Door Control

for Fire and Smoke Barrier Doors

and Other Remote Door Release

Applications
**Introduction**

Rixson® electromagnets are designed for virtually any remote door release application. They are primarily used to hold fire and smoke barrier doors open until released by a remote smoke detector or other switching device. The complete assembly consists of an armature contact plate with adjustable pivot mounting for installation on the door, and a heavy-duty electromagnet mounted on the wall or floor behind the door. A separate closing device is required.

**Features**

- 25 to 40 pounds holding power
- Fail-safe operation; power failure releases door to close
- Positive Release Button initiates closing motion
- Two-year warranty
- Multi-voltage on specific coil models
- Magnet protected against transients and surges up to 600 volts (AC models)

**Code Listings**

- Underwriters’ Laboratories, Inc.
- Underwriters’ Laboratories of Canada
- California State Fire Marshal
- ANSI/BHMA 156.15

**Finishes**

- 689 Sprayed Aluminum (SA)
- 690 Sprayed Dark Bronze (SB)
- 691 Sprayed Light Bronze (SLB)
- 696 Sprayed Gold (SG)

**Triple-voltage coil makes installation and ordering simple chores. One magnet can receive 12 VDC, 24 VAC/DC and 120 VAC. There are no wires leading from the coil, only a terminal strip. This coil draws fewer amps than conventional magnets. Available on most models. See the  symbol next to the model number in the catalog.**
**Model 980**

**Application**
Floor Mount
Single Door
C00021

**Product Description & Features**
- Concealed Wiring
- Total Floor Space Required: 6-5/8" (168mm)
- Mounting Requirements: Conduit connects directly to floor plate
- UL listed door holder

**Technical Information**
- Voltage and Current:
  - 150 VAC, 60 Hz., .020 amp
  - 50 VAC/DC, 60 Hz., .020 amp
  - 200 VDC, .040 amp
  - 250 VAC, 50/60 Hz., .009 amp
- Shipping Weight: 4 lbs. (1.8 kg)

*Note: Two Templates Required*  
(Click here to view template 1)

**Technical Information**
(Click here to view template 2)

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**Model 981**

**Application**
Floor Mount
2 Back-to-Back Doors
C00031

**Product Description & Features**
- Concealed Wiring
- Total Projection: 8-1/4" (210mm)
- Mounting Requirements: Conduit connects directly to floor plate
- UL listed door holder

**Technical Information**
- Voltage and Current:
  - 120 VAC, 60 Hz., .040 amp
  - 24 VAC/DC, .040 amp
  - 12 VDC, .080 amp
  - 250 VAC, 50/60 Hz., .018 amp
- Shipping Weight: 4-3/4 lbs. (2.2 kg)

*Note: Two Templates Required*  
(Click here to view template 1)

**Technical Information**
(Click here to view template 2)
**Model 989**

**Application**
- Wall Mount
- Low Profile
- Concealed Wiring

**Product Description & Features**
- Total Projection: 7/16" (11mm)
- Mounting Requirements:
  - 2" x 4" x 2-1/2" (51 x 102 x 64mm) outlet box
  - Wall must be properly reinforced and outlet box adequately fastened
  - UL listed door holder

**Technical Information**
- Voltage and Current:
  - 120 VAC, 60 Hz., .020 amp
  - 24 VAC/DC, 60 Hz., .020 amp
  - 12 VDC, .040 amp
  - 250 VAC, 50/60 Hz., .009 amp
- Shipping Weight: 2 lbs. (0.9 kg)

**Note: Two Templates Required**

(Click here to view template 1)

(Click here to view template 2)

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**Model 990**

**Application**
- Wall Mount
- Low Profile
- Concealed Wiring

**Product Description & Features**
- Total Projection: 1-13/16" (46mm)
- Mounting Requirements:
  - 2" x 4" x 2-1/2" (51 x 102 x 64mm) outlet box
  - Wall must be properly reinforced and outlet box adequately fastened
  - UL listed door holder

**Technical Information**
- Voltage and Current:
  - 120 VAC, 60 Hz., .020 amp
  - 24 VAC/DC, 60 Hz., .020 amp
  - 12 VDC, .040 amp
  - 250 VAC, 50/60 Hz., .009 amp
- Shipping Weight: 2 lbs. (0.9 kg)
**Model 991**

**Application**
- Wall Mount
- Surface Wiring
- Hazardous Locations

**Product Description & Features**
- Total Projection: 4" (101mm)
- UL listed door holder
- Approved for class I division 2, class II division 2, groups F and G and class III locations
- Unit includes a sealed surface-mounted junction box

