation

Operation				Heat source unit model										
				PQRY-200					PQRY-250					
Operating conditions	Power supply		V/Hz	200/60					200/60					
	Ambient temperature	Indoor	DB/WB	27.0/19.0					27.0/19.0					
	Heat source unit water temperature		°C	30.0					30.0					
	Heat source unit water-flow rate		m^3/h	3.88					4.93					
	Indoor unit	No. of connected units	Unit	4					4					
		Indoor unit operation mode		Cooling	Cooling	Cooling	Cooling	-	Cooling	Cooling	Cooling	Cooling	-
		Model		80	71	56	22	-	112	80	71	22	-
	Piping	Main pipe	m	5					5					
		Branch pipe		5	5	5	5	-	5	5	5	5	-
		Total pipe length		25					25					
	Fan speed			Hi	Hi	Hi	Hi	-	Hi	Hi	Hi	Hi	-
	Amount of refrigerant		kg	10.9					11.9					
Heat source unit	Electric current		A	21.6					27.9					
	Voltage		V	200					200					
LEV opening	Indoor unit		Pulse	300	420	400	280	-	400	300	420	280	-
	BC controller (1/3)			2000	-	160	40	-	2000	-	165	-	-
	Oil return section			180					180					
Pressure	High pressure/low pressure		MPa	1.64/0.42					1.71/0.37					
	BC controller liquid/intermediate			1.56/1.56					1.63/1.63					
Temp. of each section	Discharge (TH1)		°C [°F]	89 [192°F]					90 [194°F]					
	Accumulator	Inlet		2 [36°F]					1 [34°F]					
		Outlet		4 [39°F]					4 [39°F]					
	Inlet			6 [43°F]					6 [43°F]					
	Liquid level detection, upper (TH4)			26 [79°F]					25 [77°F]					
	Liquid level detection, lower (TH3)			2 [36°F]					1 [34°F]					
	Compressor shell bottom			55 [131°F]					60 [140°F]					

(2) Heating operation

Operation				Heat source unit model										
				PQRY-200					PQRY-250					
Operating conditions	Power supply		V/Hz	200/60					200/60					
	Ambient temperature	Indoor	DB/WB	20.0/-					20.0/-					
	Heat source unit water temperature		°C	20.0					20.0					
	Heat source unit water-flow rate		m^3/h	3.88					4.93					
	Indoor unit	No. of connected units	Unit	4					4					
		Indoor unit operation mode		Heating	Heating	Heating	Heating	-	Heating	Heating	Heating	Heating	-
		Model		80	71	56	22	-	112	80	71	22	-
	Piping	Main pipe	m	5					5					
		Branch pipe		5	5	5	5	-	5	5	5	5	-
		Total pipe length		25					25					
	Fan speed			Hi	Hi	Hi	Hi	-	Hi	Hi	Hi	Hi	-
	Amount of refrigerant		kg	10.9					11.9					
Heat source unit	Electric current		A	21.3					27.1					
	Voltage		V	200					200					
LEV opening	Indoor unit		Pulse	560	910	720	360	-	720	560	910	360	-
	BC controller			60	-	535	-	-	60	-	715	-	-
	Oil return section			115					180					
Pressure	High pressure/low pressure		MPa	1.80/0.51					1.83/0.49					
	BC controller liquid/intermediate			1.70/1.41					1.73/1.41					
Temp. of each section	Discharge (TH1)		°C [°F]	80 [176°F]					87 [189°F]					
	Accumulator	Inlet		7 [45°F]					7 [45°F]					
		Outlet		7 [45°F]					7 [45°F]					
	Inlet			5 [41°F]					5 [41°F]					
	Liquid level detection, upper (TH4)			28 [82°F]					27 [81°F]					
	Liquid level detection, lower (TH3)			7 [45°F]					7 [45°F]					
	Compressor shell bottom			38 [100°F]					40 [104°F]					

[1] Check Code Lists

Error Code	Error code definition		Searched unit				Notes
			Heat source unit	Indoor unit	OA processing unit	Remote controller	
0403	Serial communication error		O				
0900	Test run mode				O		
1102	Abnormal discharge air temperature		O				
1112	Abnormal low pressure saturation temperature	Liquid level detection (TH4)	O				
1113		Liquid level detection (TH3)	O				
1301	Abnormal low pressure		O				
1302	Abnormal high pressure (Heat source unit)		O				
1500	Excessive or insufficient refrigerant		O				
1501	Refrigerant shortage error		O				
2000	Pump interlock failure		O				
2134	Abnormal water temperature		O				
2135	Water heat exchanger freezing failure		O				
2500	Water leakage			O			
2502	Drain pump failure			O			
2503	Drain sensor (DS) failure			O			
4102	Open phase		O				
4103	Reverse phase		O				
4115	Power supply sync signal abnormality		O				
4116	RPM error/Motor malfunction		O				
4121	Harmonics action device error		O				
4200	Vdc sensor/circuit failure		O				
4220	Bus voltage drop protection		O				
4230	Heatsink overheat protection		O				
4240	Overload protection		O				
4250	IPM/Bus voltage abnormality		O				
4260	Cooling fan abnormality		O				

Error Code	Error code definition		Searched unit					Notes
			Heat source unit	Indoor unit	BC controller	OA processing unit	Remote controller	
5101	Temperature sensor failure	Indoor inlet (TH21)		O				
		Return of OA processing unit (TH4)				O		
		Outlet of Heat source unit (TH1)	O					
5102		Indoor inlet (TH22)		O				
		Pipes on the OA processing unit (TH2)				O		
5103		Indoor gas side pipe (TH23)		O				
		Pipes on the OA processing unit (gas side) (TH3)				O		
		Heat source unit liquid level detection (TH3)	O					
5104		OA for OA processing unit (TH1)				O		
		Heat source unit liquid level detection (TH4)	O					
5106		Water temperature (TH6)	O					
5107		Heat of cooling exchanger piping of INV (THINV)	O					
5110		Radiator plate (THHS)	O					
5111	Temperature sensor failure (BC controller)	Liquid inlet of BC controller (TH11)			O			
5112		Bypass outlet (TH12)			O			
5115		Bypass inlet (TH15)			O			
5116		Intermediate (TH16)			O			
5201	Low pressure sensor failure (Heat source unit)		O					
5301	IDC sensor/circuit failure		O					
6600	Address overlaps		O	O		O	O	
6602	Transmission processor hardware error		O	O		O	O	
6603	Transmission circuit bus-busy		O	O		O	O	
6606	Communication error with the transmission processor		O	O		O	O	
6607	No ACK			O		O	O	
6608	No response			O		O	O	
6810	UR communication error (UR: unit remote controller)			O		O	O	
7100	Total capacity error		O					
7101	Capacity code error		O					
7102	Error in the number of connected units		O					
7105	Address setting error		O					
7106	Attribute setting error					O		
7107	Port address setting error				O			
7111	Remote controller sensor failure			O		O		
7130	Incompatible units		O					

[2] Preliminary Error Code Lists

Preliminary error code	Contents of preliminary error
1202	Abnormal discharge air temp. or discharge air temp. sensor preliminary failure (TH1)
1205	Piping temp. sensor preliminary failure (TH5)
1212	Preliminary low pressure saturation temperature abnormality or liquid level detection temperature sensor (upper) preliminary failure (TH4)
1213	Preliminary low pressure saturation temperature abnormality or liquid level detection temperature sensor (lower) preliminary failure (TH3)
1214	THH sensor/circuit preliminary failure
1216	Temperature sensor of heat of cooling exchanger piping of INV preliminary error (THINV)
1221	Water temperature sensor preliminary error (TH6)
1402	Preliminary high pressure abnormality or pressure sensor preliminary failure
1600	Overfilling refrigerant preliminary error
1601	Refrigerant shortage preliminary error
1605	Preliminary vacuum operation protection
4171	Harmonics action device preliminary error
4300	Idc sensor/circuit preliminary failure
	Vdc sensor/circuit preliminary failure
	Serial communication preliminary error
4320	Preliminary bus voltage drop abnormality
4330	Preliminary heat sink overheat malfunction
4340	Overload protection
4350	Preliminary IPM/Bus voltage abnormality
4360	Cooling fan preliminary failure
2235	Heat of cooling exchanger protection for freezing preliminary failure
2234	Preliminary water temperature abnormality
2100	Pump interlock preliminary failure

[3] Responding to Error Display on the Remote Controller

1. Mechanical system

Error Code		Error definition and error detection method	Cause	Check method and remedy
0403	Serial communication error	Serial communication error between the main board and the INV board.	(1) Faulty wiring	Check for wiring between the connector (CNRS3) on the main board and the connector (CNRS2) on the INV board. Check for contact of the connectors.
			(2) Inverter board switch setting error	Confirm that the SW1-4 on the INV board is set to OFF.
			(3) INV board failure	Replace the compressor INV board when the power turns on automatically, even if the power source is reset.
1102	Abnormal discharge air temperature		(1) Gas leak, gas shortage	Check the refrigerant amount.
			(2) Overload operation	Check operating conditions and operation status of indoor/heat source units.
			(3) LEV failure on the indoor unit (4) LEV failure on the BC controller Cooling only LEV3 Cooling main LEV1, 3 Heating only, Heating main LEV3 (5) SVM failure on the BC controller → Cooling only (6) SVA failure on the BC controller → Cooling only, Cooling main (7) SVB failure on the BC controller → Heating only, Heating main (8) Solenoid valve SV (3-6) failure → Heating only- Heating main	Perform a cooling or heating operation and check the operation. Cooling : LEV on the indoor unit LEV1, 3 SVM SVA Heating : LEV on the indoor unit LEV3 SVB SV3-6 Check the LEV.
			(9) Port address setting error	Check the port address setting of the indoor unit.
			(10) Closed ball valve	Confirm that the ball valve is fully open.
			(11) Heat source water flow shortage, heat source water stoppage, contamination or plugging of the water heat exchanger → Heating only- Heating main (Rise in discharge temp. by low pressure drawing for (3) - (11).)	Check the water heat exchanger (contamination or plugging) Check the water heat circulation pump
			(12) Gas leak between low and high pressures (4-way valve failure, Compressor failure, Solenoid valve (SV1) failure)	Perform a cooling only or heating only operation and check the operation.
			(13) Solenoid valve (SV2) failure (The by-pass valve (SV2) can not control rise in high pressure.)	Check the solenoid valve
			(14) Thermistor failure (TH11)	Check the thermistor resistor.
			(15) Input circuit failure on the controller board thermistor	Check the inlet air temperature on the LED monitor and check the contact of the connector.

