

SECTION 32 31 00

ELECTRIC GATE OPERATORS



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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Electric Gate Operators:
  - 1. Heavy-duty, industrial, gear-driven slide gate operators (LiftMaster Model SL585).
- B. Monitored Photo Eyes
  - 1. Monitored Retro-Reflective Photo Eyes (LiftMaster Model LMRRUL)
  - 2. Monitored Through-Beam Photo Eyes (LiftMaster Model LMTBUL)

1.2 RELATED SECTIONS

- A. Section 02820 - Fences and Gates: Adjoining fences and gates.
- B. Section 03300 - Cast-in-Place Concrete: Concrete mounting pads.
- C. Section 11150 - Parking control equipment.
- D. Division 16 - Requirements for electrical connections.

1.3 REFERENCES

- A. National Electrical Manufacturers Association (NEMA): NEMA ICS 6 - Industrial Control and Systems: Enclosures.
- B. Underwriters Laboratories (UL): UL 325 - Standard for Safety for Door, Drapery, Gate, Louver, and Window Operators and Systems.
- C. Underwriters Laboratories (UL): UL 991 - Standard for Tests for Safety-Related Controls Employing Solid-State Devices.
- D. International Organization for Standardization: ISO 9001 - Quality Management Systems.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Equipment list, system description, electrical wiring diagrams for installation, and manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.

- C. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, edge conditions, and accessories.
  - 1. Operation, installation, and maintenance manuals including wiring diagrams.
  - 2. Risers, layouts, and special wiring diagrams showing any changes to standard drawings.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials and products in strict compliance with manufacturer's instructions and industry standards.
- B. Store products indoors in manufacturer's original containers and packaging, with labels clearly identifying product name and manufacturer. Protect from damage.

#### 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: ISO 9001 Certified Manufacturer.
- B. Installer Qualifications: Installation performed by factory authorized contractor specifically trained in gate operation systems of the type found within this section.
  - 1. Provide documentation of maintenance and repair service availability for emergency conditions.
  - 2. Provide quarterly maintenance for one year following Substantial Completion of the Project.

#### 1.7 WARRANTY

- A. Manufacturer's Standard Limited Warranty:
  - 1. Warranty Period: 2 years.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: LiftMaster; 300 Windsor Drive; Oak Brook, IL 60523. ASD. Toll-Free: 800.282.6225. Email: specs@LiftMaster.com. Web: LiftMaster.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

#### 2.2 GATE OPERATORS

- A. Gate Operators: LiftMaster SL585 Industrial Gear-Driven Slide Gate Operator.
  - 1. Compliance: UL Listed. Compliant to the UL 325, UL 991 and CSA C22.2 No. 247 standards.
    - a. This model is intended for use in Class I, II, III and IV vehicular slide gate applications.
  - 2. Monitored Safety Inputs: 3 inputs per board (main board and expansion board) totaling 6 inputs with any combination of up to:
    - a. Main Board:
      - 1) 1 Monitored Close Photo Eye input
      - 2) 1 Monitored Open Photo Eye input
      - 3) 1 Monitored Open Safety Edge or Open Photo Eye input

