



LOW-ENERGY AUTOMATIC DOOR OPENERS FOR ADA COMPLIANCE

By Kerby Lecka

Low-energy, swinging door operators provide hands-free, low-power point of entry door control to help meet all U.S. and Canadian Americans with Disability Act (ADA) requirements for door installations in a variety of locations. We're going to take a brief look at market trends for automatic doors, features that are driving the trends, some basic information specific to low-energy swinging doors, and application examples.

The American Association of Automatic Door Manufacturers (AAADM), a non-profit, trade association commissioned a number of research projects that indicate the following:

- 98.9 percent of consumers who expressed a preference between automatic and manual doors prefer automatic doors
- Participants indicated that it was most important for automatic doors to be used at hospitals, airports, hotels/motels, shopping mall entrances and retail stores
- When participants were asked to name specific locations where doors are essential yet not usually present, they told researchers they should be installed more frequently at shopping malls, hotels/ motels and post offices

AUTOMATIC DOORS HOLD AN OUTSTANDING SAFETY RECORD IN THE U.S., WITH MORE THAN 50 BILLION SAFE AUTOMATIC DOOR OPENINGS AND CLOSINGS ANNUALLY.

Besides questioning consumers about automatic doors, the AAADM also queried those responsible for specifying and buying automatic doors in architectural, retail, hospitality and higher education environments. Both consumers and specifiers/buyers consistently ranked the best locations for automatic doors as:

1. hospitals
2. airports
3. hotels/motels
4. hopping mall entrances
5. retail stores

The combined audiences also ranked the top features for specifying an automatic door as:

1. handicap access
2. safety/security
3. convenience and ease of use

The ADA has required many businesses to install automatic doors to become ADA-compliant. One of the intents of this law is to ensure that handicapped people are able to access or egress a building with little exertion, despite their physical disability. The elderly also benefit from the law, as many cannot easily open manual doors on their own, whether disabled or not. The two prevalent accessibility standards in the United States are *ICC A117.1—Accessible and Usable Buildings and Facilities* and the *2010 ADA Standards for Accessible Design*.

Automatic doors hold an outstanding safety record in the U.S. with more than 50 billion safe automatic door openings and closings annually. Automatic doors and components should be manufactured in compliance with the *American National Standard for Power Operated Pedestrian Doors, ANSI A156.10*, which governs and defines their installation, sensing devices and safety requirements. Many automatic doors are designed to integrate with a variety of electronic sensors, access control systems, electromagnetic locks, electric strikes and exit devices for security applications.

Automatic doors provide immediate convenience by eliminating the effort required to open a heavy, manual door. Users also appreciate the hands-free advantage when entering or exiting a door with packages, luggage and children.

There are three basic types of automatic doors: swinging, sliding and folding doors. Automatic low-energy swinging doors are designed for applications requiring ADA compliance or user convenience. These doors are usually available in three configurations:

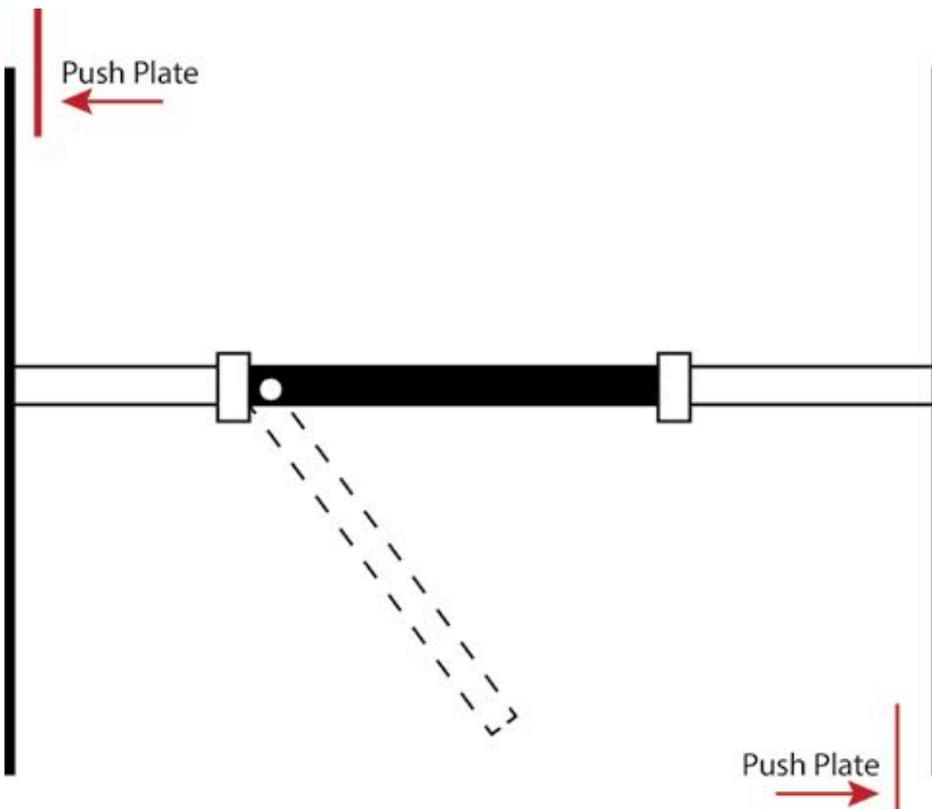
- A single door that swings in or out and is left-handed or right-handed—most common
- A pair of doors that simultaneously swing in the same direction
- Double egress—a pair of doors that simultaneously swing in opposite directions

