



SECTION 08734
COMMERCIAL DOOR OPERATORS
RHX® OVERHEAD SECTIONAL DOOR OPERATOR

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Overhead Sectional Door Openers.

1.2 RELATED SECTIONS

- A. Section 05500 - Metal Fabrications: Support framing and framed opening.
- B. Section 06200 - Finish Carpentry: Wood jamb and head trim.
- C. Section 08360 - Sectional Overhead Doors.
- D. Section 08710 - Door Hardware: Product Requirements for cylinder core and keys.
- E. Section 09900 - Painting: Field applied finish.
- F. Section 16130 - Raceway and Boxes: Conduit from electric circuit to door operator and from door operator to control station.
- G. Section 16150 - Wiring Connections: Power to disconnect.

1.3 REFERENCES

- A. [NEMA 250](#) - Enclosures for Electrical Equipment (1000 Volts Maximum).
- B. [NEMA ICS 6](#) - Enclosures for Industrial Controls and Systems.
- C. [NEMA MG 1](#) - Motors and Generators.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.
- B. Electric Motors shall be alternating-current squirrel-cage motors conforming with NEMA MG 1.
- C. Wiring Connections: Requirements for electrical characteristics.
 - 1. 115 volts, 60 Hz single phase.
 - 2. 208 volts, 60 Hz single phase or three phase.
 - 3. 230 volts, 60 Hz single phase or three phase.
 - 4. 460 volts, 60 Hz three phase.

5. 575 volts, 60 Hz three phase.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. 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. Details of construction and fabrication.
 4. Installation methods.
- C. Shop Drawings: Include detailed plans, elevations, details of framing members, required clearances and accessories. Include relationship with adjacent construction.
- D. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- E. Operation and Maintenance Data: Submit lubrication requirements and frequency, and periodic adjustments required.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified with minimum of five years documented experience.
- B. Installer Qualifications: Authorized representative of the manufacturer with minimum five years documented experience.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 1. Install in areas designated by Architect.
 2. Do not proceed with remaining work until workmanship and installation is approved by Architect.
 3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
- C. Store materials in a dry, warm, ventilated weathertight location.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 WARRANTY

- A. Provide operators with a 2 year limited warranty on motor and parts.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Overhead Door Corp., 2501 S. State Hwy. 121, Suite 200, Lewisville, TX 75067. ASD. Tel. Toll Free: (800) 275-3290. Phone: (469) 549-7100. Fax: (972) 906-1499. Web Site: www.overheaddoor.com. E-mail: sales@overheaddoor.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 OVERHEAD SECTIONAL DOOR OPERATORS

- A. Heavy Duty Sectional Door Operator: Model RHX True Gear Head Type Door Operator:
 - 1. Application:
 - a. Standard Lift Sectional Door.
 - b. Lift Clearance Sectional Door.
 - c. Full Vertical Sectional Door.
 - 2. Electric Motor: UL listed.
 - a. Rating:
 - 1) 1/2 horsepower single phase or three phase with automatic thermal reset overload.
 - 2) 3/4 horsepower or 1 horsepower single phase with manual reset overload.
 - 3) 3/4 horsepower or 1 horsepower three phase with automatic thermal reset overload.
 - 4) 3 horsepower three phase with automatic thermal reset overload.
 - b. Motor frame comply with:
 - 1) NEMA 48 for 1/2 hp single phase.
 - 2) NEMA 56 for 1/2 hp three phase.
 - 3) NEMA 56 3/4 and 1 hp all phases.
 - 4) NEMA 56 for 3 hp three phase.
 - c. Construction:
 - 1) Open drip-proof construction.
 - 2) Totally Enclosed Non Ventilated – TENV construction.
 - 3) Totally Enclosed Fan Cooled – TEFC construction.
 - 4) Washdown – NEMA 4 / NEMA 4X construction
 - d. Reduction: Primary reduction is worm gear in oil bath. Secondary reduction is by chain and sprocket on trolley model only.
 - e. Duty cycle: Accommodate heavy usage, up to 60 cycles per hour under a large constant load.
 - 1) Brake: DC Disc type with selectable Progressive Braking for smooth stopping.
 - 2) Clutch: Adjustable torque-limiter type. Standard on trolley models (optional on hoist models).
 - 3) Limit System: LimitLock limit system, magnetic type providing absolute positioning with push to set and remote setting capabilities. Limit System shall remain synchronized with the door during manual operation and supply power interruptions.
 - 3. Control System: Microprocessor based with relay motor controls on a single board. System incorporates a 16 character Liquid Crystal Display (LCD) to display the system status. System shall include the following:

- a. Capable of monitoring and reporting on a variety of operating conditions, including: Current operating status, Current command status, Motor movement status, Current error status (if applicable), Hoist Interlock status (if applicable), External Interlock status, and 24VDC status.
 - b. A delay-on-reverse operating protocol.
 - c. Maximum run timers in both directions of travel that limit motor run time in the event a clutch slips or some other problem occurs.
 - d. Provisions for the connection of a 2-wire monitored photo-eye or a 2-wire monitored edge sensor, as well as non-monitored 2-wire sensing edges, photo-eyes or other entrapment protection devices.
 - e. Control action will be constant contact close until a monitored entrapment device is installed, allowing for selection of momentary contact.
 - f. Provisions for connection of single and/or 3-button control stations.
 - g. Provisions for connection of an external 3-wire radio controls and related control devices.
 - h. On board open, close and stop control keys for local operation.
 - i. Trolley operators with an inherent secondary reversal system.
 - j. CodeDodger radio receiver that is dual frequency cycling at 315 Mhz and 390 Mhz capable of storing 250 single button and/or 250 Open-Close-Stop transmitters with the ability to add and/or delete transmitters individually, identify and store activating transmitter IDs.
4. Mounting:
- a. Sectional Steel Doors:
 - 1) Jackshaft/Hoist that is side or center mounted with:
 - (a) Chain/sprocket coupling to door.
 - (b) Direct shaft-to-shaft coupling to door.
 - 2) Trolley.
 - (a) Single trolley.
 - (b) Side-mount trolley with hoist.
 - (c) Dual trolley.
5. Release:
- a. Release shall be a pull and hold type mechanism with single cable operation and an integrated interlock switch on hoist units.
 - b. Release shall consist of a manual disconnect door arm on trolley units.
6. Hoist: Chain hoist consists of chain pocket wheel, chain guard and smooth hand chain on hoist units.
7. Entrapment Protection:
- a. Control system shall have provisions to connect monitored entrapment protection devices such as monitored electric sensing edge, or monitored photo-eye and to provide constant contact close control operation in lieu of such devices..
8. Secondary Reversal:
- a. Trolley Models Only: When the clutch is detected slipping in the close direction the operator will reverse the door to the open limit. For door/operator protection only and not intended for entrapment protection.
 - b. Control system designed to accept an optional non-monitored external reversing device.
9. Control accessories:
- a. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Key operation with open, close, and stop controls.

- 3) Push-button and key operated control stations with open, close, and stop buttons.
 - 4) Controls for interior location.
 - 5) Controls for exterior location.
 - 6) Controls for both interior and exterior location.
 - 7) Controls surface mounted.
 - 8) Controls flush mounted.
- b. Special Operation:
- 1) Vehicle detector operation.
 - 2) Radio control operation.
 - 3) Card reader control.
 - 4) OHD monitored photo-eyes.
 - 5) Commercial photo-eyes.
 - 6) Timer Close Module for unattended timed door closing. Auxiliary control inputs, safety inputs, timer hold input and automatic door closing feature with selectable time delay. Safety inputs can be configured using on board keypad.
 - 7) Commercial light package.
 - 8) Auxiliary Output Module for up, down, and mid-stop limit status via several auxiliary sets of dry contacts that are microprocessor controlled. ADA compliant outputs that activate when door is moving up, down, or both directions and can be configured using the on board keypad.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify door sizes, configuration, tolerances and conditions are acceptable.
- B. Examine conditions of substrates, supports, and other conditions under which this work is to be performed.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Use anchorage devices to securely fasten assembly without distortion or stress.
- C. Fit and align assembly including hardware; level and plumb, to provide smooth operation.
- D. Coordinate installation of electrical service with Section 16150. Complete wiring from disconnect to unit components.

3.4 ADJUSTING

- A. Test for proper operation and adjust as necessary to provide proper operation without binding or distortion.
- B. Adjust hardware and operating assemblies for smooth and noiseless operation.

3.5 CLEANING

- A. Clean components using non-abrasive materials and methods recommended by manufacturer.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

3.7 SCHEDULES

- A. :
 - 1.
 - 2.
 - 3.
- B. :
 - 1.
 - 2.
 - 3.

END OF SECTION