senseon™
SECURE ACCESS

CABINET **DESIGN GUIDE**

1.11.16

senseon™

CABINET **DESIGN GUIDE**

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This guide will walk you through the planning and design of a cabinet using Senseon components. This includes:

- Mounting features for the proximity reader
- Positions and clearance for the power supply
- Hub space requirements
- Lock placement and mounting features
- Cable routing access holes
- Planning for manual release

Installation of these components is covered in their respective installation guide, and any questions that may arise during the cabinet design stages are addressed in the Senseon FAQs. Both of these items can be found at accuride.com/en-us/markets-innovation/secure-access-control-systems.

SECTION 1:
PROXIMITY READER

PROXIMITY READER

The proximity reader is the device that reads the Senseon user cards. It is the “brain” of the Senseon system, controlling the relay of unlock signals to the E-locks.

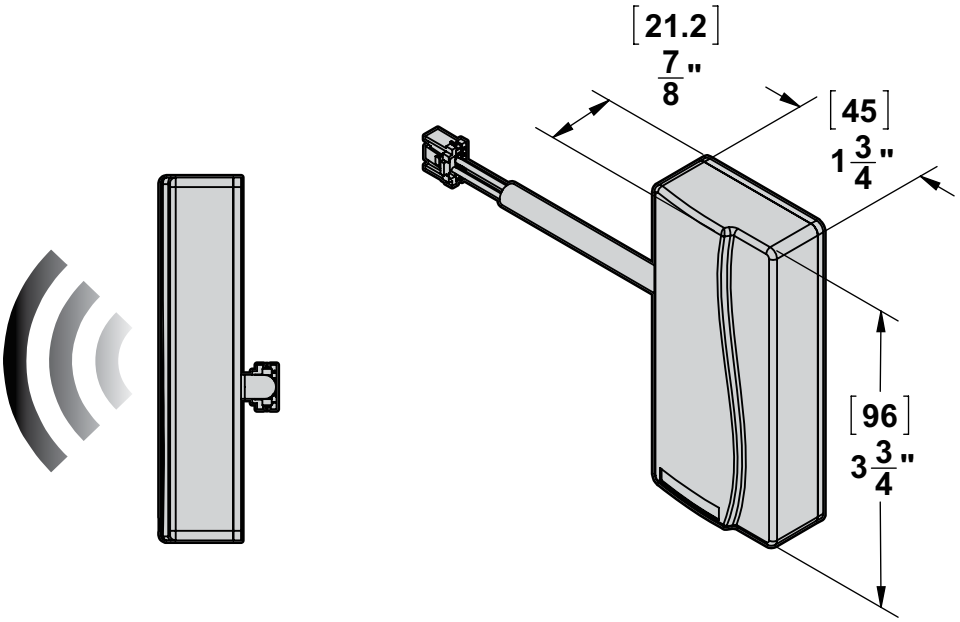


Figure 1.1: Left: proximity reader direction; right: proximity reader dimensions

Location

The reader can be placed anywhere just below or on any surface of a cabinet. This surface should be accessible to the end user to scan a user card. It is recommended that the proximity reader be mounted on a non-moving surface to reduce the risk of cables tangling during movement.

Warning

NOTE: mounting the RFID reader sub surface should be tested on the material prior to fabrication. Material composition may impact the RFID reader signal distance and may require less than 1 inch of material thickness. The RFID reader CANNOT be mounted under a metal surface. The metal surface will block the RFID signal. If your cabinet is metal, the requirement is surface mounting.

Orientation

The front of the proximity reader reads the access control cards only. The scanning location of the user cards needs to be determined first. This will determine the location and orientation of the proximity reader. There are three basic reader orientations:

[1] SURFACE MOUNT

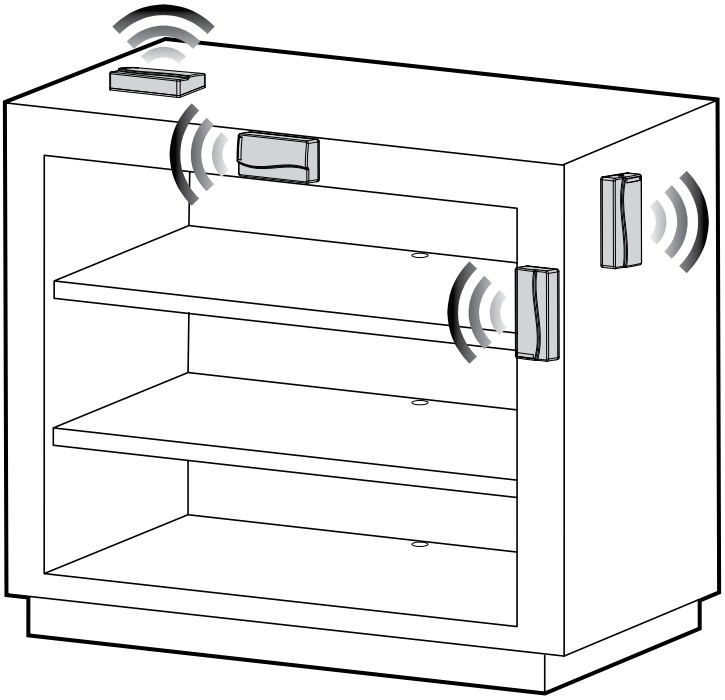


Figure 1.2: Surface mounting examples

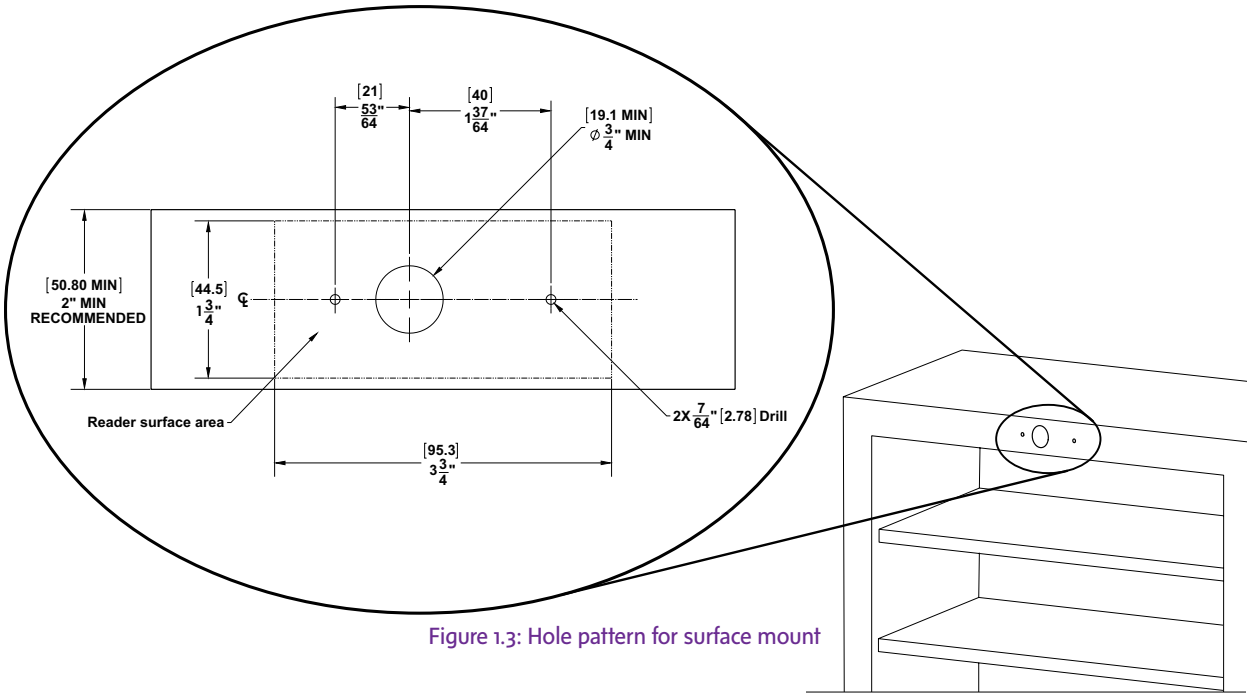


Figure 1.3: Hole pattern for surface mount

[2] Blocked Subsurface Mount - Below Cabinet Top

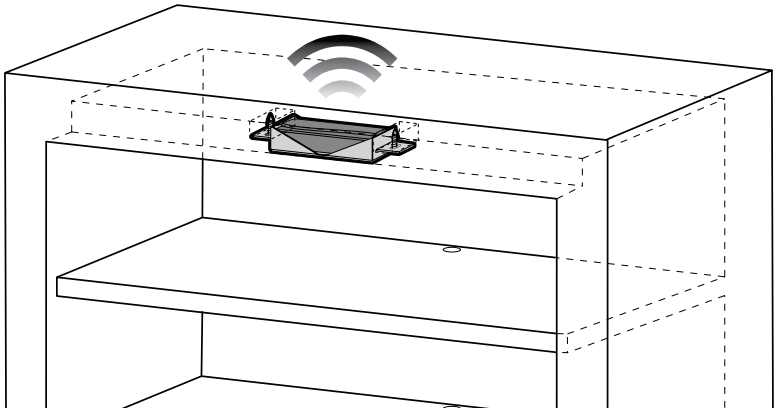


Figure 1.4: Block mounted proximity reader below cabinet top

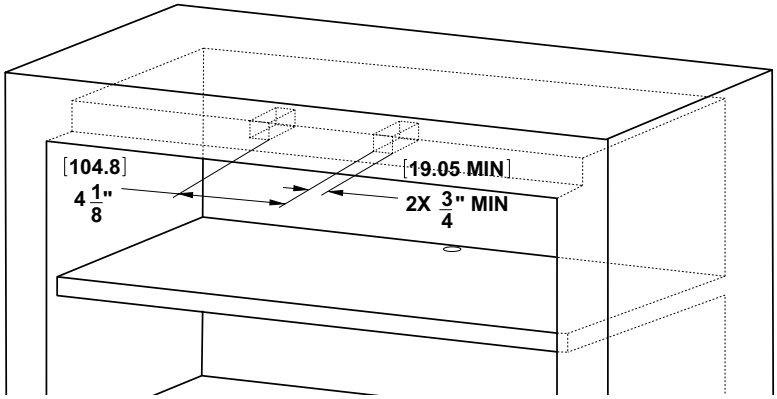


Figure 1.5: Mount block dimensions for reader cabinet top

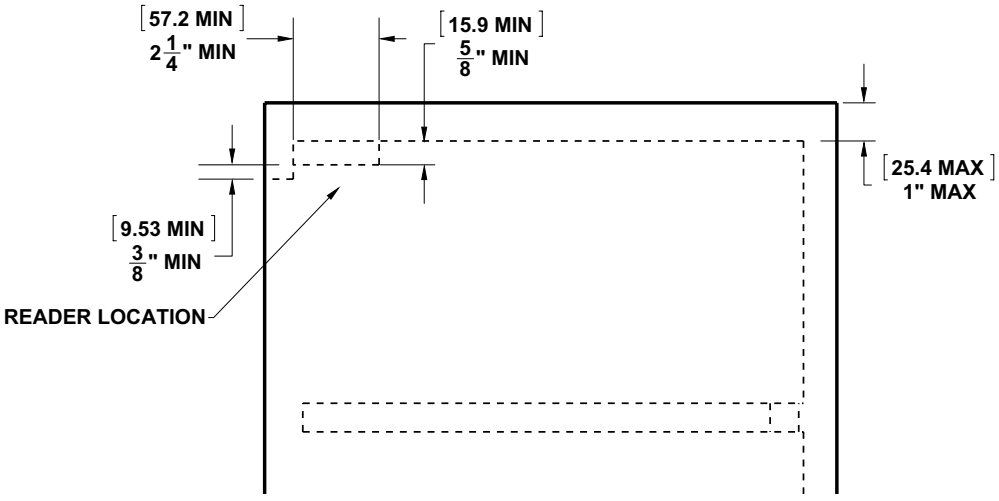


Figure 1.6: Minimum block requirements for reader mounted below cabinet top

[3] Routed Pocket Subsurface Mount - Below Cabinet Top

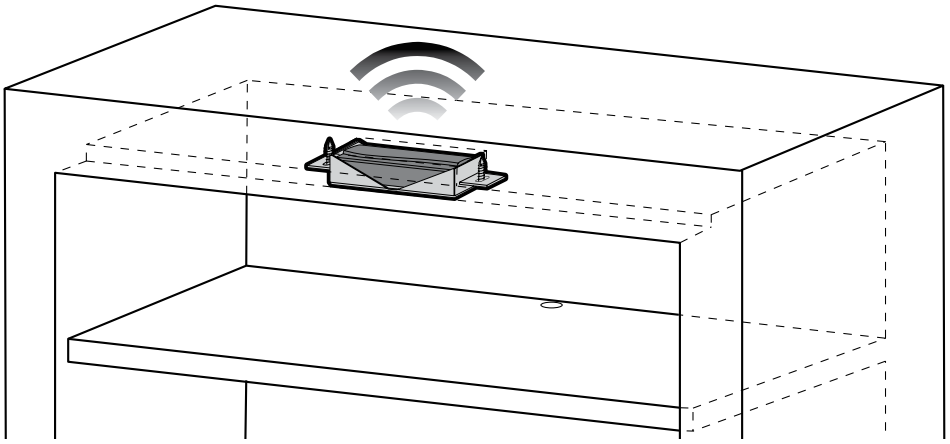


Figure 1.7: Pocket mounted proximity reader below cabinet top

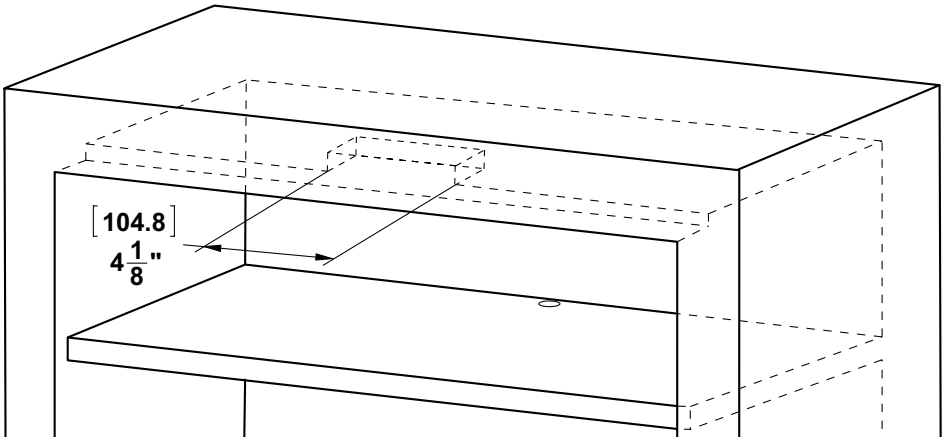
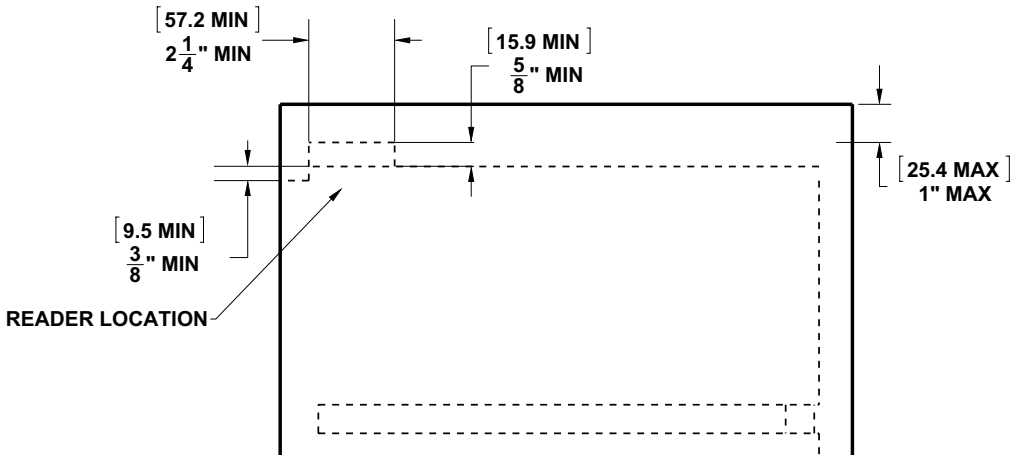


Figure 1.8: Pocket dimensions for mounting reader below cabinet top



SIDE VIEW

Figure 1.9: Minimum pocket requirements for mounting reader below cabinet top

[4] Blocked Subsurface Mount – Behind Cabinet Front

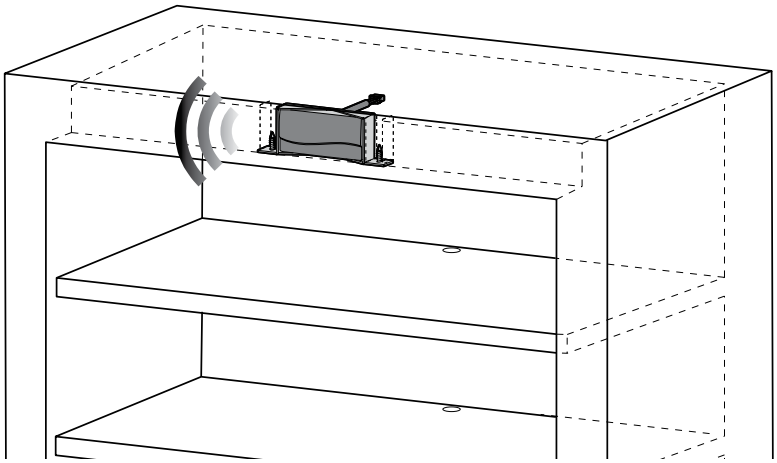


Figure 1.10: Block mounted proximity reader behind cabinet front

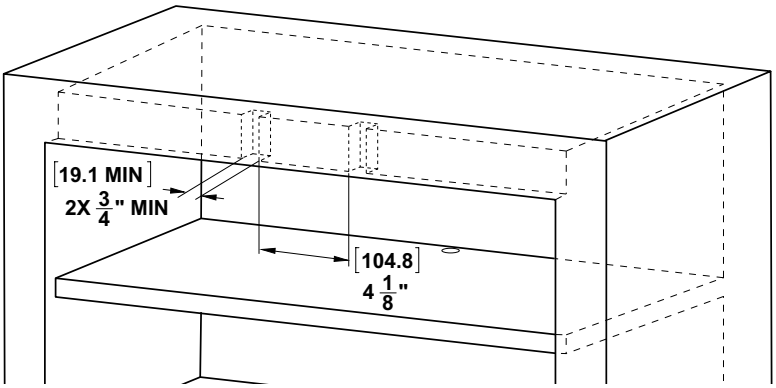


Figure 1.11: Mount block dimensions for reader behind cabinet front

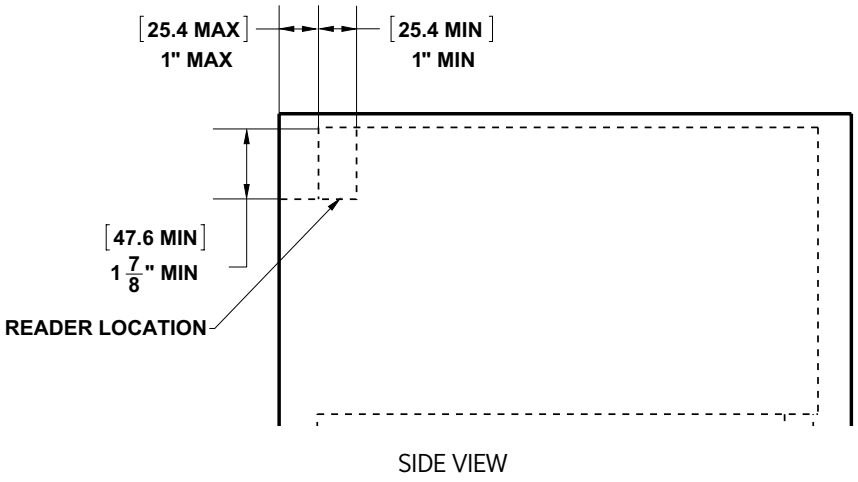


Figure 1.12: Minimum block requirements for mounting reader behind cabinet front

[5] Routed Pocket Subsurface Mount – Behind Cabinet Front

Note: Dimensions shown do not account for any radii in cut pockets.
Be sure to make necessary provisions to allow for rectangular area.

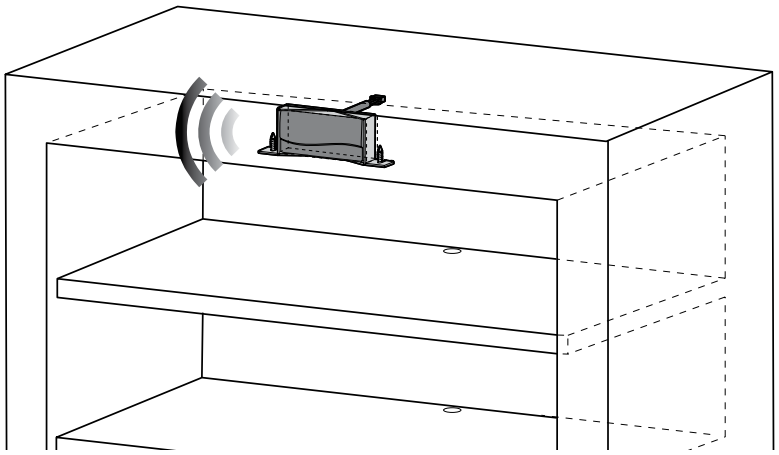


Figure 1.13: Pocket mounted proximity reader behind cabinet front

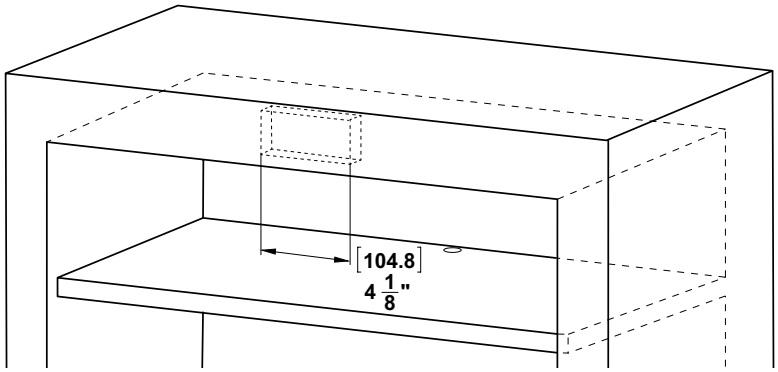


Figure 1.14: Pocket dimensions for reader mounted behind cabinet front

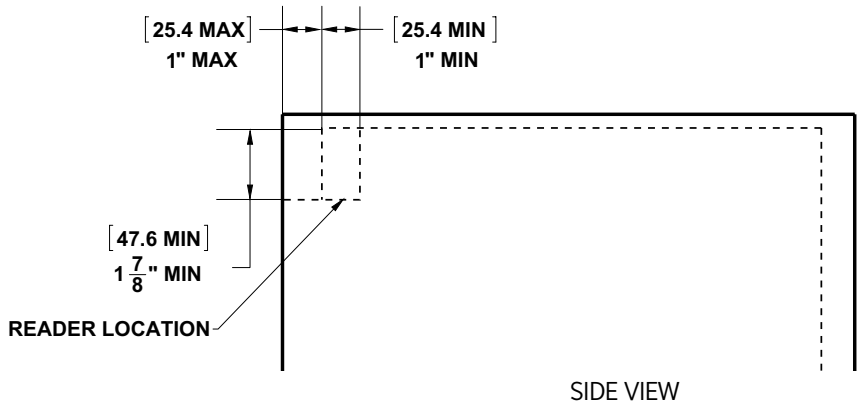


Figure 1.15: Minimum pocket requirements for reader mounted behind cabinet front

Locating Feature

If the proximity reader is mounted subsurface, the end user will not be able to see the actual location of the reader. This may cause difficulty for the user to scan a card successfully. A visual identifier may be desired over a subsurface reader for the end user to know the reader position. This is not required and is up to the cabinet maker or end user's discretion. It is suggested to use the center of the reader or an edge of a cabinet as a point of reference to help the end user locate the proximity reader.

