

Architectural Specification for Overhead Door Corporation Fire Sentinel Release Devices

(For Inclusion within Section 8330 Rolling Fire Doors)

Part 1 – General

1.1 Related Documents

- A. Drawings and general provisions of Contract, including Uniform General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 Work Included

- A. Provide time delay, fail-safe release devices for as manufactured by Overhead Door Corporation for fire doors and counter fire shutters (by others).
- B. Installation and wiring of field connections shall be by an authorized installer in accordance with the diagrams, wiring information and instructions contained within the installation manual provided by Overhead Door Corporation.

1.3 Related Work

- A. Electrical:
 - 1. Smoke detector with auxiliary contact
 - 2. Heat detector with auxiliary contact
 - 3. Audible and visual signaling appliances

1.4 Quality Assurance

- A. Standards: Comply with applicable requirements of the following standards:
 - 1. UL 864, Revision 9 – Control Units for Fire Protective Signaling Systems
- B. Product Recognition: Each fail-safe release device shall be identified as follows:
 - 1. The manufacturer's name.
 - 2. Label of approved quality control agency.
 - 3. The model number.

1.5 Submittals

- A. Submit Overhead Door Corporation product data sheet and installation instructions
- B. Manuals
 - 1. Furnish copies of installation manual with operating and maintenance instructions, emergency information, parts list, and similar information.
 - 2. Instruct Owner's personnel in proper operation and maintenance.

1.6 Warranty

- A. The manufacturer shall guarantee the following:
 - 1. Its product will be free from defects in material and manufacture.
 - 2. This warranty may remain in effect for a period of twenty-four (24) months from completion of the project

Part 2 – Products

2.1 Manufacturer

- A. Acceptable Manufacturer: Overhead Door Corporation, 23 Industrial Park Road, Lewistown, Pennsylvania 17044. Telephone: (800) 929-2553.
- B. Model: Fire Sentinel Fail-Safe Release Device for rolling fire doors and counter fire shutters.

2.2 Materials

- Use the following section for a Model FSXP release device -

- A. Release device shall be a Model FSXP.
- B. The device shall be capable of operating on a voltage of 24VDC supplied by a UL 1481 regulated power supply with a battery backup system; a red, enclosure-mounted LED shall indicate power to the device.
- C. The device shall be capable of holding and releasing up to a 40 lb. load imposed by a fusible link/sash chain assembly attached to a release mechanism within the door construction.
- D. The device shall provide DIP-Switch selectable delay settings of 10, 20, 30 or 60 seconds upon alarm activation to allow for passageway clearance before initiating door closure.
- E. The device shall be capable of receiving an alarm input from either 2-wire normally open smoke detectors, 4-wire normally open or normally closed smoke detectors, or normally open heat detectors, all as specified on an accessory compatibility guide found within the installation manual, or input from a fire alarm control panel via a relay module providing a Form C dry contact output to the release device.
 - 1) The device shall be capable of receiving input from a maximum of four smoke detectors
 - 2) Power requirements for the detectors shall be as indicated in the installation manual
- F. The device shall recognize that the door is in the closed position via input received from a proximity switch, located underneath the door and activated when the door is in the closed position and resting upon the switch, to prevent accidental release of the fusible link/sash chain (or 1/16th cable) assembly; an amber, enclosure-mounted LED shall indicate activation of the proximity switch.
- G. The device shall have relay and trouble outputs to provide notification to a fire alarm control panel when an alarm or trouble state exists.
- H. The circuit board shall have diagnostic LEDs to assist with field installation by indicating alarm or trouble conditions present within the smoke detector loops, as well as activation of the proximity switch.
- I. The device shall have an enclosure-mounted test switch that simulates an alarm condition when depressed and held for a length of time equal to the length of the DIP-Switch selectable delay setting, either 10, 20, 30, or 60 seconds.

- Add the following section when the FSXP is supplied with a floor reset interface to the Fire Minuteman Chain Hoist to create the Model FSXPFL Release Device with Floor Reset-

- J. The device shall be equipped with a factory-installed floor reset option that provides a captured end link and fusible link chain assembly, that serves as an interface between a Fire Sentinel release device and the Fire Minuteman chain hoist. The reset mechanism permits a reset of both the release device and chain hoist from ground level after a fire door drop test by means of a push-pull cable assembly

- Use the following section for a Model FSXPBB or FSXPBBVB Release Device -

- A. Release device shall be a Model FSXPBB.
- B. The device shall be capable of operating on any of three voltages, 120VAC, 24VDC or 24VAC, and shall contain internal fuse and transient protection to guard against power surges; a red, enclosure-mounted LED shall indicate power to the device.
- C. The device shall be capable of holding and releasing up to a 40 lb. load imposed by a fusible link/sash chain assembly attached to a release mechanism within the door construction.
- D. An internal battery backup system capable of providing up to 72 hours of battery power shall be provided to support alarm logic, smoke detector, release capability and audible and visible signaling appliances; the device shall monitor battery charge and annunciate the need for battery replacement via an integral sounder; a green, enclosure-mounted LED shall indicate the presence of the battery backup system.

