

## Dual 10A Relay – JS1-5V-F – Trēo™ Module

### Module Features

- 2 Panasonic JS1-5V-F Relays
- 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	158mA

#### Mechanical

- 35mm x 55mm Outline
- 30mm x 50mm Hole Pattern
- M2.5 Mounting Holes

### Description

The JS1-5V-F Trēo™ Module is a Dual 10A Relay module that features Panasonic’s JS1-5V-F Dual 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.

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## 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. Each relay is controlled separately in software.

## 2 What is Trēo™?

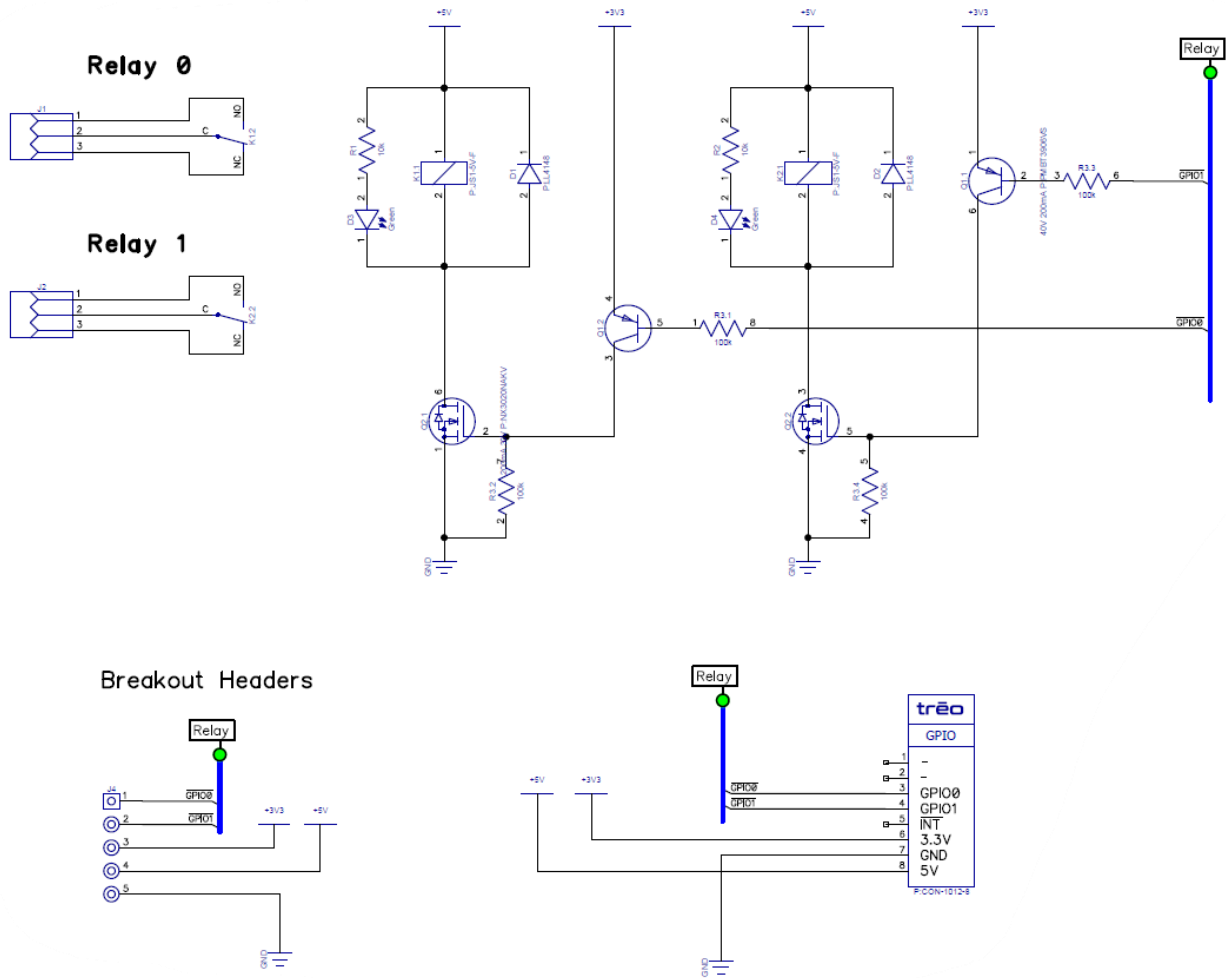
NightShade Trēo is a system of electronic modules that have standardized mechanical, electrical, and software interfaces. It provides you with a way to quickly develop electronic systems around microprocessor development boards. The grid attachment system, common connector/cabling, and extensive cross-platform 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](#).

