10A Relay – JS1-5V-F – Trēo™ Module

Module Features

- Panasonic JS1-5V-F Relay
- RoHS Compliant
- Software Library
- NightShade Trēo™ Compatible
- Breakout Headers

JS1-5V-F Features

(from Panasonic)

- 10A Current Rating
- C Form: NO & NC

Applications

- Lighting
- Process Control
- Home Automation
- Industrial Equipment

Trēo™ Compatibility

Electrical

Communication	GPIO
Max Current, 3.3V	1mA
Max Current, 5V	79mA

Mechanical

- 35mm x 35mm Outline
- 30mm x 30mm Hole Pattern
- M2.5 Mounting Holes

Description

The JS1-5V-F Trēo™ Module is a 10A Relay module that features Panasonic's JS1-5V-F 10A Relay. It can be used in a normally-open or normally-closed configuration. This module is a part of the NightShade Treo system, patent pending.

Table of Contents

1   Summary

This module is operated using the NightShade_Treo_DigitalOutput library. The module operated with the on(), off(), toggle(), and set() methods. The current state can be found with the read() method.

2   What is Trēo™?

NightShade Trēo is a system of electronic modules that have standardized mechanical, electrical, and software interfaces. It provides you with a way to quickly develop electronic systems around microprocessor development boards. The grid attachment system, common connector/cabling, and extensive cross-platform software library allow you more time to focus on your application. Trēo is supported with detailed documentation and CAD models for each device.
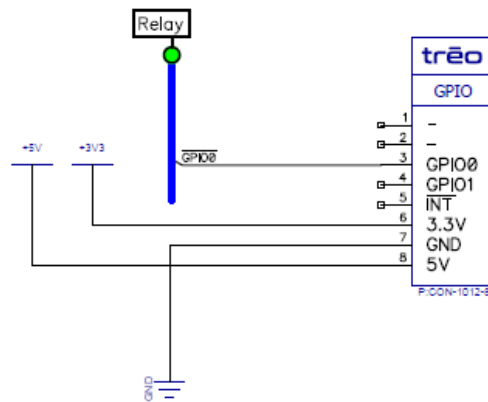
Learn more about Trēo here.

3   Electrical Characteristics

	Minimum	Nominal	Maximum
Voltages			
$V_{i/o}$ (GPIO)	-0.3V	-	3.6V
$V_{3.3V}$	3.1V	3.3V	3.5V
V_{5V}	4.8V	5.0V	5.2V
Specifications			
Contact Voltage	-	-	250VAC / 100VDC
Contact Current	-	-	10A AC / 5A DC

