Chapter 4 Maintenance

Part 1 Failure Code Table

1 System Failure Code Table

Inquiry method of malfunction display: combine division number and content number to check the corresponding malfunction.

Indoor:

Error Code	Content	Error Code	Content
L0	Malfunction of IDU	d2	Malfunction of lower water temperature sensor of water tank
L1	Protection of indoor fan	d3	Malfunction of ambient temperature sensor
L2	Auxiliary heating protection	d4	Malfunction of entry-tube temperature sensor
L3	Water-full protection	d6	Malfunction of exit-tube temperature sensor
L4	Abnormal power supply for wired controller	d7	Malfunction of humidity sensor
L5	Freeze prevention protection	d8	Malfunction of water temperature sensor
L7	No main IDU	d9	Malfunction of jumper cap
L8	Power supply is insufficient	dA	Web address of IDU is abnormal
L9	For single control over multiple units, number of IDU is inconsistent	dH	PCB of wired controller is abnormal
LA	For single control over multiple units, IDU series is inconsistent	dC	Setting capacity of DIP switch code is abnormal
LH	Alarm due to bad air quality	dL	Malfunction of air outlet temperature sensor
LC	IDU is not matching with outdoor unit	dE	Malfunction of indoor CO_2 sensor
LL	Malfunction of water flow switch	dF	Malfunction of upper water temperature sensor of water tank
LE	Rotation speed of EC DC water pump is abnormal	dJ	Malfunction of backwater temperature sensor
LF	Malfunction of shunt valve setting	dP	Malfunction of inlet tube temperature sensor of generator
LJ	Setting of functional DIP switch code is wrong	dU	Malfunction of drainage pipe temperature sensor of generator
LP	Zero-crossing malfunction of PG motor	db	Debugging status
LU	Indoor unit's branch is not inconsistent for one-to-more unit of heat recovery system	dd	Malfunction of solar power temperature sensor
d1	Indoor PCB is poor	dn	Malfunction of swing parts

Outdoor:

Error Code	Content	Error Code	Content
E0	Malfunction of ODU	FH	Current sensor of compressor 1 is abnormal
E1	High-pressure protection	FC	Current sensor of compressor 2 is abnormal
E2	Discharge low-temperature protection	FL	Current sensor of compressor 3 is abnormal
E3	Low-pressure protection	FE	Current sensor of compressor 4 is abnormal
E4	High discharge temperature protection of	FF	Current sensor of compressor 5 is