Error Code		Error definition and error detection method	Cause	Check method and remedy
1112	**(Abnormal low pressure saturation temp.)** Liquid level detection temperature sensor (TH4)	1. If the saturation temp. sensor TH3, TH4 or the liquid level detection temperature sensor TH3, TH4 detects -40°C [-40°F] or lower during the operation (the first detection), the heat source unit stops once, turns to anti-restart mode for 3 minutes, and restarts after 3 minutes automatically. 2. If the discharge temperature of -40°C [-40°F] or lower is detected (the second detection) within 30 minutes after the stop of the heat source unit , the heat source unit will make an error stop, and the error code "1112" or "1113" will be displayed. 3. If the discharge temperature of -40°C [-40°F] or lower is detected more than 30 minutes after the previous stop of the heat source unit, the detection is regarded as the first detection, and the operation described in step 1 above will start. 4. For 30 minutes after the stop (the first stop or the second stop) of the heat source unit, preliminary errors will be displayed on the LED display. Note 1: Abnormal low pressure saturation temperature is not detected for 3 minutes after the compressor starts. Note 2: When short/open is detected by the sensor TH3-TH4 in ten minutes before and after the compressor runs, "1112" or "1113" will be displayed.	(1) Gas leak, gas shortage	Check the refrigerant amount.
			(2) Light-load operation	Check operating conditions and operation status of indoor/heat source units.
			(3) LEV failure on the indoor unit (4) LEV failure on the BC controller Cooling only LEV3 Cooling main LEV1, 3 Heating only, Heating main LEV3 (5) SVM failure on the BC controller → Cooling only (6) SVA failure on the BC controller → Cooling only, Cooling main (7) SVB failure on the BC controller → Heating only, Heating main (8) Solenoid valve SV (3-6) failure → Heating only- Heating main	Check the refrigerant amount. Perform a cooling or heating operation and check the operation. Cooling : LEV on the indoor unit LEV1, 3 SVM SVA Heating : LEV on the indoor unit LEV3 SVB SV3-6 Check the LEV and the solenoid valve
			(9) Port address setting error	Check the port address setting of the indoor unit.
			(10) Ball valve failure	Confirm that the ball valve is fully open.
1113	**(Abnormal low pressure saturation temp.)** Liquid level detection temperature sensor (TH3)		(11) Short cycle on the indoor unit side (12) Clogged filter on the indoor unit (13) Reduced air flow due to dirty fan on the indoor unit (14) Dirty heat exchanger of the indoor unit (15) Fan block of the indoor unit and the motor failure (Lowered in low pressure caused by lowered evaporation capacity in cooling operation for (10) - (15).)	Check the indoor units for problems and correct them, if any.
			(16) Heat source water flow shortage (17) Heat source water stoppage (18) Contamination or plugging of the water heat exchanger (Rise in discharge temp. by low pressure drawing for (3)-(11))	Check the water heat exchanger (contamination or plugging) Check the water heat circulation pump
			(19) Solenoid valve SV1, SV2 failure (The by-pass valve (SV2) can not control drop in low pressure.)	Check the solenoid valve
			(20) Thermistor failure (TH3-TH7)	Check the resistance value of the thermistor
			(21) Pressure sensor failure	Check the pressure sensor
			(22) Thermistor on the control board/input circuit of the pressure sensor failure	Check the inlet air temperature on the LED monitor and check the contact of the connector.
			(23) Thermistor settings error (TH3-TH7)	
1301	Abnormal low pressure	When starting the compressor from Stop Mode for the first time if low-pressure reads 0.098MPa [14psi] immediately before start-up, the operation immediately stops.	(1) Inner pressure drop due to a leakage. (2) Low pressure sensor failure (3) Torn outer rubber (4) A pin on the male connector is missing. (5) Disconnected wire (6) Failure of the low pressure input circuit on the controller board	Check the low pressure sensor.

Error Code		Error definition and error detection method	Cause	Check method and remedy
1302	Abnormal high pressure 1 (Heat source unit)	1. If the pressure of 2.74MPa [397psi] or higher is detected by the pressure sensor during operation (the first detection), the heat source unit stops once, turns to anti-restart mode for 3 minutes, and restarts after 3 minutes automatically. 2. If the pressure of 2.94MPa [426 psi] or higher is detected by the pressure sensor (the second detection) within 30 minutes of the second stop of the heat source unit, the heat source unit will make an error stop, and the error code "1302" will be displayed. 3. If the pressure of 2.74MPa [397 psi] or higher is detected more than 30 minutes after the stop of the heat source unit, the detection is regarded as the first detection, and the operation described in step 1 above will start. 4. For 30 minutes after the stop of the heat source unit, preliminary errors will be displayed on the LED display. 5. The heat source unit makes an error stop immediately when not only the pressure sensor but also the pressure switch detects $2.94^{+0,-0.15}$ MPa [$426^{+0,-21.8}$ psi]	(1) LEV failure on the indoor unit (2) LEV failure on the BC controller Heating only, Heating main Indoor LEV3	Perform a heating operation and check the operation. Cooling : LEV on the indoor unit LEV1, 3 SVM SVA Heating : LEV on the indoor unit LEV3 SVB SV3-6
			(3) SVM failure on the BC controller → Cooling only (4) SVA failure on the BC controller → Cooling only, Cooling main (5) SVB failure on the BC controller → Heating only, Heating main (6) Solenoid valve SV (3-6) failure → Heating only- Heating main	Check the LEV and the solenoid valve.
			(7) Port address setting error	Check the port address setting of the indoor unit.
			(8) Closed ball valve	Confirm that the ball valve is fully open.
			(9) Short cycle on the indoor unit side (10) Clogged filter on the indoor unit (11) Reduced air flow due to dirty fan on the indoor unit fan (12) Dirty heat exchanger of the indoor unit (13) Indoor fan (including fan parts) failure or motor failure Rise in high pressure caused by lowered condensing capacity in heating only/ main operation for (9) - (13).	Check the indoor units for problems and correct them, if any.
			(14) Heat source water flow shortage (15) Heat source water stoppage (16) Contamination or plugging of the water heat exchanger	Check the water heat exchanger (contamination or plugging) Check the water heat circulation pump
			(17) Solenoid valve (SV1, SV2) malfunction (The by-pass valve (SV1,2) can not control rise in high pressure).	Check the solenoid valve.
			(18) Thermistor failure (TH3-TH7)	Check the thermistor resistor
			(19) Pressure sensor failure	Check the high pressure sensor.
			(20) Failure of the pressure sensor input circuit on the controller board	Check the temperature and the pressure of the sensor with LED monitor and check the contact of the connector.
			(21) Thermistor settings failure (TH3-TH7)	
			(22) Disconnected male connector on the pressure switch (63H) or disconnected wire	
	Abnormal high pressure 2 (Heat source unit)	If the pressure of 0.098MPa [14psi] or lower is registered on the pressure sensor immediately before start-up, it will trigger an abnormal stop, and error code "1302" will be displayed.	(1) Inner pressure drop due to a leakage. (2) Pressure sensor failure (3) Torn outer rubber (4) A pin on the male connector on the pressure sensor is missing or contact failure (5) Disconnected pressure sensor cable (6) Failure of the high pressure sensor input circuit on the controller board	Check the high pressure sensor.

Error Code		Error definition and error detection method	Cause	Check method and remedy
1500	Refrigerant overcharge	An error can be detected by the discharge temperature superheat and by the liquid level of an accumulator shown below. 1. If the liquid level of an accumulator AL=2 (overflow level) is detected during operation (the first detection), the heat source unit stops at once, turns to anti-restart mode for 3 minutes, and restarts after 3 minutes automatically. 2. If the liquid level of an accumulator AL=2 (overflow level) is detected again within 30 minutes after first stop of the heat source unit (the second detection), the heat source unit will make an error stop, and the error code "1500" is displayed.	(1) Overcharged refrigerant (2) Liquid level heater disconnection (3) Heater failure by control board failure	Check the refrigerant amount.
			(4) Thermistor failure (TH3, TH4)	Check the thermistor resistor
			(5) Themistor input circuit on the main board failure	Check the temperature and the pressure of the sensor with LED monitor.
			(6) Faulty mounting of thermistor (TH1, TH3, TH4)	
			3. If the liquid level of an accumulator AL=2 (overflow level) is detected more than 30 minutes after the heat source unit stops, and the operation described in step 1 above will start. 4. For 30 minutes after the stop of the heat source unit, preliminary errors will be displayed on the LED display.	5. When the inhibiting switch (SW2-4) for abnormal draw turns on, the operation described in step 1 above will start on the heat source unit even in the second detection or later.
1501	Refrigerant shortage	The error is detected depending on the discharge temperature or the discharge temperature superheat. 1. [Cooling operation] Compressor frequency is below 60Hz and the discharge temperature is above 125°C [257°F] and the discharge temperature superheat is above 65 deg are detected for 3 minutes in a low (the first detection) or the compressor frequency is below 45Hz and the discharge temperature is over 120°C [248°F] and the discharge temperature superheat is below 60deg are detected for 3 minutes in a low (the first detection), the heat source unit stops once. [Heating operation] Compressor frequency is below 60Hz and the discharge temperature is above 115°C [239°F] and the discharge temperature superheat is above 60 deg and TH7 is above 15°C are detected for 3 minutes in a low (the first detection), or compressor frequency is below 60Hz and the discharge temperature is above 120°C [248°F] and the discharge temperature superheat is above 70 deg and TH7 is 15°C or lower are detected for 3 minutes in a low (the first detection), the heat source unit stops once. 2. If the step 1 above is detected (the second detection) within 2 hours after the stop of the heat source unit, the heat source unit will make an error stop, and the error code "1501" will be displayed. 3. If the step 1 above is detected after 2 hours from the previous stop of the heat source unit, the detection is regarded as the first detection, and the operation described in step 1 above will start. 4. For 2 hours after the stop (the first stop or the second stop) of the heat source unit, preliminary errors will be displayed on the LED display.	(1) Gas leak or refrigerant shortage	Check the refrigerant amount.
			(2) LEV failure on the indoor unit	Perform a cooling or heating operation and check the LEV operation (superheat control or subcooled control status)
			(3) SLEV failure	Check the LEV
			(4) Discharge thermistor failure (TH1)	Check the thermistor resister
			(5) Input circuit failure of thermistor on the main board	Check the inlet temperature of the thermistor with the LED monitor
			(6) Over-load operation	Check whether the suction air temperature of the indoor unit and the suction air temperature of the heat source unit are in the range of the operation.

Error Code		Error definition and error detection method	Cause	Check method and remedy
2000	Pump interlock operation	When the pump interlock circuit is detected open for 10 minutes in a low except the stop mode, it will make an error stop and the error code “2000” will be displayed. However, it will be displayed when the dip switch SW2-8 on the control board of the heat source unit is OFF.	(1) Pump for heat source water circulation does not run (2) Disconnected wire (3) Disconnected the connector, contact failure (4) Interlock input circuit on the relay board failure (5) Interlock input circuit failure on the control board	
2134	Abnormal water temperature	1. If the inlet of water temperature of 5°C [41°F] or lower or 50°C [122°F] or higher is detected during the above operation (the first detection), the heat source unit stops once, turns to anti-restart mode for 3 minutes, and restarts after 3 minutes automatically. 2. If the inlet of water temperature of 5°C [41°F] or lower or 50°C [122°F] or higher is detected (the second detection) within 30 minutes after the stop of the heat source unit, the heat source unit will make an error stop, and the error code "2134" will be displayed. 3. If the inlet of water temperature of 5°C [41°F] or lower or 50°C [122°F] or higher is detected more than 30 minutes after the previous stop of the heat source unit, the detection is regarded as the first detection, and the operation described in step 1 above will start.	(1) Pump for heat source water circulation does not run (2) Cooling tower or heater malfunction (3) Check the water heat exchanger (contamination or plugging)	Check the thermistor resister Check the inlet air temperature on the LED monitor.
			(4) Themistor failure (TH6)	
			(5) Themistor input circuit failure on the main board	
			(6) Faulty mounting of Themistor (TH6)	

