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Guide Specification

Specifier Notes: This guide specification is written in Construction Specifications Institute (CSI) 3-Part Format in accordance with *The CSI Construction Specifications Practice Guide, MasterFormat, SectionFormat, and PageFormat*.

This Section must be carefully reviewed and edited by the Architect to meet the requirements of the Project and local building code. Coordinate this Section with Division 01, other specification sections, and the Drawings. Delete all Specifier Notes after editing this Section.

Section numbers and titles are based on *MasterFormat 2016 Edition*.

32 31 11

SWING GATE OPERATOR

Specifier Notes: This Section covers Maximum Controls LLC swing gate operator "Max Megatron 1400".

Consult Maximum Controls LLC for assistance in editing this Section as required for the Project.

GENERAL

1.1. SECTION INCLUDES

- A. Swing gate operator.

1.2. RELATED REQUIREMENTS

Specifier Notes: Edit the following list of related sections as required for the Project. Limit the list to sections with specific information that the reader might expect to find in this Section, but is specified elsewhere.

- A. Section 03 30 00 – Cast-in-Place Concrete: Concrete pads for swing gate operators.
- B. Section 26 05 00 – Common Work Results for Electrical: AC electrical power for swing gate operators.

Specifier Notes: Complete the section number and title used for the swing gates.

- C. Section 32 31 ____ – _____ Fences and Gates: Swing gates.

1.3. REFERENCE STANDARDS

Specifier Notes: List reference standards used elsewhere in this Section, complete with designations and titles. Delete reference standards from the following list not used in the edited Section.

- A. UL (www.ul.com):
 - 1. UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.
 - 2. UL 991 – Standard for Tests for Safety-Related Controls Employing Solid-State Devices.

1.4. PREINSTALLATION MEETINGS

Specifier Notes: Edit the Preinstallation Meetings article as required for the Project. Delete article if not required.

- A. Convene preinstallation meeting [1 week] [2 weeks] before start of installation of swing gate operators.
- B. Require attendance of parties directly affecting installation of swing gate operators, including Contractor, Architect, installer, and manufacturer's representative.
- C. Review the Following:
 - 1. Materials.
 - 2. Preparation.
 - 3. Installation.
 - 4. Adjusting.
 - 5. Cleaning.
 - 6. Demonstration.
 - 7. Instruction and training.
 - 8. Protection.
 - 9. Coordination with other Work.

1.5. SUBMITTALS

Specifier Notes: Edit the Submittals article as required for the Project. Delete submittals not required.

- A. Comply with Division 01.
- B. Product Data: Submit manufacturer's product data, including installation instructions.
- C. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details.
 - 1. Wiring Diagrams: Indicate wiring for each item of equipment and interconnections between items of equipment.
 - 2. Include manufacturer's names, model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts.
- D. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
- E. Manufacturer's Project References: Submit manufacturer's list of 10 successfully completed swing gate operator projects of similar size and scope to this Project, including project name and location, name of architect, and type and quantity of swing gate operators furnished.
- F. Installer's Project References: Submit installer's list of 5 successfully completed swing gate operator projects of similar size and scope to this Project, including project name and location, name of architect, and type and quantity of swing gate operators installed.
- G. Operation and Maintenance Data:
 - 1. Submit manufacturer's operation and maintenance manual, including the following:
 - a. Operation, maintenance, adjustment, and cleaning instructions.
 - b. Safety information.
 - c. Troubleshooting guide.
 - d. Parts list.
 - e. Electrical wiring diagrams.
 - 2. Provide detailed information required for Owner to properly operate and maintain swing gate operators.
- H. Warranty Documentation: Submit manufacturer's standard warranty.

1.6. QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer regularly engaged in the manufacturing of swing gate operators of similar type to that specified for a minimum of 5 years.
- B. Installer's Qualifications:
 - 1. Installer regularly engaged in installation of swing gate operators of similar type to that specified for a minimum of 5 years.
 - 2. Use persons trained for installation of swing gate operators.

Specifier Notes: Delete the following sentence if manufacturer's approval of the installer is not required.

3. Approved by manufacturer.

1.7. DELIVERY, STORAGE, AND HANDLING

- A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage and Handling Requirements:
 1. Store and handle materials in accordance with manufacturer's instructions.
 2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
 3. Store materials in clean, dry area indoors.
 4. Do not store materials directly on floor.
 5. Keep materials from freezing.
 6. Protect materials and finish during storage, handling, and installation to prevent damage.

