

Wired Control System

Bluetooth / Timer / Electronic Switch / Dimmable / Group Control



The wired control system was developed by RS485 bus communication protocol. It's mainly composed of the main controller and RS485 adapter board. We also developed the temperature and humidity meter accessories for people easy to check the growing environment.

The main controller uses 24-bit true color touch screen to realize human-machine interaction, making the control operation more simple and convenient.

The RS485 adapter board receives the control signal from the main controller and converts it into 0-10v control signal to realize the switch and dimming control of lamps.

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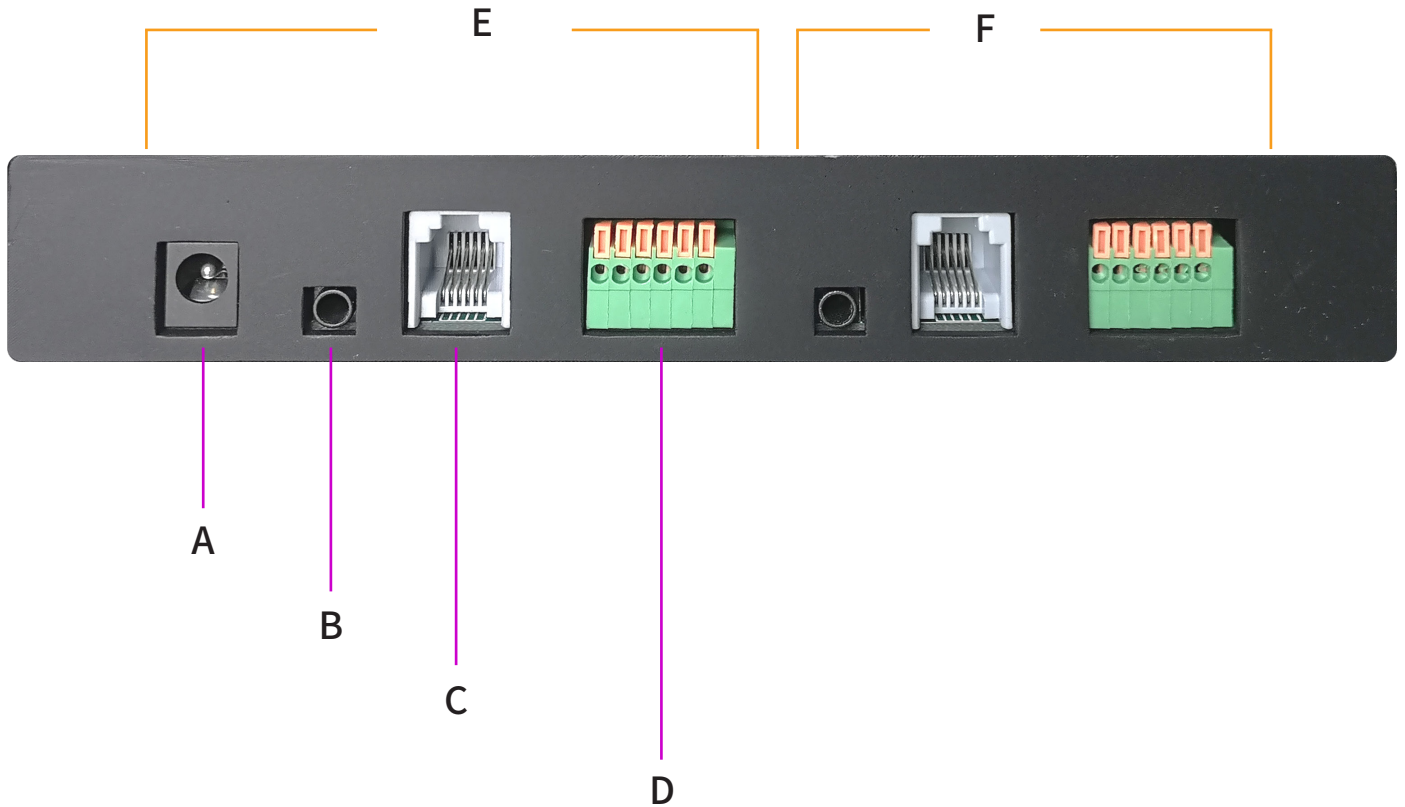
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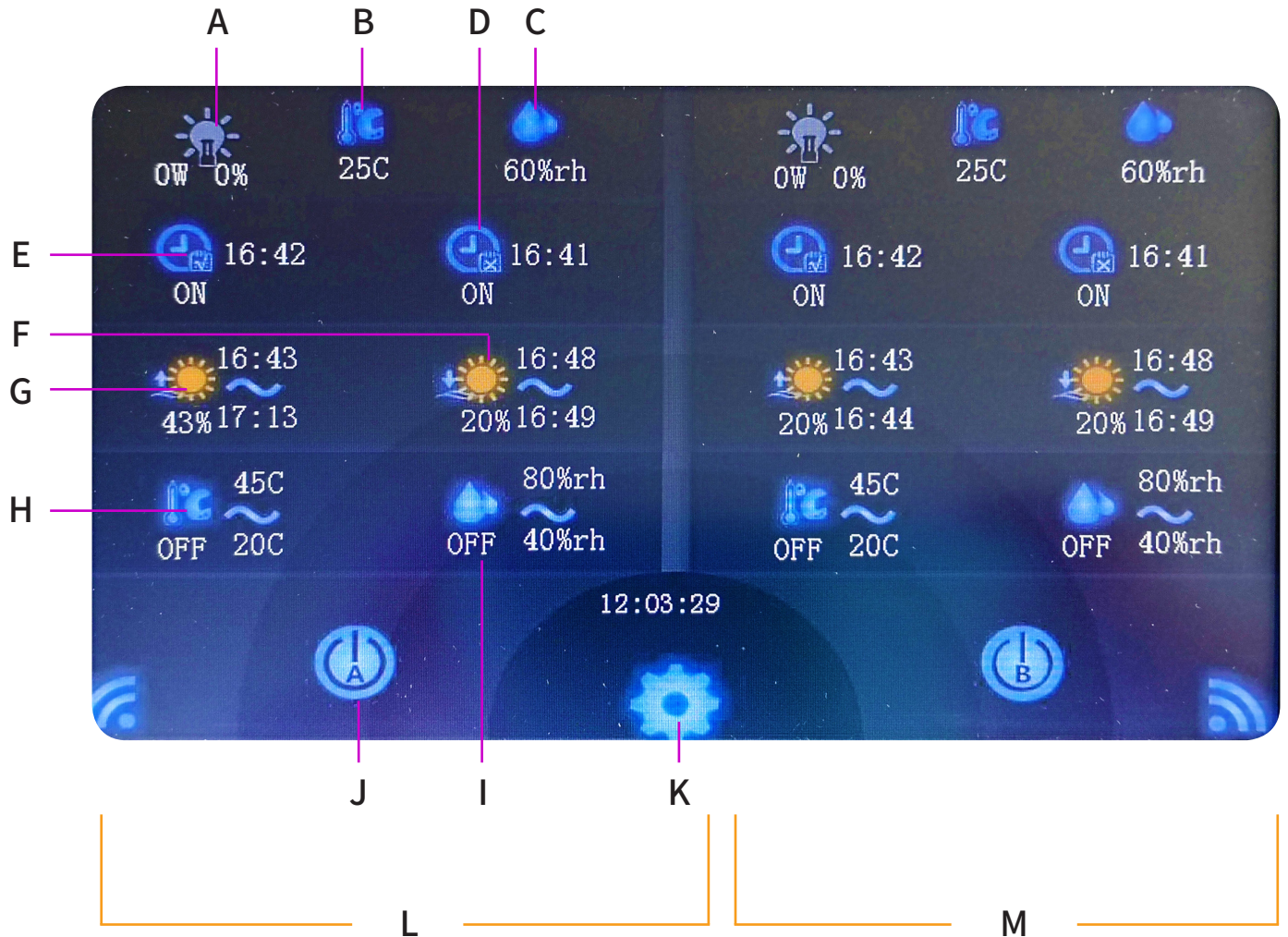
HARDWARE INTERFACE BLOCK DIAGRAM



