Iotzone's 8 Relays Module

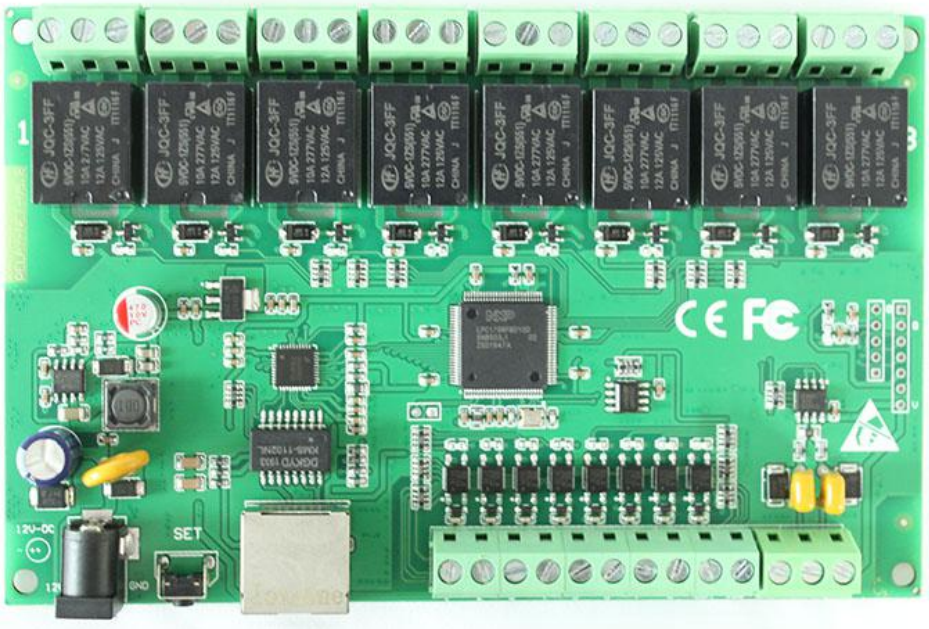
(optimized for temperature and humidity sensor with SHT30)

User Manual

Document date:20 November 2020

For firmware version:20 November 2020

For hardware version:V5.8



Description

V5+ 8 Channel Ethernet Relay module allows control electrical devices remotely through Ethernet using easy to use Web interface, TCP,UDP or MQTT interface and can be programmed using almost any language. With 8 relays that support up to 10A, 8 Digital inputs. This product works with any operating system that has a browser or has a TCP/UDP tool. This includes Windows,Linux,Mac OSX,Android etc..

Each relay/gpio can be individually controlled through the built in easy to use web interface or through any popular terminal emulator that supports TCP/UDP/MQTT protocol.The 8 Channel Ethernet Relay module is shipped with unique MAC address.This device also supports assigning and retrieving custom identification string that can be used for identifying individual device when there are large number of devices connected on the same network.All relay terminals are available on screw terminals which makes connecting external devices very easy.

Better choice for industry.This support TCP modbus commands to get or set relays status.

Features

10/100 M bit Ethernet interface with Link/Activity Led

Power supply voltage:9-24V /1A

8 SPDT relays that can handle up to 10A

8 digital inputs with 8 leds indicate

Plugs directly to the router or PC

Support DHCP and static IP

Easy to use Web interface with point and click Relay control

Human readable commands over TCP/UDP/MQTT/TCP modbus

The module response JSON data

HTTP API commands for getting/setting I/O states(with basic access authentication)

Programmable with almost any language

Built in serial unique string code(SN code)

A configurable function of load outputs state from EEPROM on boot

Each outputs can be named by user via web browser

Manually trigger relays by inputs,trigger relationship can be changed

Standard protocol:ARP,IP,ICMP(ping),DHCP,UDP,TCP,HTTP,MQTT

PCB parameters : FR4 / 1.5mm / two layers / metallized holes / HAL / white stamp / solder mask / Extra PCB openings for better voltage isolation / Doubled/PCB tracks for better voltage isolation

Software examples for nodejs, python,JAVA, .NET.

