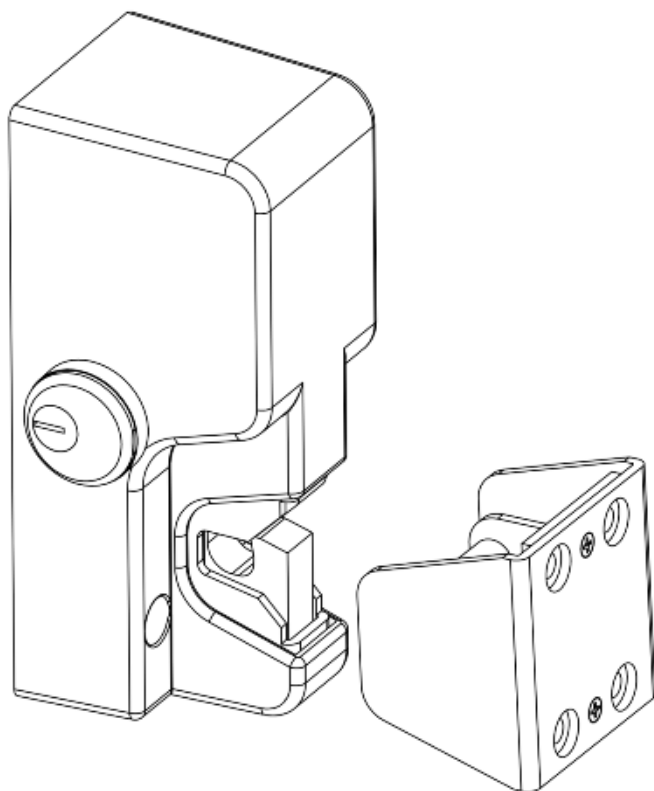




# GL-1 Gate Lock

## Installation Instructions and Operating Manual



# Table of Contents

|  |    |
|--|----|
| Table of Contents .....                                      | 2  |
| Specifications .....   | 3  |
| Physical .....   | 3  |
| Electrical.....  | 3  |
| Product Overview .....                                       | 3  |
| Product Features:.....                                       | 3  |
| Product Components .....                                     | 4  |
| Recommended Tools.....                                       | 4  |
| Installing the GL1 Electromechanical Gate Lock.....          | 5  |
| Perform a Pre-Installation Survey .....                      | 5  |
| Perform the Cylinder Lock/Cover Hole Plug Installation ..... | 8  |
| Mount the GL1 and Connect the Electrical .....               | 10 |
| Complete the GL1 Installation.....                           | 13 |
| Operating Instructions .....                                 | 13 |
| Troubleshooting.....   | 14 |
| MagnaCare® Lifetime Replacement Warranty .....               | 15 |

# Specifications

## Physical

|               |  |
|---------------|--|
| Holding Force | 2,000 lbs [907 kg]   |
| Preload       | Up to 100 lbs (Fail Locked only)                           |
| Dimensions    | 2 ¾" L X 7 ¼" H X 3 ¼" D<br>[70 mm L X 184 mm H X 83 mm D] |

## Electrical

|                            |   |
|----------------------------|---|
| 12 VDC Current Requirement | Initial (Peak): 870 mA (~ 1 sec)<br>Reduced: 290 mA<br>Power Consumption: 3.5 Watts |
| 24 VDC Current Requirement | Initial (Peak): 720 mA (~ 1 sec)<br>Reduced: 170 mA<br>Power Consumption: 4.1 Watts |
| Operating Temperature      | -58 to +167°F [-50 to +75°C]  |

# Product Overview

The GL1 Electromechanical Gate Lock is designed to secure a wide variety of vehicle and pedestrian gate applications where security and weather resistance are required. The GL1 functions equally well in both electrically and manually operated gate installations and can be used for swing gates, sliding gates, stock cage gates or other applications.

