SECTION 08731

AUTOMATIC DOOR OPERATORS - COMMERCIAL



Display hidden notes to specifier by using “Tools”/“Options”/“Display”/“Hidden Text”.

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\*\* NOTE TO SPECIFIER \*\* LiftMaster Commercial Automatic Door Operators.

This section is based on the products of The LiftMaster Group, Inc., which is located at:

 845 Larch Avenue

 Elmhurst, IL 60126-1196

 Tel: 800.282.6225

 Fax: 630.516.8412

 Email: specs@LiftMaster.com

 Web: LiftMaster.com

 [{click Here} for additional information.](http://www.arcat.com/arcatcos/cos42/arc42485.html?src=spec)

LiftMaster’s full commercial and residential garage door operator/gate operator/access control product lines meet the needs of Architects, Designers, Engineers, and Specifiers in any design or conceptual plan, while offering 100 percent compliance with UL 325-2010 safety and construction codes.  Our entire product line also contributes to energy-efficiency credits for LEED green building certification from the U.S. Green Building Council.  LiftMaster is a registered presenter of the American Institute of Architects and is approved to present any of our AIA CEUs at your firm’s location. For learning objectives and to schedule a Lunch & Learn for your firm, please send a request to specs@LiftMaster.com.  To find a complete library of architectural specifications, shop drawings, CSI format 3-part specs, CAD, and BIM product renderings, visit LiftMaster.com.

1. GENERAL
	1. SECTION INCLUDES
		1. Trolley-Type Door Operators:
			1. Trolley-type door operators for standard lift sectional doors (LiftMaster Model T).
	2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 06100 - Rough Carpentry: Installation and requirements for blocking and nailers.
		2. Section 16050 - Basic Electrical Materials and Methods: Installation and requirements for electrical connections.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. National Electrical Manufacturers Association (NEMA): NEMA ICS 6 - Industrial Control and Systems: Enclosures.
	1. SUBMITTALS
		1. Submit under provisions of Section 01300.
		2. Product Data: 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.
			4. Cleaning methods.
		3. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, edge conditions, and accessories.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store products in manufacturer’s unopened packaging with labels intact until ready for installation.
		2. Schedule delivery of door operator so that spaces are sufficiently complete that door operators can be installed immediately upon delivery.
	3. WARRANTY
		1. Manufacturer’s standard limited 2-year warranty against material and manufacturing defects with the exception of LiftMaster Model ATS2113X, which carries a limited 1-year warranty.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: LiftMaster; 845 Larch Avenue; Elmhurst, IL 60126-1196. Toll-Free: 800.282.6225. Email: specs@LiftMaster.com. Web: LiftMaster.com.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01600.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. TROLLEY-TYPE DOOR OPERATORS

E. Industrial-Duty Operator: LiftMaster T Low-Profile Industrial-Duty Trolley Operator, continuous-duty, high-starting torque motor with overload protection and emergency disconnect for manual door operation.

1. Electric Operator: Industrial-duty assembly, cULus listed and cULus labeled, complete with electric motor and factory-prewired motor controls, internal auxiliary reversal circuit, 3-button open/close/stop control station, conduit-encased wiring from control circuit to motor, and accessories required for proper operation; operator shall be capable of driving door at a speed of approximately 8 to 12 inches (203 to 279 mm) per second. Vertical operator profile shall not exceed 12 inches (279 mm).

a. Drive Reduction: Heavy-duty 5L V-belt and chain/sprocket secondary; all reduction sprockets and pulleys shall be drilled and pinned to steel shafts plated for resistance to corrosion; operator shall be equipped with permanently lubricated ball bearings on output shaft, adjustable friction clutch and quick-disconnect door arm to facilitate manual operation.

