

IN100 Series FE6600/BL6600/MP6600 Multi-Point Lock (with Aperio® Technology)

Attention Installer:

Please read these instructions carefully to prevent missing important steps.

Improper installations may result in damage to the lock and void the factory warranty.

The accuracy of the door preparation is critical for proper functioning and security of this lock.

Misalignment can cause premature wear and a lessening of security.

For specific security information, please contact your local ASSA ABLOY Door Security Solutions sales consultant or call 800-810-9473.

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1

Warning



WARNING

This product can expose you to lead which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65warnings.ca.gov.

Ce produit peut vous exposer au plomb qui, dans l'état de la Californie, est reconnu pour causer le cancer, des anomalies congénitales ou d'autres problèmes de reproduction. Pour plus d'informations, visitez: www.P65warnings.ca.gov.

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 Corbin Russwin 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.



To avoid possible damage from electrostatic discharge (ESD), some basic precautions should be used when handling electronic components:

- Minimize build-up of static by touching and/or maintaining contact with unpainted metal surfaces such as door hinges, latches, and mounting plates especially when mounting electronic components such as readers and controllers onto the door.
- Leave components (reader and controller) protected in their respective anti-static bags until ready for installation.
- Do not touch pins, leads or solder connections on the circuit boards.

Operating temperature: -13°F (-25°C) to 151°F (66°C) Humidity: < 85% non-condensing

Input Power: DC 9V, 1.5A (6 AA alkaline batteries)
Optional hard-power 12-24VDC, 1.0A

Reader with multiCLASS SE® technology offers support for the following credentials:

High Frequency (13.56 MHz)

HID iCLASS®

HID iCLASS SE® (SIO-enabled)

HID iCLASS® Seos™

HID MIFARE® SE

HID DESFire® EV1 SE

MIFARE Classic

DESFire EV1

DESFire EV2/EV3 (EV1 Compatibility)

Low Frequency (125 kHz)

AWID

EM4102

PIV/PIV-I

40-bit BCD, 64-bit BCD, 75 bit, 128-bit or 200-bit outputs

NFC & BLE-enabled Mobile Phones:

HID Mobile Access® (BLE and NFC)

Apple Wallet Seos (NFC)

Apple Wallet DESFire® (NFC)

Google Wallet DESFire® (NFC)

NOTE: reference IN100 catalog for complete list of certifications

UL NOTES:

UL Listed to UL294 Indoor Dry Use, 32°F (0°C) to 120°F (49°C), 93% Relative Humidity at 90°F (32°C) installed in accordance with NFPA70, National Electrical Code.

ULC-60839-11-1 Listed Security Grade 2 Indoor Dry Use, 32°F (0°C) to 120°F (49°C), 93% Relative Humidity at 90°F (32°C), IP4X installed in accordance with CSA C22.1, Canadian Electrical Code.

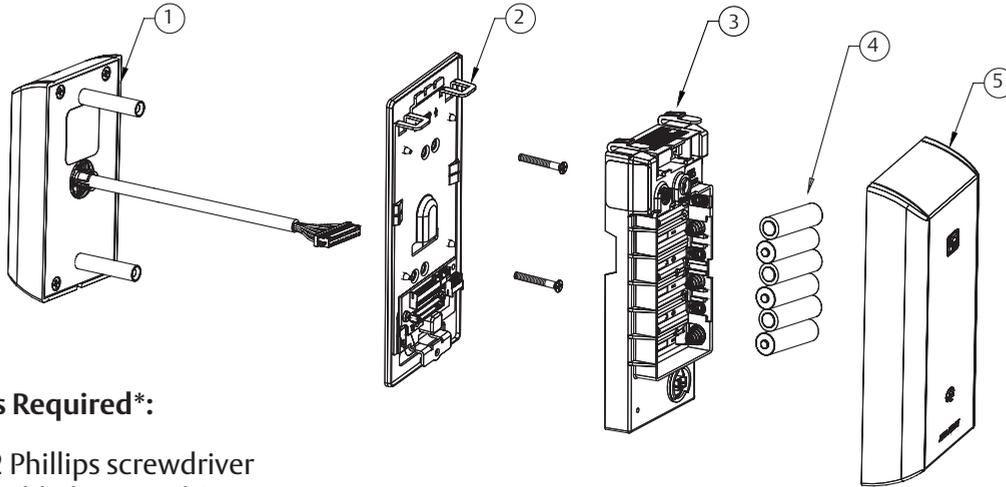
UL 294 Access Control Ratings:

Destructive Attack Level 1, Line Security Level 1, Endurance Level 4, Standby Power Level 1

Reader controller firmware version 3.14.x or greater

The electronic access control system shall not prohibit the free exit granted by other emergency systems (e.g. fire, environmental)

For Use with the separately Listed Model AH20, AH30 and AH40 HUBs



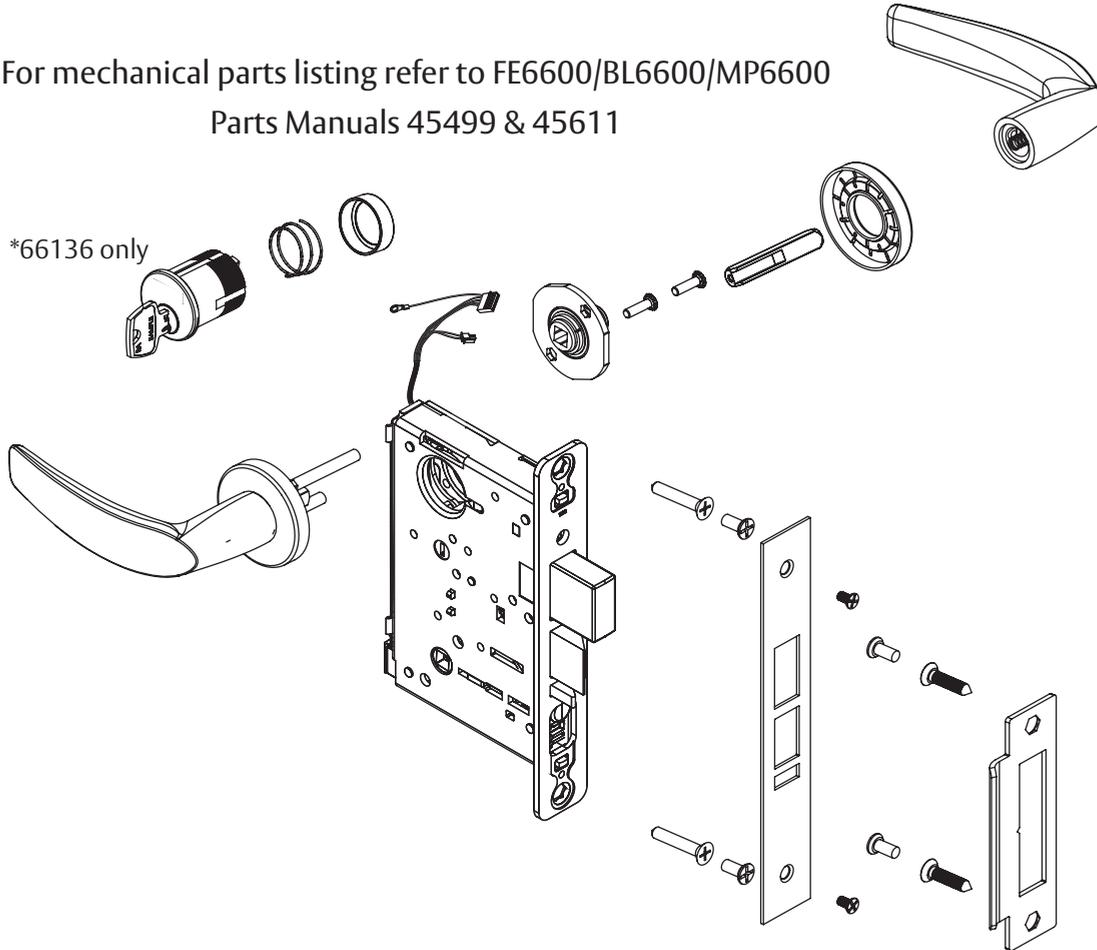
Tools Required*:

- #2 Phillips screwdriver
- Flat blade screwdriver
- 1/8" Security hex key
- 7/64" Allen Wrench

ITEM No.	DESCRIPTION
1	Aperio® Reader Assembly
2	Mounting Plate Assembly (includes gasket)
3	Aperio® Controller
4	AA alkaline batteries (6)
5	Branded Battery Cover Assembly with Privacy Button

*Additional list of tools required can be found in FE6600 and BL6600 Installation Instructions (FM440)
See Section 5 Lock Installation

For mechanical parts listing refer to FE6600/BL6600/MP6600
Parts Manuals 45499 & 45611

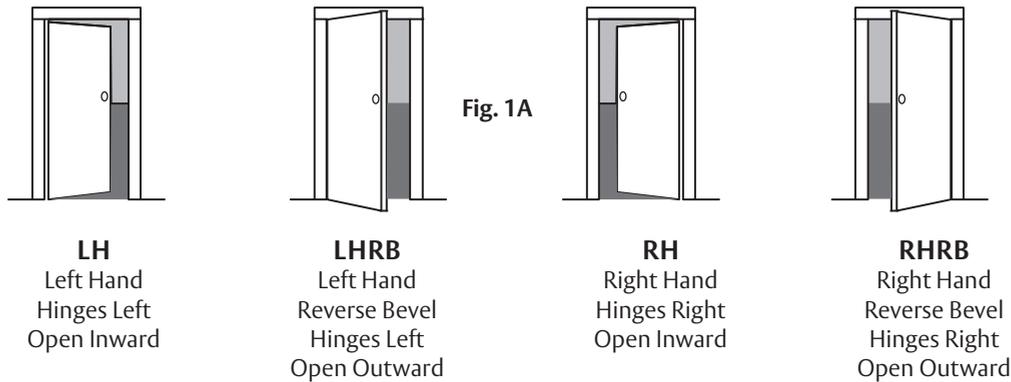


--	Reference Catalog For Available Lever Styles	1
--	Reference Catalog For Available Rose Styles	1
Lock Body	MP66136 - Multipoint lock w/ deadbolt & w/ cylinder, fail safe / fail secure	1
	FE66136 - FEMA hurricane-rated multipoint lock w/ deadbolt & w/ cylinder, fail safe / fail secure	1
	BL66136 - Blast-rated multipoint lock w/ deadbolt & w/ cylinder, fail safe / fail secure	1
	MP66135 - Multipoint lock w/ deadbolt & w/out cylinder, fail safe / fail secure	1
	FE66135 - FEMA hurricane-rated multipoint lock w/ deadbolt & w/out cylinder, fail safe / fail secure	1
	BL66135 - Blast-rated multipoint lock w/ deadbolt & w/out cylinder, fail safe / fail secure	1
Cylinder*	66136 only	1

4 Lock Installation

1A Verify Hand and Bevel of Door

Stand on outside of locked door when determining door hand.



1B Door Preparation for IN100 Series

Prior to installation, all holes must be free of burrs, debris and sharp edges.

Prepare door according to appropriate template (see website www.intelligentopenings.com).

- Door Manufacturer’s Template: **4740**
- FE6600 / BL6600 / MP6600 Series Installation Instructions: **FM440** (ships with product)

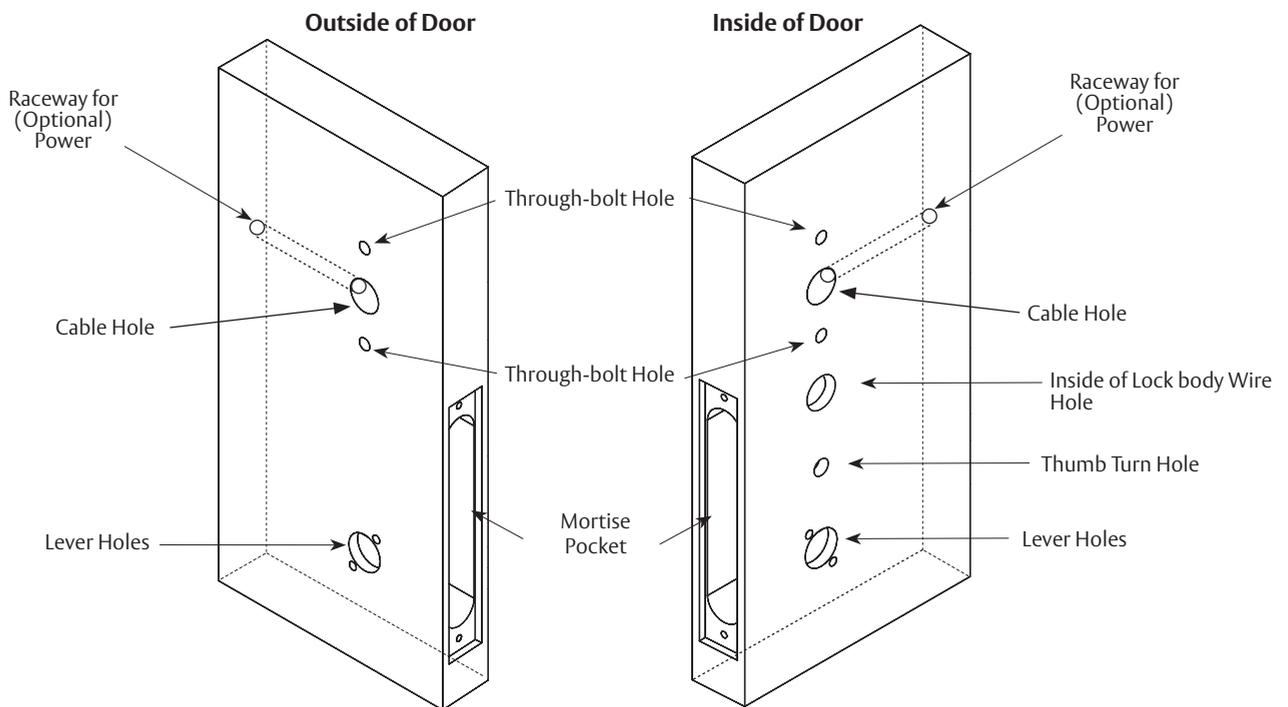


Fig. 1B Door Preparation

2 Prepare Lock Body (if necessary)

1. Reverse Lock Hand

Red surface of locking piece must face the outside/locked side of door. To rotate locking piece (Fig. 2B1):

