



Model Train™
TECHNOLOGY

DCC Relay Controller™

OPERATIONS MANUAL

Version 1.2a



** we used our Signal Controller label since the label company did not have our labels ready due to material shortages.

INTRODUCTION

The Model Train Technology™ **Relay Controller™** provides an extremely simple plug-and-play system for controlling a DPDT (Double Pole Double Throw) relay switch.

There isn't a lot to this manual because there isn't a lot to do to get this product up and running.



Relay Shown in
OFF (Closed) position

OVERVIEW

Each **MTT DCC Relay Controller** ("**Controller**") stands on its own and is triggered by DCC Accessory command via built in DCC decoder. Otherwise known as a switch command the valid addresses are 1-2044. The **Controller** has an optional magnetic base and can be mounted upside-down under the layout so that the Controller can be removed easily when needed.

The **Controller** can operate either by DCC track power (typical) or 12VDC.

With 12VDC connected to the power input you can use the DETECT terminal to trigger the relay, for example, from our Precision Detector. However, there are more economical ways to have a relay DPDT switch. We left this in since it was a derivative of our Signal Controller product line.

The Latch terminal works in 12VDC mode only. If the Latch is Active (LOW) as tripped by a sensor for example, it will hold the Relay ON if it has been tripped (Detect) even if Detect is released.

There are two states to the relay – Active and not Active. When the relay is Active (Thrown), the blue led will stay lit. When it is not active (Closed) , the blue LED will blip. We call this a heartbeat and lets you know the unit is alive and well.

Thrown is Active (ON) and Closed is inactive or OFF.

The Controller case is made using a 3D printing process. It may have some slight imperfections. It also tends to be more brittle than ABS plastic – so don't drop it on a hard floor.

Typically, you would use the Controller to have the relay LATCH. That is, the relay stays in the position you select either on or off. However, there are situations where you want the relay to turn on for a specific amount of time without having to send another command to turn it off. We call this Momentary switching. Some electronics that you might hook up to use a momentary push of a button to activate a function. The Controller has a mode where the relay activates for 300 ms (milliseconds) to simulate a manual push of the button. The other options are On for 5, 15, 30 and 60 seconds.

SETTING THE CONTROLLER ADDRESS

Press and hold the select button for about 10 seconds. Within 1 second of beginning to press the button, all the blue LED light will go out. Usually, it's just the green light that goes out since it's the only one on.

Continue to hold the select button until the light comes back on. Then release the button. The blue power light will begin to flash on and off. This indicates that the **Controller** is ready to accept a new address.

To set a new address, select the Accessory/Turnout number that you want to use on your DCC hand controller. This can be a number from 1-2044. Using your DCC hand controller, enter the number and then press the appropriate command to set a CLOSED or THROWN switch event. Either closed or thrown will work. This will be slightly different depending on the brand of DCC system that you are using.

To exit setting the address mode WITHOUT changing it, press the select button once. The Controller will return to its ready state.

As soon as you select CLOSED or THROWN, the **Controller** will flash 4 times and the lights will go off. The **Controller** is now set to the new address.

While DCC is connected and active, DCC commands will override the input signal and latching functions. In other words, you can use detectors OR DCC to trigger the Controller but not at the same time.

BLUE LIGHT TIMEOUT

If set, the BLUE indicator light will go out after 60 seconds of startup or if the Select button is not pushed. Each time you press the Select button, the light will come back on and start its 60 second timeout clock. Press the SELECT button **12** times to toggle between On and Off. After being set, the blue light will flash 10 times.

RESET

To RESET the Controller to factory defaults, press the SELECT button **13** times.

	PUSH BUTTON OPTIONS
1	Exit setting Address mode
2	Set to standard operation
3	Set to 300 ms Pushbutton
4	5 second ON time
5	15 second ON time
6	30 second ON time
7	60 second ON time
12	Disable blue LED
13	RESET to factory defaults

Simply push the select button the number of times indicated to activate the desired mode/option.

ELECTRONICS AND STATIC ELECTRICITY

The ***MTT PRECISION DETECTOR™ - Trackside*** circuit board and components are exposed when the cover is off. 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 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, CONSEQUENTIAL, SPECIAL OR EXEMPLARY DAMAGES ARISING 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 POSSIBILITY 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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