

Line Controller

Instruction Manual



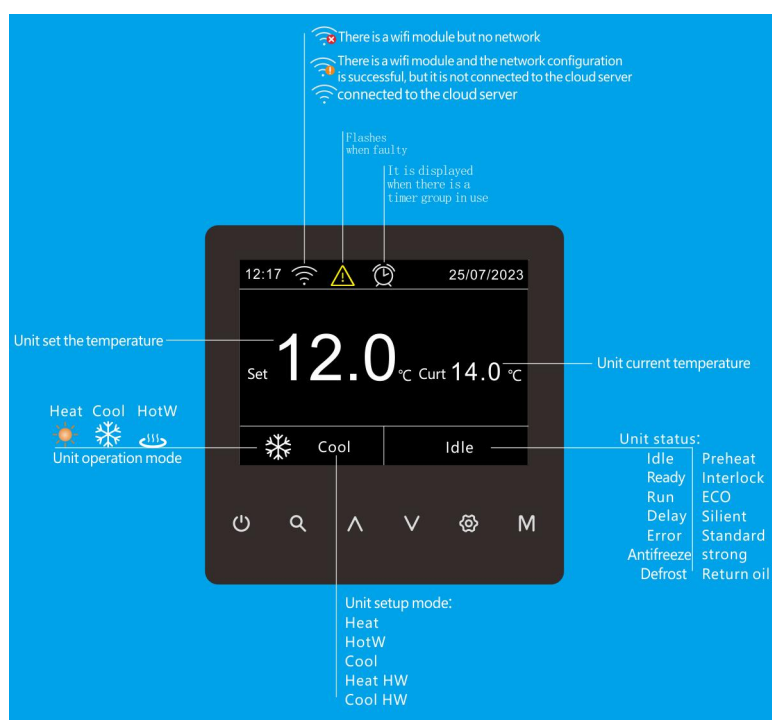
Before installing and using the controller, please
read this instruction manual in detail!

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1 Safety Precautions

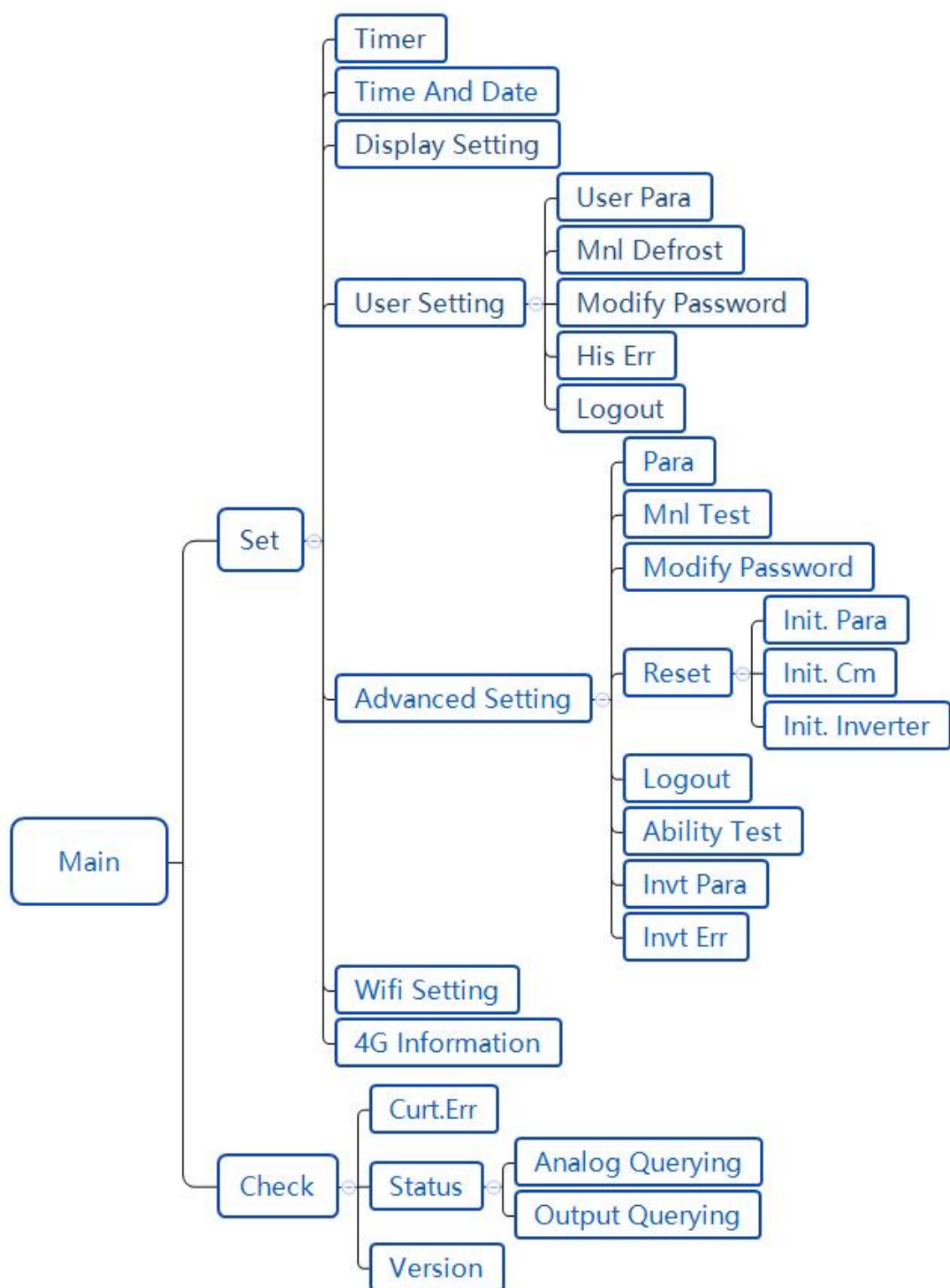
	When used incorrectly, it can cause a hazardous situation that may result in personal injury or personal injury.
	When used incorrectly, it can cause a hazardous situation that may result in equipment damage or accelerated damage. Even precautions may lead to danger due to changing circumstances.
	Please install it on a non-flammable board such as metal and mount it securely to avoid dropping it due to vibration;
	Do not install a controller that is damaged or missing parts; Do not expose to direct sunlight, strong air currents and water spray; Do not expose to corrosive or contaminated gases such as sulfide gas, salt spray. Make sure the temperature of the electrical box is between -10℃~+50℃, add an exhaust fan if necessary.
	Make sure that the power input is OFF. Have electrical staff work on the wiring. The input is a passive switch signal, do not connect to the power supply. Please increase the system level protection to avoid the danger caused by the failure of the computer controller.
	Please observe the principle of separation of strong and weak electricity. Use a wire that meets technical specifications. Please use parallel grounding method and make the grounding wire as thick as possible. Please use appropriate screwdriver when fixing the screws, too big or too small screwdriver may cause the screw head to slip.
	Setting the parameters according to the machine configuration to ensure normal operation. Setting the relevant jumpers/digitizer switches according to the machine configuration to ensure normal operation.
	Confirm that the wiring is correct before inputting power. Make sure that the environmental conditions and power supply voltage are within the permissible conditions before turning on the power for operation. Do not check signals during operation. Do not change the parameter settings during operation. Do not get too close to the machine during operation.
 	Users should contact the manufacturer for any repair needs, do not repair by yourself. Do not pull or twist the power cord or communication cable to avoid serious malfunction. Do not touch the computer components directly with your hands to avoid damage by static electricity.

