SECTION 08 71 13 – AUTOMATIC DOOR OPERATORS

PART 1 GENERAL

* + - 1. RELATED DOCUMENTS
         1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
      2. SUMMARY
         1. This section includes the following types of automatic door operators:

Power Pedestrian power door operators for swinging doors.

* + - * 1. Related Sections:

Division 7 Sections for caulking to the extent not specified in this section.

Division 8 Sections for “Aluminum-Framed Entrances and Storefronts” for entrances furnished and installed separately in Division 8 Section.

Division 8 Section “Door Hardware” for hardware to the extent not specified in this section.

Division 8 Section “Glazing” for materials and installation requirements of glazing for automatic entrances.

Division 26 and 28 Sections for electrical connections including conduit and wiring for automatic entrance operators and access-control devices.

* + - 1. REFERENCES
         1. References: Comply with the version year adopted by the Authority Having Jurisdiction.

ANSI A117.1 - Accessible and Usable Buildings and Facilities.

ICC/IBC - International Building Code.

CUL – Approved for use in Canada.

NFPA 70 - National Electrical Code.

NFPA 80 - Fire Doors and Windows.

NFPA 101 - Life Safety Code.

NFPA 105 - Installation of Smoke Door Assemblies.

* + - * 1. American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA).

ANSI/BHMA A156.10 American National Standard for Power Operated Pedestrian Doors.

ANSI/BHMA A156.19 Standards for Power Assist and Low Energy Power Operated Doors.

* + - * 1. Underwriters Laboratories (UL).

UL10C – Positive Pressure Fire Tests of Door Assemblies.

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

* + - * 1. American Association of Automatic Door Manufacturers (AAADM).
        2. American Society for Testing and Materials (ASTM).

ASTM B221 Standard Specification for Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.

ASTM B209 Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate.

* + - * 1. American Architectural Manufacturers Association (AAMA).

AAMA 611 Voluntary Specification for Anodized Architectural Aluminum.

* + - * 1. National Association of Architectural Metal Manufacturers (NAAMM).

Metal Finishes Manual for Architectural Metal Products.

* + - * 1. International Code Council (IBC).

IBC: International Building Code Building Code.

**[CBC: California Building Code.]**

* + - 1. DEFINITIONS
         1. Activation device: Device that, when actuated, sends an electrical signal to the door operator to initiate the door operation.
         2. Monitored Safety Devices: A tested system that works in conjunction with the automatic door control that detects the presence of a person or an object within a zone where contact could occur and provides a signal to stop the movement of the door.
         3. AAADM: American Association of Automatic Door Manufacturers.
         4. For automatic door terminology, refer to ANSI/BHMA A 156.10 for definitions of terms.
      2. PERFORMANCE REQUIREMENTS
         1. General: Provide automatic doors that have been designed and fabricated to comply with specified performance requirements, as demonstrated by testing manufacturers corresponding systems.
         2. Compliance:

ICC/IBC International Building Code

ANSI/BHMA A 156.10 (Current year) American National Standard for Power Operated Doors Pedestrian Doors.

UL 325 Listed

UL 10C Listed

NFPA 70 National Electrical Code.

NFPA 101 Life Safety Code

CUL Approved for use in Canada

* + - * 1. Operating ambient Temperature Range: 5 Degrees F to plus 122 degrees F (minus 15 C to 50 degrees C).
        2. Automatic Door equipment accommodates medium to heavy pedestrian traffic.
        3. Opening Force Requirements:

Power-Operated swinging doors shall open with a manual force not to exceed 30 lbf (133N) to set the door in motion and 15 lbf to fully open the door with force applied at 1” (25mm) from the latched edge of the door. The required force to prevent a stopped door from opening or closing shall to exceed 15 lbf (67N) measured 1” (25mm) from the latch edge of the door at any point during the opening or closing.

* + - * 1. Closing Time:

Door operators shall be field adjustable to close 90 degrees to 10 degrees in 3 seconds or longer per ANSI/BHMA A 156.10 standard.