SECTION 2:
POWER SUPPLY

POWER SUPPLY

The power supply provides the electrical power necessary to run the Senseon access control system. The power supply connects to a bottom hub located on either end of a hub group.

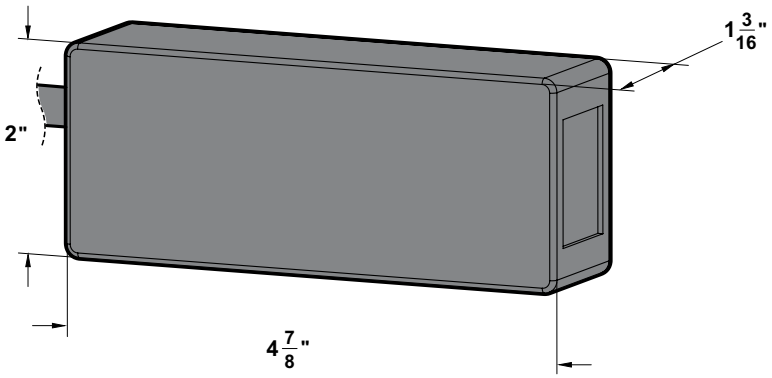


Figure 2.1: DC power supply

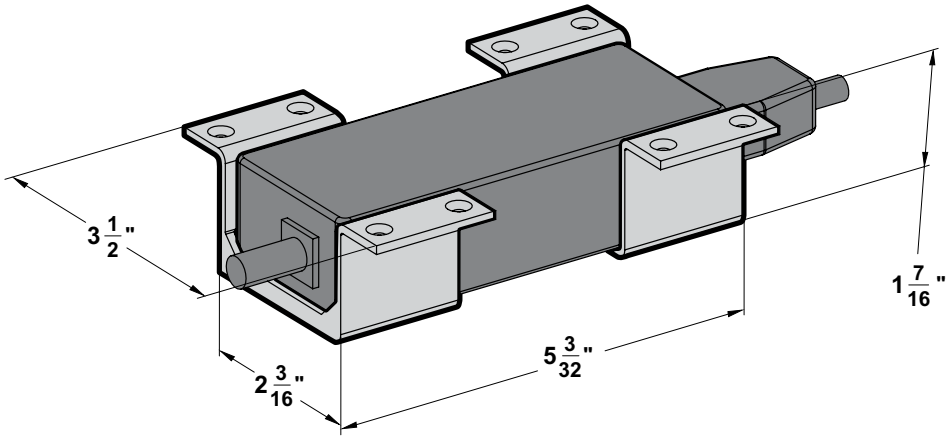


Figure 2.2: DC power supply with holders

Power Supply to Power Outlet Distance

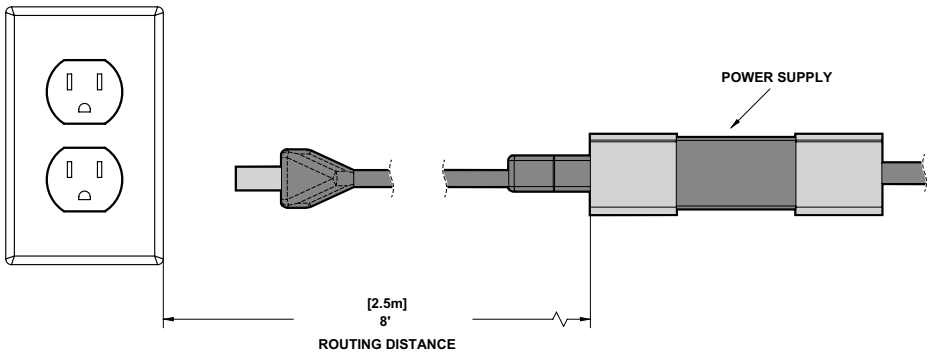


Figure 2.3: Power supply proximity to power outlet using included AC cable

Note: Routing distance is the total distance between one component to another that a cable needs to run

Power Supply to Starting Hub Distance

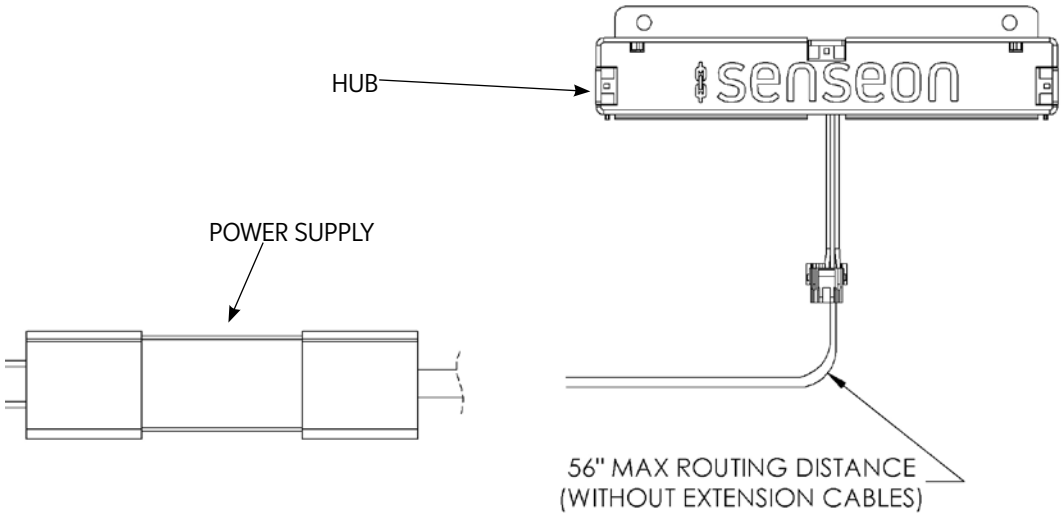


Figure 2.4: Power supply proximity to connecting hub

Mounting Positions

The power supply can be mounted on any surface of the cabinet. The example in figure 2.5 shows the power supply mounted beneath the bottom panel of the cabinet. Other possible positions inside the cabinet are on the back panel, on top of the bottom panel, on a side panel or partition, or anywhere inside a toe kick.

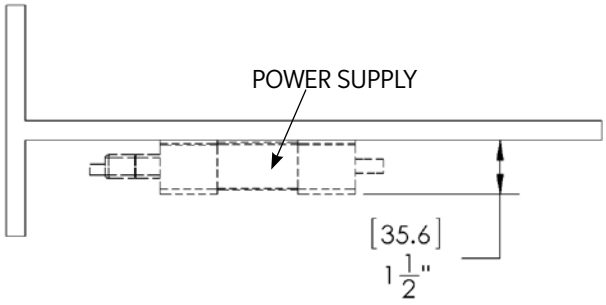


Figure 2.5: Surface mount critical dimensions

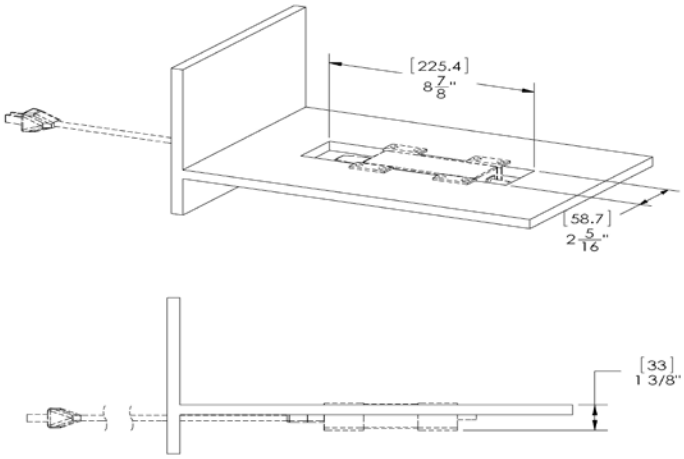


Figure 2.6: Pocket mount critical dimensions

Hole Pattern for Power Supply Holders

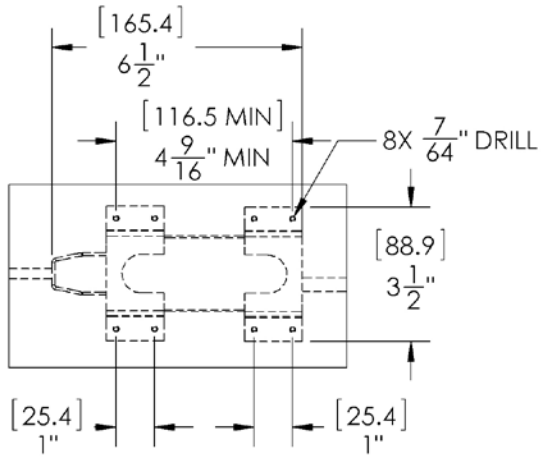
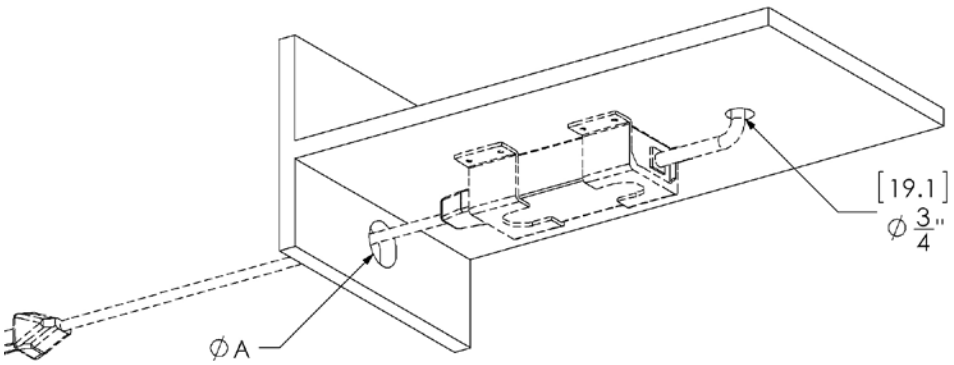


Figure 2.7: Power supply holder hole pattern

Cable Access



PLUG TYPE	ØA
US	1.25" [31.75mm]
UK	3"[75mm]
EU	1.5"[38.1mm]

Figure 2.8: Access holes for power supply cables

SECTION 3:
HUB

Hub

The hub is the "heart" of the Senseon system. It is the electrical interconnection point between one locked opening to another. Hubs connect to each other, to the locks, one hub connects to the power supply, and one or two hubs connect to the proximity reader. All connected hubs distribute power and the unlock signal amongst each other. One hub is installed into each locked opening.

