



---

# Model Train Technology

March 2021

Hello Jim,

Welcome to all of the new subscribers who joined since January 1st. Thank very much for your interest in our company and unique products.

I know I am a month behind with both the newsletter and with a few promised product releases. We are catching up and VERY excited to share with you what we've been working on.

***I will be putting the products on the web site this afternoon so if you don't see them immediately, please check back later in the day and***

***tomorrow.***

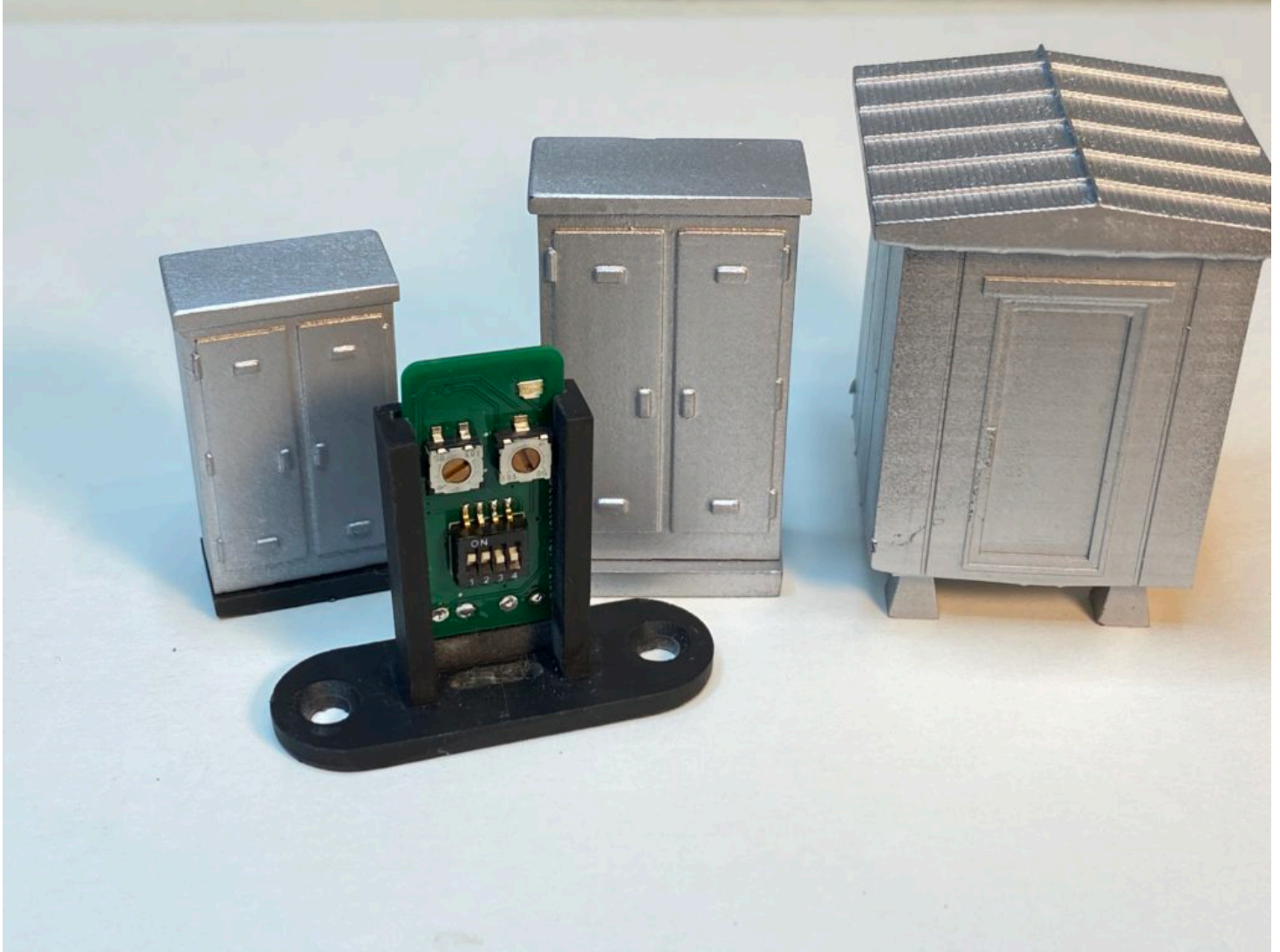
I will also be making a set of YouTube videos to highlight how all these things work - I just ran out of time!

