

MW4808O34 Temperature Controlling System Instruction Manual

[PRODUCT MODEL]

Amendment

Date	Revision version	Change Contents	Modified By
2016-01-29	00	Initial release	
2016-02-26	01	1、 Range for cooling point 2、 Range for heating point	

P&N TECHNOLOGY

Content

1	Overview.....	2
2	Technical specification.....	3
2.1	Technical paramaters:	3
2.2	interface specification:	3
3	Temperature Control System Wiring.....	4
3.1	Electrical connection diagram.....	4
3.2	Electrical connection physical map.....	4
4	Product function.....	4
4.1	Self-test.....	4
4.2	Cooling.....	5
4.3	Heating.....	5
4.4	Internal circulation fan control.....	6
4.5	External circulation fan control.....	7
4.6	Dehydrogenating fan control.....	7
4.7	Fault Alarm.....	8
4.8	Remote Monitoring.....	8
5	Temperature control system interface.....	8
5.1	Power interface.....	8
5.2	Sensor Interface.....	9
5.3	TEC interface.....	9
5.4	Fan interface.....	9
5.5	Dehydrogenating Interface.....	9
5.6	Alarm Interface.....	10
5.7	Remote Monitoring Interface.....	10
6	LED Indicator light.....	11
7	Product usage.....	11
8	Operation flow chart.....	11

1 Overview

“MW4808O34 controller system” is designed for the TEC cabinet air conditioning with automatic switching of a cooling and heating temperature control system. Two ways for fan output, respectively used for internal circulation and external heat exchange; refrigeration device can automatically switch heating and cooling output; hydrogen exhaust fan output, for replacement of the air circulating inside; it has a variety of fault alarm , dry contact relay output and LED indication, as well as voltage protection and remote monitoring, a remote PC equipment to monitor the performance of the temperature control system.

2 Technical specification

2.1 Technical parameters:

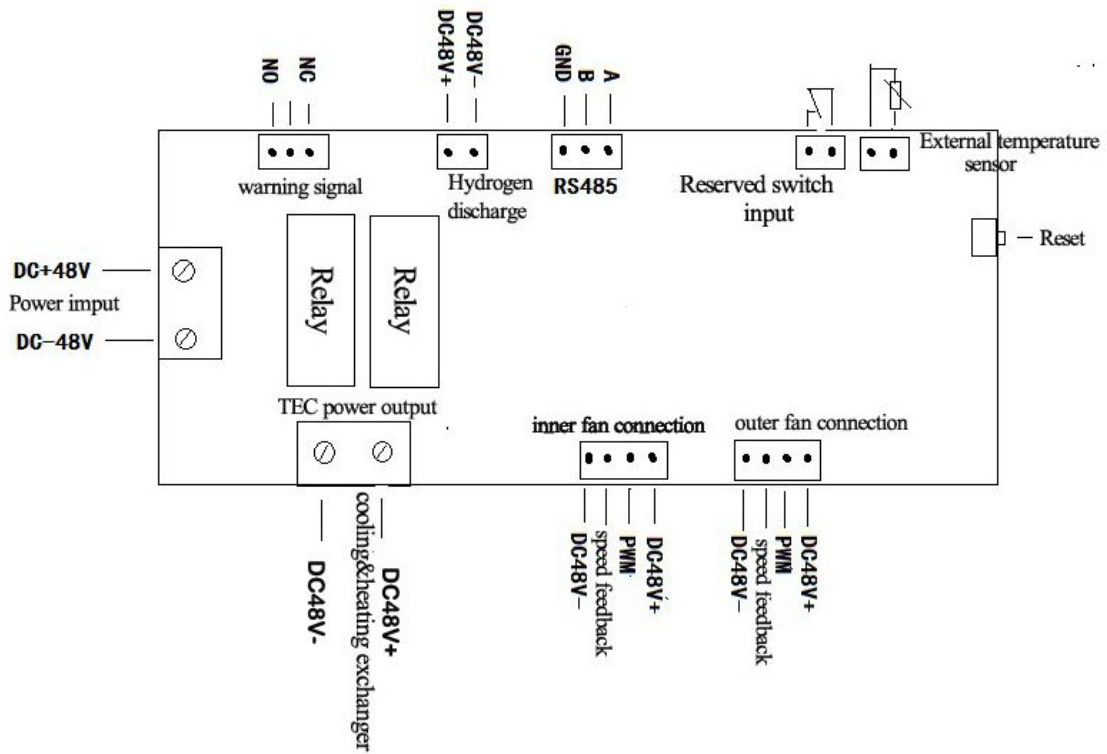
Technical Item	Unit	Parameters
➤Maximum voltage	VDC	60
➤Rated voltage	VDC	48
➤Rated current	A	8
➤Temperature range	°C	-40~110
➤Temperature precise tolerance	°C	±0.1
➤Hydrogen fan	VDC/A	48/3
➤Internal circulation fan	VDC/A	48/2
➤Internal circulation fan	VDC/A	48/2