2 User Interface Overview



ICON	Description	Name
	Turn on/off	【ON/OFF】
	Enter search or Return	【Return/Search】
	To last page or go up	【Up】
	To next page or go down	【Down】
	Setting or confirm	【Enter/Confirm】
	Enter mode selection	【Mode】

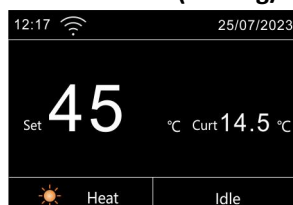
3 Interface Hierarchy



4 Main interface display

Depending on the application scenario, the main interface will be different, and the following describes several possible scenarios:

Main screen 1 (cooling/heating):



The system is heating.

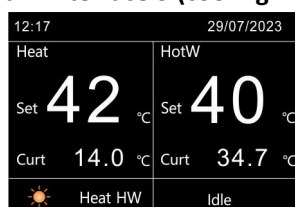
Tip: All icons in the manual are used for explanatory purposes and may differ in part from what is actually on the screen.

Main screen 2 (hot water):



The system is hot water.

Main interface 3 (cooling + hot water):



The system is "heating + hot water".

5 Basic Usage

5.1 Switching on and off

5.1.1 Line controller switch Cooling/Heating

Click on the  key in the main screen and click on  to confirm switching on/off the cooling or

heating.

Take heating as an example, in the main interface, click **M** key to select heating mode, click  to confirm, then press  key and click  to confirm to turn on the heating, as shown in Fig:



5.1.2 Line controller switch hot water

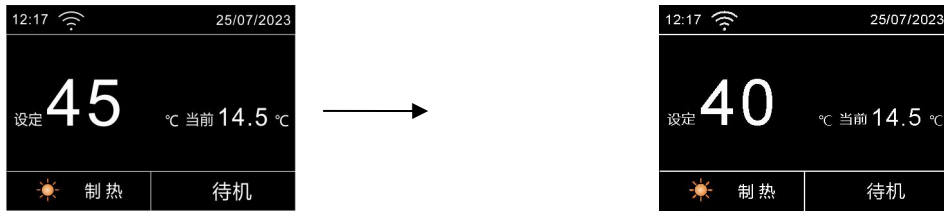
First of all, you need to make sure that [Unit Type] is set to "Hot Water" or "Hot Water + Heating & Cooling", otherwise the hot water will not be turned on.

In the main interface, click **M** key to select hot water mode, click  to confirm, then press  key and click  to confirm to turn on/off the hot water production, as shown in Fig:



5.2 Adjustment of temperature

In the main interface, click  or  to adjust the temperature, and then click  to save the adjusted temperature value, as shown in the figure:



5.3 Spatial mode setting

There are five spatial modes:

1. refrigeration
2. heat production
3. water heating
4. Cooling + hot water
5. Heating + hot water

Click **M** key in the main interface to pop up the space mode setting window, as shown in Fig:

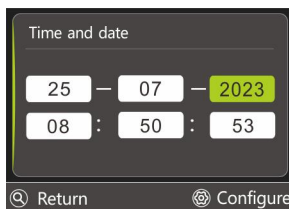


Click **^** or **v** to select the mode you want to set, and then click **⚙** to confirm the setting is successful, if you click **🔍**, you can directly close the pop-up window and cancel this mode setting.

5.4 Time Setting Operation

All the time modification (such as year, month, day, hour, minute, second) operation of this line controller is the same, here to modify the year in the date and time for example

Enter the "Date and Time" screen, please refer to 7.2 Date and Time for the path.



Select the year option via **^**, **v**, and click **⚙** to bring up the year modification box.



Click $\wedge$, $\vee$ to modify the year value, click  to save the modification after completion of the modification, click  to close the pop-up window directly without keeping the modification.

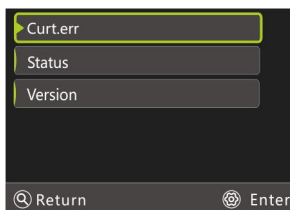
6 Enquiry Menu

There are three query menus:

- 1) Fault Enquiry Screen
- 2) Status query screen
- 3) Version Search Interface

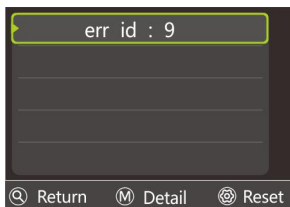
6.1 Fault Query Interface

Click  in the main interface to enter the enquiry interface.

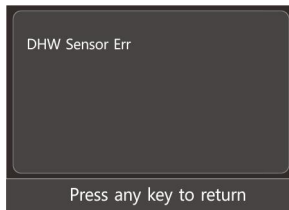


You can see the three options of fault query, status query and version query. Move through $\wedge$, $\vee$ and  to access the options.

