



SECTION 08 71 13
COMMERCIAL DOOR OPERATORS

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**** NOTE TO SPECIFIER ** Overhead Door Corporation; Commercial door operator products.**

This section is based on the products of Overhead Door Corporation, which is located at:

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[[Click Here](#)] for additional information.

Overhead Door Corporation pioneered the upward-acting door industry, inventing the first upward-acting door in 1921 and the first electric door opener in 1926. Today, we continue to be the industry leader through the strength of our product innovation, superior craftsmanship and outstanding customer support, underscoring a legacy of quality, expertise and integrity. That's why design and construction professionals specify Overhead Door Corporation products more often than any other brand.

This specification includes Overhead Door Corporation commercial electric operators to suit new construction and retrofit applications, as well as unusual or special requirements. In order to improve safety and enhance door and motor life, industry quality assurance guidelines recommend the choice of a single manufacturer for both door and operator applications.

Overhead Door Corporation is the only manufacturer of a full line of commercial and industrial doors and operators specifically designed for integral applications.

PART 1 GENERAL

1.1 SECTION INCLUDES

**** NOTE TO SPECIFIER ** Delete items below not required for project.**

- A. Overhead Rolling Door and Grille Operators.
- B. Overhead Rolling Fire Door Operators.
- C. Overhead Sectional Door Operators.
- D. Overhead Counter Door Operators.

1.2 RELATED SECTIONS

**** NOTE TO SPECIFIER ** Delete any sections below not relevant to this project; add others as required.**

- A. Section 05 50 00 - Metal Fabrications.
- B. Section 06 20 00 - Finish Carpentry.

- C. Section 08 33 36 - Side Coiling Grilles.
- D. Section 08 33 23 - Overhead Coiling Doors.
- E. Section 08 33 13 - Overhead Coiling Doors.
- F. Section 08 33 00 - Coiling Doors and Grilles.
- G. Section 08 36 16 - Single-Panel Doors.
- H. Section 08 71 53 - Security Door Hardware.
- I. Section 09 90 00 - Painting and Coating.
- J. Section 27 05 39 - Surface Raceways for Communications Systems.
- K. Section 26 05 00 - Common Work Results for Electrical.

1.3 REFERENCES

**** NOTE TO SPECIFIER ** Delete references from the list below that are not actually required by the text of the edited section.**

- A. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- B. NEMA 7 - Enclosures for hazardous locations Class I, Division 1, Group D, T2C.
- C. NEMA 9 - Enclosures for hazardous locations Class II, Division 1, Groups F and G, T2C.
- D. NEMA ICS 6 - Enclosures for Industrial Controls and Systems.
- E. 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. Fire Door Operators: Provide with Factory Mutual approval and complying to and listed in UL Directory.
- D. Explosion-proof Electric Motors shall be UL and CSA listed for hazardous location use in areas classified as Class I, Division I, Group D, T2C and Class II, Division I, Groups F and G, T2C.
- E. Explosion-proof Operators: Provide with Factory Mutual approval.

**** NOTE TO SPECIFIER ** Edit the following paragraph for power operators as required. Delete those not required.**

- F. 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 01 30 00 - Administrative Requirements.
- 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.

**** NOTE TO SPECIFIER ** Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.**

- 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

**** NOTE TO SPECIFIER ** Include the following paragraph for RSX, RMX, and CDX Models only. Delete if not required.**

- A. Provide operators with a 2 year or 20,000 cycle limited warranty on motor and parts.

**** NOTE TO SPECIFIER ** Include the following paragraph for RHX Model only. Delete if not required.**

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

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Overhead Door Corporation, 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: info@overheaddoor.com.

**** NOTE TO SPECIFIER ** Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.**

- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 OVERHEAD ROLLING DOOR AND GRILLE OPERATORS

**** NOTE TO SPECIFIER ** Model RHX Heavy Duty Operator is suitable for rolling doors with a maximum height of 24 feet and a maximum weight of 1650 pounds and with Hoist, Front-of-Hood, Top-of-Hood, Bench Mount, Wall Mount mounting configurations. Edit as required to suit project requirements.**

- A. Heavy Duty Rolling Door and Grille Operator: Model RHX True Gear Head Type Door Operator:
 - 1. Application:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the ones not required.**

- a. Rolling Steel Doors.
- b. Rolling Steel Fire Doors.
- c. Rolling Steel Grille.
- 2. Electric Motor: UL listed.
 - a. Rating:

**** NOTE TO SPECIFIER ** Consult manufacturer ' s Operator Sel ection Charts for door models, weights and sizes suitable for rated horsepower specified. Select ratings required and delete those not required.**

- 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:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs for the motor horsepower specified and delete the ones not required.**

- 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:

**** NOTE TO SPECIFIER ** Select construction required from the following paragraphs and delete**

the ones not required.

- 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. The operator shall be suited for:

**** NOTE TO SPECIFIER ** Select environment required from the following paragraphs and delete the ones not required.**

- 1) NEMA ICS 6 Type 1 general purpose environment.
 - 2) NEMA ICS 6 Type 4 water tight dust tight environment.
 - 3) NEMA ICS 6 Type 4X water tight dust tight environment with corrosion resistance.
- e. Reduction: Primary reduction is worm gear in oil bath.
- f. 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.

**** NOTE TO SPECIFIER ** The following paragraph is optional. Delete if not required.**

- 2) Clutch: Adjustable torque-limiter type.
 - 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. 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. Rolling Steel doors:

**** NOTE TO SPECIFIER ** Select mount type from the following two paragraphs and delete the ones not required.**

- 1) Front of hood and chain/sprocket coupling to door.
 - 2) Top of hood and chain/sprocket coupling to door.
 - 3) Wall-mount and chain/sprocket coupling to door.
 - 4) Bench mount and chain/sprocket coupling to door.
5. Release:

- a. Release shall be a pull and hold type mechanism with single cable operation and an integrated interlock switch on hoist units.
- 6. Hoist: Chain hoist consists of chain pocket wheel, chain guard and smooth hand chain on hoist units.