\*\* NOTE TO SPECIFIER \*\* Brake is standard on 3/4 HP and 1 HP models; brake is optional on 1/3 HP and 1/2 HP models and must be specified if desired. Delete if not required.

b. Brake: Electric solenoid-actuated brake capable of stopping and holding a door at any position. Optional on 1/3 HP and 1/2 HP. Standard on 3/4 HP and 1 HP.

c. Limit Switches: Fully adjustable, linear-driven limit mechanism synchronizing operator with door; low-friction nylon limit nuts fitted on threaded steel shaft that rotates on oil-tight self-lubricating bronze bushings; motor shall be removable without affecting limit switch settings.

d. Electric Motor: High-starting torque, continuous-duty, industrial-type protected against overload by current sensing and thermal overload devices. For single-phase applications, incoming voltage field-selectable between 115V and 230V, 60 Hz by properly positioning connector. For 3-phase applications, incoming voltage field-selectable between 208V, 230V and 460V, 60 Hz by properly positioning connector.

 Motor Specification:

\*\* NOTE TO SPECIFIER \*\* Delete options for motor specification not required.

 115/230V 60 Hz, single phase, 1/3 HP.

 115/230V 60 Hz, single phase, 1/2 HP.

 115/230V 60 Hz, single phase, 3/4 HP.

 115/230V 60 Hz, single phase, 1 HP.

 208/230/460V 60 Hz, 3-phase, 1/3 HP.

 208/230/460V 60 Hz, 3-phase, 1/2 HP.

 208/230/460V 60 Hz, 3-phase, 3/4 HP.

 208/230/460V 60 Hz, 3-phase, 1 HP

 575V 60 Hz, 3-phase, 1/2 HP.

 575V 60 Hz, 3-phase, 3/4 HP.

 575V 60 Hz, 3-phase, 1 HP.

e. Motor Control and Enclosure: LiftMaster Logic 5.0 motor control shall be UL-approved microprocessor solid-state type and shall include the capability to select one of 7 wiring types; additional features shall include a maintenance alert diagnostic system, programmable Timer-to-Close with timer defeat input, mid-stop programming capabilities and a maximum run timer to provide motor overrun protection; motor control shall be housed in a NEMA 1 enclosure integral to the operator and shall conform to ANSI/NEMA ICS 6.

 Radio Receiver: LiftMaster Logic 5.0 on-board, 3-channel receiver with standard external antenna; equipped to accept Security+ 2.0 Rolling Code Technology remote controls and trinary DIP switch remote controls, with memory up to (30) 3-button remote controls (or 90 single-button remote controls) plus 30 wireless keypads, or an unlimited number of trinary DIP switch remote controls. Tri-band frequency (310/315/390 MHz) sends multiple radio signals to bypass radio interference.

Internet Connectivity: MyQ Technology.

 902 to 928 MHz.

 50-channel FHSS (Frequency Hopping Spread Spectrum).

 LiftMaster 828LM Internet Gateway enables monitoring and control of door operators and lighting controls via Internet-enabled smartphone, tablet or computer.

 Provides two-way communication between commercial door operator and MyQ Accessories to enable remote open, close and monitoring of commercial door.

f. 3-Button Control Station: 3-button station providing open/close/stop functionality shall be NEMA Type 1 with maintenance alert indicator to signal intervals for routine door and operator maintenance.

g. Door Drive: Full #48 (1/3 HP and 1/2 HP models) or #41 (3/4 HP and 1 HP models) roller chain with emergency disconnect for manual door operation.

h. Track: Heavy-duty, double-angle, 11-gauge galvanized steel.

i. Trolley Assembly: 2 inches H x 2 inches W (51 mm H x 51 mm W) galvanized steel angle rails with cast aluminum trolley including plated steel rail spacers with a nylon chain-guide assembly.

* + - 1. Primary Entrapment Protection Devices:

\*\* NOTE TO SPECIFIER \*\* For any type of operating mode or features beyond basic constant contact on the 3-button station “Close” button to lower the door, one of the following UL-approved and listed monitored entrapment protection devices must be connected directly to the LiftMaster Logic 5.0 Operator. Select one of the following and delete options not required.

