SECO-LARM

E-941SA-300RQ

300-lb Single-Door Electromagnetic Lock
with Reversible Magnet

Manual

- Reversible magnet for left or right-swing doors.
- Perfect for cabinets, small enclosures, or pedestrian gates.
- Selectable 12/24 VDC operation.
- MOV surge protection
- Complete mounting hardware included.
- Detachable mounting bracket included.

SLI

RoHS

NOTE: Products with a model number that ends with "Q" or which have a round green "Q" sticker represent RoHS compliant products.

Table of Contents:

Introduction:

The E-941SA-300RQ electromagnetic lock is the ideal way to secure a door against unauthorized entry. When power is applied to the electromagnetic lock, it creates an extremely strong magnetic field. The electromagnet is strongly attracted to the steel armature plate which is mounted on the secured door. Once the electromagnet is deactivated, the secured door will function normally without any residual magnetism.

Features:

- Anodized aluminum.
- No residual magnetism.
- MOV surge protection.
- Magnet can be reversed for use with right-swing or left-swing doors (default left-swing).
- Adjustable mounting bracket.
- Complete mounting hardware for typical installations.
- "L" brackets, "Z" brackets and "U" brackets are available for easy mounting.
- Selectable 12/24 VDC.
- Detachable faceplate.

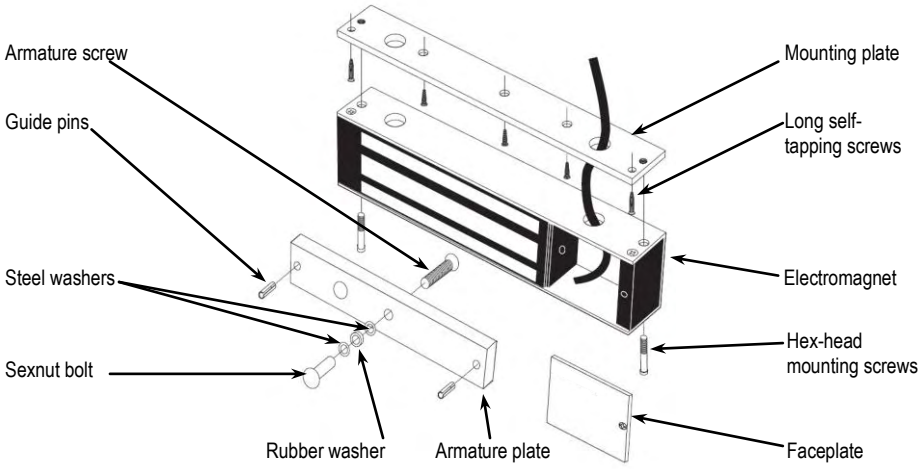
Parts List:

1 x Mounting plate
1 x Electromagnet
1 x Armature plate
1 x Armature screw
2 x Steel washers
1 x Rubber washer
1 x Sexnut bolt
2 x Guide pins
5 x Long self-tapping screws
2 x Hex-head mounting screws
2 x Tamper caps
2 x Allen wrenches

Specifications:

Operating voltage		12 or 24 VDC ±10% (Default 12VDC)
Current draw	12VDC	420mA@12VDC
	24VDC	210mA@24VDC
Coil resistance		57Ω ±10% per coil (see page 8)
Dimensions	Magnet	$7\frac{7}{8}$"x1"x$1\frac{3}{8}$" (200x24x35 mm)
	Armature plate	6"x$\frac{3}{8}$"x$1\frac{1}{4}$" (152x10x32 mm)
Operating temperature		14°~131° F (-10°~55° C)
Weight		2-lb 13.5-oz (1.3kg)

Overview:



Installation Applications:

NOTE: When mounting the electromagnet, it may be necessary to use a "Z" bracket, 1 or 2 "L" brackets, a "U" bracket and/or plate spacers, depending on the location and the type of door and frame. Use the diagram below to help decide whether or not an optional bracket will be necessary for installation.

See page 7 for a complete list of SECO-LARM accessories.

