

3-Part Architectural Specifications

Electric Door Operator

Model: MSJ

Part 1 General

1.01 Description

A. Work Included: supply and installation of an industrial heavy-duty V-belt drive Jackshaft type electric door operator with chain hoist and solenoid brake, of size and capacity recommended by door manufacturer, as specified; as well as the necessary driving hardware and control accessories necessary for proper operation.

B. Mounting: to be wall mounted. On the right (or on the left) of the door. Hoist position on the right of operator (or on the left of operator).

1.02 Related Work

A. Door preparation, miscellaneous or structural metal work, field electrical wiring, wires, disconnect switches, fuses and conduit are in the scope of work of other sections or trades.

1.03 Submittals

A. Submit manufacturer's product data and installation instructions for each type of operator. Include both published data and any specific data prepared for this project.

1.04 Delivery, Storage and Handling

A. Product shall be delivered to the project site in manufacturer's original packaging.

B. Product shall be handled and stored to prevent damage to materials, finishes and operating mechanisms.

1.05 Warranty

A. Operator shall be warranted to be free from defects in material and workmanship for a period of 2 years.

Part 2 Product

2.01 Manufacturer

A. Acceptable Product: Operator model MSJ as manufactured by Manaras-Opera, part of the Canimex Group.

2.02 Operator

A. Motor: to be rated ___Hp, ___ Volts, ___Phase, high starting torque, continuous duty motor, ODP (or TEFC), protected against overload by a built-in thermal protection with automatic reset (3 phase motors) or a current sensing device with manual reset (1 phase motors). Motor shall be separate from reduction mechanism for ease of maintenance.

B. Reduction: first step in reduction to be 5L V-belt drive, additional steps by chain and sprockets giving an output shaft speed of 47 rpm. Input steel shaft to be a minimum of 1" (25.4mm) in diameter and supported by steel pillow block bushings. Output steel shaft to be a minimum of 1" (25.4mm) in diameter and supported by cast iron pillow block bearing.

C. Drive: door shaft to be driven by a #50 roller chain and sprocket combination to provide door travel of 6" (152.4mm) to 12" (304.8mm) per second.

D. Clutch: to be friction type, adjustable from outside.

E. Brake: to be an electrically activated drum type solenoid brake.

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F. Manual Operation: to be by a chain hoist for manual operation. An electrical interlock disconnects power to the motor operator when manual operation is engaged.

G. Electrical Enclosure: all electrical components to be in a NEMA 1 enclosure (or NEMA 4/12 enclosure).

H. Limit Switches: to be rotary-type limit switch with oil-impregnated steel cams, screw and commercial grade switches. Systems to be enclosed in electrical control box, and screw to be supported by ball bearings. Limit switches to remain in time when emergency operation or after the motor as been removed. Designed to prevent any lever breakage when limits have been exceeded during manual operation.

I. Corrosion Protection: Frame and control enclosure to be protected by baked on, long lasting enamel finish. All shafts to be protected by yellow chromate coating.

Option #1: Control circuit with 5V_{DC} logic electronic control

J. Motor Control: to be a 24V_{DC} relaying and 5V_{DC} logic circuit with a class II transformer, fused protected on output, centrifugal switch relay, programmable micro-processor, non volatile memory and includes 1.5s delay on reverse, door lock sensor, reverse wiring protection, programmable maximum run timer, mid-stop, timer to close. Operating mode selection to be possible on site during or after installation. Terminal strip to allow connection of 3 button stations, sensing edges, photo cells, one push button radio control with external connection strip, ceiling pull switches, loop detectors, key switches and external interlocks. 24V_{AC} to be available on terminal strip for the power supply of control accessories.

K. Operating Mode: to be C2 (or B2 or D1 or E2 or T or TS, see appendix for description).

Note to architects:

Motorized doors can cause serious injuries or death. Manaras-Opera strongly recommends the use of entrapment protection systems, especially in case of momentary contact to close as in B2, T or TS operating modes.

Option #2: 24V electro-mechanical control circuit

J. Motor Control: to be 24V_{AC} control circuit with a 40VA class II transformer fused protected on output, heavy duty across-the-line linear reversing contactor with mechanical interlock. Pre-wired for connection of 3 button stations, sensing edges, photo cells, one push button radio control with external connection strip, ceiling pull switches, loop detectors, key switches and external interlocks. 24V_{AC} to be available on terminal strip for the power supply of accessories.

K: Operating Mode: to be C2 (or B2 or D1 or E2 or TS, see appendix for description).

Optional: 1.5s delay on reverse, mid-stop.

Note to architects:

Motorized doors can cause serious injuries or death. Manaras-Opera strongly recommends the use of entrapment protection systems, especially in case of momentary contact to close as in B2 or TS operating modes.

L. Control Accessories to be supplied: 3 push-button stations, open close key switch, one button radio control, electric sensing edge, pneumatic sensing edge, through beam photo cell.

M. Standards: operator to be certified UL 325 by a National Recognized Testing Laboratory such as UL or CSA.

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Part 3 Execution

3.01 Installation

A. Installation: to be in accordance with Manaras-Opera instructions and in compliance with federal, state or local regulations.

Appendix: WIRING TYPE Descriptions

C2 Wiring (0): Factory preset as per UL325. Momentary contact to open/stop, constant pressure to close with a 3 push-button station. Activation of entrapment detection devices will reverse the door during closing. Auxiliary devices function as an open control and to reverse the door during closing.

B2 Wiring (1): Momentary contact to open/close/stop with a 3 push-button station. Activation of entrapment detection devices will reverse the door during closing. Auxiliary devices function as open/close control and reverse the door during closing.

D1 Wiring (2): Constant pressure to open/close. Activation of entrapment detection devices will stop the door during closing.

E2 Wiring (3): Momentary contact to open, constant pressure to close. Release of close button activates the door upwards. Activation of entrapment detection devices will reverse door motion to its fully open position.

T Wiring (4): Momentary contact to open/close/stop. The door will close when the timer is expired. If the entrapment detection devices reverse upon activation, the TTC will be deactivated. When the door is at its open limit, if the entrapment detection devices are activated, or if the chain hoist is engaged, or if the stop button is pushed before time-out, it will deactivate the TTC. The TTC will get refreshed if there is a power outage, or if the radio control device is activated, or if the open button is activated. The TTC resumes its normal operation once the close cycle is completed.

TS Wiring (5): Momentary contact to open/close/stop. The door will close when the timer is expired. If the entrapment detection devices reverse upon activation, it will refresh the TTC. When the door is at its open limit, the TTC will also get refreshed if there is a power outage, or if the chain hoist is engaged, or if the radio control device is activated, or if the open button is activated, or if the stop button is pushed before time-out.