**Technical Information**
- Voltage and Current:
  - 120 VAC, 60 Hz., .017 amp
  - 24 VAC, .080 amp
  - 12 VDC, .180 amp
  - 24 VDC, .068 amp
  - 250 VAC, 50/60 Hz., .009 amp
- Shipping Weight: 3 lbs. (1.4 kg)

*Note: Two Templates Required*  
(Click here to view template 1)

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**Model 993**

**Application**
- High Hold
- Electromagnetic
- Door Release

**Product Description & Features**
- 300 lb. holding force
- Armature plate through-bolted to maintain consistent contact with magnet
- Fail-safe operation; power failure releases door to close
- Two-year warranty
- 24 VAC/DC .25 amp wiring
- Adjusting screw on special heavy-duty armature allows for alignment of contact plate
- Push-button release on housing standard
- For no push button specify when ordering
- 9930 Floor mount available
- UL listed door holder

*Note: Two Templates Req’d*  
(Click here to view template 1)

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**Technical Information**
- Typical Usage: Surface Wiring
- Total Projection: 5-1/4" (133mm)
- Mounting Requirements: Switch Box Included: 4-1/2" x 4-9/16" x 2-5/16" (114 x 116 x 59mm) deep
- Voltage and Current: 24 VAC/DC .25 amp
- Substantial wall reinforcement required
- Shipping Weight: 3 lbs. (1.4 kg)

(Click here to view template 2)
### Model 996

**Application**  
Wall Mount  
Surface Wiring

**Product Description & Features**  
- Total Projection: 4-1/8" (105mm)  
- Mounting Requirements:  
  - 2" x 4" x 1-3/4" (51 x 102 x 45mm) outlet box  
  - Wall must be properly reinforced and outlet box adequately fastened  
- UL listed door holder

**Technical Information**  
- Voltage and Current:  
  - 120 VAC, 60 Hz., .020 amp  
  - 24 VAC/DC, 60 Hz., .020 amp  
  - 12 VDC, .040 amp  
  - 250 VAC, 50/60 Hz., .009 amp

Note: Two Templates Required  
(Click here to view template 1)  
(Click here to view template 2)

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### Model 997

**Application**  
Wall Mount  
Concealed Wiring

**Product Description & Features**  
- Total Projection: 2-5/8" (67mm)  
- Mounting Requirements:  
  - 2" x 4" x 1-3/4" (51 x 102 x 45mm) outlet box  
  - Wall must be properly reinforced and outlet box adequately fastened  
- UL listed door holder

**Technical Information**  
- Voltage and Current:  
  - 120 VAC, 60 Hz., .020 amp  
  - 24 VAC/DC, 60 Hz., .020 amp  
  - 12 VDC, .040 amp  
  - 250 VAC, 50/60 Hz., .009 amp

Note: Two Templates Required  
(Click here to view template 1)  
(Click here to view template 2)
### Model 998

**Application**
- Wall Mount
- Standard Doors
- Concealed Wiring

**Product Description & Features**
- **Total Projection:** 3-5/8" (92mm)
- **Mounting Requirements:**
  - 2" x 4" x 1-3/4" (51 x 102 x 45mm) outlet box
  - Wall must be properly reinforced and outlet box adequately fastened
  - UL listed door holder

**Technical Information**
- **Voltage and Current:**
  - 120 VAC, 60 Hz., .020 amp
  - 24 VAC/DC, 60 Hz., .020 amp
  - 12 VDC, .040 amp
  - 250 VAC, 50/60 Hz., .009 amp
- **Shipping Weight:** 2-1/2 lbs. (1.1 kg)

*Note: Two Templates Required (Click here to view template 1)
(Click here to view template 2)*

### Model 999

**Application**
- Typical Usage
- Universal Mounting

**Product Description & Features**
- **Base Plate:** Concealed Wiring
- **Total Projection:** 4-3/8" (111mm)
- **Mounting Requirements:**
  - 2" x 4" (51 x 102mm) outlet box;
  - 4" (102mm) square box;
  - 4" (102mm) octagonal box
  - Wall must be properly reinforced and outlet box adequately fastened
  - UL listed door holder

**Technical Information**
- **Voltage and Current:**
  - 120 VAC, 60 Hz., .020 amp
  - 24 VAC/DC, 60 Hz., .020 amp
  - 12 VDC, .040 amp
  - 250 VAC, 50/60 Hz., .009 amp
- **Shipping Weight:** 2-3/4 lbs. (1.2 kg)

*Note: Two Templates Required
(Click here to view template 1)
(Click here to view template 2)*
**Schematics**

Doors are to be normally held open. The electromagnetic door releases will be energized with the voltage shown (at right) in the hardware set for this opening. Power shall be controlled by the fire control system. It will interrupt the power if alarmed, causing the doors to be released, thus allowing the door closers to close the doors. When power is restored the magnets will re-energize, permitting the doors to be manually returned to their held-open position.