Error Code		Error definition and error detection method	Cause	Check method and remedy
2135	Heat of water exchanger freezing failure	1. If the heat of water exchanger protection thermo for freezing (3±1°C) [37±2°F] is operated (the first detection), the heat source unit stops once, turns to anti-restart mode for 3 minutes, and restarts after 3 minutes automatically. 2. If the heat of water exchanger protection thermo for freezing (3±1°C) [37±2°F] is operated (the second detection) within 30 minutes after the stop of the heat source unit, the heat source unit will make an error stop, and the error code "2135" will be displayed. 3. If the heat of water exchanger protection thermo for freezing (3±1°C) [37±2°F] is operated more than 30 minutes after the previous stop of the heat source unit, the detection is regarded as the first detection, and the operation described in step 1 above will start.	(1) Pump for heat source water circulation does not run (2) Heater malfunction (3) Check the water heat exchanger (contamination or plugging) (4) Disconnected lead wire for water heat exchanger against freezing thermo (5) Lead wire for water heat exchanger against freezing thermo is missing (6) Input circuit of water heat exchanger against freezing failure on the relay board (7) Input circuit of water heat exchanger against freezing failure on the control board	
2500	Water leakage	When the drain pump OFF, the drain sensor detects water or its tip becomes immersed in water.	(1) Water leakage due to problems with such equipment as a humidifier	Check for water leakage around the humidifier and clogging of outlet of the drain pan.
2502	Drain pump failure	The drain sensor detects water or its tip becomes immersed in water in 3 min. or later after the drain pump turns on. The sensor detects submergence when the temperature rises within 20 deg in 40 sec. from the start of indirectly heated heater on the drain sensor runs, or the temperature of the drain sensor is 63°C [145°F] or less after 40 sec. or later.	(1) Drain water level rises and the drain sensor became immersed in water.	Check the drain pump
			(2) Disconnected the indirectly heated heater on the drain sensor.	Measure the resistance value of the indirectly heated heater on the drain sensor. (Normal value is 82 Ω between 1-3 of CN50)
			(3) The detection circuit (board) failure	If no fault is found, the indoor board is faulty.
			(4) LEV in the indoor unit failure.	When the in door unit is operated in fan mode, check the rise of TH2 and TH3 nearly the room temperature.
2503	Drain sensor failure	When a short or an open is detected during operation (cannot be detected during OFF). Short : detectable at 90°C [194°F] or higher Open : detectable at -40°C [-40°F] or lower	(1) Thermistor failure (2) Connector contact failure (loose connector) (3) Disconnected wire or partial disconnected thermistor wire	Check the thermistor resistance. 0°C [32°F]: 15kΩ 10°C [50°F]: 9.7kΩ 20°C [68°F]: 6.4kΩ 30°C [86°F]: 4.3kΩ 40°C [104°F]: 3.1kΩ
			(4) Indoor board (detection circuit) failure	Check the connector contact. If no fault is found, the indoor board is a failure.
2600	Water leakage	-	Water leaks from the pipes in such as the humidifier.	Check the location of the leak.

Error Code		Error definition and error detection method	Cause	Check method and remedy
2601	Water supply cut-off	-	(1) The water tank of the humidifier is empty.	Check the amount of supply water. Check for the solenoid valve and for the connection.
			(2) The solenoid valve for humidification is OFF.	Check the connector.
			(3) Disconnected float switch	Check the connecting part.
			(4) Poor operation of float switch	Check for the float switch.
			(5) Frozen water tank	Turn off the power source of the water tank to defrost, and turn it on again.
4102	Open phase	1. When turning on the power, the operation cannot be started because of the open phase of one of the power lines (R, S, T).	(1) Power supply error ♦Open phase of power supply voltage ♦Power-supply voltage drop	Check the voltage of the power supply terminal block (TB1)
			(2) The fuse in the control box is blown	Check whether the fuse F3 in the control box is blown.
			(3) Faulty wiring or the trance failure ♦Between the power supply terminal block TB1 and the main board CN20	Measure voltages between pins 1 and 3 of the connector CN20 on the main board. If the voltage does not be measured 180VAC or more, the wiring is faulty.
			♦Between the high pressure switch 63H and the main board CN38	Check whether the connector CN38 on the main board is disconnected. Check whether the wiring to CN38 is opened.
			♦Between the power supply terminal block TB1 and the main board CNTR	Check whether the connector CNTR1 in the control box is disconnected. Measure the voltage between pins 1 and 3 on the main board. If the voltage does not be measured 25VAC or more, the wiring is faulty or the trance T01 failure. Check the resistance value of the trance T01. (Remove CNTR and CNTR1 then measure the value.) Primary side (CNTR1) : 1.0k-2.5kΩ Secondary side (CNTR) : 20-60Ω
			(4) The fuse on the main board failure	Check whether the fuses on the main board (F1) are blown.
			(5) The main board failure	If the above faults are not found, the main board is faulty.
4103	Reverse phase	1. The operation cannot be started because of the reserve phase of one of the power lines (R, S, T).	(1) Faulty wiring	Check whether the phase of the power supply terminal block (TB1) is normal. Check the wiring between the power supply terminal block (TB1) and the main boards (CN20). TB1 – CN20 S – 3Pin T – 1Pin
			(2) Main board failure	If the above faults are not found, the main board is faulty.

Error Code		Error definition and error detection method	Cause	Check method and remedy
4115	Power supply sync signal abnormality	The frequency cannot be determined when the power is switched on. (The frequency cannot be detected or the heat source fan cannot be controlled by phase control.)	(1) Power supply error	Check the voltage of the power supply terminal block (TB1).
			(2) A fuse in the control box is blown	Check the fuse F3 in the control board.
			(3) Faulty wiring or the trance failure •Between the power supply terminal block TB1 and the main board CNTR Refer to the 4102 error, item (3)c.	
			(4) Main board failure	If none of the items described above is applicable, and if the trouble reappears even after the power is switched on again, replace the MAIN board.
4116	RPM error	[PKFY-AM only] 1. If the fan rotation speed is detected to 180rpm or lower, or 2000rpm or more during the fan operation in the indoor unit, the unit stops once, turns to anti-restart mode for 3 minutes, and makes fan to stop for 30 seconds. 2. If the fan rotation speed is detected to 180rpm or lower, or 2000rpm or more again when the restart operation after 30 seconds since the fan stops, the unit makes an error stop (fan also stops), and the error code "4116" will appear.	(1) The connector for fan rotation speed detection (CN33) on the indoor control board is blown	Check whether the connector for fan rotation speed detection (CN33) on the indoor control board is blown.
			(2) The connector for fan output (FAN 1) on the indoor power board is blown	Check whether the connector for fan output (FAN 1) on the indoor power board is blown
			(3) Disconnection of the connector for fan rotation speed detection (CN33) on the indoor control board or the connector for fan output (FAN 1) on the indoor power board	Check whether the wiring is disconnected.
			(4) Clogged filter	Check the filter.
			(5) The indoor fan motor malfunction	Check the indoor fan motor.
			(6) The circuit of fan rotation speed detection on the indoor control board or the circuit of fan output on the indoor power board faulty	If the above faults are not found (1) Malfunction occurs since the fan is operated Replace the indoor control board. If the replacement does not work, replace the indoor power board. (2) Malfunction occurs since the fan is not operated Replace the indoor power board.
	Motor abnormality	[LOSSNAY only] 1. The motor keep running even if the power is OFF. 2. The thermal overload relay is ON. (Only for the three-phase model)	(1) Board failure	Replace the board.
			(2) Motor malfunction (3) Solenoid switch malfunction	Check for the motor and the solenoid switch.
4200	VDC sensor/ Circuit failure	If Vdc 150V or less or 400V or more is detected before Inverter operation	(1) Connected to wrong voltage	Check the power supply voltage by power supply terminal block (TB1)
			(2) INV board failure	If the power supply has no faults, replace the INV board.

Error Code		Error definition and error detection method	Cause	Check method and remedy
4220	Bus voltage drop protection	If Vdc 220V or less is detected during Inverter operation.	(1) Power supply environment	Check whether the unit makes an instantaneous stop when the detection result is abnormal or a power failure occurs. Check whether the power voltage is 180V or more across all phases.
			(2) Voltage drop detected	Check voltage between FN01-FN02 on the G/A board. → If the voltage drops, refer to (3). Check voltage of the first part of CNDC on the G/A board. → If the voltage drops, replace G/A board. Check voltage of the second part of CNDC1 on the INV board connector → If the voltage drops, the wiring connection failure. Check solder of the second part of CNDC2 on the INV board connector. → Replace INV board if cracks etc. are found.
			(3) INV board failure	Check whether DC12V is applied to the inverter board connector (CN52C) during inverter operation.
			(4) 52C failure	Check the resistance of 52C coil. Check the voltage between 52C contacts during the inverter operation.
			(5) Diode stack failure	Check the diode stack resistance
4230	Heatsink overheat protection	If the cooling fan operation for 5 minutes or more in a low and the heat sink temperature (THHS) 92°C [198°F] or more is detected by the cooling fan during the inverter operation.	(1) Air passage blockage	Check that the heat sink cooling air passage is not blocked.
			(2) Faulty wiring	Check for cooling fan wiring.
			(3) THHS failure	Check for THHS sensor resistor.
			(4) INV board failure	Check whether the heat sink temperature is 55°C [131°F] or more, and the voltage of 200V is applied to the connector CNFAN on the INV board while the inverter is in operation.
			(5) Cooling fan failure	Check the cooling fan operation under the above operating conditions.
			(6) IPM failure	Replace IPM
4240	Overload protection	When Idc 103A or more is detected for 10 minutes in a low during the inverter operation after 5 seconds passed since the inverter started.	(1) Short cycle of the air passage	Check that the waste heat from the heat source unit fan is not short cycled.
			(2) Power supply	Check whether the power supply voltage is 180V or more.
			(3) Inverter output failure	Check whether the applied voltage of the compressor is unbalanced. If so, replace IPM and G/A board.
			(4) Compressor failure	Check that the compressor has not overheated during operation. → Check the refrigerant circuit (oil return section). Replace the compressor when no fault is found.
			(5) Current sensor failure	If the above faults are not found, replace the current sensor (DCCT).
			(6) IPM failure	Replace IPM

Error Code		Error definition and error detection method	Cause	Check method and remedy
4250	IPM / Bus voltage abnormality	When an error signal of IPM is detected Overload Control power supply Voltage drop	(1) Inverter output related	Check the inverter.
			(2) Same as 4230 error	Check 4230 error.
			(3) Same as 4220 error	Check 4220 error.
		When the DC bus current (DCCT) 200A or more is detected	(1) Inverter output related	Check the inverter
		When the DC bus current abnormality VDC 350V or more or VDC 190V or less is detected	(1) Same as 4220 error	Check 4220 error.
			(2) G/A board failure	Check whether the parts on the G/A board are disconnected (C50, 51).
			(3) Electrolytic capacitor (C1) failure	If the above faults are not found, replace the electrolytic capacitor.
4260	Cooling fan abnormality	When the heat sink temperature (THHS1) 60°C [140°F] or more is detected for 10 or more minutes at inverter startup	(1) Same as 4230 error	Same as 4230 error.
			(2) THHS failure	Check for short circuit in THHS sensor.
			(3) INV board failure	Replace INV board

Temperature sensor failure (indoor unit)				
Error Code		Error definition and error detection method	Cause	Check method and remedy
5101	Air inlet	If a short or an open is detected during thermostat ON, the heat source unit turns to anti-restart mode for 3 minutes. When the error is not restored after 3 minutes (if restored, the heat source unit runs normally), the heat source unit makes an error stop. Short: detectable at 90°C [194°F] or higher Open : detectable at -40°C [-40°F] or lower *Sensor error at gas-side cannot be detected under the following conditions. ♦During heating operation ♦During cooling operation for 3 minutes after the compressor turns on.	(1) Thermistor failure (2) Connector contact failure (3) Disconnected wire or partial disconnected thermistor wire (4) Unattached thermistor sensor or contact failure	Check the thermistor resistor. 0°C [32°F]: 15 kΩ 10°C [50°F]: 9.7 kΩ 20°C [68°F] : 6.4 kΩ 30°C [86°F] : 4.3 kΩ 40°C [104°F] : 3.1 kΩ
5102	Liquid pipe		(5) Indoor board (detection circuit) failure	Check the connector contact. When no fault is found, the indoor board is a failure.
5103	Gas pipe			
5104	**(OA processing unit)** Outdoor air temperature	-	(1) The connection of the connector CN29 is loose (2) OA temperature sensor failure	Check the connector contact. Replace the sensor.