2.2 Interface specification:

- 1)Power input DC48V.
- 2)NTC Sensor Interface
- 3)AC switch signal input interface (normally closed).
- 4)TEC working power output DC48V.
- 5)Exhaust fan hydrogen power MOS tube output DC48V
- 6)Inner fan Interface: Power +, PWM signal output, fan speed feedback signal, power -
- 7)Outer fan Interface: Power +, PWM signal output, fan speed feedback signal, power -
- 8)General alarm relay normally open / normally closed dry contact output
- 9)485 communication interface GND (do not take), 485B (T / R -), 485A (T / R +)
- 10)Display Interface (reserved)
- 11)Smoke control interface (reserved)
- 12)Humidity control interface (reserved)
- 13)Access control interface (reserved)

3 Temperature Control System Wiring

3.1 Electrical connection diagram



3.2 Electrical connection physical map

Please read 《MW4808O34 controller wiring scheme》

4 Product function

4.1 Self-test

After power (or press the RESET button) Start self-test function control panel, temperature sensor -

outside the fan - internal cooling fan --TEC. Green light flashes when the self-test, hardware failure is detected by the red light for about 5 seconds, the self-test completed:

- a. No alarm Green The normal operation of the control panel.
- b. When an alarm is often red Steady green

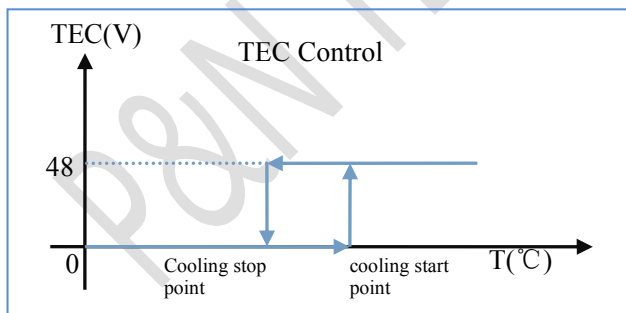
4.2 Cooling


When the cabinet internal temperature is higher than opening point of refrigeration ,it starts the cooling operation, when the temperature is below the cabinet refrigeration stop point, the cooling operation is stopped. When setting the cooling temperature point, stop point temperature should be below opening point temperature.

Cooling point parameters setting

Parameters	Default value	Setting Range	Description	Description for setting point
Refrigeration opening point	25	[20~45]	°C	The temperature point is set when the refrigeration operation starts to run
Refrigeration stopping point	15	[10~35]	°C	The temperature point is set when the refrigeration operation stops to run

Cooling Chart:



 Turn on TEC and closed it again, the outer circulation fan will delay 20 seconds before shutdown.