A	Power Input DC 5V-12V
B	Audio input port for external temperature and humidity sensor
C	RJ11 interface for RS485 communication differential line connection
D	Provide two external on-off switch(open-loop and closed-loop) signals for HVAC system and dehumidifier.
E	Zone A
F	Zone B, the function is completely symmetrical with zone A

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OPERATION INTERFACE INTRODUCTION BLOCK DIAGRAM



A	Display the switch status, power value and dimming ratio of the current lamp. Highlight it as on, and gray it as off.
B	Displays the current ambient temperature value.
C	Displays the current ambient humidity value.
D	The current timing off time is displayed. Press this key to enter the secondary page to set the timing off time.
E	The current timing power on time is displayed. Press this key to enter the secondary page to set the timing power on time.
F	Sundown light simulation display page, press this key to enter the secondary page for sundown mode parameter settings.

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OPERATION INTERFACE INTRODUCTION BLOCK DIAGRAM

G	Sunrise light simulation display page, press this key to enter the secondary page for Sunrise mode parameter settings.
H	Display the high and low thresholds of the current temperature. Press this key to enter the secondary page to set the high and low thresholds of the temperature.
I	The high and low threshold value of current humidity is displayed. Press this key to enter the secondary page to set the high and low threshold value of humidity.
J	Switch the light button, press this button to realize the real-time switch of the light.
K	Press this button to enter the system setting page.
L	Zone A.
M	Zone B, the function is completely symmetrical with zone A.

THE CONTROLLER ELECTRICAL PARAMETERS

This is the main controller, it's responsible for reading temperature and humidity data regularly, control command transmission, data communication, human-machine interaction, etc.

Its main electrical indicators and interface definitions are shown in the following table:

	Item	Technical Parameters	Remark
Electrical parameters	Input Voltage	DC 5V--12V	
	Input Current	$\leq 0.5A$ at DC 12V	
	Radio frequency	ISM Band 2.4~2.5GHz	
	Indoor communication distance	50m	
	Radio transmitted power	+4dBm (Max)	
	Receive Sensitivity	-93dBm at 1Mbps	
	Network Topology	RS485 bus protocol for networking	

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THE CONTROLLER ELECTRICAL PARAMETERS

Item		Technical Parameters	Remark
Interface definition	Power	DC-005 electrical socket	Power DC inlet
	PJ-313*2	Audio interface	For the external temperature and humidity sensor
	RJ11*2	RS485 communication interface	For the connection of the main controller and RS485 adapter board
	KF141*2	Spring terminal	For external control
Structural parameters	L*W*H	201mm*130mm*39mm	
Other parameters	Working Temperature	-25 ~ 70 °C	
	Store Temperature	-40 ~ 85 °C	
	Relative Humidity	< 95 (No condensation)	

FUNCTION SUMMARY

The main controller uses 7 inch 24 bit true color resistance touch screen to realize human-machine interaction, The main functions and interface operation are briefly explained as below.

DIMMAIN FUNCTIONENSIONS

The main interface is divided into two completely symmetrical area controls, A and B, which are convenient to meet the needs of partition control.

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Current ambient humidity.

Current ambient temperature.

Current power and Current dimming ratio.

Current timing for turn on/off Press this button to enter the secondary page, so that we can set for timing on and timing off respectively, the secondary page will introduces in next segment.

sunrise and sunset light simulation page,press this button to enter the secondary page for setting parameters of sunrise and sunset modes, the secondary page will introduces in next segment.

Current high and low threshold values for temperature and humidity, press this button to enter the secondary page to set the high and low threshold value of temperature and humidity. The secondary page will introduces in next segment.