Here are the items we'll discuss today:

1. NEW precision Train Detection - 1mm accuracy over 150mm ( about 6")
2. NEW Fiber Optic Block Signal controller (also for LEDs)
3. NEW IR Remote control of LED Lighting Boards
4. NEW 3 Light HO and N Scale lanterns
5. Scene Controller PWM ADAPTER for 6V and 12V Strip Lighting/motors

Here we go!

## PRECISION TRAIN DETECTION



Long version of what happened:

Last November we developed a sound module that will allow you to use your own sounds by connecting the Sound Module to your computer and uploading MP3 files. (More on that when we show you the Sound Module next week)

But we needed a way to trigger the sounds from the movement of a train. For years everybody has been using IR (Infrared) sensors to accomplish some form of detection, and that's where we started. Infrared is invisible to the eye so you don't see the light as it bounces off an object and back to the sensor. How much light is reflected determines if there is an object in the path or not. Most of the sensors we reviewed had a very limited distance -

usually only 2 inches. They are also VERY sensitive to ambient light because that will affect how strong the reflected signal is. We really noticed this problem when we were testing our prototype IR sensor and pushed a white caboose and then a brown coal car in front of the sensor. Nothing happened.

I thought, "what the heck?" And then I realized that my bright LED magnifying lens light was directly above the work area where we were testing. I turned the light out, and although the performance was better, it still was not good enough. Ambient light was a problem.

After two months of testing other components we found a new sensor that would give us 1mm distance precision detection - YES - 1mm precision! And the sensor is 99.9% immune to ambient light. AND, the detection distance is reliably 150mm which is just short of 6 inches.

We rewrote the software and Voila' we have the MOST ADVANCE train detection system in the world - IMHO.

Here is how it works. As you can see from the picture above the sensor board sits in a bracket (there are two styles- with the tabs/hole and without) that can be "anywhere" within 150mm of the track. There are two trim controls. One to adjust the detect distance and one to adjust how long the Trigger stays on after its tripped. There are two operating modes: a) detect anything within the target area from 5mm to xxx where xxx can be anything from 6mm to 150mm, and b) only detect an (N, HO or O scale train on a SPECIFIC track. That means that the track could be 100mm away from the sensor and it will not activate for a train that is closer (parallel) or one that is father away. It will only activate for that train - with millimeter precision - in any light condition!. Very cool. You can cover the sensor with our (included)

electrical box or you could put the sensor in a building or even in part of the scenery. (it needs a small hole to "see".

You select the scale that you want to use with the DIP switches (N, HO, & O/S). You can invert the output detect signal so that a passing train turns something OFF instead of ON. And you can set to double the trigger timeout time with one of the swithes (either 0-30 seconds or 31-60 seconds)

The output is what is called an OPEN DRAIN to GND. This is a common digital output so almost anything you already have that uses this signal will work. But if you don't have anything yet - wait, there's more. Our Sound Module and now our NEW Block Signal Controller can use our new detector.