- b. Expansion Board
  - 1) 2 Monitored Safety Edge or Photo Eye inputs (selectable for Open or Close).
  - 2) 1 Monitored Photo Eye input (selectable for Open or Close).
- c. 8 Monitored edges available when Transceiver is added.
- 3. Warranty: 2 years.
- 4. Operator Speed: 11 inches (279.4 mm) per second.
- 5. Electrical Power Requirements:
  - a. 115/208/230V AC, single phase, 60 Hz.
  - b. 208/230/460/575V AC, 3-phase, 60 Hz.
- 6. Accessory Electrical Power Requirements: 24V AC.
  - a. Main Board: 12V AC, maximum 500mA.
  - b. Terminal Strip:
    - 1) 2.2A maximum for 115/208-230V AC, single phase.
    - 2) 2.2A maximum for 208/230-460 V AC, three phase
    - 3) 1.3A maximum for 575V AC, three phase
- 7. Gear Reduction: 20:1 wormgear reducer in synthetic oil bath.
- 8. Motor: Switchless ½ HP, continuous duty
  - a. Capacity: Supports gate lengths up to 45 feet (13 m) and gate weights up to 1,000 pounds(454 kg).
  - b. Recommended Cycles per Hour: 20.
- 9. Motor: Switchless 1 HP, continuous duty.
  - a. Capacity: Supports gate lengths up to 70 feet (21 m) and gate weights up to 1,600 pounds (725 kg).
  - b. Recommended Cycles per Hour: 20.
- 10. Motor: Switchless 1 ½ HP, continuous duty (115/230V, single phase only).
  - a. Capacity: Supports gate lengths up to 75 feet (23 m) and gate weights up to 1,900 pounds (862 kg).
  - b. Recommended Cycles per Hour: 20.
- 11. Metal Frame: 7 gauge pre-galvanized steel.
- 12. Chassis: Powder-coated galvanized steel.
- 13. Enclosure: Weather-resistant, lockable, 16-gauge steel cover.
- 14. Chain: #50 nickel-plated, 25 feet (7620 mm) supplied with each unit.
- 15. Gearbox: All-weather.
- 16. Internet Connectivity: MyQ Technology.
  - a. 902 to 928 MHz
  - b. 50-channel FHSS (Frequency Hopping Spread Spectrum).
  - c. LiftMaster 828LM Internet Gateway enables monitoring and control of gate operators via internet-enabled smartphone, tablet or computer
  - d. Provides two-way communication between gate operator and MyQ accessories to enable remote open, close and monitoring of gate.
- 17. Receiver:
  - a. Security+ 2.0 3-channel on-board radio receiver, holds up to 50 remote controls (unlimited with use of 811LM/813LM), HomeLink compatible
  - b. Transmits 310 MHz, 315MHz, 390 MHz
- 18. Inherent Reversing Sensor: Utilizes Current Sense and RPM Sensor to detect obstructions or increased loads. Reverses gate when closing or stops/reverses the gate when opening.
- 19. Lockout/Tagout: Prevents power from being switched on when servicing operator. Safeguards workers from high voltage power.
- 20. Wireless Dual-Gate Operation:
  - a. Built-in wireless communication will operate primary and secondary operator without having to run a communication wire.
  - b. Support for through-beam photo eye in the wireless dual-gate setup. Can attach emitter and receiver to each operator, eliminating the communication wire between them.

