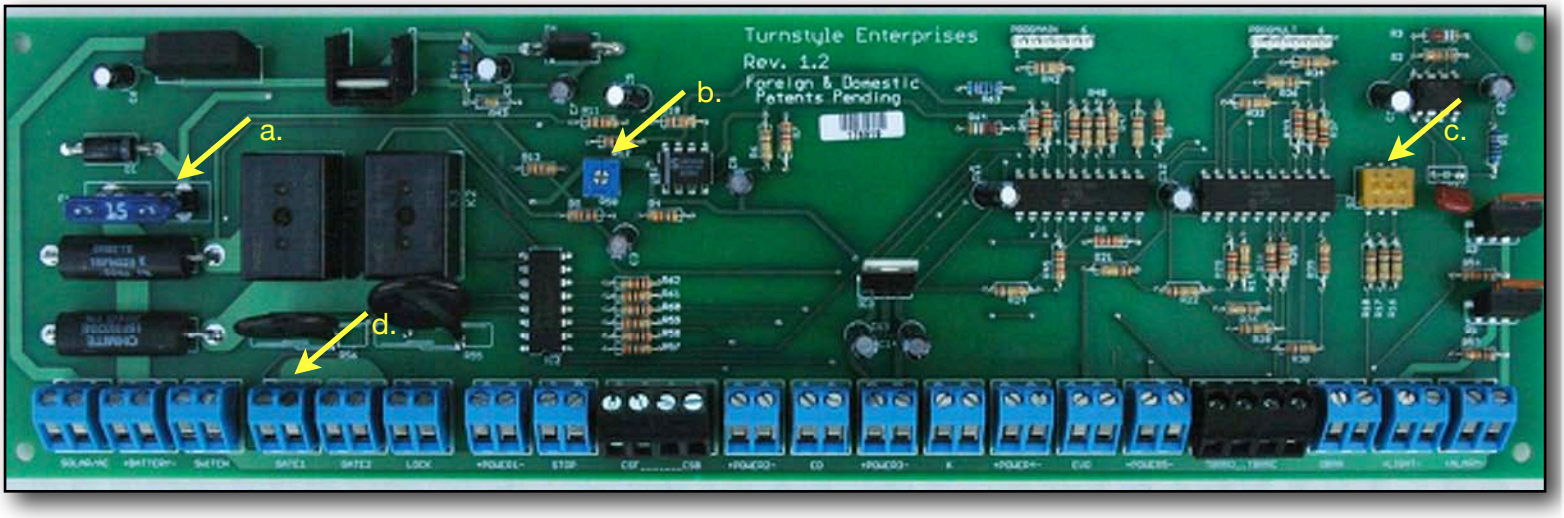
Step By Step: Control Panel Installation for your GMS™

The Control Panel will arrive mounted inside the Control Box. Also mounted inside the Control Box, and pre-wired to the control panel; are the wireless receiver with its antenna, on-off (reset) switch, and the 100dB Alarm. The Control Box is configured to accommodate wiring. Each operator is supplied with approximately 20 feet of low-voltage wire, allowing the Control Box to be mounted on any surface within a 20 foot radius. The Control Box also houses the 12 Volt battery(s). An on-off (reset) switch is located on the underside of the Control Box. It is also pre-wired to the appropriate terminal on the Control Panel.

1. *Control Panel:* The Control Panel is a printed circuit board measuring 12 inches by 3.5 inches.

WARNING: Do not attempt to remove the Control Panel from the Control Box. Contact with the reverse side of the printed circuit board can cause irreparable damage to the circuit board and render your warranty void.



The installer and/or end user has four areas of concern when wiring the Control Board:

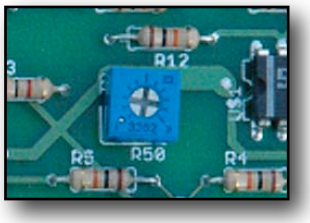
a. **Fuse** (located on left side of Control Board)

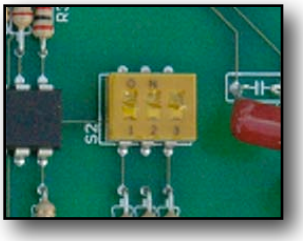
b. **Sensitivity Adjustment Square** (a small blue square with an adjusting screw head, located 4.5 inches from left side of the Control Board)

c. **Dip Switches** (a small yellow square containing three switches, located on the right side of the Control Board)

d. **Wiring Terminals** (There are 20 sets of wiring blocks located along the bottom of the Control Board)

a.


b.


c.


d.