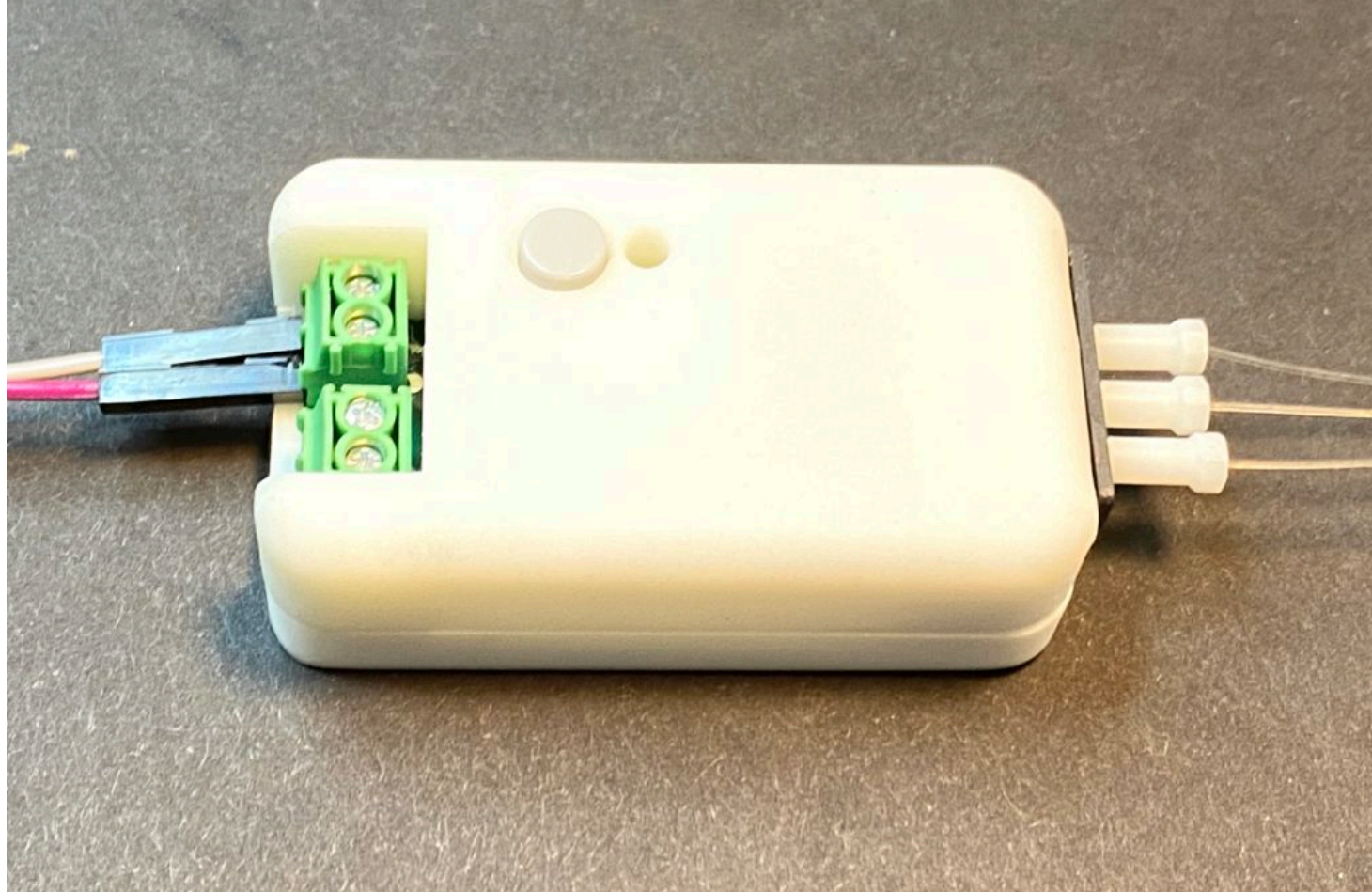
By the way, we include a small 2mm screw driver so you don't have to buy or hunt for one.

The MTT Precision Detector is \$24.95.

[STORE](#)

## FIBER AND LED BLOCK SIGNAL CONTROLLER

---







The genesis of this product began two years ago when I was fumbling around under my layout trying to solder tiny wires from my LED block signals to the control board. What a pain! I then got side tracked (oops) with designing all the other products you see today - and now finally that we have a great detector, we need it to DO something.

