

## 80-lb Miniature Electromagnetic Lock

E-941SA-80Q

### Installation Manual



Intertek  
5024193  
Conforms to  
UL Std. 294



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When power is applied to an electromagnetic lock, it activates a built-in electromagnet that attracts a door-mounted steel armature plate, preventing the door from opening. When power is removed, the electromagnet releases the armature, allowing the door to open. SECO-LARM offers a full line of electromagnetic locks with holding forces up to 1,500-lb for single- and double-doors and gates.

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- For spaces where small size is required, including cabinets, drawers, etc.
- Miniature size, 2<sup>3</sup>/<sub>4</sub>"x1<sup>1</sup>/<sub>4</sub>"x3<sup>3</sup>/<sub>4</sub>" (70x31x19 mm)
- Low current draw
- 12~24 VDC operation
- No residual magnetism
- MOV surge protection
- Complete mounting hardware for typical installations

**Specifications**

Holding Force	12VDC	80-lb. (36kg)
	24VDC	110-lb (51kg)
Operating voltage		12~24 VDC ±10%
Current draw	12VDC	60mA
	24VDC	120mA
Destructive attack level		Level I
Line security		Level I
Endurance level		Level I
Standby power		Level I
Operating temperature		14°~131° F (-10°~55° C)
Dimensions	Magnet	2 <sup>3</sup> / <sub>4</sub> "x1 <sup>1</sup> / <sub>4</sub> "x <sup>3</sup> / <sub>4</sub> " (70x31x19 mm)
	Armature	2 <sup>3</sup> / <sub>8</sub> "x1 <sup>1</sup> / <sub>4</sub> "x <sup>5</sup> / <sub>16</sub> " (60x31x8.2 mm)
Weight		0.9-lb (410g)

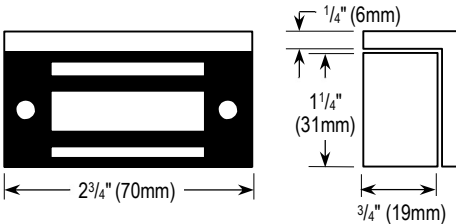
**Parts List**

- 1x Electromagnet
- 1x Armature plate
- 1x Mounting L-bracket
- 2x Short self-tapping screws
- 1x Armature screw
- 2x Steel washers
- 1x Rubber washer
- 1x Sexnut bolt
- 2x Guide pins
- 1x Hex wrenches
- 1x Manual

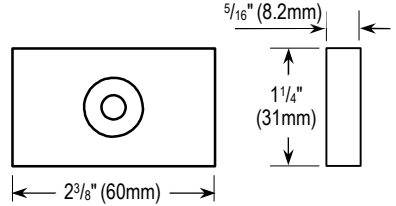
Optional M-Bracket (E-941A-80-M/HQ) available separately

**Overview**

Electromagnet and L-Bracket



Armature Plate

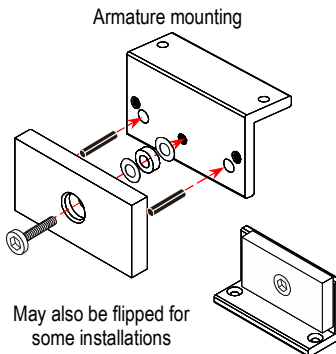
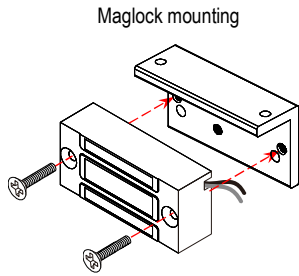


**Installation Notes**

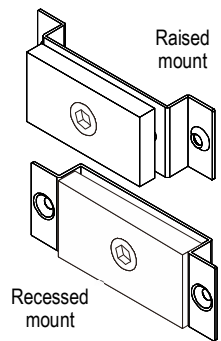
- The electromagnetic lock is designed for indoor use ONLY.
- Do not install a diode in parallel with the electromagnetic lock as this may cause a delay when releasing the door as well as cause residual magnetism.
- The best location to install the electromagnetic lock is on the inside of the door or unit that is being secured with the wiring concealed in the unit to prevent tampering with the lock.

**Mounting Bracket Options**

L-Bracket (1x included)



M-bracket (optional for armature)

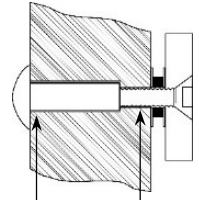


## Installation

Before starting, read the manual thoroughly and consider the type of installation (see Sample Installations, below) and its requirements. An optional M-bracket is also available separately.

1. Remove the L-bracket from the magnet. Mark and drill holes for the L-bracket and mount as needed for either the magnet or armature plate using the 1/8"x1" (4x25.4mm) screws included.
2. Drill three holes for the armature plate if mounted without a bracket, referring to Fig. 1 for instructions for the center hole for the armature plate sexnut. If using the bracket, the sexnut is not used, but holes may need to be partially drilled since the guide pins and armature screw extend beyond the opposite side of the bracket.
3. Use a hammer to lightly tap the two guide pins into the guide pin holes on the armature plate.
4. Insert the armature screw into the armature plate, then place the rubber washer between the two metal washers and place them on the protruding armature screw. This allows the plate to pivot around the screw to compensate for door misalignment.
5. Tighten the armature screw either into the sexnut inserted through the mounting location or directly into the bracket. Tighten only enough so that the armature plate can withstand a break-in attempt, but loose enough so that the armature plate can pivot slightly. Ensure that the guide pins are in the guide pin holes.
6. Drill the wiring access hole and thread the wire leads through the hole. Connect the leads to the red and black power input wires of the maglock, taking care to observe polarity, red to positive and black to negative.
7. Mount the maglock using the hex-head wrench to screw the mounting screws through the maglock and into the mounting bracket or directly into the mounting location.
8. Test the unit and make any needed adjustments.

