Cylindrical Lockset
IN100 WiFi
Installation Instructions
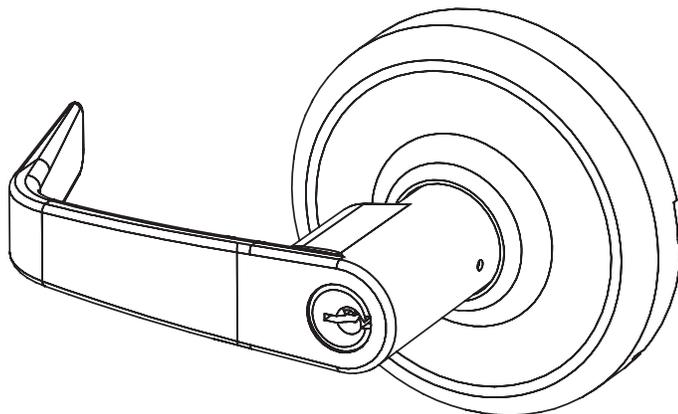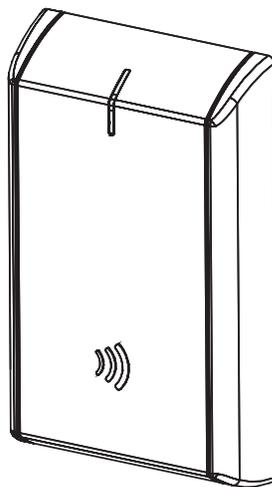
Corbin Russwin
ASSA ABLOY

Attention Installer

Please read these instructions carefully to prevent missing important steps.

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

Important: 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 Technical Assistance call Corbin Russwin at 1-800-810-WIRE (9473)

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IN100 Cylindrical Lock

Table of Contents

1) Warning

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. 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.

Note: 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 the 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 technician for help

The term "IC:" before the radio certification number only signifies that Industry Canada technical specifications were met. 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.

To comply with "Fire Listed" doors, the batteries must be replaced with alkaline batteries only.

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

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IN100 Cylindrical Lock

2) General Description

The Corbin Russwin® IN100 lock with Aperio™ Technology makes it easy and cost-effective to bring access control to more doors. It uses local wireless communication between the lock and an Aperio hub to connect to an access control system, eliminating the greatest cost and inconvenience of traditional access control – the wiring at the door.

The IN100 utilizes HID® 125 kHz prox or 13.56 MHz iCLASS® smart card technology, and all technology features are supported by the physical security of Corbin Russwin ANSI/BHMA Grade 1 hardware.

This product is operated by six (6) "AA" alkaline batteries. Corbin Russwin locks are designed with quality components to provide high security, performance and durability.

3) Specifications / Features

Hardware Specifications

- Latch – Stainless steel, ½" (13mm) throw
  Optional: ¾" (19mm) throw deadlocking fire latch for pairs of doors

- Deadlocking latch prevents manipulation when door closed

- Door Thickness – Standard 1-3/4" (44mm) to 2" (50mm)
  Optional 2" (50mm) to 2-1/4" (57mm)

- UL fire listed

- Outside lever controlled by reader or key retracts latch

- Inside Lever produces REX (request to exit) signal

- Complete monitoring of door - DPS (External Door Position Switch supplied)

- May be used for both indoor and exterior applications.

A weather-protective gasket is required for exterior applications.

Electronic Specifications

- Input Power: DC 9V, 1.5A (6 AA alkaline batteries)
- Optional hard-power 12VDC to 24VDC
- HID® 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
    - Low Frequency (125 kHz):
        - HID Prox®
    - NFC-enabled Mobile Phones

- Uses low-rate wireless personal area networks (IEEE 802.14.4)
- Multiple time zone and holiday access scheduling
- First-in unlock or automatic unlock configuration, based on specified time schedule
- Uses AES 128-bit wireless encryption*
- Privacy button

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

⚠ To comply with "Fire Listed" doors, the batteries must be replaced with alkaline batteries only.

