

Installation Instructions for Floor Mount Electromagnetic Door Holders Catalog Series EM 501 and EM 502



Description

The EM 501 Series is a floor mount door holder for use with single doors. The EM 502 Series is a floor mount door holder for use with double doors. All are UL and cUL Listed and FM approved.

Table 1. Specifications

Cat. No.	Volts	Amps
EM 501 24120	24V AC 60 Hz	0.015
	24V DC	0.015
	120V AC 60 Hz	0.015
EM 502 24120	24V AC 60 Hz	0.015
	24V DC	0.015
	120V AC 60 Hz	0.015

Installation

Conduit Location

Install and wire in accordance with applicable codes, standards, such as NFPA publications 70 (National Electrical Code), 72 (National Fire Alarm Code), and 80 (Standard for Fire Doors and Fire Windows), and/or other regulations applicable to the country and locality of installation and in accordance with authorities having jurisdiction.

1. Measure the door width. Calculate the radius (Figures 1 and 2) by subtracting 5 5/8" from the door width.
2. **Single Door (Figure 1):** Using the radius calculated in step 1, draw an arc (using the pivot point of the door as the center point) through the desired location of the door opening. Open the door and draw a line through the arc 4 1/8" (105 mm) from the pull side

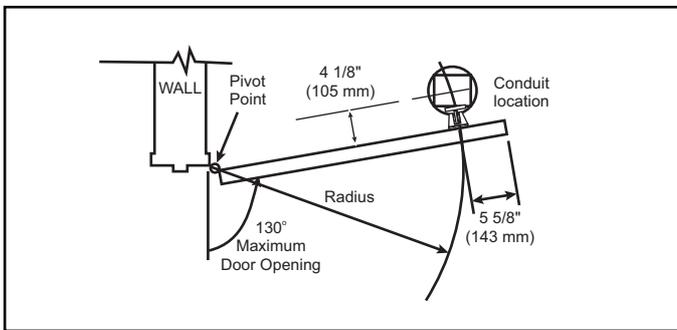


Figure 1. Single Door Conduit Location

of the door.

NOTE: A 6" (152 mm) diameter clearance is required around the conduit center for the door holder assembly.

3. **Double Door (Figure 2):** Using the radius calculated in step 1, draw an arc (using the pivot point of *each* door as the center point) through the desired location of the door opening. Locate the conduit where the two arcs intersect.

NOTE: Maximum door opening allowed is 130°.

4. Install conduit.

NOTE: Maximum height of threaded conduit is 3/4" (19 mm) above floor line. Maximum conduit size is 1/2" (13 mm). Position the base plate so that the magnet lines up with the contact plate on the door.

Floor Plate and Gasket Mounting

1. Position the mounting base plate as a template, and mark the four

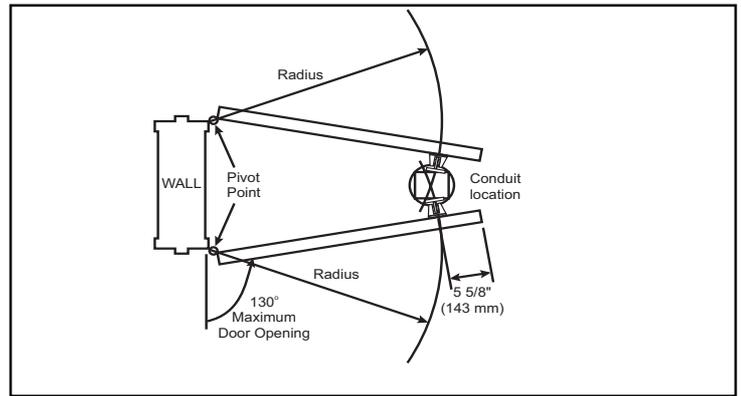


Figure 2. Double Door Conduit Location

through holes. Remove the plate and drill holes 3/8" x 1 5/8" (41 mm) deep in the floor. See Figure 3.

2. Install the cement anchors in the mounting holes. Remove the cap from the conduit. Position the gasket and base plate on the floor over the conduit.
3. Place the gasket on the floor. Set the plate over the gasket with



WARNING

To prevent electrical shock, ensure power is disconnected.

the extruded bosses facing away from the gasket and secure using (4) #1/4 x 20 x 1" screws (supplied). Install the conduit nut on top of the plate.