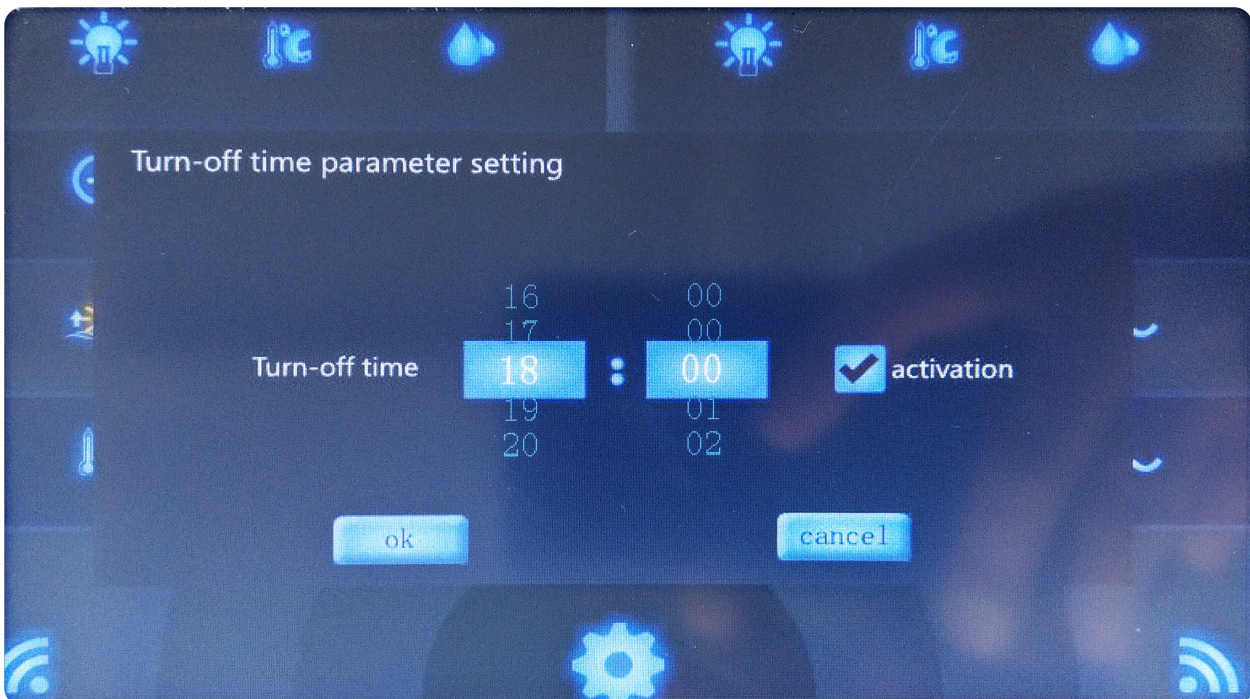
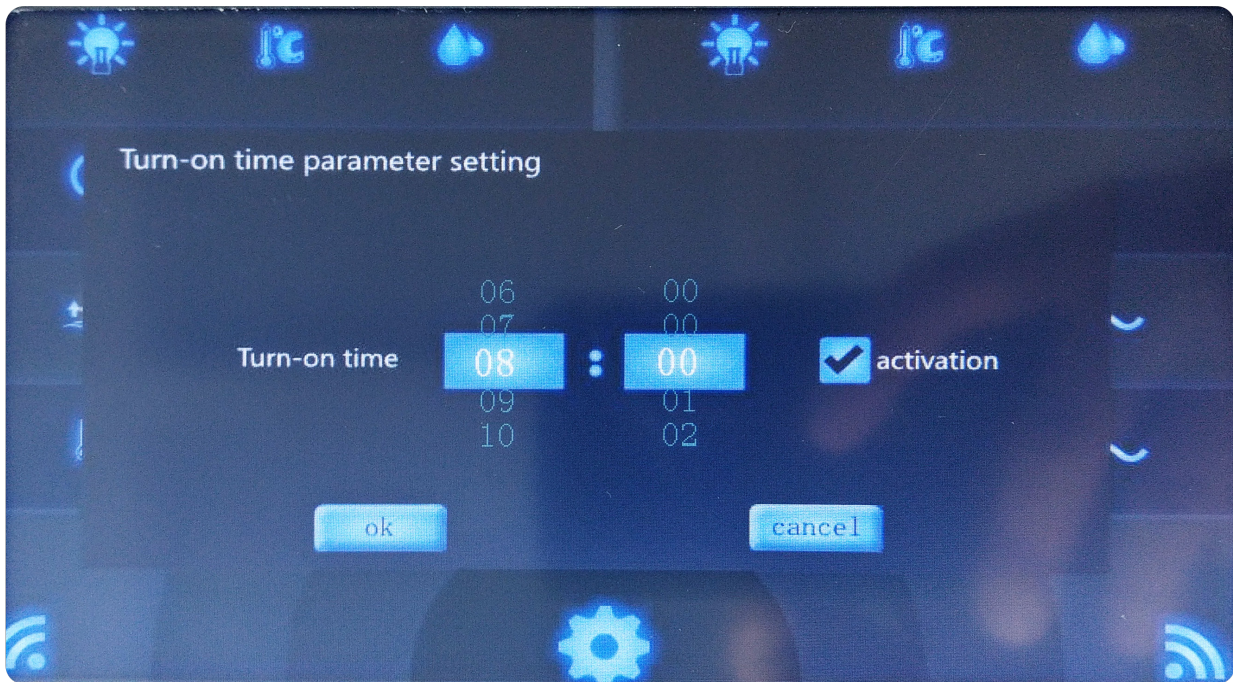
Turn on/off button,press this button to turn on/off the lights in real time.

