



This Manu-Spec® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual* (PRM), including *MasterFormat™*, *SectionFormat™* and *PageFormat™*. A Manu-Spec is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification. Specifier Notes precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate product model numbers, styles and types are used in Specifier Notes and in the specification text Article titled "Acceptable Material." Metric conversion, where used, is soft metric conversion.

This Manu-Spec specifies automatic sliding gate operators for residential, commercial, and industrial use.

32 31 11 GATE OPERATORS

PART 1 GENERAL

1.1 SUMMARY

Specifier Note: Retain and edit the following Paragraph to suit type of protective cover being specified.

- A. Section Includes: This Section specifies automatic sliding gate operators and accessories for [residential] [commercial] [industrial] use to ULC 325 Class [I] [II] [III] [IV].

Specifier Note: Revise Paragraph below to suit project requirements. Add section numbers and titles as recommended by CSI MasterFormat and specifiers practice.

- B. Related Requirements:

Specifier Note: Include in this Paragraph only those sections and documents that directly affect the work of this section. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the Subparagraph below. Do not include Division 00 documents or Division 01 sections since it is assumed that all technical sections are related to all project Division 00 documents and Division 01 sections to some degree. Refer to other documents with caution since referencing them may cause them to be considered part of the Contract.

1. Section [03 30 00 - Cast-in Place Concrete: footings].
2. Section [26 05 26 - Grounding and Bonding for Electrical Systems].
3. Section [26 05 19 - Low-Voltage Electrical Power Conductors and Cables]
4. Section [26 31 00 - Photovoltaic Collectors: solar panels].
5. Section [____].

1.2 REFERENCES

Specifier Note: Define terms that are unique to this Section and are not provided elsewhere in the contract documents. Include in this Article terms that are unique to the work result specified that may not be commonly known in the construction industry. Delete the following Paragraph if no Definitions are required.



All-O-Matic, Inc.

A. Definitions:

1. [].

Specifier Note: Paragraph below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References Paragraph when specifying products and installation by an industry reference standard. List retained standard(s) referenced in this section alphabetically. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced and update as applicable. Contract Conditions Section 01 42 00 - References may be used to establish the edition date of standards. This Paragraph does not require compliance with standard(s). It is a listing of all references used in this section. Only include here standards that are referenced in the body of the specification in PARTS 1, 2 and/or 3. Do not include references to building codes at any level.

B. Reference Standards:

1. CSA International (CSA).
 - a. CSA C22.2-[2015], Canadian Electrical Code, Part II.
2. Underwriters Laboratories (UL).
 - a. UL 325-[2017], Door, Drapery, Gate, Louver, and Window Operators and Systems.
 - b. UL 991-[2004], Standard for Tests for Safety-Related Controls Employing Solid-State Devices.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Contract Conditions and Section 01 33 00 - Submittal Procedures.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Pre-installation Meeting: Convene pre-installation meeting after Award of Contract and one week prior to commencing work of this Section to verify project requirements, substrate conditions and coordination with other building sub-trades, and to review manufacturer's written recommendations.
 1. Comply with Section 01 31 19 Project Meetings and co-ordinate with other similar pre-installation meetings.
 2. Notify attendees 2 weeks prior to meeting and ensure meeting attendees include as minimum:
 - a. Owner.
 - b. Architect.
 - c. Manufacturer's technical representative.
 - d. Gate operator installer.
 - e. Electrical subcontractor.
 3. Ensure meeting agenda includes review of methods and procedures related to sliding gate operator installation including coordination with related work.
 4. Record meeting proceedings including corrective measures and other actions required to ensure successful completion of work and distribute to each attendee within one week of meeting.

1.4 SUBMITTALS

- A. Make submittals in accordance with Section [01 33 00 - Submittal Procedures].
- B. Product Data: Manufacturer's standard specifications and descriptive literature, including:
 1. Product characteristics.
- C. Shop Drawings: Include information as follows:
 1. Physical dimensions and characteristics.
 2. Location of electrical connections.
 3. Wiring diagrams.
 4. Layout of control panel including LED diagnostics panel.
 5. Anchor bolt template.

- D. Manufacturer's written Instructions, including:
 1. Delivery, storage and handling recommendations.
 2. Preparation and installation recommendations.
- E. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
- F. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria, and physical requirements.
- G. Manufacturer's Field Reports: Submit manufacturer's field reports within 3 days of each manufacturer representative's site visit and inspection.