Error Code	Content	Error Code	Content
	compressor		abnormal
J0	Protection for other modules	FJ	Current sensor of compressor 6 is abnormal
J1	Over-current protection of compressor 1	FP	Malfunction of DC motor
J2	Over-current protection of compressor 2	FU	Malfunction of casing top temperature sensor of compressor 1
J3	Over-current protection of compressor 3	Fb	Malfunction of casing top temperature sensor of compressor 2
J4	Over-current protection of compressor 4	Fd	Malfunction of exit tube temperature sensor of mode exchanger
J5	Over-current protection of compressor 5	Fn	Malfunction of inlet tube temperature sensor of mode exchanger
J6	Over-current protection for compressor 6	b1	Malfunction of outdoor ambient temperature sensor
J7	Gas-mixing protection of 4-way valve	b2	Malfunction of defrosting temperature sensor 1
J8	High pressure ratio protection of system	b3	Malfunction of defrosting temperature sensor 2
J9	Low pressure ratio protection of system	b4	Malfunction of liquid temperature sensor of sub-cooler
JA	Protection because of abnormal pressure	b5	Malfunction of gas temperature sensor of sub-cooler
JC	Water flow switch protection	b6	Malfunction of inlet tube temperature sensor of vapor liquid separator
JL	Protection because high pressure is too low	b7	Malfunction of exit tube temperature sensor of vapor liquid separator
JE	Oil-return pipe is blocked	b8	Malfunction of outdoor humidity sensor
JF	Oil-return pipe is leaking	b9	Malfunction of gas temperature sensor of heat exchanger
P0	malfunction of driving board of compressor	bA	Malfunction of oil-return temperature sensor 1
P1	Driving board of compressor operates abnormally	bH	Clock of system is abnormal
P2	Voltage protection of driving board power of compressor	bE	Malfunction of inlet tube temperature sensor of condenser
P3	Reset protection of driving module of compressor	bF	Malfunction of outlet tube temperature sensor of condenser
P4	Drive PFC protection of compressor	bJ	High-pressure sensor and low-pressure sensor are connected reversely
P5	Over-current protection of inverter compressor	bP	Malfunction of temperature sensor of oil-return 2
P6	Drive IPM module protection of compressor	bU	Malfunction of temperature sensor of oil return 3
P7	Malfunction of drive temperature sensor of compressor	bb	Malfunction of temperature sensor of oil return 4
P8	Drive IPM high temperature protection of compressor	H0	Malfunction of driving board of fan
P9	Desynchronizing protection of inverter compressor	H1	Driving board of fan operates abnormally
PA	Malfunction of drive storage chip of compressor	H2	Voltage protection of driving board power of fan
PH	High-voltage protection of compressor's drive DC bus bar	H3	Reset protection of driving module of fan
PC	Malfunction of current detection circuit drive of compressor	H4	Drive PFC protection of fan
PL	Low voltage protection for DC bus bar of drive of compressor	H5	Over-current protection of inverter fan
PE	Phase-lacking of inverter compressor	H6	Drive IPM module protection of fan
PF	Malfunction of charging loop of driven of	H7	Malfunction of drive temperature sensor

Error Code	Content	Error Code	Content
	compressor		of fan
PJ	Failure startup of inverter compressor	H8	Drive IPM high temperature protection of fan
PP	AC current protection of inverter compressor	H9	Desynchronizing protection of inverter fan
PU	AC input voltage of drive of inverter compressor	HA	Malfunction of drive storage chip of inverter outdoor fan
F0	Main board of ODU is poor	HH	High-voltage protection of fan's drive DC bus bar
F1	Malfunction of high-pressure sensor	HC	Malfunction of current detection circuit of fan drive
F3	Malfunction of low-pressure sensor	HL	Low voltage protection of bus bar of fan drive
F5	Malfunction of discharge temperature sensor of compressor 1	HE	Phase-lacking of inverter fan
F6	Malfunction of discharge temperature sensor of compressor 2	HF	Malfunction of charging loop of fan drive
F7	Malfunction of discharge temperature sensor of compressor 3	HJ	Failure startup of inverter fan
F8	Malfunction of discharge temperature sensor of compressor 4	HP	AC current protection of inverter fan
F9	Malfunction of discharge temperature sensor of compressor 5	HU	AC input voltage of drive of inverter fan
FA	Malfunction of discharge temperature sensor of compressor 6		

Debugging:

Error Code	Content	Error Code	Content
U0	Preheat time of compressor is insufficient	C6	Alarm because ODU quantity is inconsistent
U2	Wrong setting of ODU's capacity code/jumper cap	C7	Abnormal communication of converter
U3	Power supply phase sequence protection	C8	Emergency status of compressor
U4	Refrigerant-lacking protection	C9	Emergency status of fan
U5	Wrong address for driving board of compressor	CA	Emergency status of module
U6	Alarm because valve is abnormal	CH	Rated capacity is too high
U8	Malfunction of pipeline for IDU	CC	No main unit
U9	Malfunction of pipeline for ODU	CL	The matching ratio of rated capacity for IDU and ODU is too low
UC	Setting of main IDU is succeeded	CE	Communication malfunction between mode exchanger and IDU
UL	Emergency operation DIP switch code of compressor is wrong	CF	Malfunction of multiple main control units
UE	Charging of refrigerant is invalid	CJ	Address DIP switch code of system is shocking
UF	Identification malfunction of IDU of mode exchanger	CP	Malfunction of multiple wired controller
C0	Communication malfunction between IDU, ODU and IDU's wired controller	CU	Communication malfunction between IDU and the receiving lamp
C2	Communication malfunction between main control and inverter compressor driver	Cb	Overflow distribution of IP address
C3	Communication malfunction between main control and inverter fan driver	Cd	Communication malfunction between mode exchanger and ODU
C4	Malfunction of lack of IDU	Cn	Malfunction of network for IDU and ODU of mode exchanger
C5	Alarm because project code of IDU is inconsistent	Cy	Communication malfunction of mode exchanger