4.3 Heating

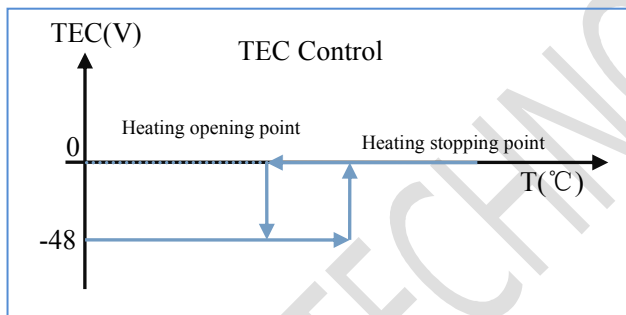
It begins the heating operation when the cabinet internal temperature is below the heating opening point. The cooling operation is stopped when the temperature is higher than the cabinet cooling stop point. Stopping point temperature should be higher than opening point


temperature, when set the cooling temperature point.

Heating parameters setting

Parameters	Default value	Setting Range	Description	Description for setting point
Heating opening point	5	[0~15]	°C	The temperature point is set when the heating operation starts to run
Heating stopping point	15	[10~20]	°C	The temperature point is set when the heating operation stops to run

Heating running chart:

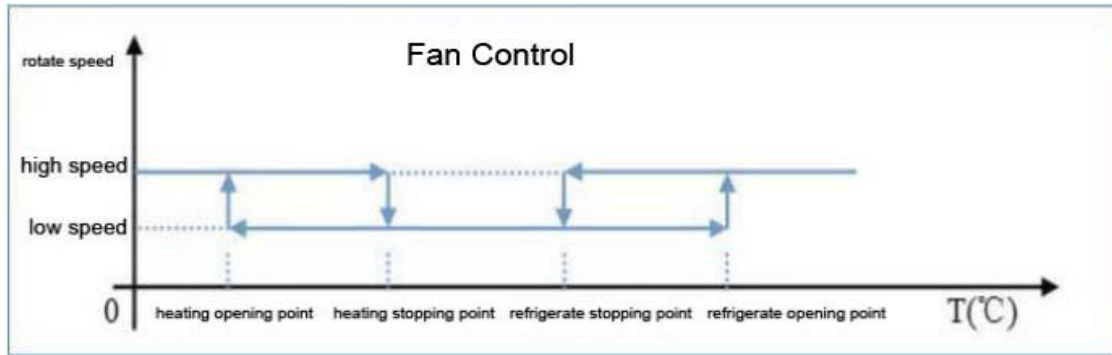


 Turn on TEC and closed it again, the outer circulation fan will delay 20 seconds before shutdown.

4.4 Internal circulation fan control

In the range of refrigerate point and heating point, internal circulation fan is running slowly at 2500 rpm (speed can set as your own). When the temperature reach refrigerate point or heating point, TEC start to work, internal circulation fan is running quickly at 2500 rpm (speed can set as your own)

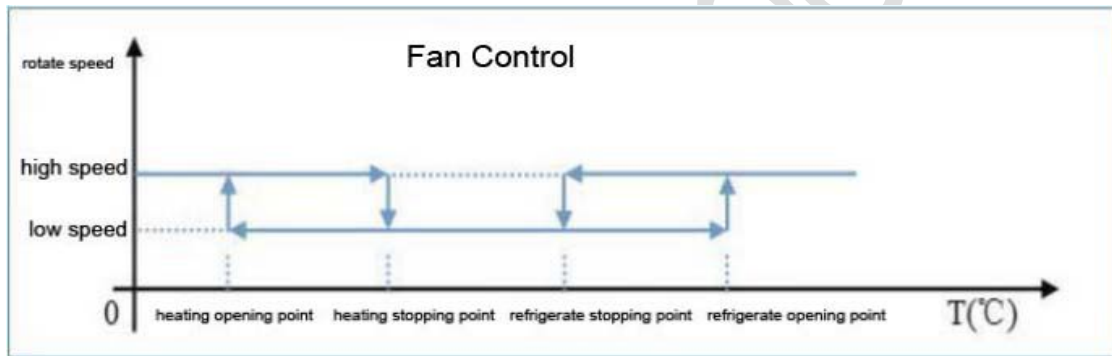
Internal circulation fan control chart



4.5 External circulation fan control

When the temperature reach refrigerate point or heating point, TEC start to work, external circulation fan is running quickly at 2850 rpm(speed can set as your own).