2. *Wiring Terminal Functions:* The 20 sets of wiring blocks are labeled in white lettering. The function of each wiring block is described below:

Power 1-Power 5 - These printed circuit board (PCB) terminals provide as access points for 12VDC power that may be required to power peripheral accessories and/or safety devices. If none of these devices are included in your final installation, these terminals will remain unused. **CAUTION - Do NOT connect ANY voltage source to any of these terminals. Doing so will damage the circuit board and render your warranty void.**

Solar/AC - Input for Solar Panel or supplied AC power supply. The polarity of the inputs is non critical. The recommended voltage is either 12VAC or 17VDC. Do not exceed 40VAC or 40VDC. ***DO NOT USE CONVENTIONAL 110V.**

Battery - Input for battery source. This DC voltage input polarity is critical and is NOT protected against reverse battery connection. In the event of reverse battery connection, the control panel will be irreparably damaged. A wiring harness is provided that will prevent inadvertent reversal of polarity. The positive (Red) wire should always be connected to the left-hand terminal and the negative (Black) wire connected to the right-hand terminal.

Power Switch - System power switch. This input is used to power 'off' and 'on' the system. Upon power up, all previous states are reset and the system will always initialize to gate being fully closed and locked.

Gate 1 - Terminal points for gate motor leads. Polarity depends on desired swing of gate. Use this terminal with a single mount gate.

Gate 2 - Terminal points for gate motor leads. Polarity depends on swing of gate. Use this terminal in addition to Gate 1 with dual mount gates.

Lock - Terminal points for lock motor(s) leads. Multiple locks may be employed.

Stop/NCI (Non-Contacting Input) - Input for non-contacting safety sensors, such as an optical sensor, with a normally open output. Activated input will stop gate instantly. Continued activated input will cause gate light to blink continuously, and prevent any movement of gate or lock. De-activating the input will allow normal operation to resume and will allow any interrupted cycle to complete.

CSF (Contact Strip Front of Gate) - Input for contact safety edge installed on front of gate. Activated input will prevent gate from closing, and reverse the gate direction if gate was closing.

CSB (Contact Strip Back of Gate) - Input for contact safety edge installed on back of gate. Activated input will prevent gate from opening, and reverse the gate direction if gate was closing.

ED (Exit Detection) - Input for devices to be used to only open the gate. Activated input will start the gate opening procedure if gate was not moving. Input activations while gate is moving have no effect.

K (Keypad) - Input for keypad, or other fixed input device in sight of gate. Activation will Open/Stop/Close/Stop the gate (repeated activations cycle through these 4). Activation will not stop the alarm.

EVO (Emergency Vehicle Opener) - Input for Emergency Vehicle Opener. Activation will open the gate. Continuous activation will prevent the gate from automatically closing.

OBRR (One Button Remote Receiver) - Input for remote controls with one button. Activation will Open/Stop/Close/Stop the gate (repeated activations cycle through these 4).

TBRRO (Two Button Remote Receiver Open) - Activation will open the gate.

TBRRC (Two Button Remote Receiver Close) - Activation will close the gate.

Light - Output for 12V lighting. Lights turn on when gate is moving and remain on for approximately 30 seconds after completion of the cycle. Do not exceed 40W of lighting.

Alarm - Output for 12VDC high volume (100 dB minimum) alarm (included).

3. *Wiring Instructions*

The Turnstyle System is low voltage (12V DC), thereby eliminating the danger of electric shock. Care should be taken however to guard against cuts and abrasions of the wire as this could cause a short circuit. All wires should be passed through one of the strain relief fittings in the bottom of the Control Box. Wires should be stripped back between 1/4" if needed. The exposed ends are then inserted into the proper terminals in the wiring blocks and the screws tightened.

a. Attach the Gate wires first. If a single gate is installed, attach the wires to "Gate 1" terminal (Blue wire on left, Brown wire on right), keeping in mind you may have to reverse polarity. If dual gates are installed, attach the wires from either gate to "Gate 1" terminal and the other to "gate 2" terminal.

b. Next, attach the charging source(s) to the "Solar/AC" terminal. These terminals are not polar. You can attach an optional 12V solar panel or the included AC/AC wall transformer, an AC trickle charger, or both to the "Solar/AC" terminals. These sources charge the 12 volt battery.

c. Next, attach the 12V battery, paying close attention to wiring colors.

***Note: Before wiring other accessories, you should now proceed to the Adjustments section below to adjust the swing of the gates, polarity and sensitivity.**

4. *Adjustments*

Now that you have installed and wired your gate(s), you must now make some adjustments; the opening and closing positions of the gate(s), the sensitivity of the gate(s) to obstructions, and Automatic Closing (Auto-Close) time (if desired).

