DC7-80/5V powered ESP8266 WIFI single 30A relay module

1. Overview

Elsay ESP8266 single 30A relay development board is equipped with ESP-12F WiFi module, I/O ports are fully pinned out, support DC7-80V/5V power supply mode. Provide Arduino development environment reference code, suitable for ESP8266 secondary development learning, smart home wireless control and other occasions.

2. Functional features

1, on-board mature and stable ESP-12F WiFi module, large-capacity 4M Byte Flash;

2, WiFi module I / O port and UART program download port all lead out, convenient for secondary development;

3, the power supply supports DC7-80V/5V;

4, on-board WiFi module RST reset button and a programmable key;

5, ESP-12F supports the use of Eclipse/Arduino IDE and other development tools, to provide reference programs under the Arduino development environment;

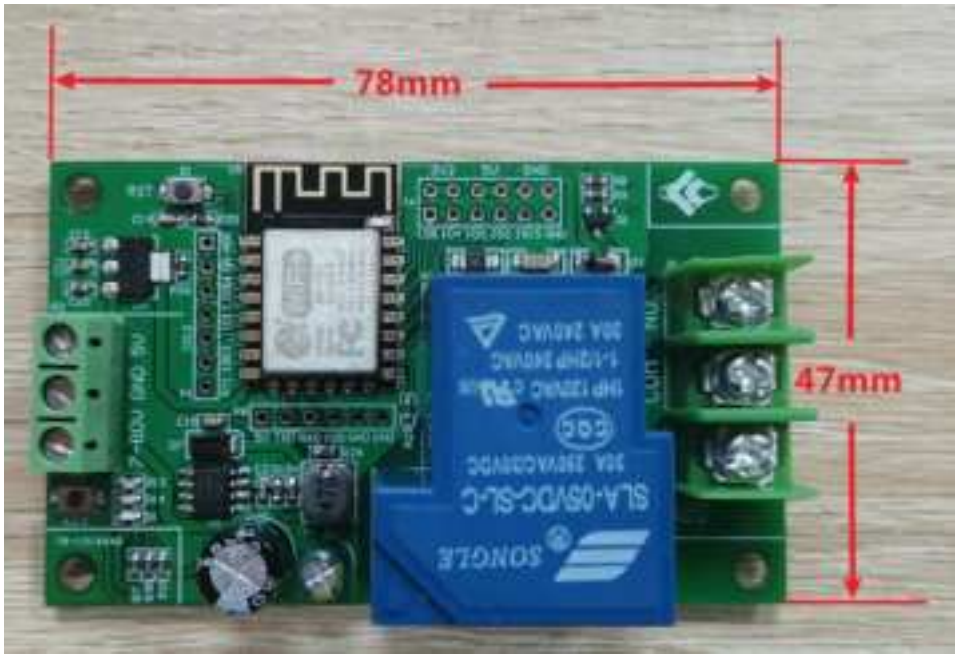
6, on-board 1-way 5V/30A relay, output switching signals, suitable for controlling the control of loads within the operating voltage of AC 250V/DC30V;

7, on-board power indicator and relay indicator, ESP-12F comes with 1 programmable LED.

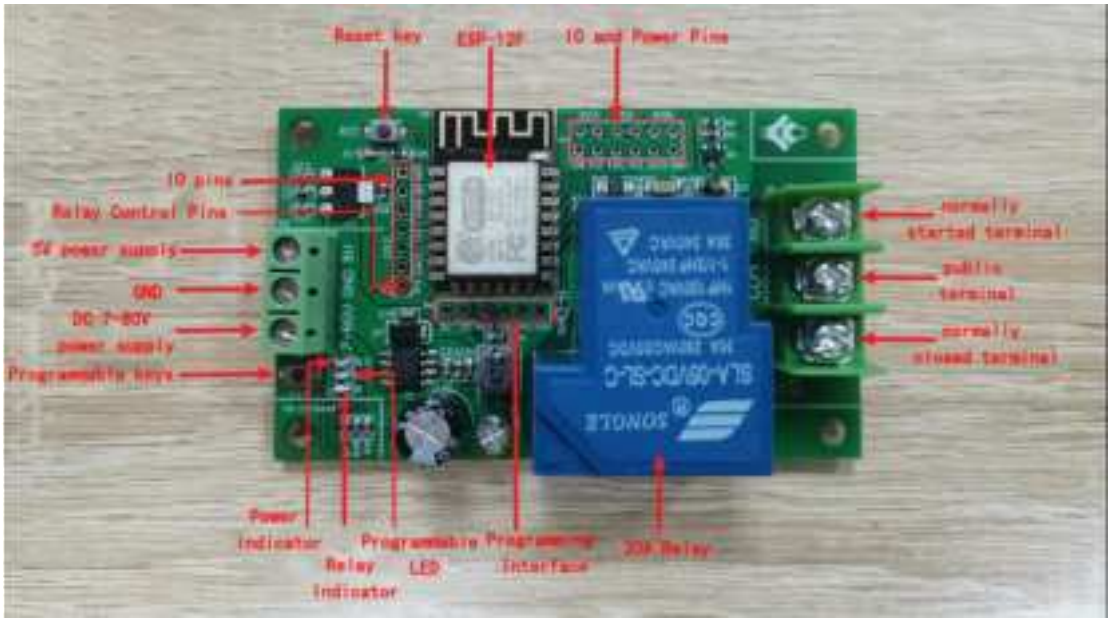
3. Hardware introduction and description

1, board size: 78 * 47mm

Weight: 45g



2, Interface Introduction



Burning port: GND, RX, TX, 5V of ESP8266 are connected to GND, TX, RX, 5V of the external TTL serial module respectively, IO0 needs to be connected to GND when downloading, and then disconnect the connection between IO0 and GND after downloading is completed;

Relay output:
NC: normally closed terminal, shorted to COM before the relay is absorbed, suspended after absorption;
COM: common terminal;
NO: Normally open terminal, the relay is suspended before it is absorbed, and is shorted to COM after it is absorbed.