Door shall be field adjusted to close from 10 degrees to fully closed position in not less than 1.5 seconds.

* + - 1. SUBMITTALS
         1. Comply with Division 01 – Submittal Procedures.
         2. Product Data: Manufacturer’s product data sheets including installation details, material descriptions, dimensions of individual components and profiles fabrication, operational descriptions and finishes.
         3. Shop Drawings: For automatic entrances. Include plans, elevations, sections, details, hardware mounting heights, additional accessories and attachments to other work.
         4. Samples: color samples of exposed finish as required.
         5. Informational Submittals: Manufacturers product information and applicable sustainability program credits that are available towards a LEED rated product certification.

Credit MR 4.1 and 4.2: Manufacture’s or fabricator’s certificate indicating percentage of post-consumer recycled content by weight and pre-consumer recycled content by weight for each product specified under this section.

* + - * 1. Manufacturers Field Reports: Submit manufacturer’s field reports from AAADM certified technician of inspection and approval of doors for compliance with ANSI/BHMA A 156.10 after completion of installation.
        2. Operating and Maintenance Manuals: Provide manufacturers operating, owners and maintenance manuals for each item specified as required in Division 01, Closeout Submittals.
      1. QUALITY ASSURANCE
         1. Manufacturer Qualifications: 10 years minimum of documented experience in manufacturing door equipment similar to that indicated within this specification with a proven record of successful service performance. A manufacturer with company certificate issued by AAADM.
         2. Installer Qualifications: Installers, trained by the primary product manufacturers, with a minimum 5 years documented experience installing and maintenance of units similar in material, design, and extent to that indicated in this specification and whose work has resulted in construction with a record of successful in-service performance. Manufacturer's authorized representative who is trained and approved for installation and maintenance of units by AAADM required for this Project
         3. Source Limitations for Automatic Operators: Obtain each type of automatic door operator and senor components specified in this section from single source from single manufacturer.
         4. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
         5. Power-Operated Door Standard: ANSI/BHMA A 156.10 Current year.
         6. Emergency-Exit Door Requirements: Comply with requirements of authorities having jurisdiction for automatic entrances serving as a required means of egress.
      2. PROJECT CONDITIONS
         1. Field Measurements: Verify actual dimensions of openings to receive automatic entrances by field measurements before fabrication.
      3. COORDINATION
         1. Coordinate door operators with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish. Coordinate hardware for automatic entrances with hardware required for rest of project.
         2. Electrical System Roughing-in: Coordinate layout and installation of automatic power door operator with connections to power supplies and access-control system.
      4. WARRANTY
         1. Automatic Door Operators to be free of defects in material and workmanship for a period of Two (2) years from the date of substantial completion.
         2. **[Safety Sensors to be free of defects in material and workmanship for a period of One (1) year from the date of substantial completion.]**
         3. During the warranty period a factory trained technician shall preform service and affect repairs. A safety inspection shall be performed after each adjustment or repair and a completed inspection form submitted to the owner.
         4. During the warranty period all warranty work shall be performed during normal working hours.

1. PRODUCTS
   * + 1. MANUFACTURER
          1. dormakaba • Reamstown, PA • 1-844-SPEC-NOW (1-844-773-2669) • Website: [www.dormakaba](http://www.dormakaba).us • Email: [specnow@dorma.com](mailto:specnow@dorma.com)

Choose the substitution clause applicable for the project select item ‘B” or “C”

* + - * 1. **[Substitutions: Requests for substitution and product approval in compliance with the specification must be submitted in writing and in accordance with the procedures outlined in Division 1, Section “Substitution Procedures”. Approval of requests is at the discretion of the architect, owner, and their designated consultants.]**
        2. **[Substitutions: Not Permitted.]**
      1. AUTOMATIC SWING DOOR OPERATOR
         1. Model: DORMA, ED Series **[ED250] [ED100]** (Basis of Design) An Integrated, self-learning automatic swing door operator with an advanced CPU, a multistage gearbox with real time adaptive software and available user interface.