External circulation fan control chart



⚠ Turn on TEC and closed it again, the outer circulation fan will delay 20 seconds before shutdown.

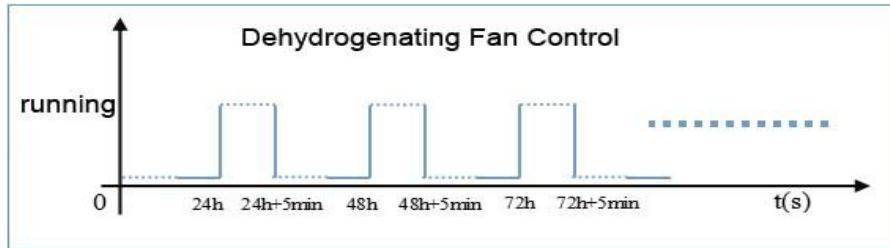
4.6 Dehydrogenating fan control

Dehydrogenating fan output can be directly with DC ventilator. Hydrogen discharge time is 5 minutes, 24 hours interval is adjustable.

Dehydrogenating parameters setting

Parameters	Default Value	Set Range	Descrip tion	Set Point Description
Dehydrogenati ng period	24	[1-100]	hours	dehydrogenating period of start-up
Dehydrogenati ng working time	5	[1-30]	minutes	dehydrogenating opening time

Dehydrogenating fan working control chart




 Dehydrogenating fan connector is “active output”, please do not short connect it.


4.7 Fault Alarm


The temperature control system has the function of fault detection and fault alarm. Below is the condition and phenomenon for alarm:

Parameters	Default Value	Set Range	Unit	Description	External Fan	The Reaction of TE When Alarming
high temperature alarm	55	[30 –55]	°C	trigger point of high temperature alarm	Keeping working	Keeping working
low temperature alarm	0	[-40 –10]	°C	trigger point of low temperature alarm	Keeping working	Keeping working
Internal recycle fan default alarm	--	--	--	/	Stop working	Stop working
Extrinsic cycle fan default alarm	--	--	--	/	Stop working	Stop working
TE module default alarm	--	--	--	/	Stop working	Stop working
Over voltage default alarm	59	--	--	Voltage input≥59VDC	Keeping working	Keeping working
Under voltage default alarm	44	--	--	Voltage input≤44VDC	Keeping working	Keeping working
NTC sensor alarm	--	--	--	Sensor fault	Keeping working	Keeping cooling

 If any of the above condition appears, the indicator light of alarm **turn red**.

Warning output: Divided into “relay dry contacts output” and “LED indicator light output”.

 Relay dry contacts please see the chapter of <temperature control system interface>.

 LED indicator light output please see the chapter of <LED indicator light>.

4.8 Remote Monitoring

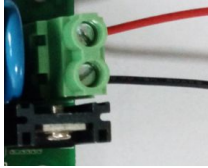
Temperature control system has the function of RS485 and remote monitoring, it can monitor the condition of temperature alarm control system in real time through remote monitor software.

5 Temperature Control System Interface

5.1 Power Interface

The chart below, you can find the definition of power interface, and also please consult the picture below.

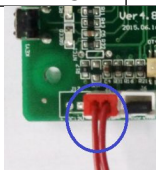
Interface Name	Interface Function	Wire Specification	Remarks
Power+	The DC Power input into positive plate	18AWG Red	
Power-	The DC Power input into negative plate	18AWG Black	



5.2 Sensor Interface

The chart below, you can find the definition of sensor interface, and also please consult the picture below

Interface Name	Interface Function	Wire Specification	Remarks
NTC	NTC		No distinction electrode
NTC	NTC		No distinction electrode



5.3 TEC Interface

The chart below, you can find the definition of TEC interface, and also please consult the picture below.