**** NOTE TO SPECIFIER ** Overhead Door Corporation recommends the installation of an external reversing device for all electrically operated commercial doors. If a sensing edge or some other reversing device is not installed, a constant contact control switch must be used to close the door. We recommend a Fail Safe electric sensing edge that will not allow the door to close if the sensing edge is damaged or not working properly.**

- 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. Control accessories:
 - a. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 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.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the one not required.**

- 4) Controls for interior location.
- 5) Controls for exterior location.
- 6) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 7) Controls surface mounted.
- 8) Controls flush mounted.
- b. Special Operation:

**** NOTE TO SPECIFIER ** Select one or more of the following operation paragraphs and delete the ones not required.**

- 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.

**** NOTE TO SPECIFIER ** Model RHX Hazardous Location NEMA 7/9 Heavy Duty Operator is suitable for rolling doors with a maximum height of 24 feet and a maximum weight of 1650 pounds and with Hoist, Front-of-Hood, Top-of-Hood, Bench Mount, Wall Mount mounting configurations. Edit as required to suit project requirements.**

- B. Hazardous Location NEMA 7/9 Heavy Duty Rolling Door and Grille Operator: Model RHX

True Gear Head Type Door Operator:

1. Application:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the ones not required**

- a. Rolling Steel Doors.
 - b. Rolling Steel Fire Doors.
 - c. Rolling Steel Grille.
2. Electric Motor: UL listed.
- a. Rating:

**** NOTE TO SPECIFIER ** Consult manufacturer's Operator Selection Charts for door models, weights and sizes suitable for rated horsepower specified. Select ratings required and delete those not required.**

- 1) 1/2 horsepower single phase with automatic thermal reset overload with ability to configure for voltages of 115/208/230V.
 - 2) 1 horsepower three phase with automatic thermal reset overload with ability to configure for voltages of 208/230/460V.
 - 3) 3 horsepower three phase with automatic thermal reset overload with ability to configure for voltages of 208/230/460V.
- b. Motor frame comply with:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs for the motor horsepower and delete the ones not required**

- 1) NEMA 56C for 1/2 hp single phase.
 - 2) NEMA 56C for 1 hp three phase.
 - 3) NEMA 182C for 3 hp three phase.
- c. Construction:

**** NOTE TO SPECIFIER ** Select construction required from the following paragraphs and delete the ones not required.**

- 1) Hazardous location NEMA 7 construction.
 - 2) Hazardous location NEMA 9 construction.
- d. The operator shall be suited for:

**** NOTE TO SPECIFIER ** Select environment required from the following paragraphs and delete the ones not required.**

- 1) NEMA Type 7 construction for indoor use in hazardous (classified) locations classified as Class I, Division 1, Groups A, B, C, or D as defined in NFPA 70.
 - 2) NEMA Type 9 construction for indoor use in hazardous (classified) locations classified as Class II, Division 1, Groups E, F, or G as defined in NFPA 70.
- e. Reduction: Primary reduction is worm gear in oil bath.
- f. Duty cycle: Accommodate heavy usage, up to 60 cycles per hour under a large constant load.
- 1) Brake: Motor and electrical system will provide dynamic braking.

**** NOTE TO SPECIFIER ** The following paragraph is optional. Delete if not required.**

- 2) Clutch: Optional adjustable torque-limiter type. Not available on 3 horsepower models.
 - 3) Limit System: Limit system shall be rotary type with vernier adjustment, synchronized with door during release operation. Limit system shall incorporate intrinsically safe wiring.
3. Control System: Microprocessor based with on-board configuration and diagnostic LEDs. This system shall be capable of monitoring and reporting on a variety of operating conditions, including: Current operating status, Current maximum run time status, Motor running status, Current error status (if applicable), Timer to close status (if applicable), Open limit status, Close limit status, and Cycle count. System shall include the following:

- a. A delay-on-reverse operating protocol.
 - b. The system shall include maximum run timers in both directions of travel that limit motor run time in the event a clutch slips or some other problem occurs.
 - c. It shall include provisions for the connection of a 2-wire T2 monitored edge sensor for entrapment protection.
 - d. Control action will be constant contact close until a monitored entrapment device is installed, allowing for selection of momentary contact.
 - e. The system shall include provisions for connection of single or 3-button control stations.
 - f. The control system shall include on board open, close and stop control keys for local operation.
 - g. The system shall include provisions for automatic door closure upon reaching the open limit and completion of adjustable time delay.
4. Mounting:

- a. Rolling Steel doors:

**** NOTE TO SPECIFIER ** Select mount type from the following paragraphs and delete the ones not required.**

- 1) Front of hood and chain/sprocket coupling to door.
 - 2) Top of hood and chain/sprocket coupling to door.
 - 3) Wall-mount and chain/sprocket coupling to door.
 - 4) Bench mount and chain/sprocket coupling to door.
5. Release:
- a. Release shall be a pull and hold type mechanism with single cable operation and an integrated interlock switch.
6. Hoist:
- a. Chain hoist consists of chain pocket wheel, chain guard and smooth hand chain on hoist units. Hoist must be field adjustable for Right Hand or Left Hand mounting.

**** NOTE TO SPECIFIER ** Overhead Door Corporation recommends the installation of an external reversing device for all electrically operated commercial doors. If a sensing edge or some other reversing device is not installed, a constant contact control switch must be used to close the door. We recommend a Fail Safe electric sensing edge that will not allow the door to close if the sensing edge is damaged or not working properly.**

7. Entrapment Protection:
- a. UL 325 momentary contact control system shall have provisions to connect intrinsically safe monitored entrapment protection electric sensing edge, and to provide constant contact close control operation in lieu of such device.
8. Control accessories:
- a. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the ones not required.**

- 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.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the ones not required.**

- 4) Controls for interior location.
- 5) Controls for exterior location.
- 6) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 7) Controls surface mounted.
- 8) Controls flush mounted.

