SARGENT®

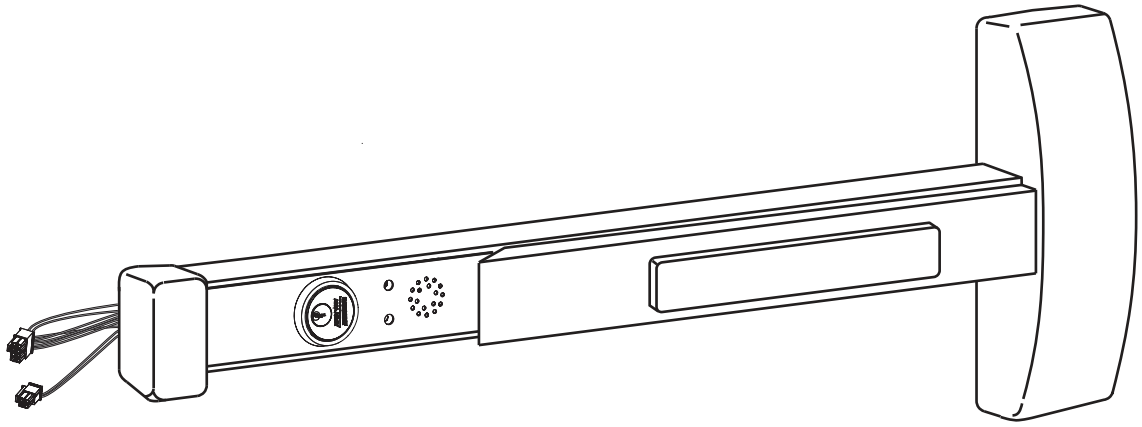
ASSA ABLOY

59-

Electroguard® Exit Device

Installation Instructions

ELECTRO LynX™



For installation assistance, contact SARGENT at 1-800-810-WIRE(9473)

A7690G

02/16

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ASSA ABLOY, the global leader in door opening solutions

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ElectroLynx®

As part of their promise to provide innovative, fast and effective, and higher security solutions to their customers, ASSA ABLOY Group companies offer ElectroLynx, a universal quick-connect system that simplifies the electrification of the door opening. ElectroLynx®is a registered trademark of ASSA ABLOY, Inc.

1 Warning

Changes or modifications to this device not expressly approved by ASSA ABLOY could void the user's authority to operate the equipment.

FCC:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada:

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareillage numérique de la classe B répond à toutes les exigences de l'interférence canadienne causant des règlements d'équipement. L'opération est sujette aux deux conditions suivantes: (1) ce dispositif peut ne pas causer l'interférence nocive, et (2) ce dispositif doit accepter n'importe quelle interférence reçue, y compris l'interférence qui peut causer l'opération peu désirée.

"This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter."

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and SARGENT Manufacturing makes no representations or warranties concerning what such impact may be in any specific situation. When retrofitting any portion of an existing fire rated opening, or specifying and installing a new fire-rated opening, please consult with a code specialist or local code official (Authority Having Jurisdiction) to ensure compliance with all applicable codes and ratings.

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02/29/16

2 General Description

The **SARGENT 59- Electroguard E**xit Device is designed for areas which require a delayed egress with a door alarm when any attempt is made to violate the door. The Electroguard can be tied into a fire alarm system, indicate latchbolt status and control an alarm at a remote location when the door is in violation.
NOTE: Proper connections and appropriate peripheral hardware are required.

BC-Prefix Option

The BC prefix for Electroguard indicates that the unit has been programmed to comply with the section of the BOCA code relating to delayed egress.

BOCA allows for automatic reset of the delayed egress unit. Under BOCA, the unit can automatically reset thirty (30) seconds after the door has been cycled. If the door is opened any time during the thirty (30) seconds, the timer in the unit resets and waits another thirty (30) seconds before rearming. This requires a door position switch.

Note: If a door position switch is not used (Blue wire connected to Black wire), the unit will automatically reset in 30 seconds.

Electrical Specifications

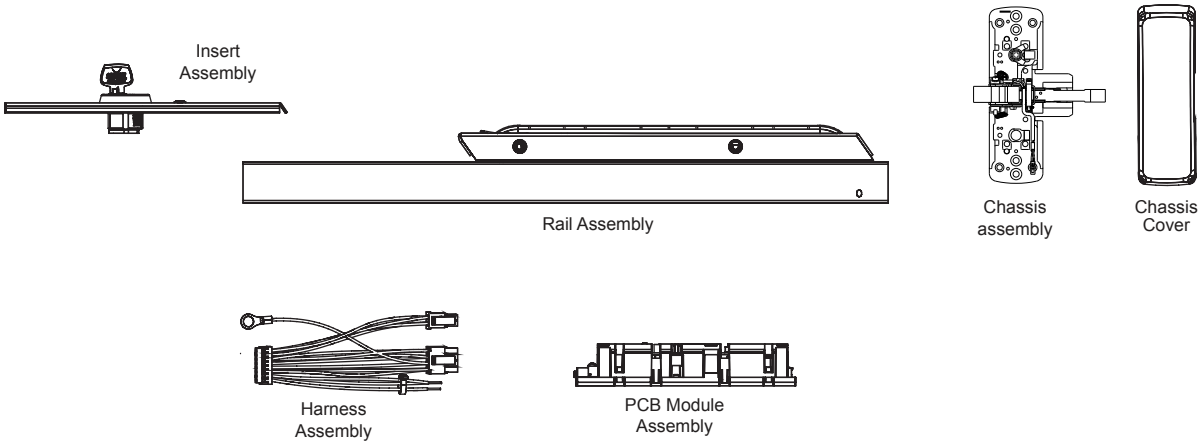
- Input Voltage: 24VDC +/- 15% (20.4 - 27.6VDC) regulated/filtered
- Power Consumption @ 24VDC:
    - 60 mA (typical) Disarmed
    - 150 mA (typical, unloaded) Armed
    - 180 mA (typical) Delayed Egress Mode
    - 250 mA (max, loaded) with Optional Features
- Output Relays: Form C, 1 Amp 24VDC
- Operating Temp: 0°C to 49°C (32°F to 120°F)

All components must be installed according to prevailing electrical codes.

There are no user-serviceable parts on the Electroguard PCB module assembly.

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3 Parts Breakdown



Part No.	Description
52-1292	Harness Assembly - “E” and “F” size rails
52-1293	Harness Assembly - “J” and “G” size rails
52-4837	PCB Module Replacement Pack - Standard
52-4838	PCB Module Replacement Pack - BOCA (BC prefix)
Consult factory	Rail Assembly
Consult factory	Chassis Assembly
Consult factory	Insert Assembly
Consult factory	Chassis Cover
52-2204	Latchbolt Harness and Switch Assembly for 59-8800 and 8500 Rim Devices
52-2217	Surface Vertical Rod Harness and Switch Assembly for 59-8700 Devices
52-2220	Concealed Vertical Rod Harness and Switch Assembly for 59-8600 and 8400 Devices
52-2224	Latchbolt Harness and Switch Assembly for 59-8900 and 8300 Mortise Devices

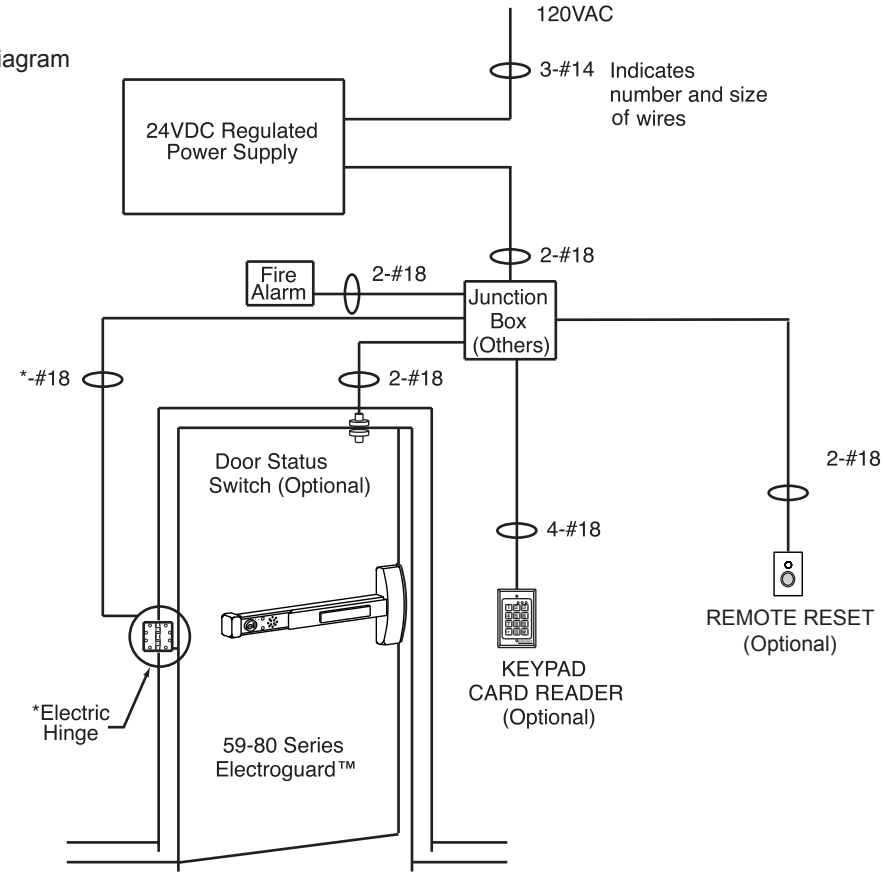
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4 Installation Instructions

1. Determine locations of components at the door.
2. Mount all hardware and peripheral equipment according to manufacturer's instructions.

   NOTE: For exit device mechanical installation, refer to mechanical instruction sheets and templates included with product.
3. Power supply should be mounted near door to avoid power drop due to excessive wire runs.
4. Features used will determine wire requirements of electric hinge or other power transfer*.

Sample Elevation Diagram

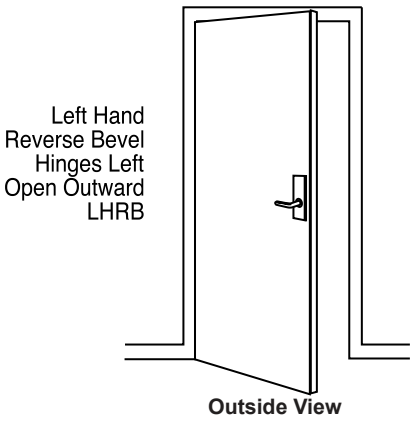


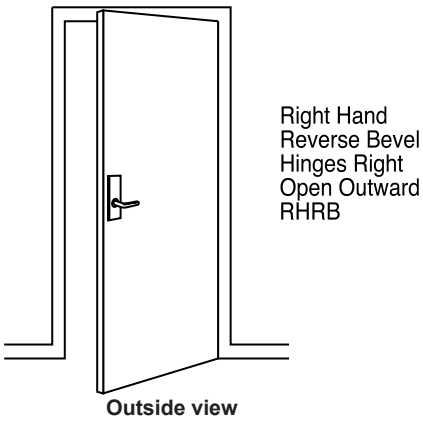
Refer to specific mechanical instructions for proper installation of 59- 80 Series (Electroguard) exit devices.

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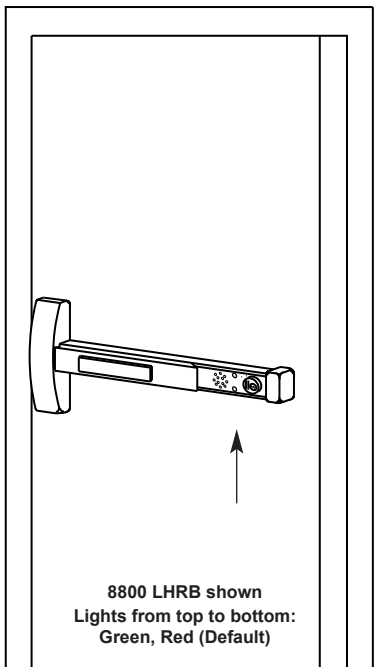
4 Installation Instructions (Continued)

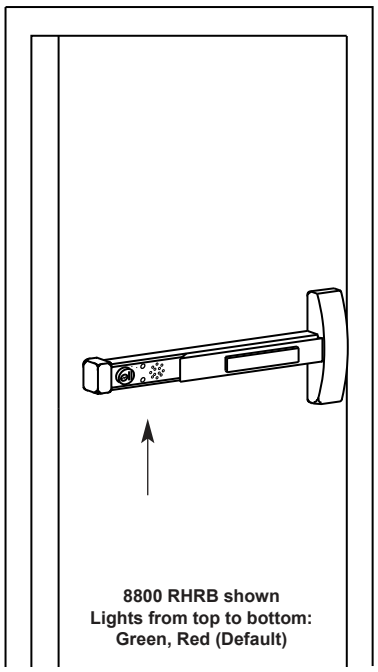
Verify hand and bevel of door. Exit devices are always reverse bevel and are mounted on the inside of the door.





On inside of door, exit devices are oriented as follows:





All subsequent illustrations in this document are shown as RHRB

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4 Installation Instructions (Continued)

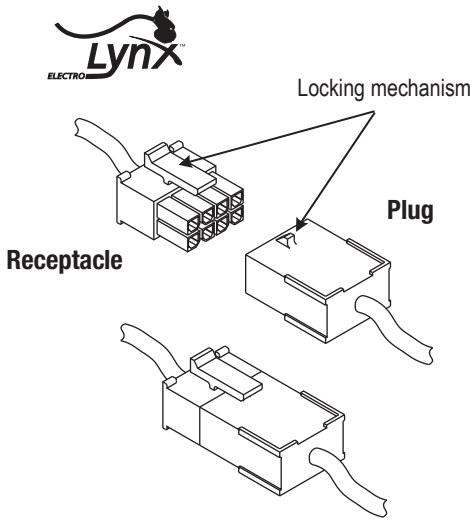
ElectroLynx® Connector System Notes:

The system is designed to be installation friendly with pluggable connectors from the electric hinge through the door to the rail. The only wiring required is to the flying leads on the pigtail harness assembly on the frame side of the electric hinge.

IMPORTANT:

The plug and receptacle connectors are designed to mate and lock together as shown in the figure. Plug the connectors into each other with the locking mechanism aligned as indicated.

Do NOT force connectors on any other way.



59- Electroguard Exit Device - ElectroLynx Wiring Notes (Consult factory for assistance if required).

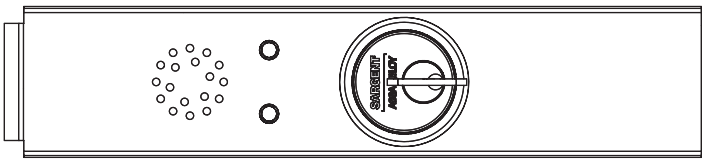
1. The ElectroLynx connector system is designed to be installation friendly with pluggable connectors from the electric hinge through the door to the rail. The rail, raceway, electric hinge, and pigtail harness connector terminations and wire colors all match.
2. For most applications, an 8-pin electric hinge is required.
3. A 12-pin (8 & 4-pin) electric hinge is required for all three remote alarm relay (RAR) contacts or latch bolt monitoring (LBM) or Gang.
4. If Gang is required, a connection choice should be made depending on which rail wires are unused leading to the 8- and 4-pin door side electric hinge. When determined, cut those wires from the door side electric hinge connector and hard wire from the raceway to the cut electric hinge wires.
5. Plug raceway connectors into ElectroLynx hinge connectors. Hard wire to corresponding pigtail harness wires as required.