Temperature sensor failure (heat source unit)

Error Code		Error definition and error detection method	Cause	Check method and remedy
5101	Discharge (TH1)	1. When a short (high temperature intake) or an open (low temperature intake) of the thermistor is detected (the first detection), the heat source unit stops, turns to anti-restart mode for 3 minutes, and restarts when the detected temperature of the thermistor. 2. When a short or an open of the thermistor is detected just before the restart of the heat source unit, the heat source unit makes an error stop, and the error code "5101", "5103", "5104", "5105", "5106" or "5107" will appear. 3. During 3-minute anti-restart mode, preliminary errors will be displayed on the LED display. 4. A short or an open described above is not detected for 10 minutes after the compressor start, during defrost mode, or for 3 minutes after defrost mode.	(1) Thermistor failure	Check thermistor resistance.
5103	Liquid level detection (TH3)		(2) Pinched lead wire	Check whether the lead wire is pinched.
5104	Liquid level detection (TH4)		(3) Torn wire coating	Check for wire coating.
5106	Water temperature (TH6)		(4) A pin on the male connector is missing or contact failure	Check connector.
5107	Cooling heat exchanger of INV (THINV)		(5) Disconnected wire	Check whether the wire is connected.
			(6) Thermistor input circuit failure on the main board	Check the intake temperature of the sensor with the LED monitor. When the temperature is far different from the actual temperature, replace the control board.

	Short detection	Open detection
TH1	240 ˚C [464 ˚F] and above (0.57 kΩ)	15 ˚C [59 ˚F] and below (321 kΩ)
TH3	70 ˚C [158 ˚F] and above (1.14 kΩ)	-40 ˚C [-40 ˚F] and below (130 kΩ)
TH4	70 ˚C [158 ˚F] and above (1.14 kΩ)	-40 ˚C [-40 ˚F] and below (130 kΩ)
TH5	110 ˚C [230 ˚F] and above (0.4 kΩ)	-40 ˚C [-40 ˚F] and below (130 kΩ)
TH6	110 ˚C [230 ˚F] and above (0.4 kΩ)	-40 ˚C [-40 ˚F] and below (130 kΩ)
THINV	70 ˚C [158 ˚F] and above (1.14 kΩ)	-40 ˚C [-40 ˚F] and below (130 kΩ)

Temperature sensor failure (BC controller)

Error Code		Error definition and error detection method	Cause	Check method and remedy
5111	Liquid inlet (TH11)	1. When a short or an open of the thermistor (TH11, TH12, TH13, TH14, TH15, TH16) is detected, the heat source unit makes an error stop, and the error code "5111", "5112", "5113", "5114", "5115" or "5116" will appear. 2. A short or an open described above is not detected for 3 minutes after the change of the operation mode.	(1) Thermistor failure	Check thermistor resistance.
5112	Bypass outlet (TH12)		(2) Pinched lead wire	Check whether the lead wire is pinched.
5115	LEV3 outlet (TH15)		(3) Torn wire coating	Check for wire coating.
5116	LEV3 inlet (TH16)		(4) A pin on the male connector is missing or contact failure	Check connector.
			(5) Disconnected wire	Check whether the wire is connected.
			(6) Thermistor input circuit failure on the main board	Check the intake temperature of the sensor with the LED monitor. When the temperature is far different from the actual temperature, replace the control board.

	Short detection	Open detection
TH11	110 ˚C [230 ˚F] and above (0.4 kΩ)	-40 ˚C [-40 ˚F] and below (130 kΩ)
TH12	110 ˚C [230 ˚F] and above (0.4 kΩ)	-40 ˚C [-40 ˚F] and below (130 kΩ)
TH13	110 ˚C [230 ˚F] and above (0.4 kΩ)	-40 ˚C [-40 ˚F] and below (130 kΩ)
TH14	110 ˚C [230 ˚F] and above (0.4 kΩ)	-40 ˚C [-40 ˚F] and below (130 kΩ)
TH15	70 ˚C [158 ˚F] and above (1.14 kΩ)	-40 ˚C [-40 ˚F] and below (130 kΩ)
TH16	110 ˚C [230 ˚F] and above (0.4 kΩ)	-40 ˚C [-40 ˚F] and below (130 kΩ)

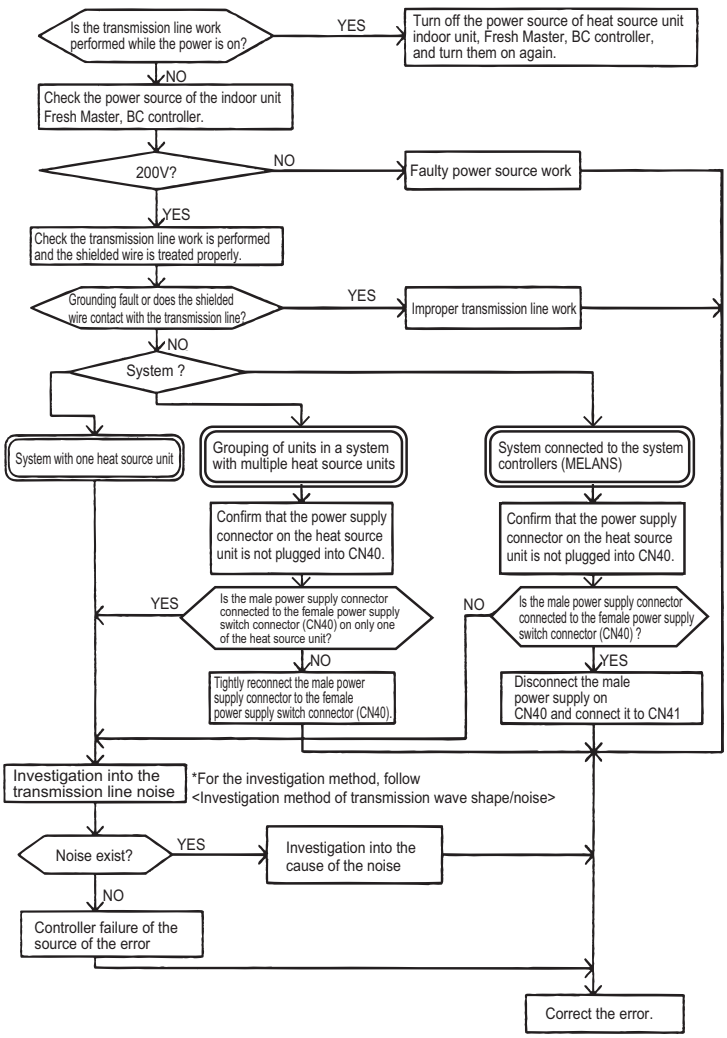
Error Code		Error definition and error detection method	Cause	Check method and remedy
5201	Low pressure sensor (Heat source unit)	1. If the high pressure sensor detects 0.098MPa [14psi] or less during the operation, the heat source unit stops once, turns to anti-restart mode for 3 minutes, and restarts after 3 minutes when the detected high pressure sensor is 0.098MPa [14psi] or more. 2. If the high pressure sensor detects 0.098MPa [14psi] or less just before the restart, the heat source unit makes an error stop, and the error code "5201" will appear. 3. During 3-minute anti-restart mode, preliminary errors will be displayed on the LED display. 4. A error is not detected for 3 minutes after the compressor start, during defrost operation, or 3 minutes after defrost operation.	(1) High pressure sensor failure	Check the high pressure sensor.
			(2) Internal pressure drop due to gas leak (3) Torn wire coating (4) A pin on the male connector is missing or contact failure (5) Disconnected wire (6) High pressure sensor input circuit failure on the main board	
5301	IDC sensor/ circuit failure	IDC 20A or more is detected or IDC 10A or less is detected after 5 seconds passed since the inverter started.	(1) Contact failure	Check around the contact of the connector CNCT on the INV board.
			(2) DCCT failure	When no fault is found with items shown above, replace the DCCT sensor.
			(3) INV board failure	If the failure occurs after following the remedies shown above, replace the INV board.

2. Transmission error

Error Code	Error definition and error detection method	Cause	Check method and remedy
6600	Address overlaps The error is detected when the same address is transmitted from different units. **Note: The address/attribute appeared on the display on the remote controller indicates the controller where an error occurred.**	(1) Two or more remote controllers for the heat source units, the indoor units, BC controller, Fresh Master, LOSSNAY, and the remote controllers have the same addresses. (2) When the transmission data is changed due to the noise on the transmission line.	When 6600 error occurs, deactivate the error (stop key operation) by the remote controller and restart the unit. When an error occurrs again in 5 minutes: → Search the unit has the same address with the error source **When the same address is found, turn off the power of the heat source unit, indoor units, BC controller, Fresh Master and LOSSNAY for 5 minutes or more after changing the address, and then turn them on it again.** When an error does not occur after operating for 5 minutes or more: → Check the transmission wave shape/ noise.

<table>
<tr><th>Error Code</th><th>Error definition and error detection method</th><th colspan="2">Cause</th><th>Check method and remedy</th></tr>
<tr><td>6602</td><td>Transmission processor hardware error

Although "0" was surely transmitted by the transmission processor, "1" is displayed on the transmission line.

The address/attribute appeared on the display on the remote controller indicates the controller where an error occurred.</td><td colspan="3">(1) When the wiring work of or the polarity of any of the indoor units, Fresh Master, heat source unit and the BC controller transmission line is performed or is changed while the power is on, the transmitted data will collide, the wave shape will be changed, and an error will be detected.
(2) When the indoor unit is connected to the 100V power supply
(3) Grounding fault of the transmission line
(4) When grouping the indoor units that are connected to different heat source units, the male power supply connectors on the multiple heat source units are connected to the female power supply switch connector (CN40).
(5) When the power supply unit for transmission lines is used in the system connected with MELANS, the male power supply connector is connected to the female power supply switch connector (CN40) on the heat source unit.
(6) Controller failure of the error source
(7) When the transmission data is changed due to the noise on the transmission line
(8) Voltage is not applied on the transmission line for centralized control (in case of grouped indoor units connected to different heat source units or in case of the system connected with MELANS)</td></tr>
<tr><td colspan="4">Check method and remedy
 
</td></tr>
</table>

Error Code	Error definition and error detection method	Cause	Check method and remedy
6603	Transmission circuit bus-busy 1. Generated error when the command cannot be transmitted for 4-10 minutes in a row due to bus-busy 2. Generated error when the command cannot be transmitted to the transmission line for 4-10 minutes in a row due to noise **Note: The address/attribute appeared on the display on the remote controller indicates the controller where an error occurred.**	(1) The transmission processor cannot be transmitted as the short-wavelength voltage like noise exists consecutively on the transmission line. (2) Error source controller failure	No noise indicates that the error source controller is a failure. If noise exists, investigate the noise. → No noise indicates that the error source controller is a failure. → If noise exists, investigate the noise.
6606	Communication error with the transmission processor Communication error between the main microcomputer on the indoor unit board and the microcomputer for transmission **Note: The address/attribute appeared on the display on the remote controller indicates the controller where an error occurred.**	(1) Data is not properly transmitted due to accidental erroneous operation of the controller of the error source. (2) Error source controller failure	Turn off the power source of the heat source unit, Fresh Master and the BC controller.(When the power source is turned off separately, the microcomputer will not be reset, and the error will not be corrected.) → If the same error occurs, the error source controller is a failure.