Specifier Note: Coordinate Article below with Contract Conditions and with Section 01 78 36 - Warranties.

- H. Installer's Experience: Submit verification of evidence of work similar to the work of this Section.
- I. Electrician's Qualification: Submit copy of certification as journeyman or master electrician.
- J. Warranty: Fully executed, issued in [Owner's] name, and registered with manufacturer, including:
 1. Manufacturer's [5-year] warranty, from date of substantial completion, covering defects in materials.

Specifier Note: Retain the following only if specifying for a LEED project. Specify only the technical submittal requirements necessary to achieve the credits desired for this Project.

- K. Sustainable Design (LEED) Submittals:
 1. LEED Submittals: In accordance with Section [01 35 21 – LEED Requirements].
 2. Submit verification for items when appropriate as follows:
 - a. MR 5.1 and MR 5.2 for Regional Materials.
 - b. EA Credit 2: On-site Renewable Energy related to solar power.
 - c. [].

1.5 CLOSEOUT SUBMITTALS

Specifier Note: Retain and edit the following Paragraph to suit type of protective cover being specified.

- A. Operation and Maintenance Data: Supply maintenance data for sliding gate operator for incorporation into manual specified in Section 01 78 00 Closeout Submittals.

Specifier Note: If LEED is not a part of the project delete the following Paragraph in its entirety.

- B. Sustainable Design Closeout Documentation (LEED): Provide calculations on end-of-project recycling rates, salvage rates, and landfill rates for work of this Section demonstrating percentage of construction wastes which were recycled.
 1. Submit verification from recycling facility showing receipt of materials.
- C. Record Documentation: In accordance with Section 01 78 00 Closeout Submittals.

Specifier Note: Retain and edit the following Paragraph to suit type of protective cover being specified.

1. List materials used in gate operators work.
2. Warranty: Submit warranty documents specified.

1.6 QUALITY ASSURANCE

- A. Installer: Experienced in performing work similar to work if this Section.
- B. Electrician: Certification as journeyman or master electrician.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in accordance with manufacturer's written instructions.
 - 1. Deliver gate operator components and accessories in manufacturer's original, unopened, undamaged packaging with identification labels intact and product name and manufacturer name clearly visible, and in sizes to suit project.
 - 2. Inspect each package for damage and promptly contact All-O-Matic, Inc. directly to report damaged packages or materials.
 - 3. Replace damaged materials with new immediately.
- B. Store materials in manufacturer's unopened packaging until ready for installation.

1.8 WARRANTY

- A. Project Warranty: Refer to Contract Conditions for project warranty provisions.
- B. Manufacturer's warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official.
 - 1. Manufacturer's [5-year] limited warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions.

PART 2 PRODUCTS

Specifier Note: Retain Article below for proprietary method specification. Add product attributes performance characteristics, material standards and descriptions in other Articles as applicable. Use of such phrases as or equal, approved equal or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining or equal products.

2.1 MANUFACTURER

- A. All-O-Matic, Inc.
- B. 7820 Gloria Avenue, Van Nuys, California, 91406; Phone: (818) 787-1988; Fax: (818) 787-2214; Email: info@allomatic.net; Website: allomatic.net.
- C. Acceptable Material: All-O-Matic, Inc., Brushless DC Slide Gate Operator [SL-45DC] [SL-90DC] [SL-100FP DC] [SL 150DC] [SL-175DC].

2.2 PERFORMANCE REQUIREMENTS

- A. Comply with UL 325.
- B. Comply with UL 991.
- C. Comply with CAN/CSA C22.2.

2.3 DESCRIPTION

Specifier Note: Retain and edit the following Paragraph to suit type of protective cover being specified. Choose either UL 325 Class I or Class II when specifying the All-O-Matic SL-45DC gate operator. All other All-O-Matic sliding gate operators are available to meet UL 325 Class I, II, III, and IV. Choose the Class which best suits the Project requirements.

- A. Automatic sliding gate operators and accessories for [residential] [commercial] [industrial] use to ULC 325 Class [I] [II] [III] [IV] including features as follows:
 - 1. Housing: [SL 175 DC: Waterproof steel cover] [All other models: Polyethylene plastic cover] [with padlock tabs].