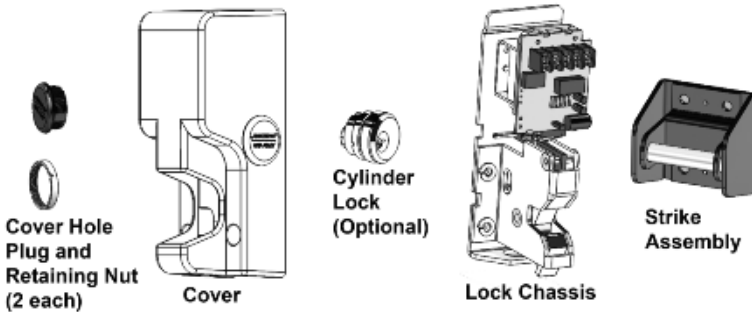
### Product Features:

- 2000 lbs holding force
- Operates under preload up to 100 lbs.
- Automatic dual voltage—no field adjustment required
- Manual key override (right or left hand)—Fail Locked only

- Self-aligning receiver (up to +/- 1/2" horizontally or vertically) helps compensate for gate misalignment and sag
- Tamper proof cast housing
- Latch status monitor switch (SPDT)
- 1/2"-14 NPSM inside pipe thread
- Surface Mount
- Black finish

## Product Components

Upon unpacking this product, an inventory should be made to ensure that all the required components and hardware have been included. Along with these instructions and the installation template, the lock assembly should include the following items:



**NOTE:** There is also a hardware pack included containing 8 mounting screws, 8 lock washers, and the cylinder nut tool.

## Recommended Tools

Hammer

Center Punch

Drill Bits: 5/16", 3/8", 1/2"

Screwdriver, #2 Phillips

Hex (Allen) wrench, 3/16" [5 mm]

Tap, 1/4"-20 UNC [M6-1.0]

# Installing the GL1 Electromechanical Gate Lock

## Installation Concerns

**CAUTION:** It is vital that all welding be completed prior to making any electrical connections to the mounted GL1. Welding in or around an electrically-connected lock assembly can cause damage to the electronic components.

- Installation should be performed by a qualified service person, who conforms to all local codes and complies with The National Electrical Code (or equivalent).
- The FMK-SL (Sliding Gate) and the FMK-SW (Swing Gate) mounting bracket kits are recommended for installing the GL1.
- The GL1 must be mounted in the upright vertical position with the conduit opening on the bottom.
- The GL1 should not be used for dual swing gates.

## Perform a Pre-Installation Survey

Due to the variety of mounting configurations available with this product, it is strongly recommended that an initial physical survey and assessment be made of the actual area where the lock will be installed to determine the optimal method of mounting prior to installation. The following should be considered:

- Physical strength of mounting areas: It is recommended that the structural integrity of mounting surfaces be strong enough to meet or exceed the holding force of the lock.
- Protection of the lock from external attack: The lock and the wiring must be protected to a reasonable degree from potential damage due to intruders or vandals.
- Convenience and accessibility of area to be protected: The lock

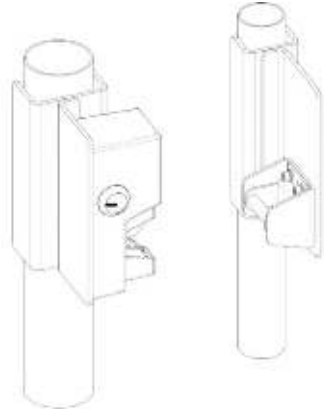
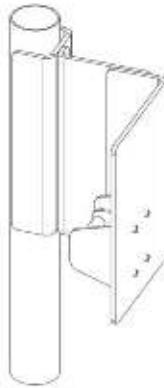
assembly should be installed in a location that will not hinder or create a potential safety hazard to authorized personnel routinely accessing the protected area.

Because of the diversity in gate construction and installation configurations, optimum mounting platforms may be achieved by welding adequate size metal plates, channels or tubing to the fence frame and the gate. Formed angle and brackets along with appropriately sized fasteners may also be utilized to mechanically secure mounting platforms for the lock and strike.

