# XY-WTH1 Temperature and Humidity Controller - MCLC.IR

## Feature:

Model: XY-WTH1
Temperature range: -20 ° C ~ 60 ° C
Humidity range: 00%~100%RH
Control accuracy: 0.1 °C 0.1% RH
Detection probe: integrated sensor
Output type: relay output
Output capacity: up to 10A

## Function:

Product features are two main types of classification: the functions of temperature and humidity.
The function of temperature are as follows:

1. The automatic identification of work mode:
The system automatically according to the start/stop temperature, identify work mode;
Start temperature > stop temperature, cooling mode'C'.
Start temperature < stop temperature, heating mode 'H'.

2. Cooling mode:
When the temperature≥Start temperature, relay conduction, red led on, refrigeration equipment begin to work;
When the temperature≤Stop temperature, relay disconnect, red led off, refrigeration equipment stop to work;

3. Heating mode:
When the temperature≤Start temperature, relay conduction, red led on, heating equipment begin to work;
When the temperature≥Stop temperature, relay disconnect, red led off, heating equipment stop to work;

4. Temperature correction function OFE (-10.0 ~ 10℃):
The system is working for a long time and may be biased, through this function correctly, the actual temperature = measuring temperature + calibration value;

## How to set the start/stop temperature:

1. In the running interface, Long Press ' TM+ ' key more than 3 seconds, into the start temperature settings interface, can be modified by TM+ TM-key, to be modified, waiting for 6s automatic exit and save;
2. In the running interface, Long Press ' TM-' key more than 3 seconds, into the stop temperature settings interface, can be modified by TM+ TM-key, to be modified after the parameters, waiting for 6s automatic exit and save;

## The humidity function is as follows:

1. The automatic identification of work mode:
The system automatically according to the start/stop humidity, identify work mode;
Start humidity > stop humidity, dehumidification mode'D'.
Start humidity < stop humidity, humidification mode 'E'.

2. Dehumidification mode:
When the humidity ≥ Start humidity, relay conduction, green led on, dehumidification equipment begin to work;
When the humidity ≤ Shop humidity, relay disconnect, green led off, dehumidification equipment stops to work;

3. Humidificationmode:
When the humidity ≤ Start humidity, relay conduction, green led on, humidification equipment begin to work;
When the humidity ≥ Shop humidity, relay disconnect, green led off, humidification equipment stops to work;

4. Humidificationcorrection function RH (-10.0 ~ 10%):
The system is working for a long time and may be biased, through this function correctly, the actual humidity= measuring humidity + calibration value;

## How to set the start/stop humidity:

1. In the running interface, Long Press ' RH+ ' key more than 3 seconds, into the start humidity settings interface, can be modified by RH+ RH- key, to be modified, waiting for 6s automatic exit and save;
2. In the running interface, Long Press ' RH-' key more than 3 seconds, into the stop humidity settings interface, can be modified by RH+ RH- key, to be modified after the parameters, waiting for 6s automatic exit and save;

## Running Interface Description:

The working mode shows that the current mode ("H/C", "E/d") will be synchronized at the front of temperature/humidity, when the setting of temperature/humidity and stop temperature/humidity are completed.

Any relay conduction, the upper-left corner of the interface display "out", if the temperature relay conduction, the flashing display temperature working mode "H/C" to show reminders; if the humidity relay conduction, then flashing display humidity working mode "E/d", as a reminder;

## Other features:

1. Parameter remote read/set:
Through the UART, set the starting temperature/humidity, stop temperature/humidity, temperature/humidity correction parameters;

2. Temperature/Humidity Real-time reporting:
If the temperature/humidity reporting function is turned on, the product will detect the temperature/humidity and relay status by the 1s interval, and pass the UART to the terminal to facilitate data collection;

