

SECO-LARM®

SD-993B-SS

Electric Shear Lock

Installation Manual



22SW



Features:

- Concealed security for remote access and exit control of aluminum and steel doors or gates.
- Zinc-plated magnet and armature, aluminum anodized housing.
- The power for the SD-993B-SS is to be provided by a Listed (UL294, CAN/ULC-S533 or UL603) Class 2 Power Supply
- Use with an optional digital keypad for keyless high security.
- Smaller size for use with most metal door jambs.
- The SD-993B-SS is intended to use as access control system accessory which are installed in accordance with the manufacturer's installation and operation instructions, ANSI/NFPA 70 and the local authority having jurisdiction. Holding Force has not been verified by UL.
- Spring-loaded locking bolts and magnetic bond holds doors securely in place with approximately 1,500 pounds (680kg) of shear holding force.
- Armature plate adjusts to compensate for gaps between door and frame.
- UL294 Indoor use, UL1034 Indoor use
- Works with sliding, single-action, and double-action (swing-through) doors and gates.
- Fail-safe operation (unlocks if power is lost).

NOTE: The products shall not impair the intended operation of an emergency exit or panic hardware mounted on the door.

SECO-LARM Electric Shear Lock

Parts List:

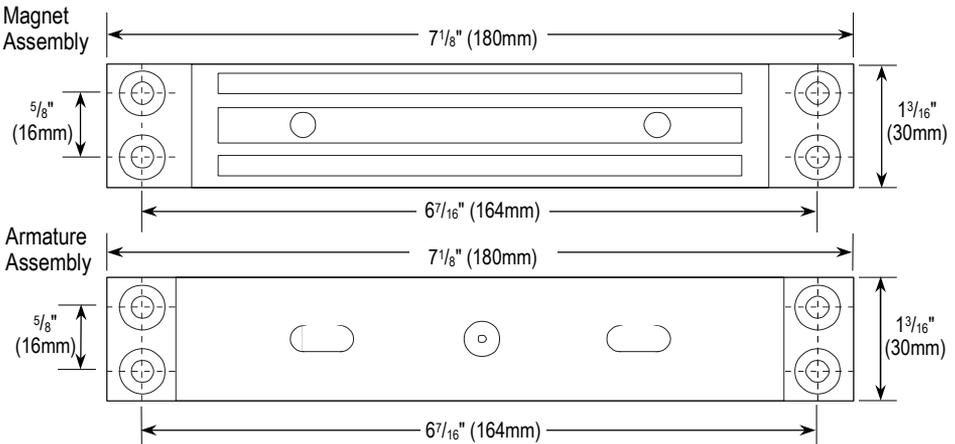
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|----------------------|--|
| 1x Magnet assembly | 1x Hex wrench |
| 1x Armature assembly | 16x Metal screws |
| 4x Spacers | 2x Springs (for use when the SD-993B-SS is mounted vertically) |

Specifications:

Operating voltage	12/24VDC	
Current draw	350mA@12VDC, 190mA@24VDC	
Holding force*	1,200-lb (544kg)	
Lock surface temperature	≤ Current temperature ± 20° C	
Door gap	2mm	
Destructive attack	Level I	
Line security	Level I	
Standby power	Level I	
Endurance	Level IV	
Static force	1,500-lb (680kg)	
Dynamic force	70 ft-lb	
Endurance	250,000 cycles	
Operating temperature	32°~120° F (0°~49° C)	
Operating humidity	0~85%, Non-condensing	
Dimensions	Armature assembly (faceplate)	7 ¹ / ₈ "x1 ³ / ₁₆ "x1 ⁵ / ₈ " (180x30x42 mm)
	Magnet housing (faceplate)	7 ¹ / ₈ "x1 ³ / ₁₆ "x1 ¹ / ₁₆ " (180x30x27 mm)
Finish	Magnet and Armature: Zinc Plated	

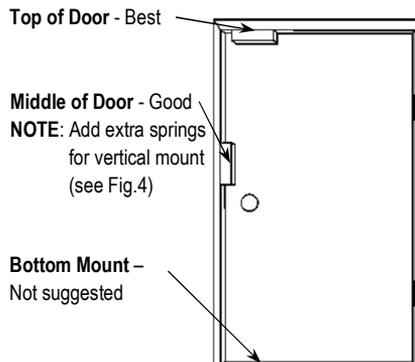
*Holding force has not been verified by UL certifications.