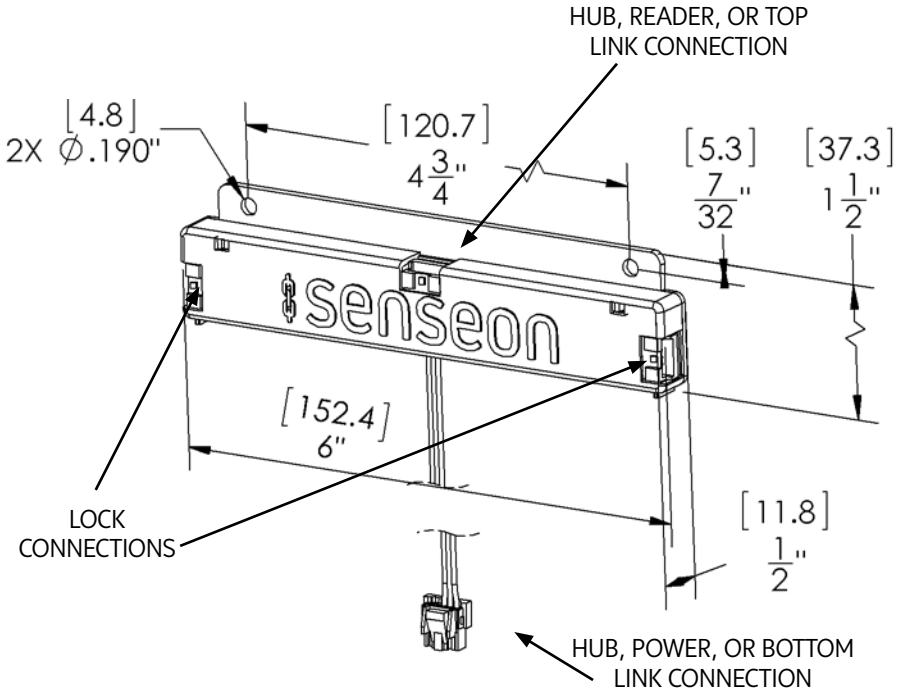
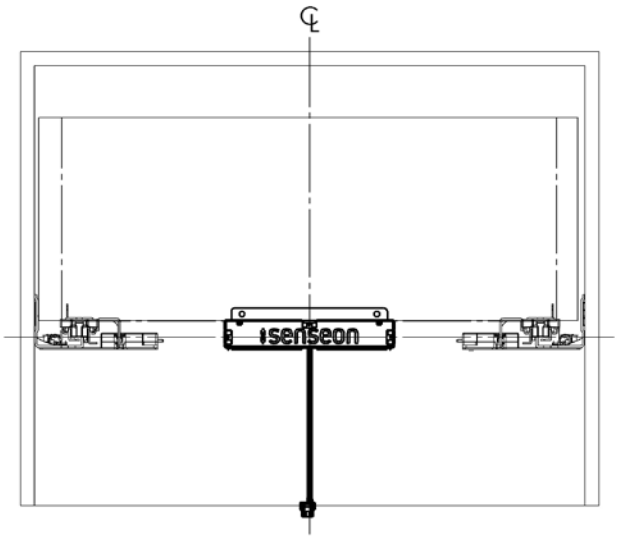


Figure 3.1: Senseon hub dimensions and hole pattern

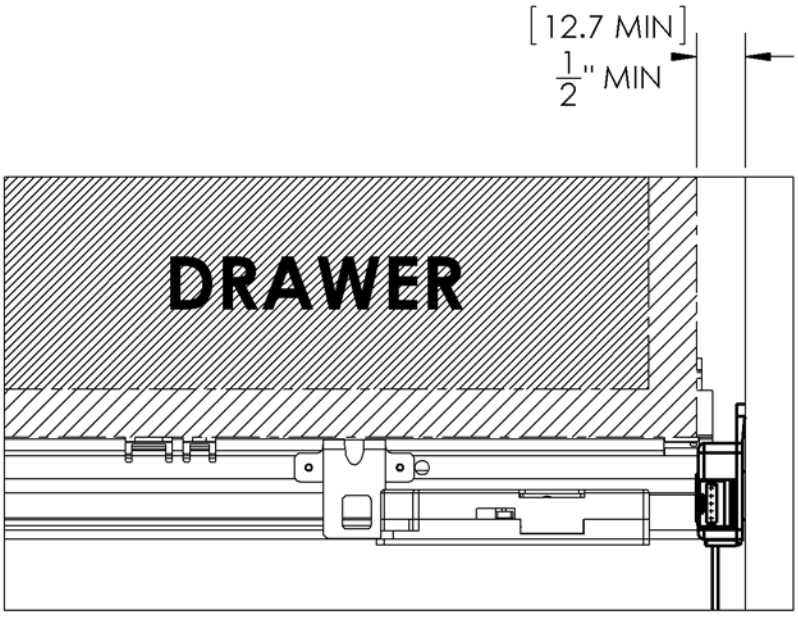
Hub Placement – Senseon undermount slides with integrated E-lock

Note: Drawers shown in following examples are not to scale. For drawer box and slide specifications, please refer to the technical documentation.



FRONT VIEW

Figure 3.2: Back panel mounted hub with Senseon undermount slides (3135TREL, 3135 ECEL)



SIDE VIEW

Figure 3.3: Back panel mounted hub with Senseon undermount slides (3135TREL, 3135ECEL)

Note: Make sure to allow at least ½" gap behind a fully closed drawer box for hub clearance

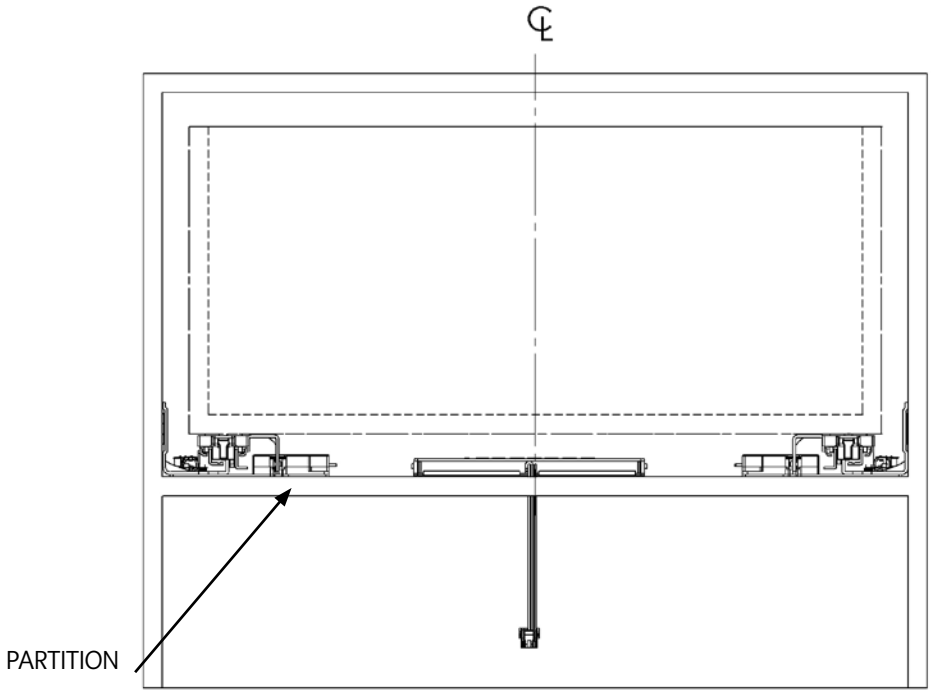


Figure 3.4: Flat mounted hub with Senseon undermount slides (3135TREL, 3135ECEL)

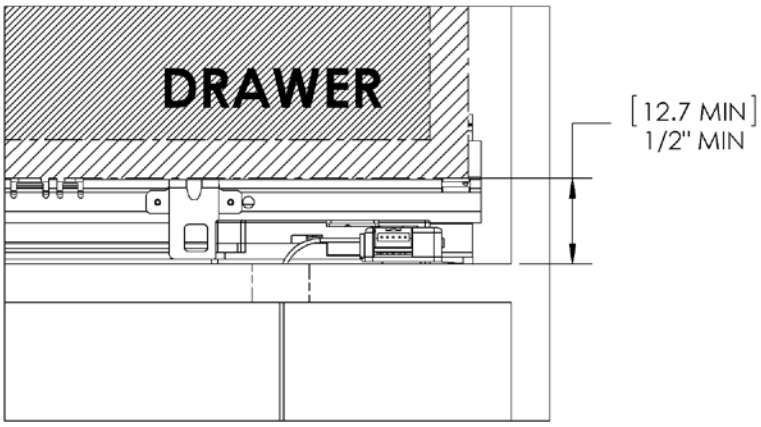
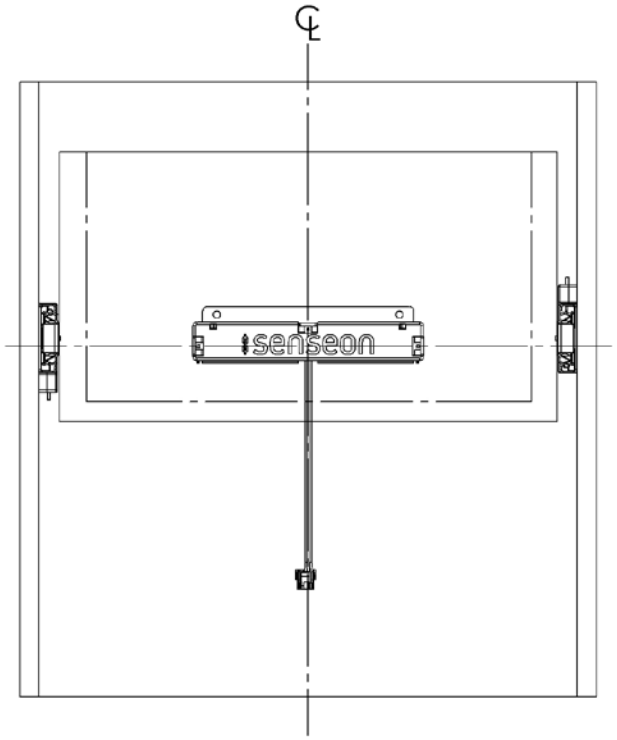


Figure 3.5: Flat mounted hub, sectioned side view, Senseon undermount slides (3135TREL, 3135ECEL)

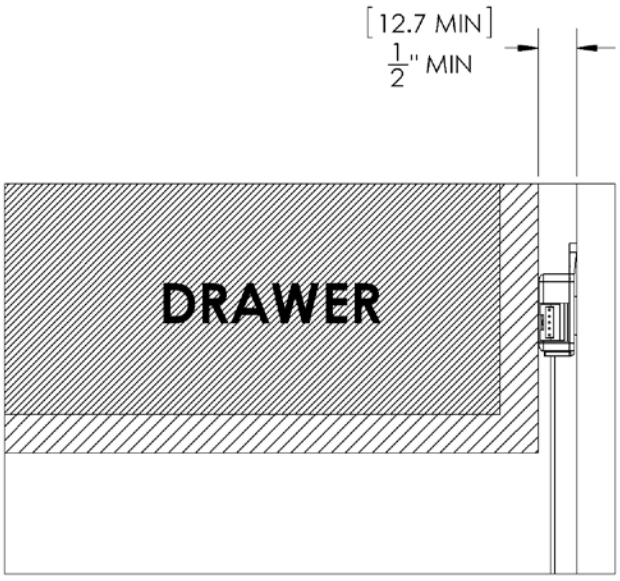
Note: Make sure to allow at least ½" gap below drawer box for hub clearance

Hub Placement - Senseon sidemount slides with integrated E-lock



FRONT VIEW

Figure 3.6: Back panel mounted hub shown with Senseon sidemount slides (38EL, 38ELAO)



SIDE VIEW

Figure 3.7: Back panel mounted hub, sectioned side view, Senseon sidemount slides (38EL, 38ELAO)

