Maximum Controls LLC June 2016

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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.*

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SLIDE GATE OPERATORS

Specifier Notes: This Section covers Maximum Controls LLC slide gate operator “Max 1700 FS".

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

GENERAL

SECTION INCLUDES

Slide gate operators.

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.

Section 03 30 00 – Cast-in-Place Concrete: Concrete pads for slide gate operators.

Section 26 05 00 – Common Work Results for Electrical: AC electrical power for slide gate operators.

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

Section 32 31 \_\_\_ – \_\_\_\_\_\_\_\_\_\_ Fences and Gates: Slide gates.

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.

UL ([www.ul.com](http://www.ul.com)):

UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.

UL 991 – Standard for Tests for Safety-Related Controls Employing Solid-State Devices.

PREINSTALLATION MEETINGS

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

Convene preinstallation meeting [1 week] [2 weeks] before start of installation of slide gate operators.

Require attendance of parties directly affecting installation of slide gate operators, including Contractor, Architect, installer, and manufacturer’s representative.

Review the Following:

Materials.

Preparation.

Installation.

Adjusting.

Cleaning.

Demonstration.

Instruction and training.

Protection.

Coordination with other Work.

SUBMITTALS

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

Comply with Division 01.

Product Data: Submit manufacturer’s product data, including installation instructions.

Shop Drawings: Submit manufacturer’s shop drawings, including plans, elevations, sections, and details.

Wiring Diagrams: Indicate wiring for each item of equipment and interconnections between items of equipment.

Include manufacturer’s names, model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts.

Manufacturer’s Certification: Submit manufacturer’s certification that materials comply with specified requirements and are suitable for intended application.

Manufacturer’s Project References: Submit manufacturer’s list of 10 successfully completed slide gate operator projects of similar size and scope to this Project, including project name and location, name of architect, and type and quantity of slide gate operators furnished.

Installer’s Project References: Submit installer’s list of 5 successfully completed slide gate operator projects of similar size and scope to this Project, including project name and location, name of architect, and type and quantity of slide gate operators installed.

Operation and Maintenance Data:

Submit manufacturer’s operation and maintenance manual, including the following:

Operation, maintenance, adjustment, and cleaning instructions.

Safety information.

Troubleshooting guide.

Parts list.

Electrical wiring diagrams.

Provide detailed information required for Owner to properly operate and maintain slide gate operators.

Warranty Documentation: Submit manufacturer’s standard warranty.

QUALITY ASSURANCE

Manufacturer’s Qualifications: Manufacturer regularly engaged in the manufacturing of slide gate operators of similar type to that specified for a minimum of 5 years.

Installer's Qualifications:

Installer regularly engaged in installation of slide gate operators of similar type to that specified for a minimum of 5 years.

Use persons trained for installation of slide gate operators.

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

Approved by manufacturer.

DELIVERY, STORAGE, AND HANDLING

Delivery Requirements: Deliver materials to site in manufacturer’s original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

Storage and Handling Requirements:

Store and handle materials in accordance with manufacturer’s instructions.

Keep materials in manufacturer’s original, unopened containers and packaging until installation.

Store materials in clean, dry area indoors.

Do not store materials directly on floor.

Keep materials from freezing.

Protect materials and finish during storage, handling, and installation to prevent damage.

WARRANTY

Warranty Period:

Motor and Cover: 8 years.

Battery: 1 year.

Other Components: 5 years.

PRODUCTS

MANUFACTURERS

Manufacturer: Maximum Controls LLC, 10530 Lawson River Avenue, Fountain Valley, California 92708. Phone 949-699-0220. [www.max.us.com](http://www.max.us.com). maxsales.us@gmail.com.

Specifier Notes: Specify if substitutions will be permitted.

Substitutions: [Not permitted] [Comply with Division 01].

Single Source: Provide materials from single manufacturer.

DESIGN CRITERIA

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

Gate Operator Safety Entrapment Protection Devices, UL 325:

Two independent safety entrapment protection devices shall be installed on gate operators (inherent reversing system in gate operators count as 1 device).

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.

Any 12 V DC, normally closed UL 325 approved safety device (wired or wireless photo eyes or edge sensors) shall function with gate operators.

SLIDE GATE OPERATO**R**

High-Traffic, Commercial, Brushless, 24 V DC, Slide Gate Operators: “Max 1700 FS".

Mechanical:

Dimensions:

Width: 14.5 inches.

Depth: 19.0 inches.

Height: 29.0 inches.

Chain Height: 7.5 inches.

Shipping Weight: 158 lbs.

Gear Box: Heavy-duty, direct-drive gear box, 20:1, Size 60 push-backable.

Gate Capacity: 1,700 lbs/50-foot long gate.

Gate Speed: 12 inches per second, adjustable.

Drive: Direct gear, synthetic oil bath, 1-inch hardened output shaft.

Jog switch/emergency release.

Specifier Notes: Specify standard nickel-plated chain or optional stainless steel chain.

Chain: [25-foot #40 nickel-plated chain] [25-foot #40 Type 304 stainless steel chain].

Specifier Notes: Lockable chain-release mechanism is optional. Delete if not required.

Lockable chain-release mechanism.

Corrosion Protection: Gold-zinc plated and powder coated.

Frame: 1/4-inch cold-rolled steel, fully welded, gold-zinc plated and powder coated.

Specifier Notes: Specify standard polyethylene cover or optional stainless steel cover.

Cover: [Polymeric polyethylene, thickness 0.25 inches, flammability rating HB, RTI:50, unbreakable, dark gray] [Pad lockable, 16 gauge, Type 304 stainless steel, powder coated, light gray].