Technical parameters

Parameter	Value
Size	115X90X40mm
Power supply voltage	9-24V/DC
Relay channels count	8
Digital I/O count	8
Relay parameters	0-250VAC/10A
Optical protection for Inputs	Yes
LED(Relay status,Power on,Activity)	Yes
Save I/O states	Yes
DHCP	Yes
Network parameters	IP/Mask/Default Gateway/DNS
Password for web	Yes
Web server for configuration/access	Yes
TCP 、UDP、TCP modbus	Yes
MQTT	Yes
Modbus RTU(RS485)	Yes
HTTP Get method interface	Yes
Search device in local network	Yes
10/100M AUTO MDIX	Yes

Application

Automated test fixtures

Home and industrial automation

Remote device monitoring and control

Remote data logging

Management/monitoring for industrial

4. Product installation

4.1 Connect 8 Relays Module to computer

1. Connect the device with your computer by cable(support AUTO MDIX).

2. Supply with 9-24VDC/1A (depending on selected model) stabilized filtered power source.

3. Your initial computer IP should be in the device network.So it is recommend to be 192.168.1.1.

4. Open web browser and type 192.168.1.166 -defaule username is “admin”,default password is “12345678”.

5. Now you can access all the parameters and control relays via your web browser.

4.2 Connect 8 Relay Module to router

1. Do all the steps from 4.1
2. Adjust the network parameters from “System.cgi” Page:

IP -must be in same network as your router.(For example if router IP is 192.168.0.1 ,Relay module may be 192.168.0.166)

Gateway- usually this is the IP of your router.

DNS1/2- usually set same DNS in your router.

Password- modify it by user.

DHCP enable -when DHCP is enable, relay module can connect to

router directly.

3. Adjust the IP of your computer to be again in the router network.
4. Open the web browser and enter the IP or domain of the module.

4.3 Steps for loading default settings

In case the access of the module is lost,factory(default settings) may be applied and the module parameters will be returned back as those in 5.1 from the current document.

1. Turn off the power supply of the device
2. Keep press the button beside of the RJ45
3. Turn on the power supply of the device
4. Release the button after 30s
5. Turn off the power supply of the device
6. Turn on the power supply of the device

