GATE ARMS+

SAFETY LIGHTING KIT FOR FLAT BARRIER GATES, SWING & SLIDE GATES

INSTALLATION MANUAL

⚠ IMPORTANT

Read all instructions in this manual before installing. Perform steps in the order given. Failure to comply could result in property damage or personal injury. Keep manual for future reference. Download the latest manual from www.GateArms.com.

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SAFETY PRECAUTIONS

For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation step exactly as shown.
- Observe all local, state, and national electrical codes.
- Pay close attention to all danger, warning, and caution notices given in this manual.

If necessary, Get help

These instructions are all you need for most installation sites. If you require help for a special situation, contact GateArms+ at 800-878-7829

When Wiring

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED EXPERIENCED TECHNICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and connections are completed or reconnected and checked.
- Highly dangerous electrical voltages and moving parts are used in the operator. Carefully refer to the wiring diagram and these instructions when performing any wiring.
- Ground the unit following local electrical codes.
- Connect all wiring tightly. Loose connections can become disconnected due to vibrations from the heavy door equipment.
- Do not modify the components, or install differently than what is described in this manual.

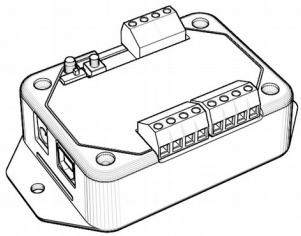
Included Accessories

⚠ WARNING
For installation purposes, be sure to use the parts supplied by the manufacturer or other prescribed parts unless directed otherwise. The use of non-prescribed parts can cause serious accidents such as the unit to fall, electric shock, or fire.
The following installation parts are furnished. Use them as required.

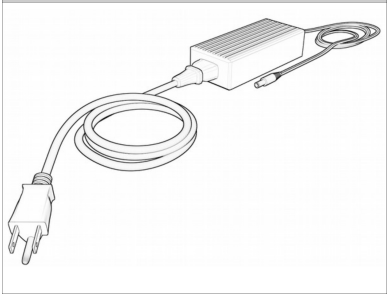
Check that the following components are included with your kit. Do not discard any components until the installation work has been completed.

(1) Instruction Manual

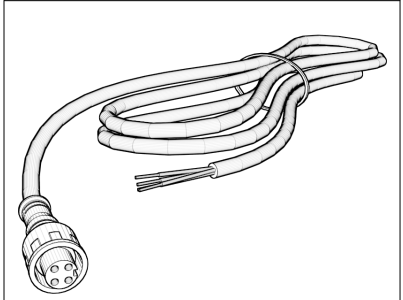
(1) LED Controller



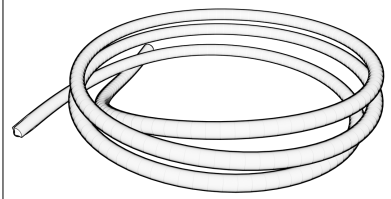
(1) 110V to 12VDC Power Supply with Cables



(1) 20 ft LED Wiring Harness

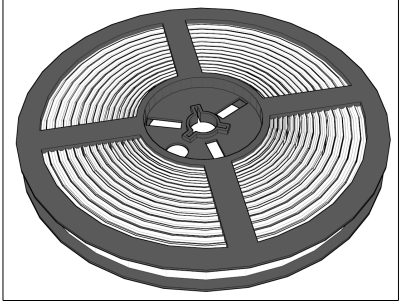


(1) 3 ft Signal Wire



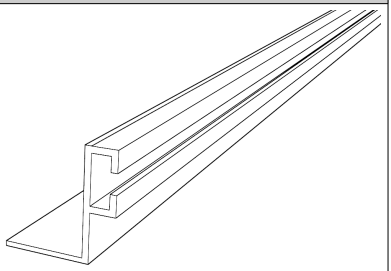
(5 per Track) #6 X ½" SS screws

(1) 10 ft LED Strip

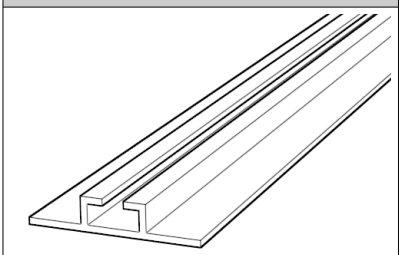


You should also have one of the following pair of retainers

(1 - 4) 5 ft 90°
LED Retainer Track



(1 - 4) 5 ft Standard
LED Retainer Track



Recommended Tools and Supplies

General

- Armored Conduit
- Mini Pocket Slotted Screwdriver
- Powered Screwdriver
- Wire Stripper
- Multi Meter
- Cleaner or Degreaser
- Clean Rags
- Double-sided Foam tape or Velcro
- Wire Ties
- Marker
- Power Drill
- Drill Bits (1/8”, 1/2”, 5/8”)

Limit Switch Installation

- Terminal Crimper
- Red Crimp Terminals – Spade

1. TURN OFF POWER

Turn off all power to the gate equipment.