1.8. WARRANTY

- A. Warranty Period:
 1. All Components: 5 years.
 2. Battery: 1 year.

PRODUCTS

2.1. MANUFACTURERS

- A. Manufacturer: Maximum Controls LLC, 10530 Lawson River Avenue, Fountain Valley, California 92708. Phone 949-699-0220. www.max.us.com. maxsales.us@gmail.com.

Specifier Notes: Specify if substitutions will be permitted.

- B. Substitutions: [Not permitted] [Comply with Division 01].
- C. Single Source: Provide materials from single manufacturer.

2.2. DESIGN CRITERIA

Specifier Notes: The following paragraph is in accordance with UL 325-2016.

- A. Gate Operator Safety Entrapment Protection Devices, UL 325:
 1. Two independent safety entrapment protection devices shall be installed on gate operators (inherent reversing system in gate operators count as 1 device).

2. Devices such as a monitored photo eye or a monitored edge sensor shall be installed with gate operators or a primary/secondary pair of gate operators.
3. Any 12 V DC, normally closed UL 325 approved safety device (wired or wireless photo eyes or edge sensors) shall function with gate operators.

2.3. SWING GATE OPERATOR

- A. High-Traffic, Commercial, Brushless, 24 V DC, Swing Gate Operators: "Max Megatron 1400".
 1. Mechanical:
 - a. Dimensions:
 - 1) Width: 18.3 inches.
 - 2) Depth: 24.5 inches.
 - 3) Height: 21.3 inches.
 - 4) Arm Height: 18.5 inches.
 - b. Shipping Weight: 205 lbs.
 - c. Gear Box: Heavy-duty, dual-gear reduction, high-efficiency, cast iron gear box, 900:1, Size 70.
 - d. Gate Capacity: 1,400 lbs/15 feet or 1,200 lbs/20 feet.
 - e. Gate Speed: 90 degrees in 11-1/2 to 18 seconds, dependent on motor speed setting.
 - f. Output Shaft: 3-1/4-inch diameter, hardened solid steel with cast iron clamping system.
 - g. Drive: Direct gear, synthetic oil bath.
 - h. Manual Gate Release Functions: Mechanical and electrical.
 - i. Corrosion Protection: Gold-zinc plated and powder coated.
 - j. Frame: 1/4-inch cold-rolled steel, fully welded, gold-zinc plated and powder coated.
 - k. Cover: Polymeric polyethylene, thickness 0.25 inches, flammability rating HB, RTI:50, unbreakable, dark gray.
 - l. Cover Door: Polymeric, thickness 0.187 inches, flammability rating HB, RTI:50, black with keylock.
 - m. Clamp Hood: Polymeric, thickness 0.25 inches, flammability rating HB, RTI:50, black with keylock.
 - n. Duty: Continuous cycle at extreme temperature range.
 - o. Gate Motion Control: Intelligent ramp-up and ramp-down, microprocessor controlled.
 - p. Sequenced Access Management: Capable of sequentially controlling operator in tandem with barrier gate.
 - q. Quiet operation, inaudible in environmental ambient noise.
 2. Electrical:
 - a. Motor: Brushless DC motor, equivalent to 1 HP AC motor.
 - b. Gate Speed Controls: Programmable, 16 selectable speeds.
 - c. Automatic gate position reset system.
 - d. Gate Sync: Automatic gate movement synchronization.
 - e. Modular system design.
 - f. Voltage Selection: Switchable 115/230 V AC.
 - g. Adaptive DSP control for advanced brushless DC motion control.
 - h. Real-time performance analyzer and event log (OBD PORT and Black Box).
 - i. Low-voltage wiring capabilities for remote power up to 1,000 feet (no battery needed).
 - j. Power Management: Energy saving intelligent power management system.
 - k. Outputs: 12 V DC and 24 V DC at 250 mA.