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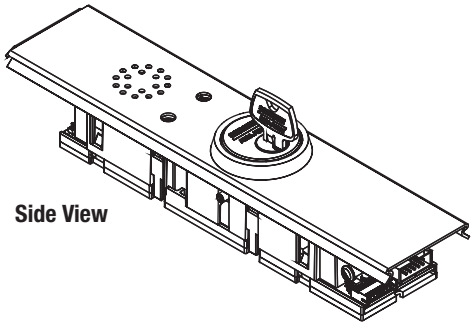
4 Installation Instructions (Continued)

Cylinder Installation

1. Prepare door according to template(s) and instructions supplied with exit device.
2. Verify cylinder (size varies; consult factory) is installed in rail insert with collar prior to installing exit device on door.



Top View of Insert

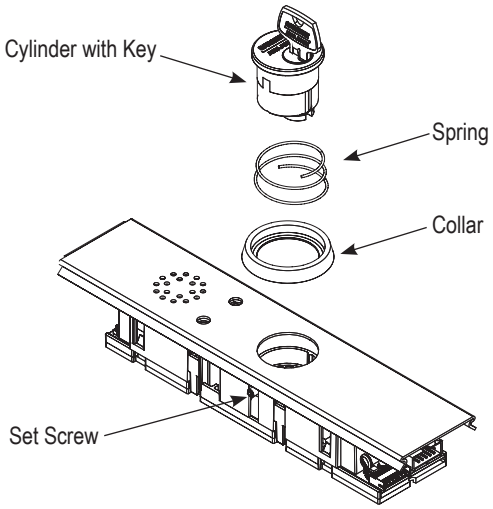


Side View

To Remove/Replace Cylinder

1. Ensure power is disconnected.
2. Loosen set screw by turning counter-clockwise using 5/64" allen wrench.
3. Extract and slide cylinder through spring and collar.

Note: When replacing cylinder, slide cylinder through spring then collar, taking care to orient cylinder as shown. Hold cylinder into proper position and slowly tighten set screw until cylinder is securely held by set screw. Do NOT overtighten set screw.

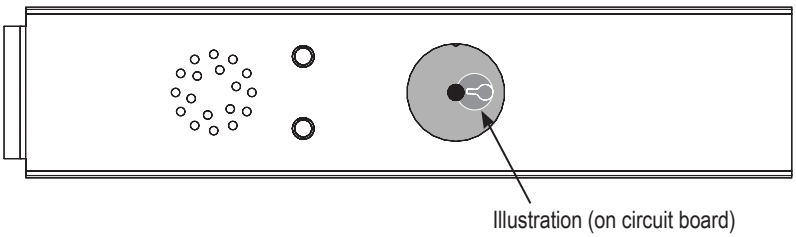


Cylinder Orientation

See illustration on circuit board for correct orientation of cylinder when installing.

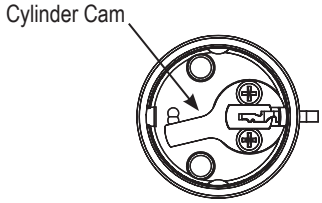
Note that proper position of cam allows for removal of key.

Top View with cylinder removed





Top of Cylinder



Bottom of Cylinder

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4 Installation Instructions (Continued)

Installation Notes:

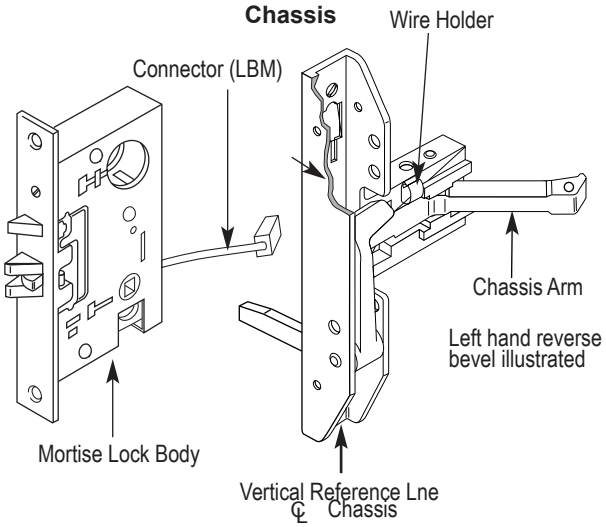
1. With new applications, a raceway harness with 8 & 4-pin connectors will be pre-installed inside the door by ASSA ABLOY door manufacturer when specified during the ordering process. Raceway harness kits are also available for retrofit applications. (For retrofit applications, refer to retrofit instructions).
2. If door does not have a raceway harness with connectors, either consult factory for raceway retrofit kit or cut connectors off product and hard wire, as required.
3. Wiring to pigtail harness is per facility wiring requirement. The rail, raceway, electric hinge and pigtail connector (- +) terminations and wire colors all match.

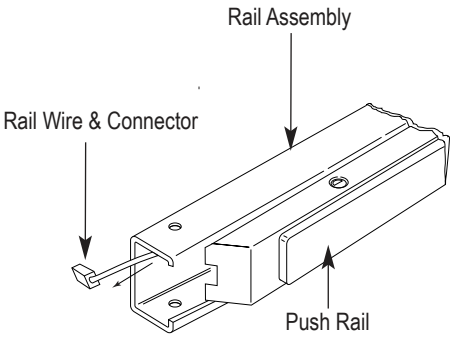
A. Installing 59-8300/12-59-8300 Series Mortise Lock Exit Device

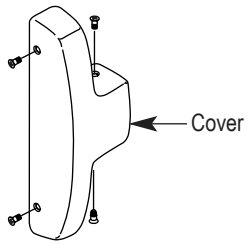
CAUTION – BEFORE STARTING:

- Check hand of door (This exit device is handed and not reversible)
- Door should be fitted and hung
- Verify box label for size of exit device, function and hand

IMPORTANT: Surface of door where exit device is to be applied must be flush. Clear away any raised projections to allow exit device to rest on flat surface of door.



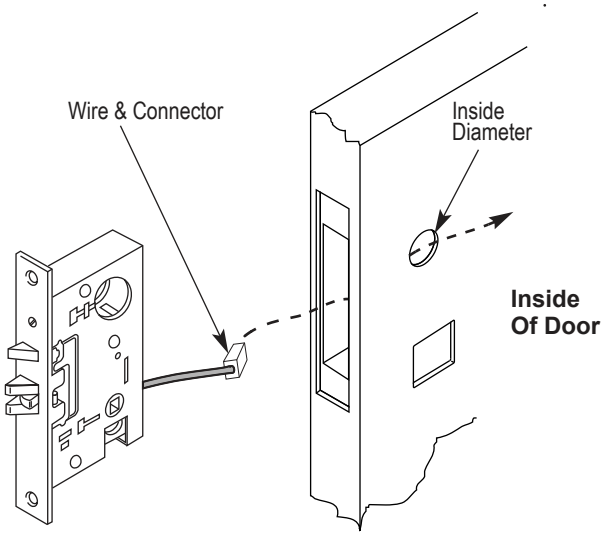




PREPARE DOOR AND MOUNT LOCK

Refer to Instruction sheet A6696

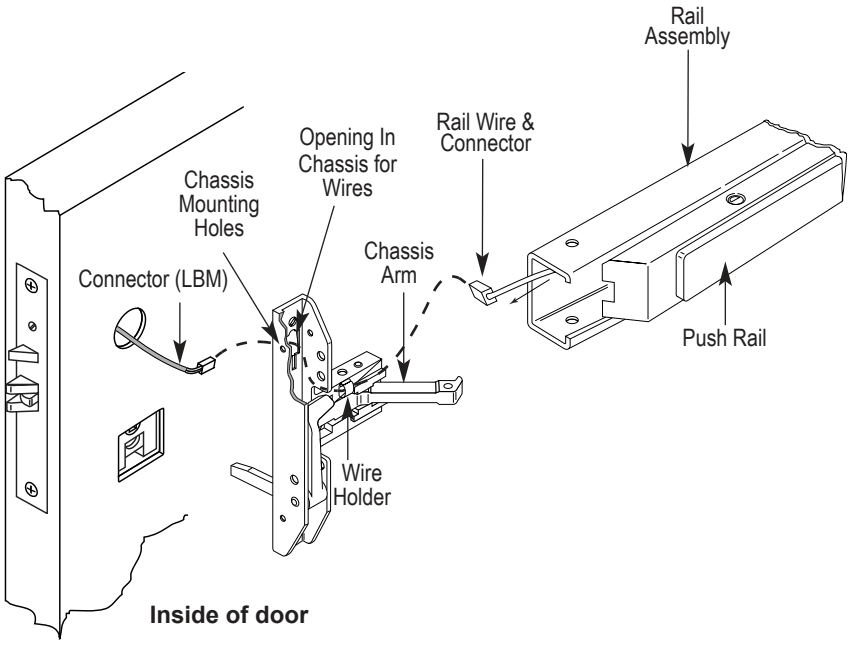
1. Feed wire and connector through the mortise opening and out the inside diameter.

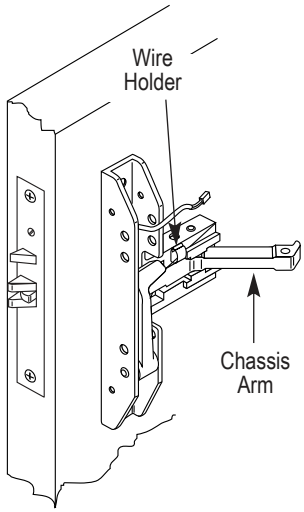


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4 Installation Instructions (Continued)

A. Installing 59-8300/12-59-8300 Series Mortise Lock Exit Device (continued)





ATTACH CHASSIS

1. Feed wire and connector through chassis as shown and mount chassis.
2. Depress chassis arm and slide rail assembly onto chassis, capturing the wire from the rail assembly in the wire holder.
3. Snap the wire connectors together and gather the excess wire in the top section of the chassis. Wire tie excess in place.
4. Finish installation per instruction sheet A6696 and Section 10 within this manual.

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4 Installation Instructions (Continued)

B. Installing 59-8400/12-59-MD8400 Narrow Design Concealed Vertical Rod Exit Device

CAUTION – BEFORE STARTING:

- Check hand of door
  (This exit device is handed and not reversible)
- Door should be fitted and hung
- Verify box label for size of exit device, function and hand

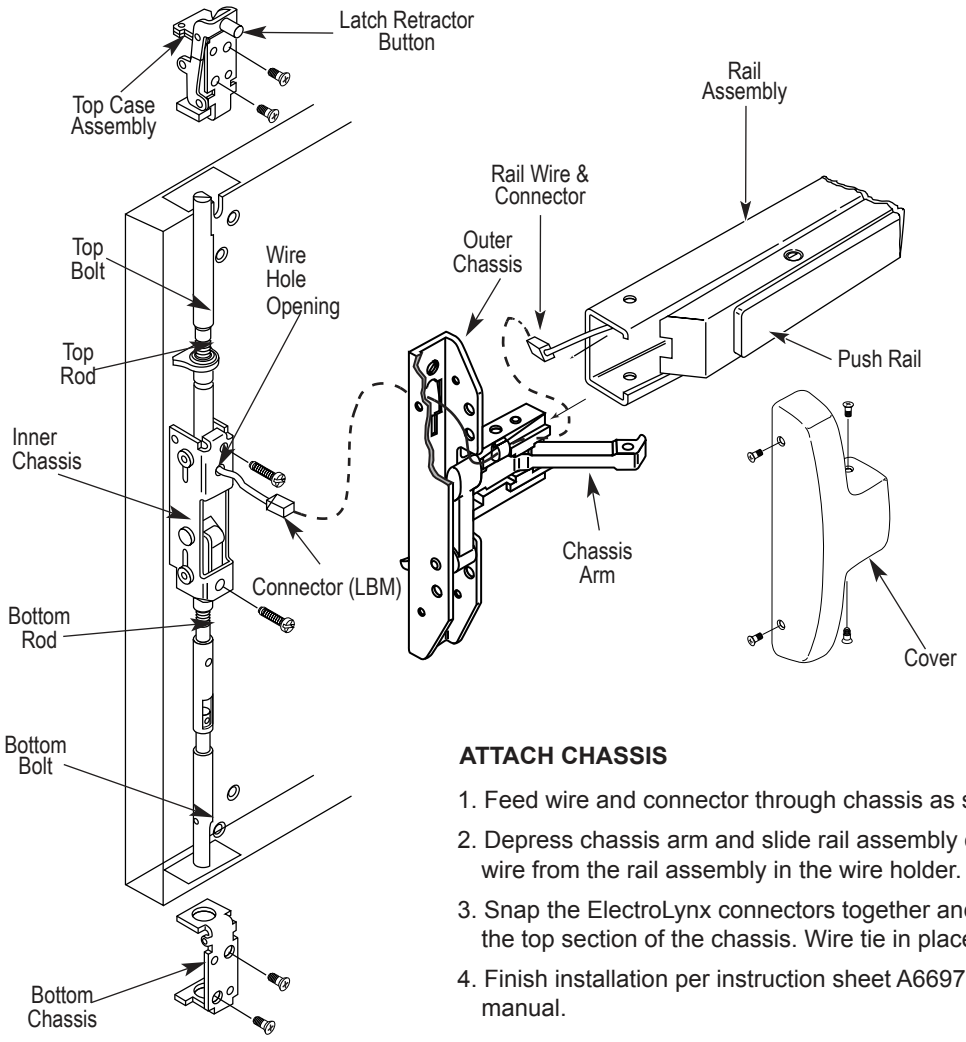
IMPORTANT: Surface of door where exit device is to be applied must be flush. Clear away any raised projections to allow exit device to rest on flat surface of door.

PREPARE DOOR – Refer to Instruction sheet A6697

INSTALLING RODS INTO DOOR

1. Screw top rod and bottom rod into inner chassis and slide this assembly into the door being careful not to damage wire and connector.
2. Slide wire and connector through the wire opening in door.
3. Attach the inner chassis to the door with (2) Fillister head screws. Refer to Instruction A6697.

NOTE: If 700 ET Series Control is used, mount ET control next



ATTACH CHASSIS

1. Feed wire and connector through chassis as shown and mount chassis.
2. Depress chassis arm and slide rail assembly onto chassis, capturing the wire from the rail assembly in the wire holder.
3. Snap the ElectroLynx connectors together and gather the excess wire in the top section of the chassis. Wire tie in place.
4. Finish installation per instruction sheet A6697 and Section 10 within this manual.