The Block Signal Controller controls an single block - although you can insert fibers from two N Scale Signals into the manifold for East/West orientation. We will have a Two Light version for HO and O scale shortly. The Block Signals shown above are our 3D printed type available in N, HO and O scale. We will have numerous other types of block signal masts coming out soon, including brass etched. We will have have a kit form so you can insert fibers into your own favorite Signal.

The Block Signal controller has four operating modes. The push button on top allows you to change it; two pushes, three pushes, etc.:

1. Two Aspect Red/Green
2. Three Aspect Red/Yellow,Green
3. Four Aspect Red/Yellow/Yellow Blink/Green

One of the problems with other controllers systems is that the lights are are the same power to the LED - which means that the three lights Red, Green and Yellow appear at different levels of brightness. With our Controller you can adjust EACH color brightness individually whether using Fiber or LEDs.

The way it works is that the Precision Sensor will "trip" the Block Signal Controller when a train passes. The light will change from Green to Red. Once the last car has passed the sensor the timer in the controller will wait the prescribed time (adjustable 0-30 seconds) the light will change to the



"next color" which might be Green again or Yellow. And then after another time gap the light will change from yellow to flashing yellow or Green depending on the settings. If the signal is Yellow and a second train comes by and trips the detector the Controller will set the light back to Red.

This is not very prototypical of anything on the railroads today. The CSX signaling rules are all about speed since an engineer is controlling the train. And the signals look very different. BUT --- It's all about animation and visual appeal on our layouts and I really enjoy the work free simple effect of the trains going around my layout and setting all the signals as the trains goes by. I just wanted a simple Plug-and-Play system that is easy to install, no soldering , etc. We will be expanding to include more prototypical signaling as soon as we figure out how to make it simple.

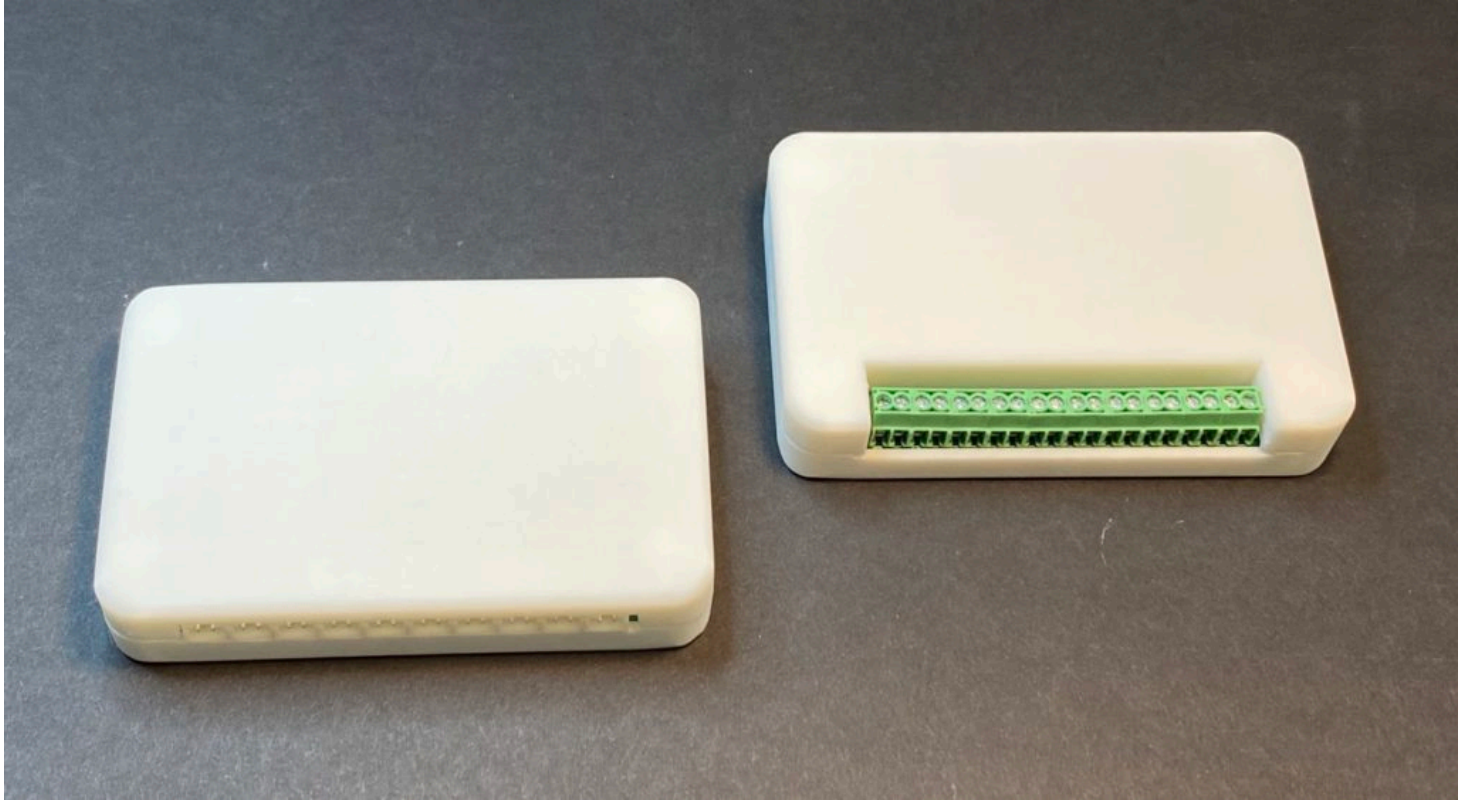
PS - There is a magnetic mounting plate available.

