Maker Studio Relay Shield User Guide

Hardware version: v1.1

Hardware model: AS0000611M

Document version: r1

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MakerStudio Technology Co. Ltd.

Room 415, Bld 4th, Zhongxing Industry Area, ChuangYe Road,

NanShan District, Shenzhen, GuangDong, 518054, China

Tel: +86 755-8650-0269

Email: info@makerstudio.cc

Website: www.makerstudio.cc

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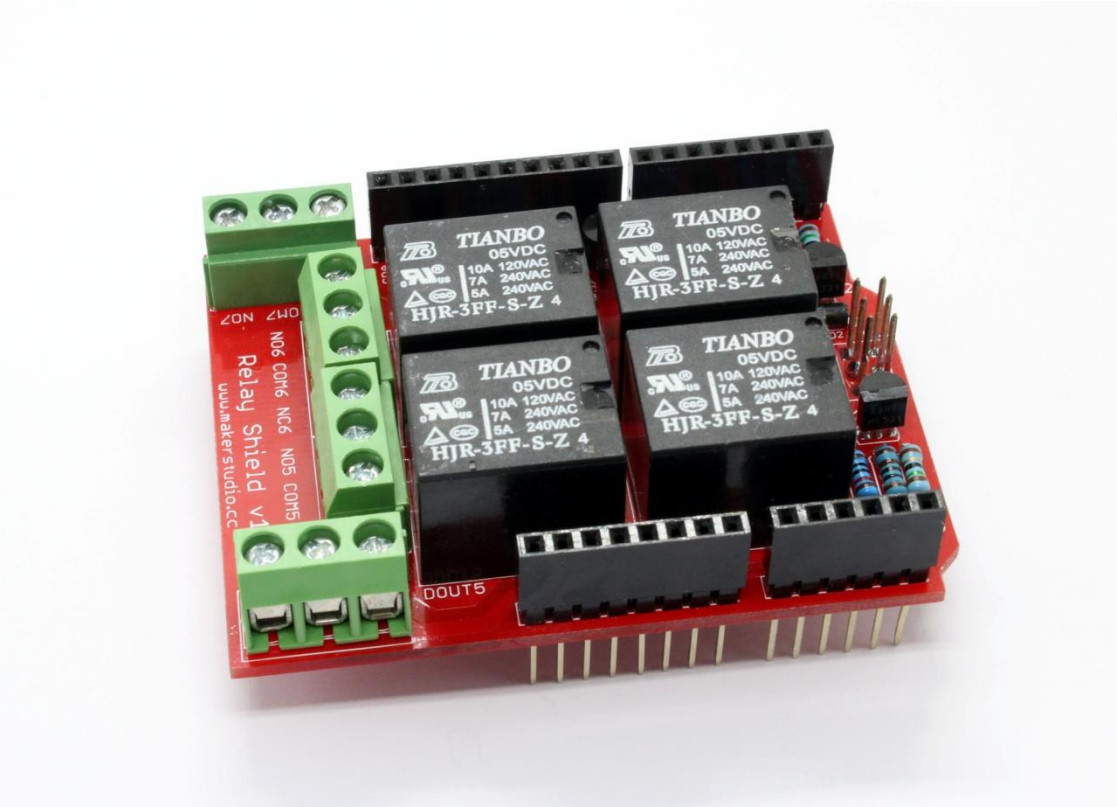
1 Revision History

Hardware Revision Date	Revision	Description
7/8/2014	1.1	Initial Release of hardware

User GuideRevision Date	Revision	Description
08/04/2014	r1	Initial Release of user guide

2 Introduction

Maker Studio Relay Shield is an Arduino compatible smart module with 4 hight quality mechanical relays providing an easy way to control high voltage. It provides NO/NC interfaces that control the load of high current up to 7A. Which means it could be a nice solution for controlling devices that couldn’ t be directly controlled by Arduino’ s Digital I/Os.



3 Features

Compatible with Arduino UNO, Makerduino UNO and other boards with the similar structure and function.

Standardized shape design.

5VDC control voltage.

4 high quality mechanical relays.

High quality screw terminal.

Provides NO/NC interfaces.

4 Specifications

4.1 Electrical Specifications

Single Relay Parameter

Coil Data

Parameter	**Data**
Nominal voltage(VDC)	5V
Coil Resistance	69
Rated Current(mA)	71.4
Max Operate Voltage(VDC)	3.75
Min Release Voltage(VDC)	0.25