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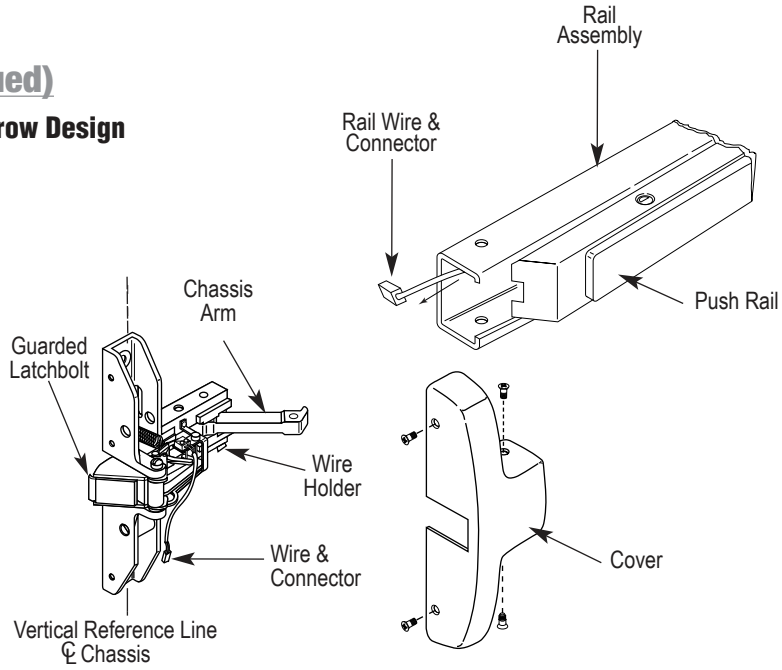
4 Installation Instructions (Continued)

C. Installing 59-8500/12-59-8500 Series Narrow Design Rim Exit Device

CAUTION – BEFORE STARTING:

- Check hand of door (This device is handed and not reversible)
- Door should be fitted and hung
- Verify box label for size of exit device, function and hand
- Install mullion in frame if used

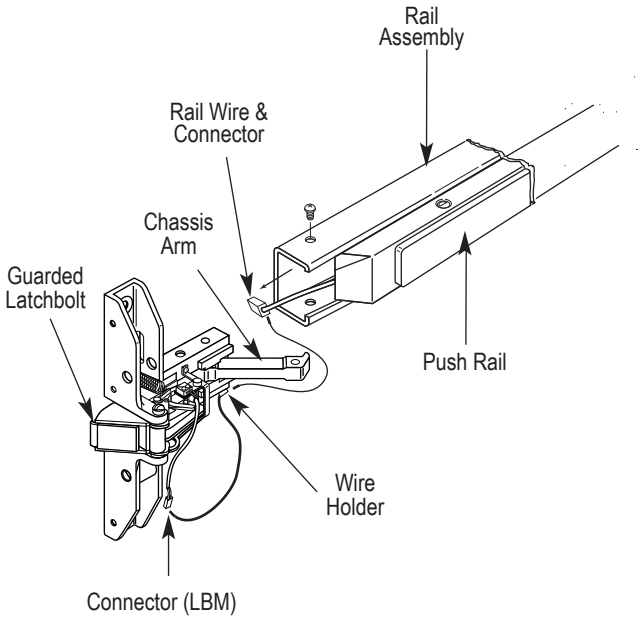
IMPORTANT: Surface of door where exit device is to be applied must be flush. Clear away any raised projections to allow exit device to rest on flat surface of door.

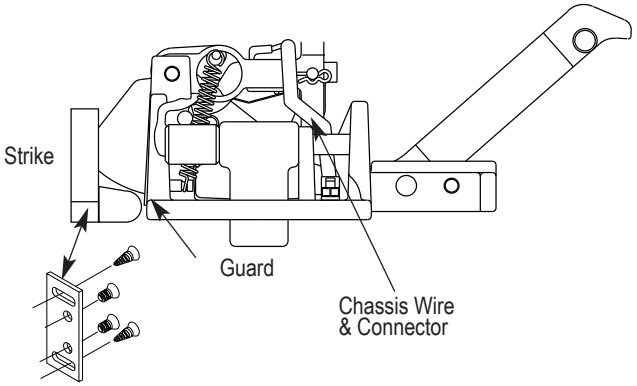


ATTACH RAIL ASSEMBLY

1. Depress chassis arm and slide rail assembly onto chassis capturing the wire from the rail assembly in the wire holder. Mount chassis.
2. Feed the rail wire along the same path as the chassis wire and snap the ElectroLynx connectors together. Wire tie excess in bottom of chassis.
3. Apply covers.

Refer to Instruction sheet A6699





APPLY STRIKE–CRITICAL TO MAINTAIN GUARDING OF LATCHBOLT

1. Determine proper position of strike by closing door after mounting chassis and rail. Position strike on frame or mullion, so that the latchbolt is extended/ engaged but the guard is held retracted. Mark location of slotted holes and drill and tap (2) holes for the oval head screws.
2. For the 59-8500 hardware, fasten the strike to the frame or mullion with (2) star washers in between strike and frame and tighten (2) screws. **Ensure guard remains retracted when door is closed.**
3. For the 12-59-8500 hardware, attach the strike to the frame or mullion with (2) oval head screws.
4. **Check strike placement again by closing door and ensuring the guard is held retracted** (latchbolt guarded). Drill and tap (2) holes for round head screws and fasten strike in place.
5. Ensure latchbolt is guarded by depressing it. The latchbolt must fully project/extend when the door is closed for the guarding to work. Finish installation per instruction sheet A6699 and Section 10 within this manual.

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4 Installation Instructions (Continued)

D. Installing 59-WD8600/12-59-WD8600 Concealed Vertical Rod Exit Devices

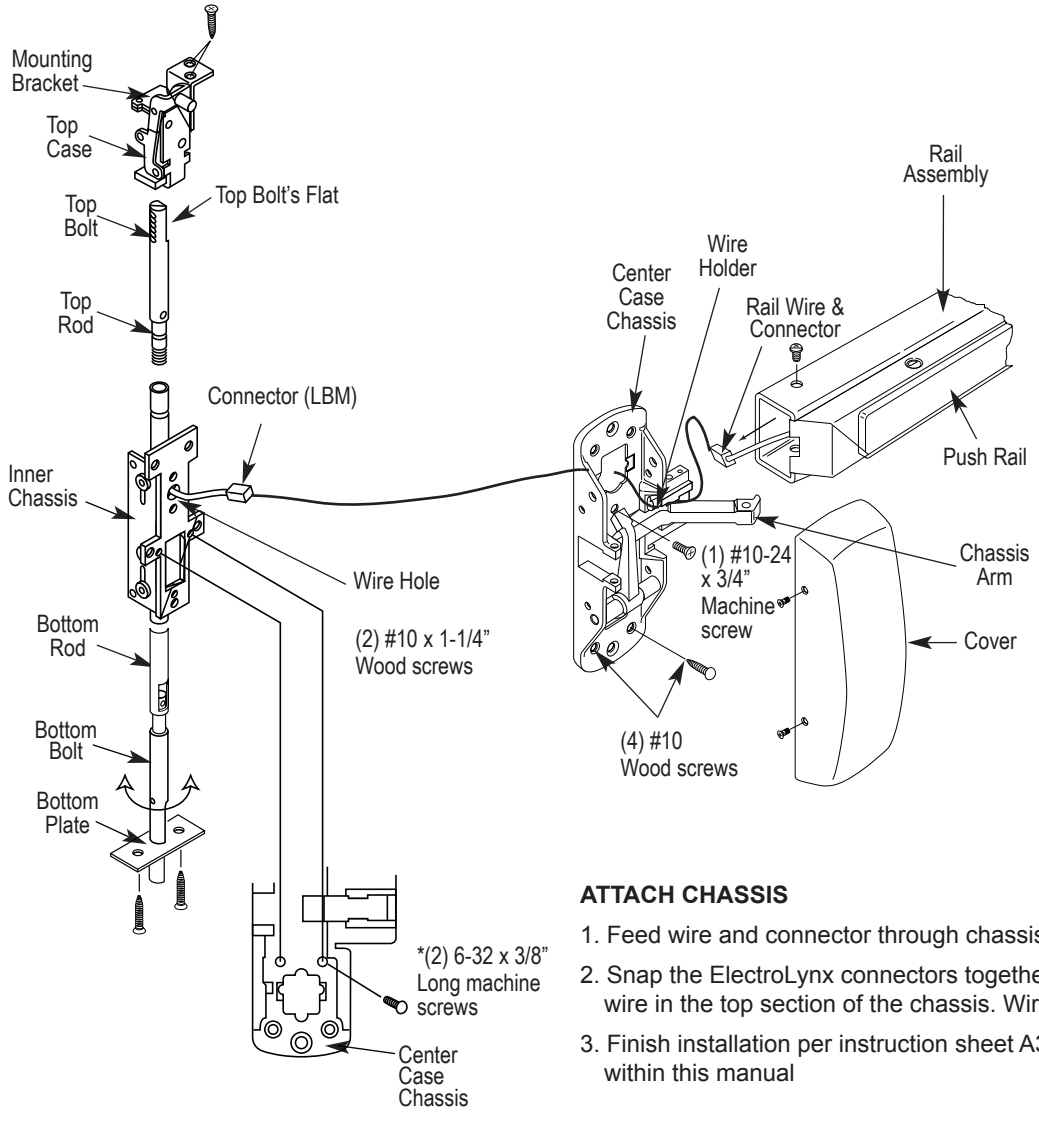
CAUTION – BEFORE STARTING:

- Check hand of door (This device is handed and not reversible)
- Door should be fitted and hung
- Verify box label for size of exit device, function and hand

IMPORTANT: Surface of door where exit device is to be applied must be flush. Clear away any raised projections to allow exit device to rest on flat surface of door.

PREPARE DOOR AND INSTALL RODS INTO DOOR

Refer to Instruction sheet A3937



ATTACH CHASSIS

1. Feed wire and connector through chassis as shown. Mount chassis.
2. Snap the ElectroLynx connectors together and gather the excess wire in the top section of the chassis. Wire tie in place.
3. Finish installation per instruction sheet A3937 and Section 10 within this manual

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4 Installation Instructions (Continued)

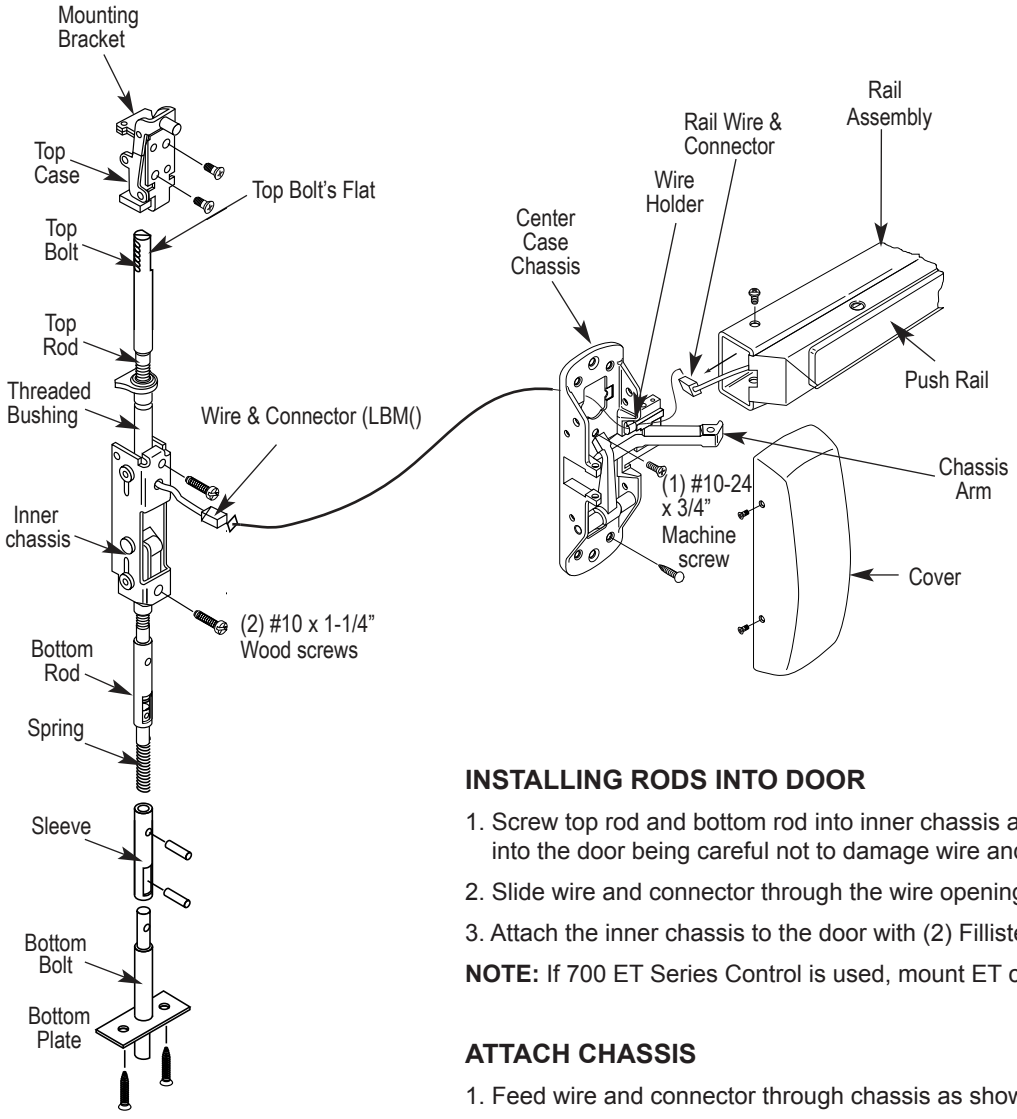
E. Installing 59-MD8600/12-59-MD8600 Concealed Vertical Rod Exit Devices

CAUTION – BEFORE STARTING:

- Check hand of door (This device is handed and not reversible)
- Door should be fitted and hung
- Verify box label for size of exit device, function and hand

IMPORTANT: Surface of door where exit device is to be applied must be flush. Clear away any raised projections to allow exit device to rest on flat surface of door.

PREPARE DOOR and install rods and chassis – Refer to Instruction sheet A7002



INSTALLING RODS INTO DOOR

1. Screw top rod and bottom rod into inner chassis and slide this assembly into the door being careful not to damage wire and connector.
2. Slide wire and connector through the wire opening in the door.
3. Attach the inner chassis to the door with (2) Fillister head screws.

NOTE: If 700 ET Series Control is used, mount ET control next.

ATTACH CHASSIS

1. Feed wire and connector through chassis as shown. Mount chassis.
2. Snap the Electrolynx connectors together and gather excess wire in the top section of the chassis. Wire tie in place.
3. Finish installation per instruction sheet A7002 manual.