(1) System with one heat source unit

Error Code	Error definition and error detection method	
6607	No ACK abnormality	The error is detected when no acknowledgement (ACK signal) is received after the transmission. (eg. When the data is transmitted six times in a row with 30 seconds interval, the error is detected on the transmission side.) **Note: The address/attribute appeared on the display on the remote controller indicates the controller which did not provide the response (ACK).**

Error source address	Error display	Detection method	Cause	Check method and remedy
Heat source unit (OC)	M-NET remote controller (RC) MA remote controller (MA)	No acknowledgement (ACK) at BC transmission to OC	(1) Contact failure of transmission line of OC or BC (2) Decrease of transmission line voltage/signal by exceeding acceptable range of transmission wiring. Farthest: 200 m [656ft] or less Remote controller wiring: 10m [32ft] or less (3) Erroneous sizing of transmission line (Not within the range below). Wire diameter: 1.25mm^2 [AWG16] or more (4) Heat source unit main board failure (5) Power supply circuit failure of the heat source unit	Turn off the power source of the heat source unit, and turn it on again. If the error is accidental, it will run normally. If not, check the causes (1) - (5).
BC controller (BC)	M-NET remote controller (RC) MA remote controller (MA)	No acknowledgement (ACK) at IC transmission to BC	(1) When BC address is changed or modified during operation. (2) Faulty or disconnected BC transmission wiring (3) Disconnected BC connector (CN02) (4) BC control board failure	Turn off the heat source unit and the BC controller for 5 or more minutes, and turn them on again. If the error is accidental, they will run normally. If not, check the causes (1) - (4).
Indoor unit (IC)	M-NET remote controller (RC) MA remote controller (MA)	No acknowledgement (ACK) at RC transmission to IC	(1) When IC unit address is changed or modified during operation. (2) Faulty or disconnected IC transmission wiring (3) Disconnected IC connector (CN2M) (4) Indoor unit board failure (5) M-NET remote controller failure	Turn off the heat source unit and the indoor units for 5 or more minutes, and turn them on again. If the error is accidental, they will run normally. If not, check the causes (1) - (5).
Fresh Master (FU)	M-NET remote controller (RC) MA remote controller (MA)	No acknowledgement (ACK) at IC transmission to FU	(1) When FU address is changed or modified during operation. (2) Faulty or disconnected FU transmission wiring (3) Disconnected FU connector (CN02) (4) FU controller failure	Turn off the heat source unit and the FU for 5 or more minutes, and turn them on again. If the error is accidental, they will run normally. If not, check the causes (1) - (4).
LOSSNAY (LC)	M-NET remote controller (RC) MA remote controller (MA)	No acknowledgement (ACK) at IC transmission to LC	(1) The power source of LOSSNAY has been shut off. (2) When the address of LOSSNAY is changed in the middle of the operation (3) Faulty or disconnected transmission wiring of LOSSNAY (4) Disconnected connector (CN1) on LOSSNAY (5) Controller failure of LOSSNAY	Turn off the power source of LOSSNAY and turn it on again. If the error is accidental, it will run normally. If not, check the causes (1) - (5).
M-NET remote controller(RC)	M-NET remote controller (RC)	No acknowledgement (ACK) at IC transmission to RC	(1) Faulty transmission wiring at IC unit side. (2) Faulty wiring of the transmission line for M-NET remote controller (3) When the address of M-NET remote controller is changed in the middle of the operation (4) M-NET remote controller failure	Turn off the power source of the heat source unit for 5 minutes or more, and turn it on again. If the error is accidental, it will run normally. If not, check the causes (1) - (4).

(2) Grouping of units in a system with multiple heat source units

Error Code	Error definition and error detection method	
6607 (Continued)	No ACK abnormality	The error is detected when no acknowledgement (ACK signal) is received after the transmission. (eg. When the data is transmitted six times in a row with 30 seconds interval, the error is detected on the transmission side.) **Note: The address/attribute appeared on the display on the remote controller indicates the controller which did not provide the response (ACK).**

Error source address	Error display	Detection method	Cause	Check method and remedy
Heat source unit (OC)	M-NET remote controller (RC) MA remote controller (MA)	No acknowledgement (ACK) at BC transmission to OC	Same cause as that for system with one heat source unit	Same remedy as that for system with one heat source unit
BC controller (BC)	M-NET remote controller (RC) MA remote controller (MA)	No acknowledgement (ACK) at IC transmission to BC	Same cause as that for system with one heat source unit	Same remedy as that for system with one heat source unit
Indoor unit (IC)	M-NET remote controller (RC)	No acknowledgement (ACK) at RC transmission to IC	(1) Same causes as (1) - (5) for system with one heat source unit (2) Disconnection or short circuit of the transmission line for the heat source unit on the terminal block for centralized control line connection (TB7) (3) When multiple heat source units are connected and the power source of one of the heat source units has been shut off. (4) The male power supply connector of the heat source unit is not connected to the female power supply switch connector (CN40). (5) The male power supply connectors on 2 or more heat source units are connected to the female power supply switch connector (CN40) for centralized control. If an error occurs, after the unit runs normally once, the following causes may be considered. •Total capacity error (7100) •Capacity code error (7101) •Error in the number of connected units (7102) •Address setting error (7105)	1) Turn off the power sources of the heat source unit and indoor units for 5 or more minutes, and turn them on again. If the error is accidental, the will run normally.If not, check the cause 2). 2) Check the causes of (1) - (5). If the cause is found, correct it. If no cause is found, check 3). 3) Check the LED displays for troubleshooting on other remote controllers whether an error occurs. If an error is found, → If an error is found, check the check code definition, and correct the error. If no error is found, → Indoor controller failure
Fresh Master (FU)	M-NET remote controller (RC) MA remote controller (MA)	No acknowledgement (ACK) at IC transmission to FU	(1) Same causes as (1) - (4) for system with one heat source unit (Interlocked operation between Fresh Master and the indoor units in the system in which the indoor units connected to different heat source units are grouped) (2) Disconnection or short circuit of the transmission line for the heat source unit on the terminal block for centralized control line connection (TB7) (3) When multiple heat source units are connected and the power source of one of the heat source unit has been shut off. (4) The male power supply connector of the heat source unit is not connected to the female power supply switch connector (CN40). (5) The male power supply connectors on 2 or more heat source units are connected to the female power supply switch connector (CN40) for centralized control. If an error occurs, after the unit runs normally once, the following causes may be considered. •Total capacity error (7100) •Capacity code error (7101) •Error in the number of connected units (7102) •Address setting error (7105)	1) Turn off the power source of the heat source unit and Fresh Master for 5 or more minutes, and turn it on again. If the error is accidental, it will run normally. If not, check the cause 2). 2) Check the causes of (1) - (5). If the cause is found, correct it. If no cause is found, check 3). 3) Same cause as that for indoor unit described in 3)

Error Code	Error definition and error detection method	
6607 (Continued)	No ACK abnormality	The error is detected when no acknowledgement (ACK signal) is received after the transmission. (eg. When the data is transmitted six times in a row with 30 seconds interval, the error is detected on the transmission side.) **Note:The address/attribute appeared on the display on the remote controller indicates the controller which did not provide the response (ACK).**

Error source address	Error display	Detection method	Cause	Check method and remedy
LOSSNAY (LC)	M-NET remote controller (RC) MA remote controller (MA)	No acknowledgement (ACK) at IC transmission to FU	(1) Same causes as (1) - (5) for system with one heat source unit (Interlocked operation between LOSSNAY and the indoor units in the system in which the indoor units connected to different heat source units are grouped) (2) Disconnection or short circuit of the transmission line for the heat source unit on the terminal block for centralized control line connection (TB7) (3) When multiple heat source units are connected and the power source of one of the heat source unit has been shut off. (4) The male power supply connector of the heat source unit is not connected to the female power supply switch connector (CN40). (5) The male power supply connectors on 2 or more heat source units are connected to the female power supply switch connector (CN40) for centralized control. If an error occurs, after the unit runs normally once, the following causes may be considered. •Total capacity error (7100) •Capacity code error (7101) •Error in the number of connected units (7102) •Address setting error (7105)	1) Turn off the power source of LOSSNAY for 5 or more minutes, and turn it on again. If the error is accidental, it will run normally.If not, check the cause 2). 2) Check the causes of (1) - (5). If the cause is found, correct it. If no cause is found, check 3). 3) Same cause as that for indoor unit described in 3)
M-NET remote controller (RC)	M-NET remote controller (RC)	No acknowledgement (ACK) at IC transmission to RC	(1) Same causes as (1) - (4) for system with one heat source unit (2) Disconnection or short circuit of the transmission line for the heat source unit on the terminal block for centralized control line connection (TB7) (3) When multiple heat source units are connected and the power source of one of the heat source units has been shut off. (4) The male power supply connector of the heat source unit is not connected to the female power supply switch connector (CN40). (5) The male power supply connectors on 2 or more heat source units are connected to the female power supply switch connector (CN40) for centralized control. If an error occurs, after the unit runs normally once, the following causes may be considered. •Total capacity error (7100) •Capacity code error (7101) •Error in the number of connected units (7102) •Address setting error (7105)	1) Turn off the power source of the heat source unit for 5 or more minutes, and turn it on again. If the error is accidental, it will run normally.If not, check the cause 2). 2) Check the causes of (1) - (5). If the cause is found, correct it. If no cause is found, check 3). 3) Same cause as that for indoor unit described in 3) If the error is not accidental, check the cause (1) - (5).

(3) System connected to the system controllers (MELANS)

Error Code	Error definition and error detection method	
6607 (Continued)	No ACK abnormality	The error is detected when no acknowledgement (ACK signal) is received after the transmission. (eg. When the data is transmitted six times in a row with 30 seconds interval, the error is detected on the transmission side.) **Note: The address/attribute appeared on the display on the remote controller indicates the controller which did not provide the response (ACK).**

Error source address	Error display	Detection method	Cause	Check method and remedy
Heat source unit (OC)	M-NET remote controller (RC) System controller (SC) MA remote controller (MA)	No acknowledgement (ACK) at BC transmission to OC	Same cause as that for system with one heat source unit	Same remedy as that for system with one heat source unit
BC controller (BC)	M-NET remote controller (RC) System controller (SC) MA remote controller (MA)	No acknowledgement (ACK) at IC transmission to BC	Same cause as that for system with one heat source unit	Same remedy as that for system with one heat source unit
Indoor unit (IC) Fresh Master (FU)	M-NET remote controller (RC)	No acknowledgement (ACK) at RC transmission to IC	Same as grouping of units in a system with multiple heat source units	Same remedy as that for grouping of units in a system with multiple heat source units
	System controller (SC)	No acknowledgement (ACK) at SC transmission to IC	1. Error occurrence on some IC (1) Same cause as that for system with one heat source unit	Same remedy as that for system with one heat source unit
			2. Error occurrence on all IC in the system with one heat source unit (1) Total capacity error (7100) (2) Capacity code error (7101) (3) Error in the number of connected units (7102) (4) Address setting error (7105) (5) Disconnection or short circuit of the transmission line for the heat source unit on the terminal block for centralized control line connection (TB7) (6) Turn off the power source of the heat source unit (7) Malfunction of electrical system for the heat source unit	1) Check the LED display for troubleshooting on the heat source unit. →If an error is found, check the check code definition, and correct the error. →If no error is found, check 2). 2) Check (5) - (7) on the left.
			3. Error occurrence on all ICs (1) Same causes as (1) - (7) described in 2. (2) The male power supply connectors on 2 or more heat source units are connected to the female power supply switch connector (CN40) for the transmission line for centralized control. (3) Disconnection or shutdown of the power source of the power supply unit for transmission line (4) System controller (MELANS) malfunction	Check voltage of the transmission line for centralized control. 20V or more : Check (1) and (2) on the left. Less than 20V : Check (3) on the left.

Error Code	Error definition and error detection method	
6607 (Continued)	No ACK abnormality	The error is detected when no acknowledgement (ACK signal) is received after the transmission. (eg. When the data is transmitted six times in a row with 30 seconds interval, the error is detected on the transmission side.) **Note: The address/attribute appeared on the display on the remote controller indicates the controller which did not provide the response (ACK).**

Error source address	Error display	Detection method	Cause	Check method and remedy
M-NET remote controller (RC)	M-NET remote controller (RC) System controller (SC)	No acknowledgement (ACK) at IC transmission to RC	Same as grouping of units in a system with multiple heat source units	Same remedy as that for grouping of units in a system with multiple heat source units
	System controller (SC)	No acknowledgement (ACK) at MELANS transmission to RC	1. Error occurrence on some IC (1) Same cause as that for system with one heat source unit	Same remedy as that for system with one heat source unit
			2. Error occurrence on all ICs in the system with one heat source unit (1) An error is found by the heat source unit. Total capacity error (7100) Capacity code error (7101) Error in the number of connected units (7102) Address setting error (7105) (2) Disconnection or short circuit of the transmission line for the heat source unit on the terminal block for centralized control line connection (TB7) (3) Turn off the power source of the heat source unit (4) Malfunction of electrical system for the heat source unit	1) Check the LED display for troubleshooting on the heat source unit. → If an error is found, check the check code definition, and correct the error. → If no error is found, check the cause 2). 2) Check (2) - (4) on the left.
			3. Error occurrence on all ICs (1) Same causes as (1) - (4) described in 2. (2) When the heat source unit for transmission lines is used and the male power supply connector is connected to the female power supply switch connector (CN40) for the transmission line for centralized control (3) Disconnection or shutdown of the power source of the power supply unit for transmission line (4) System controller (MELANS) malfunction	Check (1) - (4) on the left.