Overview:



Mounting Location:

1. **Top of Door** — Mount here for best results, as this allows flexibility against direct attacks against the door. Mount close to the corner opposite the hinges. (see Fig. 1)
2. **Middle of Door, Opposite the Hinges** — This works well in most situations. If mounting is required here, mount halfway up the door for greatest strength. Add extra springs to the armature assembly (see Fig. 4, pg. 5).
3. **Bottom of the Door** – Not recommended as dirt build up could affect operation.

Fig. 1 - Preferred mounting**Installation Notes:**

Install the magnet assembly into the door frame before installing the armature assembly into the door. The magnet assembly requires space to run wires, as well as space for the recessed portion of the unit. However, make sure that the position selected for the magnet assembly leaves enough room in the door to install the armature assembly.

Installation – Cut the Door Frame (See Fig. 2, pg. 4):

1. Find the Center Line:
 - a. Close the door and let it rest naturally.
 - b. Use a pencil to trace the position of the outside face of the door on the door frame. If mounting on the top of the door, this line should be near the top corner away from the door hinges. Leave enough room to mount the magnet assembly in the door. If mounting on the side of the door, this line should be drawn near the center of the door, but not near any physical locking mechanisms.
 - c. Measure the width of the door, then draw a line on the door frame parallel to the first line at that distance. These two lines will show where the door rests relative to the door frame when it is closed.
 - d. Measure and trace a line between these two lines. This is the door frame center line.

IMPORTANT: Make sure the place you choose to mount the magnet assembly is clear of obstructions and door adjustment bolts before making any cuts. Allow enough room inside the door frame at both ends of the magnet assembly to install the mounting tabs.
2. Tape the door frame template to the door frame, lining the template's door frame center line with the door center line you just drew.

For Hollow Metal Door Frames:

1. Cut out the rectangular piece of metal as shown on the door frame template.
2. Drill the four holes (two on each end) as shown on the door frame template.
3. Using the included metal screws, mount the mounting tabs.
4. Run the wires.

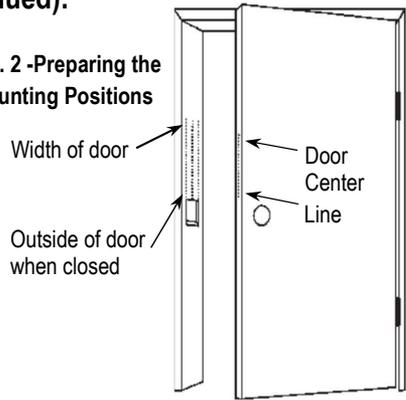
SECO-LARM Electric Shear Lock

Installation – Cut the Door Frame (Continued):

For Wood Door Frames:

1. Rout or cut a $1\frac{1}{16}$ " (27mm) deep, $5\frac{13}{16}$ "x $1\frac{3}{16}$ " (147x30 mm) hole for the cavity of the magnet assembly as shown in the door frame template.
2. Rout or cut a $\frac{3}{16}$ " (5mm) deep, $\frac{5}{8}$ "x $1\frac{3}{16}$ " (17x30 mm) hole at each end of the cavity.
3. Run the wires.

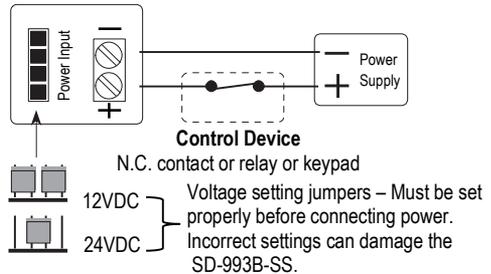
Fig. 2 -Preparing the Mounting Positions



Wiring Diagram:

1. Set for power supply type (12VDC or 24VDC) – Use the jumpers to set voltage setting (see Fig. 3).
2. Connect to power
3. One terminal positive, one to negative (non-polarized)

Fig. 3 - Power Supply Settings and Connections



Installation – Cut the Door:

NOTE: When mounting vertically near the center of the door, disassemble the armature assembly and add the two included springs. This improves the unit's push-off. (See Fig. 4, pg. 5).

1. Determine where to mount the armature assembly in the door. It should line up with the magnet assembly. (See Fig. 4).
2. Draw a line between the front and back door faces. This is the door center line (see Fig. 2).
3. Tape the door template to the door, lining the door template's door center line with the door center line you just drew.

For Hollow Metal Doors:

1. Cut out the rectangular piece of metal as shown on the door template.
2. Drill the four holes (two on each end) as shown on the door template.
3. Using the included metal screws, mount the mounting tabs.