21. LED Diagnostic Display: Simplifies installation and troubleshooting.
22. Colored Terminal Blocks: Provides easy identification of safety and fire department inputs.
23. Programmable Auxiliary Relays: 2 programmable relays with 6 settings each.
  - a. Pre-warning or gate-in motion sounder
  - b. Switch on/off devices at open or Close Limits or while gate is in motion.
  - c. Tamper detection if gate is pushed off Close Limit
  - d. Cycle quantity feedback.
  - e. Red/Green Light to control gate traffic.
24. Quick Close, Anti-Tailgate: Quickly secures property, preventing unauthorized access.
25. Sequenced Access Management: Capable of sequentially controlling the operator in tandem with a barrier gate.
26. Surge/Lightning Protection: Industrial Surge Protection on high and low voltage inputs. Protects against lightning strikes at a 50-foot (15.2m) radius.
27. Plug-in Loop Detector Inputs: Programmed inputs for shadow, interrupt and exit.
28. External Alarm Reset Button: Allows for quick reset of the gate operator when the alarm has been activated.
29. Warning Device: UL 325 compliant entrapment warning alarm has ability to be set for pre-operation warning; provides a 3-second warning prior to and during gate movement.
30. Maximum Run Timer: Protects against damage to the gate and operator by limiting the unit's run time to 120 seconds.
31. Lockable External Manual Disconnect: Allows gate to be opened in the event of a power loss without removing the operator cover.
32. Mechanical Braking: the mechanical braking system adds substantial gate position control at all points in travel. The solenoid-actuated brake system also prevents the gate from being back-driven
33. Friction Clutch: Adjustable friction clutch helps protect gate and operator from damage should the gate meet an obstruction.
34. Limit Settings: Driven limit nut switches are fully adjustable to provide precision, accuracy and reliability.
35. Universal Footprint: Easily adapts operator to common footprints. Simplifies retrofit applications by adapting to pre-existing pads for Link, Stanley or LiftMaster operators.
36. Operating Temperature Range:
  - a. Without heater: -4 degrees F (-20 degrees C) to 140 degrees F (60 degrees C).
  - b. With optional heater: -40 degrees F (-40 degrees C) to 140 degrees F (60 degrees C).
37. MyQ Enabled Accessories:
  - a. LiftMaster 828LM Internet Gateway: Allows remote monitoring from internet-enabled computer, tablet or smartphone.
  - b. LiftMaster 829LM Garage and Gate Monitor: Allows remote monitoring and operation.
  - c. LiftMaster 823LM Remote Light Switch: Controls light remotely
  - d. LiftMaster 825LM Remote Light Control: Allows remote monitoring and operation.
38. Accessories: Safety Monitoring Devices:
  - a. Monitored Photo Eyes and Wireless Edge Kits.
    - 1) LiftMaster LMRRUL Reflective Photo Eyes.
    - 2) LiftMaster LMTBUL Thru-Beam Photo Eyes.
    - 3) LiftMaster LMWEKITU Wireless Edge Kit with Transmitter and Receiver.
    - 4) LiftMaster LMWETXU Wireless Edge Transceiver
  - b. Wired Monitored Edges (all require use of LMWEKITU)

- 1) LiftMaster S50 Small Profile Monitored Edge
  - 2) LiftMaster L50 Large Profile Monitored Edge
  - 3) LiftMaster WS4 Wrap-Around 4 foot (1219 mm) square monitored edge
  - 4) LiftMaster WS5 Wrap-Around 5 foot (1524 mm) square monitored edge
  - 5) LiftMaster WS6 Wrap-Around 6 foot (1829 mm) square monitored edge
  - 6) LiftMaster WR4 Wrap-Around 4 foot (1219 mm) square monitored edge
  - 7) LiftMaster WR5 Wrap-Around 5 foot (1524 mm) square monitored edge
  - 8) LiftMaster WR6 Wrap-Around 6 foot (1829 mm) square monitored edge
39. Accessories: Provide the optional accessories listed below.
- a. LiftMaster LOOPDETLM Plug-in Loop Detector
  - b. LiftMaster KPW250 – Wireless Commercial Keypad
  - c. LiftMaster 892LT 2-Button Security+ 2.0 Learning Remote Control
  - d. LiftMaster 894LT 4-Button Security+ 2.0 Learning Remote Control
  - e. LiftMaster 811LM 1-Button Encrypted DIP Remote Control
  - f. LiftMaster 813LM 3-Button Encrypted DIP Remote Control
  - g. LiftMaster IPAC – Internet Protocol Access Control Entry System
  - h. LiftMaster EL2000SS Stainless Steel Commercial and Gated Community Telephone Entry System.
  - i. LiftMaster Star1000 Commercial Access Control Receiver
  - j. LiftMaster PPWR Passport Receiver with Security+ 2.0 Technology
  - k. LiftMaster PPV1 Passport 1-Button Remote
  - l. LiftMaster PPK1 Passport 1-Button Mini Remote
  - m. LiftMaster KPR2000 Single Access Remote Control Keypad and Proximity Reader
  - n. LiftMaster HTRNB Heater Kit
  - o. LiftMaster Power Wheels, 4 inch (101 mm) or 6 inch (152 mm) heat-treated wheels.

## PART 3 EXECUTION

### 3.1 EXAMINATION AND PREPARATION

- A. Inspect and prepare substrates using the methods recommended by the manufacturer for achieving best result for the substrates under project conditions.
- B. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
- C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

### 3.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions. Test for proper operation and adjust until satisfactory results are obtained.

### 3.3 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