**** NOTE TO SPECIFIER ** Model RSX Standard Duty Operator is suitable for rolling doors with a maximum height of 24 feet and a maximum weight of 1620 pounds and with Trolley, Side Mount, Center Mount mounting configurations. Edit as required to suit project requirements.**

C. Commercial Rolling Door and Grille Operator: Model RSX Commercial Standard Duty Door Operator:

1. Application:

**** NOTE TO SPECIFIER ** Select one or more of the following paragraphs, edit to include model(s) required and delete the ones not required.**

- a. Rolling Steel Doors.
 - b. Rolling Steel Fire Doors.
 - c. Rolling Steel Grilles.
2. Electric Motor: UL listed.

a. Rating:

**** NOTE TO SPECIFIER ** Consult manufacturer ' s Operator Selection Charts for door models, weights and sizes suitable for rated horsepower specified. Select ratings required and delete those not required.**

- 1) 1/2 horsepower single phase or three.
 - 2) 3/4 single phase or three phase.
 - 3) 1 horsepower single phase or three phase.
- b. Motor frame comply with:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs for the motor horsepower specified and delete the ones not required.**

- 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.
- c. Construction:

**** NOTE TO SPECIFIER ** Select construction required from the following paragraphs and delete the ones not required.**

- 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 Super Belt, an auto tension poly-V flex belt that does not require adjustment. Secondary reduction is by chain and sprocket.
- e. Duty cycle: Accommodate standard usage, up to 60 cycles per hour during peak usage periods.
- 1) Brake: DC Disc type with selectable Progressive Braking for smooth stopping.
 - 2) Clutch: Adjustable friction disc type.
 - 3) Limit System: Limit Lock 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 connection of a 2-wire monitored photo-eye or a 2-wire

- monitored edge sensor, as well as non-monitored standard 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. 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. Rolling Steel doors:

**** NOTE TO SPECIFIER ** Select mount type from the following three paragraphs and delete the ones not required. Include hoist paragraph for hoist models only, delete if not required.**

- 1) Front of hood and chain/sprocket coupling to door.
 - 2) Top of hood and chain/sprocket coupling to door.
 - 3) Wall-mount and chain/sprocket coupling to door.
 - 4) Bench mount and chain/sprocket coupling to door.
 - 5) Front of hood horizontal and chain/sprocket coupling to door.
 - 6) Mounting for Hoist models, Left Hand or Right Hand.
5. Release:
- a. Release shall be a pull and hold type mechanism with single cable operation and an integrated interlock switch.

**** NOTE TO SPECIFIER ** Hoist is optional delete if not required.**

6. Hoist: Chain hoist consists of chain pocket wheel, chain guard and smooth hand chain on hoist units.

**** NOTE TO SPECIFIER ** Overhead Door Corporation recommends the installation of an external reversing device for all electrically operated commercial doors. If a sensing edge or some other reversing device is not installed, a constant contact control switch must be used to close the door. We recommend a Fail Safe electric sensing edge that will not allow the door to close if the sensing edge is damaged or not working properly.**

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. Control accessories:
- a. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 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.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the one not required.**

- 4) Controls for interior location.
- 5) Controls for exterior location.
- 6) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 7) Controls surface mounted.

- 8) Controls flush mounted.
- b. Special Operation:

**** NOTE TO SPECIFIER ** Select one or more of the following operation paragraphs and delete the ones not required.**

- 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.

**** NOTE TO SPECIFIER ** Model RSX Standard Duty Egress Operator is suitable for rolling grilles with a maximum weight of 1440 pounds. Edit as required to suit project requirements.**

- D. Commercial Rolling Grille Operator: Model RSX Commercial Standard Duty Egress Operator:
 - 1. Application:

**** NOTE TO SPECIFIER ** Select one or more of the following paragraphs, edit to include model(s) required and delete the ones not required.**

- a. Rolling Steel Grilles.
- 2. Electric Motor: UL listed.
 - a. Rating:

**** NOTE TO SPECIFIER ** Consult manufacturer ' s Operator Selection Charts for door models, weights and sizes suitable for rated horsepower specified. Select ratings required and delete those not required.**

- 1) 1/2 horsepower single phase or three.
- 2) 1 horsepower single phase or three phase.
- b. Motor frame comply with:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs for the motor horsepower specified and delete the ones not required.**

- 1) NEMA 48 for 1/2 hp single phase.
- 2) NEMA 56 for 1/2 hp three phase.
- 3) NEMA 56 1 hp all phases.
- c. Construction:

**** NOTE TO SPECIFIER ** Select construction required from the following paragraphs and delete the ones not required.**

- 1) Open drip-proof construction.
- d. Reduction: Primary reduction is Super Belt, an auto tension poly-V flex belt that does not require adjustment. Secondary reduction is by chain and sprocket.
- e. Duty cycle: Accommodate standard usage, up to 60 cycles per hour during peak usage periods.
 - 1) Brake: DC Disc type with selectable Progressive Braking for smooth stopping.
 - 2) Clutch: Adjustable friction disc type on primary reduction.
 - 3) Limit System: Limit Lock 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, supply

- 4) power interruptions, and after emergency egress release.
- 4) Door Release Clutch: 24VDC solenoid activated clutch that releases up upon loss of primary power.
- 5) Integral Centrifugal Governor: Governor shall limit door ascent speed during emergency egress test or alarm activated release.
- 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 connection of a 2-wire monitored photo-eye or a 2-wire monitored edge sensor, as well as non-monitored standard 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. Egress activation form C output for notification of local egress activation to remote alarm system.
 - j. Capable of remote egress activation via normally closed contact to egress input for emergency egress operation.
 - k. Input for normally closed contact operation by test key switch or push-pull type emergency egress control station.
 - l. 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. Rolling Steel Grilles:

**** NOTE TO SPECIFIER ** Select mount type from the following three paragraphs and delete the ones not required.**

- 1) Front of hood and chain/sprocket coupling to door.
- 2) Top of hood and chain/sprocket coupling to door.
- 3) Wall-mount and chain/sprocket coupling to door.
- 4) Bench mount and chain/sprocket coupling to door.
- 5) Front of hood horizontal and chain/sprocket coupling to door.