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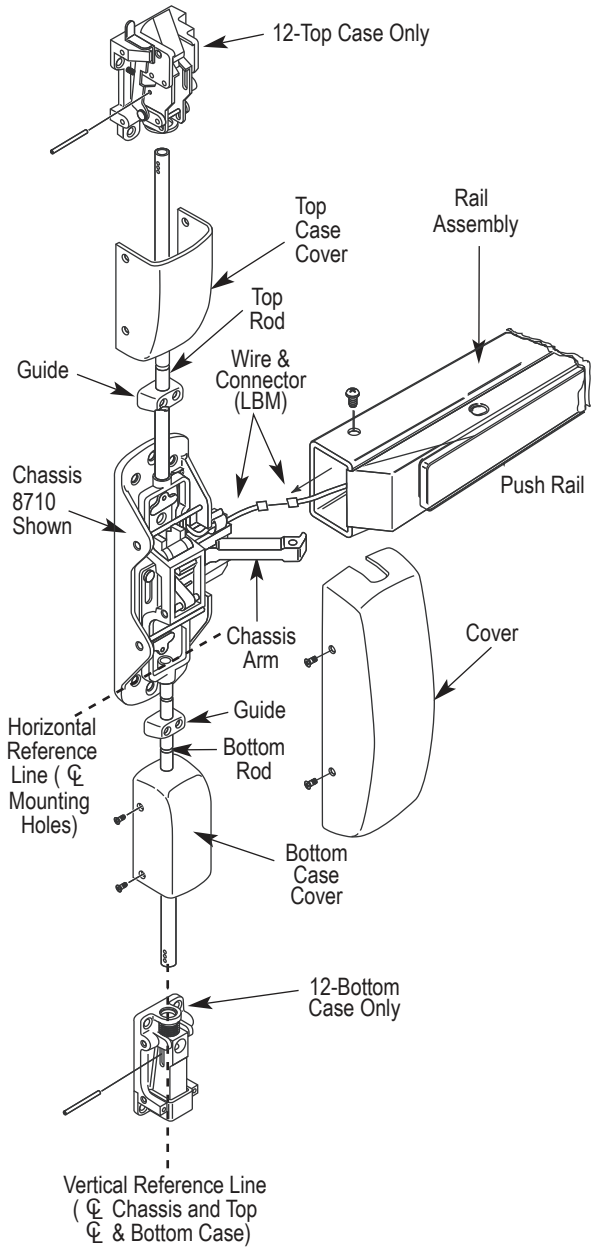
4 Installation Instructions (Continued)

F. Installing 59-8700/12-59-8700 Series Vertical Rod Exit Device

CAUTION – BEFORE STARTING:

- Check hand of door (This device is handed and not reversible)
- Door should be fitted and hung
- Verify box label for size of exit device, function and hand

PREPARE DOOR and install rods and chassis.
Refer to Instruction sheet A6701



IMPORTANT: Surface of door where exit device is to be applied must be flush. Clear away any raised projections to allow exit device to rest on flat surface of door.

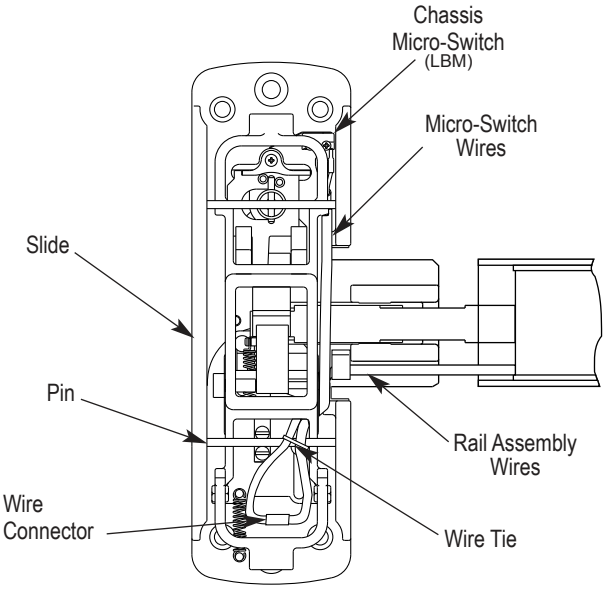
ATTACH CHASSIS

1. Feed wire and connector through chassis as shown. Mount chassis.
2. Snap the Electrolynx connectors together and gather excess wire in the top section of the chassis. Wire tie in place.

ATTACH RAIL ASSEMBLY

1. Depressing the arm on the chassis, slide the rail assembly onto the chassis.

NOTE: Be careful to have the rail assembly wire and connector as shown below on the chassis.



CONNECTING THE WIRES

1. Switch wires follow the inside edge of the chassis (as shown) and then go on top of pin.
2. The wire from the rail assembly starts under the slide and then joins the other wire on top of pin.
3. Connect ElectroLynx connectors and wire tie wires to the pin (as shown).
4. Finish installation per instruction sheet A6701 and Section 10 within this manual.

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4 Installation Instructions (Continued)

G. Installing 59-8800/12-59-8800 Series Rim Exit Device

CAUTION – BEFORE STARTING:

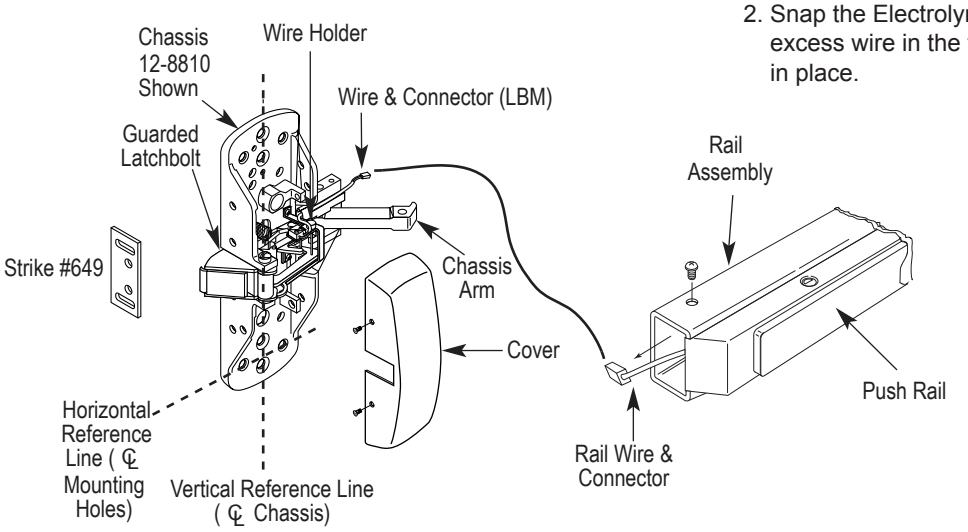
- Check hand of door (This device is handed and not reversible)
- Door should be fitted and hung
- Verify box label for size of exit device, function and hand
- Install mullion in frame if used

PREPARE DOOR – Refer to Instruction sheet A6770

IMPORTANT: Surface of door where exit device is to be applied must be flush. Clear away any raised projections to allow exit device to rest on flat surface of door.

ATTACH CHASSIS

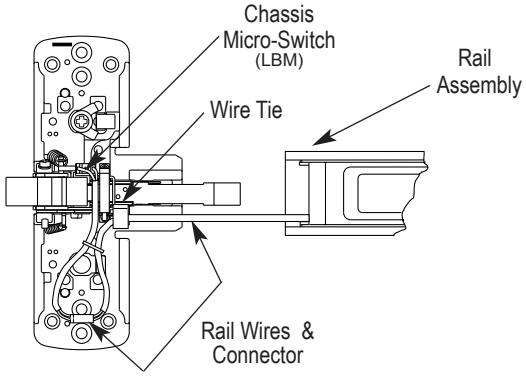
1. Feed wire and connector through chassis as shown. Mount chassis.
2. Snap the Electrolynx connectors together and gather excess wire in the top section of the chassis. Wire tie in place.



Apply Hardware and Rail Assembly

Refer to Instruction sheet A6770

1. Depress chassis arm and slide rail assembly onto chassis, capturing the wire from the rail assembly in the wire holder. Mount chassis.
2. Feed the rail wire along the same path as the chassis wire. Snap the connectors together. Wire tie away from moving parts (as illustrated).
3. Apply covers and strike per instruction sheet A6770 and finish installation per Section 10 within this manual.



APPLY STRIKE–CRITICAL TO MAINTAIN GUARDING OF LATCHBOLT

1. Determine proper position of strike by closing door after mounting chassis and rail. Position strike on frame or mullion, so that the latchbolt is extended/engaged but the guard is held retracted. Mark location of slotted holes and drill and tap (2) holes for the oval head screws.
2. For the 59-8500 hardware, fasten the strike to the frame or mullion with (2) star washers in between strike and frame and tighten (2) screws. **Ensure guard remains retracted when door is closed.**
3. For the 12-59-8500 hardware, attach the strike to the frame or mullion with (2) oval head screws.
4. **Check strike placement again by closing door and ensuring the guard is held retracted** (latch-bolt guarded). Drill and tap (2) holes for round head screws and fasten strike in place.
5. Ensure latchbolt is guarded by depressing it. The latch-bolt must fully project/extend when the door is closed for the guarding to work. Finish installation per instruction sheet A6699 and Section 10 within this manual.

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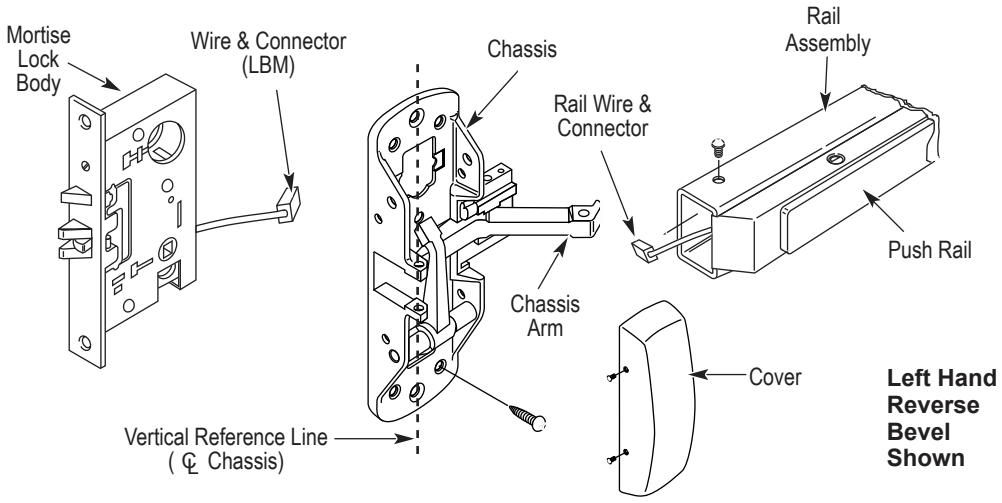
4 Installation Instructions (Continued)

H. Installing 59-8900/12-59-8900 Series Mortise Lock Exit Device

CAUTION – BEFORE STARTING:

- Check hand of door (This device is handed and not reversible)
- Door should be fitted and hung
- Verify box label for size of exit device, function and hand

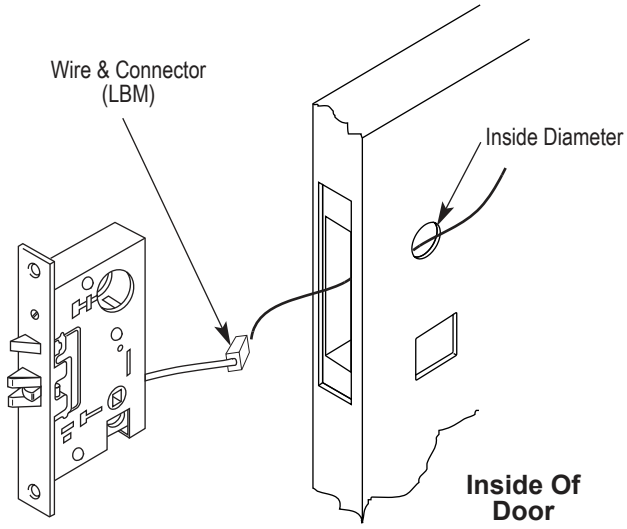
IMPORTANT: Surface of door where exit device is to be applied must be flush. Clear away any raised projections to allow exit device to rest on flat surface of door.



PREPARE DOOR AND MOUNT LOCK

Refer to Instruction sheet A6705

1. Feed wire and connector through the mortise opening and out the inside diameter.

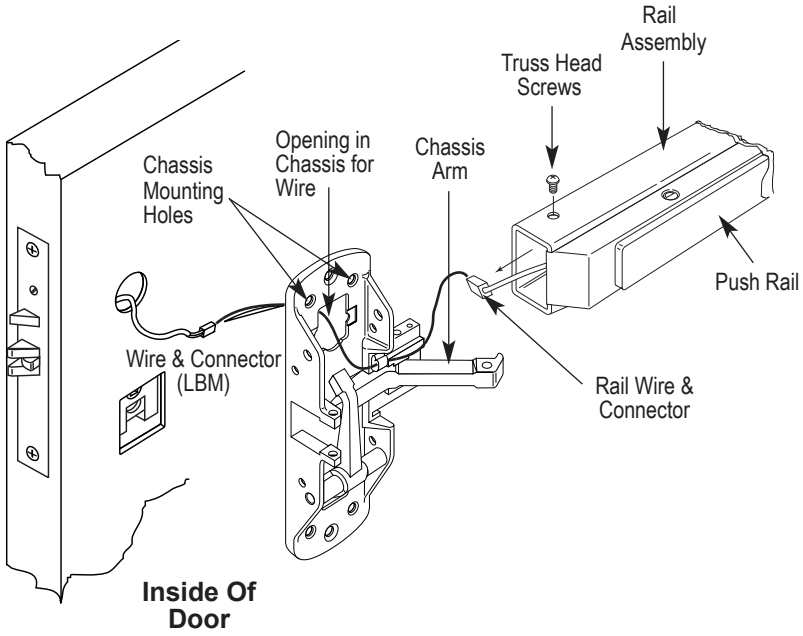


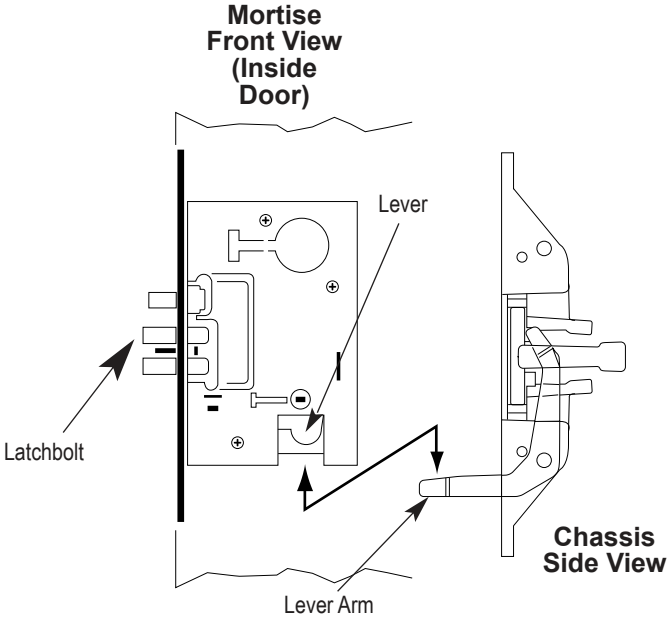
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4 Installation Instructions (Continued)

H. Installing 59-8900/12-59-8900 Series Mortise Lock Exit Device (continued)

IMPORTANT: Surface of door where exit device is to be applied must be flush. Clear away any raised projections to allow exit device to rest on flat surface of door.





MOUNT CHASSIS

1. Feed wire and connector through chassis as shown. Mount chassis.
2. Snap the ElectroLynx connectors together and gather excess wire in the top section of the chassis. Wire tie in place.
3. Finish installation per instruction sheet A6705 and Section 10 within this manual.