When a fault exists, the fault screen is shown below (click  to eliminate faults that satisfy the reset condition).

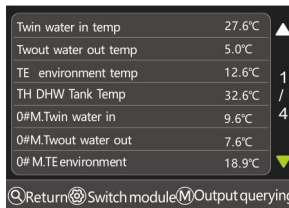


Click  to see exactly what the fault code means.

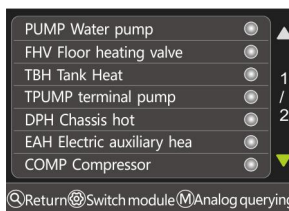


6.2 Status query screen

When you need to check the current status information of the unit (e.g. temperature, output of electrical components, etc.), you can enter the status query interface to check.



Click **M** to switch to view the switching status information (green circle on the right indicates that the component has output), and click **M** again to return to the analogue status information.



6.3 Version Query Screen

When dealing with some after-sales problems, in order to facilitate better positioning of the problem, it may be necessary to provide information on the software used by the unit controller, which can be viewed in the version query interface.

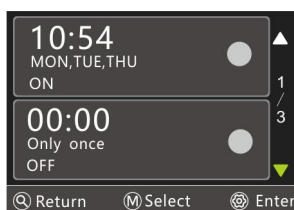


7 Setup Menu

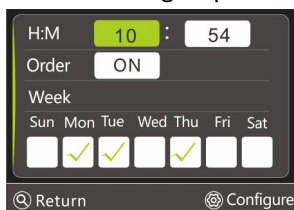
7.1 Timing Settings

Click  in the main interface to enter the setting menu and select "Timing Setting".

Click  to access the Timing menu.



Click  or  to move through,  to use or cancel the group of timings, and  to enter the setting screen of the group of timings.

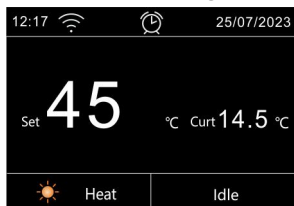


In the setting interface, click  or  to move the cursor to the information you want to set, and then

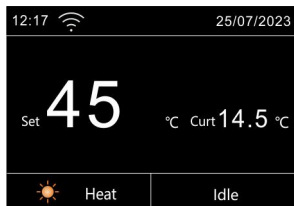
click  to set the timing time (day of the week, hour and minute) and command (timer on, timer off),

and then click  to return to save the setting value automatically after the setting is completed.

If the timer setting takes effect, the timer icon will be displayed at the top centre of the main interface.



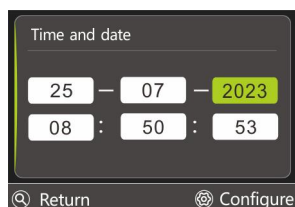
If the timer is disabled, the timer icon will not be shown in the main interface.



7.2 Date and time

If the date and time do not correspond to the actual date and time, you can change the date and time through the following path

"Main interface" > "Setting menu" > "Date and time"

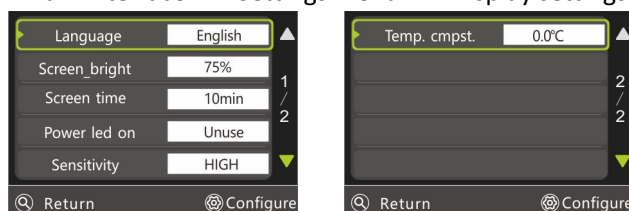


For time modification, refer to 5.5 Time Setting Operation.

7.3 Display Settings

Display settings can be set for daily use, such as language, screen saver brightness, screen saver time usage, etc. Enter the display settings interface through the following path.

"Main interface" > "Settings menu" > "Display settings"

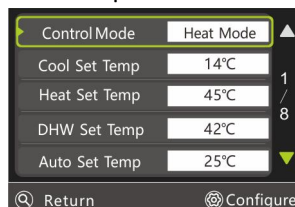


Note: If "Screen saver time" is set to 0, there is no screen saver function and the screen will stay on.

7.4 User Settings

7.4.1 User parameters

The user parameters can be used directly by the end user with the interface shown in Fig:



For more user parameters, please refer to the following table (actual parameters are subject to the display of the line controller):

settings item	setting range	unit (of measure)
control mode	cooling mode	/
	heating mode	
	Hot water mode	

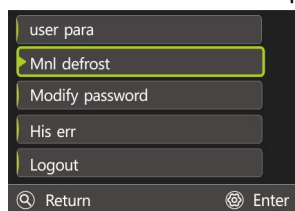
	Hot water & cooling mode Hot water & heating mode	
Refrigeration Setting Temperature	min...max	℃
Heating Setting Temperature	min...max	℃
Hot water setting temperature	min...max	℃
Thermostatic Setting Temperature	16...30	℃
power mode (of an electrical device etc)	Standard Model High Power Mode Energy Saving Mode	/
silent mode	prohibition on use Mute at night total silence	/
Night time silent on time	0~23	hour
Mute night time scoring	0~59	min
Mute off at night	0~23	hour
Night Mute Off Score	0~59	min
Duty function enable	prohibition on use start using	/
Heating duty temperature	18~50	℃
Cooling duty temperature	10~22	℃
When the segment is activated on duty	0~23	hour
Duty-commissioning segment	0~59	min
When the duty station is out of service	0~23	hour
Duty deactivation segment	0~59	min
Heating 2-way interlock	prohibition on use start using	/
Lock Screen Function Setting	prohibition on use start using	/
Alarm tone setting	noisy fig. long reverberating sound Ten seconds. Cycle time 10 seconds	/
Pump operation mode	run all the time Temperature to stop intermittent operation	/
End Pump Enable	prohibition on use start using	/
Maximum Holding Operation	0~999	min

Minimum refrigeration time	0~999	min
Minimum heating time	0~999	min
Maximum time for hot water	0~999	min
Heat pump set temperature	30~60	°C
Number of modules	1~8	pcs
00# Module Setup	prohibition on use start using	/
Press full open temperature difference	0~20	°C
Energy control cycle	0~999	second
Sterilization Function Usage Week	Sunday Monday Tuesday Wednesdays Thursdays Fridays Saturdays	/
Sterilization function hours of use	0~23	hour
Sterilization function minutes of use	0~59	min
Timed sterilisation function	prohibition on use start using	/