- 1) The battery backup/power system shall contain a management system providing trickle charge capabilities.
 - 2) During a power outage, upon depletion of the battery, the device will initiate door closure by releasing the fusible link/sash chain assembly and initiating gravity closure of the door.
- E. The device shall provide DIP-Switch selectable delay settings of 10, 20, 30 or 60 seconds upon alarm activation to allow for passageway clearance before initiating door closure.
- F. The device shall be capable of receiving an alarm input from either 2-wire normally open smoke detectors, 4-wire normally open or normally closed smoke detectors, normally open heat detectors, as specified on an accessory compatibility guide found within the installation manual, or input from a fire alarm control panel via a relay module providing a Form C dry contact output to the release device.
- 1) The device shall be capable of receiving input from a maximum of four smoke detectors
 - 2) Power requirements for the detectors shall be as indicated in the installation manual
- G. The device shall recognize that the door is in the closed position via input received from a proximity switch, located underneath the door and activated when the door is in the closed position and resting upon the switch, to prevent accidental release of the fusible link/sash chain (or 1/16th cable) assembly; an amber, enclosure-mounted LED shall indicate activation of the proximity switch.
- H. Optional audible and visual signaling appliances shall operate during the alarm closing cycle.
- 1) The device shall be capable of activating and powering a maximum of two audible/visible notification devices, e.g. strobes, horn/strobes, or horns.
- I. The device shall have relay and trouble outputs to provide notification to a fire alarm control panel when an alarm or trouble state exists.
- J. The circuit board shall have diagnostic LEDs to assist with field installation by indicating alarm or trouble conditions present within the smoke detector loops, as well as activation of the proximity switch.
- K. The device shall have an enclosure-mounted test switch that simulates an alarm condition when depressed and held for a length of time equal to the length of the DIP-Switch selectable delay setting, either 10, 20, 30, or 60 seconds.

- Add the following requirements for a Model FSXPBBVB Release Device -

- L. The device shall be equipped with an additional circuit board that generates one of two selectable voice warning messages to annunciate door closure due to an alarm condition; the messages shall be broadcast over a speaker strobe, available as an accessory item.
- M. (Note to specifier - when the device is equipped with the voice warning circuit board, substitute the following for requirement D. noted above under the FSXPBB specification) An internal battery backup system capable of providing up to 24 hours of battery power shall be provided to support alarm logic, smoke detector, release capability and audible and visible signaling appliances; the device shall monitor battery charge and annunciate the need for battery replacement via an integral sounder; a green, enclosure-mounted LED shall indicate the presence of the battery backup system.

- Add the following section when the FSXPBB or FSXPBBVB is supplied with a floor reset interface to the Fire Minuteman Chain Hoist to create the Model FSXPBBFL or FSXPBBVBFL Release Device with Floor Reset-

- N. The device shall be equipped with a factory-installed floor reset option that provides a captured end link and fusible link chain assembly, which serves as an interface between a Fire Sentinel release device and the Fire Minuteman chain hoist. The reset mechanism permits a reset of both the release device and chain hoist from ground level after a fire door drop test by means of a push-pull cable assembly