Typical Installation

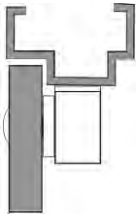
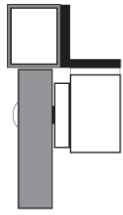


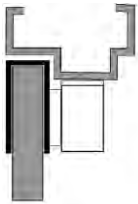
Plate Spacers

"L" Bracket

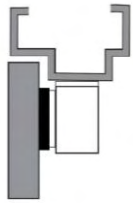


"L" Bracket and "Z" Bracket

"U" Bracket
(Typically for glass doors)



Armature-Mounting Plate

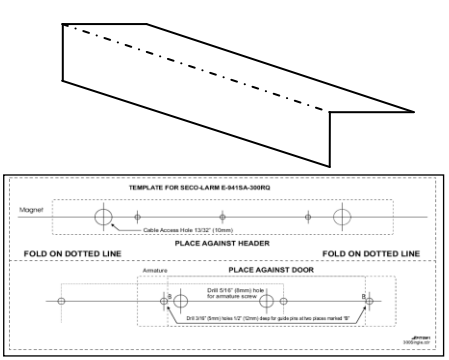


Installation Notes:

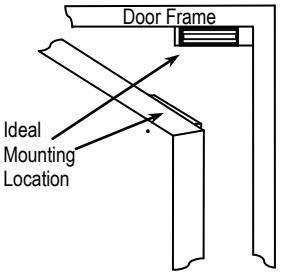
1. Read this installation manual thoroughly. A clear understanding of the product and this manual will make installation much easier.
2. The electromagnetic lock is designed for indoor use ONLY.
3. The most suitable mounting location for the electromagnetic lock may require the use of additional SECO-LARM accessories such as "Z" brackets, "L" brackets, "U" brackets and/or spacer plates. Please see the diagram on page 3 to decide if a particular application requires any mounting accessories. See page 7 for a complete list of SECO-LARM accessories.
4. Do not run power wires and signal wires in the same conduit as this may cause interference.
5. 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.
6. The best location to install the electromagnetic lock is on the inside of the door that is being secured with the wiring concealed in the frame to prevent tampering.

Installation:

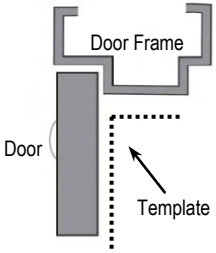
1. Fold the mounting template along the dotted line to form a 90-degree angle.



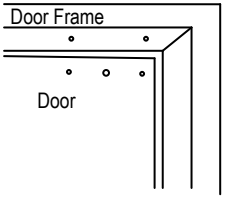
2. Close the door. Find a mounting location on the door frame near the upper free-moving corner of the door, or as close as possible to the upper corner of the door frame opposite the hinges.



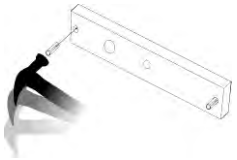
3. Place the template against the door and frame. Mark where the holes are to be drilled.



4. Drill two holes in the frame and three holes in the door as shown on the template.

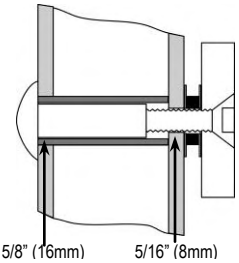


5. Use a hammer to lightly tap the guide pins into the guide pin holes on the armature plate.



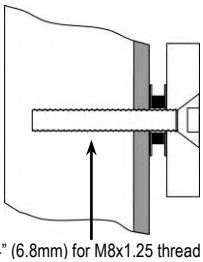
6. Depending on the type of door being protected, drill holes according to the diagrams below:

Hollow Metal Door



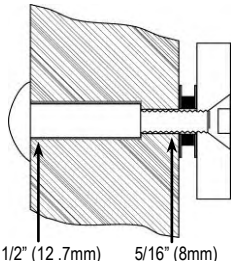
Drill a 5/16" (8mm) dia. hole through the armature-plate side of the door for the armature screw. Then drill a 5/8" (16mm) dia. hole for sexnut screw on the opposite side of the door.

Reinforced Door



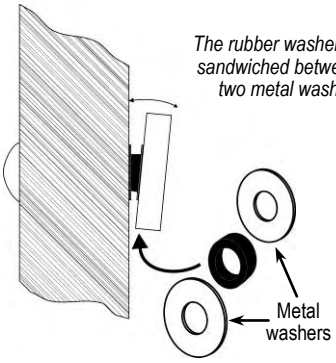
Drill a 1/4" (6.8mm) dia. and 1" (25mm) deep hole, tap for M8x1.25 thread.