- a. Position lock body with red surface of locking piece visible.
- b. Insert blade type screwdriver into locking piece slot to rotate locking piece toward back of lock body.
- c. Rotate the locking piece 180° until RED surface is on opposite side.

Note: Red indicates locked side (outside).

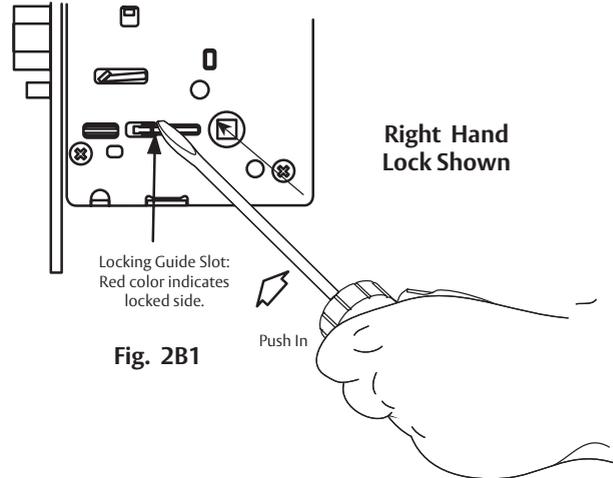


Fig. 2B1

2. Reverse Latch Hand

Beveled surface of latch must face strike (Fig. 2B2).

The deadlatch is self adjusting.

To change hand of latchbolt:

- a. Insert screwdriver into spade (triangular)- shaped slot.
- b. Rotate screwdriver 90° to push latch out until back of latch clears lock front; then rotate latch 180°.

Latch will then re-enter lock body.

Note: Latch cannot be unscrewed.

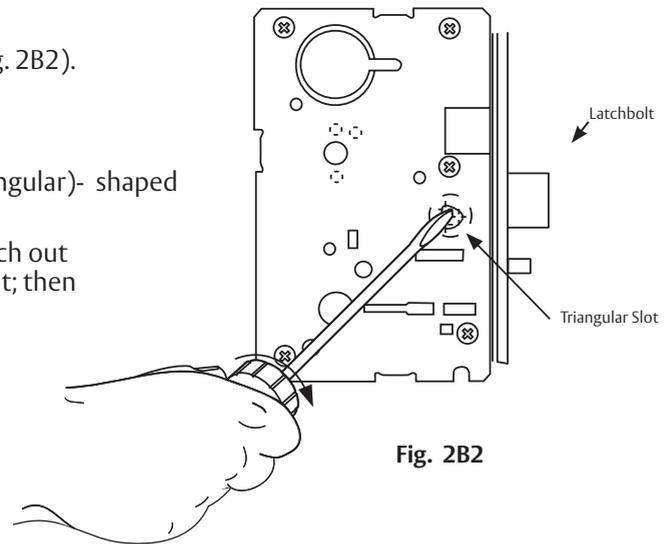


Fig. 2B2

Install Multi-Point Lock (FE6600 Series)



IMPORTANT: Read the following before continuing with installation

Please refer to **FM440** FE6600 & BL6600 MultiPoint Lock Installation Instructions (Fig. 3) before continuing with this installation.