Cable Access

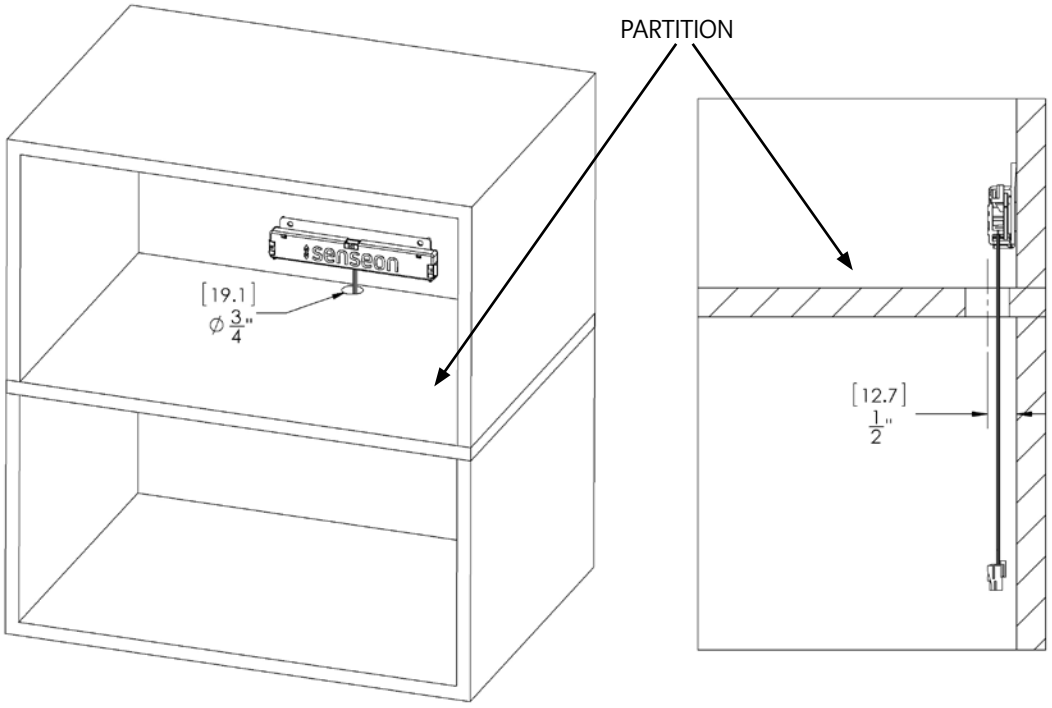


Figure 3.8: Back panel mounted hub cable access hole; left, perspective view; right, sectioned side view

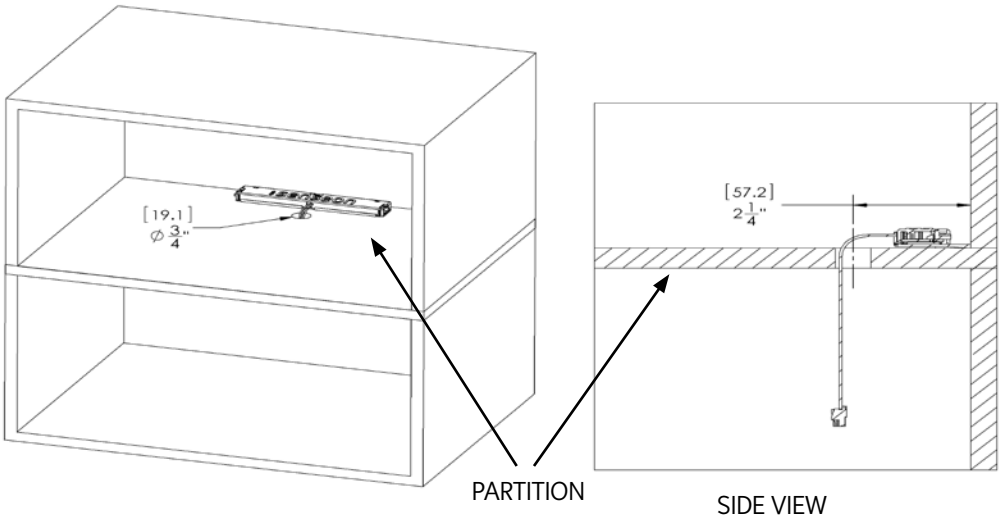


Figure 3.9: Flat panel mounted hub cable access hole; left, perspective view; right, sectioned side view

SECTION 4:
INTEGRATED SLIDE E-LOCKS

Senseon Side Mount Slide – 38EL, 38ELAO

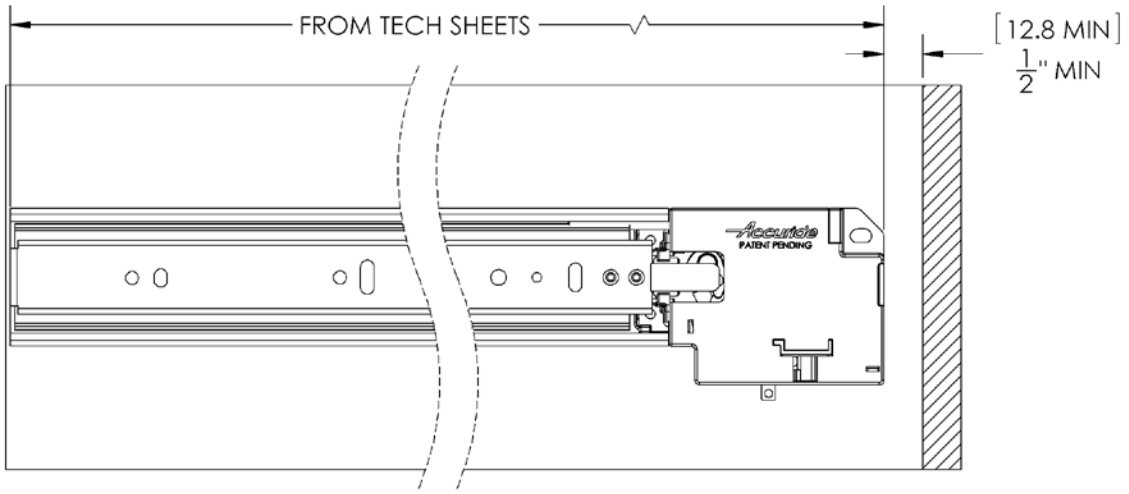


Figure 4.1: Senseon side mount slide cable clearance requirements

For all other information, please see the slide technical sheets

Senseon Undermount Slide – 3135 TREL, 3135 ECEL

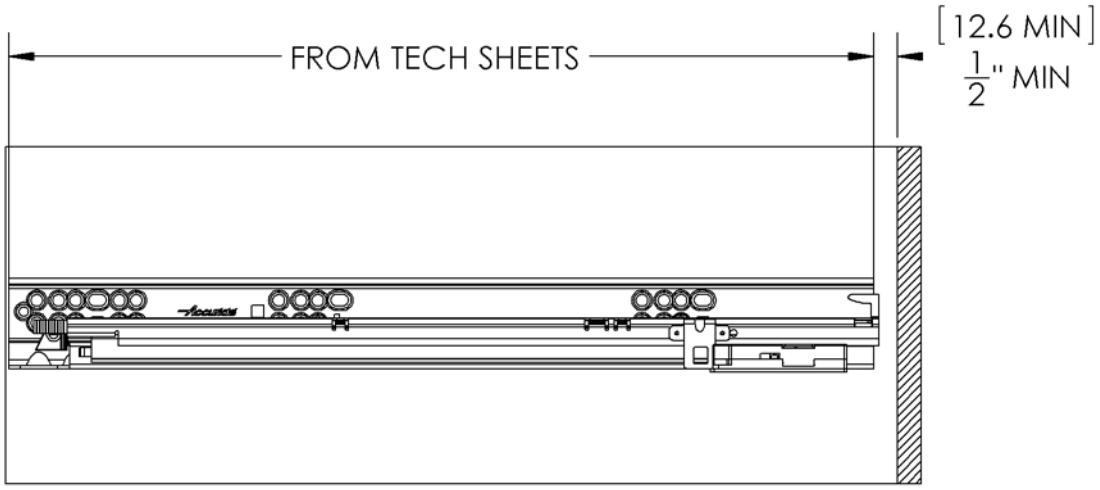


Figure 4.2: Senseon undermount slide cable clearance requirements

For all other information, please see the slide technical sheets

SECTION 5:
STAND ALONE E-LOCKS
10EL, 10TREL, 10ELAO

STAND ALONE E-LOCKS – 10EL, 10TREL, 10ELAO

Mounting Positions

Note: Frameless cabinetry is shown in the following figures. Although not shown, all stand alone E-lock positions are possible for face frame cabinetry as well, with mounting fixtures. Figure 5.3 shows how to mount a stand alone E-lock in a face frame cabinet.

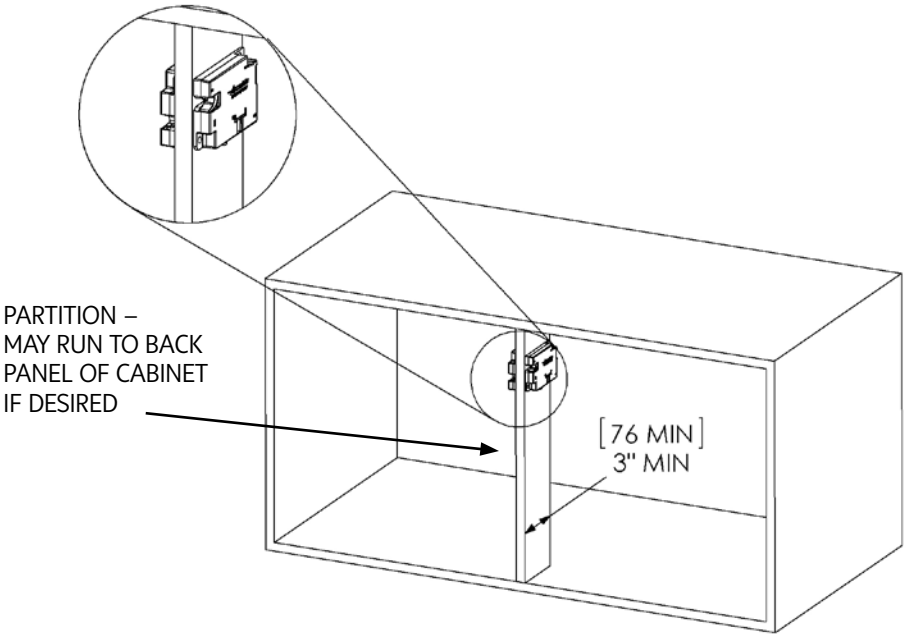


Figure 5.1: Stand alone E-lock side mounted

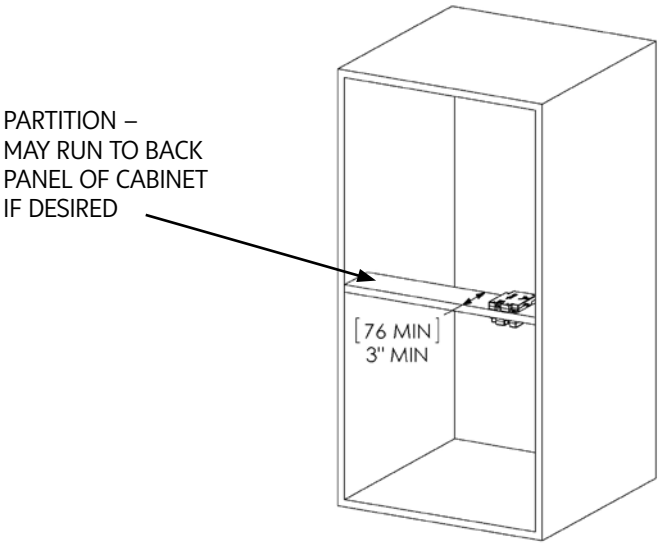


Figure 5.2: Stand alone E-lock flat mounted

Face Frame Mounting

Note: Stand alone E-locks need to be mounted flush to the inner edge of the cabinet opening. A mounting block is recommended to align the stand alone E-lock with the edge. See figure 5.3 for block dimensions.