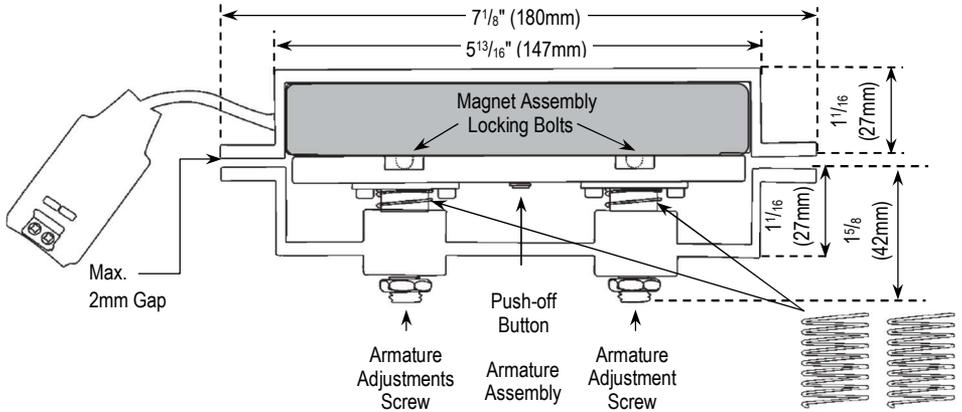
For Wood Doors:

1. Rout or cut a $1\frac{5}{8}$ "(42mm) deep, $5\frac{13}{16}$ " x $1\frac{3}{16}$ " (147x30mm) hole for the cavity of the armature assembly as shown in the door template.
2. Rout a $\frac{3}{16}$ " (5mm) deep, $\frac{5}{8}$ " x $1\frac{3}{16}$ " (17x30mm) hole at each end of the cavity.

Installation – Cut the Door (Continued):

Adjust armature screws to compensate for the gap between door and frame. (see Fig. 4)

Fig. 4 Lining up Magnet Assembly and Armature Assembly

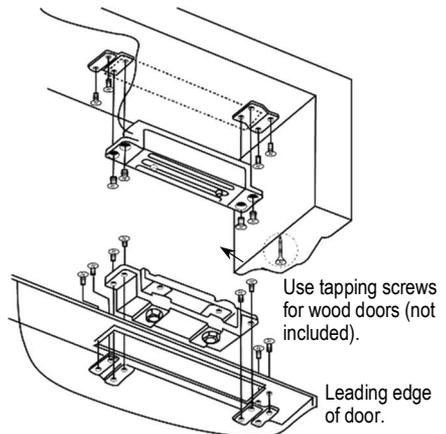


NOTE: When mounting vertically, disassemble the armature assembly and add extra springs for better push-off.

Installation – Mount the Magnet Assembly and Armature Assembly:

1. Double-check your work – Make sure the magnet assembly and armature assembly line up properly. Make any adjustments. (see Fig. 5)
2. Using the screws provided, mount the magnet assembly onto the door frame, and the armature assembly onto the door.
3. Use washers or flat pieces of metal to act as shims as necessary to mount the magnet assembly and armature assembly flush with surface.
4. Close the door and note the gap between the armature assembly and the magnet assembly. Using the included hex wrench, adjust the nickel-plated portion of the armature assembly to make the gap as small as possible without interfering with the opening and closing of the door.
5. Apply power and test the operation.

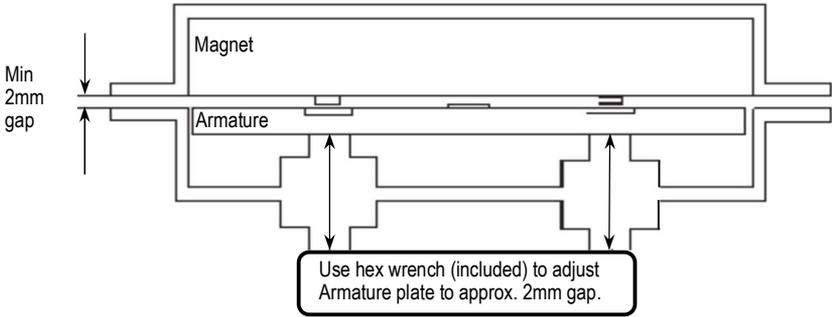
Fig. 5 Mounting the Magnet Assembly



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Installation - Mount the Magnet Assembly and Armature Assembly (Cont.):