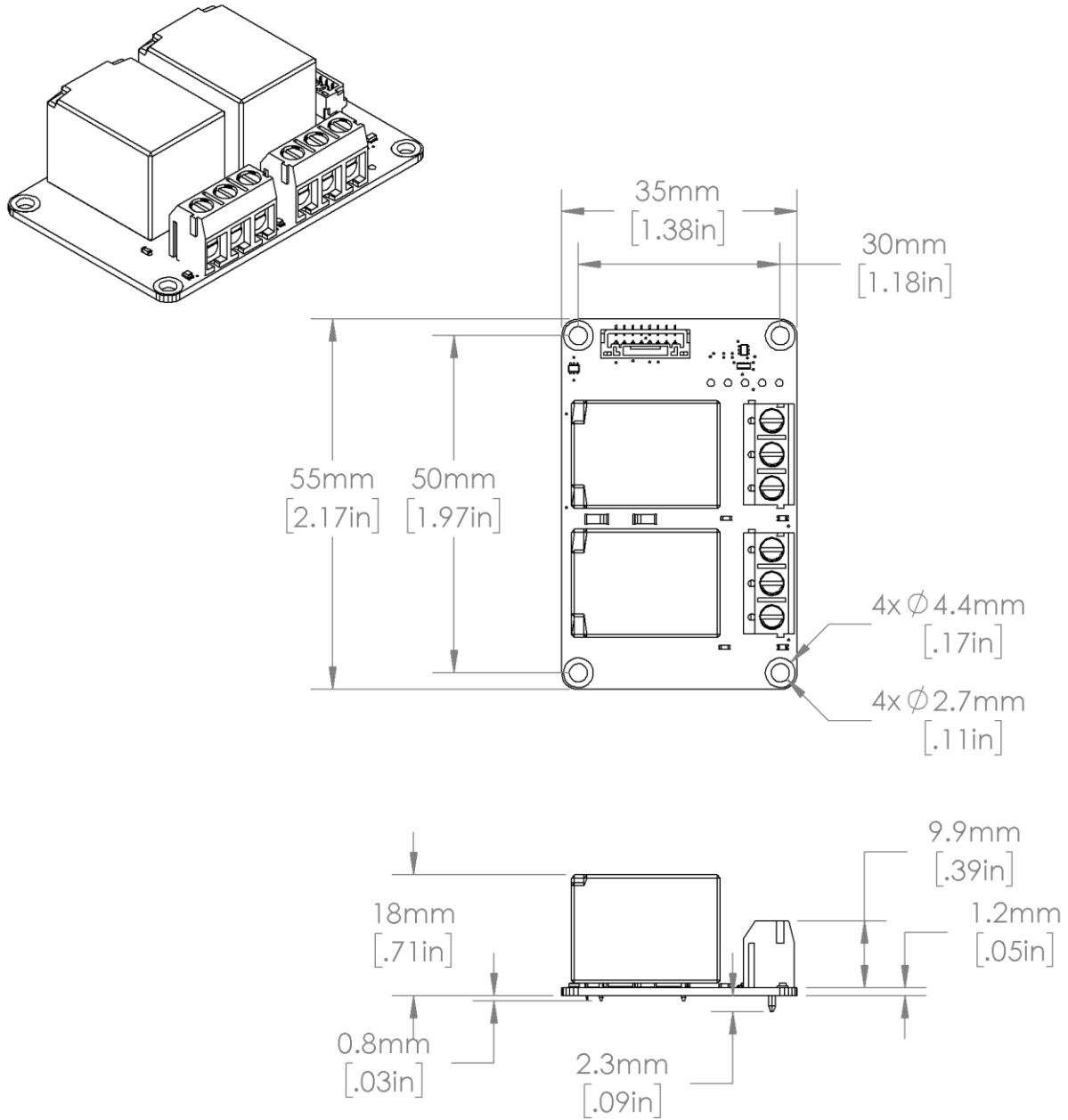
## 3 Electrical Characteristics

	Minimum	Nominal	Maximum
<b>Voltages</b>			
V <sub>io</sub> (GPIO)	-0.3V	-	3.6V
V <sub>3.3V</sub>	3.1V	3.3V	3.5V
V <sub>5V</sub>	4.8V	5.0V	5.2V
<b>Specifications</b>			
Contact Voltage	-	-	250V AC / 100V DC
Contact Current	-	-	10A AC / 5A DC

## 4 Electrical Schematic



## 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  
  
Distributed under the MIT license  
Copyright (C) 2021 NightShade Electronics  
https://opensource.org/licenses/MIT  
*/  
  
// 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);  
}
```



