

GATE ARMS+

LED SAFETY LIGHT SYSTEMS



FOLDARM90

INSTALLATION MANUAL

www.GateArms.com



IMPORTANT SAFETY INFORMATION

For safe installation and trouble-free operation, YOU MUST:

- Carefully read this installation manual before beginning.
 - Always use appropriate PPE during installation including safety glasses, gloves and hearing protection as needed.
 - 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.
 - Always use the parts supplied by the manufacturer or other prescribed parts unless directed otherwise.
- NOTE:** Use of non-prescribed parts can cause serious accidents such as the unit to fall, electric shock, or fire.

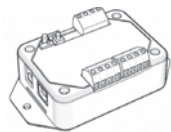
USE CAUTION WHEN WIRING: ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY QUALIFIED & EXPERIENCED INSTALLERS SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- 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 equipment.
- Install as directed. GateArms+ LED Barrier Arms and LED Controllers are intended for use as described herein and by the product literature available for download at www.GateArms.com.
- Any misuse, alteration, or modification of GateArms+ branded products beyond what is described in the available product literature will void all warranties.

KIT COMPONENTS

- White 90-DEGREE preassembled folding gate arm w/pre-installed LED Strip(s)
- 4ft LED Harness Cable [HARNESS4-G]
- Offset Plate & Hardware
- Parts Kit [INSTKITGATE] containing:
 - (1) Gate LED Controller [CONTROL-GATE]
 - (1) 110V to 24VDC Power Supply [PS24VIN-2.5A]
 - (3) Offset Plate Hex Bolts 1/2" x 2 1/4" + (3) Spacers
 - (2) Arm Bolts 5/16" x 3 3/4"
 - (2) Pivot Bracket Bolts 3/8" x 2 1/4"
 - (12) 1/2" Flat Washers + (3) 1/2" Lock Nuts
 - (4) 5/16" Flat Washers + (2) 5/16" Lock Nuts
 - (8) 3/8" Flat Washers + (2) 3/8" Rod Nuts
 - (1) Cable Strain Relief Fixture
 - (1) 4ft Signal Cable (4-wire 18AWG)
 - (1) Installation Manual

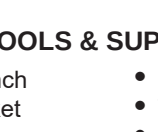
LED CONTROLLER



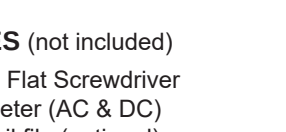
SIGNAL CABLE



POWER SUPPLY



LED HARNESS CABLE



RECOMMENDED TOOLS & SUPPLIES (not included)

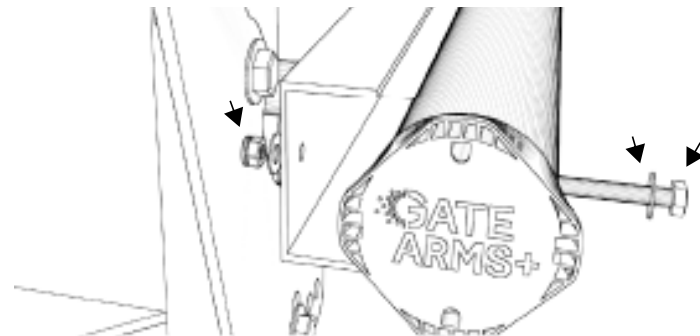
- 1/2" Open End Wrench
- 1/2" Wrench or Socket
- 5/8" Drill Bit
- 1/2" Drill Bit
- Wire Stripper
- Power Drill
- Small Flat Screwdriver
- Voltmeter (AC & DC)
- Rat-tail file (optional)
- Dielectric Grease
- Zip Ties

2. ASSEMBLE BARRIER ARM

Hold the first arm segment with the two holes farthest away from the LED and extend the 2nd arm segment or let rest against the floor for the next step. Attach the FOLDARM90 to the operator's arm bracket as shown below using the (2) Arm Bolts 5/16" x 3 3/4" starting with the bolt and washer through the barrier arm. Tighten securely using the supplied