Error Code	Error definition and error detection method	
6607 (Continued)	No ACK abnormality	The error is detected when no acknowledgement (ACK signal) is received after the transmission. (eg. When the data is transmitted six times in a row with 30 seconds interval, the error is detected on the transmission side.) **Note: The address/attribute appeared on the display on the remote controller indicates the controller which did not provide the response (ACK).**

Error source address	Error display	Detection method	Cause	Check method and remedy
System controller (SC)	M-NET remote controller (RC) MA remote controller (MA)	No acknowledgement (ACK) at IC transmission to SC	1. Error display on some displays on M-NET remote controllers (1) Faulty wiring of the transmission line for M-NET remote controller (2) Disconnection or contact failure of the transmission connector for M-NET remote controller (3) M-NET remote controller failure	Check (1) - (3) on the left.
			2. Error occurrence on all ICs in the system with one heat source unit (1) An error is found by the heat source unit. Total capacity error (7100) Capacity code error (7101) Error in the number of connected units (7102) Address setting error (7105) (2) Disconnection or short circuit of the transmission line for the heat source unit on the terminal block for centralized control line connection (TB7) (3) Turn off the power source of the heat source unit (4) Malfunction of electrical system for the heat source unit	1) Check the LED display for troubleshooting on the heat source unit. → If an error is found, check the check code definition, and correct the error. → If no error is found, check the cause 2) 2) Check (2) - (4) on the left.
			3. Error display on all displays on M-NET remote controllers (1) Same causes as (1) - (4) described in 2. (2) When the heat source unit for transmission lines is used and the male power supply connector is connected to the female power supply switch connector (CN40) for the transmission line for centralized control (3) Disconnection or shutdown of the power source of the power supply unit for transmission line (4) System controller (MELANS) malfunction	Check (1) - (4) on the left

(4) Errors that are not limited to a particular system

Error Code	Error definition and error detection method	
6607 (Continued)	No ACK abnormality	The error is detected when no acknowledgement (ACK signal) is received after the transmission. (eg. When the data is transmitted six times in a row with 30 seconds interval, the error is detected on the transmission side.) **Note: The address/attribute appeared on the display on the remote controller indicates the controller which did not provide the response (ACK).**

Error source address	Error display	Detection method	Cause	Check method and remedy
Address which should not be existed	-	-	(1) Although the address of M-NET remote controller has been changed after the group is set using M-NET remote controller, the indoor unit is keeping the memory of the previous address.The same symptom will appear for the registration with SC. (2) The address of Fresh Master (LOSSNAY) has been changed after the interlock registration of the unit by M-NET remote controller. For this reason, the indoor unit memorizes the previous address.	Delete unnecessary information of non-existing address which some indoor units have. Use either of the following two methods for deletion. 1) Address deletion by M-NET remote controller Delete unnecessary address information using the manual setting function of M-NET remote controller. 2) Deletion of connection information of the heat source unit by the deleting switch **Note that this switch deletes all the group information set via M-NET remote controller and all the interlock information of Fresh Master, LOSSNAY and the indoor unit.** ♦Turn off the power source of the heat source unit, and wait for 5 minutes. ♦Turn on the dip switch (SW2-2) on the heat source unit main board. ♦Turn on the power source of the heat source unit, and wait for 5 minutes. ♦Turn off the power source of the heat source unit, and wait for 5 minutes. ♦Turn off the dip switch (SW2-2) on the heat source unit main board. ♦Turn on the power source of the heat source unit.

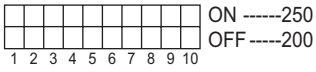
Error Code	Error definition and error detection method	Cause	Check method and remedy
6608	No response When no response command is returned although acknowledgement (ACK) is received after transmission, an error is detected. When the data is transmitted 10 times in a row with 3 seconds interval, an error is detected on the transmission side. **Note:The address/attribute appeared on the display on the remote controller indicates the controller where an error occurred.**	(1) The transmission line work is performed or the polarity is changed while the power of any of indoor units, the heat source unit, and the BC controller is on, the transmitted data will collide, and the wave shape will be changed. (2) The transmission is sent and received repeatedly due to noise. (3) Decrease of transmission line voltage/signal by exceeding acceptable range of transmission wiring. Farthest : 200m [656ft] or less Remote controller wiring: 10m [39ft] or less (4) The transmission line voltage/signal is decreased due to erroneous sizing of transmission line. Wire diameter: 1.25mm^2 [AWG16] or more	1) When an error occurs at commissioning Turn off the power source of the heat source unit, the BC controller, indoor units and Fresh Master for 5 or more minutes, and turn them on again. → When they return to normal operation, the cause of the error is the transmission line work performed with the power on. → If an error occurs again, check the cause 2). 2) Check (3) and (4) on the left. → If the cause is found, correct it. → If no cause is found, check 3). 3) Check transmission wave shape/noise on trans-mission line by following <Investigation method of transmission wave shape/noise>. **Noise is the most possible cause of the error "6602".**

Error Code	Error definition and error detection method	Cause	Check method and remedy
6831	MA communication error or no reception error Communication between the MA remote controller and the indoor unit is not done properly. No proper data has been received for 3 minutes.	(1) Contact failure of the remote controller lines of MA remote controller or the indoor unit. (2) All the remote controllers are set to SUB. (3) Failure to meet wiring regulations •Wire length •Wire size •Number of remote controllers •Number of indoor units (4) The remote controller is removed after the installation without turning the power source off. (5) Noise interference on the remote controller transmission lines (6) Faulty circuit that is on the indoor board and performs transmission/reception of the signal from the remote controller (7) Problems with the circuit on the remote controller that sends or receives the signals from the remote controller	1) Check for disconnected or loose transmission lines for the indoor units or MA remote controllers. 2) Confirm that the power is supplied to the main power source and the remote controller line. 3) Confirm that MA remote controller's capacity limit is not exceeded. 4) Check the sub/main setting of the MA remote controllers.One of them must be set to MAIN. 5) Diagnose the remote controller (described in the remote controller installation manual). [OK]: No problems with the remote controller (check the wiring regulations) [NG]: Replace the remote controller. [6832, 6833, ERC]: Due to noise interference <Go to 5)> 6) Check wave shape/noise on MA remote controller line. 7) When no problems are found with items 1) through 6), replace the indoor unit board or the MA remote controller. The following status can be confirmed on LED1 and 2 on the indoor unit board. •LED1 is lit. The main power source of the indoor unit is turned on. •LED2 is lit. MA remote controller line is being powered.
6834	MA communication error or start bit detection error Communication between the MA remote controller and the indoor unit is not done properly. No proper data has been received for 2 minutes.		
6832	MA communication error or synchronization recovery error Communication between the MA remote controller and the indoor unit is not done properly. Failure to detect opening in the transmission path and unable to send signals Indoor unit : 3 minutes Remote controller : 6 seconds	(1) Contact failure of the remote controller lines of MA remote controller or the indoor unit. (2) 2 or more remote controllers are set to MAIN. (3) Overlapped indoor unit address (4) Noise interference on the remote controller lines (5) Failure to meet wiring regulations •Wire length •Wire size •Number of remote controllers •Number of indoor units (6) Problems with the circuit on the remote controller that sends or receives the signals from the remote controller	
6833	MA communication error or transmission/reception H/W error Communication between the MA remote controller and the indoor unit is not done properly. An error occurs when the transmitted data and the received data differ for 30 times in a row.		

3. System error

<table>
<tr><th>Error Code</th><th>Error source</th><th>Error definition and error detection method</th><th>Cause</th><th>Check method and remedy</th></tr>
<tr><td rowspan="2">7100</td><td rowspan="2">Heat source unit</td><td rowspan="2">Total capacity error

The model total of indoor units in the system (including Fresh Master with heating and moistening system installed) with one heat source unit exceeds limitations.</td><td>(1) The model total of indoor units in the system heat source units with one heat source unit exceeds the following table.
<table><tr><th>Model</th><th>Capacity Total</th></tr><tr><td>PQRY-200</td><td>302</td></tr><tr><td>PQRY-250</td><td>378</td></tr></table></td><td>1) Check the model total (capacity code total) of indoor units connected.
2) Check the model name (capacity code) of the connected indoor unit set by the switch (SW2 on indoor unit board).

When the model name set by the switch is different from that of the unit connected, turn off the power source of the heat source and the indoor units, and change the setting of the model name (capacity code).</td></tr>
<tr><td>(2) The switch settings for the model selection are wrong. (SW3-10)
 
</td><td>Check the switch for the model selection (The DIP switch SW3-10 on the heat source unit main board.)</td></tr>
<tr><td rowspan="3">7101</td><td rowspan="3">Heat source unit
Indoor unit
Fresh Master</td><td rowspan="3">Capacity code error

The model name (capacity code) of the connected indoor unit connected is inappropriate.</td><td>(1) The indoor unit models (model code) to be connected is in the connection disabled range.
Enabled range connection 20-125</td><td>1) Check the models (model code) to be connected to the indoor unit.</td></tr>
<tr><td>(2) The model name (capacity code) set by the switch (SW2) is wrong.</td><td rowspan="2">2) Check the model name (capacity code) of the indoor unit which has the error source address set by the switch (SW2 on indoor controller board).
When the model name set by the switch is different from that of the unit connected, turn off the power source of the heat source and the indoor units, and change the setting of the capacity code.</td></tr>
<tr><td>*The capacity of the indoor unit can be confirmed by the self-diagnosis function (SW1 operation) of the heat source unit.</td></tr>
</table>

<table>
<tr><th>Error Code</th><th>Error source</th><th>Error definition and error detection method</th><th>Cause</th><th>Check method and remedy</th></tr>
<tr>
<td>7102</td>
<td>Heat source unit</td>
<td>Error in the number of connected units

The number of connected to the heat source units exceeds the allowable value.</td>
<td>(1) Number of indoor units connected to the heat source unit terminal block (TB3) for indoor/outdoor transmission lines exceeds limitations described below.
<table>
<tr><th>Number of units</th><th>Restriction on the number of units</th></tr>
<tr><td rowspan="2">1) Total number of indoor units</td><td>1-15 : 200 model</td></tr>
<tr><td>1-16 : 250 model</td></tr>
<tr><td>2) Total number of indoor units + Fresh Master + M-NET remote controllers</td><td>1-35</td></tr>
<tr><td>3) Total number of BC controllers</td><td>1</td></tr>
<tr><td>4) Total number of Fresh Master + LOSSNAY (During auto address start-up only)</td><td>0 or 1</td></tr>
</table>
(2) The address of heat source unit is set to 51-100 when it is the auto address (MA remote controller (MA)). "HO" will be displayed on the MA remote controller (MA).
(3) Disconnected transmission line of the heat source unit
(4) Short-circuited transmission line
When (3) and (4) apply, the following display will appear.
♦In case of M-NET remote controller
→ Nothing appears on the display as no power is supplied to the M-NET remote controller.
♦In the case of MA remote controller (MA)
→ "HO" will blink.
(5) Disconnected transmission line of the BC controller.</td>
<td>1) Check whether the number of units connected to the heat source unit terminal block (TB3) for indoor transmission lines does not exceed the limitation. (See 1) - 4) on the left.)
2) Check 2) - 5) on the left.
3) Check whether the transmission line for the terminal block for centralized control (TB7) is not connected to the terminal block for the indoor/outdoor transmission line (TB3).</td>
</tr>
<tr>
<td>7105</td>
<td>Heat source unit
BC controller</td>
<td>Address setting error