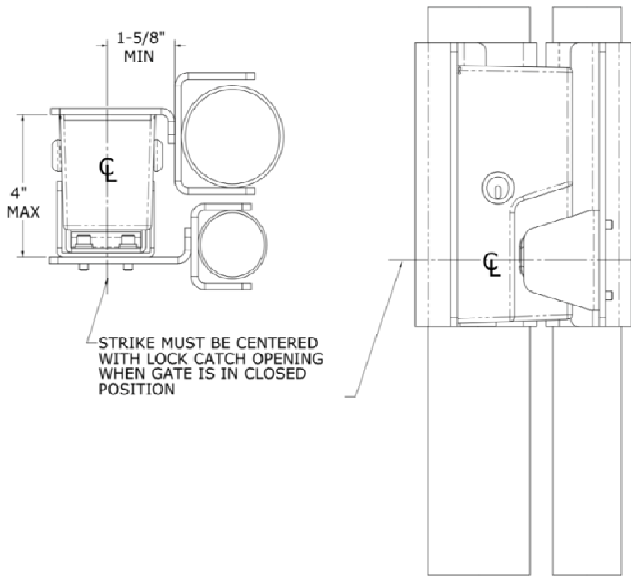
Figure 1, "Swinging Gate Mount," Figure 2, "Sliding Gate Mount," Figure 3, "Installation Spacing Dimensions," and Figure 4, "Chassis Welding," show some basic mounting configurations on a chain-link style fence frame and gate.



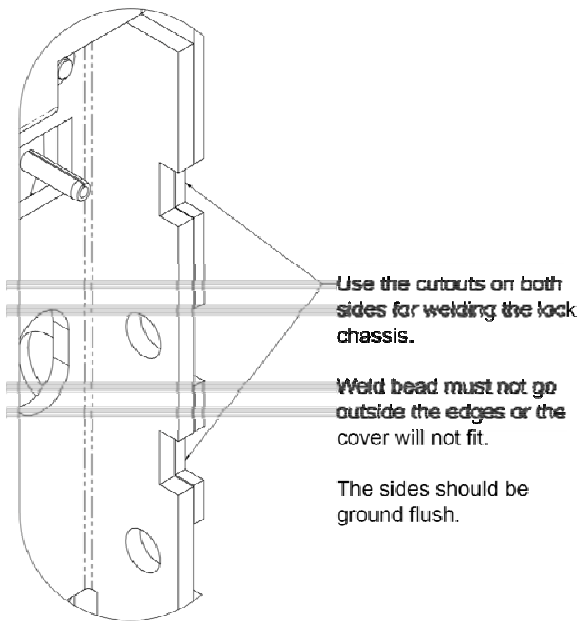
**Figure 1. Swinging Gate Mount**



**Figure 2. Sliding Gate Mount**



**Figure 3. Installation Spacing Dimensions**



**Figure 4. Chassis Welding**

# Perform the Cylinder Lock/Cover Hole Plug Installation

**NOTE 1:** The GL1 provides for the additional function of an optional key-operated cylinder lock. The cylinder lock can be installed to either side of the lock cover, because the GL-1 lock latching mechanism features an actuator lever that will engage the cylinder lock from either side.

**NOTE 2:** IF the cylinder lock is not used, **THEN** a cover hole plug (provided) must be installed on both sides of the cover.

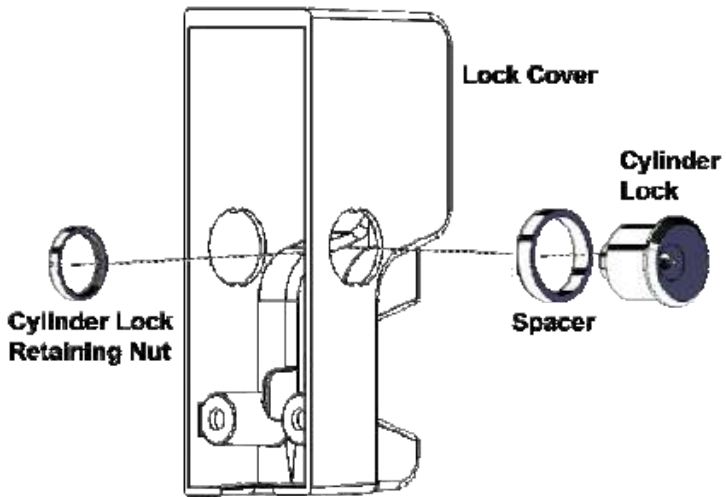
1. SELECT the side of the lock cover that will be the most convenient for the key access after installation if installing the optional manual override.
2. INSTALL the optional cylinder lock.