Solid Core Door

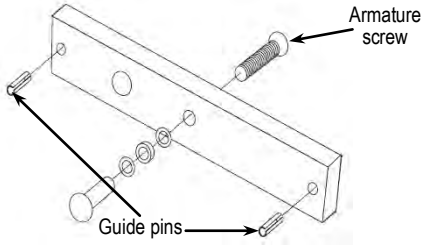


Drill an 5/16" (8mm) dia. hole on the door for the armature screw, and drill a 1/2" (12.7mm) dia. and 1" (25mm) deep hole for the sexnut screw.

7. Put a rubber washer between the two metal washers, and place them over the armature screw between the armature plate and the door. This allows the plate to pivot around the screw to compensate for door misalignment.

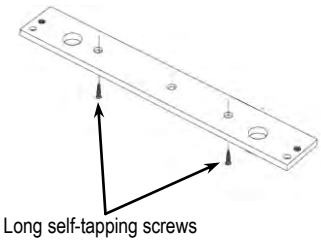


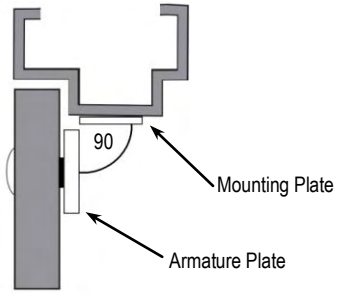
8. Tighten the armature screw enough so that the armature plate can withstand a break-in attempt, but loose enough so that the armature plate can pivot slightly. Make sure the anti-spin guide pins are in the two guide pin holes.



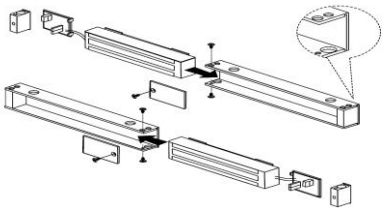
Tip: *Use a thread-locking compound on the armature screw to ensure a long-lasting installation.*

9. After determining the correct location, install two screws through the mounting plate. Do not tighten. Adjust the mounting plate into the correct position. Double-check the position by holding the magnet there. Once satisfied with the position, tighten the two screws. See the diagrams below.

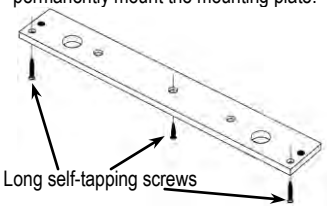




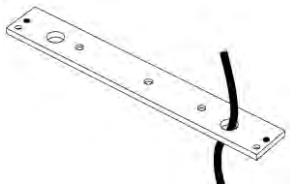
10. Magnet can be reversed depending on whether it is used for right-swing or left-swing doors.



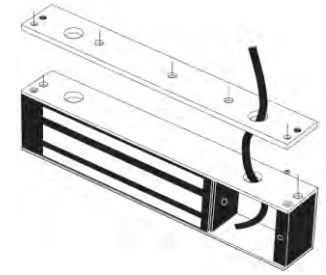
11. Once the position of the mounting plate is correct, screw in the other three long self-tapping screws to permanently mount the mounting plate.



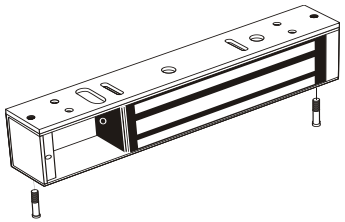
12. Drill the cable access hole. Run the power leads through the cable access hole in the mounting plate and through the hole in the door frame.



13. Remove the faceplate from the front of the electromagnet. Run the power leads through the large cable access hole.



14. Push the electromagnet against the mounting plate so the electromagnet ends are flush with the ends of the mounting plate. Use the Allen wrench to screw the hex-head mounting screws through the bottom of the electromagnet into the mounting bracket.



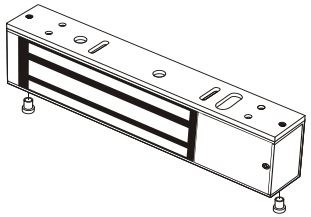
15. Cut the wires so they are long enough to connect with the terminal block. Set the voltage using the selection jumpers based on your input voltage.

Voltage Selection Jumpers

Position two jumpers on all four pins for 12VDC operation

Position a jumper over the two middle pins for 24VDC operation

16. Connect the power wires according to the wiring diagram on page 7. Test the unit. Then replace the faceplate and install the hex-head tamper caps.