Status:

Error Code	Content	Error Code	Content
A0	Unit waiting for debugging	Ay	Shielding status
A2	Refrigerant recovery operation of after-sales	n0	SE operation setting of system
A3	Defrosting	n3	Compulsory defrosting
A4	Oil-return	n4	Limit setting for max. capacity/output capacity
A6	Heat pump function setting	n5	Compulsory excursion of engineering code of IDU
A7	Quiet mode setting	n6	Inquiry of malfunction
A8	Vacuum pump mode	n7	Inquiry of parameters
AH	Heating	n8	Inquiry of project code of IDU
AC	Cooling	n9	Check quantity of IDU on line
AL	Charge refrigerant automatically	nA	Heat pump unit
AE	Charge refrigerant manually	nH	Heating only unit
AF	Fan	nC	Cooling only unit
AJ	Cleaning reminding of filter	nE	Negative code
AP	Debugging confirmation when starting up the unit	nF	Fan model
AU	Long-distance emergency stop	nJ	High temperature prevention when heating
Ab	Emergency stop of operation	nU	Eliminate the long-distance shielding command of IDU
Ad	Limit operation	nb	Bar code inquiry
An	Child lock status	nn	Length modification of connection pipe of ODU

Note: Previous faults in the system can be queried on the main board of the ODU and commissioning software. See n6 Fault Enquiry of the ODU or enquiry function of the commissioning software for the method.

Part 2 Exception and Troubleshooting

2 Exception Analyzing and Troubleshooting

2.1 Form analyzing

2.1.1 Control

Fault code	Fault	Possible reasons	Solution
F0	Faults in the ODU's main board (such as memory and address chip exceptions)	1.The clock chip on the main board is damaged. 2.The memory chip on the main board is damaged. 3.The address chip on the main board is damaged.	1.Replace the small CPU board. 2.Replace the control board. 3.Replace the control board.
FC	Faults in the constant frequency compressor's current sensor	1.The constant-frequency compressor is not started. 2.The current detection board is faulty. 3.The main board's detection circuit is faulty.	1.If the compressor is not started, check if the AC contact is closed. If not, replace the AC contact. If the connection is loose, reconnect it; 2.Replace the current detection board. 3.Replace the main board.
U2	Wrong outdoor capacity code setting	1.The capacity code is wrong. 2.The dial component is faulty.	1.Modify the capacity code setting. 2.Replace the main board.
U3	Power phase sequence protection	1.The three-phase power cable is not connected correctly. 2.The main board's detection circuit is faulty.	1.Check connection of the power cable. 2.Replace the control board.
UL	Wrong emergency operation dial code	1.The dial setting is wrong. 2.The dial component is faulty.	1.Modify the dial setting. 2.Replace the main board.
C0	Communication failure between indoor and ODUs and IDU's communicator	1.The communication cable is not connected. 2.The communicator is disconnected. 3.The communication cable is poorly connected. 4.The communicator controller is faulty.	If C0 is not displayed on the control board of the ODU, check the network between the IDU and communicator. If C0 is displayed, check the network between the IDUs and ODUs and between the IDU and communicator as follows: 1)Check if the cables connecting the control board of the ODU and the IDU and connecting the IDU and communicator are loose. If yes, reconnect them; 2)Check if the cables connecting the control board and IDU and connecting the IDU and communicator are broken. If yes, replace the cables; 3)Check the contact of the communication cables; 4)Replace the control board. If the fault is solved, the control board is faulty. Replace the IDU. If the fault is solved, the IDU is faulty.
C2	Communication failure between main control board and inverter compressor drive	1.The communication cable is not connected. 2.The communicator is disconnected. 3.The communication cable is poorly connected. 4.The communicator is faulty.	1)Check if the cable connecting the control board and the compressor's drive board is loose. If yes, reconnect it; 2)Check if the cable connecting the control board and compressor's drive board is broken. If yes, replace the cable; 3)Check the contact of the communication cable connecting the control board and compressor's drive board; 4)Replace the control board. If the fault is solved, the control board is faulty. Replace the