Erroneous setting of OC address
Erroneous setting of BC address</td>
<td>(1) Erroneous setting of OC address
The address of heat source unit is not being set to 00 or 51 - 100.
(2) Erroneous setting of BC address
The address of BC controller is not being set to 51-100.</td>
<td>1) Check that the address of OC and BC are set to 00 or 51- 100.Reset the address if it stays out of the range, while shutting the power source off. If the heat source unit stays out of the range, reset the address while shutting the power source of the heat source unit off.
If the BC controller stays out of the range, reset the address while shutting the power source of the heat source unit and the BC controller off.</td>
</tr>
</table>

<table>
<tr><th>Error Code</th><th>Error source</th><th>Error definition and error detection method</th><th>Cause</th><th>Check method and remedy</th></tr>
<tr><td>7107</td><td>BC controller</td><td>Port setting error

The port with wrong number is connected to the indoor unit.The model total connected to the port is greater than the specification.</td><td>(1) Model total of indoor units per each port or per each port merge is greater than the specification.
<table>
<tr><th>Total port number</th><th>Model total</th></tr>
<tr><td>Single branching</td><td>80</td></tr>
<tr><td>2 branches merge</td><td>160</td></tr>
<tr><td>3 branches merge</td><td>240</td></tr>
<tr><td>4 branches merge</td><td>320</td></tr>
</table>
(2) 4 or more indoor units are connected to the same port.
(3) Fresh Master and the indoor unit are connected to the same port.
(4) 2 Fresh Masters are connected to the same port.
(5) When a number of ports are joined together, it is not connected to the port with the smallest number.</td><td>Check the settings of the BC controller and the branch port number of indoor units in the same system with one outdoor unit.
1) Are 4 or more indoor units connected to the same port?
→ In case of the port number settings error, change the port number.
→ If 4 or more indoor units were connected or connected to the same port, adjust the piping connection to the port.
2) Is the model total of indoor units connected to the same port smaller than the item (1) shown below?
→ In case of the port number settings error, adjust the port number or the switch (indoor board SW2) for model (ability code) settings.
→ If the model total of indoor units exceeds the limit, adjust the piping connection to the port.
3) Some Fresh Masters are connected to the same port.
→ In case of the port number settings error, change the port number.
→ If some Fresh Masters were connected to the same port, adjust the piping connection to the port.
4) When some indoor units are connected, check the port with the smallest number connected to the indoor unit.

Before resetting the port number or the model (capacity code) using the port number setting switch or the model (capacity code) setting switch, turn off the power of the outdoor unit, the BC controller and the indoor unit (Fresh Master).</td></tr>
<tr><td>7111</td><td>Indoor unit</td><td>Remote controller sensor failure

This error occurs when the temperature data is not sent although the remote controller sensor is specified.</td><td>The remote controller without the temperature sensor (the wireless remote controller or the M-NET compact remote controller (mounted type)) is used and the remote controller sensor for the indoor unit is specified. (SW1-1 is ON.)</td><td>Replace the remote controller to the M-NET remote controller.</td></tr>
<tr><td>7130</td><td>Indoor unit</td><td>Incompatible units

The check code will appear when the indoor units with different refrigerant systems are connected.</td><td>The indoor unit model P that uses only R407C refrigerant is connected.

The wrong unit model is connected.</td><td>Check the connected indoor unit model.</td></tr>
</table>

[VI LED Monitor Display on the Heat source unit Board]

[1] Table of LED Codes

LED monitor display

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	0	0000000000	Relay output display 1 Lighting	Comp in operation	Crank-case heater	21S4	SV1	SV2	SV3	SV4	Always lit	LD8 stays lit at all times while the power to the microcomputer is on. Relay output display Finish sending the monitor demand to IC If no errors are detected, "----" appears on the display.
			Check (error) display 1 OC error	0000 to 9999 (Address and error codes highlighted)								
	1	1000000000	Relay output display 2	SV5	SV6	SV71	SV72	SV73		CH2, 3		
	2	0100000000 (Including IC)	Check (error) display 2	0000 to 9999 (Address and error codes highlighted)								If no errors are detected, "----" appears on the display.
	3	1100000000										
	4	0010000000										
	5	1010000000										
	6	0110000000	External signal						Harmonic action device in operation	Harmonic action device preliminary error	Harmonic action device preliminary error record	
	7	1110000000	Heat source unit operation display	Operation demand from BC	Warm up mode	3-minutes restart mode	Compressor in operation	Preliminary error	Error			
	8	0001000000	Check indoor unit	Unit No. 1	Unit No. 2	Unit No. 3	Unit No. 4	Unit No. 5	Unit No. 6	Unit No. 7	Unit No. 8	The lamp is lit when IC demanded an abnormal stop. The abnormal stop lamp of the unit No. 1 goes off in numeric order of its address when the error reset is made.
	9	1001000000		Unit No. 9	Unit No. 10	Unit No. 11	Unit No. 12	Unit No. 13	Unit No. 14	Unit No. 15	Unit No. 16	
	10	0101000000	Indoor unit operation mode	Unit No. 1	Unit No. 2	Unit No. 3	Unit No. 4	Unit No. 5	Unit No. 6	Unit No. 7	Unit No. 8	Lit during cooling Blink during heating Unlit while the unit is stopped or in the fan mode
	11	1101000000		Unit No. 9	Unit No. 10	Unit No. 11	Unit No. 12	Unit No. 13	Unit No. 14	Unit No. 15	Unit No. 16	
	12	0011000000	Indoor unit thermo	Unit No. 1	Unit No. 2	Unit No. 3	Unit No. 4	Unit No. 5	Unit No. 6	Unit No. 7	Unit No. 8	Lit when thermo-ON. Unlit when thermo-OFF.
	13	1011000000		Unit No. 9	Unit No. 10	Unit No. 11	Unit No. 12	Unit No. 13	Unit No. 14	Unit No. 15	Unit No. 16	
	14	0111000000	BC all indoor units operation mode	Cooling only ON	Cooling only OFF	Heating only ON	Heating only OFF	Both ON	Both OFF	Fan	Stop	
	15	1111000000	Heat source unit operation mode	Permissible stop	Standby		Cooling only	Cooling main	Heating only	Heating main	Demand	
	16	0000100000	Heat source unit control mode	Cooling only Refrigerant recovery	Cooling main refrigerant recovery	Heating only Refrigerant recovery	Heating main refrigerant recovery	Cooling only Oil recovery	Cooling main Oil recovery	Heating only Oil recovery	Heating main Oil recovery	

[VI LED Monitor Display on the Heat source unit Board]

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	17	1000100000	Heat source unit preliminary error mode	Abnormal high pressure 1, 2	Abnormal low pressure 1	Abnormal discharge temperature	Overcurrent protection	Radiator plate thermo-ON	Overcurrent cut-off	INV failure	Refrigerator overcharge	The appropriate flag is lit during the preliminary error.
	18	0100100000		Vacuum operation	Composition detection error	Refrigerant shortage failure	Heat of water exchanger freezing failure	Abnormal water temperature		Pump interlock failure		
	19	1100100000		TH1 failure		TH3 failure	TH4 failure		TH6 failure	HPS failure	THHS failure	
	20	0010100000							THINV failure			
	21	1010100000	Heat source unit preliminary error record	High voltage failure 1, 2	Low voltage failure 1, 2	Abnormal discharge temperature	Overcurrent protection	Radiator plate thermo-ON	Overcurrent cut-off		Refrigerator overcharge	Lit if the preliminary error has occurred since the power turned on to data. To turn the lamp off, once turn the power off.
	22	0110100000		Vacuum operation		Refrigerant shortage failure	Heat of water exchanger freezing failure	Abnormal water temperature		Pump interlock failure		
	23	1110100000		TH1 failure		TH3 failure	TH4 failure		TH6 failure	HPS failure	THHS failure	
	24	0001100000							THINV failure			

[VI LED Monitor Display on the Heat source unit Board]

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	25	1001100000	Error record 1	0000 to 9999								Error codes and preliminary error codes are displayed. Address and error codes are highlighted. If no errors are detected, "----" appears on the display.
	26	0101100000	Inverter failure details	Inverter failure details (0001-0009)								If no errors are detected, "----" appears on the display.
	27	1101100000	Error record 2	0000 to 9999								
	28	0011100000	Inverter failure details	Inverter failure details (0001-0009)								
	29	1011100000	Error record 3	0000 to 9999								
	30	0111100000	Inverter failure details	Inverter failure details (0001-0009)								
	31	1111100000	Error record 4	0000 to 9999								
	32	0000010000	Inverter failure details	Inverter failure details (0001-0009)								
	33	1000010000	Error record 5	0000 to 9999								
	34	0100010000	Inverter failure details	Inverter failure details (0001-0009)								
	35	1100010000	Error record 6	0000 to 9999								
	36	0010010000	Inverter failure details	Inverter failure details (0001-0009)								
	37	1010010000	Error record 7	0000 to 9999								
	38	0110010000	Inverter failure details	Inverter failure details (0001-0009)								
	39	1110010000	Error record 8	0000 to 9999								
	40	0001010000	Inverter failure details	Inverter failure details (0001-0009)								
	41	1001010000	Error record 9	0000 to 9999								
	42	0101010000	Inverter failure details	Inverter failure details (0001-0009)								
	43	1101010000	Error record 10	0000 to 9999								
	44	0011010000	Inverter failure details	Inverter failure details (0001-0009)								
	45	1011010000	Type of inverter preliminary failure (Details of inverter No. 17 failure)	0001 to 0009								If no errors are detected, "----" is always overwritten.
	46	0111010000	TH1 data	-99.9 to 999.9								(The microcomputer of the inverter monitors THHS data No.52.)
	47	1111010000	TH2 data	↑								
	48	0000110000	TH3 data	↑								
	49	1000110000	TH4 data	↑								
	50	0100110000	TH5 data	↑								
	51	1100110000	TH6 data	↑								
	52	0010110000	THHS data	↑								
	53	1010110000	HPS data	↑								

[VI LED Monitor Display on the Heat source unit Board]

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	54	0110110000	THINV failure	-99.9 to 999.9								
	55	1110110000										
	56	0001110000										
	57	1001110000										
	58	0101110000	LPS data	-99.9 to 999.9								
	59	1101110000										
	60	0011110000										
	61	1011110000	Accumulator level	Accumulator level: 0-9 (“AL=” is also displayed.)								
	62	0111110000	Increase and decrease of HZAK	ΔHz -	ΔHz 0	ΔHz +	-	-	ΔAk -	ΔAk 0	ΔAk +	
	63	1111110000	The difference from the target Tc (Tcm-Tc)	Lower –3K max.	Lower –3 - –2K	Lower –2 - –1K	Stable range		Higher 1 - 2K	Higher 2 - 3K	Higher 3K min.	
	64	0000001000	The difference from the target Te (Tem-Te)	Lower –3K max.	Lower –3 - –2K	Lower –2 - –1K	Stable range		Higher 1 - 2K	Higher 2 - 3K	Higher 3K min.	
	65	1000001000	Tc	-99.9 to 999.9								
	66	0100001000	Te	↑								
	67	1100001000	Tcm	↑								
	68	0010001000	Tem	↑								
	69	1010001000	Frequency	0000 to 9999								Controlled frequency
	70	0110001000	INV output frequency	↑								Actual output frequency from the inverter
	71	1110001000	AK	↑								
	72	0001001000	SLEV	↑								
	73	1001001000										
	74	0101001000	LEV2	0000 to 9999								
	75	1101001000	DC bus current	-99.9 to 999.9								The microcomputer of the inverter monitors the current
	76	0011001000	OC address	0000 to 9999								

[VI LED Monitor Display on the Heat source unit Board]

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	77	1011001000	IC1 address/ capacity code	00 to 99				00 to 99				IC address is displayed on the left (LD1-LD4) Capacity code is displayed on the right (LD5-LD8) (Displayed alternately per minute)
	78	0111001000	IC2 address/ capacity code	↑				↑				
	79	1111001000	IC3 address/ capacity code	↑				↑				
	80	0000101000	IC4 address/ capacity code	↑				↑				
	81	1000101000	IC5 address/ capacity code	↑				↑				
	82	0100101000	IC6 address/ capacity code	↑				↑				
	83	1100101000	IC7 address/ capacity code	↑				↑				
	84	0010101000	IC8 address/ capacity code	↑				↑				
	85	1010101000	IC9 address/ capacity code	↑				↑				

When an error stop occurs, No. 95-122 is displayed the data of the error stop or of just before the preliminary error stop which is located in the memory for service.