⚠ WARNING
Serious injury could occur if power is not disconnected prior to installation.

2. INSTALL ALUMINUM TRACK

Attach the aluminum track to the swing gate by drilling through the mounting flange(s) and secure with screws.

The track can be mounted in various directions:

- Facing road surface
- Facing driver (lower horizontal edge)
- Facing driver (non-hinge vertical edge)

LED strips must not be installed with sharp turns or bends. To install LEDs at a 90 degree turn (on horizontal and vertical edges, for example), you must install two separate LED strips with two separate harness wires.

3. PULL LED STRIP INTO TRACK

At the Track's farthest point away from the operator, use a pliers to flare-open the LED track. This makes it easier to fit the LED strip end-cap.

Gently pull the LED strip into the LED track. When the end-cap enters the flared-open section, push the cap into the LED track and use a pliers to crimp-down the end-cap so the LED strip doesn't move.

4. PLUG HARNESS INTO LED STRIP

Plug the harness wire into the LED strip's connector. Match the two sides up. There is a notch inside to enforce correct orientation. Ensure the O-rings are in place to keep the connector water-proof.

Note: There is dielectric grease inside the connector. Add more grease to female side in the future if the connector is unplugged.

5. ROUTE HARNESS WIRE TO OPERATOR CABINET

Route the harness wire from the gate hinge to the operator cabinet. Leave enough slack so the cable can move freely with the moving gate. Bring the end of the cable up to the operator cabinet, where you will create the penetration hole.

Note: Some installers use flexible armored conduit at the hinge to reduce fatigue on the harness wires.

6. DRILL HOLE FOR CABLE RELIEF FITTING

Decide how to route the harness wire to the operator chassis, and where to penetrate the operator. Position the hole so that the wire will be as hidden and as short as possible.

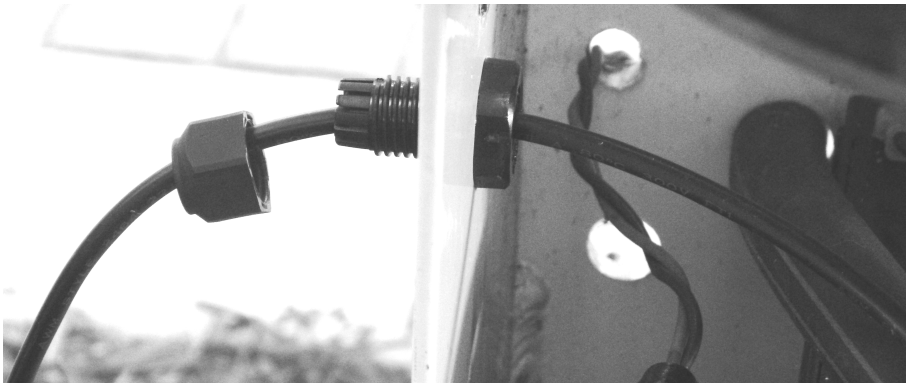
Drill hole in operator chassis (Single LED – 1/2”, Dual LED – 5/8”).

Deburr hole with the drill bit or a metal file.

7. INSTALL CABLE RELIEF FITTING & HARNESS WIRE

Remove outer (tension) nut from cable relief fitting, then insert fitting into the new hole.

Tighten the Back Nut onto the fitting inside the operator housing. This nut holds the fitting to the operator wall.



Slide the raw wire end of the LED wiring harness through the cable relief Tension Nut, entering the narrowest side. If Dual LED, slide both cables through the fitting.

Leave enough cable outside of the operator to account for the gate swing. It is essential that the cable always has some slack in it, regardless of the position of the gate, or the LED strip may be damaged.

8. INSTALL AC POWER SUPPLY & LED CONTROLLER

Plug the DC power plug from the 12V power supply into the power port on the LED Controller, located on the side near the USB port.