- 5. Release:
 - a. Release shall be a 24VDC solenoid activated clutch that releases up upon loss of primary power, or removal of 24VDC from clutch controlled by internal egress accessory board.

**** NOTE TO SPECIFIER ** Overhead Door Corporation recommends the installation of an external reversing device for all electrically operated commercial doors. If a sensing edge or some other reversing device is not installed, a constant contact control switch must be used to close the door. We recommend a Fail Safe electric sensing edge that will not allow the door to close if the sensing edge is damaged or not working properly.**

- 6. 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.

7. Control accessories:
 - a. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 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) Test key operated control station for testing of emergency egress operation.
- 5) Push-pull button operation for local emergency egress activation.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the one not required.**

- 6) Controls for interior location.
- 7) Controls for exterior location.
- 8) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 9) Controls surface mounted.
- 10) Controls flush mounted.

- b. Special Operation:

**** NOTE TO SPECIFIER ** Select one or more of the following operation paragraphs and delete the ones not required.**

- 1) Vehicle detector operation.
- 2) Radio control operation.
- 3) OHD monitored photo-eyes.
- 4) Commercial photo-eyes.
- 5) 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.
- 6) Commercial light package.
- 7) 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.

**** NOTE TO SPECIFIER ** The Medium Duty Model RMX Door Operator is suitable for commercial rolling doors and grilles with a maximum height of 16 feet and a maximum weight of 580 pounds and with jackshaft with or without hoist.**

E. Commercial Rolling Door and Grille Operator: Model RMX Door Operator:

1. Application:

**** NOTE TO SPECIFIER ** Select one or more of the following operation paragraphs and delete the one not required.**

- a. Rolling Steel Door.
- b. Rolling Steel Grille.
2. Electric Motor: UL listed.
 - a. Rating:
 - 1) 1/2 horsepower single phase with automatic thermal reset overload.
 - b. Motor frame comply with:
 - 1) NEMA 42 for 1/2 hp single phase.
 - c. Construction:

- 1) Open drip-proof construction.
- d. Reduction: Primary reduction is SuperBelt poly-V flex auto tension belt. Secondary reduction is by chain and sprocket.
- e. Duty cycle: Accommodate medium usage, up to 15 cycles per hour.
 - 1) Brake: Solenoid actuated band type.
 - 2) Clutch: Adjustable friction disc type.
 - 3) Limit System: Adjustable linear type synchronized with the door during release operation. Limit activation by opto-sensors.
- 3. Control System: Microprocessor based with relay motor controls on a single board. System incorporates a Liquid Crystal Display (LCD) to display the system status. System shall include the following:
 - a. A delay-on-reverse operating protocol.
 - b. Maximum run timers in both directions of travel that limit motor run time in the event a clutch slips or some other problem occurs.
 - c. 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.
 - d. Control action will be constant contact close until a monitored entrapment device is installed, allowing for selection of momentary contact.
 - e. Provisions for connection of single and/or 3-button control stations.
 - f. Provisions for connection of an external 3-wire radio controls and related control devices.
 - g. On board open, close and stop control keys for local operation.
- 4. Mounting:
 - a. Rolling Steel doors:

**** NOTE TO SPECIFIER ** Select mount type from the following three paragraphs and delete the ones not required. Include hoist paragraph for hoist models only, delete if not required.**

- 1) Front of hood and chain/sprocket coupling to door.
- 2) Top of hood and chain/sprocket coupling to door.
- 3) Wall-mount and chain/sprocket coupling to door.
- 4) Mounting for Hoist models shall be Right Hand.
- 5. Release:
 - a. Release shall be a pull and hold type mechanism with single cable operation and an integrated interlock switch on hoist units.

**** NOTE TO SPECIFIER ** Select optional hoist for side mount model from the following paragraph. Delete if not required.**

- 6. Hoist: Chain hoist with chain pocket wheel, chain guard and smooth hand chain on hoist units.

**** NOTE TO SPECIFIER ** Overhead Door Corporation recommends the installation of an external reversing device for all electrically operated commercial doors. If a sensing edge or some other reversing device is not installed, a constant contact control switch must be used to close the door. We recommend a Fail Safe electric sensing edge that will not allow the door to close if the sensing edge is damaged or not working properly.**

- 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. Control accessories:
 - a. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 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.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the one not required.**

- 4) Controls for interior location.
- 5) Controls for exterior location.
- 6) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 7) Controls surface mounted.
 - 8) Controls flush mounted.
- b. Special Operation:

**** NOTE TO SPECIFIER ** Select one or more of the following operation paragraphs and delete the ones not required.**

- 1) Radio control operation.
- 2) OHD monitored photo-eyes.
- 3) Commercial photo-eyes.
- 4) 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.
- 5) 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.

2.3 OVERHEAD ROLLING FIRE DOOR OPERATOR

**** NOTE TO SPECIFIER ** Model RSX Standard Duty Fire Door Operator is suitable for rolling fire doors with a maximum height of 24 feet and a maximum weight of 1440 pounds and with Hoist, Front-of-Hood, Top-of-Hood, Bench Mount, Wall Mount mounting configurations. Edit as required to suit project requirements**

- A. Commercial Rolling Steel Fire Door Operator: Model RSX Commercial Standard Duty Fire Door Operator:
1. Application:
 - a. Rolling Steel Fire Doors.
 2. Electric Motor: UL listed.
 - a. Rating:

**** NOTE TO SPECIFIER ** Consult manufacturer's Operator Selection Charts for door models, weights and sizes suitable for rated horsepower specified. Select ratings required and delete those not required**

- 1) 1/2 horsepower single phase or three.
 - 2) 3/4 single phase or three phase.
 - 3) 1 horsepower single phase or three phase.
- b. Motor frame comply with:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs for the motor horsepower specified and delete the ones not required.**

