

# Prosinno International Limited

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## Agricultural Greenhouse Temperature & Humidity Controller Instruction

### Product Description

Item name: Agricultural Green house Temperature&Humidity Controller

Item number: P-TH6

### Parameter:

Power supply: 12VDC/1A

Temperature range: -40°C~+100°C

Temperature accuracy:±0.5°C

Humidity range: 0-100% RH

Humidity accuracy: ±1%RH

Communication Interface:RS485

Communication distance: 1200m

Storage temperature:-20-60°C

Display: LCD

Installation: wall-hung

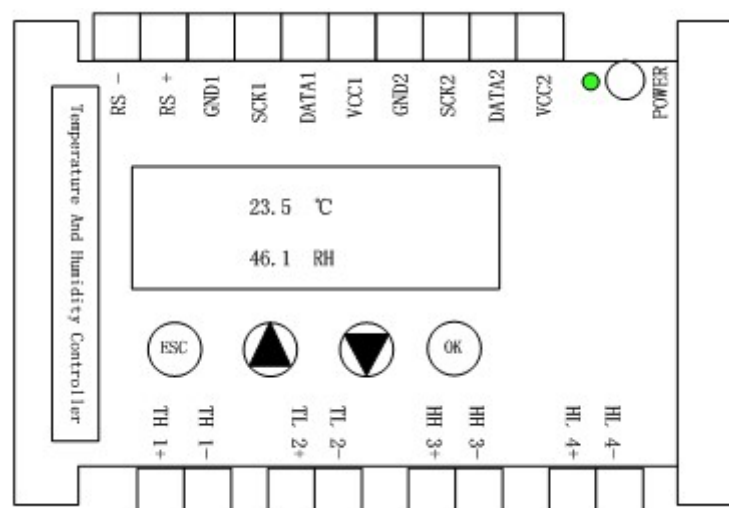
Size: 145x90x37

### Introduction:

The accurate control of temperature and humidity is a very important condition for the high efficient productivity of agricultural greenhouse. The daily data of temperature and humidity in the greenhouse is influenced by the weather, warming, and ventilation, so the item is specially designed to control them accurately, not only to set the maximum and minimum but also to control the outputting equipments such as: fan, heater, dehumidifier, humidifier when they're beyond the preset data to keep the crops in their required environment. What's more, P-TH6 can be connected to a host to make it possible for remote control so that it can improve efficiency and reduce the human resources.

### Function Introduction

#### 1. Item outline



Pic 1 Item outline

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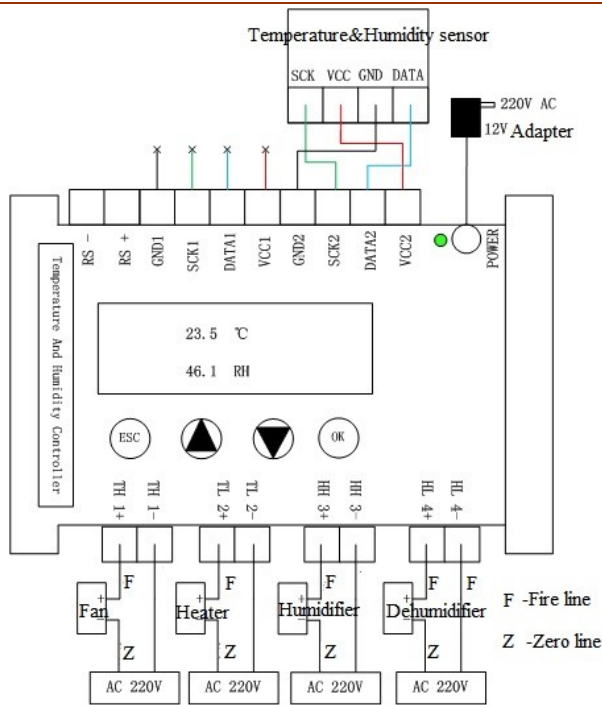
## 2. Interface Definition

Interface	Connected to
RS-	RS485 -
RS+	RS485 +
GND1	Non connection here/Pending
NC1	Non connection here/Pending
DATA1	Non connection here/Pending
VCC1	Non connection here/Pending
GND2	GND
SCK2	SCK
DATA2	DATA
VCC2	VCC
POWER	AC 12V
TH1+	High temperature outputting NO
TH1-	High temperature outputting NM
TL2+	Low temperature outputting NO
TL2-	Low temperature outputting NM
HH3+	High humidity outputting NO
HH3-	High humidity outputting NM
HL4+	Low humidity outputting NO
HL4-	Low humidity outputting NM

## 3. Function Instruction

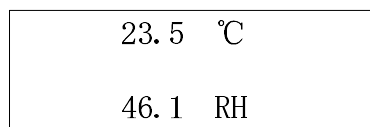
- The item use high sensitivity temperature and humidity sensor to make sure of the accuracy.
- It supports 4 out putting, which can be separately connected to fan, heater, dehumidifier, humidifier etc.
- LCD panel makes it easier to check the data.
- There are 4 setting buttons:  — Save & Exit,  — Up,  — Down,  — Confirmation, You can adjust the temperature and humidity by these 4 buttons according to the demanding growth environment of the crops.
- To use MODBUS Communication Protocol and RS485 Communication mode to make data's remote transmission. Also can be connected to a host to make integrated control.
- There's matched application software to make sure remote control to improve the efficiency and reduce human resources.