MTT Block Signal Controller (Fiber or LED) is \$19.95

STORE

## MTT POWER CENTER MODULES

---



The MTT Precision Detector and the Block Signal Controller (and the Sound Module) are all powered by 5VDC. To make it easy to hook up all the units we designed two 5V power modules, one with JST plugs and one with terminal screws - your choice. The Power Center Modules comes with a power supply so simply plug in the power supply to the Power Center Module and then connect all your detectors and block signals to it. Simple.

AND, there is another reason for using our Power Center Module and it has to do with the way OPEN DRAIN to ground detection works. In order for the digital detect signal to work, all the connected unit have to have a common GROUND "somehow". Sometimes with other system if you power things and put them on terminal strips or different power supplies the detect signal has a hard time finding a path to ground. Its a bit more complicated that Im making it but, if you connect all our units to the same power system you don't have

to worry about it.

PPS - and there is a magnet mounting bracket for these as well.

MTT Power Center Module (JST plugs) \$16.95

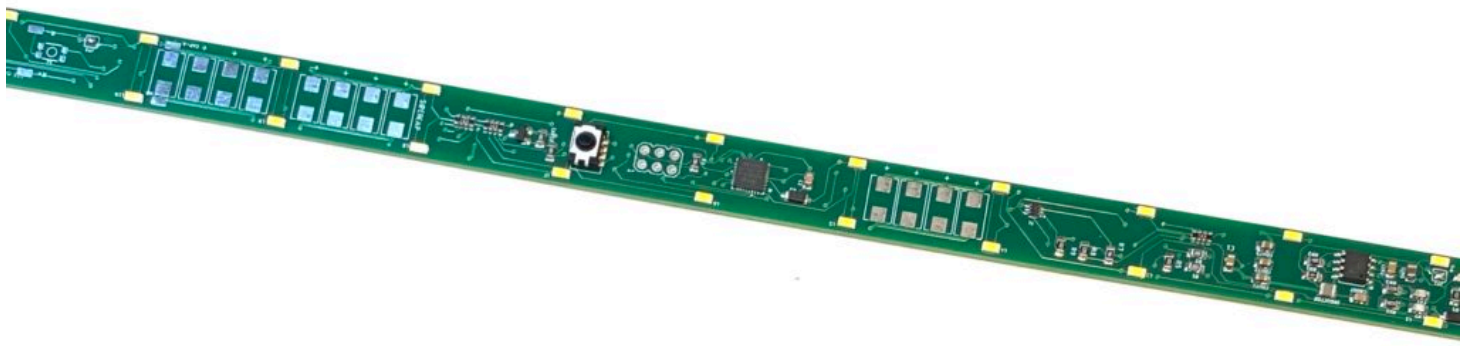
MTT Power Center Module (Terminal ) \$18.95