- 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.
- c. Construction: Open drip-proof construction.
- d. Reduction: Primary reduction is SuperBelt, an auto tension poly-V flex belt that does not require adjustment. Secondary reduction is by chain and sprocket.
- e. Duty Cycle: Accommodate standard usage, up to 60 cycles per hour during peak usage periods.
- 1) Brake: DC Disc type with selectable Progressive Braking for smooth

- stopping.
 - 2) Clutch: Adjustable friction disc type.
 - 3) Door Release Clutch: 24VDC solenoid activated clutch that releases up upon loss of primary and battery backup power.
 - 4) 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, supply power interruptions, and fire door release operation.
 - 5) Integral Centrifugal Governor: Governor shall limit door drop speed during manual test or alarm activated release.
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. Provide with an internal battery backup system capable of providing up to 24 hours of battery power to support alarm logic, smoke detector, release capability and audible and visible signaling appliances. Device shall monitor battery charge and annunciate the need for battery replacement via an integral sounder; an LCD display that indicates battery low condition. Battery backup/power system shall contain a management system providing trickle charge capabilities.
 - b. During a power outage, and upon depletion of the battery, the device will initiate door closure by releasing the electric clutch.
 - c. Monitoring for an Alarm input while on internal battery backup power.
 - d. Initiate gravity door closure through the release of the Door Release Clutch
 - e. Includes LCD display selectable delay settings of 10, 20, 30 or 60 seconds upon alarm activation to allow for passageway clearance before initiating door closure.

**** NOTE TO SPECIFIER ** Contact manufacturer for list of compatible smoke or heat detectors.**

- f. Capable of receiving an alarm input from compatible 2-wire normally open smoke detectors, 4-wire normally open smoke detectors, or normally open heat detectors, or input from a fire alarm control panel via a relay module providing a Form C dry contact output to the release device.
- g. Capable of receiving input from a maximum of two smoke detectors requiring use of an End-of-Line (EOL) device to ensure the integrity of the wiring.
- h. Provide with audible and visual signaling appliances to operate during the alarm closing cycle. Device shall be capable of activating and powering up to two (optional) audible/visible notification devices, e.g. strobes, horns or horn/strobes.
- i. Fire door operator shall recognize that the door is in the closed position through monitoring of door position to prevent release of the Door Release Clutch when the door is closed.
- j. Provide with relay and trouble outputs to provide notification to a fire alarm control panel when an alarm or trouble state exists.
- k. Circuit board shall have LCD display and diagnostic LEDs to assist with field installation by indicating alarm or trouble conditions present within the alarm activation device(s) or notification appliance(s).
- l. Operator shall provide remote key test switch to simulate an alarm condition during testing procedures.
- m. Operator shall provide an LCD configuration setting selectable for 2-minute or 4-minute safety timer that will initiate gravity door closure if the operator close cycle is not completed within the selected time.
- n. Upon alarm, the operator shall attempt motorized door closure.
- o. Upon alarm the operator shall provide release on obstruction selectable through the LCD display on the operator via a monitored sensing edge (by others).
- p. Upon alarm the operator shall provide one or three time obstruction cycling of

- the door selectable through the LCD display on the operator via a monitored sensing edge (by others).
- q. Operator shall provide an LCD configurable feature allowing automatic open after routine testing.
 - r. One audible and visual signaling appliance shall be provided to annunciate closure due to alarm, power loss conditions or test mode.
 - s. 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.
 - t. Maximum run timers in both directions of travel that limit motor run time in the event a clutch slips or some other problem occurs.
 - u. Provisions for connection of a 2-wire monitored photo-eye or a 2-wire monitored edge sensor, as well as non-monitored standard 2-wire sensing edges, photo-eyes or other entrapment protection devices.
 - v. Control action will be constant contact close until a monitored entrapment device is installed, allowing for selection of momentary contact.
 - w. Provisions for connection of single and/or 3-button control stations.
 - x. On board open, close and stop control keys for local operation.
 - y. 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.
 - z. On board non-resettable cycle counter.
4. Mounting:
- a. Rolling Steel doors:

**** NOTE TO SPECIFIER ** Select mount type from the following paragraphs and delete those not required. Include hoist paragraph for hoist models only, delete if not required.**

- 1) Front of hood and chain/sprocket coupling to door.
 - 2) Top of hood and chain/sprocket coupling to door.
 - 3) Wall-mount and chain/sprocket coupling to door.
 - 4) Bench mount and chain/sprocket coupling to door.
 - 5) Front of hood horizontal and chain/sprocket coupling to door.
 - 6) Mounting for Hoist models, Left Hand or Right Hand.
- 5. Release: Release shall be a pull and hold type mechanism with single cable operation and an integrated interlock switch.
 - 6. Hoist: Chain hoist consists of chain pocket wheel, chain guard and smooth hand chain on hoist units.

**** NOTE TO SPECIFIER ** Select optional fusible release from the following paragraph and delete if not required.**

- 7. Fusible Release: Capable of holding and releasing door via a fusible link/sash chain assembly attached to a release mechanism within the operator construction.

**** NOTE TO SPECIFIER ** Overhead Door Corporation recommends the installation of an external reversing device for all electrically operated commercial doors. If a sensing edge or some other reversing device is not installed, a constant contact control switch must be used to close the door. We recommend a Fail Safe electric sensing edge that will not allow the door to close if the sensing edge is damaged or not working properly.**

- 8. 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.
 - b. Control system shall have provisions to connect monitored entrapment protection devices such as wireless monitored electric sensing edge and to provide constant contact close control operation in lieu of such devices.

- c. Control system shall have provisions to provide constant contact close control operation in lieu of such devices.
- 9. Control accessories:
 - a. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the those not required.**

- 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.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the one not required.**

- 4) Controls for interior location.
- 5) Controls for exterior location.
- 6) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 7) Controls surface mounted.
- 8) Controls flush mounted.
- b. Special Operation:

**** NOTE TO SPECIFIER ** Select one or more of the following operation paragraphs and delete the ones not required.**

- 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) Visual and/or audible signal devices.
- 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.