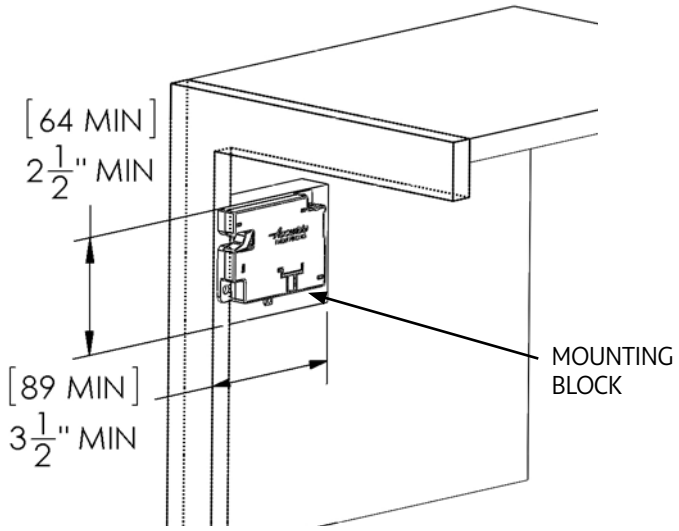


Figure 5.3: Stand alone lock in face frame cabinet

For more information, please see the technical sheets.

Cable Routing Options

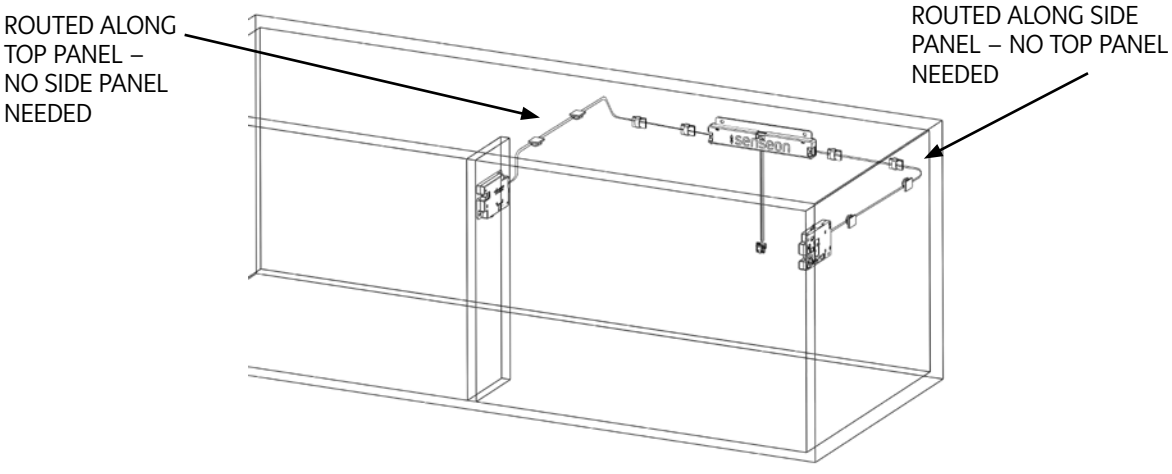
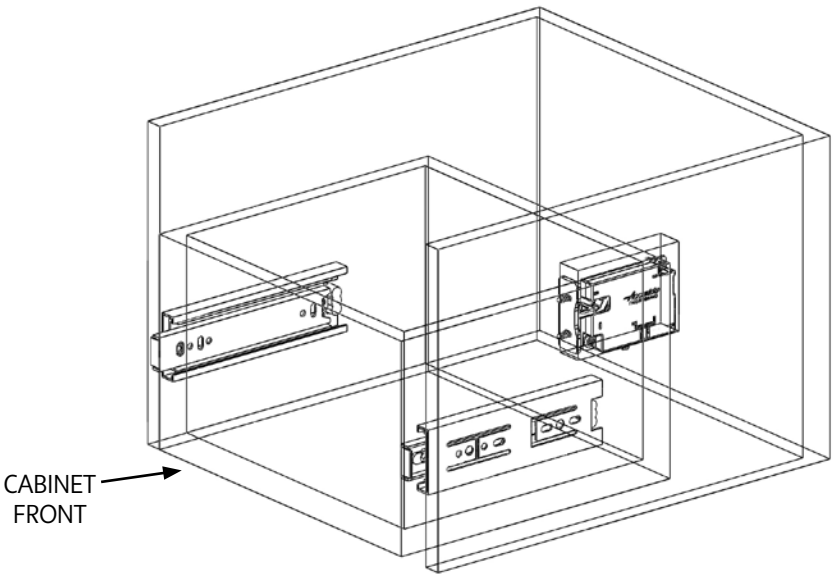


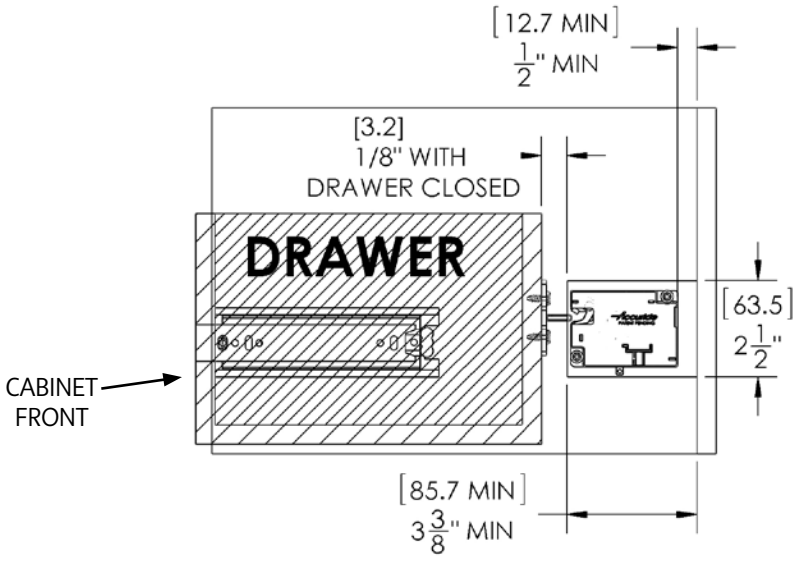
Figure 5.4: 10EL lock cable routing options

SECTION 6:
STAND ALONE E-LOCKS
USED WITH STANDARD DRAWER SLIDES

STAND ALONE E-LOCKS USED WITH STANDARD DRAWER SLIDES

Note: Side mount slides shown in examples. The stand alone E-lock is not restricted to only these. Undermount, or any other slide type, may also be used.