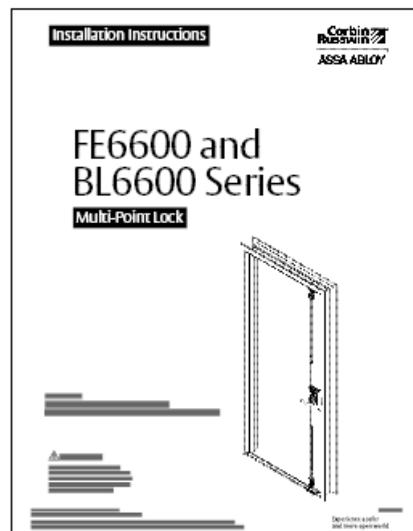


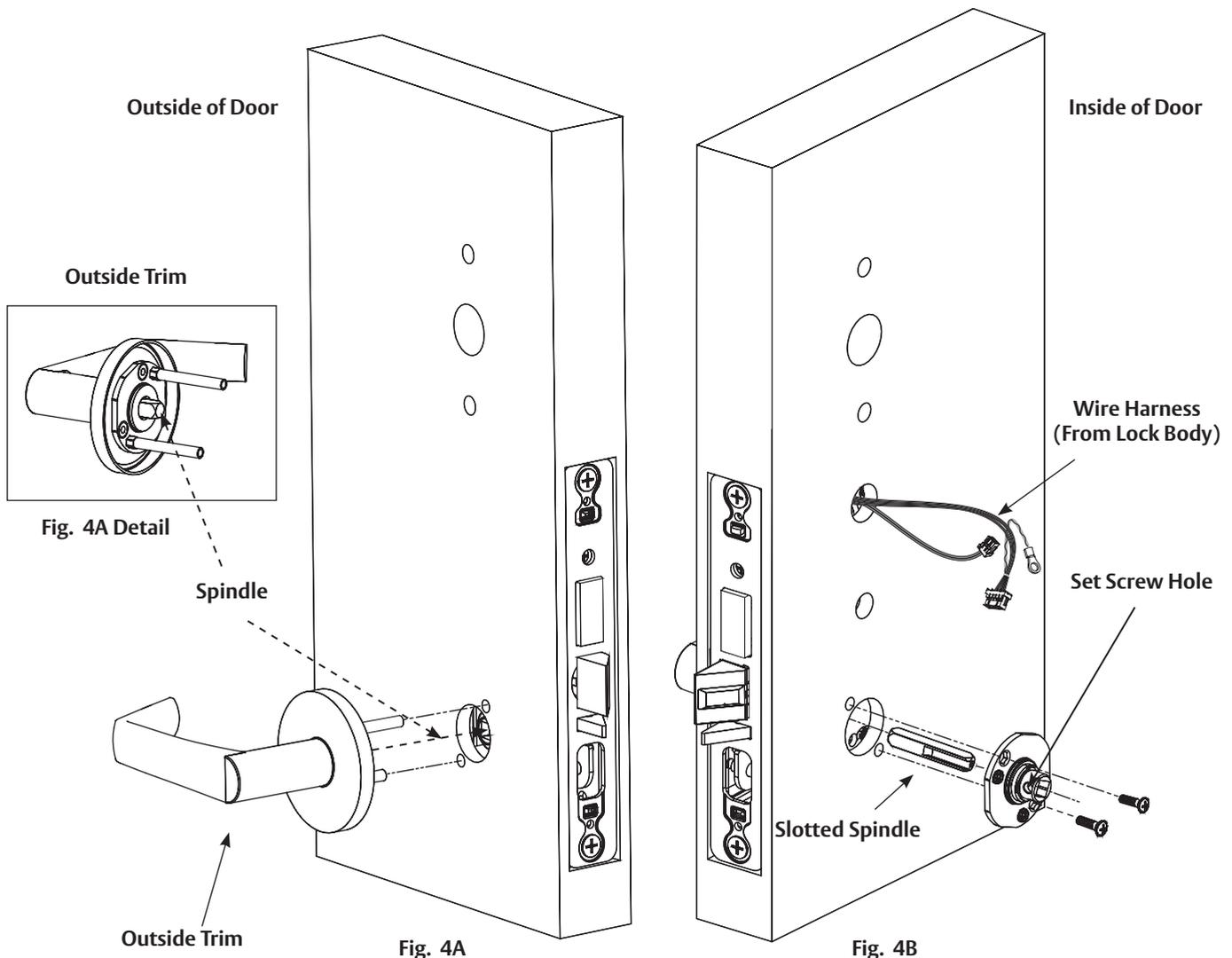
Fig. 3

4 Assemble Outside Trim

1. With outside lever horizontal, insert the mounting posts through outside of door and lock body. Make certain the lever spindle is properly engaged inside the lock body (Fig 4A).
2. On the inside of the door, insert spindle into square hole of mortise lock (Fig 4B).
3. Slide inside adapter and plate assembly over spindle and secure with (2) 8-32 X 5/8" Phillips oval head and lock washer machine screws.

NOTE: For FE6600 Muséo levers, ensure that position of set screw hole on inside adapter is oriented to match location of hole in inside lever handle.

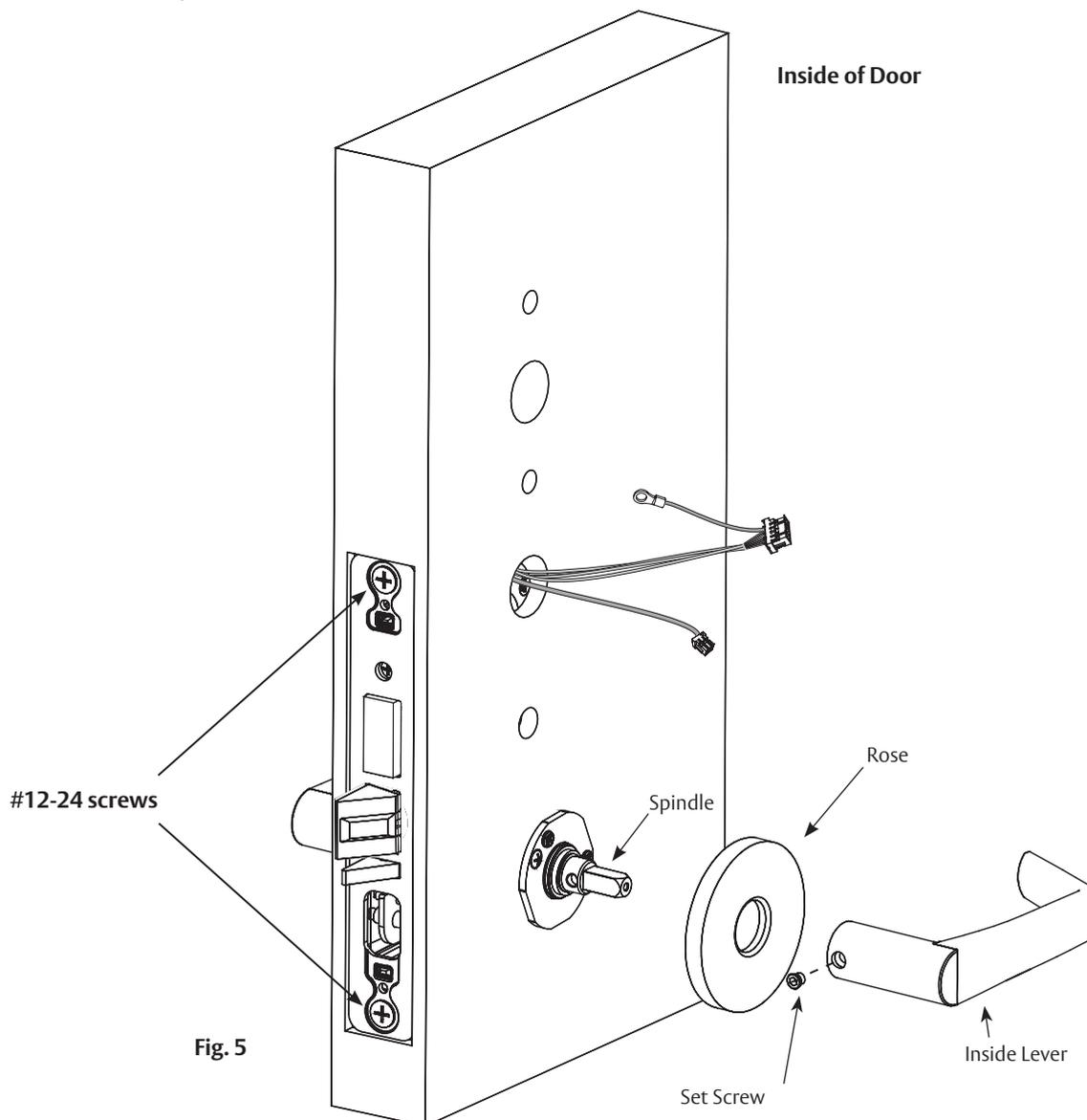
Additionally, ensure that slot in spindle is facing away from door (Fig. 4B), and is oriented to match location of hole in inside lever handle.



5

Install Inside Rose and Inside Lever Assembly

1. Place inside rose flush against door surface and rotate first counter-clockwise to seat the threads, then clockwise to securely tighten.
2. Slide lever onto spindle until fully seated. Be sure handle is horizontal and facing the hinge side of the door. Push lever onto spindle so minimum gap is visible.
3. Tighten the set screw securely with a T20 Torx® driver.
4. Finish securely tightening (2) #12-24 lock body screws.
5. Before closing the door, test that the lever is functional and ensure smooth operation of the latchbolt.