5. V5+ Default Settings

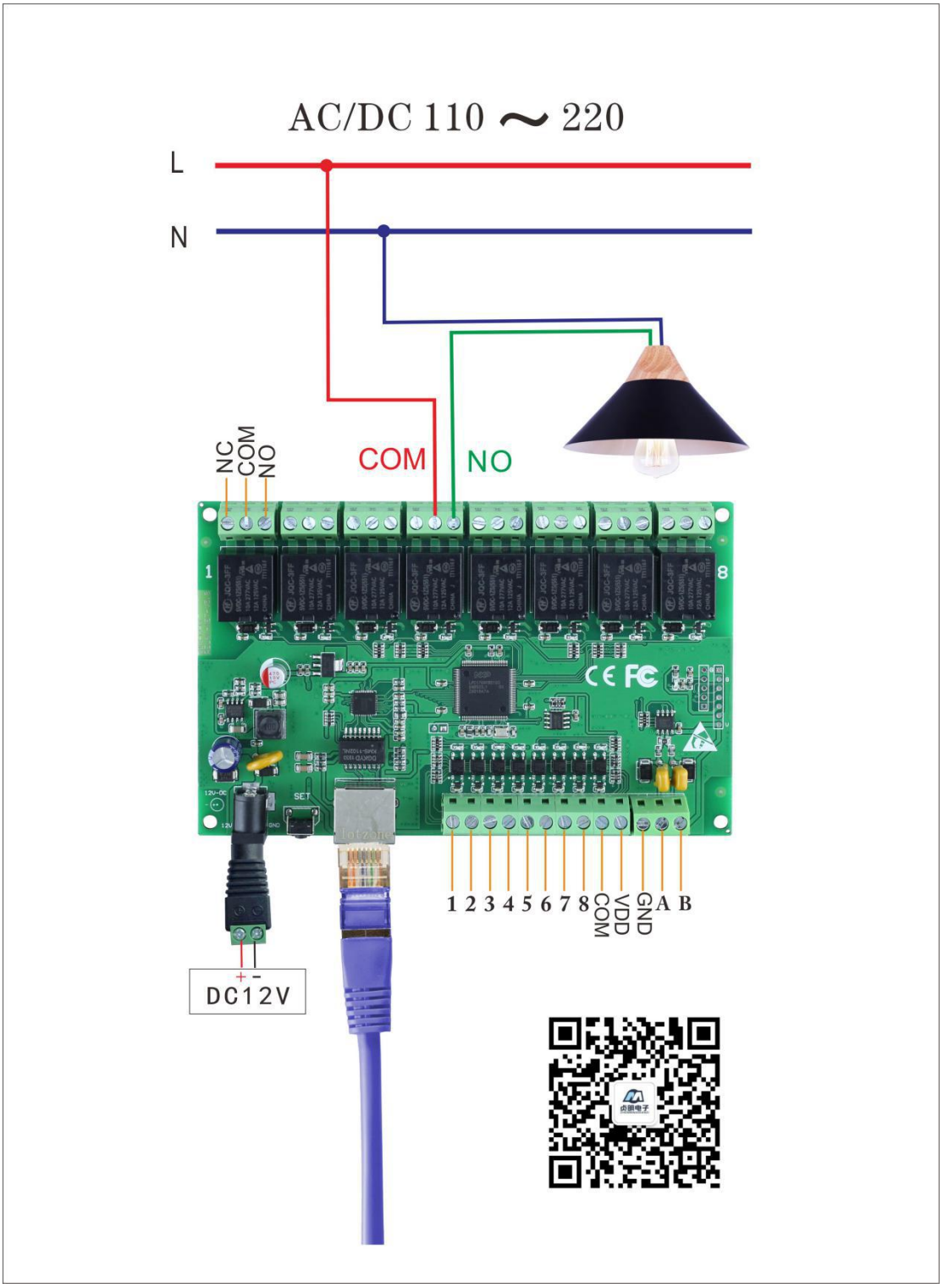
5.1 Table with default settings

These are the default(factory) settings of Module. When you buy the module you will receive it with these things. If not, please load

Parameter (according Web pages)	Value
DHCP	Disable
IP	192.168.1.166
Gateway	192.168.1.1
Mask	255.255.255.0
Domain	http://iotzone/ (in local network)
SN	Device unique serial number
WEB server	Enable
Web user/password	admin/12345678
HTTP port	80
TCP port	1234
UDP port	9128
TCP modbus port	502
MQTT	disable

the default settings(see 5.2).