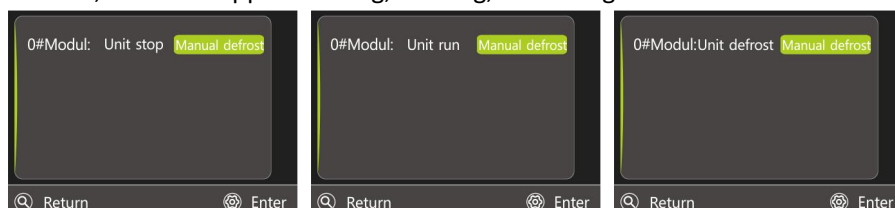
7.4.2 Manual defrosting

The unit operates normally with an intelligent (automatic) defrost function, but in some cases it may be necessary to use the manual defrost function, which is available via the following path.

"Main Interface" > "Setup Menu" > "User Settings" > "Manual Defrost", as shown in the figure:



Click  to enter the manual defrost setting interface, which will display the current status of each module, such as stopped running, running, defrosting.



Only when the module is running and the water temperature, fin temperature, etc. meet the conditions, click  to successfully enter the defrost, then the current state of the module will be switched to defrosting. Otherwise, the module will remain in its original state.

7.4.3 Historical Fault Query

For the faults that have occurred in the unit (including reset completion faults) are recorded in the controller and are queried as follows:

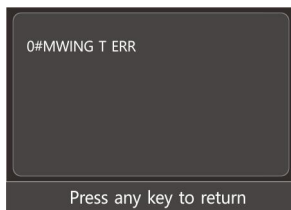
Firstly, through the path "Main Interface" > "Setting Menu" > "User Setting" > "Historical Fault Query",

click  to enter the historical fault interface.

err id : 4	07/25 09:03	▲
err id : 12	07/25 09:03	
err id : 64	07/25 09:02	1 / 2
err id : 3	07/25 09:02	
err id : 9	07/25 08:51	▼

Return Detail Clear

Through this interface you can see the code of each fault in the past, the time of occurrence, click  will clear all the historical faults, please be careful. Click  to see the specific meaning of the fault code.

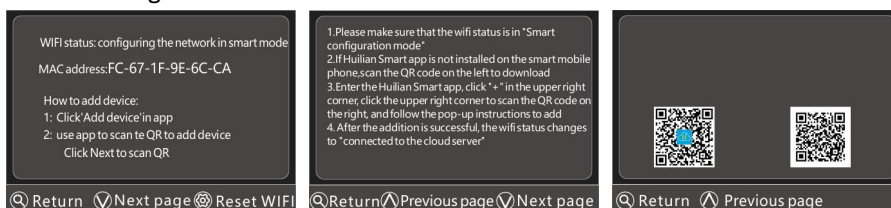


7.5 Network Configuration Guidelines

This line controller has a built-in WIFI module, which can establish communication with mobile phone APP and use mobile phone APP to operate the unit.

When you configure the line controller to WIFI network for the first time, you first need to make sure that the line controller is within the same WIFI signal as your mobile phone, and the signal cannot be

too weak. Through "Main Interface" > "Setting Menu" > "WIFI Setting", click  to enter the network information interface. The interface displays the current WIFI status, MAC address, and instructions on how to configure the network.

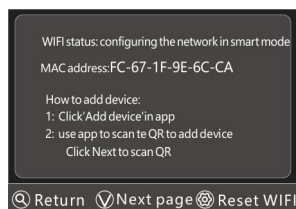


If the WIFI status (WIFI status) shows "Connected to cloud server", the line controller has been provisioned and can be operated on the account where the provisioning was previously completed.



If the WIFI status displays something else or if you need to cancel a previously completed pairing, you can follow the steps below (Note: Accounts that have been successfully paired and communicated with will no longer be able to operate the unit).

Click  on the first page of the distribution information interface, and wait until the WIFI status shows "Distributing in Smart Mode", you can use the mobile phone APP to carry out the distribution and connection operation, please refer to the "Pocket Wisers APP.Device Distribution Instruction Manual" for details.



Appendix A

Table 1 Heating low-temperature curve (heating ring temperature - target temperature table)

Unit: ° C

Ambient tempera ture TA	≤ -20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0
Low Tempera ture Curve 1	38	38	38	38	38	37	37	37	37	37	37	36	36	36	36	36	36	35	35	35	35
Low Tempera ture Curve 2	37	37	37	37	37	36	36	36	36	36	36	35	35	35	35	35	35	34	34	34	34
Low Tempera ture Curve 3	36	36	36	35	35	35	35	35	35	34	34	34	34	34	34	34	33	33	33	33	33
Low Tempera ture Curve 4	35	35	35	34	34	34	34	34	34	33	33	33	33	33	33	33	32	32	32	32	32
Low Tempera ture Curve 5	34	34	34	33	33	33	33	33	33	32	32	32	32	32	32	32	31	31	31	31	31
Low Tempera ture Curve 6	32	32	32	32	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	30	29
Low Tempera ture Curve 7	31	31	31	31	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	28
Low Tempera ture Curve 8	29	29	29	29	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	26
Ambient	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	≥	

tempera ture TA																				20	
Low Tempera ture Curve 1	35	35	34	34	34	34	34	34	33	33	33	33	33	33	32	32	32	32	32	32	
Low Tempera ture Curve 2	34	34	33	33	33	33	33	33	32	32	32	32	32	32	31	31	31	31	31	31	
Low Tempera ture Curve 3	32	32	32	32	32	32	31	31	31	31	31	31	30	30	30	30	30	30	29	29	
Low Tempera ture Curve 4	31	31	31	31	31	31	30	30	30	30	30	30	29	29	29	29	29	29	28	28	
Low Tempera ture Curve 5	30	30	30	30	30	30	29	29	29	29	29	29	28	28	28	28	28	28	27	27	
Low Tempera ture Curve 6	29	29	29	29	29	29	28	28	28	28	28	28	27	27	27	27	27	27	26	26	
Low Tempera ture Curve 7	28	28	28	28	28	28	27	27	27	27	27	27	26	26	26	26	26	26	25	25	
Low Tempera ture Curve 8	26	26	26	26	26	26	26	25	25	25	25	25	25	25	25	24	24	24	24	24	