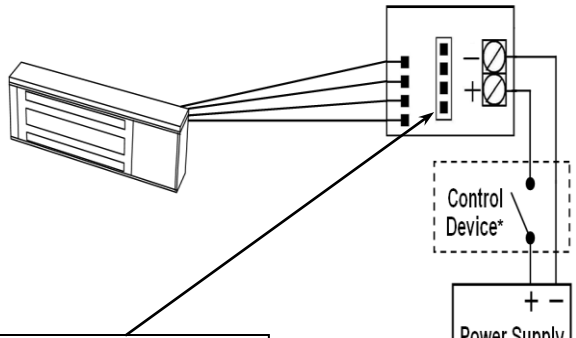
NOTE: This should be the very last step, as once the tamper caps are in place they are very difficult to remove.

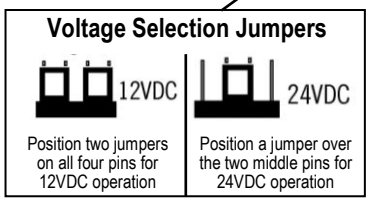
NOTE: Failure to correctly set the input voltage may cause damage to the lock.

NOTE: Connect switching devices like push-to-exit switches between the power source and the positive terminal on the lock. Connecting switching devices to the negative terminal may cause a delay in unlocking.

Wiring Diagram:

***NOTE**: Connect switching devices like push-to-exit switches between the power source and the positive terminal on the lock. Connecting switching devices to the negative terminal may cause a delay in unlocking.





Maximum Distance from Power Source to Electromagnetic Lock:

For a complete chart, please visit www.seco-larm.com

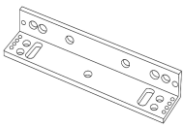
12VDC Minimum Wire Gauge:

Wire Length	25ft.	50ft.	75ft.	100ft.	150ft.	200ft.	250ft.	300ft.	400ft.	500ft.	1000ft.
Wire Gauge @ 420mA	20	18	18	18	16	14	14	12	10	10	--

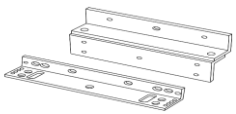
24VDC Minimum Wire Gauge:

Wire Length	25ft.	50ft.	75ft.	100ft.	150ft.	200ft.	250ft.	300ft.	400ft.	500ft.	1000ft.
Wire Gauge @ 210mA	24	24	22	20	18	18	16	16	14	14	14

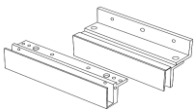
Optional SECO-LARM Electromagnetic Lock Accessories:



"L" bracket
E-941S300R/LQ



"L" & "Z" brackets
E-941S300R/ZQ



"L" & "Z" & "U" brackets
E-941S300R/UQ

Also Available from SECO-LARM:

Access Control Power Supply

EAP-5D1Q
(shown)

Digital Access Keypads

SK-2323-SDQ
(shown)

Complete Line of Electromagnetic Locks and Strikes

E-941SA-1200
(shown)

Voltage Converters or Boosters

ST-LA110-TTQ
(shown)

Wired or Wireless RTE Plates

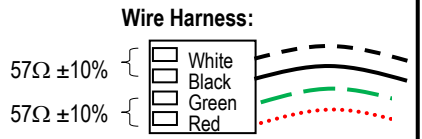
SD-7202GC-PEQ
(shown)

Troubleshooting:

Door does not lock	• Check to make sure the wires are securely tightened to the terminal block. • Check that the power supply is connected and operating. • Use a multimeter to check the resistance of coils inside the lock. See below. • Make sure the rubber washer is installed and free from damage.
Door 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. • Check the power leads with a multimeter to see if 12 or 24VDC is present. • Use a multimeter to check the resistance of coils inside the lock. See below. • Make sure the rubber washer is installed and free from damage. • Check Voltage Selection Jumper for correct setting.
Delay in door releasing	• The electromagnet is fitted with a metal oxide varistor to prevent interference, so do not install a second diode.

If the Electromagnet has low or no holding force, check the resistance of the coils by performing the following steps:

1. *Remove the faceplate from the lock.*
2. *Disconnect the wire harness from the circuit board.*
3. *Using a multimeter, measure the resistance across: Red/Green wires, and the Black/White wires.*
4. *Each coil should test at 57Ω ±10%.*
5. *If one or both of coils shows an open, short, or incorrect resistance, replace the electromagnet.*



SECO-LARM U.S.A., Inc.
16842 Millikan Avenue, Irvine, CA 92606
Tel: 800-662-0800 / 949-261-2999 Fax: 949-261-7326
Website: www.seco-larm.com
E-mail: sales@seco-larm.com