1. Open and Closed Positions of the Gates

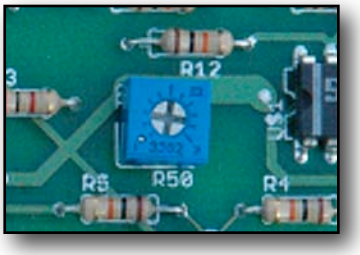
Turnstyle Gate Operators are engineered to move 90 degrees in either direction. Following your installation, your gates will most likely not open and close the way you want. However, adjustment to the desired positioning is very simple. First, direct your attention to the collar at the bottom of the operator(s). On a pillar mount the collar is a part of the lower mounting bracket. on a ground mount, the collar is a part of the ground sleeve (pictured below). The collar has two Allen (hex head) screws. Position the gate(s) in the closed position. Tighten the Bottom Mount screws so that the gate(s) are level and will not swing freely.

a. With your keychain transmitter, press the button to activate the gate(s). Note the direction of opening of each gate. Press the button a second time to stop the gates before they hit any obstructions. If a gate is not moving in the desired direction, reverse the wires for that gate on the Control Panel wiring block. Again, press the transmitter button and allow the gate(s) to move until they completely stop. The gate(s) will not be in the desired positions. Do not press the button again because that will reverse the movement of the gate(s).

b. Loosen the collars at the bottom of the gate(s) until the gates move freely. Position the gate(s) in the full 90 degree open position. Tighten the collars. Press the transmitter button again and allow the gate(s) to fully close. Loosen the collars and adjust the gate(s) to the final closed position. Tighten the collars securely. The gate(s) should now open and close to the desired positions. If the gate positions need any fine tuning, use the above procedure.

2. Sensitivity Adjustment

The sensitivity adjustment is located near the center of the control panel circuit board. It is a square blue device with a screw adjustment. (See photo on page 15) The sensitivity is preset at the factory for most applications. It is intended to interrupt the operation of the system in the event the gate(s) encounter resistance such as striking an object or person. However, because of wind load or the weight of the gate(s), you may need to adjust sensitivity. To decrease sensitivity, turn the adjusting screw counter-clockwise. To increase sensitivity, turn the adjusting screw clockwise.

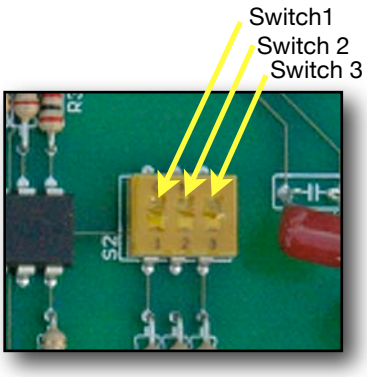


3. Auto-Close Adjustment

The Turnstyle operator system has an automatic closing (Auto-Close) feature that is programmed into the Control Panel. This feature allows you to have the Control Panel automatically close your gate(s) without the need to human input. You can elect to have the gate(s) close after either 7, 14, or 21 seconds. The "Auto-Close" time begins as soon as the gate(s) reach their fully open positions. "Auto-Close" may be modified, enabled or disarmed at any time.

On the right hand side of the control panel is a small yellow square control with three switches (pictured below, left). Switch 1 enables a power bolt lock. An up-down combination of switches 2 & 3 determine the "Auto-Close" time.

***Note**: If, after enabling the "Auto-Close" feature; you find the gates are automatically *opening* rather than closing, the polarity of the gate wires are reversed at the control panel. Simply reverse the positions of the wires at the "Gate" terminals. Now, after your gates open, they should "Auto-Close".



SWITCH 1	FUNCTION
DOWN	POWER BOLT LOCK **DISABLED**
UP	POWER BOLT LOCK **ENABLED**

SWITCH 2	SWITCH 3	FUNCTION
DOWN	DOWN	AUTO-CLOSE **DISABLED**
UP	DOWN	AUTO CLOSE ENABLED - **7 SECOND** DELAY AFTER FULL OPENING
DOWN	UP	AUTO CLOSE ENABLED - **14 SECOND** DELAY AFTER FULL OPENING
UP	UP	AUTO CLOSE ENABLED - **21 SECOND** DELAY AFTER FULL OPENING

**** Note: For all combinations, Power Bolt Lock will be enabled as long as Switch 1 is in the Up Position.***

Optional Equipment Installation

The control panel to your Turnstyle Gate Operating System allows the employment of various optional devices.

1. **Solar Panel** - A solar panel is an optional battery charging device. The solar panel wires are connected to the terminal block labeled "Solar/AC." Polarity is not critical. Be sure the solar panel is facing south for maximum exposure to sunlight.

2. **Exit Devices** - Various exit devices can be used to open your gate(s) upon exit. These include exit wands, loop detectors and optical sensors. These devices should be wired into the terminal labeled "ED." Wiring instructions are provided with each of these devices.

3. **Lights** (low voltage) - Low voltage lights add beauty as well as function. They are wired directly into the terminal block labeled "Light." The lights come on when the gate is activated and remain on for approximately 10 seconds after the cycle completes. They also visually relay critical system information such as battery conditions and sensor actions.

4. **Contact Sensors** - Contact sensors are sensitive strips attached to either the front, back, or both edges of the opening end of a gate. Contact sensors will stop the movement of a gate immediately upon contacting an object or person. A front edge contact sensor must be connected to the "CSF" terminal and back edge contact sensor must be connected to the "CSB" terminal.