Table 2 Heating high temperature curve (heating ring temperature - target temperature table)

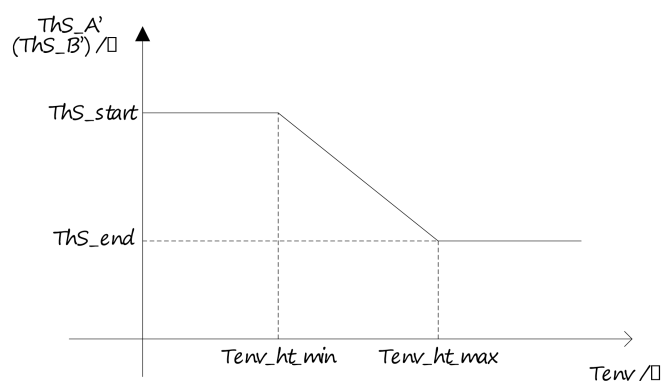
Unit: °C

Ambien t temper ature TA	≤ -20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0
High temper	55	55	55	55	54	54	54	54	54	54	54	54	53	53	53	53	53	53	53	53	52

ature curve 1																				
High temper ature curve 2	53	53	53	53	52	52	52	52	52	52	52	52	51	51	51	51	51	51	51	50
High temper ature curve 3	52	52	52	52	51	51	51	51	51	51	51	51	50	50	50	50	50	50	50	49
High temper ature curve 4	50	50	50	50	49	49	49	49	49	49	49	49	48	48	48	48	48	48	48	47
High Temper ature Curve 5	48	48	48	48	47	47	47	47	47	47	47	47	46	46	46	46	46	46	46	45
High Temper ature Curve 6	45	45	45	45	44	44	44	44	44	44	44	44	43	43	43	43	43	43	43	42
High Temper ature Curve 7	43	43	43	43	42	42	42	42	42	42	42	42	41	41	41	41	41	41	41	40
High Temper ature Curve 8	40	40	40	40	39	39	39	39	39	39	39	39	38	38	38	38	38	38	38	37
Ambien t temper ature TA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	≥ 20
High temper ature curve 1	52	52	52	52	52	52	52	51	51	51	51	51	51	51	51	50	50	50	50	
High temper ature curve 2	50	50	50	50	50	50	50	49	49	49	49	49	49	49	49	48	48	48	48	

High temper ature curve 3	49	49	49	49	49	49	49	48	48	48	48	48	48	48	48	47	47	47	47	47	
High temper ature curve 4	47	47	47	47	47	47	47	46	46	46	46	46	46	46	46	45	45	45	45	45	
High Temper ature Curve 5	45	45	45	45	45	45	45	44	44	44	44	44	44	44	44	43	43	43	43	43	
High Temper ature Curve 6	42	42	42	42	42	42	42	41	41	41	41	41	41	41	41	40	40	40	40	40	
High Temper ature Curve 7	40	40	40	40	40	40	40	39	39	39	39	39	39	39	39	38	38	38	38	38	
High Temper ature Curve 8	37	37	37	37	37	37	37	36	36	36	36	36	36	36	36	35	35	35	35	35	

The heat production curve 9 is an automatic setting curve (linear curve generated by setting parameters), which is calculated as follows:



Where, $Tenv_ht_max$: $\text{MAX}([\text{Curve 9 heating loop temperature 1}], [\text{Curve 9 heating loop temperature 2}])$

$Tenv_ht_min$: $\text{MIN}([\text{Curve 9 Heating Circle Temperature 1}], [\text{Curve 9 Heating Circle Temperature 2}])$

ThS_{end} : $\text{MIN}([\text{Curve 9 Heat Out 2}], [\text{Curve 9 Heat Out 1}])$

ThS_{start} : $\text{MAX}([\text{Curve 9 Heat Out 2}], [\text{Curve 9 Heat Out 1}])$

Note: $\text{MAX}(A, B)$ is the greater of A and B.

MIN(A,B) is the smaller of A and B.

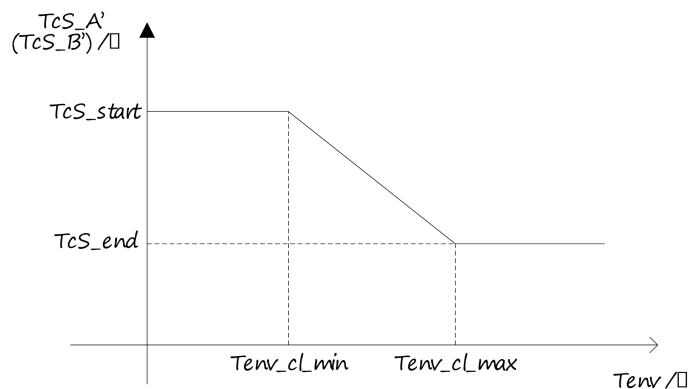
Table 3 Refrigeration low-temperature curve (Refrigeration ring temperature - target temperature table) Unit: ° C

Ambient temperature TA	-10≤TA<15	15≤TA<22	22≤TA<30	30≤TA
Low Temperature Curve 1	16	11	8	5
Low Temperature Curve 2	17	12	9	6
Low Temperature Curve 3	18	13	10	7
Low Temperature Curve 4	19	14	11	8
Low Temperature Curve 5	20	15	12	9
Low Temperature Curve 6	21	16	13	10
Low Temperature Curve 7	22	17	14	11
Low Temperature Curve 8	23	18	15	12

Table 4 Refrigeration High Temperature Curve (Refrigeration Ring Temperature - Target Temperature Table) Unit: ° C