6 Install Outside Reader

- a. Orient reader so LED lens is at top. (Figure 6A)
- b. Feed reader harness through door from outside to inside.
- c. Install reader to outside of door by aligning mounting posts with door preparation holes. Hold reader flush against door while ensuring proper alignment.
- d. Feed reader harness and DPS connectors through inside mounting assembly and gasket if required*. (Figure 6B)

IMPORTANT:

Do not run wires through bottom flange hole in plate - it will damage wires and controller connector (Figures 6A-6B)
Route wires around flange, do not route wires through flange hole. (Figure 6B)

- e. Tuck excess cable into wire hole on inside of door.
- f. Begin to secure mounting assembly by partially tightening two (2) through-bolts on inside of door while ensuring proper alignment as reader is secured. (Figure 6B)
- g. Secure ground lug with #6-32 machine screw. (Figure 6C)

***NOTE:**

- Gasket is required for outdoor installations
- Do not use gasket for fire-rated openings
- If installing with gasket, separate gasket from mounting plate to feed cables/connectors through holes as indicated (Figure 6B)
- Once cables/connectors are fed through, reattach gasket to mounting plate

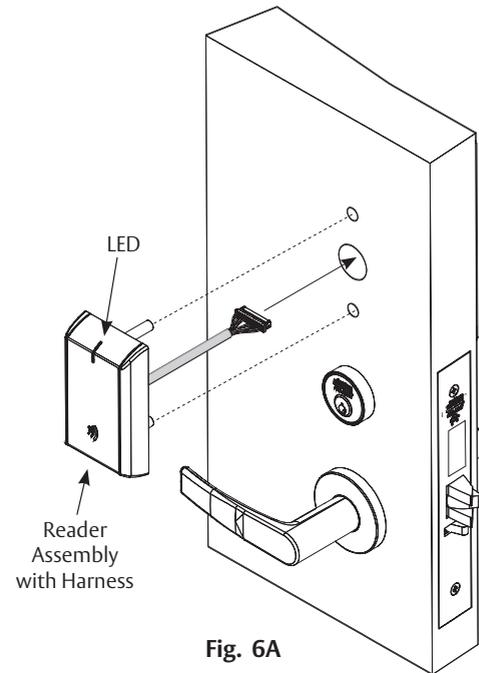


Fig. 6A

NOTE: Cable lengths exaggerated for illustrative purposes

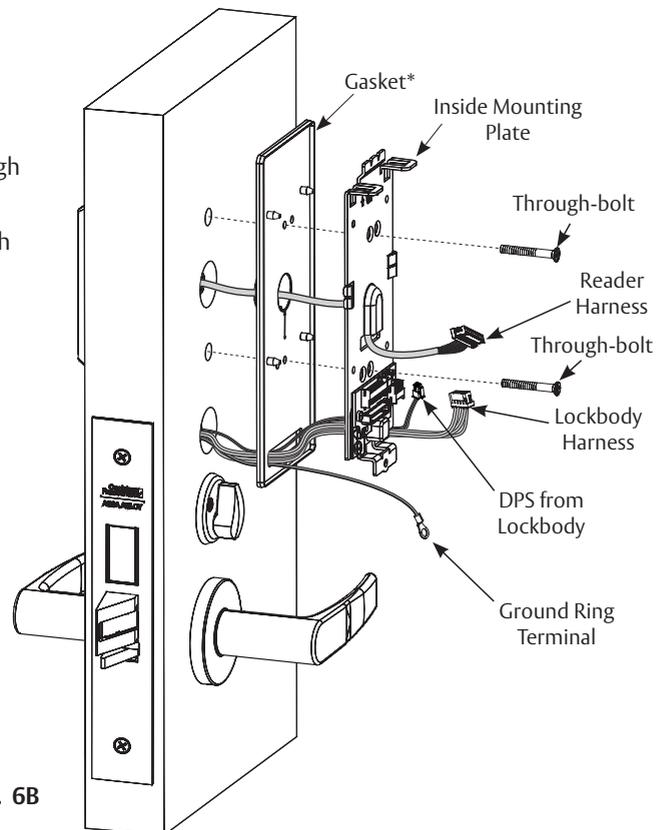


Fig. 6B

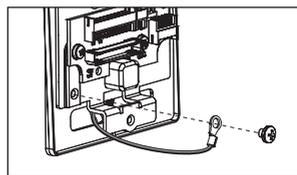


Fig. 6C

4 Lock Installation (Continued)

6 Install Outside Reader (Continued)

h. Secure the following connectors to their respective terminals (Figure 6D):

CAUTION: Do not touch or allow debris to enter connector contacts.

- Secure 4-pin DPS connector
- Secure 10-pin lock body assembly connector
- Secure (*optional) 2-pin external 12-24VDC power connector
- Secure (*optional) external 12-24VDC power supply ground ring terminal to Ground Lug

NOTE: For UL294 applications, the power supply shall be UL294 Listed, Class 2 Power Limited

NOTE: For ULC-60839-11-1 applications, the power supply shall be ULC-60839-11-1 (Security Grade Level 2 or better) Listed Class 2, or ULC-S319 (Security Grade Level 2 or better) Listed Class 2, or ULC-S318 Listed, Class 2

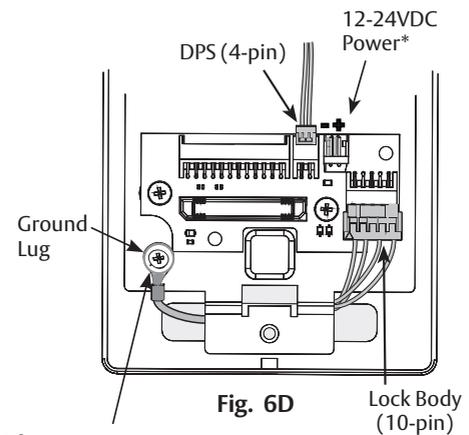
NOTE: For ULC-60839-11-1 applications the power supply wiring shall be a maximum length of 3 meters (9.8 feet)

IMPORTANT: Do not run wires through bottom flange hole in plate - it will damage wires and controller connector. Route wires around flange. (See Figures 6D-F)

- i. When all connections have been made, tuck excess cable into wire hole on inside of door.
- j. Secure mounting assembly while ensuring proper alignment of outside reader and tighten two (2) through-bolts on inside of door to secure reader. (Figure 6E)
- k. Secure 24-pin card reader connector. (Figure 6F)

*Optional 12-24VDC Power		
Remote Power Harness Wire Terminations		
2-pin Connector	Black	PS (-) Return
	Red	PS (+) 12-24VDC
Ring Terminal	Green	Earth Ground