(includes power supply)

STORE

## IR Remote Control for LED Passenger Lighting

---



---

An IR Remote control light board has also been on our product roadmap for some time. Spurred on by a customer request we bumped this forward by six months. If you DON'T have DCC but you still want to remotely control the lighting in your passenger cars this will do it! This is available for HO both the HO-264 and the HO-192. Shown is the double row HO board. The keypad shown is the sample keypad. We have modified the buttons to match the function needed for our application and those controllers with the buttons are due in mid April. You can control the board EITHER by DCC or by the IR Remote. When you order the board you must choose to add the IR Option even if you don't initially plan to use it.

The price of the IR Option is \$12.95

## **NEW** - HO and N Scale Lanterns 3 LITE LENS

Once again we have updated the 3D printed lanterns to now include an option for the light to come out from 3 sides - one green and two red. This was no small feat and it took a lot of trial and error to make this work. There is a single LED inside that is encased in a special hardened clear resin. They work the same as the previous version. (3V powered by our caboose board)

HO LANTERN:





[STORE](#)

# N SCALE 3 LITE CABOOSE LANTERN

---

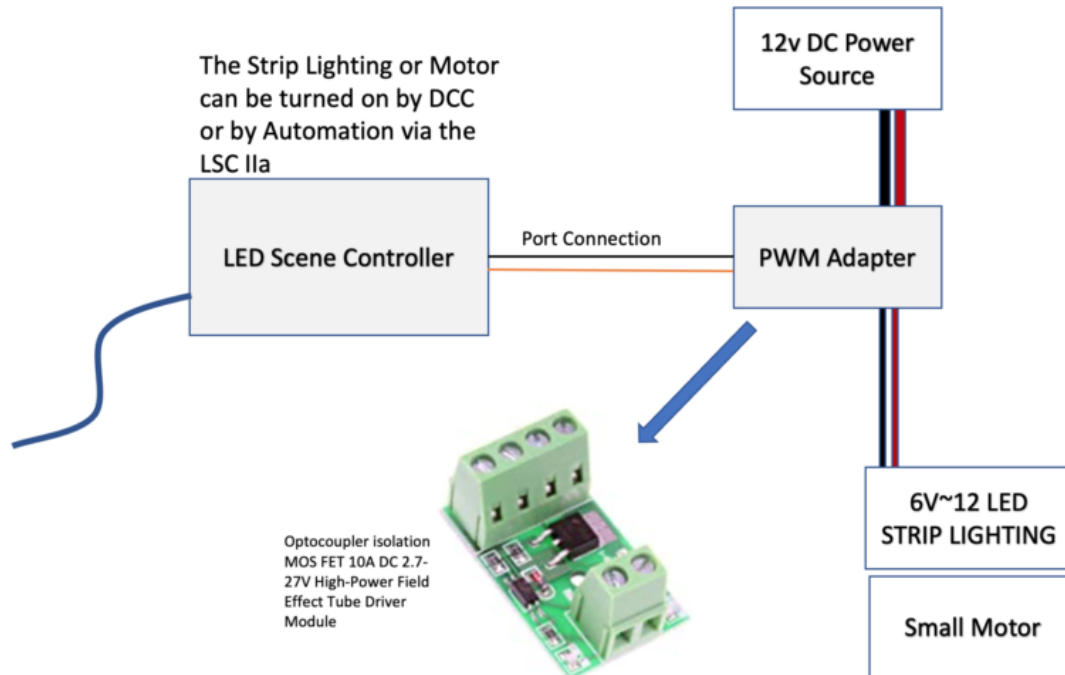


[STORE](#)