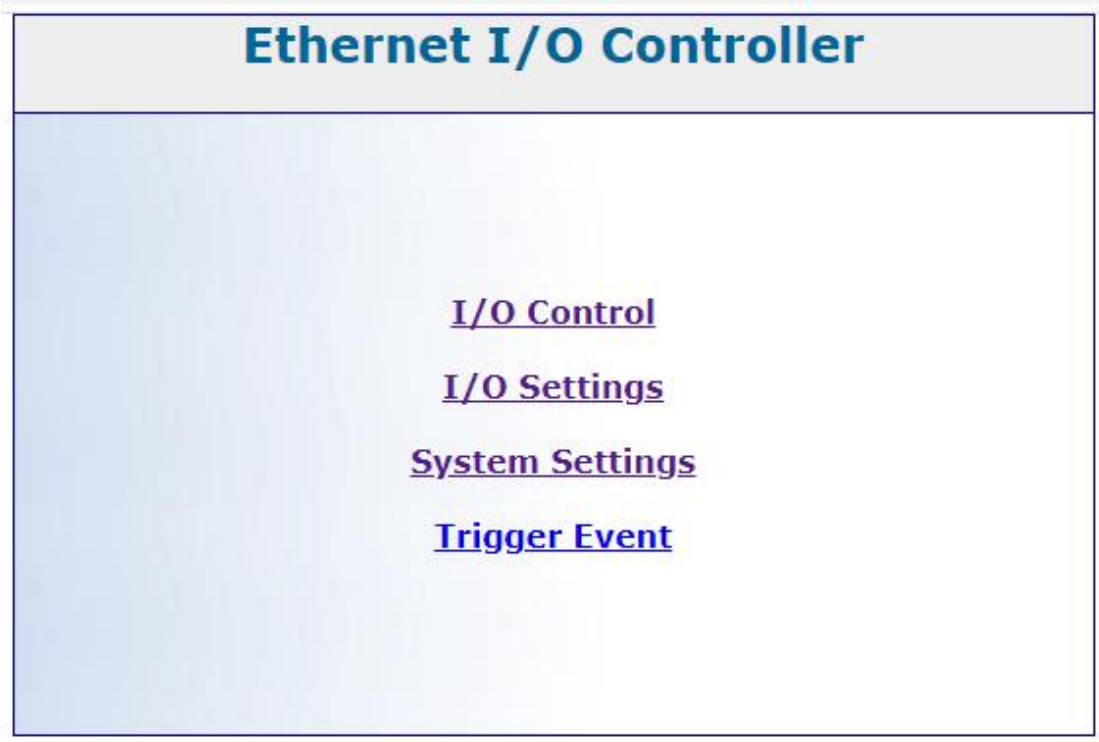
6. V5+ Eight relays module Ports



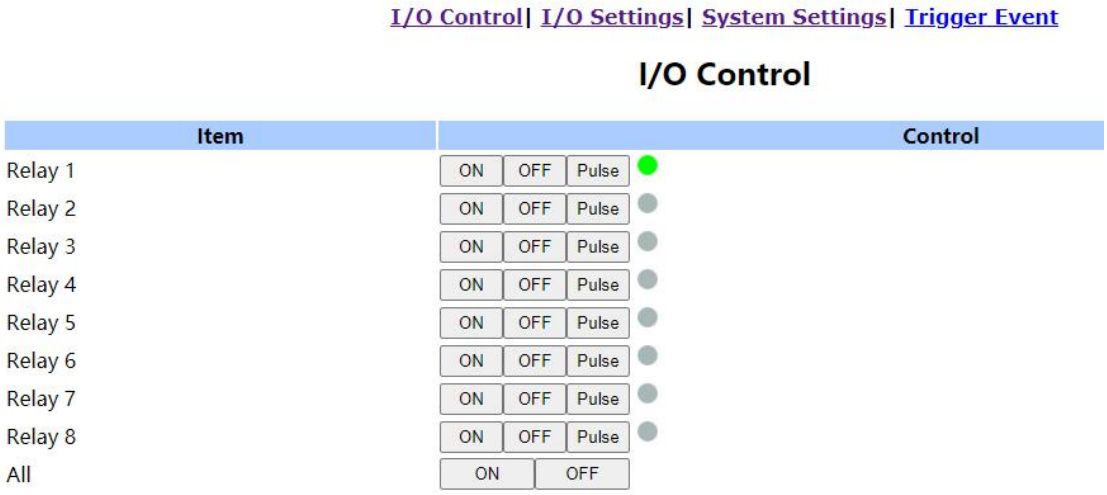
7. Web access

It is possible to configure V5+ via IE10, Chrome , Mozilla or other

browser. The browser must support JavaScript. The is username and password(Basic Authentication). The web server has 6 sessions and 6 users access the V5+ via web at a time.