Electromagnet Assembly Mounting

1. Pull field wiring through conduit.
2. Establish earth-ground continuity in accordance with applicable codes, standards and authorities having jurisdiction.
3. Refer to Figure 4 and connect as instructed below:
 - a. **120V AC operation.** Connect power field wiring to terminals marked "120V AC" and "COM."
 - b. **24V AC/DC operation.** Connect power field wiring to terminals marked "24V AC/DC" and "COM."
 - c. For, double door models, connect a jumper between appropriate terminals on *both* terminal blocks and connect field wiring to either terminal block.

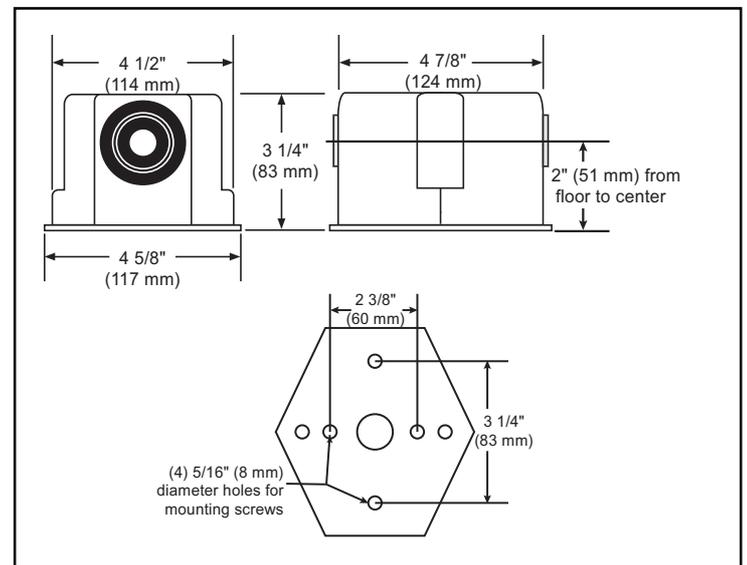


Figure 3. Dimensions

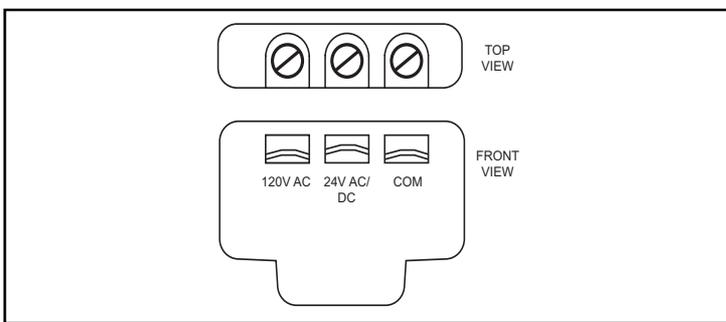


Figure 4. Terminal Block

4. Mount the connected assembly onto the floor plate, and secure it using (2) #1/4 x 20 x 1" screws (supplied).

Armature Assembly Mounting

NOTE: Armature assembly must be mounted vertically (Figure 5) to obtain correct alignment with the electromagnet.

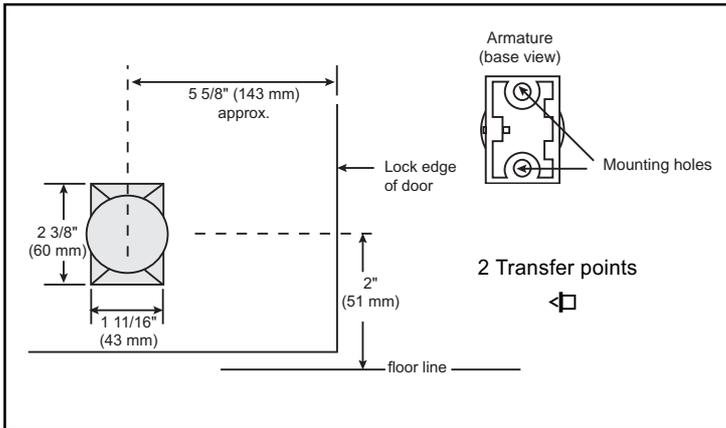


Figure 5. Armature Mounting

1. Using a 5/32" Allen wrench, turn the contact plate adjusting screw (Figures 6 and 7) counterclockwise to loosen the contact plate.
2. Place the transfer marking points in the armature mounting holes (Figure 5).