* + - * 1. NEMA 1 Monitored Photo Sensors: LiftMaster CPS-U Monitored Photo Eyes fully monitored, non-contact, infrared beam photo sensor system shall reverse, in conjunction with the LiftMaster Logic 5.0 Operator, a closing door to the full open position when an obstruction is sensed; photo sensors shall be mounted no higher than 6 inches (152 mm) maximum above the floor.
				2. NEMA 4 Monitored Photo Sensors: LiftMaster CPS-UN4 Monitored Photo Eyes (industrial thru-beam) fully monitored, non-contact, photo beam reversing photo sensor system with NEMA 4 watertight enclosure shall reverse, in conjunction with the LiftMaster Logic 5.0 Operator, a closing door to the full open position when an obstruction is sensed; photo sensors shall be mounted no higher than 6 inches (152 mm) maximum above the floor.
				3. NEMA 4X Monitored Photo Sensors: LiftMaster CPS-OPEN4 Monitored Photo Eyes (commercial thru-beam) and CPS-RPEN4 Monitored Retro-reflective Photo Eyes, fully monitored, non-contact, photo beam reversing photo sensor system with NEMA 4X watertight/corrosion-resistant enclosure shall reverse, in conjunction with the LiftMaster Logic 5.0 Operator, a closing door to the full open position when an obstruction is sensed; photo sensors shall be mounted no higher than 6 inches (152 mm) maximum above the floor.

\*\* NOTE TO SPECIFIER \*\* Delete options for motor specification not required.

* + - * 1. NEMA 6 Monitored Optical Edge System (OES): Shall provide a means to attach a 2-wire monitored sensing edge to a LiftMaster Logic 5.0 Operator for continuous monitoring purposes; the edge, in conjunction with the LiftMaster Logic 5.0 Operators, shall reverse a closing door to the full open position when an obstruction is sensed; sensing edge ordered separately and can be field-cut to required length.
				2. Monitored Sensing Edge Interface:

LiftMaster CPS-MEI Monitored Sensing Edge shall provide a means to attach a 2-wire monitored sensing edge to a LiftMaster Logic 5.0 Operator for continuous monitoring purposes; the edge, in conjunction with the LiftMaster Logic 5.0 Operators, shall reverse a closing door to the full open position when an obstruction is sensed; sensing edge ordered separately and can be field-cut to required length.

LiftMaster CPS-EI Monitored Sensing Edge shall provide a means to attach a 4-wire monitored sensing edge to a LiftMaster Logic 5.0 Operator for continuous monitoring purposes; the edge, in conjunction with the LiftMaster Logic 5.0 Operators, shall reverse a closing door to the full open position when an obstruction is sensed; sensing edge ordered separately.

* + - * 1. Additional monitored primary entrapment protection devices may be added with the appropriate interface device or plug-in accessory card.
			1. Ancillary Entrapment Protection Devices:

\*\* NOTE TO SPECIFIER \*\* Ancillary entrapment protection devices are optional and can be used to supplement, but not replace, primary entrapment protection devices. Select one of the following and delete options not required.

* + - * 1. Retro-reflective Photo Sensors: LiftMaster CPS-RN4 Retro-reflective Photo Eyes non-monitored, non-contact, infrared beam photo sensor with polarized reflector for use in conjunction with the LiftMaster CPS-EI Monitored Sensing Edge and monitored 4-wire sensing edge, shall reverse a closing door to the full open position when an obstruction is sensed; photo sensor shall be mounted no higher than 6 inches (152 mm) maximum and no lower than 4 inches (102 mm) minimum above the floor.
				2. NEMA 6 Optical Edge System (OES): 2-wire non-monitored electric edge shall reverse a closing door to the full open position when an obstruction is sensed.
				3. Non-Monitored Electric Sensing Edge: 2-wire non-monitored electric edge shall reverse a closing door to the full open position when an obstruction is sensed.
				4. Pneumatic Sensing Edge: Pneumatic (air hose) sensing edge shall reverse a closing door to the full open position when an obstruction is sensed.
1. EXECUTION
	1. EXAMINATION AND PREPARATION
		1. Do not proceed with installation until substrates have been properly prepared and deviations from manufacturer’s recommended tolerances are corrected.
		2. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer’s recommended installation tolerances and conditions. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions. Commencement of installation constitutes acceptance of conditions.
	2. INSTALLATION
		1. Install in accordance with manufacturer’s instructions and in proper relationship with adjacent construction. Test for proper operation and adjust until satisfactory results are obtained. Demonstrate operation to owner’s personnel.
	3. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch up, repair or replace damaged products before Substantial Completion.

END OF SECTION