7.1 I/O Control via web browser



Every relay can be controled on/off/pulse via web, relay.cgi automatically refreshes the state every 3 seconds.The gray circle indicates off and green circle indicates on.

The pulse means that relay on, then delays and then off.Buttons on the web page enable full on and off with one click.

7.2 I/O Settings via web browser

7.2.1 SN Code

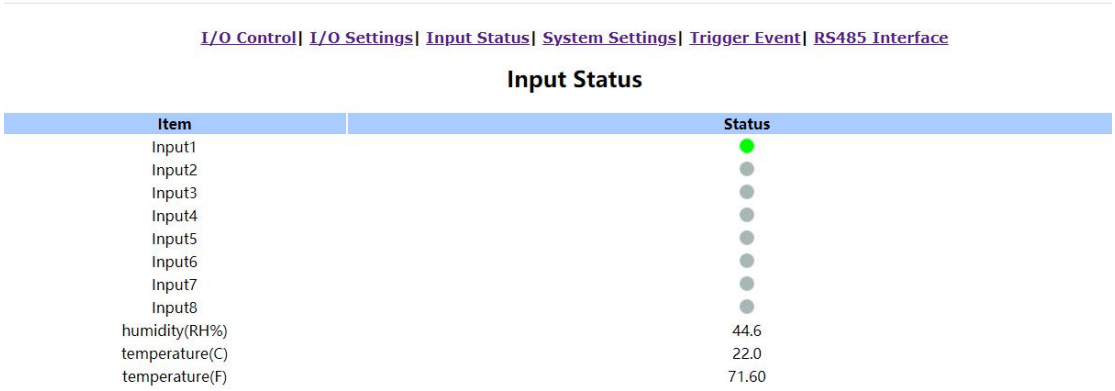
Each device has a different Unique serial number.

7.2.2 Pulse Time

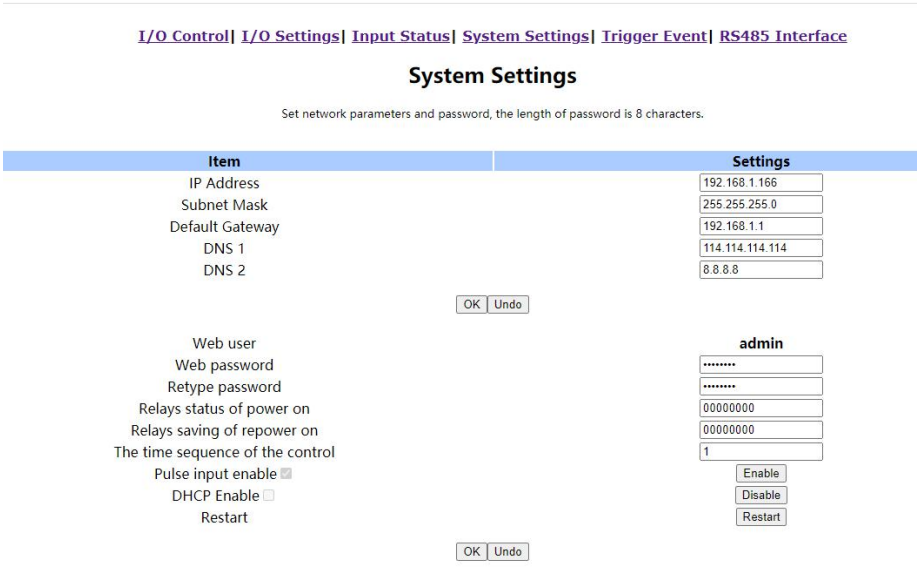
Set the pulse time for each channel,pulse means the relay output on then delay pulse time then output off.

7.3 Inputs Status

The 8 inputs status is on and the circle icon is green,off is grey.The humidity and temperature need add iotzone's sensor by RS485 interface.



7.4 System settings



7.4.1 IP Address

The IP address of the module.

