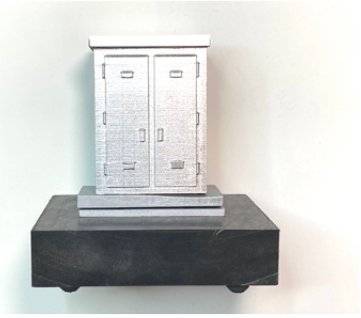
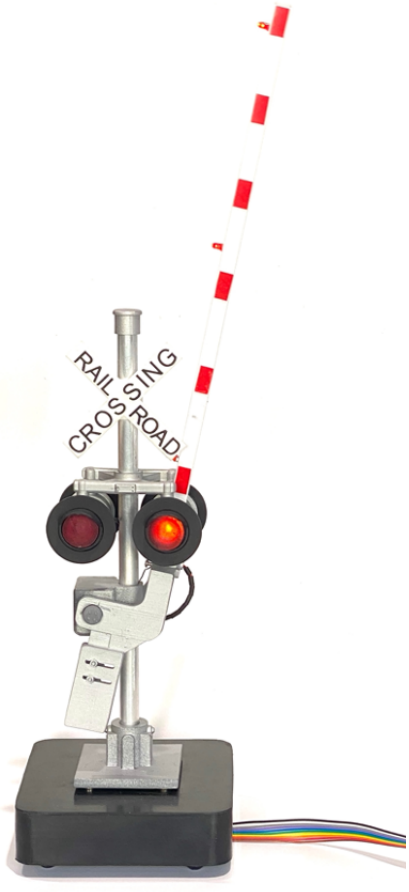
Model Train™ TECHNOLOGY