Fault code	Fault	Possible reasons	Solution
			compressor's drive board. If the fault is solved, the compressor's drive board is faulty.
C3	Communication failure between main control board and variable frequency fan drive	1.The communication cable is not connected. 2.The communicator is disconnected. 3.The communication cable is poorly connected. 4.The communicator is faulty.	1)Check if the cable connecting the fan's drive board and the compressor's drive board is loose. If yes, reconnect it; 2)Check if the cable connecting the fan's drive board and compressor's drive board is broken. If yes, replace the cable; 3)Check the contact of the communication cable connecting the fan's drive board and compressor's drive board; 4)Replace the control board. If the fault is solved, the control board is faulty. Replace the fan's drive board. If the fault is solved, the fan's drive board is faulty.
C4	Malfunction of lack of indoor unit	1.Some indoor units in the system are not power-connected. 2.Communication wires of some indoor units in the system are disconnected or have loose contact. 3.Controllers of some indoor units in the system are abnormal.	1. Check the number of online indoor units through outdoor unit and compare it with the number of indoor units that are actually installed. Confirm the number of missing indoor units. 2. Check whether all the indoor units are power-connected. If some are not, connect them to power. If power connection is fine, check further whether there is any indoor unit that fails to display on wired controller or receiver board. If such indoor unit exists, it means its main board is abnormal and needs to be replaced. If everything said above is confirmed OK, continue to check according to step 3. 3. The missing indoor units will display error “C0” on wired controller or receiver board. Check the communication wire of the missing indoor unit whether it is disconnected or has loose contact. If yes, connect the communication wire tightly. If communication wire is OK, check whether it is connected reversely. Power on the indoor unit again and see if error “C0” occurs. If “C0” is displayed, it means main board is abnormal and needs to be replaced.
C5	Indoor unit project number conflict warning	1.Project numbers conflict with each other.	1.Change conflicting project numbers and ensure that no IDU's project number is repeated.
C6	Outdoor unit number inconsistency warning	1.Communication cables between ODUs are loose. 2.Communication cables between ODUs are broken. 3.Communication cables between ODUs are poorly connected. 4.The control board is faulty.	1.If the communication cable is loose, reconnect it; 2.If the communication cable is broken, replace it; 3.Check contact of the communication cable; 4.Replace the control board.
CC	No controlling unit	The SA8 dial switch of the ODU is not switched to 00. The SA8 dial switch of the ODU is faulty.	1.Switch the SA8 dial switch of an ODU to 00; 2.Replace the control board or switch an ODU's SA8 dial switch to 00.
CF	Multiple controlling units	SA8 dial switches of multiple ODUs are switched to 00. Dial switches of multiple ODUs are faulty.	1.Leave one SA8 dial switch unchanged, while switch all the other dial switches to 11; 2.Replace the control board.
L7	No master IDU	The master IDU is powered off. The communication of the master	Check if the master IDU is powered on. If yes, replace the main board;

Fault code	Fault	Possible reasons	Solution
		IDU fails. The main board of the master IDU is faulty. No master IDU is set in the system.	Check the contact of the communication cable of the master IDU. If no communication failure (C0) is reported, replace the main board. Replace the IDU's main board and reset the master IDU. Set the master IDU.