## 4. Operational Instruction







### Pic2 Wire connecting

1. The four interface of the sensor should be correspond respectively to the signal input ports as shown in the Pic 2: VCC-VCC2、GND-GND2、SCK-SCK2、DATA-DATA2, and there's no connection for GND1、NC1、DATA1、VCC1.
2. TH1+、TH1- are the interfaces of High temperature controlling outputting , which are used to lower the indoor temperature and can be connected to inductive load like motor type; TH1+ should be connected to the positive pole of the fan while the TH1- to the firing line of AC 220 V, and the negative pole of the fan to zero line of AC 220 V as the pic2 above.
3. TL1+、TL1- are the interfaces of Low temperature controlling outputting , which are used to increase the temperature indoor, the connecting way is showed as picture above: TL1+ to the positive pole of the heater, TL1- to the firing wire of AC 220V, and the negative pole of the heater to the zero line of AC 220V.
4. HH1+、HH1- are the interfaces of High humidity controlling outputting, which are used to lower the humidity indoor. HH1+ should be connected to the positive pole of dehumidifier, while HH1- to the fire wire of AC 220V, and the negative pole of the dehumidifier to the zero line of AC 220V.
5. HL1+、HL1- are interfaces of low humidity controlling outputting, which are used to increase the humidity indoor. HL1+ should be connected to the positive pole of heater, while HL1- to the fire wire of AC 220 V, and the negative pole to the zero line of AC 220V.
6. RS+ should be connected to RS485+ while RS- to RS485 -.
7. After finishing the procedure above, please connect "POWER" to AC 220V by 12V adapter, then it starts to work.
8. When the controller get through the power, LCD will report real time data automatically. The first line is the data of temperature (°C) and the second line is the humidity data (RH) . As the following picture 3:



Pic 3 LCD screen

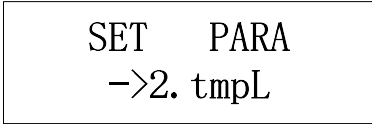
9. When need to set the highest and lowest value of the temperature and humidity, please press "UP"  —or "Down"  after you press "" and "" at the same time —to move to setting page, as Pic4 shows:

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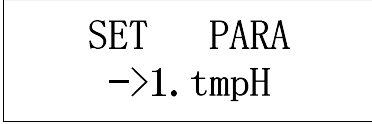
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SET PARA  
->2. tmpL


Pic 4 first setting page

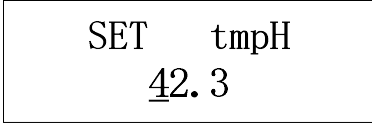
10. Then press "UP"  or "Down"  to set it. If need to set the maximum of the temperature, please choose to the maximum setting page, as the following pic 5 shows:



SET PARA  
->1. tmpH







Pic 5 the first setting page of maximum temperature setting

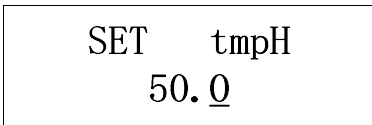
11. Press button , then it moves to the second setting page of Maximum temperature setting as following pic 6 shows: the cursor is flashing




SET tmpH  
42.3

Pic 6 the second setting page of maximum temperature setting

12. Press button , the cursor will move towards right to set the value. When the cursor flashing under a number then you can set it. For example, if you want to set the max temperature as 50.0 °C, first move the cursor under ten's digit, then press button "UP"  or "Down"  until it shows "5"; next press button "OK"  move the cursor under the digit, then press the button "UP"  or "Down"  until it shows 0, and according to the same way to set the decimal into 0, as following picture shows:



SET tmpH  
50.0

13. Next press button  to save and exit.
14. Each setting only can set one function, if you need to set next function just repeat the procedure from 9 to 13.

## Attention

- 1、 When connecting the sensor, please follow pic2 make sure it's all right.。
- 2、 When connection outputting controllers, please follow pic 2, the fire wire and zero line should be all right or it will be dangerous.
- 3、 The total loads of outputting should be within 1500W, or the controller will be burned up.
- 4、 Please make sure RS485 in right interface or it won't work normally.
- 5、 Please make sure that all the input, output and communication interfaces are in right connection, then connect the 12V Adapter to AC 220V in case of burning the Controller and cause the danger.。
- 6、 After finishing all the procedures, finally open the AC 220V switch, or it'll be dangerous.
- 7、 Please follow the operation instruction to set the temperature and humidity, or there'll be setting errors.