2.4 OVERHEAD SECTIONAL DOOR OPERATORS

**** NOTE TO SPECIFIER ** Model RHX Heavy Duty Operator is suitable for sectional doors with a maximum height of 24 feet and a maximum weight of 1650 pounds and with Standard, Side Mount, Dual Trolley with Hoist: Side Mount, Center Mount chain couple or direct couple mounting configurations. Edit as required to suit project requirements.**

- A. Heavy Duty Sectional Door Operator: Model RHX True Gear Head Type Door Operator:
 - 1. Application:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the ones not required.**

- a. Standard Lift Sectional Door.
- b. Lift Clearance Sectional Door.
- c. Full Vertical Sectional Door.
- 2. Electric Motor: UL listed.
 - a. Rating:

**** NOTE TO SPECIFIER ** Consult manufacturer ' s Operator Selection Charts for door models, weights and sizes suitable for rated horsepower specified. Select ratings required and delete**

those not required.

- 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:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs for the motor horsepower specified and delete the ones not required.**

- 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:

**** NOTE TO SPECIFIER ** Select construction required from the following paragraphs and delete the ones not required.**

- 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: Limit Lock 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:

**** NOTE TO SPECIFIER ** Select mount type from the following two paragraphs and delete the ones not required. Mounting for Hoist models is Left Hand or Right Hand field adjustable.**

- a) Chain/sprocket coupling to door.
 - b) Direct shaft-to-shaft coupling to door.
- 2) Trolley.

**** NOTE TO SPECIFIER ** Select trolley type from the following paragraphs and delete the ones not required. Single trolley is standard.**

- 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.

**** NOTE TO SPECIFIER ** Overhead Door Corporation recommends the installation of an external reversing device for all electrically operated commercial doors. If a sensing edge or some other reversing device is not installed, a constant contact control switch must be used to close the door. We recommend a Fail Safe electric sensing edge that will not allow the door to close if the sensing edge is damaged or not working properly.**

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:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 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.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the one not required.**

- 4) Controls for interior location.
- 5) Controls for exterior location.
- 6) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 7) Controls surface mounted.

- 8) Controls flush mounted.
- b. Special Operation:

**** NOTE TO SPECIFIER ** Select one or more of the following operation paragraphs and delete the ones not required.**

- 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.

**** NOTE TO SPECIFIER ** Model RHX Hazardous Location NEMA 7/9 Heavy Duty Operator is suitable for sectional doors with a maximum height of 24 feet and a maximum weight of 1650 pounds and with Standard, Side Mount, Dual Trolley with Hoist: Side Mount, Center Mount chain couple or direct couple mounting configurations. Edit as required to suit project requirements.**

- B. Hazardous Location NEMA 7/9 Heavy Duty Sectional Door Operator: Model RHX True Gear Head Type Door Operator:
 - 1. Application:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the ones not required.**

- a. Standard Lift Sectional Door.
- b. Lift Clearance Sectional Door.
- c. Full Vertical Sectional Door.
- 2. Electric Motor: UL listed.
 - a. Rating:

**** NOTE TO SPECIFIER ** Consult manufacturer's Operator Selection Charts for door models, weights and sizes suitable for rated horsepower specified. Select ratings required and delete those not required.**

- 1) 1/2 horsepower single phase with automatic thermal reset overload with ability to configure for voltages of 115/208/230V.
- 2) 1 horsepower three phase with automatic thermal reset overload with ability to configure for voltages of 208/230/460V.
- 3) 3 horsepower three phase with automatic thermal reset overload with ability to configure for voltages of 208/230/460V.
- b. Motor frame comply with:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs for the motor horsepower specified and delete the ones not required.**

- 1) NEMA 56C for 1/2 hp single phase.
- 2) NEMA 56C for 1 hp three phase.
- 3) NEMA 182C for 3 hp three phase.
- c. Construction:

**** NOTE TO SPECIFIER ** Select construction required from the following paragraphs and delete the one not required.**

- 1) Hazardous location NEMA 7 construction.
- 2) Hazardous location NEMA 9 construction.
- d. The operator shall be suited for:

**** NOTE TO SPECIFIER ** Select environment required from the following paragraphs and delete the ones not required.**

- 1) NEMA Type 7 construction for indoor use in hazardous (classified) locations classified as Class I, Division 1, Groups A, B, C, or D, T2C as defined in NFPA 70.
- 2) NEMA Type 9 construction for indoor use in hazardous (classified) locations classified as Class II, Division 1, Groups E, F, or G T2C as defined in NFPA 70.
- e. Reduction: Primary reduction is worm gear in oil bath.
- f. Duty cycle: Accommodate heavy usage, up to 60 cycles per hour under a large constant load.
 - 1) Brake: Motor and electrical system will provide dynamic braking.

**** NOTE TO SPECIFIER ** The following paragraph is optional. Delete if not required.**

- 2) Clutch: Optional adjustable torque-limiter type. Not available on 3 horsepower models.
- 3) Limit System: Limit system shall be rotary type with vernier adjustment, synchronized with door during release operation. Limit system shall incorporate intrinsically safe wiring.
3. Control System: Microprocessor based with on-board configuration and diagnostic LEDs. This system shall be capable of monitoring and reporting on a variety of operating conditions, including: Current operating status, Current maximum run time status, Motor running status, Current error status (if applicable), Timer to close status (if applicable), Open limit status, Close limit status, and Cycle count. System shall include the following:
 - a. A delay-on-reverse operating protocol.
 - b. The system shall include maximum run timers in both directions of travel that limit motor run time in the event a clutch slips or some other problem occurs.
 - c. It shall include provisions for the connection of a 2-wire T2 monitored edge sensor for entrapment protection.
 - d. Control action will be constant contact close until a monitored entrapment device is installed, allowing for selection of momentary contact.
 - e. The system shall include provisions for connection of single or 3-button control stations.
 - f. The control system shall include on board open, close and stop control keys for local operation.
 - g. The system shall include provisions for automatic door closure upon reaching the open limit and completion of adjustable time delay.
4. Mounting:
 - a. Sectional Steel Doors:
 - 1) Jackshaft/Hoist that is side or center mounted with:

**** NOTE TO SPECIFIER ** Select mount type from the following two paragraphs and delete the ones not required. Mounting for Hoist models is Left Hand or Right Hand field adjustable.**

- a) Chain/sprocket coupling to door.
- b) Direct shaft-to-shaft coupling to door.
- b. Trolley.

