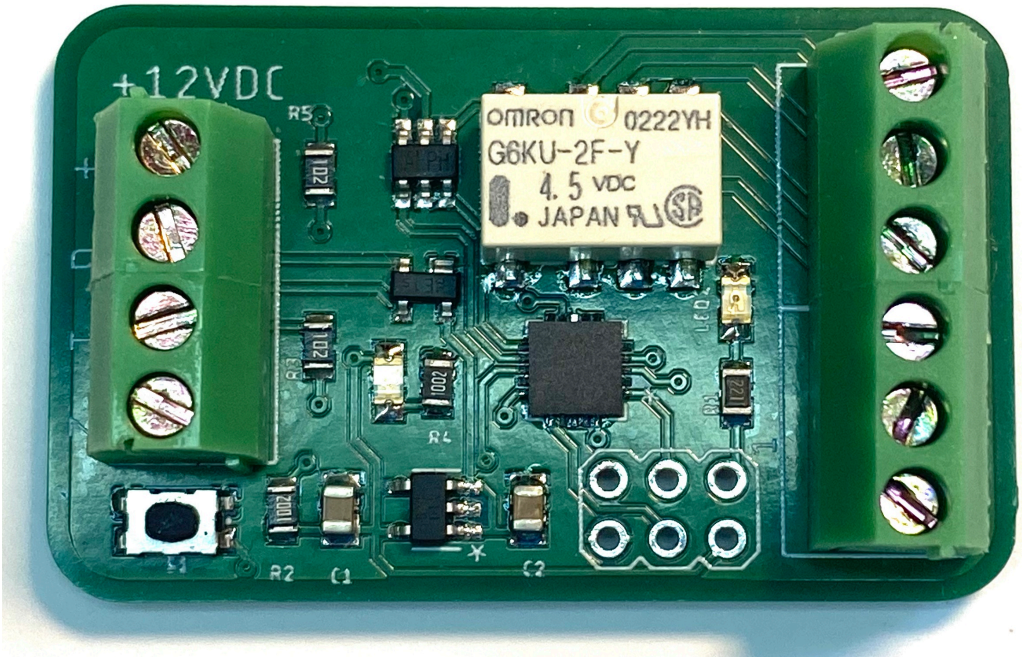
Model Train™
TECHNOLOGY

SMART Relay Board™

OPERATIONS MANUAL

Version 1.0a



INTRODUCTION

The Model Train Technology™ ***SMART Relay Board™*** provides a simple way to connect the MTT Precision Sensor to trigger a DPDT (Double-Pole, Double Throw) relay with three distinct behavior options:

1. Relay follows the #1 input immediately. Exactly like our Single DPDT relay.

2. Relay is switched and Latched with each subsequent activation of the #1 input.

3. Relay is switched and latched by #1 input and #2 input.

The “latching” feature of this relay will keep the relay in a fixed position without constant power and without an active trip signal.

While an input becomes active it will switch the relay but will not let the other input respond. Once the “primary” input is released the other input will “fire” if it is active. It doesn’t matter of input #1 or input #2 is the “primary” or first input to trip the relay.

You can use this setup automatically turn Motorized turnouts, protect larger block section or to show a bi-color LED on a panel in synchronization with any action that is triggered by our ***Precision Detector***.

There is a short demonstration video on the product page of the Model train Technology online Store.

This relay circuit is purpose build for our detector and may not work with other sensor systems unless they have an ACTIVE LOW signal.

DO NOT USE an ARDUINO Port (or similar device) to activate the inputs to this relay.

The relay contacts are rated to 1A.

Use the same 12VDC power source to power the Precision Detector and the DPDT Relay Board. You may connect the Precision Detector yellow signal wires to BOTH this relay board AND any Signal Controller in our product lineup.

THE RELAY CONTACTS DO NOT HAVE POWER. THEY ARE SIMPLY ON/OFF SWITCHES.

INSTALLATION

The Precision Detector, the Relay Adapter and the Relay all use 12VDC as the input power. They must be connected to the SAME power source for this to work properly. As shown in the diagram, you connect 12 VDC power to the Relay Adapter Board and connect it to the terminals on the relay. Then, for each Precision Detector simply connect the yellow signal wire to the green input terminal on the Relay Adapter board.