Power Supply (PS) Required - UL Class 2 Filtered & Regulated, 12-24VDC, 1.0A



*If 12-24VDC power harness used, secure its ground (ring terminal) here as well

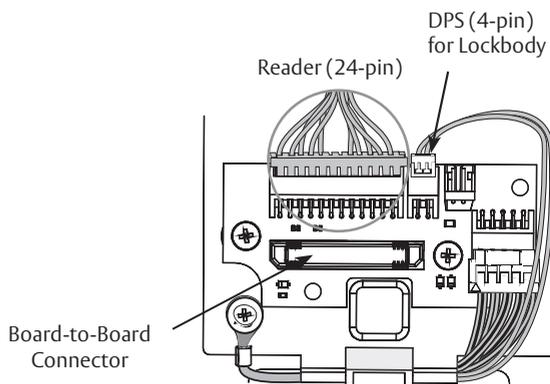


Fig. 6F

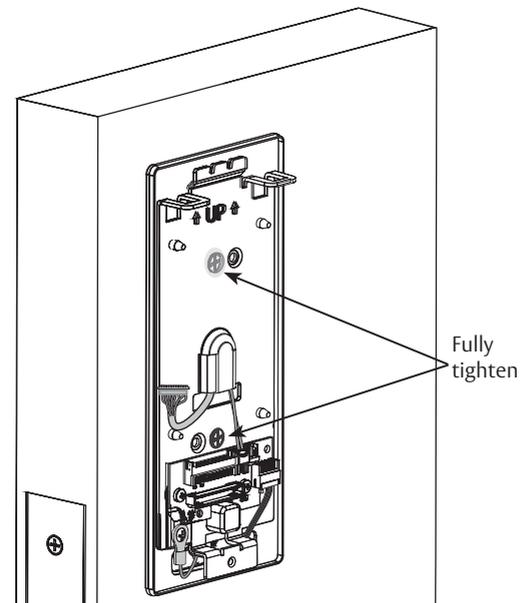


Fig. 6E

4

Lock Installation (Continued)

7

Install Controller Assembly

- a. Insert bottom tab of controller - (ensure path is clear) into slot on mounting plate. (Figure 10A)
- b. Ensure proper alignment of board-to-board connectors while pivoting controller toward door until two tabs on top click securely into place on mounting plate. (Figure 10B)

CAUTION: To avoid possible damage to board-to-board connectors, care should be taken when securing controller to mounting plate. If there is resistance when securing, detach controller to determine cause before re-attaching controller.

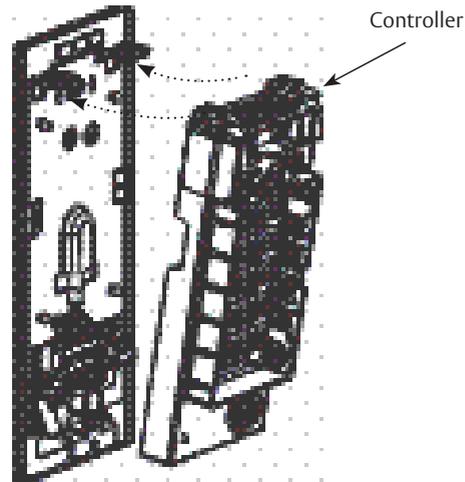


Fig. 10A

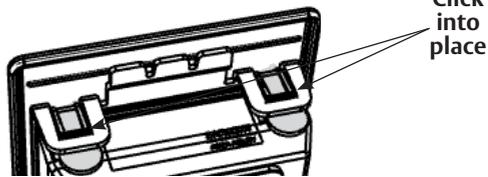


Fig. 10B

8

Install Batteries

- a. Place six (6) "AA" alkaline batteries in compartment, being careful to align polarity properly. (Figure 11)
- b. After batteries are installed, there is a slight delay; then red and green flash*, audible "beep" and lock motor will cycle.

*See Section 8 - LED Indications for more information.

NOTE: It is recommended to put the batteries on a replacement schedule of no more than two (2) years.

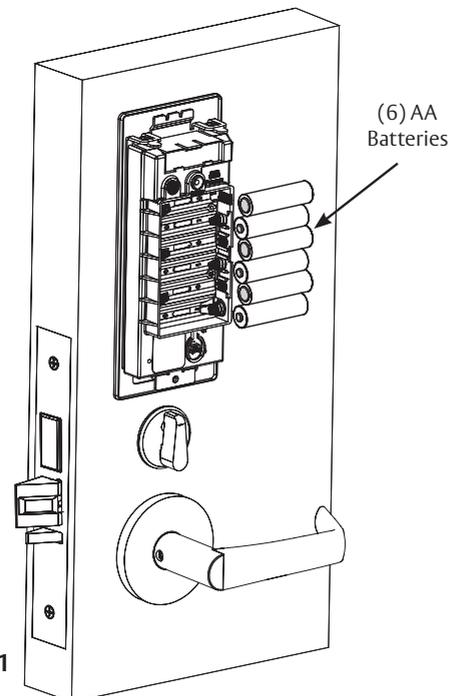


Fig. 11

9 Install Inside Cover (Figure 12)

- a. Assemble cover by hooking top edge on inside mounting plate.
- b. Carefully press bottom of cover toward door without pinching or damaging wires.
- c. Secure cover utilizing 1/8" security hex key.

NOTE: Use of power tools on this step is strongly discouraged. Over-torquing security pin hex screw will result in battery cover damage.

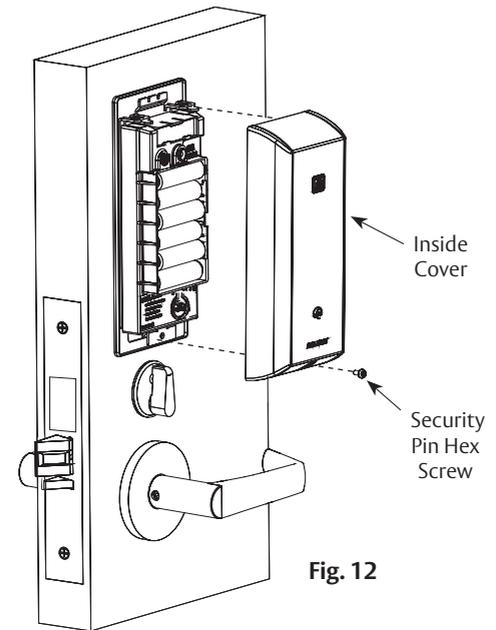


Fig. 12

10 Install Shield

- a. Install shield (provided) over inside controller. (Figure 13)
- b. Drill and tap door for #8-32 machine screws (provided).