This key is the enter system page button. It will introduces in next segment.

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TIMING SWITCH SETTING INTERFACE

It belongs to the secondary page, which is mainly used to set the timing for turn on/off of light regularly, as following picture:

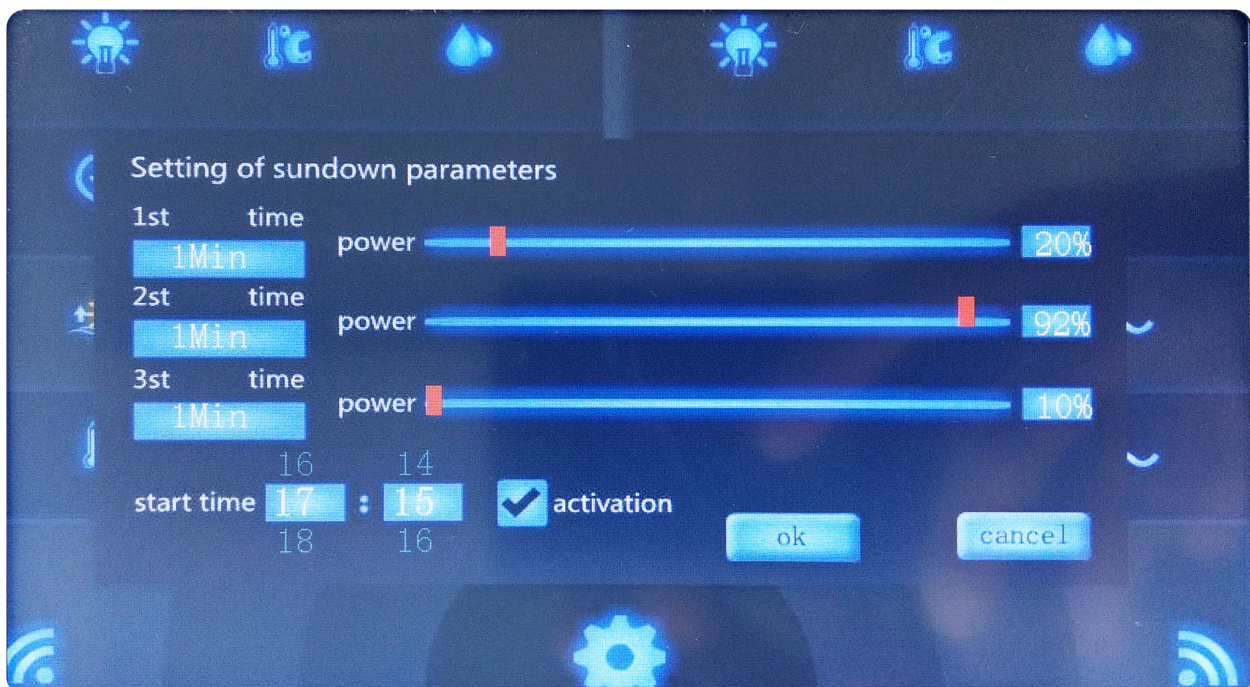


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Slide the number to input the timing switch hours and minutes. After setting, "activation" needs to be clicked to enable this function. Press "OK" to exit the secondary page after setting.