- l. Connections: Gold contact input connections and automobile-grade connectors.
 - m. Selectable Open Timer: 0.5 to 60 seconds with timer-off option.
 - n. Operational Temperature Range: Minus 4 to 165 degrees F (minus 20 to 74 degrees C), including battery performance without heater.
 - o. Lightning Protection: Up to 20 K volts and 10 K amps on inputs and outputs (44 channels), including loop detector input connections.
 - p. Safety Obstruction Sensor: Tunable, 16 position; auto adaptable to gate weight and size.
 - q. Dual motor overcurrent safety shut off.
 - r. Battery Backup Module: "Max BC-7"; minimum of 400 cycles in case of power failure.
 - s. Battery Backup Functions: 3 modes, open once, leave open, leave closed, selectable.
 - t. State machine electronics.
 - u. On-board 3-button station.
 - v. Plug-in loop detector rack.
 - w. Primary/Secondary Sync: RS 485 3-wire communication.
3. Security:
- a. Loop-Management System: High traffic, intuitive.
 - b. Alarms: Audible and remote.
 - c. Magnetic lock control relay outputs with selectable delay times.
 - d. Tamper-alert relay output triggers "on" if gate is forced open.
 - e. Audible alarm if gate is tampered with or ERD is triggered.
 - f. Gate Partial Open Recorder: Programmable, allows partial open cycles for high-traffic gates, while providing complete open cycles for emergency vehicles.
 - g. Cover: Lockable with key-lock release.
 - h. Gate Disable Feature: Disables inputs with exception of fire department input.
 - i. Transaction buffer.
 - j. Gate Status Outputs: For gate monitoring.
 - k. Direct motor control of jog OPEN/CLOSE for manually moving gate in case of emergency.
 - l. Anti-Tailgate Feature:
 - 1) Quick-close entrance.
 - 2) Quick-close exit.
4. Safety:
- a. Compliance:
 - 1) UL 325, Class I, II, III, and IV.
 - 2) UL 991.
 - b. Approval: CSA.
 - c. ETL Listed.
 - d. Adaptive Obstruction Sensor: 16 selectable sensitivity settings.
 - e. Pinch arm protection.
 - f. Dynamic Magnetic Brake System: Stops gate immediately to prevent damage to obstructions.
 - g. Vehicle Hit Protection: Protects gate operator from collision damage caused by automobile impact.
 - h. Entrapment protection and alarm output.
 - i. Selectable gate-in-motion alarm.
 - j. 12 V DC, Normally Closed UL 325 protocol.
 - k. Three combinations of monitored photo eyes and edge sensors.

- l. Secondary entrapment reverses and resets.
- m. UL reset button.

EXECUTION

3.1. EXAMINATION

- A. Examine areas and swing gates to receive swing gate operators.
- B. Notify Architect of conditions that would adversely affect installation or subsequent use.
- C. Do not begin installation until unacceptable conditions are corrected.

3.2. PREPARATION

Specifier Notes: Complete the section number used for the swing gates.
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- A. Verify swing gates are installed as specified in Section 32 31 ____ and as indicated on the Drawings.
- B. Verify swing gates are properly installed and move freely in both directions.
- C. Verify swing gates are plumb, level, square, and without sag or damage.

3.3. INSTALLATION

- A. Install swing gate operators in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Install swing gate operators in accordance with UL 325.
- C. Install swing gate operators plumb, level, square, and secure on concrete pads.
- D. Concrete Pads: Install concrete pads as specified in Section 03 30 00.
- E. Electrical: Install AC electrical power to swing gates operators as specified in Section 26 05 00.
- F. Install swing gate operators to function properly.
- G. Install swing gate operators to be weathertight.

3.4. ADJUSTING

- A. Adjust swing gate operators for proper operation in accordance with manufacturer's instructions.
- B. Adjust swing gate operators to operate smoothly and to open and close swing gates properly.

- C. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
- D. Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by Architect.

3.5. CLEANING

- A. Clean swing gate operators promptly after installation in accordance with manufacturer's instructions.
- B. Do not use harsh cleaning materials or methods that could damage finish.

3.6. CLOSEOUT ACTIVITIES

Specifier Notes: Edit the Closeout Activities article as required for the Project.
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- A. Demonstration:
 - 1. Demonstrate to [Architect] [and] [Owner] that swing gate operators function properly.
 - 2. Demonstrate to Owner proper operation of swing gate operators.
 - 3. Perform demonstration at final system inspection by factory-trained and certified representative of manufacturer.
- B. Instruction and Training:
 - 1. Provide instruction and training of Owner's personnel in operation and maintenance of swing gate operators.
 - 2. Provide instruction and training by factory-trained and certified representative of manufacturer.

3.7. PROTECTION

- A. Protect installed swing gate operators to ensure that, except for normal weathering, gate operators will be without damage or deterioration at time of Substantial Completion.

END OF SECTION