M400 Series
Electromagnetic Locks
Installation Instructions for Double Locks
M422, M452, M492

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

M422 (Traffic Control)
UL1034 and 10C/500lb and 3hr rating

M452 (High Security)
UL1034 and 10C/1000lb and 3hr rating

M492 (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>M422</td>
<td>1.500</td>
<td>0.760</td>
<td>500</td>
</tr>
<tr>
<td>M452</td>
<td>1.500</td>
<td>0.760</td>
<td>1000</td>
</tr>
<tr>
<td>M492</td>
<td>1.300</td>
<td>0.700</td>
<td>1500</td>
</tr>
</tbody>
</table>

LOCK INSTALLATION

1 PREPARE FOR INSTALLATION

1a Lock Orientation
- Locks should be installed with wiring covers in the middle, so the magnet in one of the locks must be reoriented.

Shown from Exterior

Magnet  Wiring Covers  Magnet
1b Reorient Magnet in One Lock
- Remove screws, wiring cover and end blocks.
- Rotate magnet, end blocks and wiring cover as shown, then reassemble.

1c Place Template and Mark Holes
- Place template on top centerline of doors.
- Mark holes and prepare them per template.
2 INSTALL MBS INDICATOR (OPTIONAL, PLUS MODELS ONLY)

2a Remove Cover

2b Drill Hole for MBS Indicator

   - Bottom
   - 0.75" (19 mm) hole
   - 0.50" (13 mm) hole
   - ¼" (6 mm) drill bit

2c Install MBS Indicator

3 INSTALL ATS (PLUS MODELS ONLY)

3a Remove End Block and Wiring Cover

3b Install ATS and Reassemble
4 ATTACH ARMATURES TO DOORS

4a Install as Shown

5 INSTALL MOUNTING BRACKETS INTO FRAME

5a Attach Mounting Brackets Temporarily
- Install alignment tool onto brackets.
- Install four (4) screws into slotted holes and partially tighten.
5b Remove Wiring Covers and End Blocks

5c Slide One Magnet onto Bracket

5d Slide Second Magnet onto Bracket

5e Align Magnets to Armatures
- Close doors.
- Press magnets to fully engage with armatures.
- Mark brackets on ends.

5f Remove Magnet and Snug Two (2) Outer Screws

5g Align Center of Brackets Using Alignment Tool
- Loosen two (2) innermost screws.
- Place alignment tool over brackets.
- Tighten all four (4) screws.
**5h Verify magnet Adjustment**
- Close door and verify magnets make full contact with armatures.
- If alignment is satisfactory, go to step 5i.
- If further adjustment is required, repeat steps 5e through 5h.

**5i Prepare Additional Holes**
- Install alignment tool on brackets.
- Fully tighten four (4) screws.
- Drill eight (8) remaining holes. Use #10-24 tap if metal is reinforced.

**5j Install Eight (8) Screws**
- Remove alignment tool.
- Install and fully tighten eight (8) screws.
6 ATTACH MAGNETS TO MOUNTING BRACKETS

6a Slide One Magnet onto Bracket

6b Install Joining Block into Lock

6c Slide Second Magnet onto Bracket
   - Align with joining block.

6d Secure Locks with Four (4) Screws
7 CONNECT WIRING TO BOARD (STANDARD MODEL)

7a Review Wiring Connections

- Mag Lock Board
  - DC (+)
  - DC (-)
  - From Magnet

7b Connect Wires to Boards

- From Door Frame
- DC Power Wires
- From Magnet

7c Install Covers

- Mag Lock Board
  - DC (+)
  - DC (-)
  - From Magnet
8a Connect Outside Wires to Boards

- Choose between NO or NC.

**Normally Open (NO) Wiring in Parallel**

Switch position will be closed when doors are closed and locked.
To be used with normally open terminals

**Normally Closed (NC) Wiring in Parallel**

Switch position will be open when doors are closed and locked.
To be used with normally closed terminals

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DC Power

MBS: 1A, 30VDC, Resistive

DPS: 0.25A, 30VDC, Resistive

Mag Lock Board

Normally Open (NO) MBS MBS

Normally Open (NO) DPS DPS

DC (+) DC (+)

DC (-) DC (-)

Normally Closed (NC) In Out

 Normally Closed (NC) In Out

DC (+) DC (+)

DC (-) DC (-)
**8b. Review Plug Locations**

<table>
<thead>
<tr>
<th>Mag Lock Board</th>
<th>From MBS</th>
<th>From MBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB3</td>
<td>Note: Two MBS plugs are interchangeable</td>
<td></td>
</tr>
<tr>
<td>TB2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TB1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RTD Adjuster

Min. Time
Max. Time

Polarized Black/Red

**8c. Connect Plugs to Boards**

- From LED
- From MBS
- From MBS
- From Magnet

**8d. Connect ATS Wires**

- NC (violet)
- C (white)
- NO (gray)

Switch Rating: 1A @ 30VDC, Resistive

**8e. Install Covers**