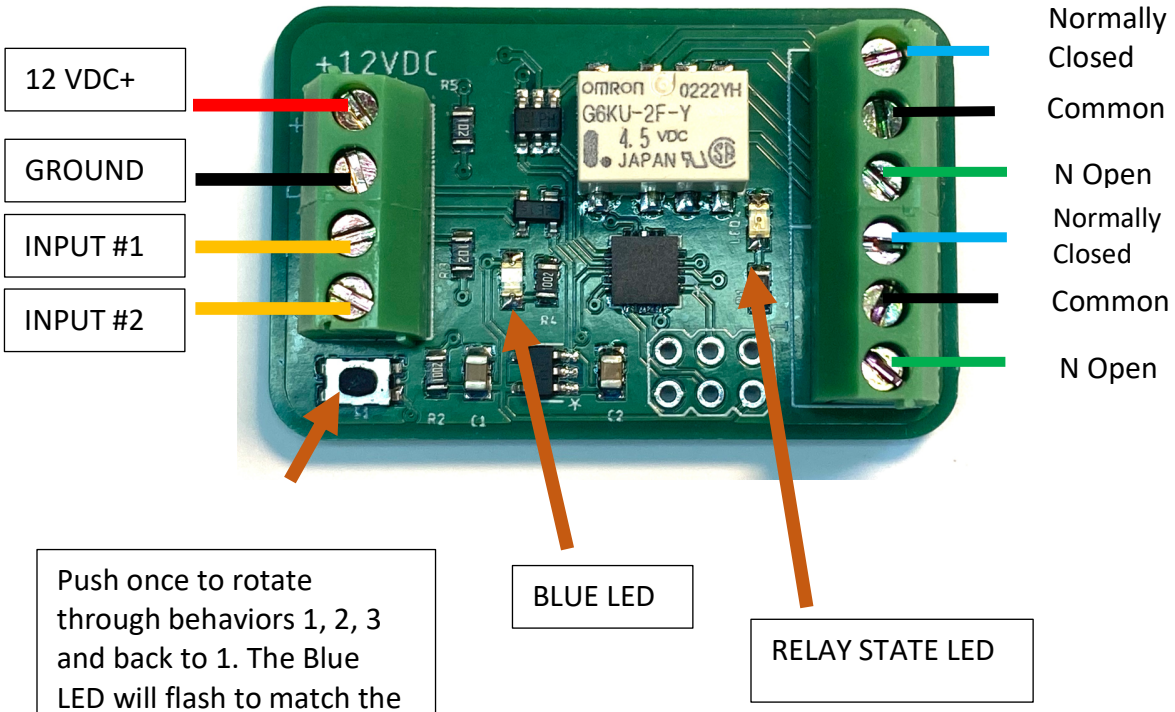
The POWER wires to the DPDT relay board can be connected in either polarity direction.

HOWEVER, if you wish to test the relay board without the sensor connection you will need to know WHICH wire to the 12V terminals is GROUND. To test you can hold a short wire between the GROUND input and either input #1 or input#2 as shown in the demonstration video.

WARNING – BE CAREFUL NOT TO CONNECT 12VDC+ POWER TO THE *INPUT* TERMINALS.

When powered properly, the blue LED will light. When the relay is tripped by a Precision Detector, the green light will light according the behavior you have selected.

SMART Relay Board Connections



Even though you don't need to connect the power wires according to polarity, it's a good idea in practice to do so. This way you know which is the ground wire in case you want to test the relay.

ELECTRONICS AND STATIC ELECTRICITY

Electricity can be dangerous. Static electricity can cause component failure. Scuffing along a carpet and then touching one of the component connectors can cause a static spark. These components are fairly rugged – some designed for the automotive industry. Just be mindful of the risk. The current on the board will not harm you if the board is powered and operated as per the instructions.

ONE YEAR MANUFACTURER WARRANTY:
We warrant this product to be free from defects in workmanship and materials, under normal residential use and conditions, for a period of one (1) year for the original invoice date. Shipping and handling fees are to be paid for by the customer.

LIMITATION OF LIABILITY

UNDER NO CIRCUMSTANCE SHALL COMPANY OR ITS AFFILIATES, PARTNERS, SUPPLIERS OR LICENSORS BE LIABLE FOR ANY INDIRECT, INCIDENTAL, CONSEQUENCIAL, SPECIAL OR EXEMPLARY DAMAGES ARRISING OUT OF OR IN CONNECTION WITH YOUR USE, OR INABILITY TO USE THE PRODUCT, WHETHER OR NOT THE DAMAGES WERE FORESEEABLE AND WHETHER OR NOT COMPANY WAS ADVISED OF THE POSSIBLITY OF SUCH DAMAGES. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, COMPANY'S AGGREGATE LIABILITY TO YOU SHALL NOT EXCEED THE AMOUNT OF THE PRODUCT. THE FOREGOING LIMITATION WILL APPLY EVEN IF THE ABOVE STATED REMEDY FAILS OF ITS ESSENTIAL PURPOSE.

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