Ambient temperature TA	-10≤TA<15	15≤TA<22	22≤TA<30	30≤TA
High temperature curve 1	20	18	17	16
High temperature curve 2	21	19	18	17
High temperature curve 3	22	20	19	17
High temperature curve 4	23	21	19	18
High Temperature Curve 5	24	21	20	18
High Temperature Curve 6	24	22	20	19
High Temperature Curve 7	25	22	21	19
High Temperature Curve 8	25	23	21	20

Refrigeration curve 9 is an automatic setting curve (linear curve generated by setting parameters), which is calculated as follows:



Where, Tenv_cl_max: MAX([Curve 9 cooling ring temperature 1], [Curve 9 cooling ring temperature 2])

Tenv_cl_min: MIN([Curve 9 Cooling Ring Temperature 1], [Curve 9 Cooling Ring

Temperature 2])

TcS_end: MIN([Curve 9 Cooling Out Temperature 1], [Curve 9 Cooling Out Temperature 2])

TcS_start: MAX([Curve 9 Cooling Out Temperature 1], [Curve 9 Cooling Out Temperature 2])

Note: MAX(A,B) is the greater of A and B.

MIN(A,B) is the smaller of A and B.

Appendix B

Fault Code Table

B-1 控制器本身故障

故障	复位方式	检测条件	报警动作	故障排除
EEPROM 数据错	上电复位	上电后检测。	报警，不能开机	● 初始化所有参数。 ● 如果初始化后仍无法排除故障，请联系我们！
系统维护数据错	上电复位	上电后检测。	报警，不能开机	● 初始化系统维护设置。 ● 如果初始化后仍无法排除故障，请联系我们！
变频器通讯故障 EC1、2 通讯故障	A	上电后检测。	停压机	检查通讯线是否连接正常，接触良好。
变频器故障	A/M	上电后检测。	停压机	对应查变频器故障。 具体故障含义参考变频器说明书

EC1、2故障	A	上电后检测。	停压机	对应查变频器故障。 具体故障含义参考变频器说明书
变频型号设置中	A	上电后检测。	停压机	首次接入变频器时会有此故障提示，若故障不能自动恢复，重新上电一下，若仍不能恢复，则变频驱动器中无相应压机型号。
风盘通讯故障n	A	【末端个数】不为0时才检测，故障确认延时为60秒	仅报警，不停机	检查末端通讯连接、设置、上电情况等
风盘故障n	A	【末端个数】不为0时才检测	仅报警，不停机	检查风盘
n#模块通讯故障 n#模块通讯异常	A	【模块数】>1时才检测	停相应模块	1.检查级联通讯接线 2.检查地址拨码
机组故障				
水流不足	A/M	水泵启动30s后开始检测水流不足； 当开关持续断开【水流不足检测延时】，报警。	停机组、停空调泵； 末端泵不停； 非防冻时，若【水流不足开泵】为“使用”且环温低于2℃，则不关空调泵	检查对应输入点是否为闭合。
电源故障	M	上电后检测“电源故障”输入点；	报警，不能开机 “非降频停机”	
风机保护	M	上电后检测“风机过载”输入点；	报警，停压机。	检查风机过载输入状态是否为正常。
压机高压	A/M	压机运行后开始检测；	停压机	检查高压输入状态是否正常
压传高压过高	A/M	若正在除霜则退除霜，不报警；	“非降频停机”	检查高压压力
压机低压	A/M	压机运行【低压检测延时】后（或【待机检测低压】设为使	停压机	检查低压输入状态是否正常

压 传 低 压过低	A/M	用且待机时), 开始检测低压, 当低压持续【制冷低压延时】 或【制热低压延时】: 报警。 若压机正在除霜, 不检测低压; 退出除霜后延时【退除霜低压 检延时】才重新检测低压;		检查低压压力
排 气 温 度过高	A/M	若【压顶温度设定】设为“使用”, 则使用“压机顶温”与“排气温度”的较高者进行判断: 当排气温度> 【排气温度过高】, 报警; 当排气温度≤【排气温度过高】- 【退排温过高温差】, 允许恢复。	停压机 “非降频停机”	1、 检查温度探头是否正常。 2、 检查是否缺少冷媒。
空 调 侧 出 温 过 低	A/M	制冷时检测: 当出水温度≤【制冷出温过低】时, 报警; 当出水温度>【制冷出温过低】+ 【退出温保护回差】时, 允许恢复。	停压机 “非降频停机”	检查出水温度、回水温度
空 调 侧 回 温 过 低	A/M	制冷时检测: 当回水温度≤【制冷出温过低】+1 时, 报警; 当回水温度>【制冷出温过低】+ 【退出温保护回差】+1 时, 允许恢复。		
空 调 侧 出 温 过 高	A/M	制热时检测: 当出水温度≥【制热出温过高】时, 报警; 当出水温度<【制热出温过高】- 【退出温保护回差】时, 允许恢复。	停压机	
空 调 侧 回 温 过 高	A/M	制热时检测: 当回水温度≥【制热出温过高】-1 时, 报警; 当回水温度<【制热出温过高】- 【退出温保护回差】-1 时, 允许恢复。		
出 回 温 差过大	A/M	压机启动且非除霜运行中检测: 当出回温差大于【出回温差过大】且持续 1min 时, 报警。 当出回温差小于【出回温差过大】-5 时, 允许自动复位。	停压机	检查出、回水温度探头 检查水流量等