THIS IS INSANELY SMALL - YES - we managed to insert an LED inside our N scale lantern AND we were able to use the same resin technique we used for the HO Scale lantern - and then paint the lens with a fine needle. The wire is magnet wire and you can see from the picture how big that looks. Sorry the picture is a fuzzy due to expanding the image. I'll keep trying to get a better picture - you really do need a magnifying glass to see this - pictures on an installed caboose coming this weekend.

---

# SCENE CONTROLLER HIGH VOLTAGE CONTROL



✎ ✎ ✎ ✎

I've receive numerous requests to share how to hook up long 6v and 12V LED strips to the LED Scene Controller. We found an add on product that does just that AND maintains the ability to dim and animate. The PWM adapter takes in a typically 12V DC source OTHER than the power from the Scene controller. That might be the power source that came with the LED strips or it can be something you buy on eBay or Amazon. As shown in the picture, you connect the Scene Controller to the input side that says PWM (two screw terminal side). The other four-screw terminal is power IN and LED power OUT. It's labeled on the bottom of the board.

One customer is hooking up small smoke generators and another connected

a small DC motor that turns a windmill. You can adjust the speed with the DIM control and then use the Random function to turn it on and off - for example. It would be easy for us to build something similar but this works great and we have our hands full.

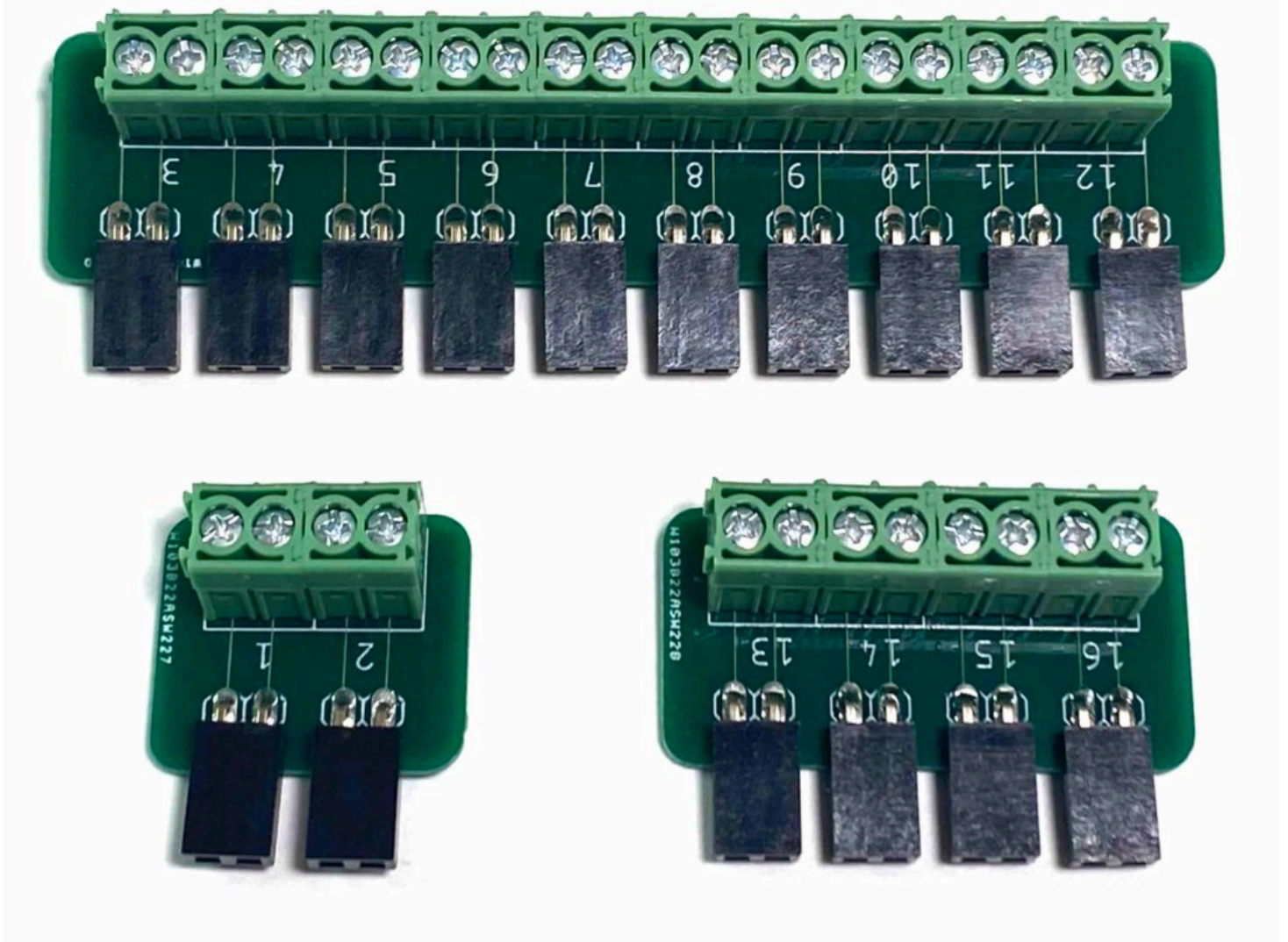
[Link to Amazon PWM Adapter Source](#)