4 Electrical Schematic
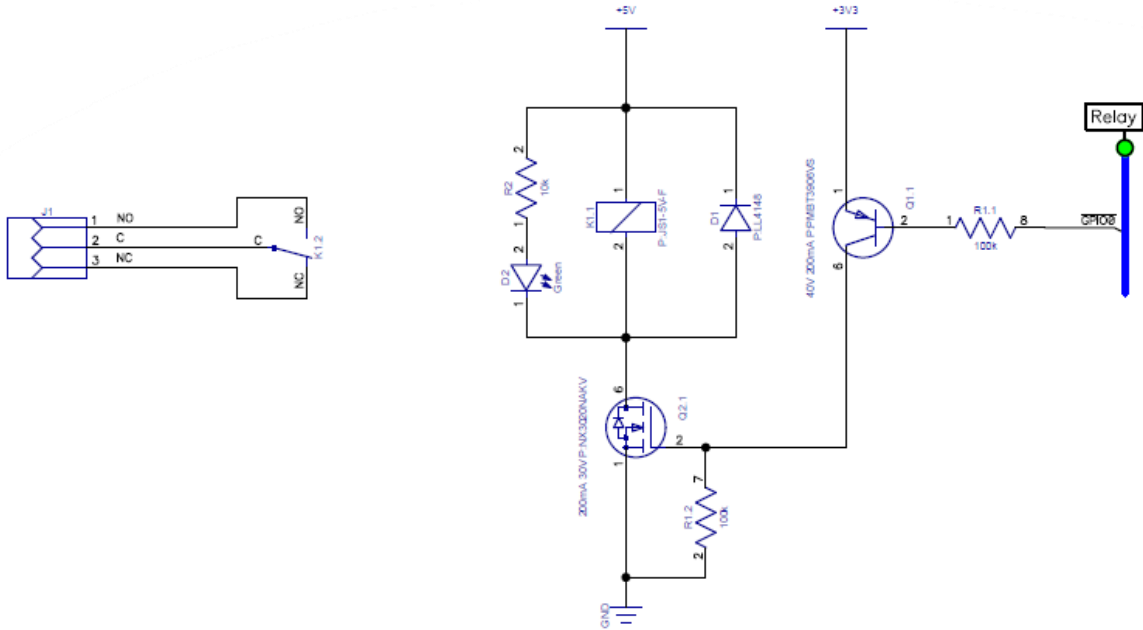
Breakout Headers
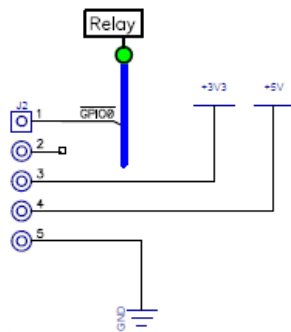
5   Mechanical Outline
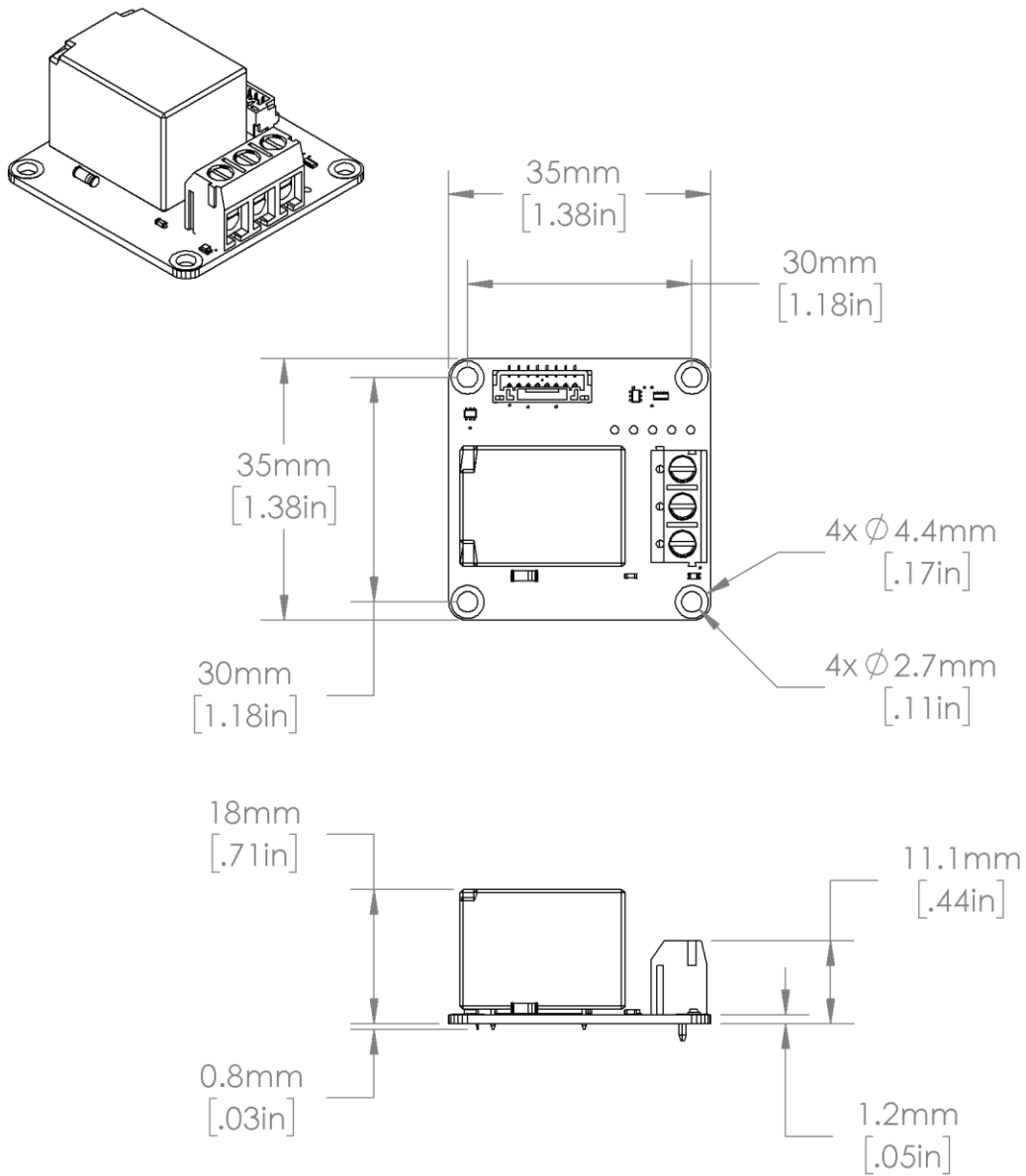
6 Example Arduino Program

```
/********************************************************
  DigitalOutput - NightShade_Treo by NightShade Electronics

  This sketch demonstrates the functionality of the
  NightShade Trēo digital output modules like LEDs and
  relays.

  Created by Aaron D. Liebold
  on February 15, 2021

  Links:
  NightShade Trēo System: https://nightshade.net/treo

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// Include NightShade Treo Library
#include <NightShade_Treo.h>

// Declare Objects (Dual Output Device - GPIO0: D5, GPIO1: D4)
NightShade_Treo_DigitalOutput out0(5);
NightShade_Treo_DigitalOutput out1(4);

void setup() {

}

void loop() {
  out0.on();
  delay(500);
  out0.off();
  delay(500);
  out1.on();
  delay(500);
  out1.off();
  delay(500);
}
```

7   Library Overview (C++ & Python)

C++ Class

NightShade_Treo_DigitalOutput <classObject>();

Python Module

<classObject> = NightShade_Treo.DigitalOutput()

7.1   Constructors

NightShade_Treo_DigitalOutput(int gpioPin)

Creates a DigitalOutput object.

Arguments:
gpioPin   Integer of the GPIO pin

Returns:
Nothing

7.2   Methods

on()

Turns the GPIO output to the ON state.

Arguments:
None

Returns:
Error   0 = Success

off()

Turns the GPIO output to the OFF state.

Arguments:
None

Returns:
Error   0 = Success

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toggle()

Toggles the GPIO output state.

Arguments:
None

Returns:
Error   0 = Success

set(int enable)

Sets the GPIO to the ON (enabled) or OFF (disabled) state.

Arguments:
enable   true/false

Returns:
Error   0 = Success

read()

Returns the current GPIO state.

Arguments:
None

Returns:
GPIO state   0: Off
                                1: On