出回温差异常	A/M	压机启动且非除霜运行中检测： 当出回温差反向大于【出回温差异常】且持续 10min 时，报警。 压机关闭后，允许自动复位。	停压机	检查出、回水温度探头 检查水流量等								
防冰温度过低	A/M	防冰温度使用且制冷时才检测： 当防冰温度<3℃时，报警； 当防冰温度>7℃时，允许恢复。	停压机 “非降频停机”	检测防冰温度								
紧急除霜频繁	M	两个小时内出现 3 次紧急除霜	停压机	检测冷媒量								
制冷吸气过低	A/M	制冷运行时： 压机启动 3 分钟内，吸气温度<【制冷吸气过低】-5 并保持 30 秒则报警； 压机启动 3 分钟后，吸气温度<【制冷吸气过低】并保持 30 秒则报警； 若吸气温度>【制冷吸气过低】+2，允许复位；	停压机 “非降频停机”	检测冷媒量								
压机电流过小	M	$I_{实} \leq 0.3A$ ，且压机运行 2S 后，报警“压机电流过低”； 【变频器使用】 设为禁用 且 【压机额定电流】 $\neq 0$ ，才有电流保护。 $I_{实}$ ：实测电流。	停压机	1、检查设定参数是否存在问题。 2、检查电流互感器穿线是否穿错。 用电流钳表检测电流是否异常。								
压机电流过大	A/M	<table><tr><td>$I_{实} / I_{额}$</td><td>≥ 1.2</td><td>≥ 1.3</td><td>$\geq$</td></tr><tr><td>动作时间(S)</td><td>60</td><td>48</td><td></td></tr></table>	$I_{实} / I_{额}$		≥ 1.2	≥ 1.3	$\geq$	动作时间(S)	60	48		停压机
		$I_{实} / I_{额}$	≥ 1.2		≥ 1.3	$\geq$						
动作时间(S)	60	48										
$I_{额} * 1.2 \leq I_{实} \leq I_{额} * 3.9$，按上表做延时处理，报警。 例：当 $I_{实} = I_{额} * 2.0$ 并持续 5 秒，报警。 $I_{实} \geq I_{额} * 4.0$，立即报警。 【变频器使用】 设为禁用 且 【压机额定电流】$\neq 0$，才有电流保护。 $I_{实}$ ：实测电流。 $I_{额}$ ：【压机额定电流】。												
风机 1 转速异常	M	【变频风机设置】为 PWM 风机才检测此故障；风机启动后，若风速持续【PWM 风速检测延	停压机	检查 PWM 风机接线是否正常								

风 机 2 转 速 异 常		时】时间小于【PWM 风速过低】，则报警。		
吸 排 温 差异常	M	【吸排异常检延】为 0 时则禁用。 除霜时不检测。 压机开启【吸排异常检延】后，若吸气温度>排气温度+5，则报警。	停压机 “非降频停机”	
制 冷 蒸 发过低	A/M	制冷运行时： 压机开启前 3 分钟，若阀后温度<【制冷蒸发过低】-3℃且维持 30 秒，或压机开启 3 分钟后，若阀后温度<【制冷蒸发过低】且维持 30 秒，报警； 当阀后温度>【制冷蒸发过低】+2，允许复位；	停压机 “非降频停机”	
降 频 开 关	A	当“降频开关”触发时，压机进入强制降频保护； 当“降频开关”恢复时，压机恢复正常频率控制。		
送 风 压 差	M	送风机开启即检测送风压差； 当开关持续断开【一般故障延时】，报警。	停压机	
变 频 水 泵警告	A			
变 频 水 泵故障	M		停压机 “非降频停机”	
R290 泄 露	M	当【R290 传感器编码】不为“0”才检测 当传感器检测到 R290 浓度过高时，报警	停压机 “非降频停机” 关闭辅助电加热 关闭底盘电加热 关闭曲轴电加热 风机以最小转速运行	检查机组冷媒管路情况
传感器故障				
环 境 温 度 探 头 故障	A	上电后检测。	停压机	检查探头是否连接正常； 检查温度探头是否正常。
回 温 温 度 探 头 故障	M			

出 温 温 度 探 头 故障	M			
水 箱 温 度 探 头 故障	A			
缓 冲 水 箱 探 头 故障	A			
流 量 传 感 器 故 障	A			
翅 片 温 度 探 头 故障	M			
排 气 温 度 探 头 故障	M			
吸 气 温 度 探 头 故障	M			
阀 后 温 度 探 头 故障	M			
防 冰 温 度 探 头 故障	A			
经 济 器 进 温 探 头	A			
经 济 器 出 温 探 头	A			
低 压 压 传故障	M			
高 压 压 传故障	M			
R290 传 感 器 故 障	A			

B-2 变频器类故障:

故障序号	故障名称	可能的故障原因	排除方法
Er.ocb (1)	起动瞬间过流 Overcurrent at start	压机型号参数与实际不匹配	检查压机型号与型号参数
		对旋转中的压机进行再起动	等压机完全停止后再起动
		UVW 输出线间有短路或对地短	检查 UVW 输出线是否短路
		逆变模块有损坏	寻求服务
Er.ocA (2)	加速运行过流 Overcurrent during acceleration	压机型号参数与实际不匹配	检查压机型号与型号参数
		电网电压过低	检查输入电源
		变频器功率太小	选用功率等级大的变频器
		加速时间太短	延长加速时间
Er.ocd (3)	减速运行过流 Overcurrent during deceleration	压机型号参数与实际不匹配	检查压机型号与型号参数
		变频器功率偏小	选用功率等级大的变频器
		减速时间太短	延长减速时间
Er.ocn (4)	恒速运行过流 Overcurrent during constant-speed operation	压机型号参数与实际不匹配	检查压机型号与型号参数
		电网电压低	检查输入电源
		负载异常	进行负载检查
		变频器功率偏小	选用功率等级大的变频器
Er.ouA (5)	加速运行过压 Overvoltage during acceleration	输入电压过高	检查输入电源
		对旋转中的压机进行再起动	等压机完全停止后再起动
		压机型号参数与实际不匹配	检查压机型号与型号参数
Er.oud (6)	减速运行过压 Overvoltage during deceleration	输入电压过高	检查输入电源
		压机型号参数与实际不匹配	检查压机型号与型号参数
		减速时间太短	延长减速时间
Er.oun (7)	恒速运行过压 Overvoltage during constant-speed	输入电压过高	检查输入电源
		压机型号参数与实际不匹配	检查压机型号与型号参数
		加减速时间设置太短	适当延长加减速时间
Er.ouE (8)	待机时过压 Overvoltage in	输入电压过高	检查输入电源
		直流母线电压检测电路故障	寻求服务
Er.dcl (9)	运行中欠压 Undervoltage during running	输入电压异常或运行时掉电	检查输入电源、接线
		输入缺相	检查输入电源、接线
		充电接触器损坏	检查并更换
Er.PLI (10)	输入缺相 (仅三相输入时有) Input phase loss	三相输入有缺相	检查安装配线
		输入三相不平衡	检查输入电压
		输出严重振荡	调整参数消除振荡
Er.PLo (11)	输出缺相 Output	输出 U、V、W 有缺相	检查输出配线, 检查电机及电缆
Er.FoP (12)	功率器件保护 Power device protection	压机型号参数与实际不匹配	检查压机型号与型号参数
		UVW 输出线间有短路或对地短	重新配线
		压机与变频器连线过长	加输出电抗器或滤波器
		有严重干扰或变频器损坏	寻求服务
Er.oHI (13)	变频器过热 Inverter overheating	环境温度过高	降低环境温度
		刚上电就故障, 可能温度探头损	寻求服务
		风道阻塞或风扇损坏	清理风道或更换风扇
		负载过大	检查负载或选用大功率变频器
Er.oLI (14)	变频器过载 (PFC 过	变频器温度过高	检查风扇、风道和环境温度