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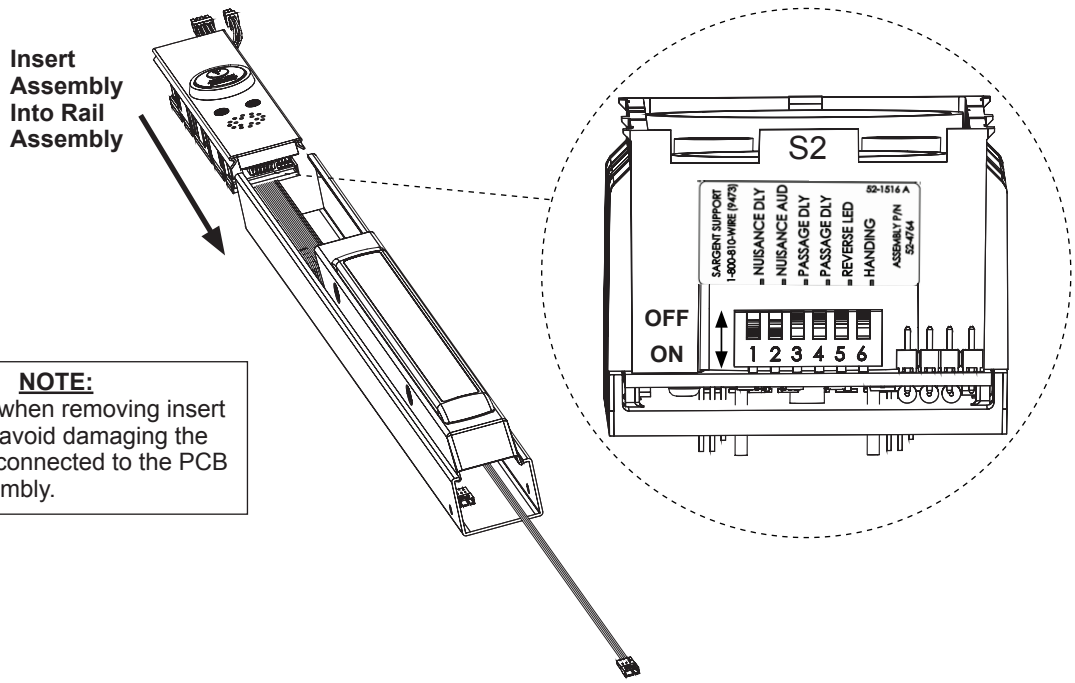
5 Factory Default Settings

Default factory presets for the Electroguard® are as follows:

Status	LEDs/Time	Horn
Armed (Delayed Egress)	Solid GREEN	Off
Momentary Egress (Passage Delay)	Flashing RED for (5) seconds	Off
Disarmed	Solid RED	Off
Alarm	Flashing RED & GREEN (15) seconds for egress	On
Nuisance Delay	(1) second	On
Nuisance Audible		On
Momentary Egress Time	(5) seconds	
Reverse LED	RED (Armed)	
Handing	”Top” LED (Armed) for LHRB or RHRB	

If default feature settings need to be changed, carefully slide the insert assembly from the rail assembly to make the proper DIP switch adjustments (see **Section 5 - Electroguard DIP Switch Settings**).

For example, solid RED can be set to indicate that the rail is ”Armed” with solid GREEN indicating that rail is ”Disarmed”.



NOTE:
Use caution when removing insert assembly to avoid damaging the rail harness connected to the PCB module assembly.

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6 Electroguard Dip Switch Settings

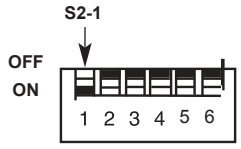
S2-1 **Nuisance Delay** - (Field selectable 0 or 1 second) A one second nuisance delay can be enabled by setting Dip Switch (S2-1) to the "On" position. When nuisance delay is enabled, the unit will require the push bar to be depressed for more than one second in order to trigger an irreversible alarm condition. If the push bar is released before the 1 second has elapsed, the unit will go back into the "delayed egress mode" and the alarm will not sound. Nuisance delay is set to "On" position at factory.

If the Dip Switch S2-1 is in the "Off" position, there will be no nuisance delay and alarm horn will sound immediately when the push bar is depressed.

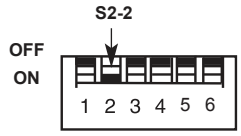
S2-2 **Nuisance Audible** - (Field selectable on or off) An audible horn is enabled by setting Dip Switch S2-2 to the "On" position. The internal horn will sound as soon as the push bar is depressed, signaling that the device is armed. If the pushbar is held down for more than 1 second, an irreversible alarm condition begins. If Dip Switch S2-2 is in the "Off" position, the horn will not sound during nuisance delay.

Nuisance audible is set to "On" position at factory to sound horn when rail is depressed during nuisance delay.

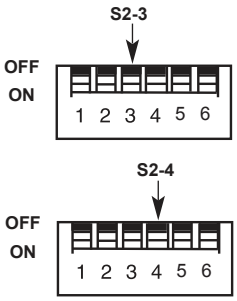
S2-1 On - (1) second Nuisance Delay
S2-1 Off - No Nuisance Delay



S2-2 On - Nuisance Audible On
S2-2 Off - Nuisance Audible Off



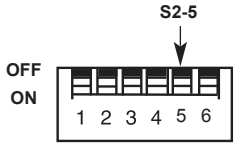
S2-3 & S2-4 **Momentary Egress Time** - Used to select the momentary egress time of 5, 10, 20 or 40 seconds. This switch is preset at the factory for five seconds.



S2 Dip Switch Position		Momentary Egress Time
S2-3	**S2-4**	
OFF	**OFF**	5 seconds (Default)
OFF	**ON**	10 seconds
ON	**OFF**	20 seconds
ON	**ON**	40 seconds

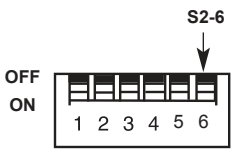
S2-5 **Reverse LED** - Field selectable green or red. When S2-5 is "Off" the exit device LED is **green** when in armed mode (default) and **red** when in maintained or momentary egress mode. When S2-5 is "On" the exit device LED is **red** when in armed mode and **green** when in maintained or momentary egress.

S2-5 On - Red (Armed); Green (maintained or momentary egress)
S2-5 Off - Green (Armed); Red (maintained or momentary egress)



S2-6 **Handing** - Field selectable LHRB or RHRB. For a LHRB exit device S2-6 is "Off" for the top LED on the insert to be used when the device is armed. For a RHRB exit device S2-6 is "On" for the top LED on the insert to be used when the device is armed.

S2-6 Off - LHRB; Top LED indicates "Armed"
S2-6 On - RHRB; Top LED indicates "Armed"



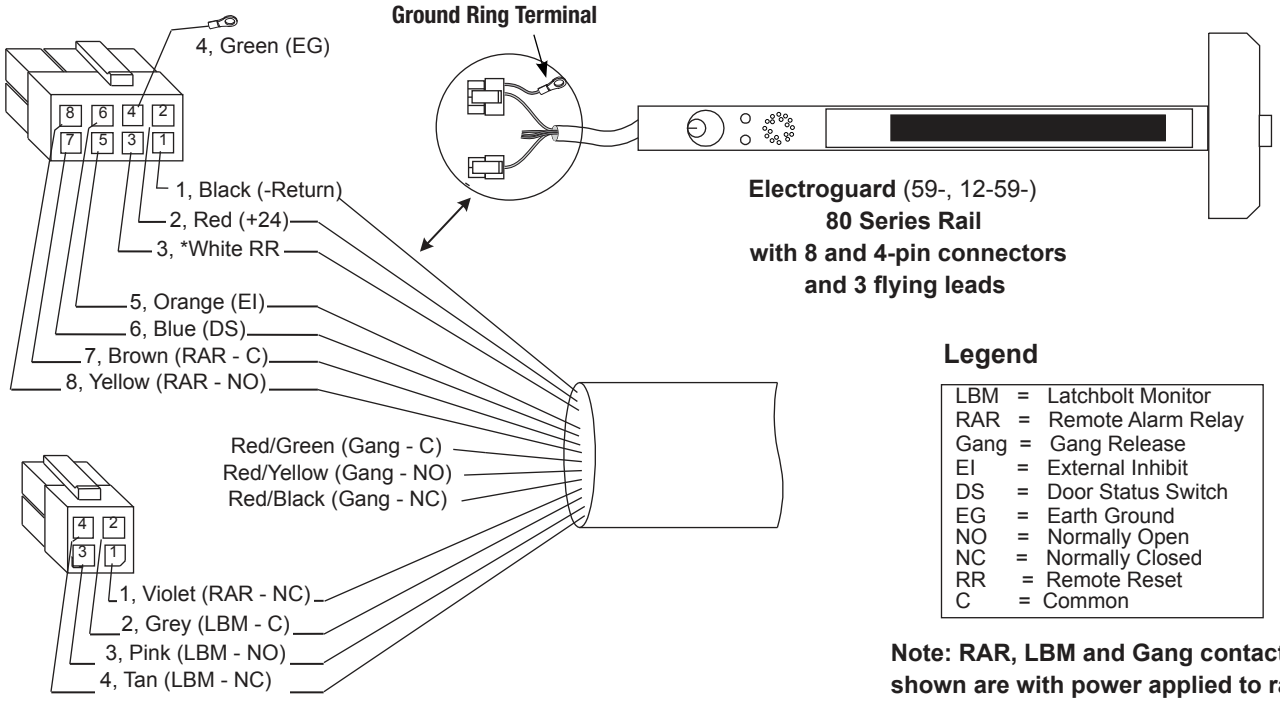
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7 Electroguard Wiring

A. IMPORTANT

Caution: Disconnect all input power before beginning installation to prevent electrical shock and equipment damage

1. Installer must be a trained, experienced service person.
2. All wiring must comply with applicable local electrical codes, ordinances and regulations.
3. Field cut rail assemblies are not allowed. Exit device must be ordered for specific door width.



* Note: White wire on previous Legacy product was used as Fire Alarm input option and has been replaced with RR.

Legend

LBM	=	Latchbolt Monitor
RAR	=	Remote Alarm Relay
Gang	=	Gang Release
EI	=	External Inhibit
DS	=	Door Status Switch
EG	=	Earth Ground
NO	=	Normally Open
NC	=	Normally Closed
RR	=	Remote Reset
C	=	Common

Note: RAR, LBM and Gang contacts shown are with power applied to rail.

B. Installation Notes:

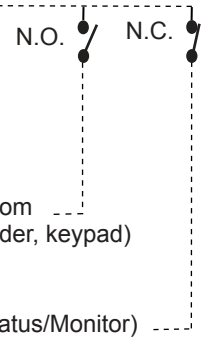
1. With new applications, a raceway harness with 8 & 4-pin connectors will be pre-installed inside the door by ASSA ABLOY door manufacturer when specified during the ordering process. Raceway harness kits are also available for retrofit applications. (For retrofit applications, refer to retrofit instructions).
2. If door does not have a raceway harness with connectors, either consult factory for raceway retrofit kit or cut connectors off product and hard wire, as required.
3. Wiring to pigtail harness is per facility wiring requirement. The rail, raceway, electric hinge and pigtail connector (- +) terminations and wire colors all match.

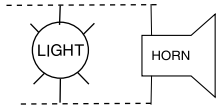
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7 Electroguard Wiring (Continued)

The following are the input and output connector designations.

Harness Connector Pin No.*	Circuit Board Pin No.	Input/ Output	Harness Wire Color	Function
8-2	J1-1	input	Red	+24VDC power
8-1	J1-2	input	Black	-Return
8-3	J1-4	input	White	Remote Reset
8-5	J1-5	input	Orange	External inhibit - disarm unit from i/s or o/s (key switch, card reader, keypad)
8-6	J1-6	input	Blue	Door position sensor (Door Status/Monitor)
8-4	**Chassis**	**Ground**	**Green**	**ESD (Earth) Ground**
8-7	J1-8	output	Brown	Remote alarm relay (C.)
4-1	J1-9	output	Violet	Remote alarm relay (N.O.)
8-8	J1-10	output	Yellow	Remote alarm relay (N.C.)
4-2	J1-11	output	Grey	Latchbolt monitor relay (C.)
4-4	J1-12	output	Tan	Latchbolt monitor relay (N.O.)
4-3	J1-13	output	Pink	Latchbolt monitor relay (N.C.)
flying lead	J1-14	output	Red/Green	Gang (C)
flying lead	J1-15	output	Red/Yellow	Gang (N.O.)
flying lead	J1-16	output	Red/Black	Gang (N.C.)





The Latchbolt monitor relay prevents the door from being armed when latchbolt or vertical rods are retracted.

NOTES:
1. Remote alarm relay shown in power "off" state. Power "on" relay energizes; contacts reverse state.
2. Latchbolt monitor relay shown in power "off" state. Power "on" relay energizes; contacts reverse state.

*Example: 8-2 is the 8-pin connector position #2
4-3 is the 4-pin connector position #3

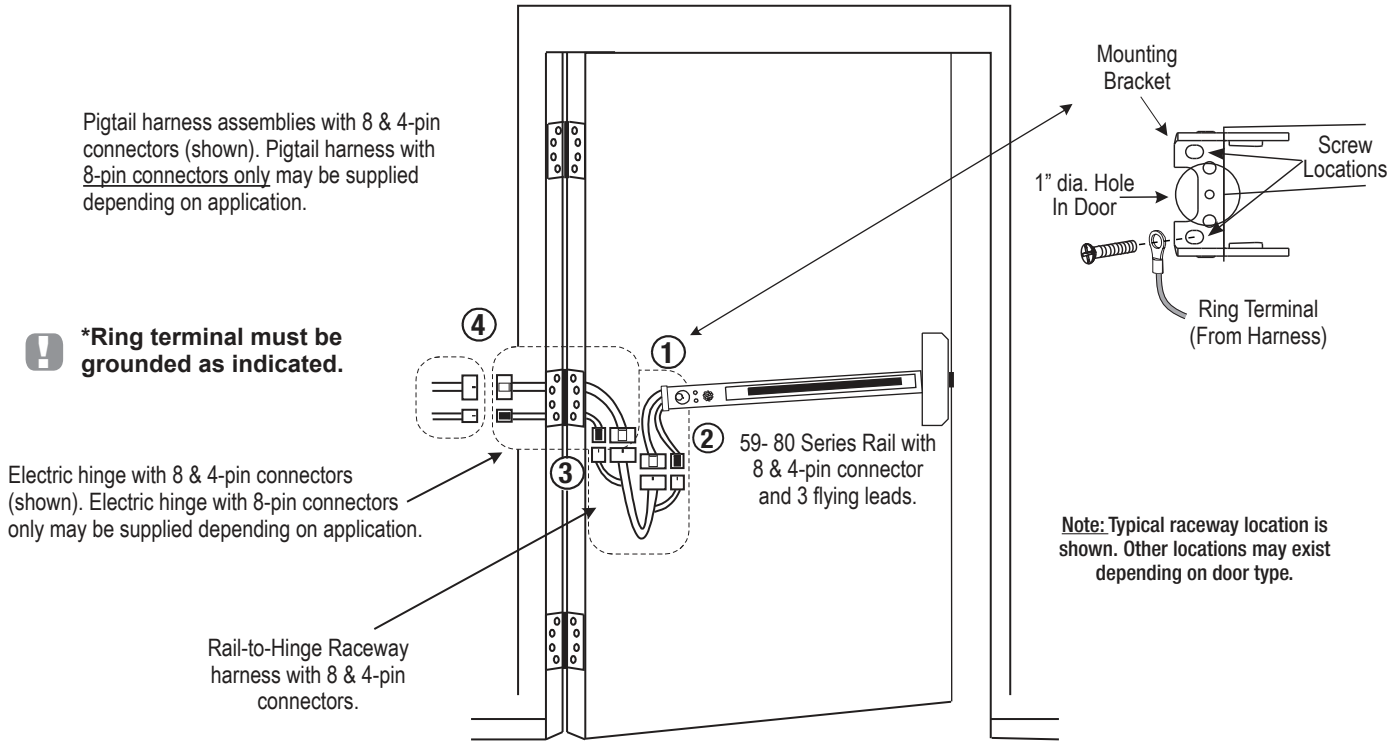
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7 Electroguard Wiring (Continued)