Place the 12V power supply and LED Controller inside the gate operator chassis where they will remain safe and dry.

Route the power supply's power cord to the 120 VAC outlet (used by the operator). Ensure wiring does not interfere with the motor or pulleys. **DO NOT PLUG THE 110V PLUG INTO THE OUTLET YET!**

IMPORTANT: The Controller can only accept power voltage of 12 VDC. Higher voltage may irreversibly damage the LED Controller. THIS WILL VOID WARRANTY.

9. CONNECT LED HARNESS CABLE(S) TO LED CONTROLLER

Route Harness Cable through the inside of the gate operator chassis until the end is conveniently located near where the LED Controller will be positioned.

Be sure the Harness Cable will always avoid the pulley and any moving parts or sharp edges.

Connect the Harness Cable's wires to the press-on header(s), matching wire colors to the labels on the LED Controller cover.

Push the press-on header(s) vertically onto the LED Controller pins with screw heads facing outwards.

WARNING: Do not connect more than 1 LED strip to a LED header. Use dual LED controller for double-sided gates.

FOR WHITE-LIGHT-ONLY GATES*: Your LEDs will remain white color for 24/7. Do not use an LED Controller. Cut the DC plug off the end of the AC Power Adapter's DC cable. Connect the AC Power Adapter's Red (+Positive) wire to the LED Harness Cable's Black wire. Connect the AC Power Adapter's Black (- Negative) Wire to the LED Harness Cable's Blue, Green AND Red wires (together).*
Disregard next 2 sections regarding Signal Cable.

10. CONNECT SIGNAL CABLE TO LED CONTROLLER

The Installation Kit includes a 4-wire Signal Cable for connecting to signal posts on the gate operator control board.

Remove the upper-right 4-pin press-on wire header from LED Controller.

Connect one end of the Signal Cable's wires to the press-on header. Note the pin definitions on the LED Controller cover.

- Black = Ground
- Green = Open
- Red = Close
- Blue = Aux (Auxiliary Open)

Plug the press-on header into the LED Controller with screw heads facing OUT.

Route the Signal Cable from the LED Controller to the gate operator control board, where the standard input and/or output posts are located.

11. CONNECT SIGNAL CABLE TO OPERATOR

Connect the other end of the Signal Cable to the gate operator control board. The connection spots will vary depending on the operator make & model. Most swing gates provide relay outputs for fully-open and fully-closed. Ask GateArms+ for a wiring schematic specific to your make/model.

> ***MAX VOLTAGE:*** *The Controller can accept any signal voltage from 2.5-30 VDC. Higher voltage may irreversibly damage the Controller.* ***THIS WILL VOID WARRANTY***.

D/C SIGNALS ONLY: The LED Controller can only accept D/C or dry-contact signals. A/C signals will irreversibly damage the Controller. **THIS WILL VOID WARRANTY**. We offer an add-on **A/C Signal Converter board** that will allow the use of A/C signals with this LED Controller. Several swing-gate models require this AC Signal Converter board. Call GateArms+ to verify.

12. CONFIRM & SECURE WIRING

Take a moment to reconfirm all connections on each of the cables.

Check both sides of the power cable.

Check the operator's signal wire posts where the Signal Cable is connected. Ensure you are tied into the right circuits for open and close. Ensure Common (Ground) is well-connected.

Check the LED strip(s) to ensure the wire colors correspond correctly to the colors printed on the LED Controller.

Ensure all wiring is well out of the way of moving parts, including pulleys and belts.

Using zip ties, secure all wiring inside the gate operator housing so the pulley and belt will never touch any wires.

Make the wiring look neat and professional.

13. TURN ON POWER

Turn on power to the gate operator.
Immediately power-off if you sense any problems.

Plug the 12V Power Supply into the 110VAC outlet located inside the operator.
Note: This Adapter can accept 100-240VAC.

Turn on the LED Controller. If the LED Controller's status light doesn't turn on, turn switch off and re-check power connections. We need "Mode 3", where the status light is flashing rapidly. If the status light is solid or flashing slowly, hold the MODE button down again for 3 seconds and release. Repeat until flashing rapidly.
LED strip should turn on after 2-3 seconds. If not, immediately turn off Controller and review wiring.

14. TEST LEDs

Open the gate. The solid Red LED lights should begin blinking red, then transition to Green when gate is fully open.

Close the gate. The solid Green lights should begin blinking red, then transition to solid Red when gate is fully closed.