- Use the following section for a Model FSAFCB Release device -

- A. Release device shall be a Model FSAFCB, and shall be used in conjunction with an appropriate UL 325-rated commercial door operator, either a gearhead, jackshaft, or jackshaft with hoist operator equipped with auxiliary open and close limit switches, to create a door closing system.
- B. The device shall be capable of operating on 120VAC, and shall contain internal fuse and transient protection to guard against power surges; a red, enclosure-mounted LED shall indicate power to the device.
- C. The device shall be capable of holding and releasing up to a 40 lb. load imposed by a fusible link/sash chain assembly attached to a release mechanism within the door construction.
- D. An internal battery backup system capable of providing up to 48 hours of battery power shall be provided to support alarm logic, smoke detector, release capability and audible and visible signaling appliances; the device shall monitor battery charge and annunciate the need for battery replacement via an integral sounder; a green, enclosure-mounted LED shall indicate the presence of the battery backup system.
 - 1) The battery backup/power system shall contain a management system providing trickle charge capabilities.
 - 2) During a power outage, upon depletion of the battery, the device will initiate door closure by releasing the fusible link/sash chain assembly and initiating gravity closure of the door.
 - 3) A DIP-Switch selectable feature shall provide the capability of operating on battery power upon loss of line power or closing the door through the release of the fusible link assembly initiating gravity closure of the door
- E. The device shall provide DIP-Switch selectable delay settings of 10, 20, 30 or 60 seconds upon alarm activation to allow for passageway clearance before initiating door closure.
- F. The device shall be capable of receiving an alarm input from either 2-wire normally open smoke detectors, 4-wire normally open or normally closed smoke detectors, normally open heat detectors, as specified on an accessory compatibility guide found within the installation manual, or input from a fire alarm control panel via a relay module providing a Form C dry contact output to the release device.
 - 1) The device shall be capable of receiving input from a maximum of four smoke detectors
 - 2) Power requirements for the detectors shall be as indicated in the installation manual
- G. The device shall recognize that the door is in the closed position via input received from an auxiliary close limit switch present on the operator. Activation of this switch occurs as the door reaches the closed position and prevents accidental release of the fusible link/sash chain (or 1/16th cable) assembly; an amber, enclosure-mounted LED shall indicate activation of the auxiliary close limit switch.
- H. Optional audible and visual signaling appliances shall operate during the alarm closing cycle.
 - 1) The device shall be capable of activating and powering a maximum of two audible/visible notification devices, e.g. strobes, horn/strobes, or horns.
- I. The device shall have relay and trouble outputs to provide notification to a fire alarm control panel when an alarm or trouble state exists.
- J. The circuit board shall have diagnostic LEDs to assist with field installation by indicating alarm or trouble conditions present within the smoke detector loops, as well as activation of the auxiliary close limit switch.
- K. The device shall have an enclosure-mounted test switch that simulates an alarm condition when depressed and held for a length of time equal to the DIP-Switch selectable delay setting, for a duration lasting either 10, 20, 30, or 60 seconds
 - 1) A remote key test switch shall also be provided to simulate an alarm condition during testing procedures.
- L. The hold open/release device shall recognize that the door is in the closed position and where motor driven, be capable of sensing that power is available to the motor. The device may be wired to close on alarm.
- M. Upon alarm, the device shall offer the DIP-Switch selectable feature of motorized door closure through the operator or bypassing the operator and initiating gravity door closure by releasing the fusible link assembly and engaging the door's release mechanism.

- N. Audible and visual signaling appliances shall be provided to annunciate closure due to alarm or power loss conditions.
- O. The device shall provide three-time obstruction cycling of the door through the operator
 - 1) An electric sensing edge (by others) attached to the bottom edge of the door, and connected to both the device and the operator, shall be furnished.
 - 2) Upon contact by the sensing edge with an obstruction, the closing door shall reverse and the device will instruct the operator to repeat the attempt at closure two additional cycles.
 - 3) Failure to reach the closed position will activate the one of two selectable actions:
- P. The release device shall reverse the direction of the door through the operator upon the sensing edge making contact with an obstruction and repeat the attempt to achieve closure for two additional cycles.
 - 1) Mode of operation upon failure to close the door shall be one of two DIP-Switch selectable options
 - i. Failure to reach the closed position upon completion of the closure cycle or within a factory set time limit will result in the door being lowered by the operator upon the object. The door will rest on the obstruction until the obstruction is removed, at which point the door will resume closure through the operator to a fully closed position.
 - ii. Failure to reach the closed position upon completion of the closure cycle or within a factory selected time limit will result in gravity closure of the door. The door will rest on the obstruction until the obstruction is removed, at which point door closure shall be achieved through gravity drop.
 - 2) The device shall provide a DIP-Switch selectable 6-minute or 3-minute safety timer setting that will initiate gravity door closure if the operator close limit is not completed with the selected time or one of the modes of operation upon encountering an obstruction is not completed.
 - 3) Loss of power to the operator or release device an alarm condition will result in gravity closure of the door.
- Q. Upon successful completion of door closure through the operator with no obstructions encountered, the release device shall offer the DIP-Switch selectable feature of allowing automatic open after the alarm condition is cleared.
- R. The release device shall offer a dry contact relay that may be used to activate signaling appliances or other external signaling functions.

- Add the following requirements for a Model FSAFCBVB Release Device -

- S. The device shall be equipped with an additional circuit board that generates one of two selectable voice warning messages to annunciate door closure due to an alarm condition; the messages shall be broadcast over a speaker strobe, available as an accessory item.
- T. (Note to specifier - when the device is equipped with the voice warning circuit board, substitute the following for requirement D. noted above under the 'FSAFCB' specification) An internal battery backup system capable of providing up to 36 hours of battery power shall be provided to support alarm logic, smoke detector, release capability and audible and visible signaling appliances; the device shall monitor battery charge and annunciate the need for battery replacement via an integral sounder; a green, enclosure-mounted LED shall indicate the presence of the battery backup system.

Part 3 – Execution

3.1 Installation

- A. The Fire Sentinel release device shall be installed and tested in accordance with the Overhead Door Corporation instructions in compliance with the latest NFPA, U.L., N.E.C., local, county, district and/or other applicable building and fire standards and guidelines, regulations and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ).

- B. Testing of the release device shall be performed and witnessed for normal operation after installation. Refer to test procedures contained with the installation manual, as well as any other testing programs recommended by the door manufacturer.

3.2 Maintenance

- A. Test intervals shall be as referenced within NFPA 80 – Standard for Fire Doors and Fire Windows, or as determined and subjected to criteria established by the AHJ.
- B. Release device shall be tested and witnessed for proper operation as described within the installation manual.