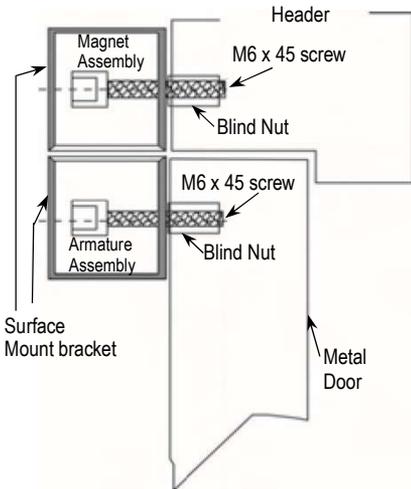
Fig. 6 Adjustment Of SD-993B-SS Electric Shear Lock



Installation for Surface Mounting (SD-993S-SB):

Surface-mount
(magnet and armature)

Use 2 x surface-mount brackets

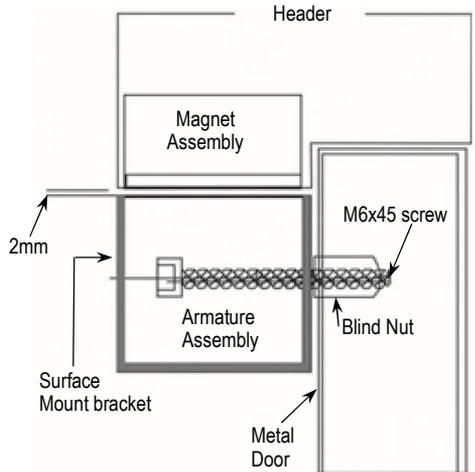


The magnet assembly is in the bracket above the door, and the armature assembly is in the bracket on the door.

Flush mount (magnet)

Surface mount (door)

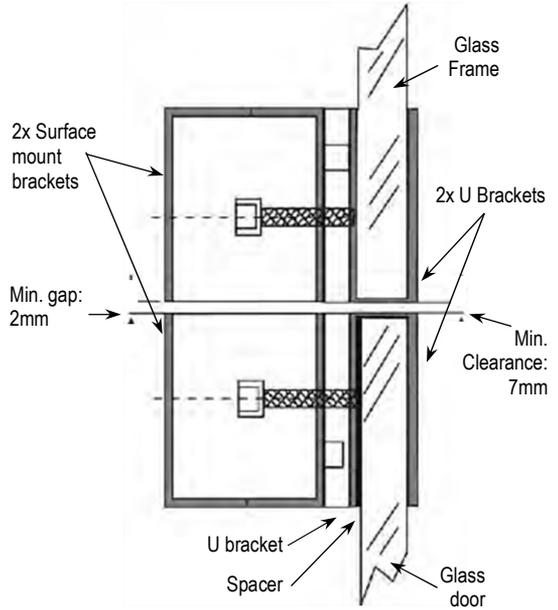
Use 1 x surface mount bracket



The magnet assembly is flush to the door frame or header, and the armature assembly is in the bracket on the door.

Installation for Glass Door Mounting (SD-993S-UB):

May require 1 or more SD-993S-SB and SD-993S-UB bracket kits, depending on the glass door configuration.



NOTES: One glass door with a glass frame illustrated above.

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Troubleshooting:

Bracket kits for SD-993B-SS
Electric Shear Lock
If the shear lock does not activate when
the door is closed

- The magnet assembly is too far away from the armature assembly.
- Adjust the distance between the magnet and armature assembly by adding more shims under the back portion of the armature assembly.
- Re-adjust the position of the armature assembly or the magnet assembly.

Poor attraction between the magnet
assembly and the armature assembly

- Check the power supply, and make sure it is according to specifications.
- If the power supply is adequate, replace the unit.

If the magnet assembly pulls the
armature assembly, but the door can
still be opened

- Check to make sure the locking bolts are in the armature assembly's keeper hole when the unit is activated.

If the door can be kicked in or pushed in
with your shoulder

- Check to make sure the magnet assembly and armature assembly surfaces are clean and free from dirt.
- Even a little dirt could reduce the attraction between the two surfaces.

For any other problems

- Test again
- Replace the unit
- The problem unit can also be substituted for a working unit in another door frame to see if it works there.

Accessories:

SD-993S-SB
Surface-Mount Bracket Kit



SD-993S-UB
U-Bracket (Glass door) Kit



WARRANTY: This SECO-LARM product is warranted against defects in material and workmanship while used in normal service for 1 year from the date of sale to the original customer. 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.

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