

New Requirements for Pedestrian Automatic Door Operators and Sensors

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For doors with automatic operators, there are two standards that are referenced by the model codes. Low-energy and power-assist operators must comply with *BHMA A156.19*, and power-operated pedestrian doors must comply with *BHMA A156.10*. Low-energy operators are typically found on doors that are operated by an actuator mounted on the wall, or some other type of knowing act. Power-assist doors open manually with reduced opening force. Power-operated pedestrian doors are swinging, sliding, or folding doors which usually open automatically when a motion sensor detects an approaching occupant.

A new edition of *A156.10 – Standard for Power-Operated Pedestrian Doors*, was approved in July of 2017 and published in August. The standard includes an important change with regard to the presence sensors and safety control mats that are required to prevent a door from opening or closing automatically if the surrounding area is not clear. This change also applies to low-energy operators that are actuated by a motion sensor, because *A156.19* requires these doors to comply with *A156.10* when the operator is not initiated by a knowing act. The intent of the newly-added requirement for monitoring is to

decrease the possibility of injury or entrapment caused by automatic doors with missing, disabled, disconnected, or defective safety sensors and safety control mats.

The new requirements, found in Sections 7.6.1 and 8.1.4 of the *A156.10* standard, require power-operated pedestrian door systems to include a means to verify that the presence sensors are functional, and that there is communication between the automatic door control system and each presence sensor. If a fault is detected, the automatic operator cannot function until the fault is corrected. Monitoring of the presence sensors must occur at least once before each closing cycle, but some systems also monitor the sensors before each opening cycle as well.

The technology used in monitored safety sensors was fairly new when *A156.10* was last updated in 2011, but the capability of monitoring sensors has now been available for several years. It has not been a standard feature for most automatic-door systems, but going forward it will be mandatory for presence sensors on automatic doors that are required to comply with the 2017 edition of *A156.10*. Existing doors are not necessarily required to comply with the monitoring



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requirements, depending on the codes and standards that have been adopted in the jurisdiction where the facility is located. However, upgrading existing doors may lead to decreased incidents involving malfunctioning or disconnected sensors and door controls.

Most low-energy power operators are actuated by using a “knowing act” as required by *BHMA A156.19 - Standard for Power Assist and Low Energy Power Operated Doors* (2007 and subsequent editions). A knowing act is a conscious action to initiate the powered opening of the door, and includes push buttons, fixed non-contact switches (touchless switches with a range of 12 inches or less), access-control readers, or pushing or pulling the door. Low-energy power operators initiated by a knowing act do not require presence sensors and are not directly affected by the new monitoring requirements.

When a door with a low-energy power operator is initiated by a motion sensor instead of by a knowing act, the door must comply with the requirements of *BHMA A156.10*, which includes the addition of presence sensors or safety control mats, and in most cases, guide rails. Therefore, low-energy power operators that are not initiated by a knowing act must have monitored presence sensors or monitored safety control mats as required by the 2017 edition of *BHMA A156.10*.

When automatic operators are installed on fire door assemblies, the operators must be listed to *UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies* or *NFPA 252 - Standard Methods of Fire Tests of Door Assemblies*.

These tests ensure that the products are safe for use on fire-rated doors, and accessories – including sensors – are also required to be tested and listed to one of these test standards. In addition, *NFPA 80 - Standard for Fire Doors and Other Opening Protectives*, requires power-operated fire doors to be equipped with a releasing device that will automatically disconnect the operator at the time of a fire, allowing a self-closing or automatic device to close and latch the door.

Typically, a new standard goes into effect when it is incorporated into a model code by reference, and that code is adopted by a jurisdiction. However, the effective date for the changes incorporated into the 2017 edition of *A156.10* is Nov. 11, 2017, 90 days after publication of the standard. The impact of the monitoring change on existing installations is addressed in Appendix E, Section E-6, which was added to the 2017 edition.

Additional revisions to the 2017 edition of *BHMA A156.10* include a definition for the term “monitoring fault” and a change in the required location of automatic-door signage to 50 inches +/- 12 inches from the floor to the center line of the sign (previously 58 inches +/- 5 inches). Drawings in Appendix A were updated, and grammatical changes were made throughout the document.

The American Association of Automatic Door Manufacturers (AAADM) strongly recommends daily safety checks of all automatic doors, conducted by the owner or person responsible for the equipment. These checks include verification that the

activating and safety sensors or mats are working properly, the doors open and close without impact, the doors, threshold, and guide rails are intact and properly secured, proper safety signage is present, and the area is free of obstacles that could affect the traffic flow or operation of the doors.

If any deficiencies are found during the safety check, the doors should be safely secured and serviced immediately; automatic doors should be installed, serviced, and inspected at least annually by an AAADM-certified technician. In addition, AAADM mandates that installation and service technicians who are AAADM certified are required to conduct a safety check during each installation or service call.

For more information about automatic-door safety and the standards that apply to automatic doors, visit BHMA’s website at www.builderhardware.com, or AAADM’s website at www.aaadm.com. ■

Many thanks to Jeff Dunham of BEA Sensors for his assistance with the background information needed for this article. BEA has successfully tested a safety sensor that is capable of internal and external monitoring in compliance with A156.10, and the product is listed to UL 10C for use on a fire door assembly (the 10LZRMICROSCAN1UT-FR will be available Dec. 5.)



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