Low-energy swinging doors deliver a cost effective alternative to meeting accessibility compliance, while still allowing the able bodied to manually use the swinging door. Low-energy operators can be retrofitted to existing doors for additional cost savings while providing universal accessibility.

Basic information about low-energy swinging doors

Low-energy swinging doors are governed by ANSI 156.19 and ADA and include these features and requirements:

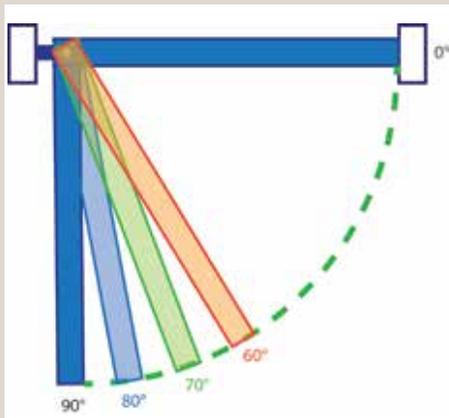
- “Knowing Act” activation (pushbutton or push plate)
- Slow opening and closing speeds
- Low operating force
- Floor space requirements
- No guide rails required
- Clear opening width—32 inches (815 mm) minimum in power-on and power-off mode—based on clear opening provided by all leaves in the open position



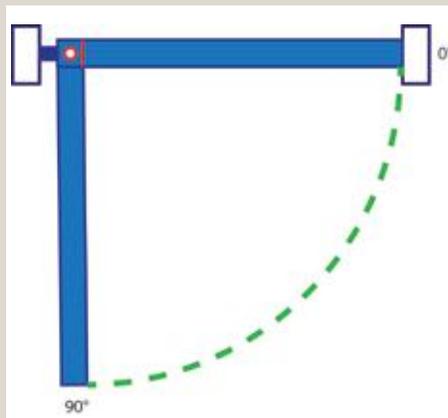
Knowing Act: Consciously initiating the powered opening of a low-energy door using acceptable methods, including: wall or jamb-mounted contact switches such as push plates; fixed non-contact switches; the action of manual opening (pushing or pulling) a door; and controlled access devices such as keypads, card readers, and key switches.

Photos and illustrations courtesy of Security Door Controls

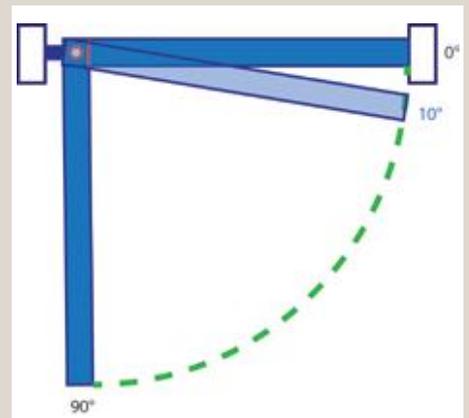
Doors shall open from closed to back-check, or 80°, whichever occurs first, in three seconds or longer. Back check shall not occur before 60° opening.



When powered open, the door shall remain at the fully open position for not less than five seconds.



Doors shall close from 90 degrees to 10 degrees (latch-check) in three seconds or longer.



Exception: When *push-pull activation* is used, the door shall remain at the fully open position for not less than three seconds.

Push-Pull Activation: A door where the user pushes or pulls a door equipped with a low energy power operator to activate a mechanism, causing the door to go through a complete cycle of automatic opening, hold open time delay, and closing.