SIDE VIEW

Figure 5.5: Stand alone E-lock mounted vertically behind drawer

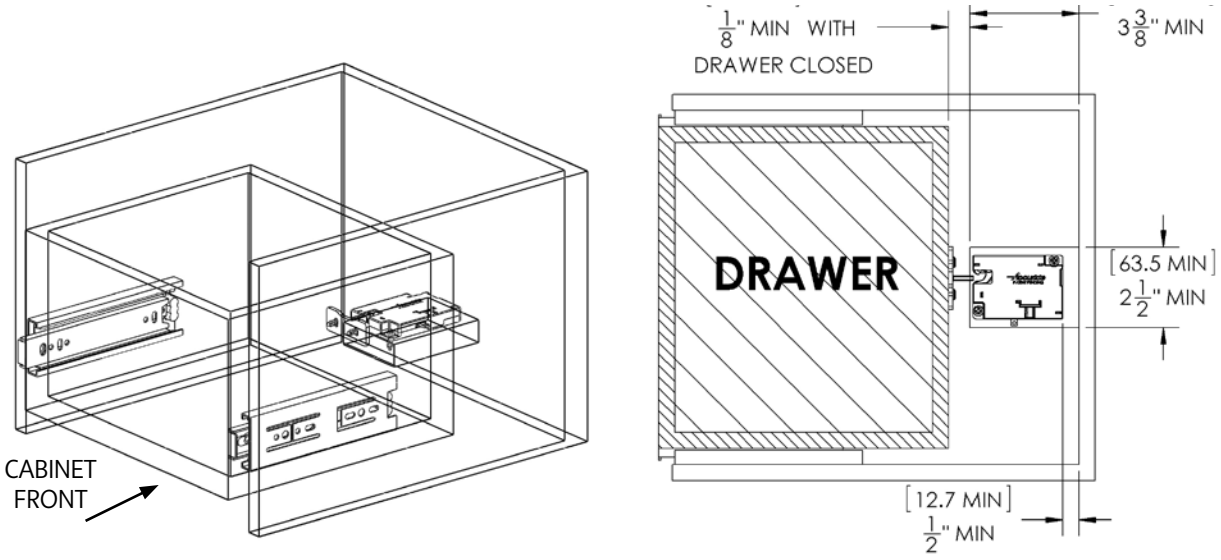


Figure 5.6: Stand alone E-lock mounted flat behind drawer

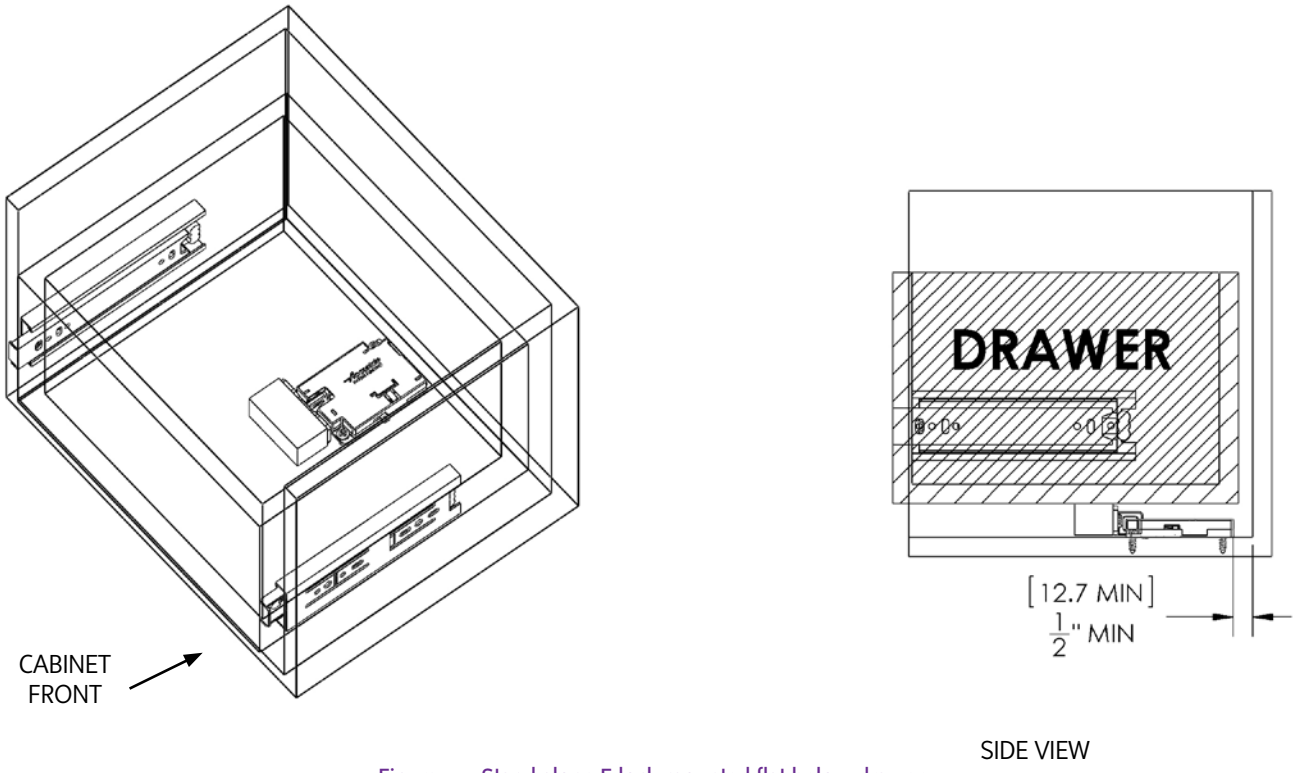


Figure 5.7: Stand alone E-lock mounted flat below drawer

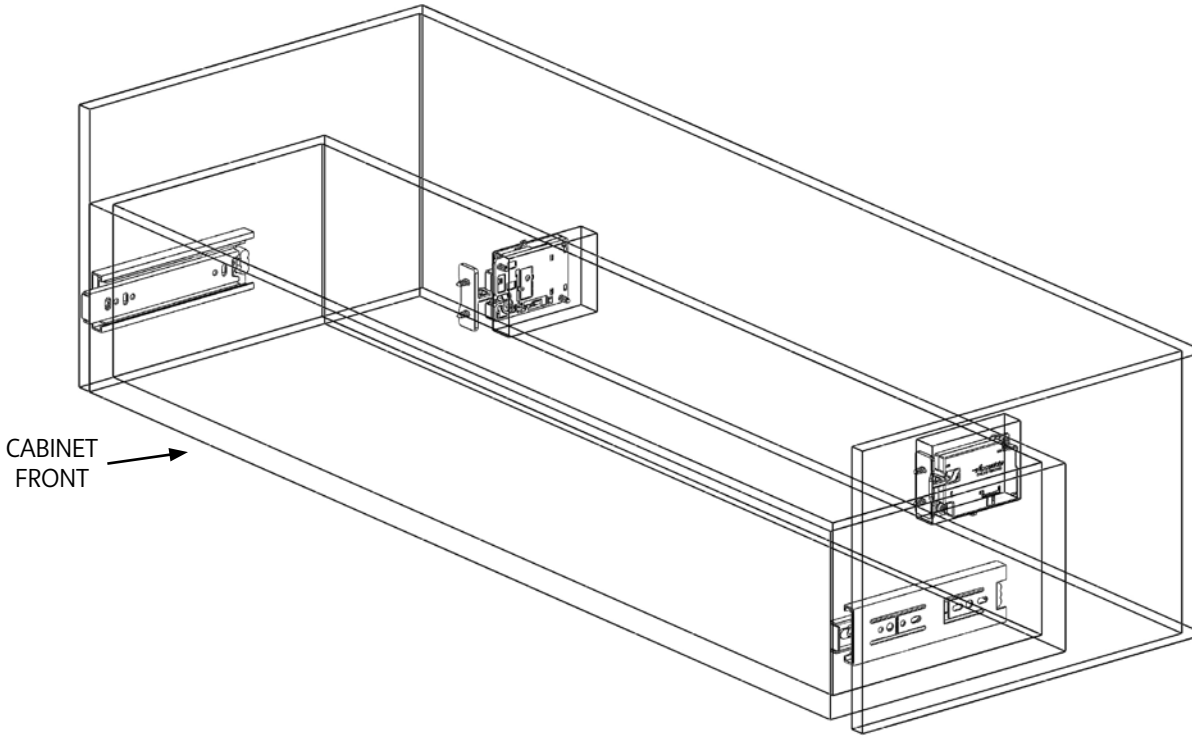


Figure 5.8: Two stand alone E-locks in a wide drawer application, mounted behind drawer

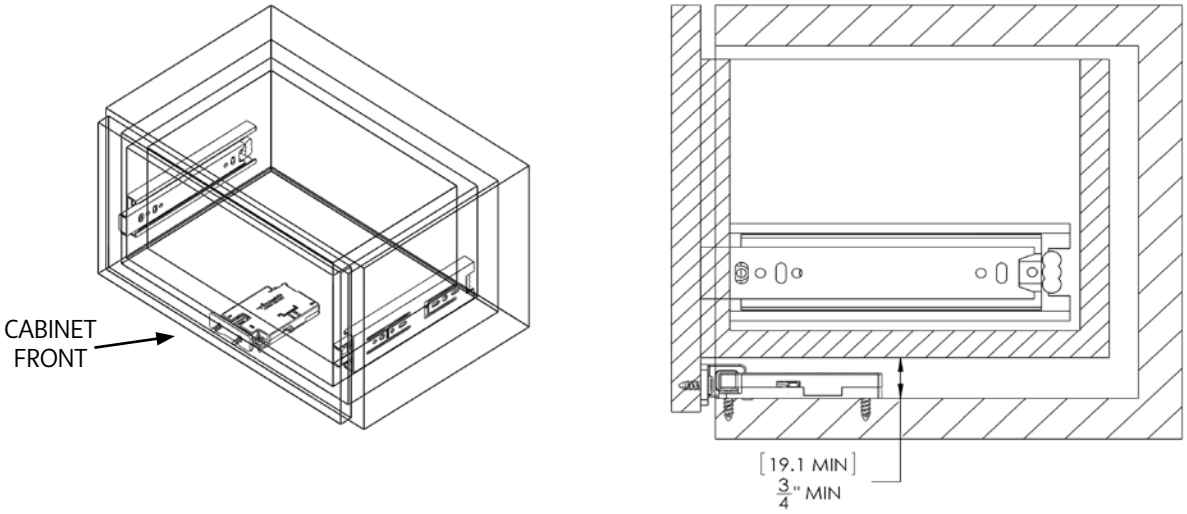


Figure 5.9: Stand alone E-lock mounted underneath drawer, latched to drawer front