**Accessories**

XK996
Part# 996631-*
1-1/2"(38mm) Extension
(For Use Only with Models 997 & 998)
Mounts behind wall cover.

*specify finish
Do not use more than 10° projection off of face of door
The Rixson® 972 Industrial Door Release is listed by Underwriters' Laboratories as a substitute for fusible links in such applications as overhead rolling doors, guillotine doors, fire dampers and self-closing windows. These heavy-duty units provide positive latching and automatic release when triggered by a smoke detector, manual pull station or other electrically operated switch.

The 973 door release is approved for use in Class 1, Division 2 hazardous locations when wired in accordance with NEC Article 500.

Product dimensions and templating product dimensions are identical to 972 series.
**Model 975**

**975 Time Delay Control Unit**
The 975 is a companion to the 972/973 industrial fire door holder which permits up to a 45-second delay in the activation of the Firemark® Industrial Fire Door Release. The 975 continues to hold doors open in the event of power failure or momentary power interruption, thereby preventing disruption of plant or factory routine.

**Features:**
- Power failure or alarm will initiate time-delay function
- Field-adjustable time delay, from 0 to 45 seconds
- Annunciation capability: Audible or visual indicator can be used to show that delay function is in effect
- Restoration of power, or alarm clearance, before time-delay setting has expired, permits uninterrupted operation of the 972 magnet holders
- Controls up to four (4) 972 magnet holders
- Test button allows check of delay function
- Case size 12" x 10" x 4" (305 x 254 x 102mm)
- Time-delay function operates through 12-volt gel-cell batteries, which are under continuous trickle charge from 120-volt power source
- One-year warranty

**Code Listings:**
- Underwriters’ Laboratories, Inc. (UL)
- Underwriters’ Laboratories of Canada
- State of California Fire Marshal
  (Listing No. 7470-047:100)

NOTE: California law permits time-delay devices on fire-door releases to operate only in the event of a power failure, and not in an alarm condition. (The 975 has California State Fire Marshal Approval.)

**Voltage and Current:**
120 VAC input/12 VDC output
.32 amps maximum

**Shipping Weight:**
8-1/4 lbs. (3.8 kg)
Photo-electronic Smoke Detector

- 120 VAC, 4-wire Photo-electronic detector with built-in 135° heat sensor
- Unique optical sensing chamber:
  - Superior signal-to-noise ratio (2.0)
  - Stable photo-electronic operation
  - 3.3% nominal sensitivity
  - Built-in signaling process
- Temperature range: 0°C to 49°C, 32°F to 120°F
- Humidity range: 10% to 93%
- UL Listed
- Factory Mutual Approved

Technical Information

Electrical Information

<table>
<thead>
<tr>
<th>Relay contacts</th>
<th>Form A: 2.0A @ 30 VAC/DC</th>
<th>Form C: 2.0A @ 30 VAC/DC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.06A @ 110 VDC</td>
<td>1.0A @ 125 VAC</td>
</tr>
</tbody>
</table>

Nominal operating current:

- 24 VDC: 120 mA maximum
- 120 VAC: 75 mA maximum

Ionization Smoke Detector

- 120 VAC, 4-wire ionization detector
- Unique unipolar dual sensor:
  - Provides exceptional stability
  - Factory preset at 1.5% nominal sensitivity
  - Withstands wind gusts up to 2000 feet per minute without false alarming
- Temperature range: 0°C to 49°C, 32°F to 120°F
- Humidity range: 10% to 93%
- UL Listed
- Factory Mutual Approved

Alarm Current:

- 24 VDC: 17 to 36mA

Diameter:

- 6.2" (157.5mm)

Weight:

- 120 VAC - 1.2 lbs (.5 kg)
- 24 VDC - 0.8 lbs (.4 kg)

9732

Identical to Model 9734 except:

- 24 VDC, 4-wire

Replacement Parts

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9720 H</td>
<td>Ionization Detector Head Only</td>
</tr>
<tr>
<td>813 x 135H</td>
<td>Photo-electronic Detector Head Only</td>
</tr>
<tr>
<td>9724B</td>
<td>Base only - 120 VAC/4-Wire - can be used with either detector head</td>
</tr>
<tr>
<td>9722B</td>
<td>Base only - 24 VDC/4-Wire - can be used with either detector head</td>
</tr>
</tbody>
</table>
**Parts Drawings**

**Used With Model 980/981**

- Floor Portion
  - 980311-* / 981311-* Magnet Housing Cover
  - 981309 Magnet Support Bracket
  - 980095 Gasket
  - **996219-3V Magnet**

**For voltages other than 12 VDC, 24 VAC, 24 VDC, and 120 VAC, contact factory for electromagnet assembly part number.**

- Screw Kit for 980: 980328-*
- Screw Kit for 981: 981328-*

*specify finish

**Used With Model 980/981, 990, 991, 996, 997**

- Door Portion
  - 900314 **Backup Plate**
  - 997510-* Door Armature
  - Surface Applied Concealed Mounting
  - Contact Plate Adjusting Screw Location
  - Door Armature
  - Through Bolt Mounting
  - 998009 **Door Plate**

**Not Sold Separately – See Screw Kit**

- Door portion screws included with Wall/Floor parts.