Automatic Door Configuration:

1. Configuration: Single swing door or pair of doors swinging.
2. Traffic Pattern: **[One-way] [ two-way] [as shown on drawings]**
3. Mounting: Surface applied
   * + - 1. Control Features

Power-hold Close

Built in Lock Delay

On-Off-Hold Open switch control to control door function, (Automatic-Hold Open- Exit Only)

On-Off Power Switch

Fire Alarm Integration

Field Adjustable Handing

Push and Go

Power Assist Opening Activation

Intergraded Connections for Safety Sensors and other accessories.

* + - * 1. Door Control Features

Wind Load and Stack Pressure microprocessor monitored with power boost to ensure secure opening and closing in changing conditions.

Door Weight Max. **[ED 100 220 lbs.] [ED 250 600 lbs.]**

* + - * 1. Header Size: Narrow Header height at 4” by 6” depth **[optional - Fine header height at 2 ¾” by 5” 1/8” depth.]**

Remove this entire smoke evacuation option if not required.

* + - 1. **[ACTIVATION BY SMOKE EVACUATION SYSTEM]**
         1. **General: Provide activation by smoke alarm evacuation. Coordinate other required activation devices and safety devices with door operation and door operator controls.**
         2. **Activation: Smoke evacuation system shall provide activation of the operator by means of a contact point within the door operator to control the opening and closing of the door in the event of an alarm condition. Doors are to be held open until the smoke evacuation system is reset**. **Door position status integrated within operator and control without additional relays or magnets.**

Select the required type of activation and safety devices required for the project.

* + - 1. ACTIVATION DEVICES
         1. Provide controls in accordance with ANSI/BHMA standards A 156.10 and complying with cited BHMA standard for condition of exposure and for long-term, maintenance-free operation under normal traffic load. Coordinate controls with door operation and door operators.
         2. **[Motion Sensor: Self-contained units; consisting of both motion and presence sensors in a single housing; adjustable to provide detection field sizes and functions required by BHMA A156.10.**

**Motion Sensor: K-band-frequency, active infrared technology.**

**Provide capability for switching between bidirectional and unidirectional detection.**

Select additional activation devices for the swing door operations

* + - * 1. Activation Device: Activation Device:

**[Push Plate:  Hard wired, [4-3/4 inch square]  [6 inch round] stainless steel push plate engraved with "Push to Open" with a handicap logo.]**

**[Push Plate:  [Hard wired] [Wireless], 36 inch x 6 inch stainless steel push plate engraved with "Push to Open" with a handicap logo.]**

**[Push Plate:  Jamb mounted, hard wired, 1-1/2 inch x 4-3/4 inch, stainless steel push plate switches engraved with "Push to Open" with a handicap logo.]**

**[Push Plate:  Radio controlled, 900 MHZ wireless, [4-3/4 inch square]  [6 inch round]   stainless steel push plate engraved with "Push to Open" with a handicap logo.]**

**[Touchless Wave Plate:  [2-3/4 inch x 4-1/2 inch]  [4-1/2 inch square] activation senor plate in [white] [black] [cream].  Microwave technology has an adjustable range of 2 inches to 24 inches.]**

**[Access control activator: as selected by architect.]**

*The California Building Code requires two push-plate actuators at each actuator location—one mounted between 178 and 203 mm (7 and 8 in.) from the floor to the centerline, and the other mounted between 762 and 1118 mm (44 in.) above the floor. Vertical actuation bars may be used in lieu of two separate actuators, with the bottom of the bar at 127 mm (5 in.) maximum above the floor and the top at 889 mm (35 in.) minimum above the floor.*

* + - 1. SAFETY DEVICES
         1. Door Mounted Presence sensor: Door mounted infrared presence mounted at the top of each door with adjustable detection field to meet the requirements of ANSI/BHMA A 156.10.

Select the following safety sensor system for safety at the doorway. Consult SPEC NOW with any questions.