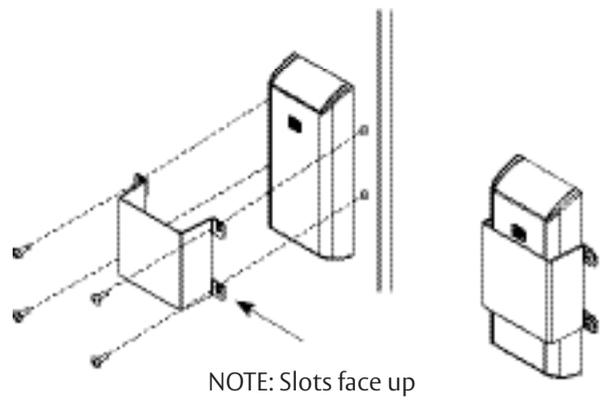


Fig. 13

IMPORTANT: Read the following before continuing with installation

Please refer to FM440 FE6600 & BL6600 MultiPoint Lock Installation Instructions before continuing with this installation if (optional) Dogging Indicator is being installed.

5**Operational Check**

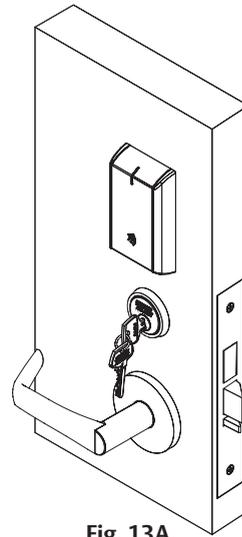
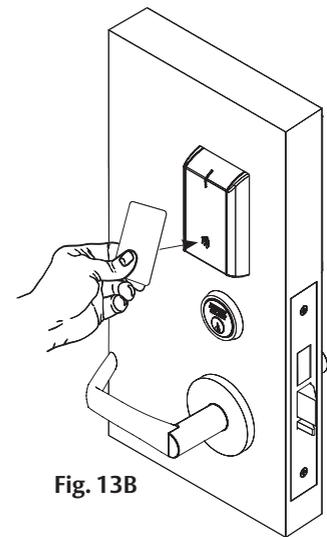
1. Insert key into cylinder and rotate.
(Figure 13A)
NOTE: There should be no friction against lock case, wire harness or any other obstructions.
2. Check that key retracts latch.
NOTE: Key should rotate freely.
3. Throw deadbolt, if present. Check that key retracts both deadbolt and latch.
4. Try inside lever; ensure it retracts latch and deadbolt, if provided.

NOTE: Consult premises access control system for use of RX function and verification of signal.

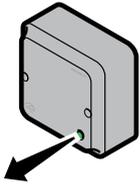
5. Present a valid credential* to unlock outside lever; turn lever handle to ensure latch retracts. (Figure 13B)

NOTE: Credential should approach inscription on reader as indicated to ensure credential is read properly. Do not wave credential. (Figure 13B)

*Depending upon availability of access control system either a (denied) red flash or a green and lock motor cycle (access granted).

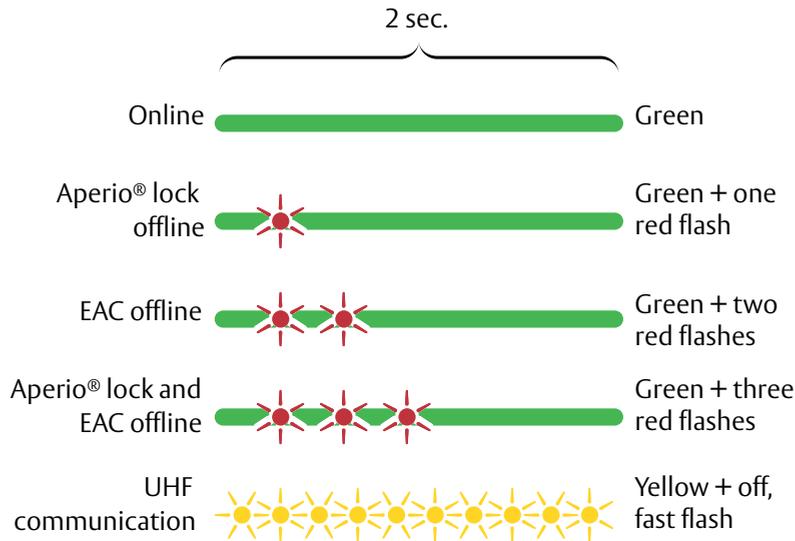
**Fig. 13A****Fig. 13B**

6 Communication Hub LED Indications



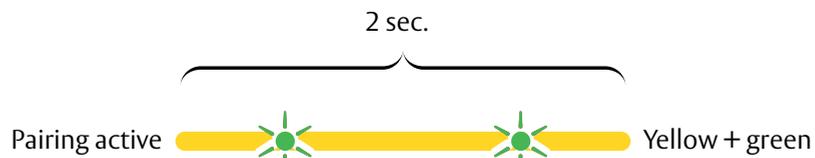
Communication hub has a single LED. It supports an optical scheme of red, green and yellow.
Indication scheme is described by figures below:

Communication Hub NORMAL OPERATION LED indication



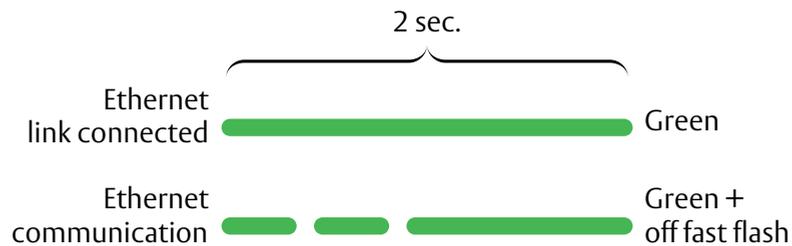
Some special LED indication schemes are used during lock maintenance actions:

Communication Hub MAINTENANCE LED indication



LED on AH40 communication hub indicates both status of Ethernet link level and ethernet communication:

AH40 Communication Hub ETHERNET LED indication



*For more information, refer to Aperio Online Quick Installation Guide
Document No: ST-001322-PF Date: 2015-12-23

Lock has three (3) LEDs. They support an optical scheme with red, yellow and green. Indication scheme described by figures below:

Lock NORMAL OPERATION LED indication

	EAC response time	Enter PIN	
Card + PIN access (configurable)			One yellow flash after card, two flashes before PIN (.125 second)
Card access (configurable)			One yellow flash (.25 second)
Access granted, EAC offline or online			One green flash (1 sec.)
Access denied, EAC online			One red flash (1 sec.)
Force closed in remote open/office mode			Five yellow flashes & one red flash (.25 sec.)
Busy blink, com hub busy w/other locks			Continuous yellow flashes (.25 sec. every sec.)
Access denied, EAC offline			Three red flashes (.5 second each)
*Lock mechanism is blocked when closing			Continuous red flashes (.125 sec. every 1 sec.)
Error in lock, maintenance required			Ten red flashes (.125 sec. each) (Repeated every 5 sec. if lock can't close)
Tamper			Ten red flashes (.125 sec. each) repeated every 5 sec.
Time to replace battery			Continuous yellow flashes (.25 sec. every 5 sec.)
Battery reached end of life, lock disabled			Continuous red flashes (.25 sec. every 5 sec.)
USB cable detection action occurred			Five yellow flashes (.25 second each)
Privacy mode** activation (inside)			Ten red flashes (.125 sec. each, 1 per sec.)
			then one red flash every 3 sec. for 120 sec.
Privacy mode activation (outside)			One flash (1 sec.) and 1 beep (if available)
Privacy mode deactivation (inside)			Three red flashes (.125 sec.)



