M400 Series
Electromagnetic Locks
Installation Instructions for Single Locks
M420, M450, M490

FEATURES

Automatic Voltage Selection (AVS)
Magnet immediately detects 12VDC or 24VDC when power is connected.

Anti-Tamper Switch (ATS)
An indication is provided should the magnet cover become unsecured from lock.

Magnetic Bond Sensor (MBS)
Detects proper bond between magnet and armature. It can be monitored remotely and locally with an LED.

LED
Provides local indication of MBS status.

Door Position Switch (DPS)
Indicates whether door is open or closed. This feature is used in conjunction with the MBS.

Relock Time Delay (RTD)
Relock time can be changed. Range is 1 - 30 seconds.

MODELS

M420 (Traffic Control)
UL1034 and 10C/500lb and 3hr rating

M450 (High Security)
UL1034 and 10C/1000lb and 3hr rating

M490 (Max Security)
UL1034 and 10C/1500lb and 3hr rating

TRIMS

Basic
Auto Voltage Selection (AVS) for 12 or 24VDC

Plus
Basic features + Door Position Switch (DPS), Magnetic Bond Sensor (MBS), Relocking Time Delay (RTD), LED Status Indicator (LED) and Anti-Tamper Switch (ATS)

UL Requirements:
• Units shall not impair operation of panic hardware mounted on door.
• Units shall not impair intended operation of an emergency exit.
• Units/Models are intended to be connected to UL Listed Equipment, not intended for Burglar or Fire Alarm Initiating or Indicating Devices.
• Ambient Conditions - “For Indoor Use Only”

This device complies with part 15 of FCC rules.
Operation is subject to following two conditions:
1. This device may not cause harmful interference.
2. This device must accept any interference received, including any interference that may cause undesired operation. Changes or modifications not expressly approved by party responsible for compliance could void user’s authority to operate equipment.
ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>Amps (12VDC) Per Lock</th>
<th>Amps (24VDC) Per Lock</th>
<th>Holding Force (lbs) Per Coil</th>
</tr>
</thead>
<tbody>
<tr>
<td>M420</td>
<td>0.750</td>
<td>0.380</td>
<td>500</td>
</tr>
<tr>
<td>M450</td>
<td>0.750</td>
<td>0.380</td>
<td>1000</td>
</tr>
<tr>
<td>M490</td>
<td>0.650</td>
<td>0.350</td>
<td>1500</td>
</tr>
</tbody>
</table>

LOCK INSTALLATION

1 PREPARE FOR INSTALLATION

1a Determine Proper Magnet Orientation
- Magnet should be placed opposite of door hinges.

LHR Door - Shown from Exterior
- Wiring Cover
- Magnet

RHR Door - Shown from Exterior
- Magnet
- Wiring Cover
Reorient Magnet (if necessary)

- Remove screws, wiring cover and end blocks.

- Rotate magnet, end blocks and wiring cover as shown, then reassemble.

Place Template and Mark Holes

- Place template on top corner, opposite of hinges.
- Mark holes and prepare them per template.
2 INSTALL MBS INDICATOR (OPTIONAL, PLUS MODELS ONLY)

2a Remove Cover

2b Drill Hole for MBS Indicator

2c Install MBS Indicator

3 INSTALL ATS (OPTIONAL, PLUS MODELS ONLY)

3a Remove End Block and Wiring Cover

3b Install ATS and Reassemble
4 ATTACH ARMATURE TO DOOR

4a Install as Shown

5 INSTALL MOUNTING BRACKET INTO FRAME

5a Attach Mounting Bracket Temporarily
- Install two middle screws into slots and partially tighten.
5b Remove Wiring Cover

5c Slide Magnet onto Bracket

5d Align Magnet to Armature
- Close door.
- Press magnet to fully engage with armature.
- Mark bracket location.

5e Fully Attach Bracket
- Remove magnet from bracket.
- Check bracket alignment with marks.
- Fully tighten two screws in slotted holes.
- Drill four (4) remaining holes.
- Fully tighten all screws.

Mark here

Press magnet to armature

Check alignment

Fully tighten all screws

Drill four (4) holes

Use 10-24 tap if metal reinforced

Actual Size

Reinforced Metal

Sheet Metal
6 INSTALL LOCK

6a Install Magnet and Secure with Screws

7 CONNECT WIRING TO BOARD (STANDARD MODEL)

7a Review Wiring Connections

7b Connect Wires to Board

7c Install Cover
8 CONNECT WIRING TO BOARD (PLUS MODEL)

8a Review Wiring Connections

- **Printed Circuit Board**
  - **DPS**: 0.25A, 30VDC, Resistive
    - Contacts shown in open-door state
  - **MBS**: 1A, 30VDC, Resistive
    - Contacts shown in de-energized state
  - **DC Power**
  - **RTD Adjuster**
  - **From Magnet**
  - **From LED**

- **Note**: Two MBS plugs are interchangeable

8b Connect Wires to Board

- **From Door Frame**
- **Multi Wire Cable**
- **From LED**
- **From MBS (2)**
- **From MBS (1)**
- **From Magnet**

8c Connect ATS Wires

- **ATS**
- **NC (violet)**
- **C (white)**
- **NO (gray)**
- **Switch Rating**: 1A @ 30VDC, Resistive

8d Install Cover