3. Relay enabling (by default):
If the relay is disabled, the relay remains disconnected;
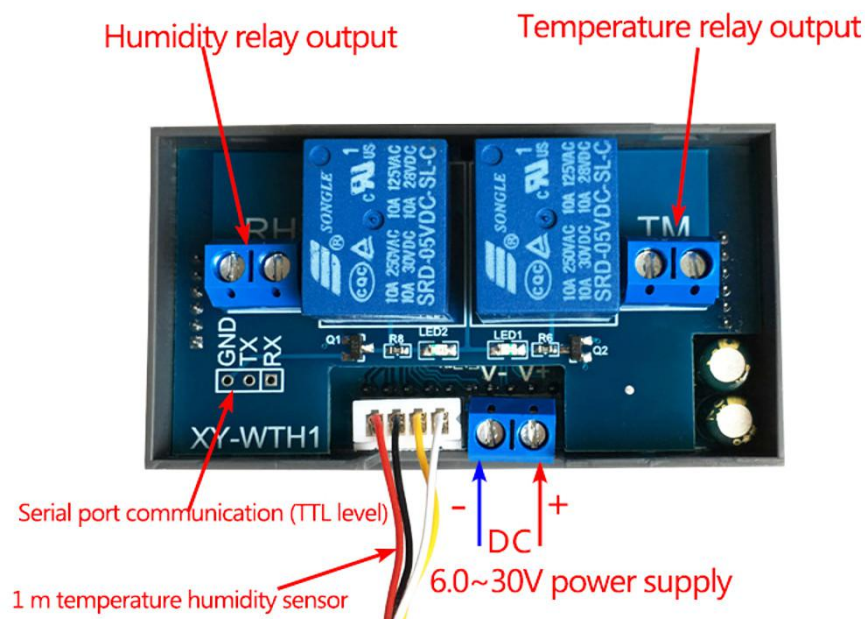
## How to modify the temperature/humidity correction value:

1. In the operating interface, double-click the ' TM+ ' key to enter the correction of the set interface, the downward display correction of the type, the upward display of specific values; (OFE: Temperature correction value RH: Humidity correction value)

2. At this time by a short press ' TM-' key, switch to modify the parameters, through the RH+ RH-key, modify the specific value of the support long press short;

3. When the parameters have been modified, double-click the ' TM+ ' key, exit the correction positive setting interface, and save the data;

## How to enable/disable relay:

In the running interface, Short press ' TM-' key, enable/disable the temperature relay(ON: enable OFF: disable), back to the running interface, if the temperature relay is disabled, the temperature symbol ' ℃ ' flashes to remind.
In the running interface, Short press ' RH-' key, enable/disable the humidity relay (ON: enable OFF: disable), back to the running interface, if the humidity relay is disabled, the humidity symbol '% ' flashes, as a reminder.

**Serial control(TTL level)**
**BaudRate:9600bps Data bits :8**
**stop bits :1**
**crc :none**
**Flow control :none**

| CMD | Description |
|---|---|
| Start | start data upload |
| Stop | stop data upload |
| Read | Read the param setting |
| T: ON | Temperature relay enable |
| T: OFF | Temperature relay disable |
| H: ON | Humidity relay enable |
| H: OFF | Humidity relay disable |
| TS: XX.X | Set start Temperature (-20.0~60.0) |
| TP: XX.X | Set stop Temperature (-20.0~60.0) |
| HS: XX.X | Set start Humidity (00.0~100.0) |
| HP: XX.X | Set stop Humidity (00.0~100.0) |
| TC: XX.X | Set Temperature Calibration (-10.0~10.0) |
| HC: XX.X | Set Humidity Calibration (-10.0~10.0) |

**Temperature and humidity Data upload format Description:**

Temperature format: Operating mode (H/C), temperature value, temperature relay status;
Humidity Format: Operating mode (E/D), humidity value, humidity relay status;

H, 20.5 ℃ , CL: Heating operating mode, the current temperature of 20.5 degrees, temperature relay disconnection state;

D, 50.4%,OP:Dehumidification working mode, current humidity 50.4%, humidity relay connection;



Any relay relay indicates OUT.



Setting startup temp   Current heating mode        Set up start humidity
Temp addition          Heating H/ cooling C   Detection temp   Humi reduction

Setting stop temp    Current humi mode   Detection humi   Set stop humidity /
Tempe stop /         Humidifying E/                       Humi stop /
tempe reduction      dehumidification D                   humi reduction