**** NOTE TO SPECIFIER ** Select trolley type from the following paragraphs and delete the ones not required. Single trolley is standard.**

- 1) Single trolley.
- 2) Side-mount trolley with hoist.
- 3) 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.
 - c. Hoist: Chain hoist consists of chain pocket wheel, chain guard and smooth

hand chain on hoist units.

**** NOTE TO SPECIFIER ** Overhead Door Corporation recommends the installation of an external reversing device for all electrically operated commercial doors. If a sensing edge or some other reversing device is not installed, a constant contact control switch must be used to close the door. We recommend a Fail Safe electric sensing edge that will not allow the door to close if the sensing edge is damaged or not working properly.**

6. Entrapment Protection:
 - a. UL 325 momentary contact control system shall have provisions to connect intrinsically safe monitored entrapment protection electric sensing edge, and to provide constant contact close control operation in lieu of such device.
7. Control accessories:
 - a. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the ones not required.**

- 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.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the ones not required.**

- 4) Controls for interior location.
- 5) Controls for exterior location.
- 6) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 7) Controls surface mounted.
- 8) Controls flush mounted.

C. Commercial Sectional Door Operator: Model RSX Commercial Door Operator:

1. Application:

**** NOTE TO SPECIFIER ** Select one or more of the following paragraphs, edit to include model(s) required and delete the ones not required.**

- a. Standard Lift Sectional Door.
 - b. Lift Clearance Sectional Door.
 - c. Full Vertical Sectional Door.
2. Electric Motor: UL listed.
- a. Rating:

**** NOTE TO SPECIFIER ** Consult manufacturer 's Operator Selection Charts for door models, weights and sizes suitable for rated horsepower specified. Select ratings required and delete those not required.**

- 1) 1/2 horsepower single phase or three.
 - 2) 3/4 single phase or three phase.
 - 3) 1 horsepower single phase or three phase.
- b. Motor frame comply with:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs for the motor horsepower specified and delete the ones not required.**

- 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.

c. Construction:

**** NOTE TO SPECIFIER ** Select construction required from the following paragraphs and delete the ones not required.**

- 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 Super Belt, an auto tension poly-V flex belt that does not require adjustment. Secondary reduction is by chain and sprocket.
- e. Duty cycle: Accommodate standard usage, up to 60 cycles per hour during peak usage periods.
 - 1) Brake: DC Disc type with selectable Progressive Braking for smooth stopping.
 - 2) Clutch: Adjustable friction disc type.
 - 3) Limit System: Limit Lock 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:

**** NOTE TO SPECIFIER ** Select mount type from the following two paragraphs and delete the ones not required. Mounting for Hoist models is Left Hand or Right Hand field adjustable.**

- a) Chain/sprocket coupling to door.
- b) Direct shaft-to-shaft coupling to door.
- 2) Trolley.

**** NOTE TO SPECIFIER ** Select trolley type from the following paragraphs and delete the ones not required. Single trolley is standard.**

- 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.

**** NOTE TO SPECIFIER ** Hoist is optional delete if not required.**

6. Hoist: Chain hoist consists of chain pocket wheel, chain guard and smooth hand chain on hoist units.

**** NOTE TO SPECIFIER ** Overhead Door Corporation recommends the installation of an external reversing device for all electrically operated commercial doors. If a sensing edge or some other reversing device is not installed, a constant contact control switch must be used to close the door. We recommend a Fail Safe electric sensing edge that will not allow the door to close if the sensing edge is damaged or not working properly.**

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 version 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 not intended for entrapment
 - b. Control system designed to accept an optional non-monitored external reversing device.
9. Control accessories:
 - a. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 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.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the one not required.**

- 4) Controls for interior location.
- 5) Controls for exterior location.
- 6) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 7) Controls surface mounted.
- 8) Controls flush mounted.

b. Special Operation:

**** NOTE TO SPECIFIER ** Select one or more of the following operation paragraphs and delete the ones not required.**

- 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.

- D. Commercial Sectional Door Operator: Model RMX Door Medium Duty Operator:
 1. Application:

**** NOTE TO SPECIFIER ** Select one or more of the following operation paragraphs and delete the ones not required.**

- 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 with automatic thermal reset overload.
 - b. Motor frame comply with:
 - 1) NEMA 42 for 1/2 hp single phase.
 - c. Construction:
 - 1) Open drip-proof construction.
 - d. Reduction: Primary reduction is SuperBelt poly-V flex auto tension belt. Secondary reduction is by chain and sprocket.
 - e. Duty cycle: Accommodate medium usage, up to 15 cycles per hour.
 - 1) Brake: Solenoid actuated band type. Optional on trolley models, standard on jackshaft and hoist models.
 - 2) Limit System: Adjustable linear type synchronized with the door during release operation. Limit activation by opto sensors
- 3. Control System: Microprocessor based with relay motor controls on a single board. System incorporates a Liquid Crystal Display (LCD) to display the system status. System shall include the following:
 - a. A delay-on-reverse operating protocol.
 - b. Maximum run timers in both directions of travel that limit motor run time in the event a clutch slips or some other problem occurs.
 - c. 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.
 - d. Control action will be constant contact close until a monitored entrapment device is installed, allowing for selection of momentary contact.
 - e. Provisions for connection of single and/or 3-button control stations.
 - f. Provisions for connection of an external 3-wire radio controls and related control devices.
 - g. On board open, close and stop control keys for local operation.
 - h. Trolley operators with an inherent secondary reversal system.
- 4. Mounting:
 - a. Sectional Steel Doors:
 - 1) Jackshaft/Hoist that is side mounted with:

**** NOTE TO SPECIFIER ** Select mount type from the following two paragraphs and delete the ones not required. Mounting for Hoist models is Left Hand or Right Hand field adjustable.**

- a) Chain/sprocket coupling to door.
 - b) Direct shaft-to-shaft coupling to door.
 - 2) Trolley.
 - a) Single trolley.
5. Release:

**** NOTE TO SPECIFIER ** Select release from the following two paragraphs and delete the one not required.**

- 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.