7.4.2 Subnet mask

The subnet mask of the module.

7.4.3 Default Gateway

The default gateway of the module.

7.4.4 DNS1 and DNS2

The dns1 and dns2 of the module.Make sure the dns available for domain name resolution.

7.4.5 Password for web

The password of the local website.The maximum length is 8 characters.

7.4.6 Relays status of power on

The state of the relay can be set when the power on,the bit ’1’ is on,’0’ is off.

7.4.7 Relays saving of repower on

Set the corresponding channel power off state to save,the state of relays before power off will be saved,Repower on to restore the previous state.’1’ means save,’0’ means not save,each channel can be set.

7.4.8 Pulse input enable

Enable or disable the pulse input.Relays can be triggered by pulse or level.

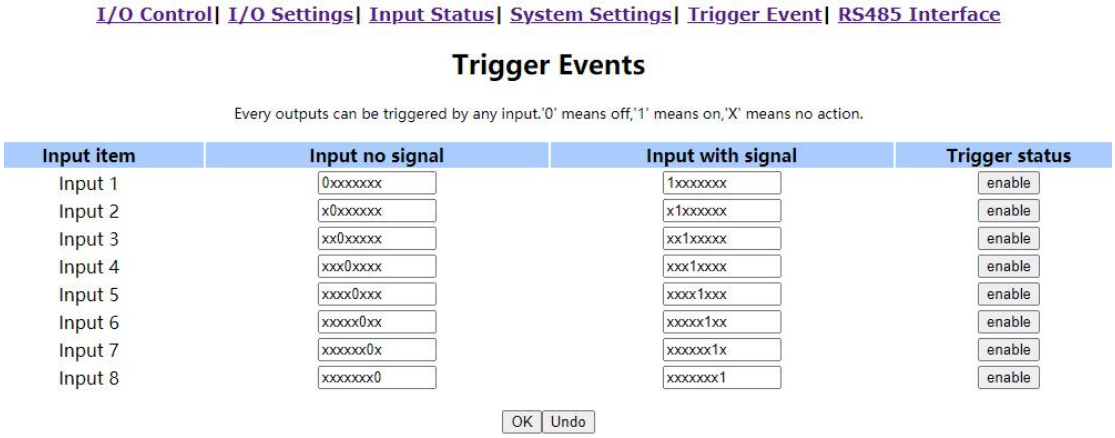
7.4.9 DHCP enable

The IP, MASK and Gateway can be brought by DHCP server.Restart the device or repower 30s after settings.

7.4.10 Restart

Restart the device, the relay state of the restart device will not be changed.

7.5 Trigger Event

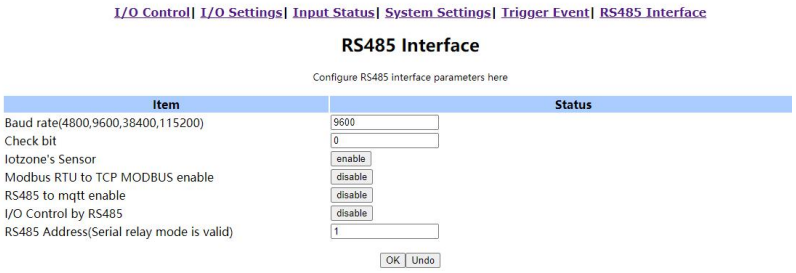


Each input can trigger any output of the relay,the type of the input be set in “Ststem Settings” page.

The 8 characters are the output status of 8-way relay respectively.’1’ means relay on,’0’ means relay off,’x’ means no action when input trigger.

Trigger status can be set “enable” or “disable” ,the state of the input can still be read by TCP or UDP.