Harness Connector Pin No.	I/O Circuit Board Pin No.	Function
8-2	J1-1	**24VDC** Power Supply Input (+) This input may be tied to the normally closed contact of a building's fire alarm system. If the fire alarm is activated, this contact will open, voiding the 15 second delay for egress.
8-1	J1-2	**Return -** Power Supply -return (-).
8-3	J1-4	**Remote Reset** - This input may be tied to a momentary normally open contact at a remote location to reset the device when in alarm. Additionally when the device is armed this input may be used for momentary egress with the time per the Dip switch settings. NOTE: Previous Fire Alarm Input option has been replaced with Remote Reset.
8-4	Chassis Ground	**Chassis Ground** - The chassis ground wire must terminate at earth ground of the equipment power supply or the main power source.
8-5	J1-5	**External Inhibit Input** - Used to provide remote override of the delayed egress when in the armed condition. Most common external inhibits are: card readers, keypad, key switches, or remote control console. More than one external inhibit device must be wired in parallel.
8-6	J1-6	**Door Position Sensor** - An external door status switch can be connected to the Electroguard to provide additional security. If the door status switch is utilized, an irreversible alarm will sound if the door is forced open while the device is armed. Unit will not arm if door is not shut. Once the irreversible alarm sounds, it will have to be reset at the door. If the door status switch is not utilized, connect the Blue wire to -Return (Black wire) of the 5-pin harness.
8-7 8-8 4-1	J1-8 J1-9 J1-10	**Remote Alarm Relay Output** - A SPDT (Single Pole Double Throw) 1A, 24VDC contact relay is provided for external alarm indication. The contacts change state when the unit goes into an irreversible alarm or if the door is forced open while the device is armed. A door position sensor is required for monitoring a door forced open condition. This contact can be utilized to drive a horn, lamp or other monitoring device.
4-2 4-3 4-4	J1-11 J1-12 J1-13	**Latchbolt Monitor Relay** - A SPDT (Single Pole Double Throw) 1A, 24VDC relay contacts, are provided for monitoring the latchbolt status at a remote location. This contact can be used to drive a horn, lamp or other monitoring device.
flying leads	J1-14 J1-15 J1-16	**Gang** - Relay contact – SPDT (Single Pole Double Throw) 1A, 24VDC. **Gang Option** - Allows multiple doors that are ganged together to unlock simultaneously after the delayed egress time has expired during an alarmed egress state. The LED (Red or Green according to DIP switch setting) on all ganged units shall light when unlocked. The rail horn shall sound only on the unit that initiated the delayed egress state (not on the other ganged units). Resetting the rail which initiated the delayed egress state with the key switch will relock and rearm all ganged rails back to the delayed egress mode. Refer to page Section 9 for wiring and application requirements.

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8 Exit Device Plug-in Connector Installation



① Insert bracket mounting screw through *ground ring terminal. Fasten mounting bracket with mounting bracket screws (ring terminal). Finish mounting exit device per instruction sheet provided.

② Plug rail connectors into raceway connectors. Feed through 1" hole in door. Install rail mounting bracket with two screws supplied. Install rail insert and end cap.

To insure trouble-free operation, check that the push rail can be fully depressed.

On vertical rod exit devices, adjust rods and check that the latch bolts do not go into hold- back position until the push rail is fully depressed.

③ Plug raceway connector(s) into electric hinge connector(s) then feed through door prep.

Note: Electric hinge will have two 8-pin connectors or two 8-pin and two 4-pin connectors. Mount electric hinge to door side only.

④ Refer to (A) if wiring now. Refer to to (B) if wiring is to be done later.

A. Refer to Input/Output Terminations - Section 11 through Wiring Examples - Section 14.

Wire to flying leads on pigtail harness(es) as required using connectors allowed by local code. Plug pigtail harness connector(s) into electric hinge connector(s).

Feed harnesses through frame prep and mount electric hinge.

Ensure wiring is correct; apply power and test exit. Refer to operating instructions in Section 9.

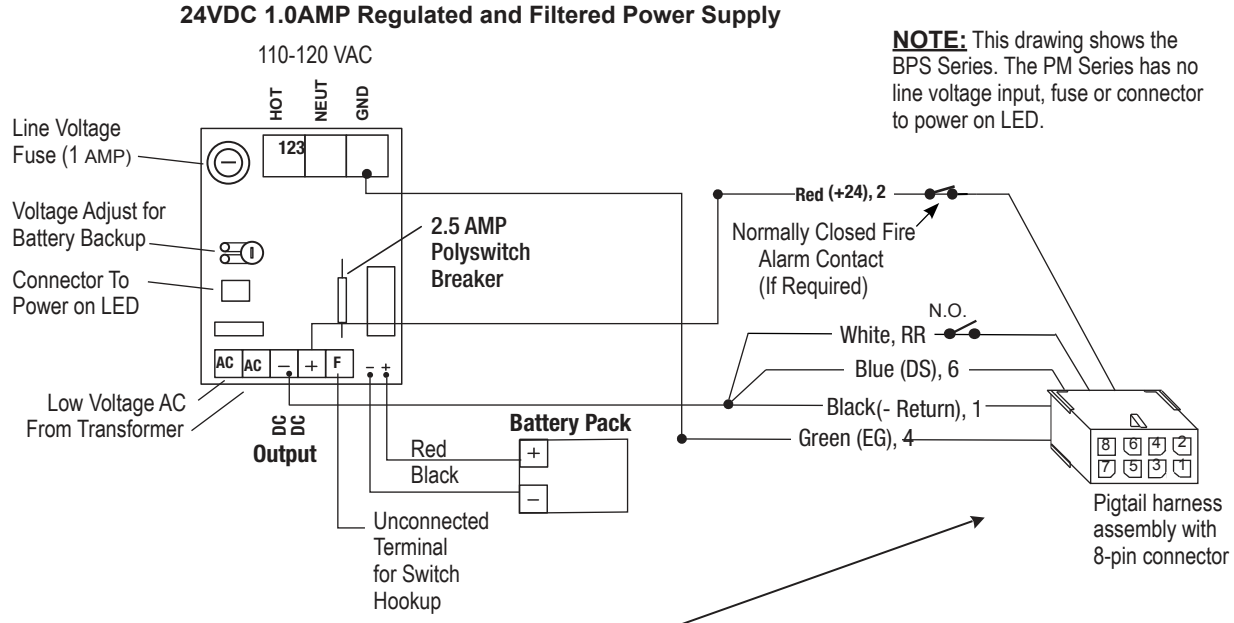
B. Plug pigtail harness connector(s) into electric hinge connector(s). Feed harness(es) through frame prep and mount electric hinge.

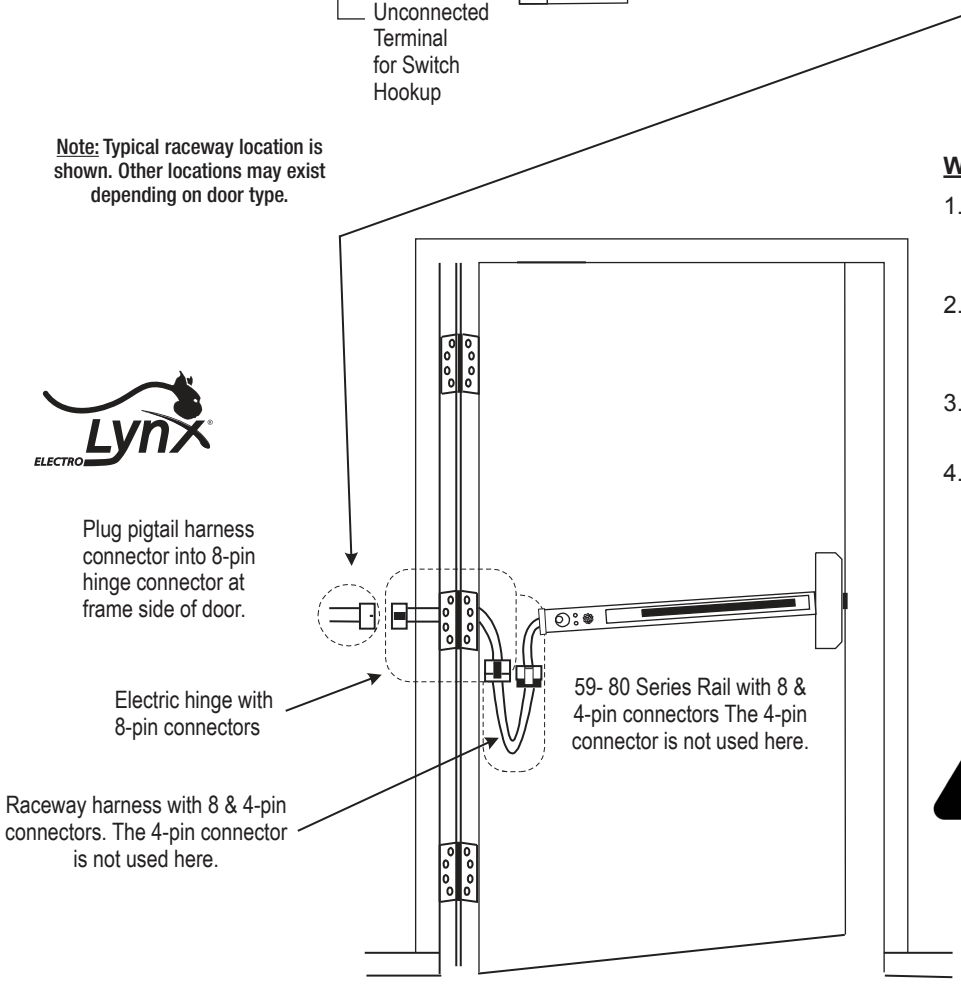
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9 System Wiring Examples

Sample Wiring #1 – Basic 59- Delayed Egress with Fire Alarm and Remote Reset

During a fire alarm condition, the fire alarm contact opens which de-energizes the rail magnet and allows immediate egress.





Wiring Notes:

1. Rail, raceway, electric hinge and pigtail 8-pin connector terminations and wire colors all match.
2. Tape or cap off ends of unused pigtail wires (not shown) to ensure that they do not short.
3. A fire alarm tie-in is required on fire rated openings.
4. The fire alarm contact (when required) must be wired to drop 24VDC power to rail. In this case, terminate fire alarm contact between the red (+ 24VDC) wire and supply + 24VDC output.

ATTENTION:
Electrified Trim applications require a separate raceway & power transfer device. Installation of conductors or harnesses (by others) through the exit device rail is prohibited as it could lead to product performance issues up to and including product failure.

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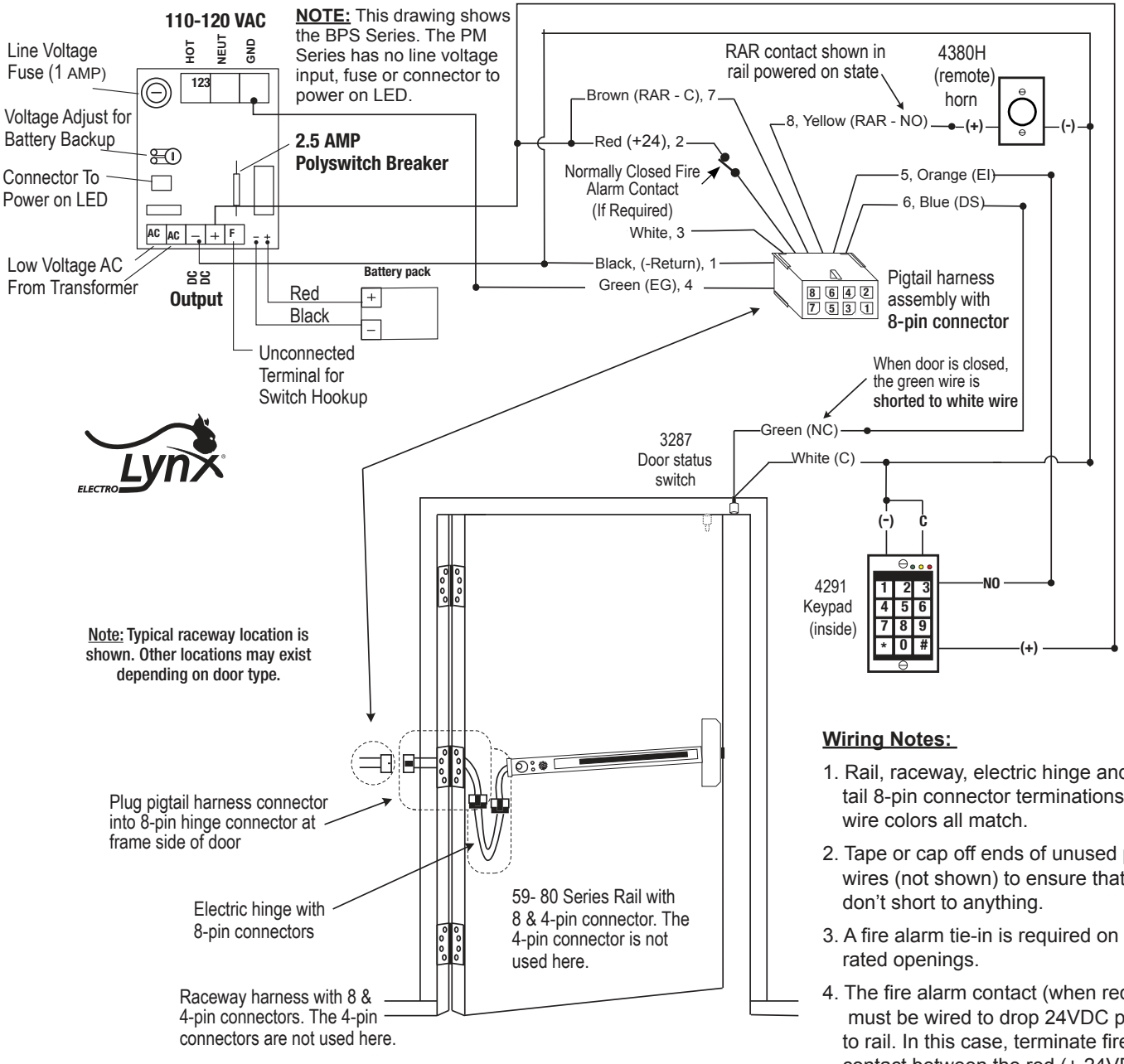
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9 System Wiring Examples (Continued)

Sample Wiring #2 – 59- Electroguard Exit Device with inside Keypad, Fire Alarm, Door Status and Remote Horn

A valid code entry at the 4291 (Inside) keypad shunts the Electroguard exit device and allows egress for a time period programmable at the keypad. During a fire alarm condition, the contact opens which de-energizes the rail electromagnet and allows immediate egress. When the rail is armed and the door is forced open, the 3287 door status switch signals the rail sounding the rail alarm. When the rail is armed and violated, the remote alarm relay sends 24VDC to the 4380H remote horn.

3520 24VDC 1.0AMP Regulated and Filtered Power Supply



Wiring Notes:

1. Rail, raceway, electric hinge and pigtail 8-pin connector terminations and wire colors all match.
2. Tape or cap off ends of unused pigtail wires (not shown) to ensure that they don't short to anything.
3. A fire alarm tie-in is required on fire rated openings.
4. The fire alarm contact (when required) must be wired to drop 24VDC power to rail. In this case, terminate fire alarm contact between the red (+ 24VDC) wire and supply + 24VDC output.
5. Connect the white wire to the black (-return) wire.