*When lock mechanism is blocked (lock jammed) lever must be turned to release lock mechanism.

** Ensure Privacy mode button configuration in lock matches access control system configuration settings.

Some special LED indication schemes are used during lock maintenance actions:

Lock MAINTENANCE OPERATION LED indication

Enter configuration mode Five yellow flashes (.125 sec. each)

8 Lock Self-Test LED Indications

After replacing batteries, a Power on Self Test (POST) is performed. The result is indicated using a series of red and green LED flashes as described by figures below:

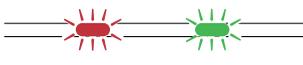
Battery Not Fully Charged

Error in lock is an indication -10 quick (125ms) red blinks, that either new batteries are not at right voltage or a backward battery has been installed; battery not fully charged; energy counter not reset or no Power on self-test performed.

Error in lock, maintenance required  Ten red flashes (.125 sec. each) (Repeated every 10 sec. if lock can't close)

Test Pass

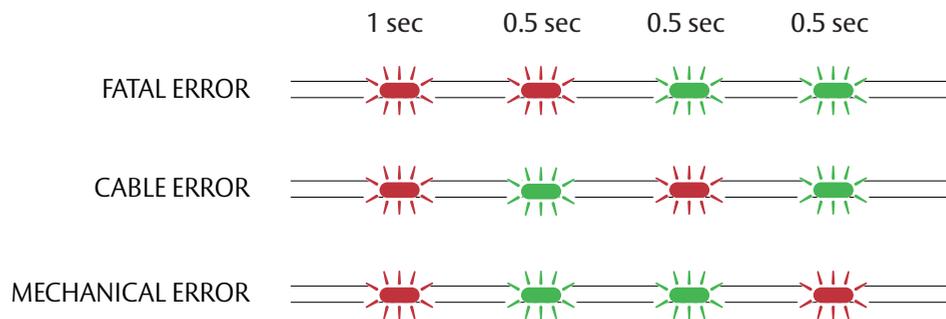
1 red (1s) + 1 green (1s), Power on self-test passed. See table below.

POST Successful  One red, one green flash (1 second)

Test Fail

1 red (1s) + 3 blinks (500ms, green or red), at least one test failed (red). See table below.

If a fatal error is detected, lock will enter an Error state and continuously indicate fatal error. Lock will not read cards or unlock.

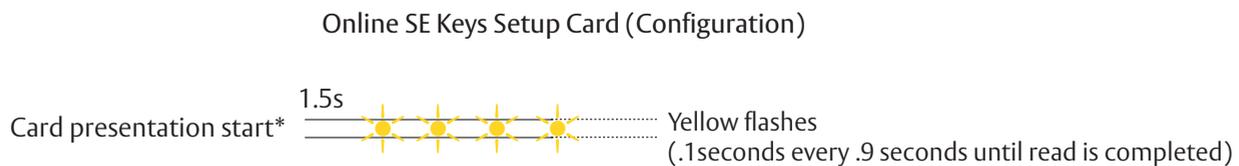
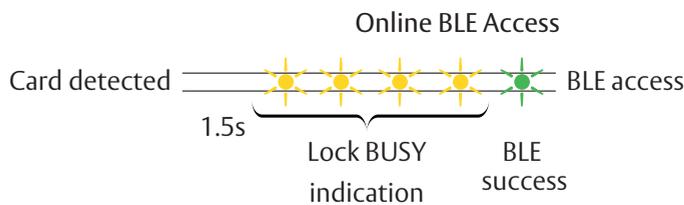
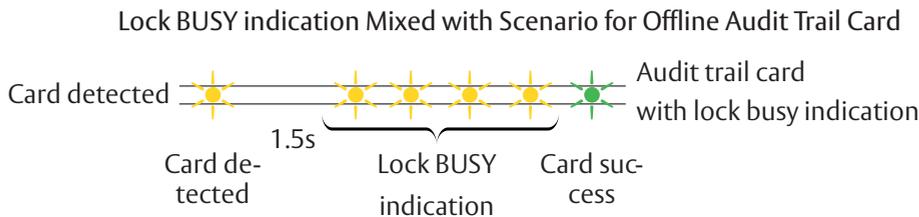
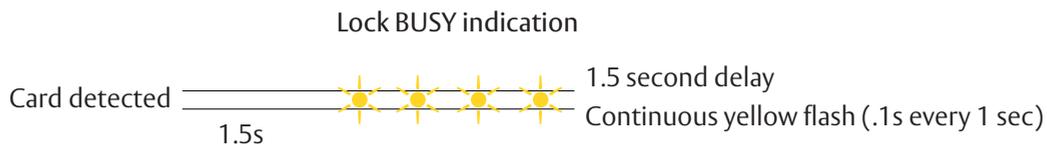


FATAL ERROR	Tests core functionality. MCUs, memory and internal communication, etc.
CABLE ERROR	Tests communication between different parts in system, i.e. different boards connected with a wire.
MECHANICAL ERROR	Test related to moving parts of lock.

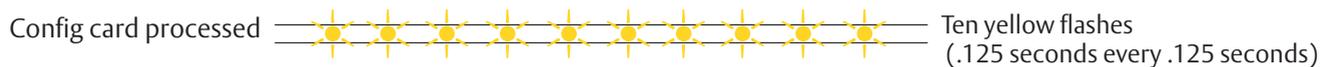
9 Lock Busy LED Indications

Lock BUSY indicates lock is processing a card (such as a key configuration card for online SE processor or offline void list card with many entries). Card should be kept in close proximity to reader until end of process. Lock BUSY indication does not cancel or overwrite any other indications. Indications related to access permissions or setup card processing are still present.

Indication scheme is described by figures below:



*Introduced with firmware version 3.8 - in prior firmware versions only
"Config card processed" LED indication is displayed.



IN100 Series
FE6600/BL6600/MP6600
Multi-Point Lock





**IN100 Series
FE6600/BL6600/MP6600
Multi-Point Lock**

IN100 Series
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Multi-Point Lock



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