Contact Data

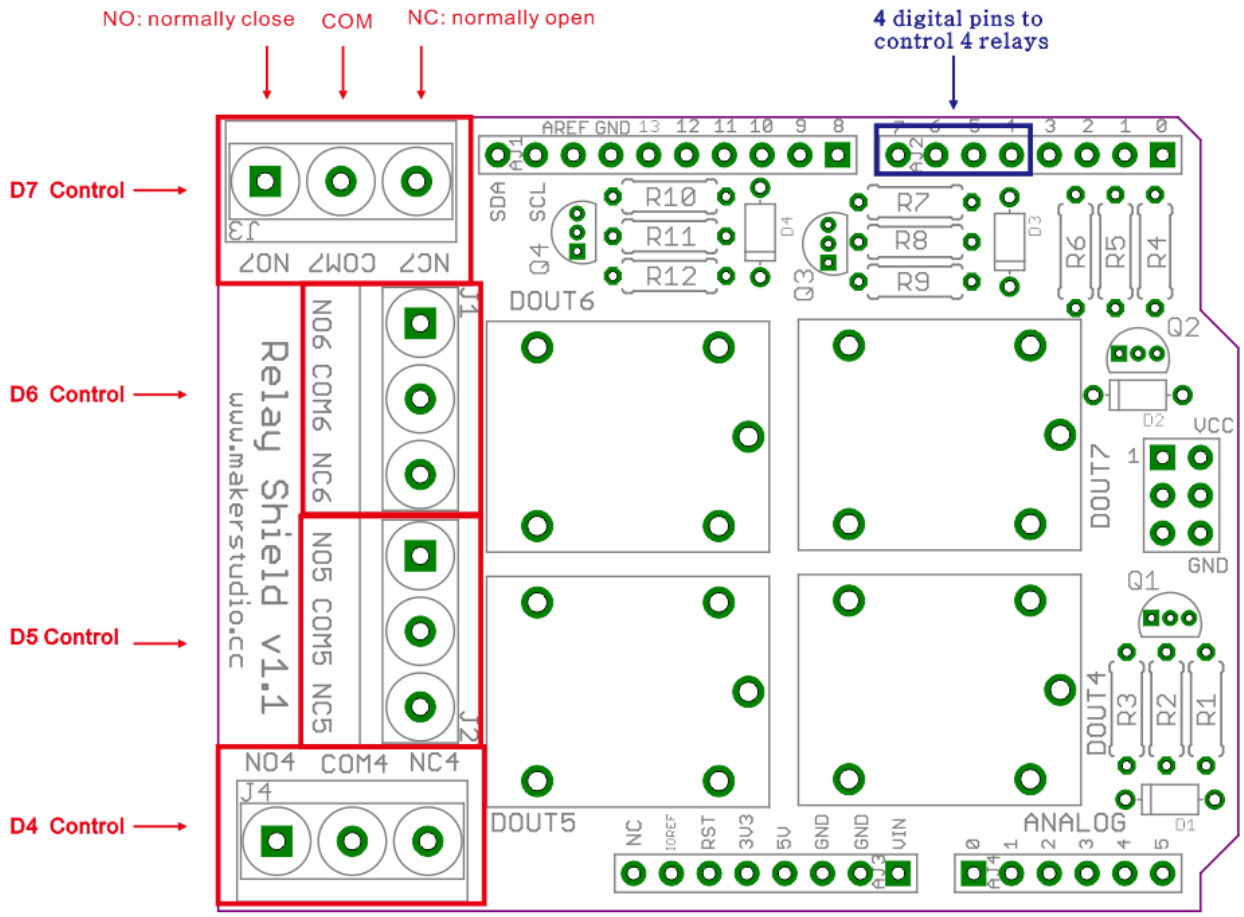
Parameter	**Data**
Contact Form	1Z
Contact Ratings	7A 240VAC 10A 120VAC
Minimum load	100mA 5VDC
Max Switching Voltage	250VAC/30VDC
Mac Switching Current	15A

Relay Shield Parameter

Parameter	**Data**
Voltage(VDC)	3.75~5.25
Current(mA)	8~280

Dimension(mm)	68.45x58.34x27.42

4.2 Mechanical Specifications



Example : J4 Interface. J5~7 Interface are similar to J4 interface, except that the control ports are D5-D7.

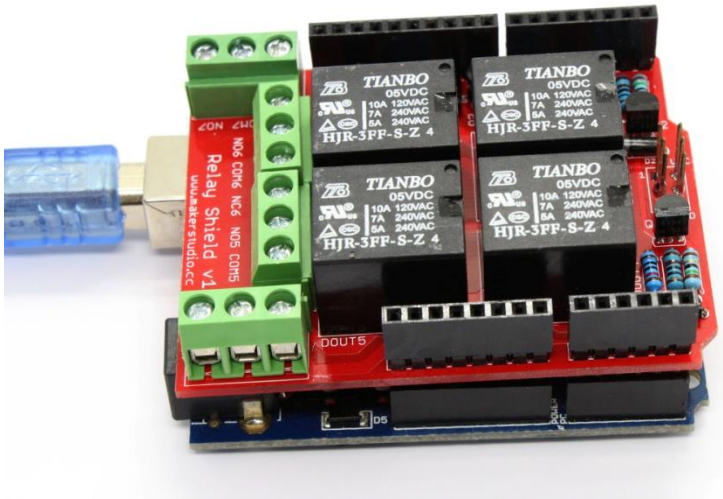
COM4	Common pin
NO4	Normally Open. Will be connected with COM4 when D4 pin is set high and disconnected when D4 is low;
NC4	Normally Closed. Will be connected with COM4 when D4 pin is set low and disconnected when D4 is high;

5 Applications

The relay have some practical application. For example: low-voltage control of high voltage, remote control, anti-hearing alarm, automatic temperature alarm ,and so on.