G Gate Controller™

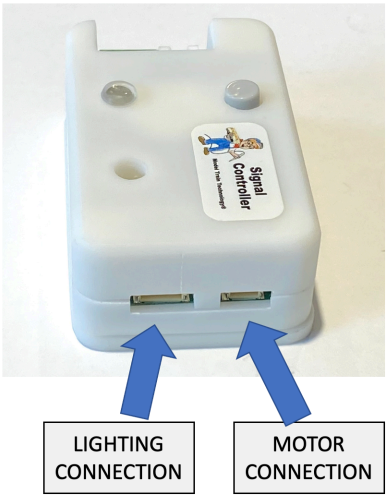
OPERATIONS MANUAL

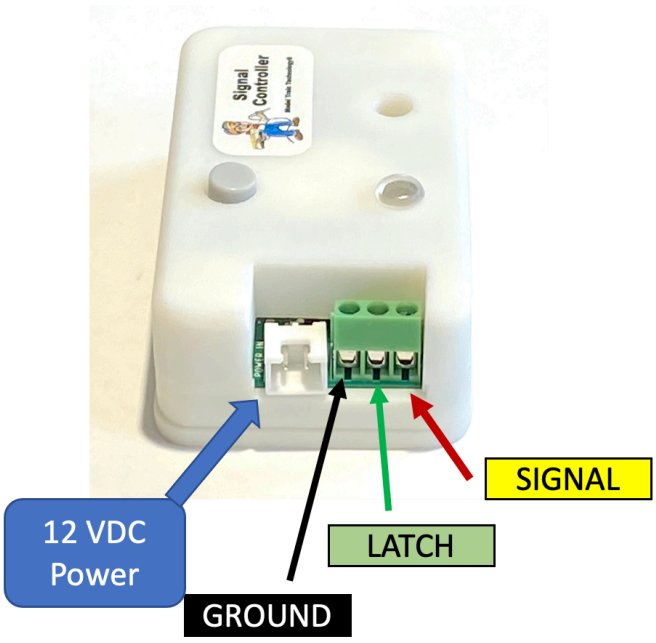
Version 1.1c

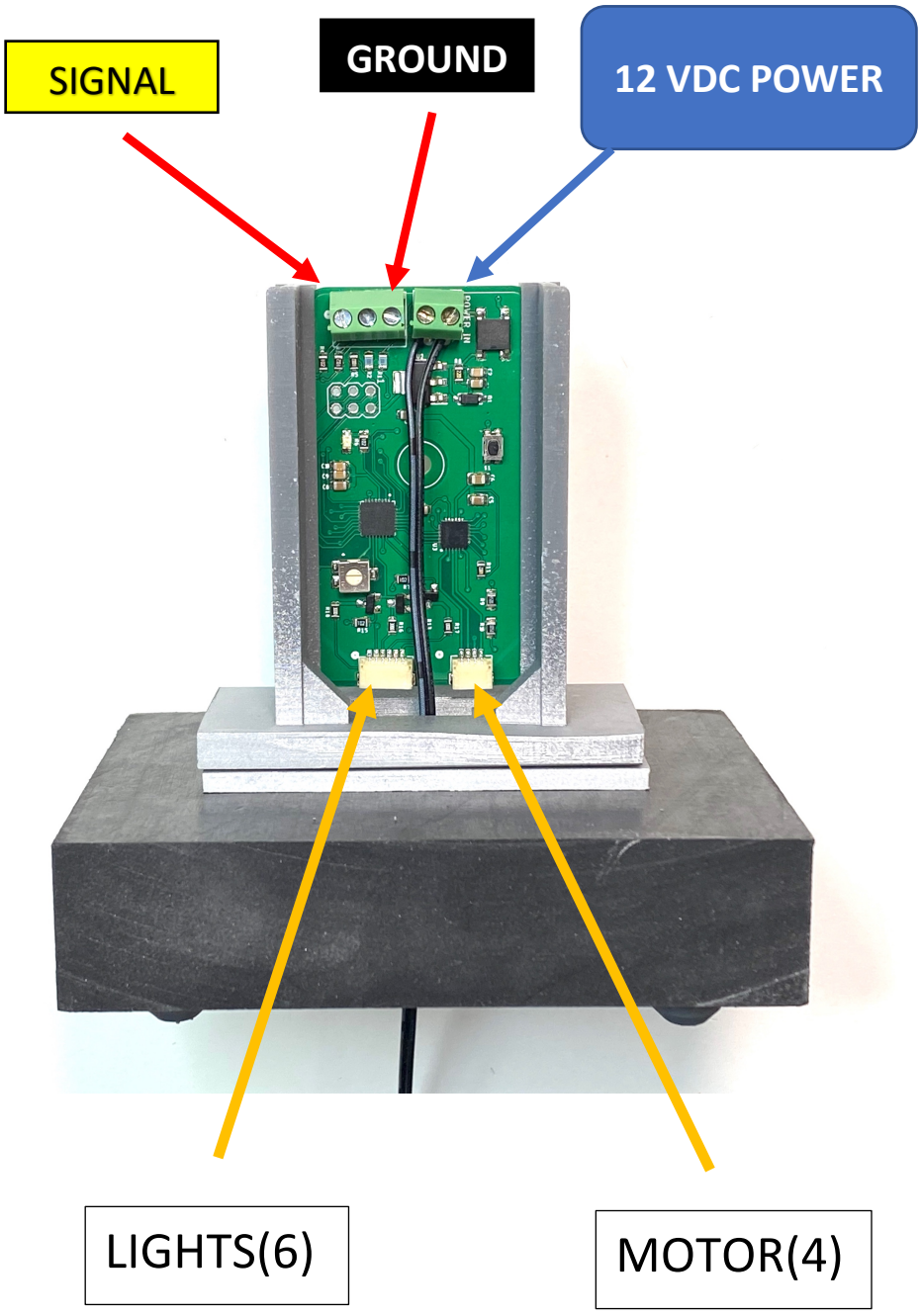




The Model Train Technology™ ***G Gate Controller™*** provides an extremely simple plug-and-play system for controlling the Model Train Technology™ G Scale Motorized Railroad Crossing gate. There are two version of the case – one for inside (white case) and one for outside (silver with mounting block and brackets).



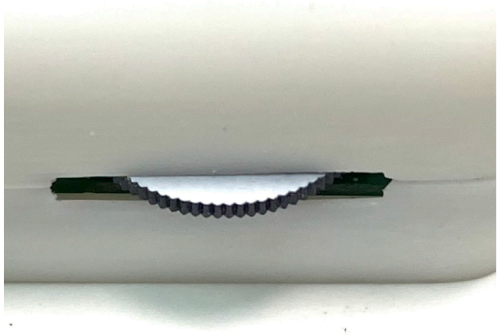



SIGNAL
GROUND
12 VDC POWER
LIGHTS(6)
MOTOR(4)

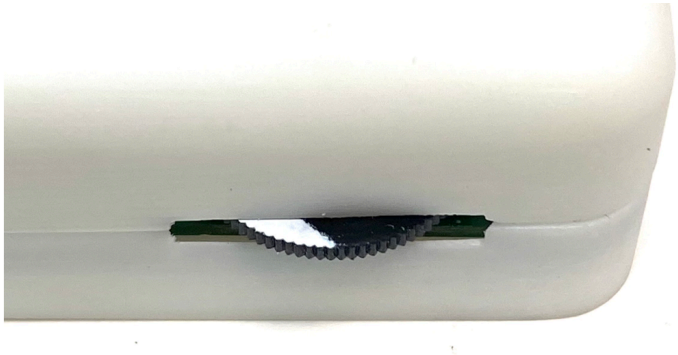
The INSIDE version of the G Scale Gate Controller may have a thumb wheel as shown below.