Note: Solution of C5 fault when multiple cooling systems are controlled in a centralized way

When multiple cooling systems are controlled in a centralized way, the C5 fault, i.e. project number conflict, may occur on different cooling systems. In such case, set project numbers of each system and solve the fault as follows:

1) Project number conflict:

When multiple systems are controlled in a centralized way, if two or more IDUs share the same project number, the engineer number conflict occurs. In that case, IDUs cannot be switched to varied modes or be turned on or off. The whole device cannot be started before the conflict is solved. The commissioning software will show the following page:

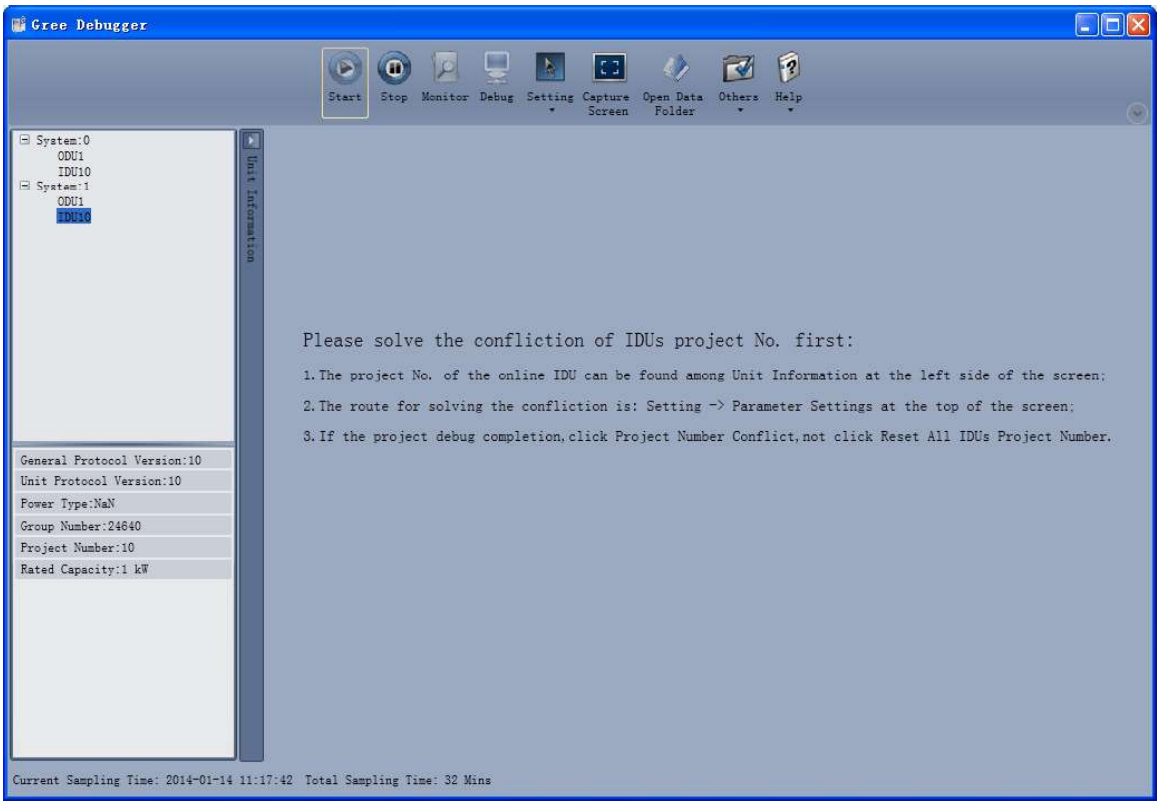

Figure 1