SUNRISE AND SUNSET SETTING INTERFACE

The simulation of sunrise and sunset is mainly used to set the lighting changes during the simulation of the rise and fall of the sun, which is basically to set the dimming value of different time periods.



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The start time is setting for the local sunrise or sunset time, 1st time, 2nd time and 3rd time are respectively the duration of each segment. The corresponding scroll bar is the dimming ratio of the current period. After setting, "activation" needs to be clicked to enable this function. Press "OK" to exit the secondary page after setting.

THRESHOLD VALUES FOR TEMPERATURE AND HUMIDITY SETTING INTERFACE

The setting of temperature and humidity threshold is to set the high and low threshold of the current environmental temperature. When the temperature and humidity of the environment exceed the threshold range, peripheral equipment such as HVAC system and dehumidifier will be triggered to realize closed-loop automatic control.

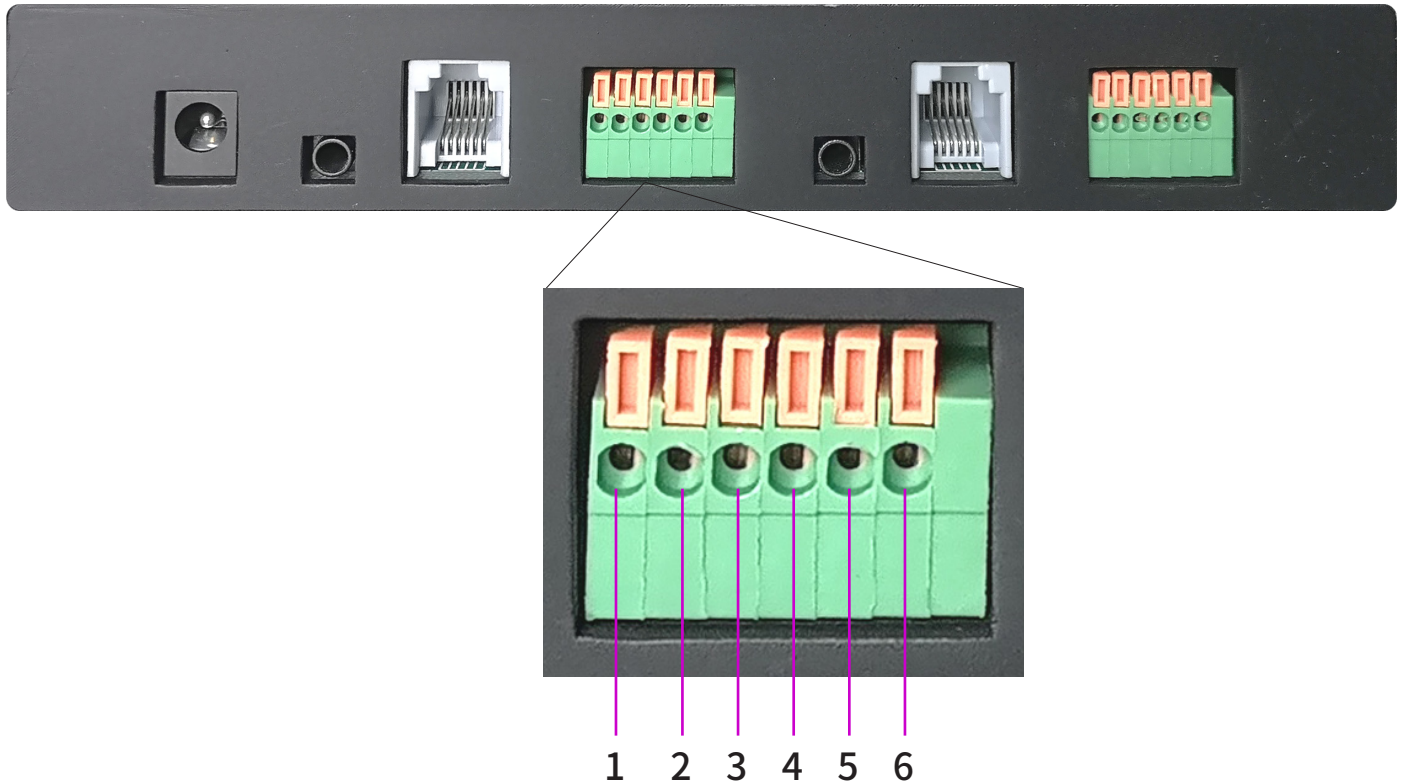


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Press the input box to enter the number, After setting, "activation" needs to be clicked to enable this function. Press "OK" to exit the secondary page after setting.