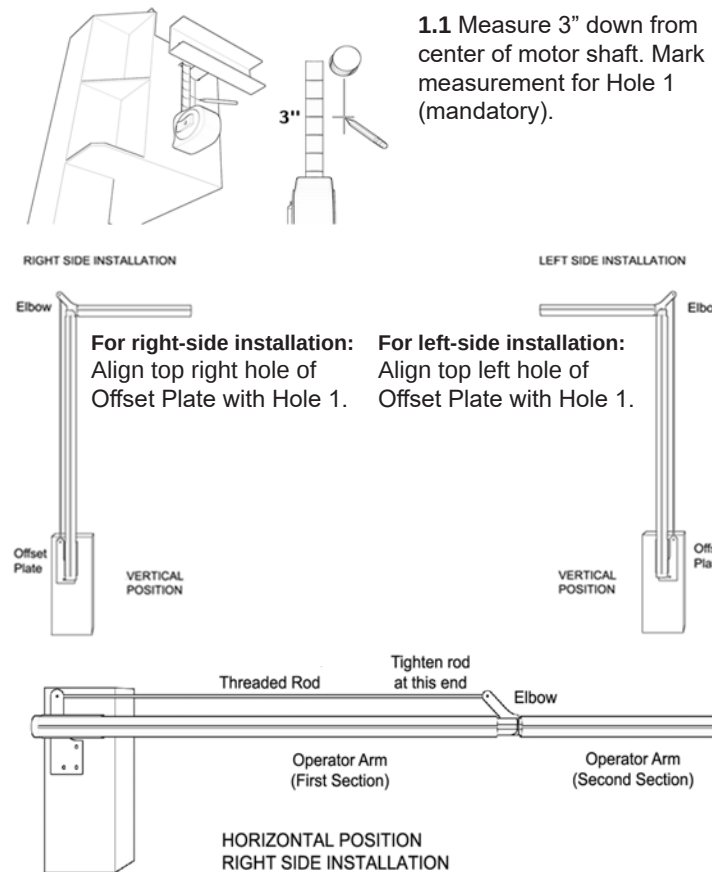
NOTE: Do not use nylon nuts on folding arms due to vibration concerns.

5/16" Lock Nut ← 5/16" Flat Washer ← Barrier Arm to Bracket ← 5/16" Flat Washer ← 5/16" x 3 3/4" Arm Bolt



INSTALLATION OVERVIEW

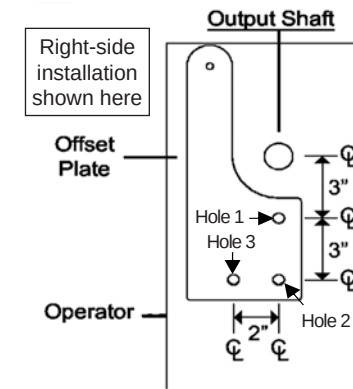
1. INSTALL OFFSET PLATE TO OPERATOR HOUSING



1.1 Measure 3" down from center of motor shaft. Mark measurement for Hole 1 (mandatory).

For right-side installation:
Align top right hole of Offset Plate with Hole 1.

For left-side installation:
Align top left hole of Offset Plate with Hole 1.

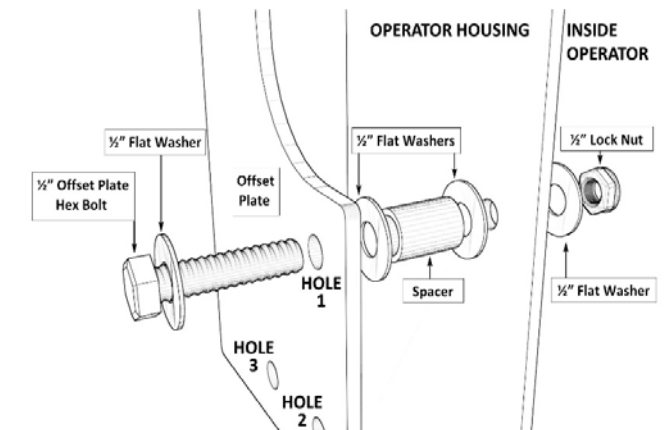


1.2 Measure 3" down from the center of Hole 1 and mark the measurement for Hole 2.

1.3 Measure 2" left of the center of Hole 2 and mark the location for Hole 3.

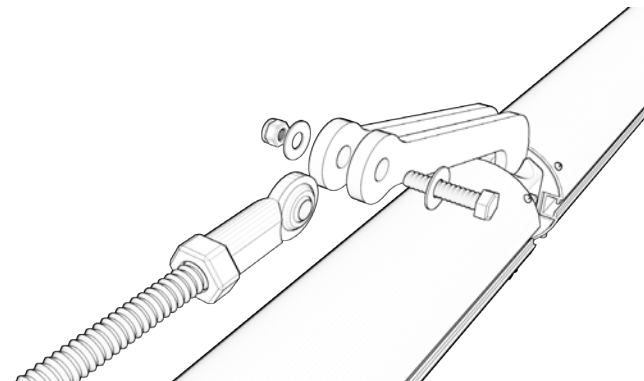
1.4 Drill 1/2" holes into the operator on marked locations, being careful not to damage anything on the inside of the operator.

1.5 Starting at Hole 1, attach the Offset Plate to the operator as shown below with hardware included in kit. Tighten securely. Repeat for Hole 2 and Hole 3.