* + - * 1. Presence Detection Systems and Safety Devices:

**[Adaptive Door Mounted Sensor System (Basis of Design):]**

**Adaptive Door Mounted Safety Systems (ADMSS): Door mounted presence sensor, where the sensor shall be mounted on both the swing (pull) side and the approach (push) side of the door. No header mounted sensor is required.**

**Sensor shall provide an auto adapting field to detect moving or stationary people or objects in the swing path of the door. Sensor shall utilize active infrared technology with auto adapting field to detect moving or stationary people or objects in the swing path of the door.**

**The sensor shall provide a full detection pattern that covers the entire swing path of the door and provides detection in the fully open and full close position. While the door is in motion, the pattern shall be capable of providing door panels from 24” to 48”.**

**The sensor will provide secondary activation as required for “knowing act” doorways.**

**Sensors to be field installed and adjusted in accordance with applicable safety standards.**

**System will reactivate a closing door, stop/stall an opening door, keep a closed door closed and keep an open-door open if a person is within the detection zone of the sensors.**

**[OHPS + (2) DMS (Basis of Design), Combination of an Overhead Presence Sensor (OHPS) and Door Mounted Presence Sensors (DMS) as specified:]**

**Overhead Mounted Presence Sensor (OHPS): Header mounted, overhead presence sensor mounted on swing side of door utilizing infrared technology for detection; adjustable to provide detection field sizes and functions required by ANSI/BHMA A156.10. Unit to provide the following two independently adjustable patterns of detection:**

**The door closed position covering the area on the swing side of the door.**

**The door open position including an area of detection that reaches through the threshold toward the non-swing side of the door.**

**The sensor is to be inhibited during the closing cycle of the door.**

**Door Mounted Presence Sensor (DMS) Door mounted infrared presence Sensor mounted on the approach or push side of the door and on the swing or pull side of the door. Each module within the sensor housing shall detect a 28” (50.8 cm) minimum high person. The sensor shall be mounted at the top rail of the door(s).**

**Door Mounted Presence Sensor (DMS) Door mounted infrared presence Sensor mounted on the approach (push) side of the door. Each module within the sensor housing shall detect a 28” (50.8 cm) minimum high person. The sensor shall be mounted at the top rail of the door(s).**

**System will reactivate a closing door, stop/stall an opening door, keep a closed door closed and keep an open-door open if a person is within the detection zone of the sensors.**

**[Combination of a (Header mounted sensor system) OHPS+ (door mounted sensor system) DMS as specified (Basis of Design),]**

**Header Mounted Presence Sensor (OHPS): Header mounted, overhead presence sensor utilizing infrared technology for detection; adjustable to provide detection field sizes and functions required by ANSI/BHMA A156.10. Unit to provide the following two independently adjustable patterns of detection:**

**The door closed position covering the area on the swing side of the door.**

**The door open position including an area of detection that reaches through the threshold toward the non-swing side of the door.**

**The sensor is to be inhibited during the closing cycle of the door.**

**Door Mounted Presence Sensor (DMS): Door mounted infrared presence Sensor mounted on the swing or pull side of the door. Each module within the sensor housing shall detect a 28” (50.8 cm) minimum high person. The sensor shall be mounted at the top rail of the door(s).**

**System will stop/stall an opening door, keep a closed door closed and keep an open-door open if a person is within the detection zone of the sensors.**

* + - 1. ELECTRICAL
         1. Electrical: 115 V AC +/- 10% 50/60 Hz 6.6 A max.
      2. ACCESSORIES
         1. **[Guide Rails: [Anodized aluminum bars] [Painted aluminum bars] [Stainless steel tubing], minimum 30 inches (762 mm) high; positioned and projecting from face of door jamb for distance as indicated, but not less than that required by ANSI/BHMA A156.10 for type of door and direction of travel; with filler panel**

**Filler Panel: [Expanded aluminum mesh.] [Polycarbonate plastic.]**

**Orient expanded aluminum mesh with long dimension of diamonds [parallel to top rail.] [perpendicular to top rail.] [horizontal.] [vertical.]**

**Color: [To match guide rails.] [Clear.] [As indicated by manufacturer's designations.] [Match Architect's sample.]**

Mounting: **[Jamb and floor.] [Floor, freestanding]**

* + - * 1. **[Guide Rails: To be as detailed (see architectural drawings).]**
        2. **Guide Rail Finishes:**