7.6 RS485 Interface



7.6.1 Baud rate

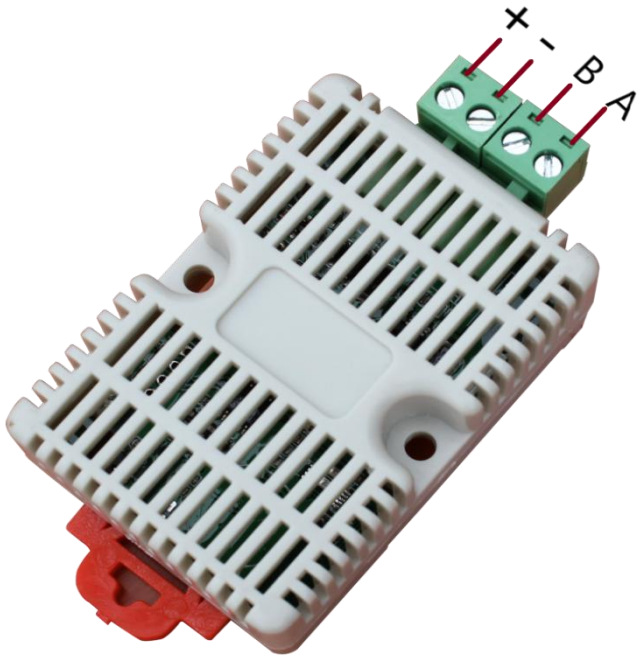
Baud rate of the RS485 interface.It support 4800bps ,9600bps, 38400bps and 115200 bps.

7.6.2 Check bit

‘0’ means no check bit,’1’ means Odd check,’2’ means Even check.

7.6.3 Iotzone’s Sensor

The Iotzone’s temperature and humidity sensor is supported by default.



7.6.4 Modbus RTU to TCP modbus enable

Modbus RTU to TCP modbus, any module support RTU can be conected to TCP modbus by the RS485 interface.

7.6.5 RS485 to MQTT enable

Any RS485 device data can be sent or receive by MQTT.

7.6.6 I/O controled by RS485

The device as a slave device can be controled or read by Modbus RTU.

7.6.7 RS485 Address

The device as be a slave device, address must be set correctly.

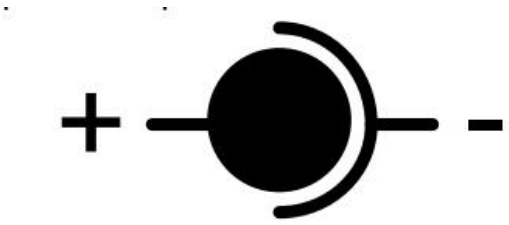
8. Appendix

8.1 Power Supply

The power supply of Iotzone's 8 relay module support 9-24VDC, 12VDC and 24VDC are normal.

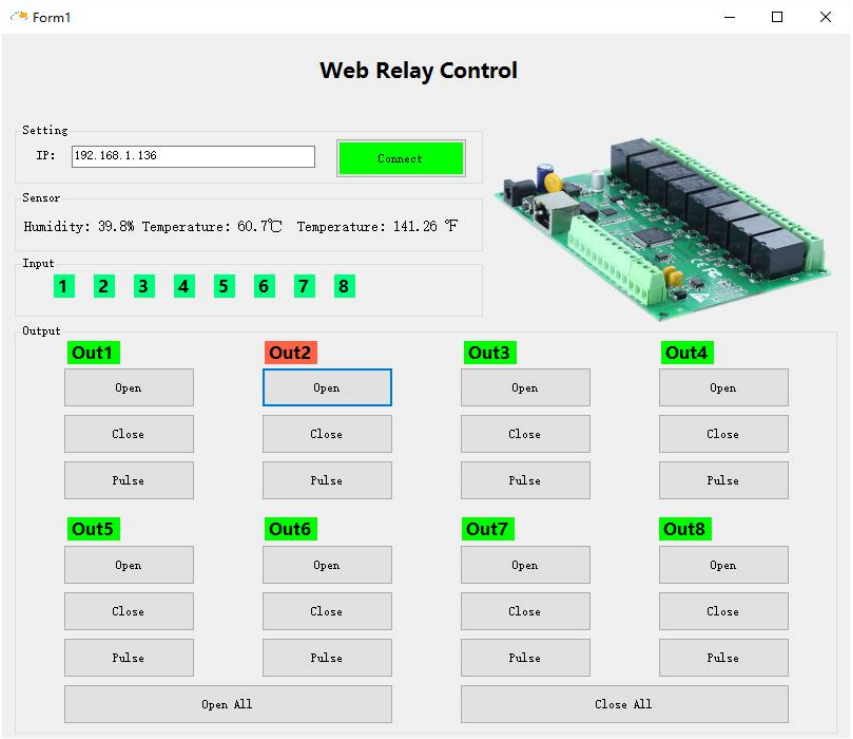
Other supply voltages may damage the device!