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We use open-loop and closed-loop signal to control HVAC system and dehumidifier machines. The 1,2,3 jacks are for HVAC system to control the ambient temperature. The 4,5,6 jacks are for dehumidifier to control the humidity.

Control the HVAC system:

If the temperature is ON your setting range, the “1” and “2” jacks will be disconnected, the “2” and “3” jacks will be connected.

But when the temperature is NOT on your setting range, the control system will be warning, and the “1” and “2” jacks will be connected, the “2” and “3” jacks will be disconnected.

Control the dehumidifier:

If the humidity is ON your setting range, the “4” and “5” jacks will be disconnected, the “5” and “6” jacks will be connected.

But when the humidity is NOT on your setting range, the control system will be warning, and the “4” and “5” jacks will be connected, the “5” and “6” jacks will be disconnected.

Also we can customize that DC 12V/3.3V high low-level output to control the machines.

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SYSTEM INTERFACE

In system page "**Current time**" is the system's time, slide the numbers in the input box to complete the setting of hours and minutes respectively.

"**Max power**" Is the maximum power value of the current working lamp.

"**Temperature type**" is the setting for the temperature unit. There are Fahrenheit and Celsius options, and highlight means select.

"**Module Addr**" is the reading and writing of module address, mainly used for reading and setting of lamp address in networking.

"**Work Mode**" is working mode , there are five modes: automatic, spring, summer, autumn and winter, and the default setting is automatic .

"**Master Addr**" Set the working address of the current main controller.

The default addr is 0. However, when a individual lamp need to be controlled in the network, the same address should be set to the main controller so that the lamp can be control individual. The default is unified control.

"**QR code**" bluetooth QR code for scanning, click "close" to back to the main page of the system.



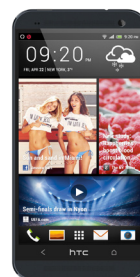
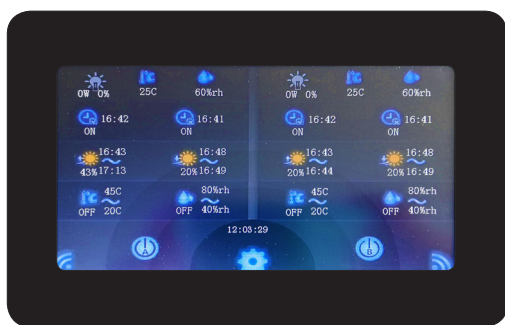
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DIAGRAM FOR APPLICATION

Wired Control System^{50Lamps}

WITH BLUETOOTH WIRELESS CONTROL FUNCTION

TIMER / ELECTRONIC SWITCH / DIMMABLE / GROUP CONTROL



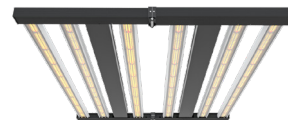
RJ11 Cable

Distance: Less than 15 meters,
10 meters for default.

**MAX 100PCS
for Each Zone**



50PCS



2 meters for default.

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TEMPERATURE AND HUMIDITY METER

The thermohygrometer uses standard audio cable interface for power supply and data output, and the main controller provides real-time temperature and humidity data of the environment.



Item		Technical Parameters	Remark
Electrical parameters	Power	DC 3.3V±0.2V	Power DC inlet
	Working Current	≤ 10mA	
Interface definition	PJ-313	Temperature and humidity power supply input, temperature and humidity data output	DC 3.3V Input temperature and humidity data output
Structural parameters	L*W*H	5mm*9mm*4mm	
Other parameters	Working Temperature	-25 ~ 70 °C	
	Store Temperature	-40 ~ 85 °C	
	Relative Humidity	< 95 (No condensation)	