3. ASSEMBLE THREADED ROD

3.1 Assemble the threaded rod to the elbow as shown in the illustration below. Tighten nuts securely.



3.2 If necessary, adjust the operator's bracket position until the 1st segment of the arm is level. Using a level tool, ensure the foldnig part of the elbow is level when in the fully-locked horizontal position. Have a helper hold the elbow in the horizontal position desired.

3.3 On the back side of the threaded rod, take a pencil or sharpie and put it through the eye of the threaded rod end facing the offset plate. It may help to wrap the pencil with some electrical tape to ensure it sits centered within the threaded rod end eye. With the elbow in the fully-locked horizontal position and while keep the arm level, carefully mark a line going up and down onto the offset plate. Keep the pencil perpendicular to the arm and as centered as possible within the threaded rod end eye.

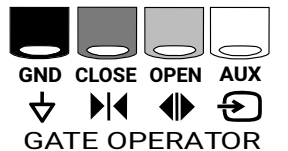
4. CONNECT SIGNAL CABLE TO LED CONTROLLER

The installation kit includes a 4-wire Signal Cable for connecting to the signal wire posts on the gate operator's control board.

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

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

- Black = Ground
- Red = Close
- Green = Open
- White = Aux



Plug press-on header into the LED Controller with screw heads facing OUT. Route the Signal Cable from the LED Controller to the gate operator's control board.

13. CONNECT SIGNAL CABLE TO OPERATOR

Connect the Signal Cable to the gate operator's control board. See Wiring Schematic insert for details.



WARNING - OVER-VOLTAGE WILL VOID WARRANTY
Signals entering the LED Controller cannot exceed 30 VDC.

Higher voltage may cause irreversible damage.

D/C SIGNALS ONLY: The LED Controller can only accept D/C. A/C signals may damage the LED Controller.

NOTE: We offer an optional **A/C Signal Converter board** that allows the use of A/C signals with this LED Controller.

14. **CONFIRM WIRING**

- Take a moment to reconfirm all connections on each of the cables.
- Check both sides of the power cable.
 - Check the gate operator's signal wire posts where the Signal Cable is connected. Ensure you are tied into the correct circuits for Open & Close, and that 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.

15. **REVIEW WIRE MANAGEMENT**

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

16. **TURN ON OPERATOR POWER**

First, turn on the 110V switch and then plug the 24V power supply into the 110VAC outlet located inside the operator.
NOTE: Adapter can accept 100-240VAC.

17. **TURN LED CONTROLLER POWER-SWITCH TO ON**

Turn LED Controller switch on. The amber LED by the switch should immediately light up. The LED strip should turn on (red) after 1 second.

18. **TEST OPEN HEAVY GATE (IF INTERLOCK)**

- Open the heavy gate.
- LED Lights should flash amber while heavy gate is opening.

19. **TEST OPEN BARRIER ARM - ARM GOES UP GREEN**

- Raise the gate arm by triggering Open.
- LED Lights should flash red when the arm begins to go up.
 - LED Lights should turn solid green when arm is fully open.

20. **TEST CLOSE BARRIER ARM - ARM GOES DOWN RED**

- Lower the gate arm by triggering Close.
- LED Lights should flash red when the arm begins to descend.
 - LED Lights should turn solid red when arm is fully closed.

21. **FINALIZE**

- Close and secure gate operator case.
- Check the gate operator belt. If it is loose, tighten it.
- Add oil to gearbox if needed.

Still need help? Call our Tech Support line at (786)339-9840.
There are many subtle configuration settings that can be tweaked to get your project working. We are eager to help you ensure that EVERY PROJECT IS A SUCCESS!

CONGRATULATIONS!

You have completed the installation.

Run into an issue? No worries we have you covered.

Appendix A will help guide you with the installation or replacement of the LED Strip(s) within the Barrier Arm.

Appendix B will help you install the Configuration Tool program. See LED Controller Programming insert after software installation.

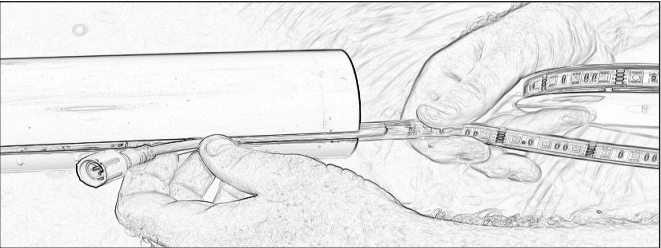
Appendix C will help guide you through some common issues.

Wiring Schematic Insert will help you wire to the most common gate operators. Contact Tech Support if your operator is not listed.

LED Controller Programming Insert will help guide you with programming the controller's optional features.