---

## Reminder: JST to Terminal Connectors

We have received a number of requests for a way to mix both JST plug accessories and those that DONT have a JST plug. Here is the solution. These connector simply plug into the JST sockets as a set (2,4 or 10). Easily removed like the JST plugs. You can use the 2 port and 4 port anywhere it fits - not just on the ends.





---

## FIBER LIGHTING CONTROLLER - UPDATE

**OUR MTT PRECISION DETECTOR WORKS WITH OUR FIBER LIGHTING CONTROLLER.**

We have release and shipped our NEW Fiber Lighting Controller. The controller will light 16 Fiber Cables with 8 CONTROL PORTS. There are two fiber lights per port. The animation included are ON, Alternate Flashing and Blinking. This perfect for use as a crossing gate, emergency vehicles or



building flashing signals. The Fiber Lighting Controller also has 8 DETECTION circuits so that you can activate any of the ports via remote detection system. You can assign one or more detection inputs to one or more ports.

The unit also has a built in DCC decoder AND you can select whether it behaves as a Multifunction Decoder OR an Accessory Decoder. The Unit will support 8 separate Switch addresses and you can assign any switch to any port - or motile ports. This give you a lot of flexibility. The unit fully supports NMRA short and Long addressing. The kit comes with an 18VDC power supply ("wall wort").

We invented Fiber Connector Pins so that you just slide the Fiber Cable in and insert it int the Fiber Light Manifold.



---

For your convenience, here are the links to our site: (both links work the same but one is easier to remember and type!)

[www.ModelTrainMan.com](http://www.ModelTrainMan.com)

[www.ModelTrainTechnology.com](http://www.ModelTrainTechnology.com)

Store

---

Until next time, best regards and stay safe and healthy,

Jim

Founder & Inventor

Model Train Technology

Orlando, Florida

[Jim@ModelTrainTechnology.com](mailto:Jim@ModelTrainTechnology.com)

407-242-5436

---

[Unsubscribe](#) | [Manage your subscription](#)

Add your postal address here!