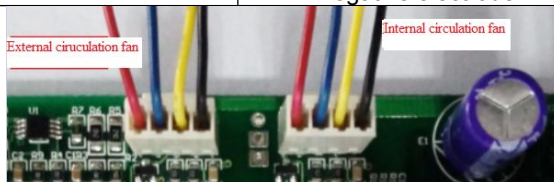
Interface name	Interface function	Wire specification	Remarks
TEC+	TEC input into positive electrode	18AW Red	
TEC-	TEC input into negative electrode	18AWG Black	



5.4 Fan Interface

The chart below, you can find the definition of fan interface, and also please consult the picture below.

Interface Name	Interface Function	Wire Specification	Remark
DC48V+	The fan interface input into positive electrode	RED	Internal (External)
PWM speed governing	Fan speed-transfer	BLUE	Internal (External)
speed feedback	Fan speed test	YELLOW	Internal (External)
DC48V-	The fan interface input into negative electrode	BLACK	Internal (External)




5.5 Dehydrogenating Interface

The chart below, you can find the definition of dehydrogenating interface, and also please consult the

picture below.

Interface Name	Interface Function	Wire Specification	Remark
H+	The Dehydrogenating fan input into positive electrode	Red	
H-	The Dehydrogenating fan input into negative electrode	Blue	

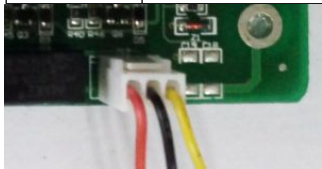



 For battery-free freezer, this interface can be ignored.


5.6 Alarm Interface

The chart below, you can find the definition of fan interface, and also please consult the picture below.

Interface Name	Interface Function	Wire Specification	Remark
NO	Normally open dry contact	Red	The internal switch connected to COM in case of failure
COM	common port	Black	Public interface
NC	Normally closed dry contact	Yellow	The internal switch connected to COM under no-fault



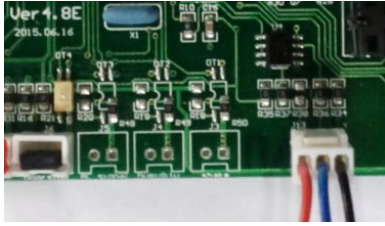
 If alarm Interface is not connected, it will not affect the function of temperature control system.

 Dry contact, referring to the passive output. Only a relay switch. Specific reference to the connection 《MW4808034 temperature control system wiring diagram》

5.7 Remote Monitoring Interface

The chart below, you can find the definition of remote monitoring interface, and also please consult the picture below.

Interface Name	Interface Function	Wire Specification	Remark
A	RS485 differential positive electrode	RED	
B	RS485 differential negative electrode	BLUE	
GND	Ground Wire	BLACK	can be left open