		加速时间太短	延长加速时间
		输入电压过低	检查输入电压
		压机型号参数与实际不匹配	检查压机型号与型号参数
Er.oLL (15)	电机过载 Motor overload	压机型号参数与实际不匹配	检查压机型号与型号参数
		压机堵转或负载突变过大	检查压机型号与型号参数
		输入电压过低	检查输入电压
Er.EEF (16)	PFC启动失败	启动系统后输入电网电压持续好几秒过低,造成 PFC 无法启动	检查输入电压
		PFC 模块自保护或电路异常	请断电几分钟后,重新上电再次启动,或寻求服务
Er.oLP (17)	电机负载过重 Motor load	电流超出负载过重检出水平并超过检出时间	检查压机型号与型号参数
Er.ULd (18)	电机速度过大 Motor over speed	压机运行转速超过上限速度的 1.1 倍	压机相序接反了,或未接压机 检查压机型号与型号参数
Er.Co1 (19)	电机D轴电流过大 Motor D-axis overcurrent	压机型号参数与实际不匹配	检查压机型号与型号参数
		压机停机时间过短就再次启动	停机几分钟后,再次启动
		电流检测回路异常	寻求服务
		PMSM电机退磁	更换电机
		压机定子绕组断线	检查电机定子电阻、更换电机
Er.Co2 (20)	电机Q轴电流过大 Motor Q-axis overcurrent	压机型号参数与实际不匹配	检查压机型号与型号参数
		压机停机时间过短就再次启动	停机几分钟后,再次启动
		电流检测回路异常	寻求服务
		PMSM电机退磁	更换电机
		电机定子绕组断线	检查电机定子电阻、更换电机
Er.EEP (21)	参数存储失败 Parameter saving	参数写入发生错误	断电后再上电重试,若问题仍然存在,请寻求服务
Er.CFE (22)	通讯异常 Communication error	控制板与变频驱动板通信线接	检查控制板与变频驱动板及接线
		通讯参数设置不当	检查通讯参数
		通讯干扰严重	检查通讯回路配线及接地
Er.ccF (23)	电流检测故障 Current test error	电流传感器损坏或电路异常	断电后再上电重试,若问题仍然存在,请寻求服务
Er.ArF (24)	PFC温度检测故障 Heat temperature test error for PFC	刚上电就故障,可能 PFC 测温探头损坏或断线,或电路异常。	断电后再上电重试,若问题仍然存在,请寻求服务
Er.Aco (25)	启动中电机堵转 Motor Lock at start	电机转子旋转波动超过限制,电	检查压机型号与型号参数
		电机停机时间过短就再次启动	停机几分钟后,再次启动
		电机启动及电机堵转检测参数	检查压机型号与型号参数
		PMSM电机退磁	更换电机
		电机定子绕组断线	检查电机定子电阻、更换电机
		运行负载过大	检查电机负载
Er.PGo (26)	运行中电机堵转 Motor lock during running	电机转子旋转波动超过限制,电	检查压机型号与型号参数
		电机停机时间过短就再次启动	停机几分钟后,再次启动
		电机启动及电机堵转检测参数	检查压机型号与型号参数
		PMSM电机退磁	更换电机
		电机定子绕组断线	检查电机定子电阻、更换电机
		运行负载过大	检查电机负载
Er.rHo (27)	散热温度检测故障 Heat temperature test	刚上电就故障,可能温度探头损坏或断线,或电路异常。	断电后再上电重试,若问题仍然存在,请寻求服务
Er.Abb (28)	失速(零速)故障	电机没有按指令运行起来。	检查压机型号与型号参数
Er.lo1 (29)	中断溢出1 Interrupt overflow 1	内部故障	寻求服务

Er.lo2 (30)	中断溢出2 Interrupt overflow 2	内部故障	寻求服务
Er.PnL (31)	启动中转子抖动过大 Rotor shake at start	电机停机时间过短就再次启动	停机几分钟后，再次启动
		电机启动及电机堵转检测参数	检查压机型号与型号参数
		PMSM电机退磁	更换电机
		电机定子绕组断线	检查电机定子电阻、更换电机
		运行负载过大	检查电机负载
Er.rr1 (32)	运行中转子抖动过大 Rotor shake during running	电机停机时间过短就再次启动	停机几分钟后，再次启动
		电机启动及电机堵转检测参数	检查压机型号与型号参数
		PMSM电机退磁	更换电机
		电机定子绕组断线	检查电机定子电阻、更换电机
		运行负载过大	检查电机负载
Er.PF1 (33)	PFC过流 PFC Overcurrent	输入电网电压低且超负荷运行	检查输入电源
		PFC电感线间有短路或对地短路，或PFC电路故障	检查PFC电感引出线或电感线圈是否短路，或寻求服务
Er.PF2 (34)	PFC峰值电流过大 PFC peak current	输入电网电压低且超负荷运行	检查输入电源
		PFC电感线间有短路或对地短路，或PFC电路故障	检查PFC电感引出线或电感线圈是否短路，或寻求服务
Er.PF2 (35)	PFC有效值电流过大 PFC rms current over	输入电网电压低且超负荷运行	检查输入电源
		压机负载过大或压机冷媒异常	检查机械系统、压机冷媒等，或寻求服务