*specify finish

**Used With Model 990, 989**

- **996219-3V Magnet**
- 990001 Wall Cover Plate
- 990002 Magnet Bracket

**For voltages other than 12 VDC, 24 VAC, 24 VDC, and 120 VAC, contact factory for magnet mounting bracket assembly part number.**

- Screw Kit for 990: 990300-*

*specify finish
**For voltages other than 12 VDC, 24 VAC, 24 VDC, and 120 VAC, contact factory for magnet mounting bracket assembly part number.

**Screw Kit for 997/998: 998300-*

*specify finish

**Not Sold Separately – See Screw Kit

Door portion screws included with Wall/Floor parts.

*specify finish

**For voltages other than 12 VDC, 24 VAC, 24 VDC, and 120 VAC, contact factory for magnet mounting bracket assembly part number.

**Screw Kit for 996: 996325-*

*specify finish

Attachment screw included in Kit.
**Parts Drawings**

**Used With Model 999**

- 999055-* Cover
- **996219-3V Magnet**
- 999105 Base Plate

**For voltages other than 12 VDC, 24 VAC, 24 VDC, and 120 VAC, contact factory for magnet mounting bracket assembly part number.**

*Screw Kit for 999: 999318-*

**Used With Model 991**

- 991002 Switch Box
- 991001 Gasket
- 990001 Wall Cover Plate

*Screw Kit for 991: 990300-*

**Used With Model 993**

- Switch Box
- 993100-A Magnet Housing Assembly
- Magnet and Bracket Assembly
- 993512-A Armature Assembly
- Through Bolt Mounting

*Screw Kit for 993: 993300-A*

**Specify finish**
**Parts Drawings**

**Used With Model 972H/973H**

- Screw Kit for 972/973H: 972190
- Box
  - 972100/973100–12 VDC
  - 972112/973112–24 VAC
  - 972118/973118–120 AC
  - 972120/973120–24 VDC

**Used With Model 972S/973S**

- Screw Kit for 972/973S: 972290
- Box
  - 972100/973100–12 VDC
  - 972112/973112–24 VAC
  - 972118/973118–120 AC
  - 972120/973120–24 VDC

**Used With Model 972U/973U**

- Screw Kit for 972/973U: 972390
- Box
  - 972100/973100–12 VDC
  - 972112/973112–24 VAC
  - 972118/973118–120 AC
  - 972120/973120–24 VDC
Selector Chart For Standard Architectural Magnets

<table>
<thead>
<tr>
<th>If the distance from wall to door is:</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16 (11)</td>
<td>989</td>
</tr>
<tr>
<td>1-13/16 (46)</td>
<td>990</td>
</tr>
<tr>
<td>2-5/8 (67)</td>
<td>997</td>
</tr>
<tr>
<td>3-5/8 (92)</td>
<td>998</td>
</tr>
<tr>
<td>4-1/8 (105)</td>
<td>996</td>
</tr>
<tr>
<td>4-3/8 (111)</td>
<td>999</td>
</tr>
<tr>
<td>5-1/8 (130)</td>
<td>998 x 996XK</td>
</tr>
<tr>
<td>6-5/8 (168) min.</td>
<td>980</td>
</tr>
</tbody>
</table>

900 – Minimum: 1-1/2"(38mm) extension. Maximum: unlimited using combination of extensions [1/2"(13mm), 3/4"(19mm), etc.]

How to Order

A. Where trivoltage symbol is shown, use model number and finish, i.e.; 998 689.

B. For voltages other than trivoltage, put model number, voltage and finish, i.e.; 998 12 VAC 689.

C. For models not furnished in trivoltage, put model number, voltage and finish, i.e.; 972U 120 VAC 689.

D. To order parts:
Put part number and finish (if applicable), i.e.; Wall Covers 998315 689.

<table>
<thead>
<tr>
<th>Model/Part Number</th>
<th>Voltage</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example A</td>
<td>998</td>
<td>--</td>
</tr>
<tr>
<td>Example B</td>
<td>998</td>
<td>12VAC</td>
</tr>
<tr>
<td>Example C</td>
<td>972U</td>
<td>120VAC</td>
</tr>
<tr>
<td>Example D</td>
<td>998315</td>
<td>--</td>
</tr>
</tbody>
</table>