6 LED Indicator Light

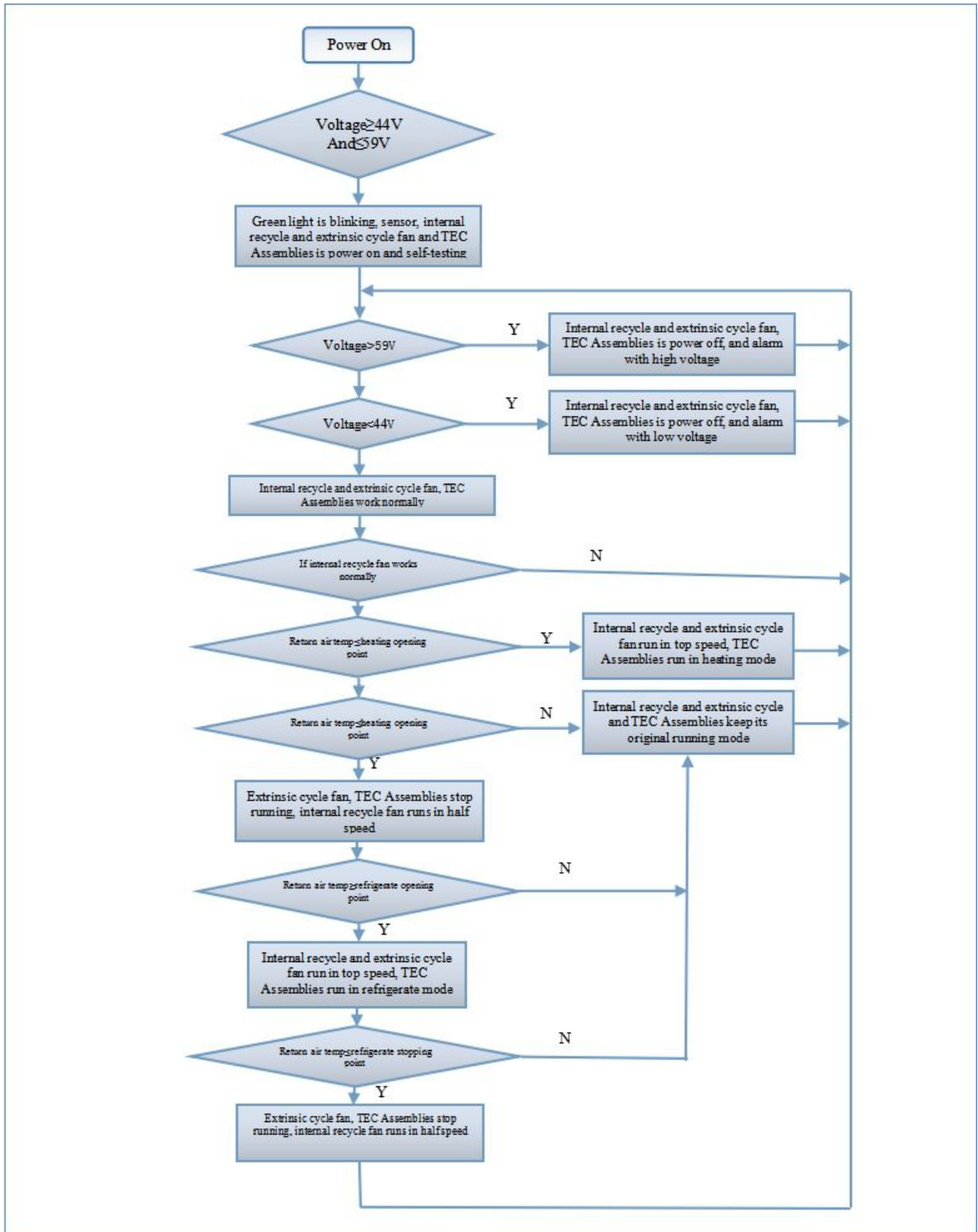
There are two kinds of color on the control panel, below is the definition:

LED	Statements	Colors	Indicator status	Definition
Power indicator light	Normal operation	GREEN	LIGHTING	Normal operation
			FLASHING	Self test
			OFF	No power
Alarm indicator light	Alarm	RED	LIGHTING	Default
			OFF	No alarming

7 Product usage

- 1、Interface Operation(Reserved)
- 2、Remote Control Operation
Refer to “MW temperature controlling system instruction manual”

8 Operation Flow Chart





鹏南电子科技（厦门）有限公司
P&N Technology (Xiamen) Co.,Ltd.

地址：福建省厦门火炬高新区（翔安）产业区翔明路 28 号新飞大厦 5 楼 361101
ADD: 5/F Xinfei Building 28th Xiangming Road, Torch (Xiang'an) Hi-tech Zone, Xiamen Fujian China 361101.
Tel: +86-592-352 1988 Fax: +86-592-352 1989
Web: www.pengnantech.com www.pntech.cc