The voltage polartity is tip "Center positive"!



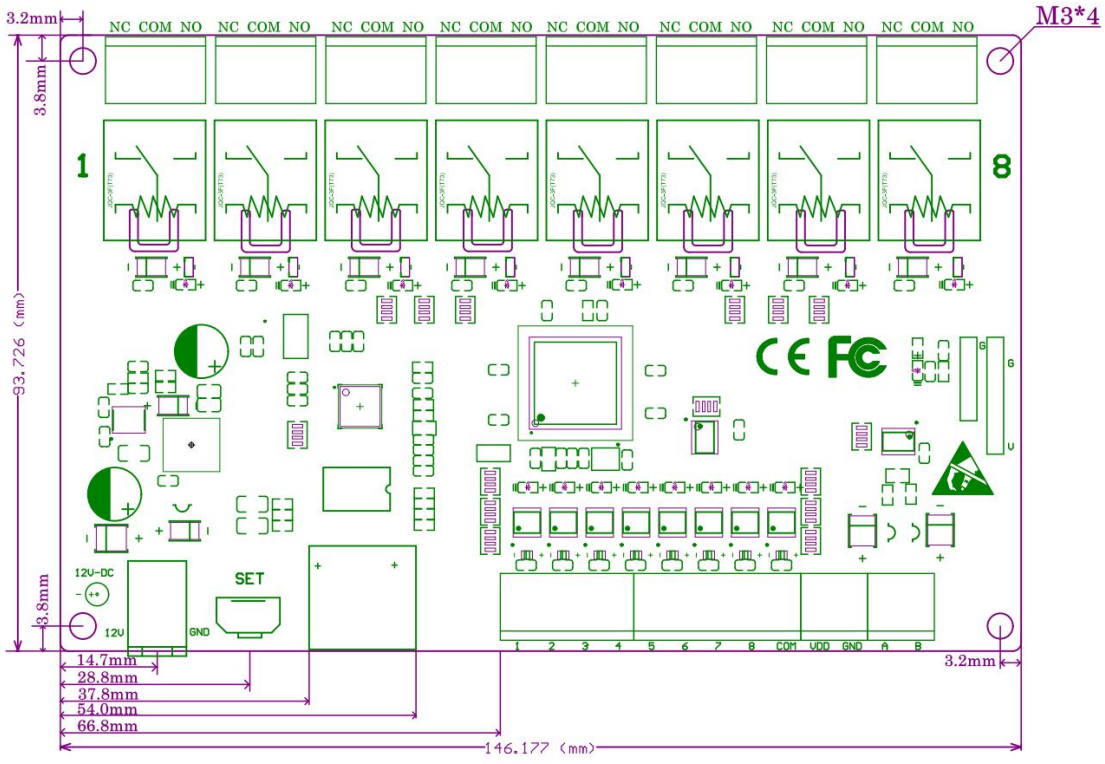
The device has protection against reverse polarity voltage!

8.2 Software on windows 10



8.3 Android software

8.4 Mechanical draw



8.5 Conect us

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