15. FINALIZE

Close and secure the operator housing.

Clean your workspace, removing all wire cuttings or evidence you were there.

16. PROBLEMS?

If there are any problems with the LED behavior during these events, turn off the gate operator and review your wiring. Refer to the troubleshooting section of this manual.

17. TROUBLESHOOTING

If troubles persist, call or email us. The LED Controller is extremely versatile, and can probably be configured to work for your unique situation. There are many subtle configuration settings that can be tweaked to get your project working. We want to help you!

No Gate Lights On

Possible issue: Power Supply Problems

- Check LED Controller. Is its amber LED on?
- Is the 110V power adapter LED on? Check 110V power wiring at operator power source. Trace wire from LED Controller.
- Check Press-on Headers. Are their wires well-secured? Are they pressed in vertically all the way? Screws facing outwards?
- Ensure the external connector mating the Harness to the LED Strip is fully connected and tightly screwed together.
- Check the LED strip header. Is it reversed? Screws facing outwards? Match wire colors with the words on the case cover.

Red Lights stay on, No Green when gate opens

Possible Issue 1: Open-Signal Wire or LED Green wire disconnected

- Check the LED strip header. Is the green wire disconnected?

- Check (green) Open signal wire connection at the Signal Press-on Header.

- Check the Open signal wire connection at the gate operator control board post. Ensure LED Controller's green (Open) wire is well-connected (piggybacked) to the same open post(s) used on the operator. Use a multimeter to ensure voltage is changing momentarily as expected when the gate opens.

- Are you using multiple posts for Open devices (i.e., post 1 for guard, post 2 for RFID, post 3 for clicker)? You must tie all 3 open posts together with wire jumpers so the LED Controller will sense the voltage changes on all posts.

Red Lights stay on, No Green when gate opens

Possible Issue 2: Controller Misprogrammed

- Ensure your controller is programmed correctly for your particular gate scenario. Controllers are factory-set for a standard swing gate arm profile that has Open and Close limit switches or relays using dry-contacts. When triggered, the relay is grounded. Your Controller may be in a Mode other than "Swing-gate Mode" or have custom-programming that is interferring. Ensure status LED is fast-blinking.

LEDs change from Green back to Red while vehicle is still in the gate

Possible Issue 1: Controller "Close" set to Entering

- If the lights change when drivers enter the loop, set the LED Controller's Close to trigger on "Exiting".

Possible Issue 2: LED Controller's timer is set too low for your scenario

- Use the LED Controller's Configuration Tool and set the Auto-Close Timer to Disabled or to a higher value.

Driver won't install correctly

Possible Issue: Driver must be installed manually

1. Right-click "My Computer", choose "Manage"
2. Click "Device Manager", then find "LED Driver" in "Human Interface Devices" or "Other Devices"
3. Right-click "LED Driver" and choose "Update Driver Software".
4. Browse to the GateArms.com installation folder, probably located in C:/Program Files or C:/Program Files (x86)
5. Choose Folder: C:\Program Files (x86)\Gatearms.com\Configurator\Driver
6. Click OK to Update Driver Software
7. Try Configuration Tool again

18. PROGRAM THE LED CONTROLLER

The default Swing / Slide gate profile includes solid-red on fully-closed, flashing-red on opening & closing, and solid-green on fully-open. This profile requires 2 relays or limit switches, for fully-open and fully-closed.

Other features can be programmatically added:

- Enable A/C Signal Converter
- Change color or timing of flashing
- Control external devices (horns, etc.)
- Clone Mode for 2 LEDs
- Auto-shutoff for inside and/or outside LEDs
- Configure various timers
- Set dimmer level

USING MODE BUTTON

The swing/slide gate profile is Mode 3 (fast-flashing). Hold the Mode button down for 4 seconds. If status light is not fast-flashing, hold button down again. This will reset the Controller.

USING CONFIGURATION SOFTWARE

Download and install the LED Controller Configuration Tool from http://gatearms.com.

Connect LED Controller to PC using USB cable.

Add a new profile, and configure according to instructions from GateArms+ technical support personnel.

USING A JUMPER WIRE

Beginning with version 4.1 (GAT-171007), the LED Controller can be configured without use of a computer. A jumper wire can be connected between 2 pins on the LED Controller. The user holds the Mode Button down and turns on the Power Switch. Which feature is set depends on which 2 pins are jumpered.

Please contact GateArms+ for assistance when attempting to program with a jumper wire.

Patent Pending

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