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Dimensions shown are width × length × height. Choose the 11 × 14.5 × 15.5 inches for the All O-Matic SL-45DC gate operator. Choose 15.5 × 18.5 × 17 inches for the SL-90DC gate operator. Choose 12 × 17 × 23.5 inches for the SL-100FP DC gate operator. Choose 15 × 19.5 × 25 inches for the SL-150DC gate operator. Choose 19.5 × 20 × 27.5 inches for the SL-175DC gate operator.

- a. Dimensions: [11 × 14.5 × 15.5] [15.5 × 18.5 × 17] [12 × 17 × 23.5] [15 × 19.5 × 25] [19.5 × 20 × 27.5] inches.



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2. Emergency Reversing Device (ERD): Intelligent obstruction sensor with alarm input.
 - a. Ensure alarm will operate for 5 minutes if gate hits obstruction twice before hitting close limit switches.

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Choose the “push open” release option when specifying the All-O-Matic SL-45DC gate operator. All other All-O-Matic sliding gate operators have an “emergency foot pedal” release. The SL-100FP-DC is available with the push open option if the foot pedal option is not needed.

3. Power failure release: [Push open] [Emergency foot pedal] release.
4. Gate Status LEDs for items as follows:
 - a. Check for AC Power.
 - b. Gate Position.
 - c. Battery Status.
 - d. Opening/Closing Gate Direction Alarm Mode.
 - e. External Accessories Status.

Specifier Note: Add other items as needed to suit Project requirements.

- f. [].
5. UL 325 monitored device and stop command inputs for photocell or edge for open and or close direction.
6. Adjustable hold-open timer capable of holding gate open for 60 seconds maximum.
7. Master and slave synchronization for dual gate applications.
8. Programmable relay with four configurations as follows:
 - a. Cycle Counter.
 - b. Audible or strobe light when gate is in motion.
 - c. Alarm system output if gate is forced open.
 - d. Gate position indicator.
9. Soft start and stop algorithm.
10. Leaf delay setting adjustable potentiometer from 1-6 seconds for control of master and slave dual gates.
11. Three-button station and reset button to open, close and reset gate.
12. Anti-tailgating feature.
13. Fail safe and fail secure selection.
14. Open left and open right dip-switch selection.
15. Pre-wired safety, phantom, and exit loop rack.
16. Low voltage accessory power: 12V and 24V 750 mAmps each maximum.
17. BLDC maintenance free motor.
18. Integrated battery backup.
19. MPPT solar charger.

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Delete the emergency foot pedal release when specifying the All-O-Matic SL-45DC gate operator.

20. On board relay for magnetic or solenoid lock control..

2.4 OPERATOR

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Retain the option for alternate solar power source only if the gate operator is to be powered by solar power. Choose the 36 VDC 80 Watts solar power source only when specifying the All-O-Matic SL-175DC gate operator. Choose 250 cycles and 600 pounds if specifying All-O-Matic Gate Operator SL-45DC. Choose 1000 pounds for all other gates. For SL-90DC choose 150 cycles. For SL-100FP DC choose 80 cycles. For SL-150DC and SL-175DC choose 100 cycles.



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- A. Brushless DC Slide Gate Operator with integrated battery backup capable of [250] [150] [100] [80] continuous cycles on [600] [1000] pounds gate [and [24] [36] VDC 80 Watts alternate solar power source].

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Choose 800 pounds for the All-O-Matic SL-45DC gate operator. Choose 1,600 pounds for the SL-90DC gate operator. Choose 2000 pounds for the SL-100FP DC gate operator. Choose 3000 pounds for the SL-150DC gate operator with a ½ HP continuous duty motor or 4000 pounds for SL-150DC gate operator with a 1 HP continuous duty motor. Choose 3000 pounds (24 inches/second) or 8000 pounds (12 inches/second) for the pounds for the SL-175DC gate operator.

1. Gate weight: [800] [1600] [2000] [3000] [4000] [8000] pounds maximum.

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Choose 30 feet for the All-O-Matic SL-45DC gate operator. Choose 50 feet for the SL-90DC or the SL-100FP DC gate operator. Choose 60 feet for the SL-150DC gate operator. Choose 100 feet for the SL-175DC gate operator.

2. Gate length: [30] [50] [60] [100] feet maximum.

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Choose either the 12 inches or the 24 inches per second when specifying the All-O-Matic Gate Operator SL 175DC. All other All-O-Matic gate operators have a travel speed of 12 inches per second maximum.

3. Gate travel speed: [12] [24] inches per second.
 a. Include travel adjustment control.
 b. Include obstruction sensing system.