**** NOTE TO SPECIFIER ** Select optional hoist for side mount model from the following paragraph. Delete if not required.**

6. Hoist: Chain hoist with chain pocket wheel, chain guard and smooth hand chain.

**** NOTE TO SPECIFIER ** Overhead Door Corporation recommends the installation of an external reversing device for all electrically operated commercial doors. If a sensing edge or some other**

reversing device is not installed, a constant contact control switch must be used to close the door. We recommend a Fail Safe electric sensing edge that will not allow the door to close if the sensing edge is damaged or not working properly.

7. Entrapment Protection:
 - a. Control system shall have provisions to connect monitored entrapment protection devices such as monitored electric sensing edge, pneumatic 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 not intended for entrapment
 - b. Control system designed to accept an optional non-monitored external reversing device.
9. Control accessories:
 - a. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 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.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the one not required.**

- 4) Controls for interior location.
- 5) Controls for exterior location.
- 6) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 7) Controls surface mounted.
 - 8) Controls flush mounted.
- b. Special Operation:

**** NOTE TO SPECIFIER ** Select one or more of the following operation paragraphs and delete the ones not required.**

- 1) Radio control operation.
- 2) OHD monitored photo-eyes.
- 3) Commercial photo-eyes.
- 4) 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.
- 5) 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.

2.5 OVERHEAD COILING COUNTER DOORS

- A. Counter Door Operator: Model CDX Counter Door Operator:
1. Electric Motor: Intermittent-duty, with instant reverse and automatic reset thermal overload. UL listed.
 - a. Rating:

**** NOTE TO SPECIFIER ** Consult manufacturer for door models, weights and sizes suitable for rated horsepower specified.**

- 1) 1/2 horsepower single phase.

- 2) 115 V.
- b. Motor frame comply with:
 - 1) NEMA 42 for 1/2 hp single phase.
- c. Construction:
 - 1) Open drip-proof construction.
- d. Reduction: Helical gear primary reduction and hardened bevel gear secondary reduction.
- e. Duty cycle: Accommodate light duty usage, up to 4 cycles per hour.
 - 1) 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.
- 2. 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. A delay-on-reverse operating protocol.
 - b. Maximum run timers in both directions of travel that limit motor run time in the event a problem occurs.
 - c. 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.
 - d. Control action will be constant contact close until a monitored entrapment device is installed, allowing for selection of momentary contact.
 - e. Provisions for connection of single and/or 3-button control stations.
 - f. On board open, close and stop control keys for local operation.
- 3. Mounting:
 - a. Counter doors:
 - 1) Front of hood and chain/sprocket coupling to door.
- 4. Release:
 - a. Release shall be a pull and hold type mechanism with single cable operation and an integrated interlock switch on hoist units.

**** NOTE TO SPECIFIER ** Hand Crank is optional delete if not required.**

- 5. Hand Crank: Hand crank for manual door control.

**** NOTE TO SPECIFIER ** Overhead Door Corporation recommends the installation of an external reversing device for all electrically operated commercial doors. If a sensing edge or some other reversing device is not installed, a constant contact control switch must be used to close the door. We recommend a Fail Safe electric sensing edge that will not allow the door to close if the sensing edge is damaged or not working properly.**

- 6. 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.
- 7. Control accessories:
 - a. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 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.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the one not required.**

- 4) Controls for interior location.
- 5) Controls for exterior location.

- 6) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 7) Controls surface mounted.
 - 8) Controls flush mounted.
- b. Special Operation:

**** NOTE TO SPECIFIER ** Select one or more of the following operation paragraphs and delete the ones not required.**

- 1) Radio control operation.
- 2) OHD monitored photo-eyes.
- 3) Commercial photo-eyes.
- 4) Fire Sentinel/Time Delay Release.
- 5) 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.
- 6) 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.

**** NOTE TO SPECIFIER ** Select the following paragraphs for Fire Sentinel/Time Delay Release Control Panel. Delete if not required.**

8. Automatic Closure:
 - a. Fire Sentinel time-relay release mechanism with motor close option provides an added measure of safety to control the doors' closure.
 - 1) Voltage: 120 VAC
 - 2) Voltage output 24 VDC
 - 3) Release time delay: Factory set at 10 seconds can be field adjusted by dipswitch settings to 20, 30 and 60 seconds.
 - 4) Must use normally open proximity switch to detect door is closed.
 - 5) Can support 2 or 4 wire smoke detector system (maximum of 4 Class B Style A detectors. Release devices are normally open contacts. Provided with 4 wire detectors when detectors are specified with an end of line relay.
 - 6) Unit has two 12 VDC batteries 24 VDC output.
 - 7) Power Loss Time delay: 48 hours.
 - 8) Unit can power an optional ADA horn / strobe 24 VDC.
 - 9) Load Rating: Support and Release 40 lbs. maximum.
 - 10) Auxiliary output module must be installed to accept wiring from Fire Sentinel.

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.

**** NOTE TO SPECIFIER ** Select the following paragraph for electric operation of counter doors and delete if not required.**

- D. Coordinate installation of electrical service with Section 26 05 00 - Common Work Results for Electrical. 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

**** NOTE TO SPECIFIER ** Retain Paragraph below if required to suit project requirements. Identify products by name on the Drawings or use this paragraph to define the location of each type of operator to be used. The following are some examples of schedule references. Edit as required to suit project or delete and identify products on the Drawings.**

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

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

END OF SECTION