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	86	0110101000	IC10 address/ capacity code	00 to 99				00 to 99				IC address is displayed on the left (LD1-LD4) Capacity code is displayed on the right (LD5-LD8) (Displayed alternately per minute)
	87	1110101000	IC11 address/ capacity code	↑				↑				
	88	0001101000	IC12 address/ capacity code	↑				↑				
	89	1001101000	IC13 address/ capacity code	↑				↑				
	90	0101101000	IC14 address/ capacity code	↑				↑				
	91	1101101000	IC15 address/ capacity code	↑				↑				
	92	0011101000	IC16 address/ capacity code	↑				↑				
	93	1011101000	COMP operation time First 4 digits	0000 to 9999								
	94	0111101000	Last 4 digits	↑								

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	95	1111101000	Heat source unit operation mode	Permissible stop	Standby		Cooling only	Cooling main	Heating only	Heating main	Demand	
	96	0000011000	Heat source unit control mode	Cooling only Refrigerant recovery	Cooling main Refrigerant recovery	Heating only Refrigerant recovery	Heating main Refrigerant recovery	Cooling only Oil recovery	Cooling main Oil recovery	Heating only Oil recovery	Heating main Oil recovery	
	97	1000011000	Relay output display 1 Lighting	COMP in operation	Crankcase heater	21S4	SV1	SV2	SV3	SV4		
	98	0100011000	TH1 data	-99.9 to 999.9								
	99	1100011000	TH2 data	↑								
	100	0010011000	TH3 data	↑								
	101	1010011000	TH4 data	↑								
	102	0110011000	LEV2	↑								
	103	1110011000	TH6 data	↑								
	104	0001011000	63HS data	↑								
	105	1001011000	THHS data	↑								
	106	0101011000	THINV	↑								
	107	1101011000										
	108	0011011000										
	109	1011011000										
	110	0111011000	63LS data	-99.9 to 999.9								
	111	1111011000										
	112	0000111000										
	113	1000111000	Tc	-99.9 to 999.9								
	114	0100111000	Te	↑								
	115	1100111000										
	116	0010111000	INV output frequency	0000 to 9999								
	117	1010111000	AK	↑								
	118	0110111000	SLEV	↑								
	119	1110111000	Relay output display 2 Lighting	SV5	SV6	SV71	SV72	SV73		SSR		
	120	0001111000	DC bus current	-99.9 to 999.9								
	121	1001111000	Heat source unit operation display	Operation demand from BC	Warm up mode	3-minutes restart mode	Compressor in operation	Preliminary error	Error			
	122	0101111000	BC all indoor units operation mode	Cooling only ON	Cooling only OFF	Heating only ON	Heating only OFF	Both ON	Both OFF	Fan	Stop	

[VI LED Monitor Display on the Heat source unit Board]

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	123	1101111000										
	124	0011111000										
	125	1011111000										
	126	0111111000										
	127	1111111000										
	128	0000000100	BC TH11 data	-99.9 to 999.9								
	129	1000000100	BC TH12 data	↑								
	130	0100000100										
	131	1100000100										
	132	0010000100	BC TH15 data	-99.9 to 999.9								
	133	1010000100	BC TH16 data	↑								
	134	0110000100	BC P1 data	↑								
	135	1110000100	BC P3 data	↑								
	136	0001000100	BC SC11 data	↑								
	137	1001000100	BC SH12 data	↑								
	138	0101000100										
	139	1101000100	BC SC16 data	-99.9 to 999.9								
	140	0011000100	BC LEV1 data	0000 to 9999								
	141	1011000100	BC LEV3 data	↑								
	142	0111000100										
	143	1111000100										
	144	0000100100	IC1 Liquid pipe temperature	-99.9 to 999.9								
	145	1000100100	IC2 Liquid pipe temperature	↑								
	146	0100100100	IC3 Liquid pipe temperature	↑								
	147	1100100100	IC4 Liquid pipe temperature	↑								
	148	0010100100	IC5 Liquid pipe temperature	↑								
	149	1010100100	IC6 Liquid pipe temperature	↑								

[VI LED Monitor Display on the Heat source unit Board]

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	150	0110100100	IC7 Liquid pipe temperature	-99.9 to 999.9								
	151	1110100100	IC8 Liquid pipe temperature	↑								
	152	0001100100	IC9 Liquid pipe temperature	↑								
	153	1001100100	IC10 Liquid pipe temperature	↑								
	154	0101100100	IC11 Liquid pipe temperature	↑								
	155	1101100100	IC12 Liquid pipe temperature	↑								
	156	0011100100	IC13 Liquid pipe temperature	↑								
	157	1011100100	IC14 Liquid pipe temperature	↑								
	158	0111100100	IC15 Liquid pipe temperature	↑								
	159	1111100100	IC16 Liquid pipe temperature	↑								
	160	0000010100	IC1 gas pipe temperature	↑								
	161	1000010100	IC2 gas pipe temperature	↑								
	162	0100010100	IC3 gas pipe temperature	↑								
	163	1100010100	IC4 gas pipe temperature	↑								
	164	0010010100	IC5 gas pipe temperature	↑								
	165	1010010100	IC6 gas pipe temperature	↑								
	166	0110010100	IC7 gas pipe temperature	↑								
	167	1110010100	IC8 gas pipe temperature	↑								
	168	0001010100	IC9 gas pipe temperature	↑								
	169	1001010100	IC10 gas pipe temperature	↑								
	170	0101010100	IC11 gas pipe temperature	↑								
	171	1101010100	IC12 gas pipe temperature	↑								
	172	0011010100	IC13 gas pipe temperature	↑								

[VI LED Monitor Display on the Heat source unit Board]

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	173	1011010100	IC14 gas pipe temperature	-99.9 to 999.9								
	174	0111010100	IC15 gas pipe temperature	↑								
	175	1111010100	IC16 gas pipe temperature	↑								
	176	0000110100	IC1 SH	↑								
	177	1000110100	IC2 SH	↑								
	178	0100110100	IC3 SH	↑								
	179	1100110100	IC4 SH	↑								
	180	0010110100	IC5 SH	↑								
	181	1010110100	IC6 SH	↑								
	182	0110110100	IC7 SH	↑								
	183	1110110100	IC8 SH	↑								
	184	0001110100	IC9 SH	↑								
	185	1001110100	IC10 SH	↑								
	186	0101110100	IC11 SH	↑								
	187	1101110100	IC12 SH	↑								
	188	0011110100	IC13 SH	↑								
	189	1011110100	IC14 SH	↑								
	190	0111110100	IC15 SH	↑								
	191	1111110100	IC16 SH	↑								
	192	0000001100	IC1 SC	↑								
	193	1000001100	IC2 SC	↑								
	194	0100001100	IC3 SC	↑								
	195	1100001100	IC4 SC	↑								
	196	0010001100	IC5 SC	↑								
	197	1010001100	IC6 SC	↑								
	198	0110001100	IC7 SC	↑								
	199	1110001100	IC8 SC	↑								
	200	0001001100	IC9 SC	↑								
	201	1001001100	IC10 SC	↑								
	202	0101001100	IC11 SC	↑								
	203	1101001100	IC12 SC	↑								
	204	0011001100	IC13 SC	↑								

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	205	1011001100	IC14SC	-99.9 to 999.9								
	206	0111001100	IC15 SC	↑								
	207	1111001100	IC16 SC	↑								
	208	0000101100	IC1 LEV opening	0000 to 9999								
	209	1000101100	IC2 LEV opening	↑								
	210	0100101100	IC3 LEV opening	↑								
	211	1100101100	IC4 LEV opening	↑								
	212	0010101100	IC5 LEV opening	↑								
	213	1010101100	IC6 LEV opening	↑								
	214	0110101100	IC7 LEV opening	↑								
	215	1110101100	IC8 LEV opening	↑								
	216	0001101100	IC9 LEV opening	↑								
	217	1001101100	IC10 LEV opening	↑								
	218	0101101100	IC11 LEV opening	↑								
	219	1101101100	IC12 LEV opening	↑								
	220	0011101100	IC13 LEV opening	↑								
	221	1011101100	IC14 LEV opening	↑								
	222	0111101100	IC15 LEV opening	↑								
	223	1111101100	IC16 LEV opening	↑								
	224	0000011100	IC1 operation mode/Branch port address	00: Stop 01: Ventilation 02: Cooling 03: Heating 04: Dry				00 to 99				Operation mode is displayed on the left (LD1-LD4) Branch port addess is displayed on the right (LD5-LD8) (Displayed alternately per 5 sec.)
	225	1000011100	IC2 operation mode/Branch port address									
	226	0100011100	IC3 operation mode/Branch port address									
	227	1100011100	IC4 operation mode/Branch port address									
	228	0010011100	IC5 operation mode/Branch port address									
	229	1010011100	IC6 operation mode/Branch port address									
	230	0110011100	IC7 operation mode/Branch port address									
	231	1110011100	IC8 operation mode/Branch port address									

[VI LED Monitor Display on the Heat source unit Board]

	No	SW	Item	Display								Remarks
		1234567890		LD1	LD2	LD3	LD4	LD5	LD6	LD7	LD8	
Current data	232	0001011100	IC9 operation mode/Branch port address	00: Stop 01: Ventilation 02: Cooling 03: Heating 04: Dry				00 to 99				Operation mode is displayed on the left (LD1-LD4) Branch port addess is displayed on the right (LD5-LD8) (Displayed alternately per 5 sec.)
	233	1001011100	IC10 operation mode/ Branch port address									
	234	0101011100	IC11 operation mode/ Branch port address									
	235	1101011100	IC12 operation mode/ Branch port address									
	236	0011011100	IC13 operation mode/ Branch port address									
	237	1011011100	IC14 operation mode/ Branch port address									
	238	0111011100	IC15 operation mode/ Branch port address									
	239	1111011100	IC16 operation mode/ Branch port address									
	240	0000111100	IC1 filter	0000 to 9999								
	241	1000111100	IC2 filter	↑								
	242	0100111100	IC3 filter	↑								
	243	1100111100	IC4 filter	↑								
	244	0010111100	IC5 filter	↑								
	245	1010111100	IC6 filter	↑								
	246	0110111100	IC7 filter	↑								
	247	1110111100	IC8 filter	↑								
	248	0001111100	IC9 filter	↑								
	249	1001111100	IC10 filter	↑								
	250	0101111100	IC11 filter	↑								
	251	1101111100	IC12 filter	↑								
	252	0011111100	IC13 filter	↑								
	253	1011111100	IC14 filter	↑								
	254	0111111100	IC15 filter	↑								
	255	1111111100	IC16 filter	↑								

Service Handbook PQRY-200M-B-BM
PQRY-250M-B-BM

MITSUBISHI ELECTRIC CORPORATION

Issued in Sep. 2006 HWE06080
Printed in Japan

New publication effective Sep. 2006.
Specifications subject to change without notice.