3, Introduction to GPIO Pinout Ports

serial numer	name	Functional Description	serial numer	name	Functional Description
1	ADC	A/D conversion result. Input voltage range 0 to 1V, value range: 0 to 1024	10	IO2	GPIO2; UART1_TXD
2	EN	Enable pin, default pull-up	11	IO15	GPIO15; MTDO; HSPI_CS; UART0_RTS
3	IO16	GPIO16	12	TXD	UART0_TXD; GPIO1
4	IO14	GPIO14; HSPI_CLK	13	RXD	UART0_RXD; GPIO3
5	IO12	GPIO12; HSPI_MISO	14	GND	POWER GROUND

6	IO13	GPIO13; HSPI_MOSI; UART0_CTS	15	5V	5V Power Supply
7	IO5	GPIO5	16	3.3V	3.3V Power Supply
8	IO4	GPIO4	17	RY1	For relay drive port, shorting cap and IO16 can be used; to use other I/O to drive relay, DuPont wire jumper can be used
9	IO0	GPIO0			

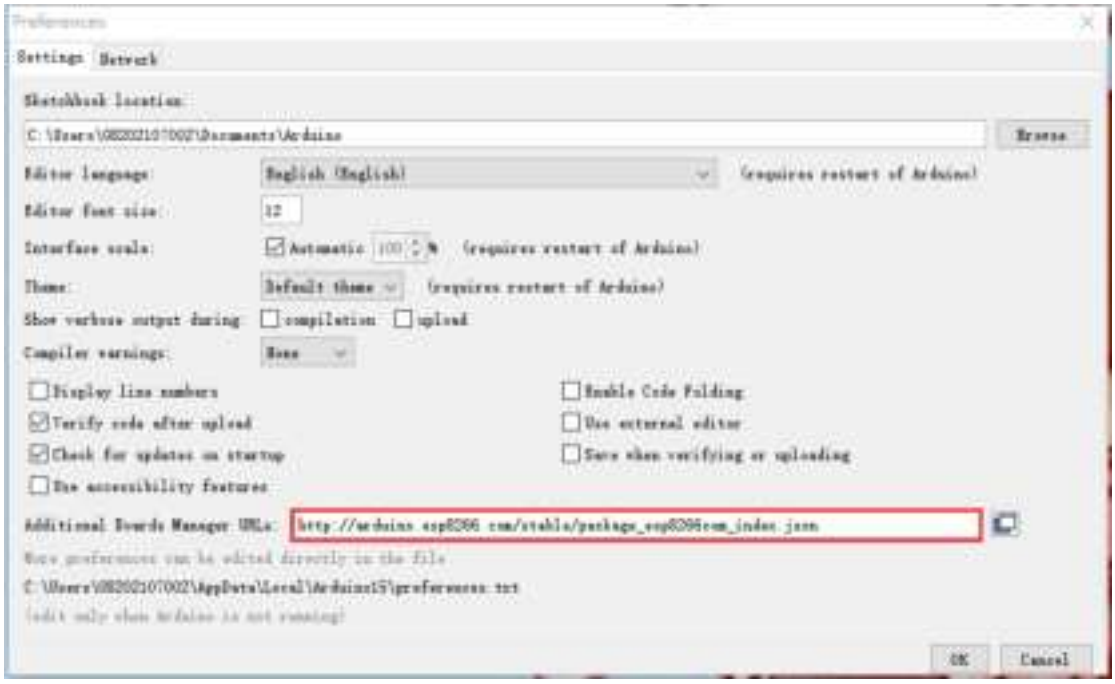
4，Arduino Development Environment Setup

ESP8266 supports Eclipse/Arduino IDE and other development tools, the use of Arduino to be relatively simple, the following is the Arduino development environment to build methods:

1, install Arduino IDE 1.8.9 or the latest version;

2, open the Arduino IDE, click the menu bar File - Preferences, enter the Preferences in the "additional development board manager URL" in the click to add the URL:

http://arduino.esp8266.com/stable/package_esp8266com_index.json,



3, click the menu bar of the Tools - Development Board - Development Board Manager, and then search for "ESP8266" to install the Arduino support package for ESP8266 2.5.2 or the latest version!

5, program download

1, use jumper caps to connect IO0 and GND pins, prepare a TTL serial module (e.g., FT232) plugged into the computer USB, serial module and development board connection method is as follows:

TTL Serial Module	ESP8266 Development Board
GND	GND
TX	RX
RX	TX
5V	5V

2, click the menu bar Tools - Development Board, select the development board for ESPino (ESP-12 module)

3, open the program you want to download, click Tools - Port in the menu bar, select the correct port number.

4, click "Upload" and the program will be automatically compiled and downloaded to the development board, as follows:

5, and finally disconnect IO0 and GND, the development board re-power or press the reset button program can run.