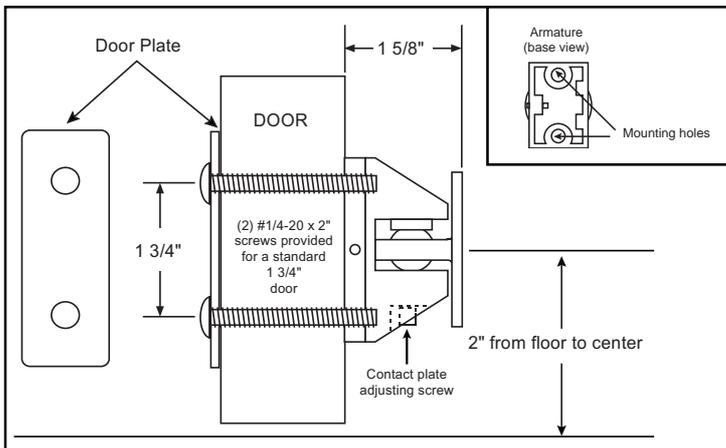


Figure 6. Thru-Bolt Mounting

3. To locate the two mounting holes in the door, hold the contact plate centered against the magnet, open the door and press against the transfer marking points on the armature base.
4. Mount the armature assembly using one of the following methods:

- a. **Thru-bolt mounting (Figure 6).** Center punch the two holes (at the points marked in step 3) and drill 5/16" diameter through the door. Distance between the center points should equal 1 3/4" (44 mm).

NOTE: Thru-bolt mounting is recommended for standard 1 3/4" (44 mm) hollow metal, hollow core or composite type wood doors.

Secure the armature assembly, with the contact plate adjust screw facing up, to the door as shown in Figure 6 using (2) #1/4-20 x 2" screws (supplied)

NOTE: For 2" doors, use (2) 1/4-20 x 2-1/4" bolts.

- b. **Surface concealed mounting (Figure 7).** Measure two points for 1/8" holes drilled 1/2" on center equidistant from each marked point. Center punch the holes and drill 1/8" diameter x 1 1/4" deep. Install the concealed mounting plate using the two #10 x 1 1/2" screws provided.

NOTE: Surface concealed mounting is not recommended for hollow metal, hollow core, or composite type wood doors.

Align the holes for the concealed mounting plate in the armature base with the pins on the concealed mounting plate. Secure the armature assembly, with the contact plate adjust screw facing up as shown in Figure 7, to the door by tightening the set screw.

5. Align the contact plate against the electromagnet. The contact plate **must be** centered and lie flat against the magnet to ensure sufficient holding force. Tighten the contact plate adjusting screw until the plate is firm but not set. **Do not overtighten the contact plate.**
6. Recheck alignment and adjust if necessary.
7. Adjust the door closer to exert 3 pounds of force when the door is open and armature and magnet are in contact.
8. Energize the electromagnet and check operation.

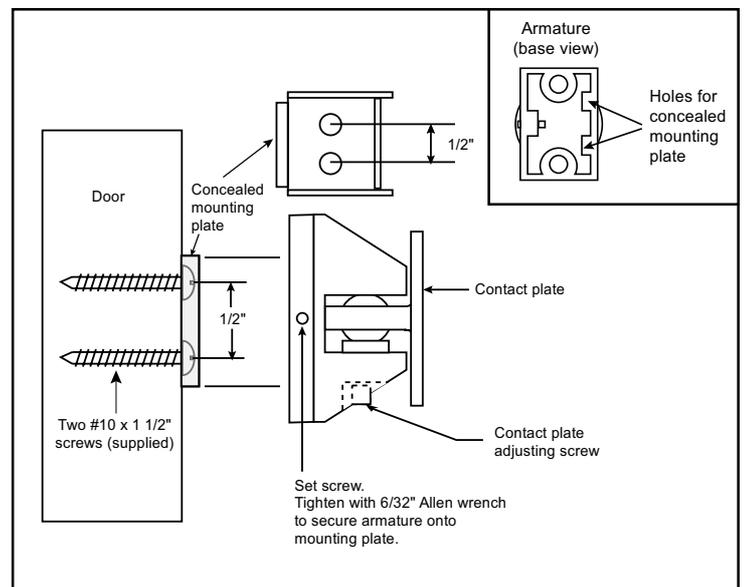


Figure 7. Surface Concealed Mounting