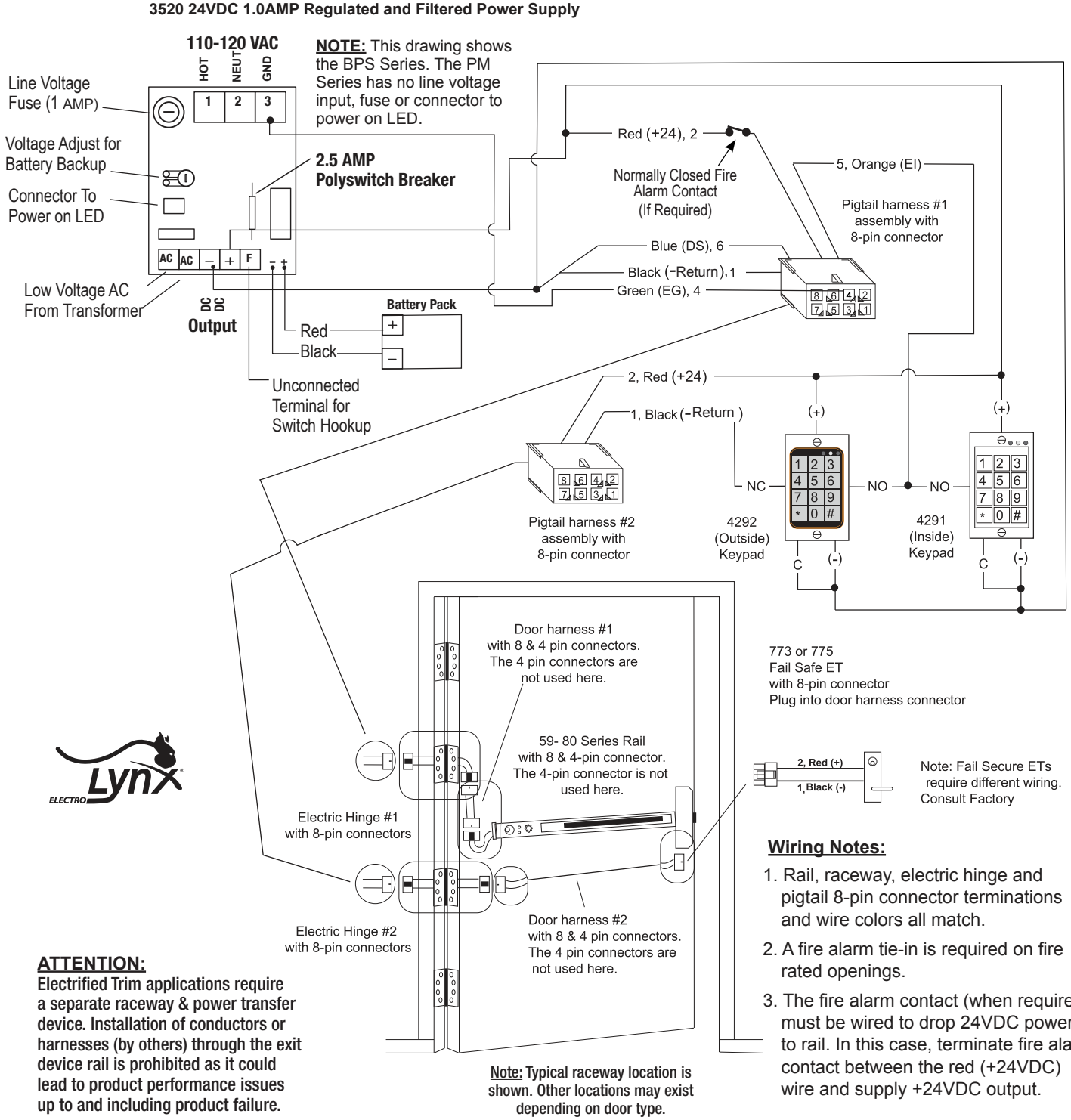
ATTENTION:
Electrified Trim applications require a separate raceway & power transfer device. Installation of conductors or harnesses (by others) through the exit device rail is prohibited as it could lead to product performance issues up to and including product failure.

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9 System Wiring Examples (Continued)

Sample Wiring #3 – 59- Electroguard Exit Device with Fire Alarm, Keypads and Fail Safe ET

During a fire alarm condition, the contact opens which de-energizes the rail electromagnet and allows immediate egress. A valid code entry at the 4291 (Inside) keypad shunts the Electroguard exit device and allows egress for a time period programmable at this keypad. A valid code entry at the 4292 (Outside) keypad unlocks the 773 or 775 Fail Safe ET and shunts the Electroguard exit device and allows ingress for a time period programmable at this keypad.



ATTENTION:
Electrified Trim applications require a separate raceway & power transfer device. Installation of conductors or harnesses (by others) through the exit device rail is prohibited as it could lead to product performance issues up to and including product failure.

Wiring Notes:

1. Rail, raceway, electric hinge and pigtail 8-pin connector terminations and wire colors all match.
2. A fire alarm tie-in is required on fire rated openings.
3. The fire alarm contact (when required) must be wired to drop 24VDC power to rail. In this case, terminate fire alarm contact between the red (+24VDC) wire and supply +24VDC output.

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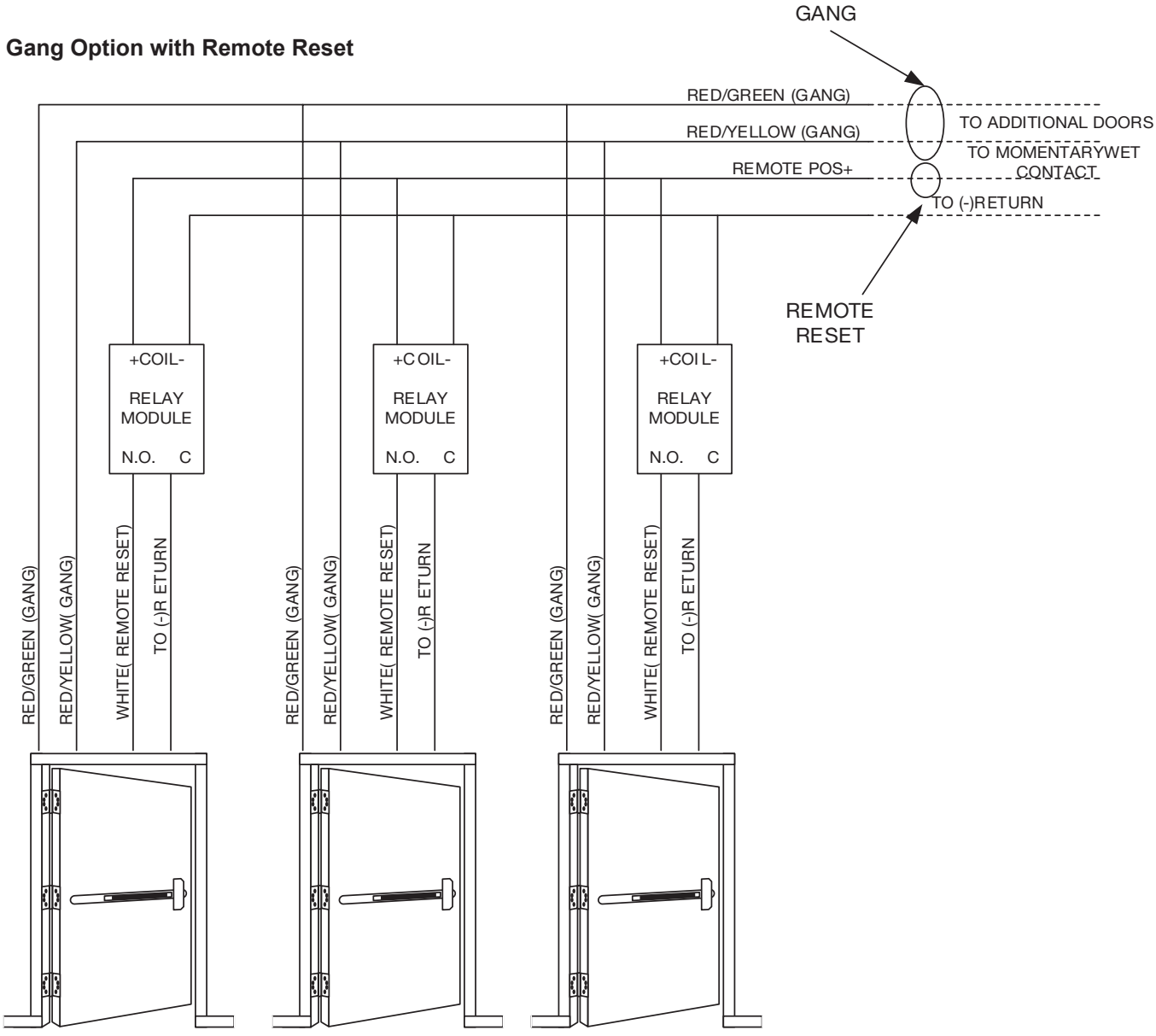
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9 System Wiring Examples (Continued)

Gang Mode for Banks of Doors - Optional

1. When Electroguards are connected on a bank of doors, it is possible to have them all released simultaneously (see wiring layout below).
2. All ganged units **must** share the same power supply to avoid ground loops.
3. All interconnecting equipment must be located within the same area.
4. A total of 12 doors can be ganged together when randomly distributed across 1000 feet of cable or less using 18 gauge wire.
5. Ganged doors must have their remote reset lines connected in parallel to a N. O. (normally open) dry contact. For long wire runs (1000 ft. max) each remote reset line must be wired to a relay module (as shown) so all doors may be reset together remotely from a momentary wet contact. Wet contact can typically be found at a panel, remote console or switch.

Gang Option with Remote Reset



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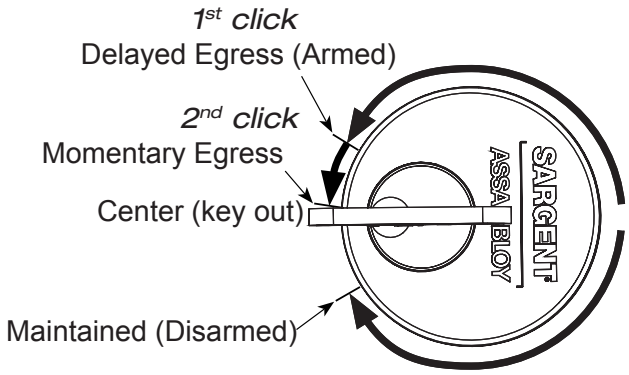
10 Operating Instructions

Note: Power-up sequence is as follows:

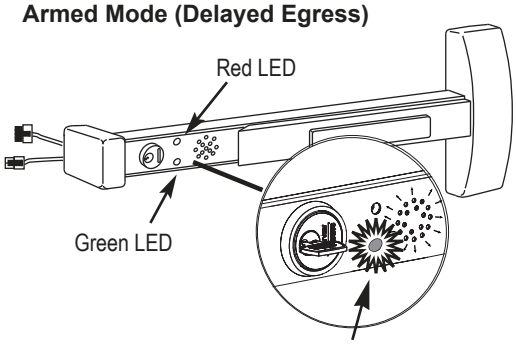
- Both insert LEDs illuminate "red" for 2 seconds while concurrently sounding buzzer for 500ms.
- Both insert LEDs illuminate "green" for 2 seconds (no buzzer)
- The (4) *diagnostic* LEDS on bottom of module illuminate for 2 seconds.
- Insert LED illuminates to the switch position (armed or not armed).

There are three modes of operation: **Armed** (Delayed Egress), **Momentary Egress** and **Maintained Egress**.

These modes are set by fully inserting a valid key and rotating it in either a clockwise or counter-clockwise direction until there is a click (detent). Note that a second click must be engaged in order to set momentary egress.
To remove the key, it must be returned to its original center position.



Armed Mode (Delayed Egress)

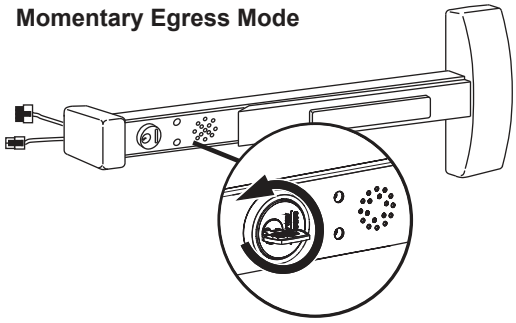


***Depends on handing**

1. Apply power to the System; horn will sound for one second.
2. Both LEDs will flash RED, then both LEDs will flash GREEN.
3. Green (default) or Red LED on Electroguard insert will illuminate (See DIP switch settings section 7).
4. Rail assembly is armed. Latchbolt cannot be retracted by depressing the push rail for immediate egress. If rail is depressed for (min.) one second, alarm will sound.
5. ATTENTION: It is recommended to check that the latchbolt can't be retracted by the push bar after normal arming and after rearming from delayed egress/alarm mode via cylinder key switch, remote reset, or power cycle.
6. If any of above sequence fails to function, the unit is not armed.

   See: Troubleshooting section

Momentary Egress Mode

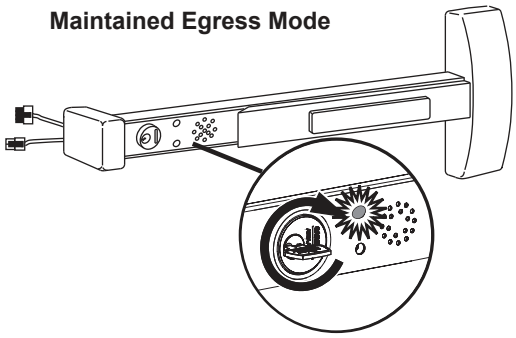


1. Rotate key counter-clockwise to **2nd click** and return key to center position (key out).
2. Red (Default) or Green LED flashes on insert for a factory preset time of 5 seconds. (For other time selections and LED color, see Dip Switch Settings Section 7.) The rail assembly will disarm itself for this time period allowing for momentary egress.
3. After the factory preset time of 5 seconds, delay expires.
4. Unit is then in Delayed Egress Mode (or Power Up State).

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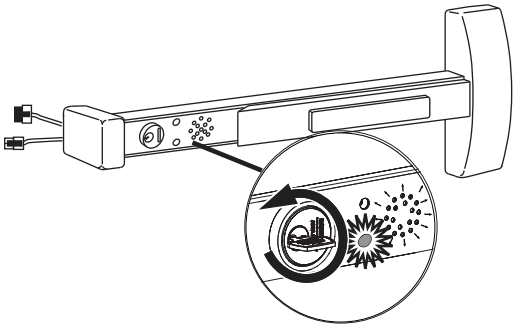
10 Operating Instructions (Continued)

Maintained Egress Mode



1. Rotate key fully clockwise (one click) and return key to center position, (remove key).
2. Red (default) or Green LED will illuminate. See Dip Switch Settings Section 5 for LED color settings.
3. Rail assembly is disarmed allowing the device to operate as a standard exit device permitting free egress.