5.1 Test the Relay Shield

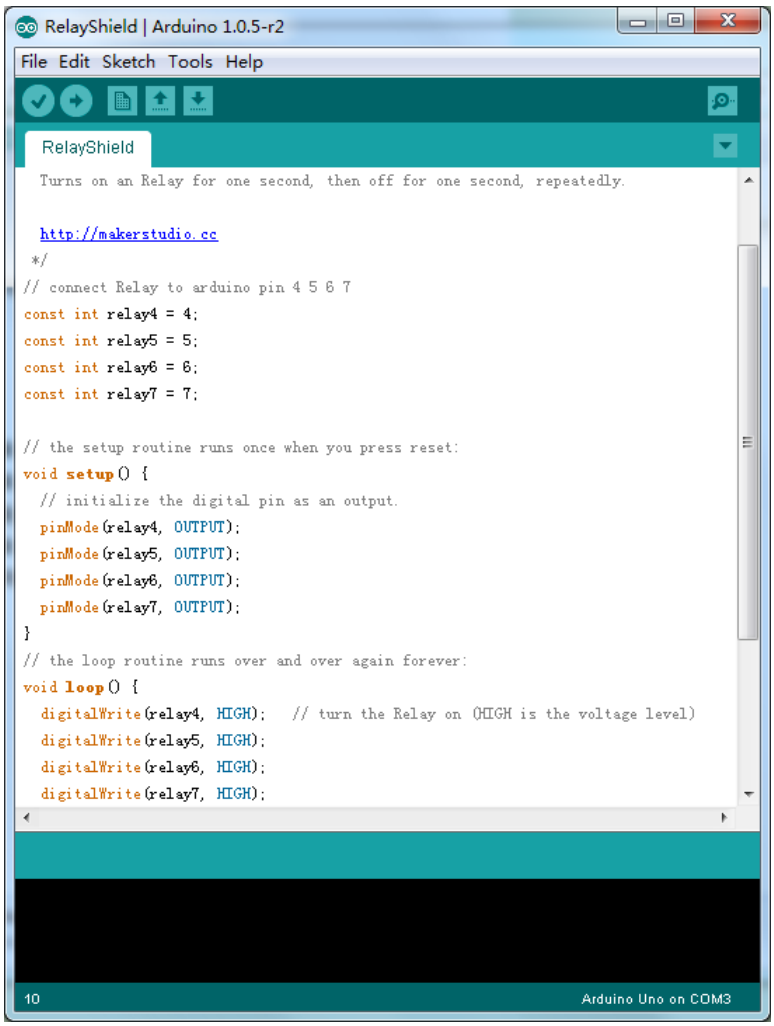
Step1: Plug Relay Shield into Arduino/Makerduino board;



Step2: Connect USB cable to board and download the example code;

Step3:Supply 5VDC power though USB cable or 9VDC power though power input terminal to board;

Step4: Download code and run.



After download the example code to your Arduino/Makerduino board, the relays on the shield will be switch on and off with a period of 1 second. you will hear some noise "bang …bang.." when the relays work. It means the relay shield is OK and you can use it to your application.

```
/*
  EB - Relay demo code

  Turns on an Relay for one second, then off for one second, repeatedly.

  http://makerstudio.cc
 */
// connect Relay to arduino pin 4 5 6 7
const int relay4 = 4;
const int relay5 = 5;
const int relay6 = 6;
const int relay7 = 7;
```

```
// the setup routine runs once when you press reset:
void setup() {
  // initialize the digital pin as an output.
  pinMode(relay4, OUTPUT);
  pinMode(relay5, OUTPUT);
  pinMode(relay6, OUTPUT);
  pinMode(relay7, OUTPUT);
}
// the loop routine runs over and over again forever:
void loop() {
  digitalWrite(relay4, HIGH);   // turn the Relay on (HIGH is the voltage level)
  digitalWrite(relay5, HIGH);
  digitalWrite(relay6, HIGH);
  digitalWrite(relay7, HIGH);
  delay(1000);              // wait for a second
  digitalWrite(relay4, LOW);    // turn the Relay off by making the voltage LOW
  digitalWrite(relay5, LOW);
  digitalWrite(relay6, LOW);
  digitalWrite(relay7, LOW);
  delay(1000);              // wait for a second
}
```