- B. [Motor] [Continuous duty motor]: [½] [1] [3] HP] with [24] [36] VDC brushless motor.

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Choose the 29:1 gearbox ratio when specifying the All-O-Matic SL-45DC gate operator. Choose the 20:1 ratio when specifying the SL-90DC or the SL-100FP DC gate operators. Choose the 30:1 ratio when specifying the SL-150DC or the SL-175DC gate operator. Choose the internal clutch option for the SL-150DC.

1. Gearbox ratio: [29:1] [20:1] [30:1] [with internal clutch].

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Choose the nylon idlers for the All-O-Matic SL-45DC, SL-90DC or SL-100FP DC gate operators. All other All-O-Matic gate operators use metal idlers.

- C. Idler: Two [nylon] [metal] idlers with ball bearings.

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Choose 41 chain size for the All-O-Matic SL-45DC, SL-90DC & SL-100FP DC. Choose 40 chain size for SL-150DC. Choose 50 chain size and the 30 feet long chain for the All-O-Matic SL-175DC gate operator. All other All-O-Matic gate operators use the 20 feet long chain.

- D. Chain Size: [41] [40] [50] nickel plated chain [20] [30] feet long.

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified.

- E. Brackets: Two gate brackets with two ½ inch thread chain bolts.
 F. Main Power Source: [115] [120] [230] [220] [480] VAC [single phase].
 G. Optional Power Source: [24] [36] VDC solar power].

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. See manual for power specifications.



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1. Power consumption: [4 Amps at 115 VAC] [9 Amps at 120 VAC] [2 Amps at 220 VAC] [5 Amps at 240 VAC] [2.5 Amps at 480 VAC].

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements. Choose the 14 Ahrs batteries when specifying the All-O-Matic SL-175DC. All other All-O-Matic sliding gate operators use 7 Ahrs batteries.

2. Integrated battery backup with [7] [14] Ahrs batteries.

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Choose the 125 VA transformer for the All-O-Matic SI-45 DC gate operator. Choose the 300 VA transformer for the SL-90DC gate operator. Choose the 480 VA transformer for either the SL-100FP DC or the SL-150DC gate operator. Choose the 1000 VA transformer for the SL-175DC gate operator.

- H. Transformer: [125] [300] [480] [1000] VA toroidal transformer.
- I. Operating temperature range: Minus 40 degrees F to 160 degrees F.

Specifier Note: Retain and edit the following Paragraph to suit the Project requirements and the gate operator to be specified. Consult with ALL-O-Matic directly before editing the following Paragraph.

- J. LED Diagnostics: Include items as follows:
 1. "AC/PWR On": LED will be on when AC power is being used.
 2. "M/S Link": LED will be on when master/slave communication is active.
 3. "ALARM": Two states as follows:
 - a. 1st state: LED will blink(horn will beep also) every 30 seconds when battery is low, bad or disconnected.
 - b. 2nd state: LED will turn on for 5 minutes when operator goes on shut down mode due to gate hitting obstruction and horn will sound for 5 minutes or until cancelled.
 4. "LOW BATTERY": LED will be on when battery is low.
 5. "MODE": Two states as follows:
 - a. 1st state: LED will blink approximately every two seconds when overload occurs over current.
 - b. 2nd state: LED will blink fast approximately twice per second when gate is jammed and motor sensors are not responding or are disconnected.
 6. "OPEN-LIMIT": LED will be on while limit nut is against open limit switch.
 7. "CLOSE-LIMIT": LED will be on while limit nut is against close limit switch.
 8. "OPENING": LED will be on while gate operator is in opening cycle.
 9. "CLOSING": LED will be on while gate operator is in closing cycle.
 10. "RADIO": LED will be on while Radio input is activated (closed circuit to Common).
 11. "EXIT": LED will be on while Exit input is activated (closed circuit to Common).
 12. "PHANTOM": LED will be on while Phantom input is activated (closed circuit to Common).
 13. "SAFETY": LED will be on while Safety input is activated (open circuit to Common).
 14. "STOP CMD": LED will be on while Stop Command input is activated (open circuit to Common).
 15. "CLOSE CMD": LED will be on while Close Command input is activated (closed circuit to Common).
 16. "MON_OPEN": LED will be on while Monitor Open input is activated (open circuit to Common) or when device is not installed.
 17. "MON_CLOSE": LED will be on while Monitor Close input is activated (open circuit to Common) or when device is not installed.
 18. "MON_FAULT": LED will be on when entrapment device (MON_OPEN or MON_CLOSE) is not installed or fault condition has been detected.
 19. "TIMER": LED will blink when timer is counting on open position only.