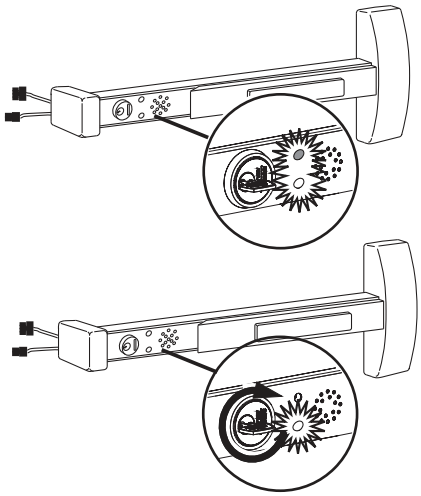
Resetting the Unit from Maintained Egress Mode to Armed Mode



1. Rotate key counter-clockwise and return key to center position, (key out).
2. Maintained Red (Default) or Green LED de-energizes and Armed Green (default) or Red LED will illuminate.

   See Dip Switch Settings Section 5.
3. The rail assembly re-arms itself into the Delayed Egress Mode.

While in the Delayed Egress Mode



1. The rail assembly is armed - Green (default) or Red LED is illuminated, preventing immediate egress. See Dip Switch Settings Section 5.
2. When the push rail is depressed for more than (1) second, the alarm will sound and the Red and Green LEDs alternately flash. If there is no nuisance delay, alarm will sound immediately when push rail is depressed and the Red and Green LEDs will again flash alternately.
3. The alarm will continue to sound until the rail assembly is reset by inserting the key into the cylinder located on the mounting insert and rotating the key clockwise (one click) to return the unit to the armed mode.

   NOTE: A 59-BC-80 Series device automatically resets 30 seconds after door has been closed. (Requires door position switch).
4. During the first 15 seconds after the alarm begins, the rail assembly remains armed and locked preventing immediate egress. After 15 seconds, the rail releases (unlocks) allowing egress.

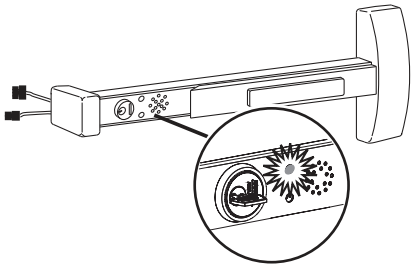
   NOTE: The delayed egress time can be factory set to 30 seconds. Local authority having jurisdiction prevails.

   Delay times may be regulated by local codes ordinances and regulations.

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10 Operating Instructions (Continued)

Unit Tied Into A Fire Alarm System – Optional for Non-Labeled Devices



1. In case of a fire/emergency, the rail assembly will release instantaneously, voiding the 15 second delay, allowing immediate egress and continuous immediate egress.

2. LED will be extinguished and the rail will remain unlocked.

3. Once the fire alarm contact re-closes, the rail assembly automatically sets the unit into the armed mode, preventing immediate egress.

NOTE: Fire Alarm contact must be a normally closed (N.C.) contact.

External Inhibit Input - Optional

Used to provide remote override of the delayed egress unit when in an armed condition.

1. Using external inhibit overrides latchbolt release.

2. External inhibit is a normally open (N.O.) contact to common (-return).

3. If triggered, the unit is in an unarmed state for the duration of the time delay in the card reader, key switch or other external inhibit. Once the time delay from external inhibit device expires, the unit arms itself immediately.

NOTE: If not using an external inhibit, any trim which retracts the latchbolt will provide 10 seconds to enter before going into alarm.

Remote Reset Input - Optional

Used to provide remote reset when the delayed egress unit is in alarm and momentary egress when delayed egress unit is armed.

1. Remote reset input is a normally open (N.O.) contact to common (-return).

2. If triggered when unit is in alarm, the device is immediately reset to armed mode.

3. If triggered when unit is in armed mode, the device shall allow momentary egress for the time specified by the DIP switch settings then return to armed mode.

NOTE: If not using an external inhibit, any trim which retracts the latchbolt will provide 10 seconds to enter before going into alarm.

Manual hex key dogging (non-fire rated) application note:
If push bar is in the dogged (retracted) position when 24VDC power to rail is cycled (via fire alarm/reset or temporary power outage), the device will enter hall error mode "Both Insert LEDs flash rapid RED and GREEN".

To clear this error mode, use the manual hex key to un-dog the push bar, ensure the push bar returns to the extended (home) position then turn the cylinder key CW to Maintained Egress mode then CCW to the center (Armed) position (or cycle 24VDC power to rail with cylinder key set to center - Armed position).

The device should clear error mode and Arm.

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11 Electroguard Troubleshooting

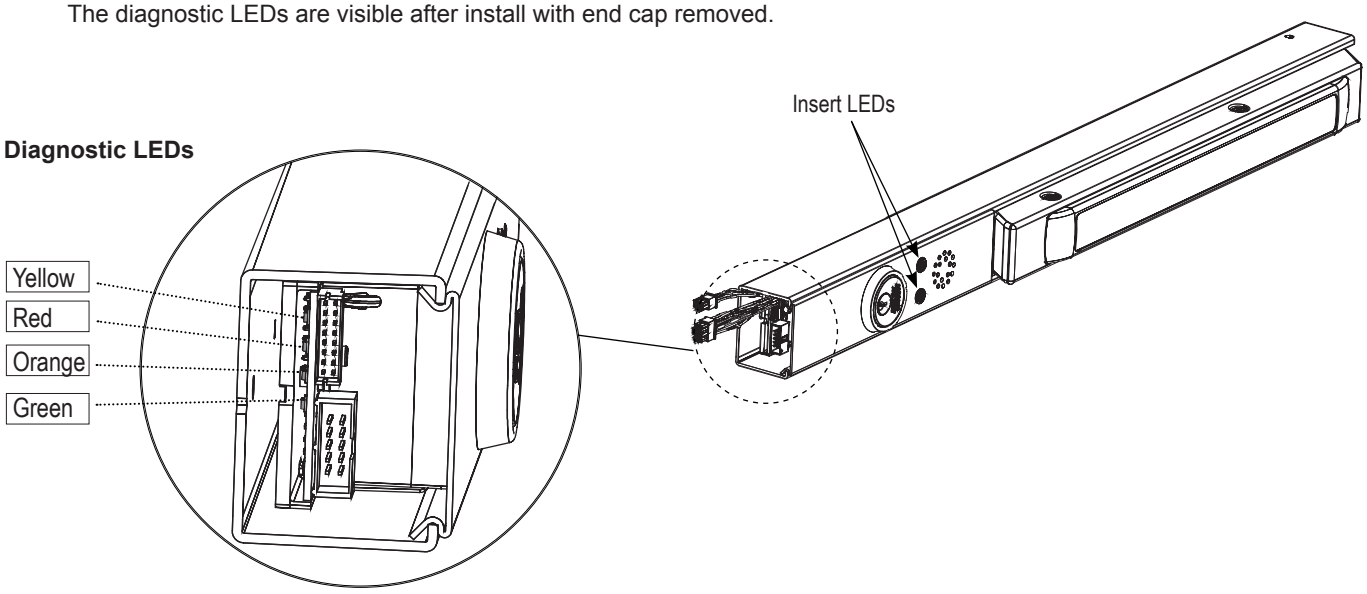
The tables below are provided to assist in the installation and troubleshooting of the 59- Electroguard exit device.

The following table lists the status and function of the (2) Green/Red LEDs located on the rail insert.

Visible Insert LEDs	Function
Green (Default) or Red ON only	Rail is Armed - Delayed Egress Mode
Red(Default) or Green ON only	Rail is Disarmed – Maintained (Free) Egress Mode
Red (Default) or Green “Flashing”	Rail is in Momentary Egress Mode
Green and Red “Alternate”, Rail Horn is ON	Rail is in violation

IMPORTANT: Always remove power to the rail before disconnecting or reconnecting connectors at the 59- PCB module assembly. Disconnect the 24VDC Power Supply or remove the Red (+24VDC) power wire at the rail.

The diagnostic LEDs are visible after install with end cap removed.



Refer to the following table and notes for an explanation of each LED’s function.

Diagnostic LEDs	Function
Yellow (Latch Bolt/Rod Monitor)	ON – Latch Bolt or Vertical Rods are retracted OFF – Latch Bolt or Vertical Rods are extended/latched
Red (Push Rail Switch)	ON – Rail Push Bar is depressed OFF – Rail Push Bar is released
Orange (Door Status Switch)	ON – Door Status Switch is open. Door is open/violated OFF – Door Status Switch is closed. Door is closed and secure
Green (Magnet)	ON – Rail Magnet is energized (+24VDC from main board) OFF – Rail Magnet is de-energized

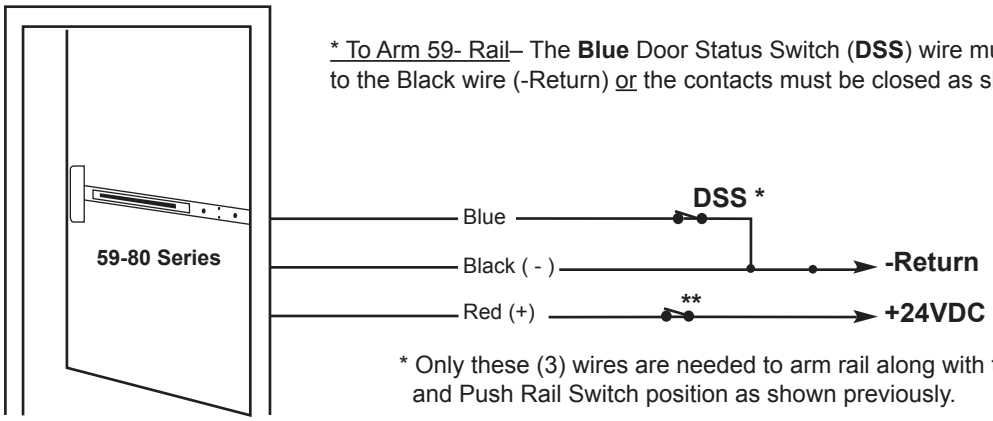
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11 Electroguard Troubleshooting (Continued)

NOTES

1. With Rim and Mortise type exit devices - When the latch bolt is retracted about half-way, the **Yellow Diagnostic LED** turns ON. The LED will be ON from half- way to the fully retracted position; otherwise the LED will be OFF.
2. With Vertical Rod type exit devices – When the rods are retracted and the door is opened, the Rod Monitor Switch is activated and the **Yellow Diagnostic LED** turns ON. The LED will remain on until the door closes and the rods are reset and engaged.
3. When the rail is armed (in Delayed Egress Mode) and the door is closed and latched, the ***Green (default) or Red LED*** and the **Green Diagnostic LED** should be ON only. All other LEDs should be OFF.
4. With the rail armed, depressing the rail push bar slightly will turn the **Red Diagnostic LED** ON. The rail should go into alarm immediately (no nuisance delay) or after being pressed in for 1 second (1-second nuisance delay). The rail will be in the irreversible alarm mode – ***Insert Green and Red LED*** flash and the rail horn sounds. After a standard delay of 15 seconds (or 30-second optional delay), the rail magnet de-energizes and passage is allowed. The rail horn will continue to sound until the rail is reset with a key.
5. When a Door Status switch is used and the door is opened the **Orange Diagnostic LED** will turn ON, which indicates that the door is not secure. When NOT using a Door Status switch, the Blue wire should be connected to Black (-Return). In this case, the LED will always be OFF.

MINIMUM REQUIREMENTS FOR ARMING RAIL (DELAYED EGRESS MODE)

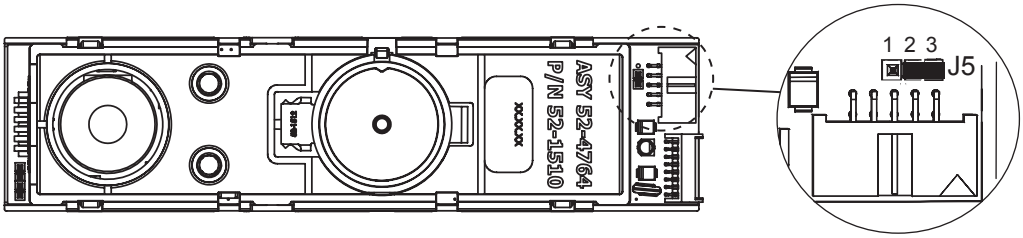


* To Arm 59- Rail– The **Blue** Door Status Switch (**DSS**) wire must be connected directly to the Black wire (-Return) or the contacts must be closed as shown.

* Only these (3) wires are needed to arm rail along with the correct LBM switch and Push Rail Switch position as shown previously.

** Fire Alarm Contact (if required).

6. With Rim, Mortise and Vertical Rod exit devices - If jumper (J5) is in wrong position, the latchbolt monitor switch is bypassed (if held, will not go into alarm). To locate (J5) jumper, remove Insert Assembly and Insert Assembly Plate.



Default factory setting for 59- shown

FUNCTION	JUMPER
59-STD	J5-2 & J5-3
57-	J5-1 & J5-2

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11 Electroguard Troubleshooting (Continued)

Symptom / Failure

Refer to Diagnostic LED Table/Description and Minimum Requirements to Arm Rail sections.

A. Rail won't arm - (Armed LED won't turn ON / Horn sounds immediately or after a delay) -
When trying to arm, the rail goes into alarm immediately after momentary egress times out or after a short delay after the momentary egress times out.

- Are the Yellow, Red and Orange Diagnostic LEDs OFF?
  YES – Replace defective PCB module assembly.
  ***NO** – All of these LEDs should be OFF. Troubleshoot according to which LED is ON. If any LED stays ON after troubleshooting, consult 1-800-810-WIRE (9473).

B. Rail won't arm - (Armed LED won't turn ON / Horn stays OFF) -
- The rail is receiving an external inhibit signal
- The Orange wire is connected to Black wire (-Return) through external device or directly
- The rail is in fire alarm condition

C. Rail Arms, but the push bar does not guard (hold back) when depressed
- (Armed LED and Green Diagnostic LED are ON) - Defective push mechanism, rail electromagnet or open electromagnet wires (with power removed, disconnect rail harness from 59- Controller, electromagnet = 300 ohms nominal when measured with ohmmeter across the red & brown ribbon cable wires). If wires can't be repaired, consult **1-800-810-WIRE**
(Armed LED is ON and Green Diagnostic LED is OFF) – Defective 59- Controller

D. Rail Arms, but will not go into alarm when depressing push bar -
- Does the Red Diagnostic LED turn ON when depressing push bar?

YES – Replace defective PCB module assembly.
NO – The push rail hall switch is defective or out of activation range. If wires can't be repaired or if switch can't be adjusted (on rails which allow adjustment), consult **1-800-810-WIRE (9473**

E. LEDs flash RED then GREEN in sequence approximately 0.25 seconds (*Hall Error Mode). Horn and all diagnostic LEDs are off -
- Rail may or may not arm prior to this error code
- Check harnesses are connected to controller PCBs
- Push rail hall switch circuit defective or out of activation range. Consult **1-800-810-WIRE (9473).**
- If the push bar was in the dogged (retracted) position during a 24VDC power cycle (via fire alarm/reset or temporary power outage) this **hall error mode** will occur. To clear error un-dog push bar with manual hex key, ensure bar extends fully then turn cylinder key CW to Maintained Egress position then CCW to Armed (center) position (or cycle 24VDC power) to rearm device.

*If horn sounds or flashing sequence differs from the above; or if error mode does not clear, consult **1-800-810-WIRE (9473)**

IMPORTANT: RAIL IS NOT ARMED WHEN IN THIS CONDITION!

ATTENTION:
Electrified Trim applications require a separate raceway & power transfer device. Installation of conductors or harnesses (by others) through the exit device rail is prohibited as it could lead to product performance issues up to and including product failure.

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