**NOTE:** The following step is critical to the proper operation of the mechanical override. The cam of the cylinder (“MS” type) must come into contact with the actuator lever pin to operate the release trigger of the lock mechanism when the cover is assembled to the lock chassis.

- a. ASSEMBLE the cam, as necessary, so that the key rotation moves the cam to point toward the rear (opening) of the cover.
- b. INSERT the cylinder lock with applicable spacer (i.e., Sargent Number 90) into the applicable cover hole (see table below and Figure 5, “Cylinder Lock Installation”).

| Size of Cylinder Lock | Spacer Required |
|-----------------------|-----------------|
| 1”                    | 1/4”            |
| 1 1/8”                | 3/8”            |





**Figure 5. Cylinder Lock Installation**

- c. SLIP the spacer over the cylinder lock and INSERT the cylinder lock into the applicable side hole on the lock cover.
- d. SLIP the lock mounting nut over the cylinder lock inside the cover and THREAD the nut onto the lock body by hand.
- e. TIGHTEN to secure the nut in place using the provided cylinder nut tool.
- f. INSTALL a cover hole plug in the opposite side of the cover, and SECURE its retaining nut using the provided retaining nut tool.

**NOTE:** The following steps are performed if the cylinder lock is not used.

3. INSTALL the two cover hole plugs (provided) through both sides of the cover (see Figure 6, Cover Hole Plug and Retaining Nut”).
4. SECURE the cover hole plugs in place using the retaining nuts and provided cylinder nut tool (see Figure 6, “Cover Hole Plug and Retaining Nut”).

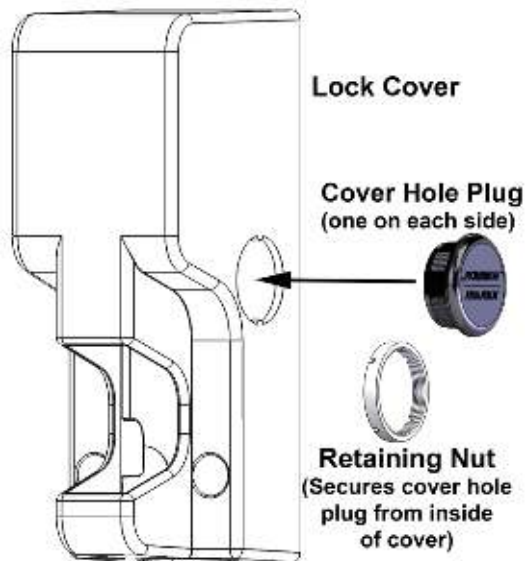


Figure 6. Cover Hole Plug and Retaining Nut

## Mount the GL1 and Connect the Electrical

**NOTE:** The FMK-SL (Sliding Gate) and the FMK-SW (Swing Gate) mounting bracket kits are recommended for installing the GL1.

1. **IF** not using one of the recommended mounting bracket kits, **THEN USE** the included template to locate and install mounting hardware.
2. **INSTALL** the lock chassis using the top two lock chassis mounting positions.