APPENDIX A: REPLACING LED STRIPS

1. Disconnect the LED strip wiring connector.
2. Remove white end cap from gate arm (far end only).
3. One person should gently pull on the LED strip from the far end, while another person gently pushes the LED strip towards the far end.
4. The LED strip will slide out of the track.
5. Put replacement LED roll in a bucket on the ground, or have a partner hold it.
6. Hold LED strip by the connector with LED chips facing out. Gently insert the new LED strip into the track from the far end. One person can push from the end while the other gently pulls the cable.
7. Pull LED strip into track until the wire is nearby the gate arm bracket. Leave at least an inch of space by bracket.
8. Cut the LED strip at the cut lines if necessary. Remove LED end cap from scrap piece. Glue end cap onto LED with silicone glue.
9. Replace the white gate arm cap on the gate arm end.
10. Put some dielectric grease inside both sides of the connector.
11. Connect the LED to the harness cable.
12. Put a dab of silicone glue near the bracket-end of the LED strip to prevent it from moving.
13. Test to ensure the LEDs function correctly.



APPENDIX B: INSTALL THE CONFIGURATION TOOL

INSTALL PROGRAM

1. Visit www.GateArms.com/downloads and click on the LED Controller Configuration Software to download.
2. You may need to stop any antivirus programs that are running.
3. Open (run) downloaded file with Administrative rights to install it.

CONNECT CONTROLLER TO PC

1. Detach power from LED Controller.
2. Use a Type-B (printer) USB cable (not included) to connect the LED Controller to the PC.
3. The PC should immediately recognize that the device was connected, although it will not install any supporting driver software.
4. Use the Configuration Tool to program the LED Controller.
5. Detach the USB Cable from the LED Controller.
6. Test LED Controller on your gate.

NOTE: If device is NOT RECOGNIZED, you will need to manually connect the driver file to the device using the following steps:

1. Open Device Manager in Windows
 - a. Right-click “Computer”, then choose “Manage”
 - b. Or, click “Start Button”, then “Administrative Tools”, then “Computer Management”, then “Device Manager”
2. Find “LED Driver” with an alert mark on it, probably in “Unknown Devices” group
3. Right-click that item, then choose “Update Driver Software”
4. Click “Browse...click “Browse” again if necessary, to search your computer C: drive
5. Open “Program Files (x86)”
6. Find folder “GateArms.com”, then “Configurator”, then “Driver”
Click the “Driver” folder, then click “OK” button
7. Click the “Next” button and “Close”.

APPENDIX C: TROUBLESHOOTING

No gate arm lights on/wiring disconnect

Possible issue: Power Supply problems

- Check LED Controller. Is its amber LED on?
- Is the 110V power adapter on? Check 110V power wiring at the gate operator's power source. Trace wire from LED Controller.
- Check Press-on Headers. Are the wires well-secured? Are they pressed in vertically all the way? Screws facing outwards? Match wire colors with the words on the LED Controller's cover.
- Ensure the external connector mating the LED Harness Cable to the LED Strip is fully connected. Check pins inside the connector.

Red lights stay on, No Green when gate goes up

Possible Issue 1: Open Signal Wire disconnected

- If red stays on, the Open signal is not being received.
- Check Open (green) signal wire connection at the Signal Header of the LED Controller.
- Check the Open signal wire connection at the gate operator control board post. Refer to the Wiring Schematic insert and confirm correct wiring. Use a multimeter to ensure voltage or continuity is changing 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 jumper wires so the LED Controller will sense the voltage changes on all posts.

Possible Issue 2: Controller Mis-programmed

- Ensure controller is programmed correctly for your scenario and gate operator. See Wiring Schematic insert.

Barrier Arm goes GREEN when heavy gate begins to open, but should stay RED or FLASH AMBER until barrier arm goes up

Possible Issue: Aux Wire disconnected

- Connect the Controller's Aux signal wire to the Interlock post on the operator board.
- NOTE:** You may need to use the Configuration Tool to change the default Auto Close Timer setting (29 sec).

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

Possible Issue 1: Controller “Close” set to Entering

- Program the LED Controller. Set Close to trigger on “Exiting”.

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

- Program the LED Controller. Set the Timer to Disabled or to a higher value.

LEDs stay Green too long

Possible Issue: Close Signal Wire disconnected/Timer to Close

- Connect the Controller's Close signal wire to the close output post on the operator board.
- Check Close (red) signal wire connection at the Signal Header.
- Check Close signal wire connection at the gate operator control board post.
- If no close port is used (timer to close), change the Auto-Close Timer duration to match the gate-close timer.



Wiring Schematics



Troubleshooting



LED Controller
Programming



TECH SUPPORT HOURS
MONDAY - FRIDAY
9:00AM - 5:00PM EST

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