BEFORE YOU POWER UP THE GATE, MAKE SURE THE THUMB WHEEL IS CENTERED.

If the LED does NOT go out, it means that the trim wheel is not in its centered position (OFF). The trim wheel is OFF and in its centered position when the white mark on the wheel is evenly balanced as shown on the left below. Simply move the wheel so that the white part is evenly displayed and then the LED will extinguish.



Trim Wheel Centered (OFF)
CORRECT POSITION



Trim Wheel NOT Centered (ON)

OVERVIEW

When power (12VDC only) is first applied to the ***G Gate Controller™*** the arm of the gate will rise to the open position regardless of whether the DETECT line is tripped. When the STOP PIN hits the aluminum post it will stop the motor and turn off the lights. This automatically calibrates the gate to this "known" open/up position. Thereafter, all raising and lowering of the gate will be calibrated.

If the STOP PIN is not able to touch the aluminum poll for any reason, the motor will stop after 6.5 seconds total run time. This is an ERROR condition and as such the last LED on the Gate arm will flash.

THE ONLY WAY TO RESET THE GATE IS TO TURN THE POWER OFF. THIS IS TO PROTECT THE FRICTION GEAR.

The Friction Gear acts like a "shear bolt" that is designed to "break away" and reduce the chances of damaging the arm, gear or the motor.

NEVER MOVE THE GATE ARM MANUALLY !!!!

Before turning the power back on – make sure that nothing is blocking the arm from reaching the upright position.

DO NOT ADJUST THE STOP PIN.

Simultaneous with turning the power on, and before the arm moves, the BLUE LED on the controller will flash FOUR times. This indicates that the controller has completed its startup test and is ready to operate.

A trigger condition from an MTT Precision Detector will trip the circuit and cause the gate closing ***sequence*** to begin. Once started the gate will move down regardless of whether the trip condition is released. If it is release while the arm is moving down, the arm will immediately go up once it has completed its travel going down.

There are three options for when the gate will move after it is triggered. Press the SELECT button #n times for the option. The gate must be in the UP and non-triggered position to change settings.

#4 Immediately
#5 After 5 seconds after the lights start flashing
#6 After 10 seconds after the lights start flashing.

When the controller is tripped the flashers will flash but the gate will not move (*unless it is set to immediate mode* #4). (This simulates the prototype).

After five seconds (default setting) the gate will lower.

(In the prototype this time is longer than five seconds and is designed to let vehicles crossing the tracks to exit before the gate begins to close)

The gate will stay down while the DETECT line is tripped. Once the DETECT signal is released the gate will open immediately but the flashers will still flash.

When the STOP PIN (screw located on the gate arm) hits the aluminum gate post, the motor will stop, and the lights will extinguish.

WARNING: It the gate arm STOP PIN is not able to reach the aluminum post, the motor will run until 6.5 seconds has elapsed and then the Gate will enter the ERROR condition mentioned above.

The Gate Motor is attached to the Gate Arm with a set of FRICTION GEARS. Thus, the gate motor cannot force the gate arm beyond a reasonable torque enough to move the arm.

If the gate arm moves a little during transit or setup (for example) do not worry. As mentioned, when power is applied the gate arm will raise to the up position and auto calibrate using the STOP PIN.

REMINDER – DO NOT MOVE THE GATE ARM MANUALLY.

To reset the Gate Controlled press the SELECT button 13 times.

FRICTION GEARS

Over time the Friction gears may become “sloppy”. There are two places this can happen: 1) the gear to the arm connection OR 2) inside the gear to motor connections. The gears can be replaced. There is a video on how to do this. Contact us first.

TESTING

To test the operation of the gate, with the DETECT signal off (recommend wire disconnected), press the SELECT button twice. After one second the gate flashers will activate and after the delay period the motor will move the arm down.

The arm will stay down and the lights flashing until you press the SELECT button again twice. Then the arm will raise to the stop position and the lights will shut off.

ADJUSTING THE GATE ARM POSITION

The gate arm in the down position can be adjusted up and down slightly so that it is level. This is accomplished by means of the trim potentiometer located inside the G Gate Controller. A screwdriver is provided.