**NOTE:** The following chart shows wire gauge sizing versus voltage versus distance:

| Distance | Gauge 12V | Gauge 24V | Distance | Gauge 12V | Gauge 24V |
|----------|-----------|-----------|----------|-----------|-----------|
| 100 FT   | 20 GA     | 22 GA     | 800 FT   | 12 GA     | 14 GA     |
| 200 FT   | 18 GA     | 20 GA     | 1500 FT  | 10 GA     | 10 GA     |
| 400 FT   | 14 GA     | 16 GA     | 2000 FT  | 8 GA      | 8 GA      |

3. ROUTE all electrical wiring through either the provided wire conduit coupling in the bottom of the lock chassis or through the 1/2" [12.7 mm] hole in the rear of the lock mounting chassis (see Figure 7, "Wire Routing").
4. FEED wires through the hole in the side of the lock chassis opposite to the cylinder lock, if installed.
5. **IF** there is no cylinder lock installed, **THEN** FEED wires through either side of the lock chassis (see Figure 7).

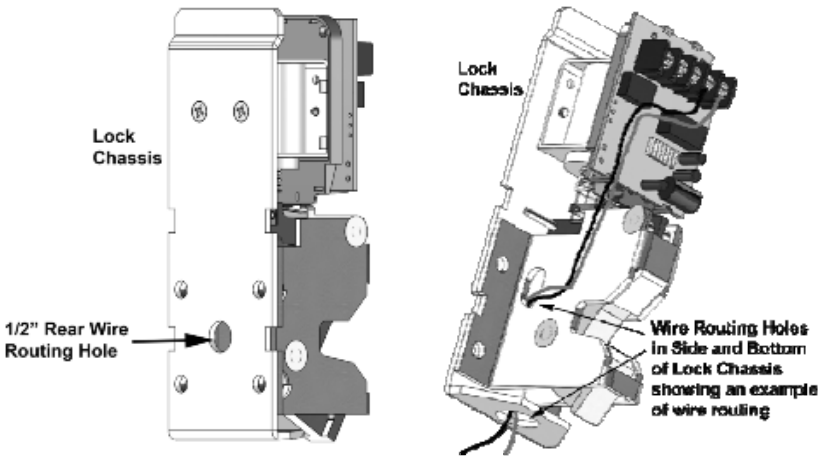


Figure 7. Wire Routing

6. CONNECT wires to the terminal block on the PC board (see Figure 8, "PC Board Terminal Block," and Figure 9, "System Connections").

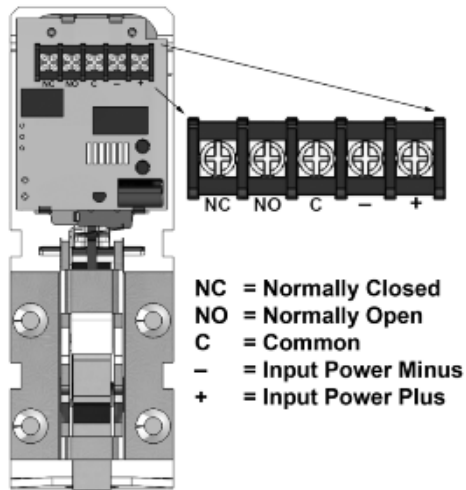


Figure 8. PC Board Terminal Block

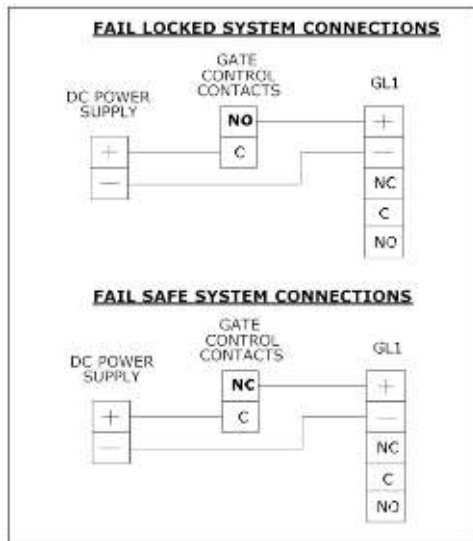


Figure 9. System Connections

7. PERFORM a functional test of the GL1.

# Complete the GL1 Installation

**CAUTION:**      **Lock cover must be installed straight on to avoid possible damage to the PC Board.**

1. INSTALL the lock cover over the lock mounting chassis by placing the cover straight on and then sliding to engage.
2. SECURE the cover to the mounting surface using two (2) socket head cap screws and two (2) split lock washers.
3. PLUG conduit fitting if not used, welding the plug for maximum security.