Doors shall close from 10 degrees (latch-check) to fully closed in not less than 1.5 seconds

Signage: Doors shall be equipped with (a) decal(s) visible from either side, instructing the user as to the operation and function of the door. The decal shall be mounted 50 inches, +/- 12 inches, from the floor to the centerline of the decal. The letters shall be 5/8-inch high minimum.

A. All low energy doors shall be marked with a sign, visible from both sides of the door, with the words "Automatic Caution Door." See Figure 1. The sign shall be a minimum of 6 inches in diameter and with minimum 5/8-inch tall black lettering on a yellow background. Additional information may be included.



B. When a separate wall switch is used to initiate the operation of the door operator, the door shall be provided with decals on both sides of the door with the message "Activate Switch to Operate" or the side with the knowing act switch if there is only one. Letters white and background blue.

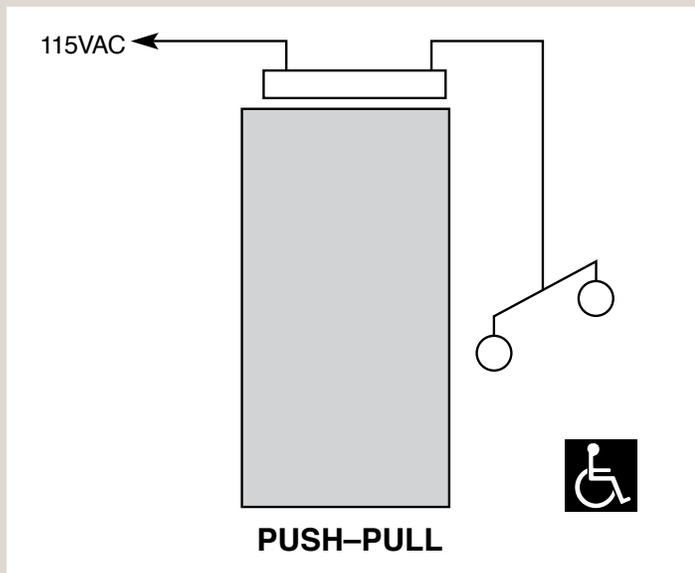


C. When door motion is used to initiate the door operation, the doors shall be provided with the message *Push to Operate* on the push side of the door and *Pull to Operate* on the pull side of the door. Letters white and background blue.



ALL LOW ENERGY DOORS SHALL BE MARKED WITH A SIGN, VISIBLE FROM BOTH SIDES OF THE DOOR, WITH THE WORDS "AUTOMATIC CAUTION DOOR."

Typical Low-Energy Swinging Door Applications



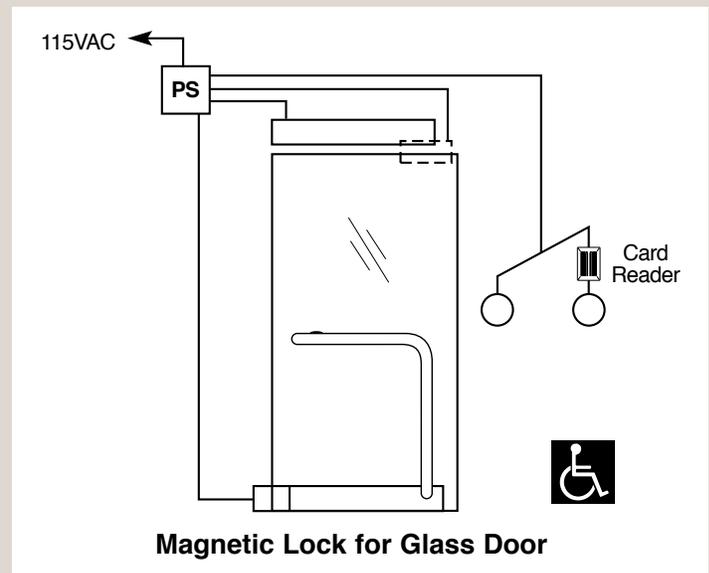
Low Energy Operator with Push-Pull

Operation: 115VAC

- Free ingress and egress using low-energy operator or bypassing the operator and using door manually
- Door operator acts as standard door closer when entering or exiting manually

Material:

- Low-energy operator
- 2 door actuators or push and go
- Local power



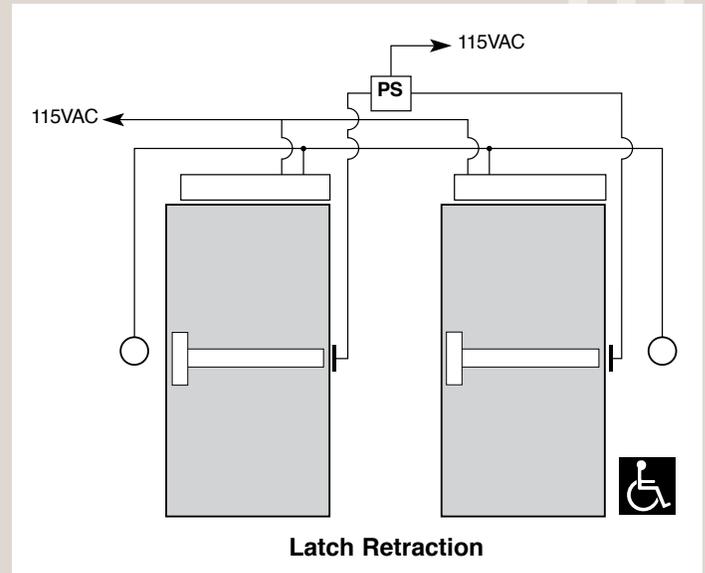
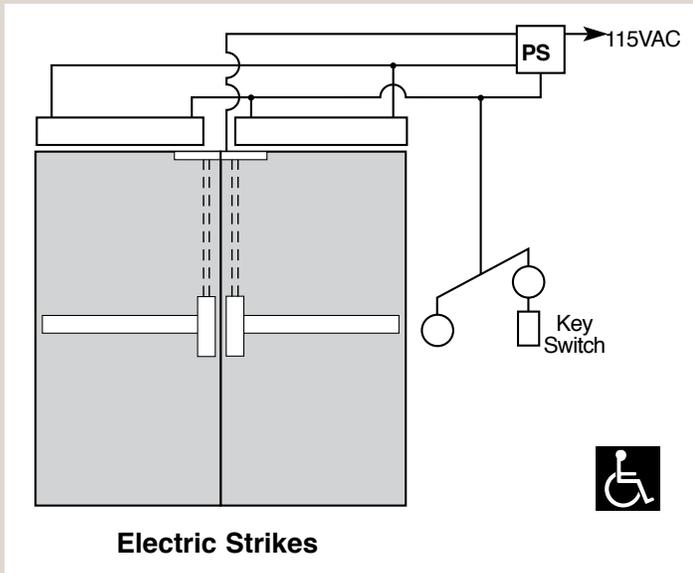
Low-Energy Operator with Concealed Mag Lock for Glass Door Applications

Operation: 115VAC

- Free entry when security system is shunted or off
- Entry after hours by card reader, which unlocks and activates low energy operator
- Free egress at all times by touching push bar or using inside actuator, which de-energizes mag lock and activates low energy operator

Material:

- Low-Energy Operator
- Electromagnetic Shear Lock and Power Supply (PS)
- Electrified Pivot
- Touch Bar Sensor PUSH-PULL set
- Card Reader
- Actuators



Low-Energy Operator with Electric Strikes

Operation: 115VAC

- Doors are to be closed and latched (Example: Fire Doors)
- Key switch shunts exterior actuator (Example: After hours traffic control)
- When not shunted, actuators will signal electric strike power supply and activate auto operators
- From secure side, egress by manually pushing exit devices or using inside actuator to activate auto operators

Material:

- 2 Low-Energy Operators
- 2 Vertical Rod Exit Devices
- Electric Strike & Power Supply (PS)
- Key Switch
- 2 Actuators

Low Energy Operator with Latch Retraction

Operation: 115VAC

- Doors are to be closed and latched at all times
- When activated, latch bolts are retracted and door(s) will automatically open
- Non-rated devices can be dogged for push/pull operation

Material:

- 2 Low Energy Operators
- 1 Power Supply
- 2 Electric Hinge
- 2 Exit Devices with Electric Latch Retraction
- 2 Actuators

As you know, building codes are always progressing and impact the application of access and egress solutions to doorways. Because the adoption and enforcement of building codes varies across the country—even with national ANSI and ADA standards relating to automatic doors—you should always consult the local Authority Having Jurisdiction (AHJ) for compliance requirements governing your door project.

That said, understanding the code requirements for low-energy, swinging door operators is actually an opportunity for their application as a solution to meet the compliance needs and demands of consumers and specifiers/buyers across the country.



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