**[Anodized Finish:]**

**[Clear, AA- M12C22A41, Class I, 0.018 mm.]**

**[Dark Bronze, AA-M12C22A44, Class I, 0.018 mm.]**

**[Custom anodized to match architect’s sample.]**

**[Painted Finish:]**

**[Powder coat painted to match architect’s sample.]**

**[Kynar finish with 20-year finish warranty by finisher, [2 coat] [3 coat], to match architect’s sample.]**

**[Stainless Steel Finish:]**

**Stainless steel with a satin finish.**

**[To match architects sample.]**

* + - 1. ALUMINUM FINISHES
         1. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
         2. Anodized Finish:

Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm.

**[Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class I, 0.018 mm]**

**[Dark Bronze Anodic Finish: AAMA 611, AA-M12C22A44, Class I, 0.018 mm].**

**[Color Anodic Finish: AAMA 611, AA-M12C22A44, Class I, 0.018 mm]. [To match architects sample]**

* + - * 1. Painted Finish:

**[Powder coat painted to match architects sample] [Manufactures standard colors]**

**Kynar paint finish with 20 year finish warranty by finisher, [2 coat] [3 coat] [to match architects sample]**

* + - * 1. Clad Finish: Cladding shall be factory finished at manufacturers facility using .36 thick metalcladding panel surface utilizing tesa® 4965 tape. Heat and humidity resistant, the specialized adhesive tape is comprised of a polyester backing coated on both sides with a transparent modified acrylic adhesive and a tensile strength of 20 N/cm. tesa® 4965 is recognized per UL standard 969. UL file: MH 18055.

**[Stainless Steel with No. 4 Satin Finish]**

**[Stainless Steel with No. 8 Mirror-like Finish]**

**[Bronze with Satin Finish]**

**[Bronze with Polished, Non-directional Finish]**

**[Brass with Satin Finish]**

**[Brass with Polished, Non-directional Finish]**

Contact SPEC NOW Center for additional customized finish options.

EXECUTION

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine doors and frames with Installer present, for compliance with requirements for installation tolerances, wall and floor construction and other conditions affecting performance of automatic entrances.
          2. Examine roughing in for electrical source power to verify actual locations of wiring connections.
          3. Proceed with installation only after unsatisfactory conditions have been corrected.
       2. INSTALLATION
          1. General: Do not install damaged components. Fit frame joints to produce hairline joints free of burrs and distortion. Rigidly secure non-movement joints.
          2. Entrances: Install automatic entrances plumb and true in alignment with established lines and grades without warp or rack of framing members and doors. Anchor securely in place.

Install surface-mounted hardware using concealed fasteners to greatest extent possible.

Set headers, carrier assemblies, tracks, operating brackets, and guides level and true to location with anchorage for permanent support.

* + - * 1. Door Operators: Connect door operators to electrical power distribution system as specified in Division 26 Sections **[including smoke evacuation and/or fire detection system.]**
        2. Sealants: Comply with requirements specified in Division 07 Section "Joint Sealants" to provide seal between the operator housing and wall surface. installation.
        3. Signage: Apply signage on both sides of each door and each sidelight as required by ANSI/BHMA A 156.10
      1. FIELD QUALITY CONTROL
         1. Manufacturer’s representative shall provide technical assistance and guidance for installation of automatic doors.

Factory trained and AAADM certified representative shall test and inspect each automatic door to determine compliance of the installed system to ANSI/BHMA A 156.10.

* + - 1. ADJUSTING
         1. Adjust door operators and controls for smooth and safe operation. For weather tight closure comply with requirements in ANSI/BHMA A156.10
      2. CLEANING AND PROTECTION
         1. Clean adjacent surfaces soiled by automatic operator installation promptly after installation .
      3. DEMONSTRATION
         1. Engage a factory authorized representative to train Owner's maintenance personnel to adjust, operate, and maintain safe operation of automatic entrances.

END OF SECTION 087113