## Operating Instructions

The Gate Lock is a direct-latching fail safe/locked electromechanical lock which incorporates Securitron's unique dual voltage system. The GL1 does not automatically re-lock if the strike is not moved from the latch. The strike must always be pushed closed to mechanically re-latch in order for the GL1 to re-lock.

Fail Locked Version (GL1-FL): Applying input voltage of 12 or 24 volts DC, observing polarity (See Wiring diagram below), will energize and unlock the Gate Lock allowing the gate to be opened. Removing the input voltage will de-energize the Gate Lock and will allow it to mechanically latch securely when the gate is closed.

Fail Safe Version (GL1-FS): The input voltage must be maintained to keep the Gate Lock in a locked mode. Removing the input voltage will de-energize and unlock the Gate Lock allowing the gate to be opened. Applying input voltage will energize and lock the Gate Lock awaiting the gate to be closed.

Additionally, the Gate Lock may include an optional gate status sensing feature. When the gate (strike assembly) is latched closed, the Gate Lock will report this closed condition by outputting a closed circuit condition between the C and NO terminals. When the gate is open, there is an open circuit between the C and NO terminals. This dry Single Pole Double Throw (SPDT) output can carry 1 Amp @ 30 VDC maximum.

# Troubleshooting

## **PROBLEM: The lock does not latch.**

- CHECK lock-to-strike engagement distance—strike may be mounted too far away from the lock.
- CHECK wire routing to ensure wiring does not impede the function of the lock mechanism manual override/actuator lever, or behind lock catch.
- ENSURE that there is power supplied to the unit and that the lock is wired correctly.

## **PROBLEM: The lock output does not report secure condition.**

- CHECK wiring to ensure wires are connected to the appropriate terminals.
- CHECK status of lock/strike to verify that lock and strike are physically latched.
- CHECK for damage to monitor lever.

## **PROBLEM: The lock does not release.**

- CHECK for excessive pre-load to lock—the gate lock latching mechanism is not designed to release under pre-loads in excess of 100 lbs (Fail-Secure only).
- CHECK incoming voltage at the lock.
  - For fail locked models, electrical power is required to energize and release the lock—VERIFY that there is power to the lock and that the voltage being delivered is within the operating specifications.
  - For fail safe models, electrical power is removed to de-energize and release the locking mechanism—VERIFY that the power to the lock has been terminated.
- CHECK wire routing to ensure wiring does not impede the function of the lock mechanism manual override/actuator lever.

**PROBLEM: Cover does not fit on the lock.**

- CHECK welding—If the lock chassis was welded to the mounting surface; verify that there are no welds that extend beyond the edge of the chassis back plate.
- CHECK wire routing to ensure that the placement of the wires is not inhibiting the proper fit of the cover to the lock chassis.
- Cover must be straight on and slid into position (DO NOT TILT).

**PROBLEM: Manual override does not work.**

- CHECK cover to verify that the lock cover is fully seated and securely fastened in place.
- CHECK mortise lock installation.
- VERIFY that the compatible cylinder lock is correctly installed and functions properly—REVIEW installation instructions and CHECK rotation direction.
- Check wire routing to ensure that the placement of the wires does not impede the rotation of the cam or movement of the latching mechanism.
- CHECK that the GL1 is being used in Fail Locked mode—manual override does not work in Fail Safe mode.

**If any problem persists, call Technical Support at  
1-800-624-5625 (toll free).**

## **MagnaCare<sup>®</sup> Lifetime Replacement Warranty**

MagnaCare is the industry's best warranty, and covers every product manufactured by Securitron. No registration is required. Product will be replaced forever, for any reason, including but not limited to installation error, vandalism, or act of God. Replacement product is shipped the next day at Securitron's expense if needed.

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