Fig. 1

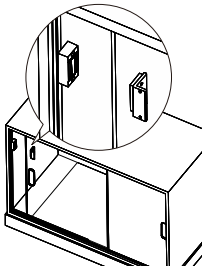


$\varnothing 3/8"$  ( $\varnothing 9\text{mm}$ )  $\varnothing 1/4"$  ( $\varnothing 6\text{mm}$ )

Drill a 1/4 (6mm) diameter hole in the door for the armature screw and drill a 3/8" (9mm) diameter and 1 1/8" (28mm) deep hole from the opposite side for the sexnut screw.

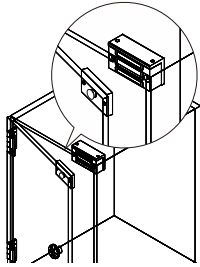
## Sample Installations

Sliding door



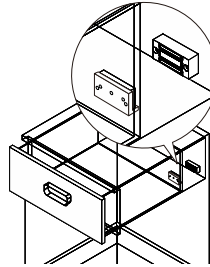
Mounting the magnet to the cabinet side and the armature to the back of the sliding door with the L-bracket

Hinged door



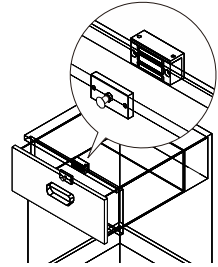
Mounting the magnet to the cabinet top with the L-bracket and the armature to the inside of the door

Drawer back



Mounting the magnet to the cabinet back and the armature to the drawer back (with or without the L-bracket)

Drawer front



Mounting the magnet to the cabinet top with the L-bracket and the armature to the inside of the drawer front

## Maximum Distance from Power Source

### 12VDC Minimum Wire Gauge

Wire Length	25ft	50ft	75ft	100ft	150ft	200ft	250ft	300ft	400ft	500ft	1,000ft
Wire Gauge@500mA	20	18	18	18	16	14	14	12	10	---	---

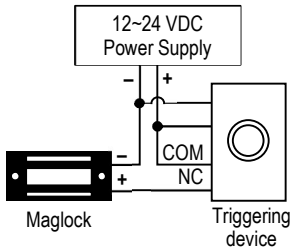
### 24VDC Minimum Wire Gauge

Wire Length	25ft	50ft	75ft	100ft	150ft	200ft	250ft	300ft	400ft	500ft	1,000ft
Wire Gauge@250mA	24	24	22	20	18	18	16	16	14	14	14

For a complete chart, visit [www.seco-larm.com](http://www.seco-larm.com)

**NOTE:** Use only low-voltage, power-limited/Class 2 power supply and low-voltage field wiring not to exceed 98.5ft (30m).

## Sample Wiring



### NOTES:

- All field wiring must be within the protected area.
- Connect switching devices like push-to-exit switches between the power source and the positive terminal of the lock. Connecting them to the negative terminal may cause a delay in unlocking.
- A fail-safe lock unlocks when power is lost.

## Troubleshooting

Does not lock

- Check to make sure the wires are securely connected and wired properly.
- Check that the power supply is connected and operating.
- Make sure the rubber washer is installed and free from damage.

Locks, but can easily be forced open

- Make sure the electromagnet and armature plate are properly aligned.
- Make sure the contact surfaces of the electromagnet and armature plate are clean and free from rust. A light coat of silicone lubricant will help prevent rust.
- Check the power leads with a meter to ensure the power supply is 12~24VDC.
- Make sure the rubber washer is installed and free from damage.

Delay in releasing

- The electromagnet is fitted with a metal oxide varistor to prevent interference, so do not install a second diode.
- Ensure that the control device is connected between the power source and the positive terminal of the lock

**WARNING:** Incorrect mounting which leads to exposure to rain or moisture inside the enclosure could cause a dangerous electric shock, damage the device, and void the warranty. Users and installers are responsible for ensuring that this product is properly installed and sealed.

**IMPORTANT:** Users and installers of this product are responsible for ensuring that the installation and configuration of this product complies with all national, state, and local laws and codes. SECO-LARM will not be held responsible for the use of this product in violation of any current laws or codes.

**California Proposition 65 Warning:** These products may contain chemicals which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**LIMITED LIFETIME WARRANTY:** This SECO-LARM product is warranted against defects in material and workmanship while used in normal service for the lifetime of the product. SECO-LARM's obligation is limited to the repair or replacement of any defective part if the unit is returned, transportation prepaid, to SECO-LARM. This Warranty is void if damage is caused by or attributed to acts of God, physical or electrical misuse or abuse, neglect, repair or alteration, improper or abnormal usage, or faulty installation, or if for any other reason SECO-LARM determines that such equipment is not operating properly as a result of causes other than defects in material and workmanship. The sole obligation of SECO-LARM and the purchaser's exclusive remedy, shall be limited to the replacement or repair only, at SECO-LARM's option. In no event shall SECO-LARM be liable for any special, collateral, incidental, or consequential personal or property damage of any kind to the purchaser or anyone else. For all other countries, the warranty is 1 (one) year.

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