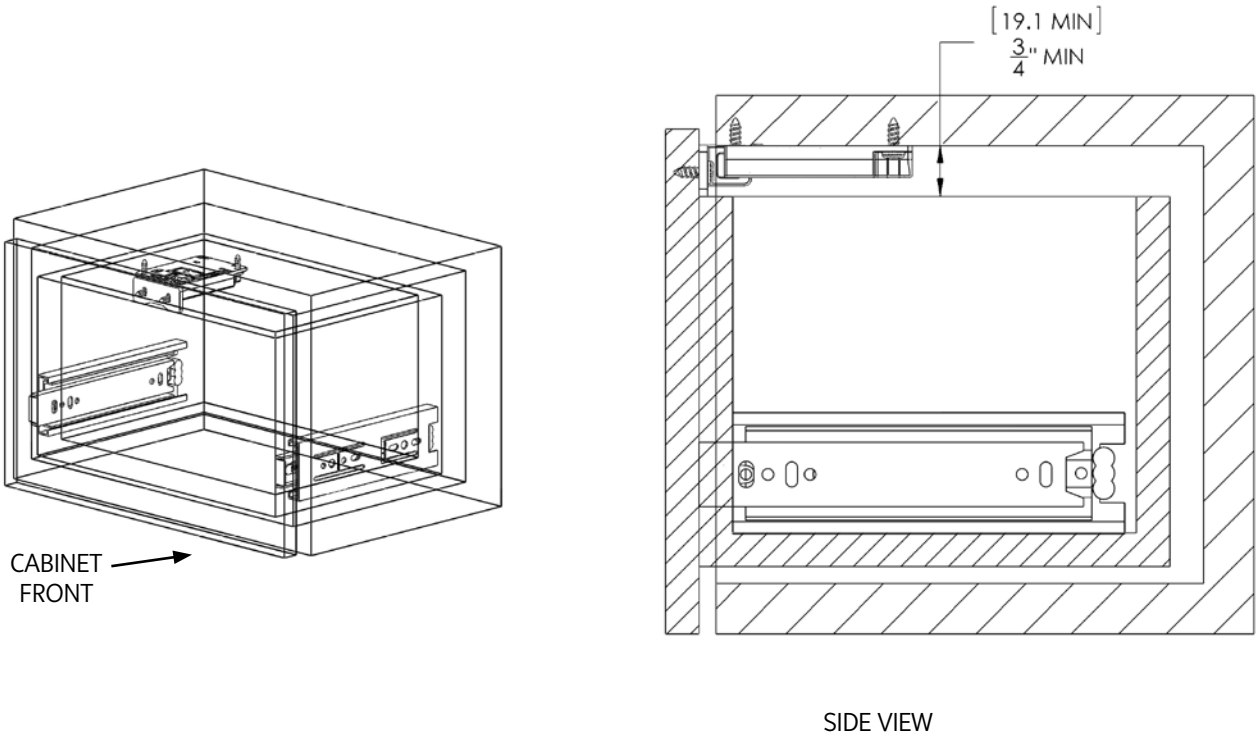


Figure 5.10: Stand alone E-lock mounted above drawer, latched to drawer front

SECTION 7:
CABLE ROUTING ACCESS EXAMPLES

CABLE ROUTING ACCESS EXAMPLES

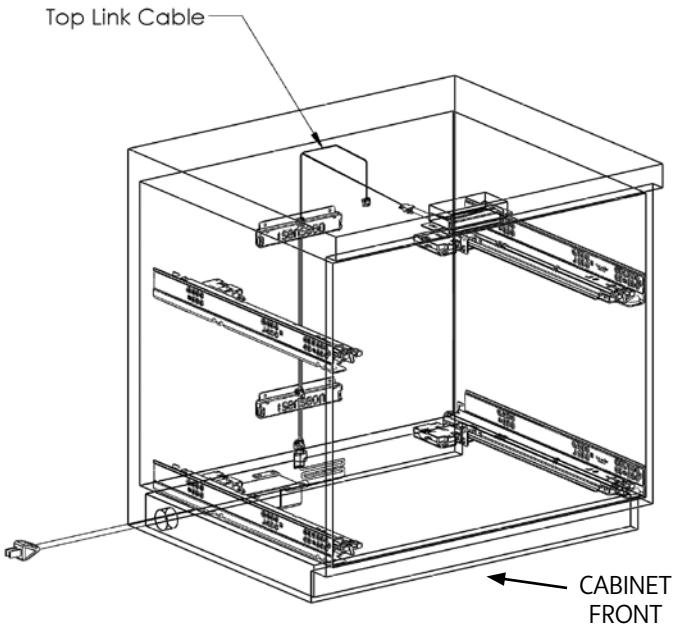


Figure 6.1: Two drawer cabinet, shown with Senseon undermount E-lock slides

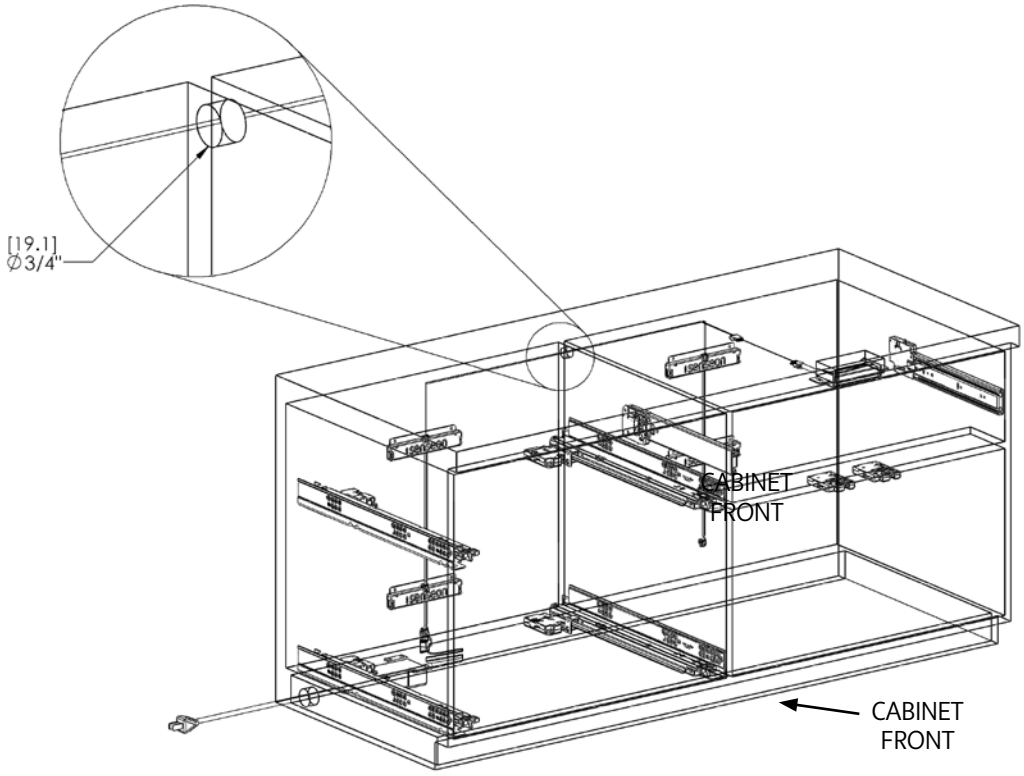


Figure 6.2: Two column cabinet, top link routing hole

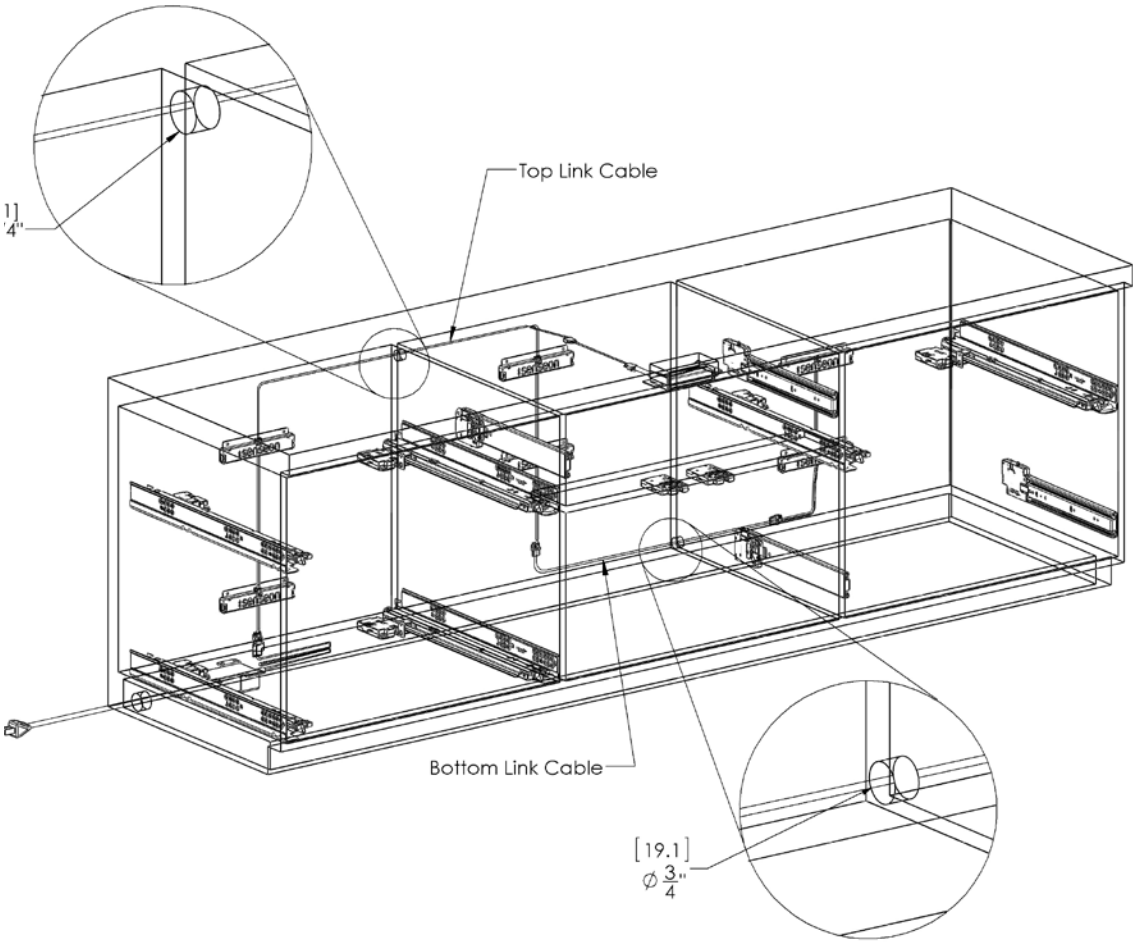


Figure 6.3: Three column cabinet showing top link and bottom link routing holes.

Cabinet is shown using both Senseon undermount slides and Senseon side mount slides.
There are also two door locks shown in the lower center opening in the cabinet.

SECTION 8:
MANUAL RELEASE

MANUAL RELEASE

All Senseon components are equipped with the same manual release method. This is done through a tab located on the side of the lock (figure 7.1) with a small hole. When the tab is pulled towards the front of the lock, the mechanism unlocks and the latched object is free to move.

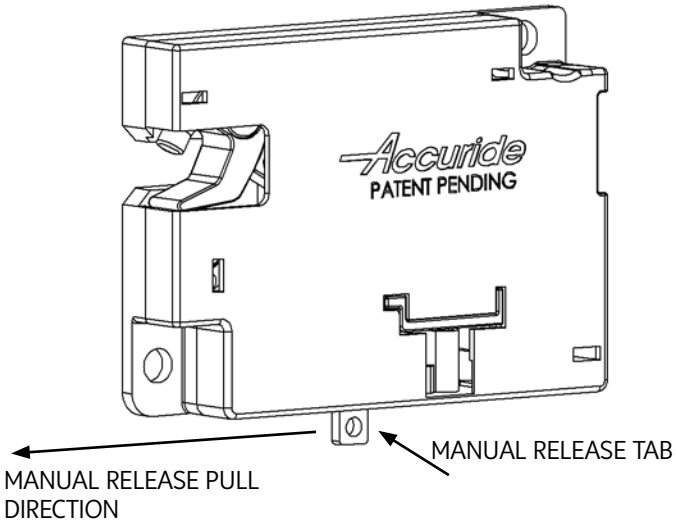


Figure 7.1: Lock and manual release pull direction

Accuride recommends using 50 lb. nylon line to attach to the manual release tab. Depending on the thickness of the line chosen, routing holes need to be added to the cabinet in order to route the line to an accessible location.

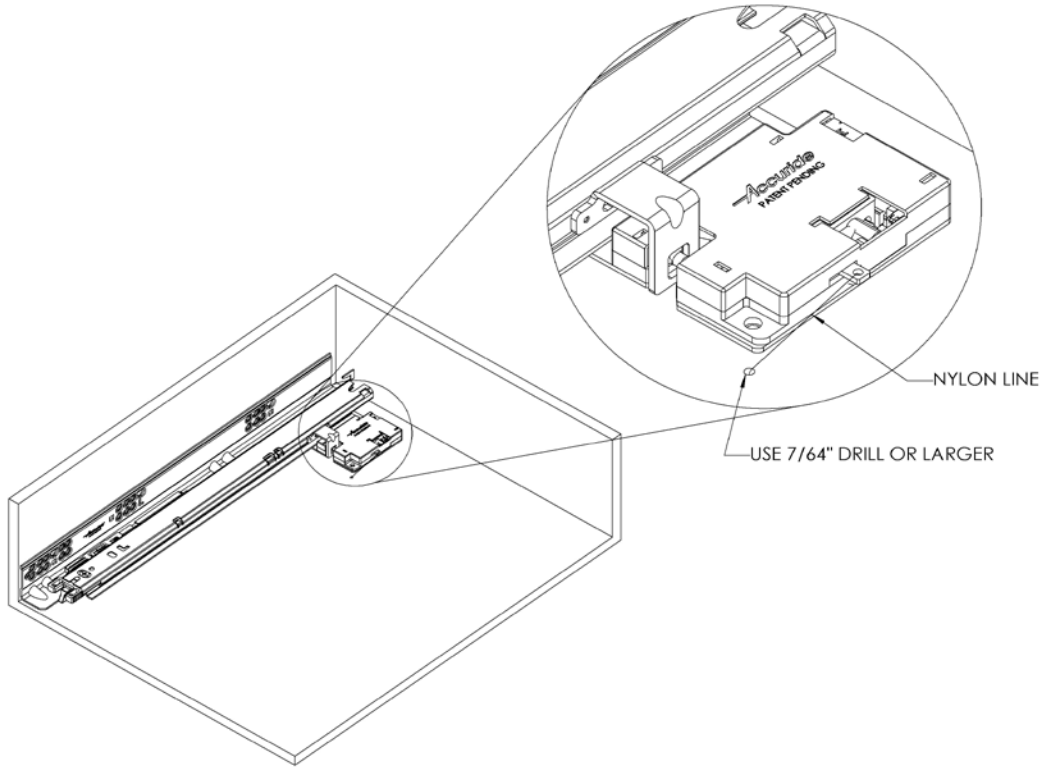


Figure 7.2: Nylon line routed from manual release

Partitions between openings are not required, but any lock separated in the cabinet by a partition must have a manual release line to unlock. Openings without partitions can be opened by moving the manual release tab by hand.

When routing the manual release, make sure the line is kept away from the slides and cannot get tangled inside the slide members.

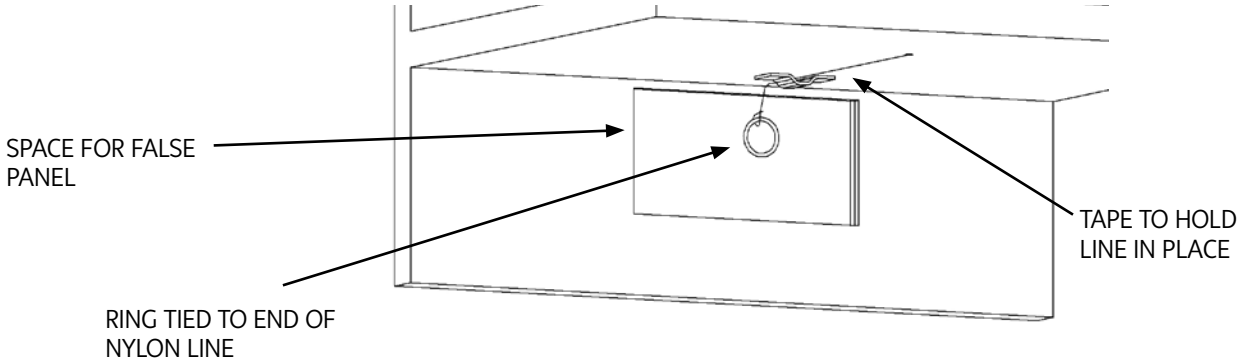


Figure 7.3: Nylon line end tied to ring, shown from below partition

NEED TO KNOW MORE?

For installation methods, see Senseon Installation Guide
For ordering instructions, see Senseon Ordering Guide
For further questions, see Senseon FAQs at accuride.com/en-us/markets-innovation/secure-access-control-systems

Still have questions? Please contact Senseon technical support at (800) 688-8242.

accuride.com/senseon

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