How it works: Press the SELECT button to move the gate to the down position.

THIS WILL NOT WORK WITH THE DETECT TRIGGER ACTIVE.

This is easy but it will help if you watch the video. The position of the trim pot is set at the mid-range from left to right (or counterclockwise to clockwise). This "center"

position is OFF. The range of the trim pot is 1000, therefore the center position is 500. If you turn the screw to the left to less than 300 the motor turns on at ¼ speed and starts moving the arm. To stop this movement, adjust the trim pot back to the center (500 approx.). Turning the screw in the other direction, above 700 cause the motor to turn in the opposite direction. To stop, again move the trim pot back to center. The numbers mentioned are for reference only.

It takes VERY little motion to activate the motor and more turning does NOT make it go faster or slower.

WHILE the the motor is running in this adjustment mode, the blue LED will flash. You know the screw is back at center when the LED is NOT flashing.

Once you stop the motor after you have made an adjustment, the G Gate Controller remembers the new setting.

To finish, press the SELECT button once to raise the gate arm. Then press it again to test the new setting.

To return to normal operation, press the select button to raise the gate arm.

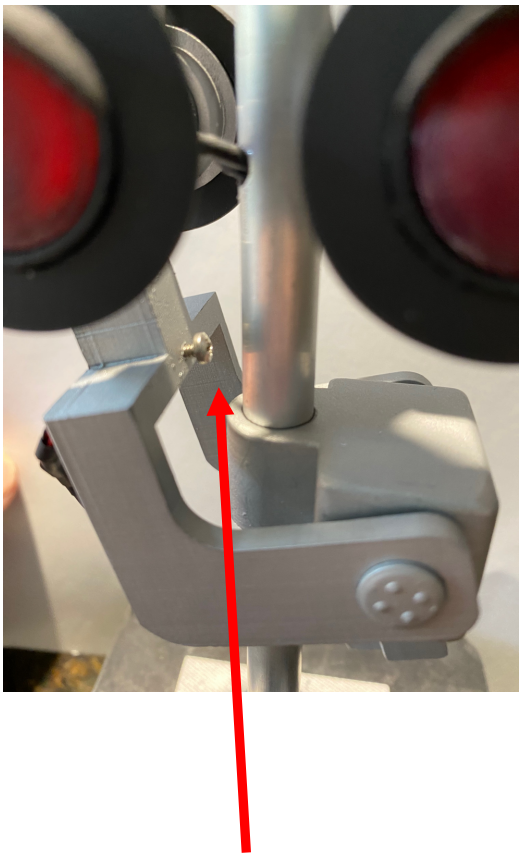
HEARTBEAT

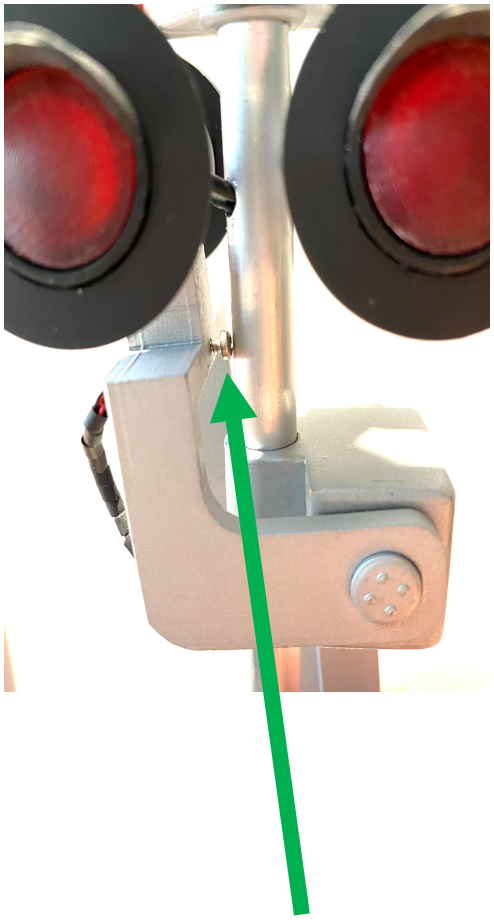
While the gate is sleeping the blue LED will flash every three seconds. We call this the heartbeat, and it lets you know that the Controller is alive and well.

GATE ARM STOP PIN

In the picture on the left the screw (Stop Pin) is not touching the post. The picture on the right shows it touching the post.

NOTE: the Stop Pin must touch the post only momentarily to stop the motor and calibrate the up position. When in the REST position the Stop Pin might not be contacting the post.





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 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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