Cover Door: Polymeric, thickness 0.187 inches, flammability rating HB, RTI:50, black with keylock.

Duty: Continuous cycle at extreme temperature.

Gate Motion Control: Intelligent ramp-up and ramp-down, microprocessor controlled.

Sequenced Access Management: Capable of sequentially controlling operator in tandem with barrier gate.

Quiet operation.

Electrical:

Motor: Brushless DC motor, equivalent to 1-1/4 HP AC motor.

Gate Speed Controls: Programmable, 16 selectable speeds.

Automatic gate position reset system.

Gate Sync: Automatic gate movement synchronization.

Modular system design.

Voltage Selection: Switchable 115/230 V AC.

Adaptive DSP control for advanced brushless DC motion control.

Real-time performance analyzer and event log (OBD PORT and Black Box).

Low-voltage wiring capabilities for remote power up to 500 feet (no battery needed).

Power Management: Energy saving intelligent power management system.

Outputs: 12 V DC and 24 V DC at 250 mA.

Connections: Gold contact input connections and automobile-grade connectors.

Selectable Open Timer: 0.5 to 60 seconds with timer-off option.

Operational Temperature Range: Minus 4 to 165 degrees F (minus 20 to 74 degrees C), including battery performance without heater.

Lightning Protection: Up to 20 K volts and 10 K amps on inputs and outputs (44 channels), including loop detector input connections.

Safety Obstruction Sensor: Tunable, 16 position; auto adaptable to gate weight and size.

Downhill Gate Motion: Controlled by auto-dynamic cruise control.

Dual motor overcurrent safety shut off.

Battery Backup Module: “Max BC-7”; minimum of 100 cycles in case of power failure.

Battery Backup Functions: 3 modes, open once, leave open, leave closed, selectable.

State machine electronics.

On-board 3-button station.

Plug-in loop detector rack.

Primary/Secondary Sync: RS 485 3-wire communication.

Security:

Loop-Management System: High traffic, intuitive.

Alarms: Audible and remote.

Magnetic lock control relay outputs with selectable delay times.

Tamper-alert relay output triggers “on” if gate is forced open.

Audible alarm if gate is tampered with or ERD is triggered.

Gate Partial Open Recorder: Programmable, allows partial open cycles for high-traffic gates, while providing complete open cycles for emergency vehicles.

Cover: Lockable with key-lock release.

Gate Disable Feature: Disables inputs with exception of fire department input.

Transaction buffer.

Gate Status Outputs: For gate monitoring.

Direct motor control of jog OPEN/CLOSE for manually moving gate in case of emergency.

Quick close anti-tailgate feature.

Magnetic Lock: No need for magnetic lock with direct drive and dynamic magnetic brake system.

Chain-Drop Sensor: Detects unauthorized chain drops.

Gate Push-Back: 20:1 gear reducer allows emergency opening via latching key switch or gate disable switch.

Anti Push-Back: While in normal operation mode, machine fights back when unauthorized opening attempt or tampering is detected, prohibiting unwanted access.

Safety:

Compliance:

UL 325, Class I, II, III, and IV.

UL 991.

Approval: CSA.

ETL Listed.

Adaptive Obstruction Sensor: 16 selectable sensitivity settings.

Dynamic Magnetic Brake System: Stops gate immediately to prevent damage to obstructions.

Entrapment protection and alarm output.

Selectable gate-in-motion alarm.

12 V DC, Normally Closed UL 325 protocol.

Three combinations of monitored photo eyes and edge sensors.

Secondary entrapment reverses and resets.

UL reset button.

Gate Disable: When chain is disconnected in gate closed position, machine defaults to shut-down mode.

EXECUTION

EXAMINATION

Examine areas and slide gates to receive slide gate operators.

Notify Architect of conditions that would adversely affect installation or subsequent use.

Do not begin installation until unacceptable conditions are corrected.

PREPARATION

Specifier Notes: Complete the section number used for the slide gates.

Verify slide gates are installed as specified in Section 32 31 \_\_\_ and as indicated on the Drawings.

Verify slide gates are properly installed and move freely in both directions.

Verify slide gates are plumb, level, square, and without sag or damage.

INSTALLATION

Install slide gate operators in accordance with manufacturer’s instructions at locations indicated on the Drawings.

Install slide gate operators in accordance with UL 325.

Install slide gate operators plumb, level, square, and secure on concrete pads.

Concrete Pads: Install concrete pads as specified in Section 03 30 00.

Electrical: Install AC electrical power to slide gates operators as specified in Section 26 05 00.

Install slide gate operators to function properly.

Install slide gate operators to be weathertight.

ADJUSTING

Adjust slide gate operators for proper operation in accordance with manufacturer’s instructions.

Adjust slide gate operators to operate smoothly and to open and close slide gates properly.

Repair minor damages to finish in accordance with manufacturer’s instructions and as approved by Architect.

Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by Architect.

CLEANING

Clean slide gate operators promptly after installation in accordance with manufacturer’s instructions.

Do not use harsh cleaning materials or methods that could damage finish.

CLOSEOUT ACTIVITIES

Specifier Notes: Edit the Closeout Activities article as required for the Project.

Demonstration:

Demonstrate to [Architect] [and] [Owner] that slide gate operators function properly.

Demonstrate to Owner proper operation of slide gate operators.

Perform demonstration at final system inspection by factory-trained and certified representative of manufacturer.

Instruction and Training:

Provide instruction and training of Owner’s personnel in operation and maintenance of slide gate operators.

Provide instruction and training by factory-trained and certified representative of manufacturer.

PROTECTION

Protect installed slide 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