Specifier Note: Add other items as required. Consult with ALL-O-Matic directly before specifying other items.

20. [].

2.5 ACCESSORIES

- A. Concrete Footings: In accordance with Section [03 30 00 - Cast-in-Place Concrete].
- B. Electrical Conduits: In accordance with Section [26 05 33 - Raceway and Boxes for Electrical Systems].

Specifier Note: All accessories must be industry standard. All-O-Matic does not manufacture these accessories.

Specifier Note: Edit the following Paragraph to suit the Project requirements and coordinate the Paragraph with other Project Manual sections where appropriate. Contact All-O-Matic directly for information related the backup solar panel that they recommend for use with their sliding gate operators.

- C. Solar Panel: In accordance with Section [26 31 00 - Photovoltaic Collectors].
- D. Exit Loop Detector.
- E. Safety Loop Detector.
- F. Phantom Loop Detector.
- G. Keypad.
- H. Telephone.
- I. Push Button Box.
- J. Fire Box.
- K. Card Reader.
- L. Key Switch.
- M. Anchor Bolts: [Galvanized] [Stainless] steel bolts sized [to withstand seismic acceleration and] in accordance with sliding gate operator manufacturer's written recommendations.

2.6 PRODUCT SUBSTITUTIONS

- A. Substitutions: [In accordance with Section 01 23 13 - Product Substitution Procedures] [No substitutions permitted].

PART 3 EXECUTION

3.1 INSTALLER

- A. Use only installers who have training and experience of work similar to work of this Section.
- B. Use only certified journeyman or master electricians when performing electrical work.

3.2 EXAMINATION

Specifier Note: Retain and edit the following Paragraph to suit type of protective cover being specified.

- A. Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for sliding gate operator installation in accordance with manufacturer's written recommendations.
 1. Visually inspect substrate in presence of Architect.
 2. Ensure that gate moves freely before installing gate operator.
 3. Ensure all gaps greater than 2¼ inch in sliding gate-to-fence assembly below 6 feet height are eliminated.
 4. Inform Architect of unacceptable conditions immediately upon discovery.
 5. Proceed with application only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Architect.

Specifier Note: Retain and edit the following Paragraph to suit type of protective cover being specified.

6. Starting installation of sliding gate operator implies substrate conditions and gate installation are acceptable for Work of this Section.

3.3 PREPARATION

- A. Install concrete footings in accordance with gate operator's written recommendations and with Section [03 30 00 Cast-in Place Concrete].
- B. Install high and low voltage conduits and electrical power supply where indicated and in accordance with Section [26 05 00 - Common Work Results for Electrical].

3.4 INSTALLATION

- A. Install sliding gate operators in accordance with manufacturer's written instructions.
- B. Locate sliding gate operator [inside fence line] [as indicated].
- C. Install plumb and square.
- D. Ground sliding gate operator in accordance with Section [26 05 26 - Grounding and Bonding for Electrical Systems].
- E. Install accessories and additional components specified.
- F. Connect low voltage wiring in accordance with Section [26 05 19 - Low-Voltage Electrical Power Conductors and Cables].

3.5 ADJUSTMENT

- A. Adjust sliding gate operator clutch or load sensing device to minimum force setting that will still allow for reliable gate operation.
- B. Lubricate moving parts to operate smoothly and fit accurately.

3.6 CLEANING

- A. Perform daily progress cleaning.
 - 1. Leave work area clean at end of each day.
- B. Upon completion, remove surplus materials, rubbish, tools and equipment.
- C. Collect recyclable waste and dispose of in accordance with manufacturer's written recommendations and at appropriate recycling facilities.

Specifier Note: Specify protection methods completed after installation, but prior to acceptance by the owner. Include only statements unique to this Section. Coordinate the following Article with Section 01 76 00 - Protecting Installed Construction.

Specifier Note: Retain and edit the following Article to suit type of protective cover being specified.

3.7 CLOSEOUT PROCEDURES

- A. Demonstration and Training: Engage factory-authorized service representative to train Owner's maintenance personnel in adjustment, operation, and maintenance and to demonstrate use of sliding gate operators.

3.8 PROTECTION

- A. Protect installed sliding gate operators from damage during construction.
- B. Repair or replace adjacent materials damaged by installation of sliding gate operators.

END OF SECTION