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IN100 Cylindrical Lock

4) Product Illustration

Reader Module
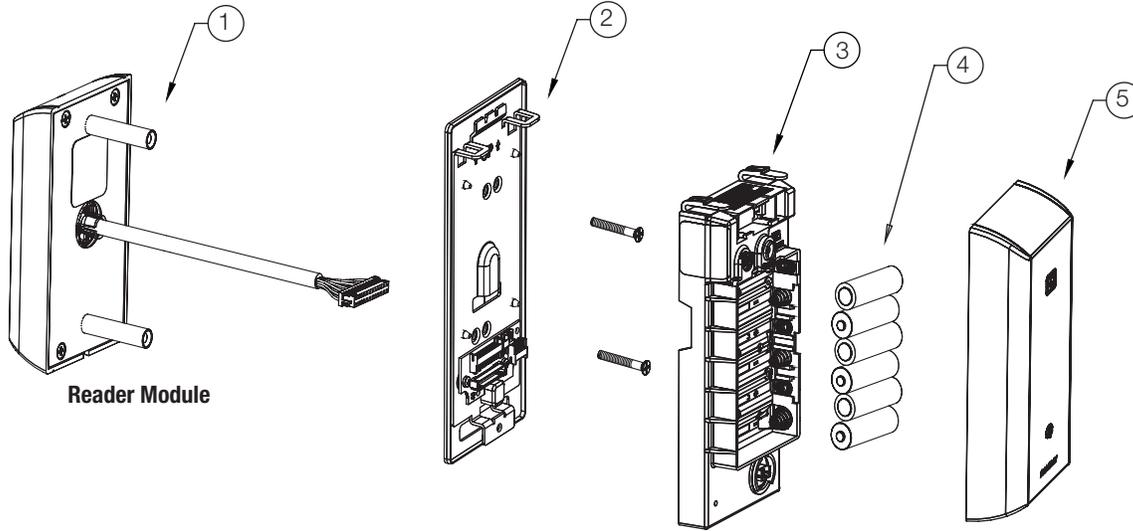
ITEM	PART NUMBER/ORDER STRING	DESCRIPTION	COLOR/TRIM	QTY
1	IN-100-EM01CL33134-IP-B	HID iCLASS®, HID iCLASS SE® (SIO-enabled), HID iCLASS® Seos™, HID MIFARE® SE, HID DESfire® EV1 SE, HID Prox®, NFC-enabled mobile phones	Black	1
	IN-100-EM01CL33134-IP-W	HID iCLASS®, HID iCLASS SE® (SIO-enabled), HID iCLASS® Seos™, HID MIFARE® SE, HID DESfire® EV1 SE, HID Prox®, NFC-enabled mobile phones	White	1
	IN-100-EM01CL33134-IP-MB-[finish]*	HID iCLASS®, HID iCLASS SE® (SIO-enabled), HID iCLASS® Seos™, HID MIFARE® SE, HID DESfire® EV1 SE, HID Prox®, NFC-enabled mobile phones	Black with metal trim	1
	IN-100-EM01CL33134-IP-MW-[finish]*	HID iCLASS®, HID iCLASS SE® (SIO-enabled), HID iCLASS® Seos™, HID MIFARE® SE, HID DESfire® EV1 SE, HID Prox®, NFC-enabled mobile phones	White with metal trim	1
	IN-100-EM01CL33134-IPS-B	All credentials supported by the IP option plus MIFARE Classic and DESfire EV1	Black	1
	IN-100-EM01CL33134-IPS-W	All credentials supported by the IP option plus MIFARE Classic and DESfire EV1	White	1
	IN-100-EM01CL33134-IPS-MB-[finish]*	All credentials supported by the IP option plus MIFARE Classic and DESfire EV1	Black with metal trim	1
	IN-100-EM01CL33134-IPS-MW-[finish]*	All credentials supported by the IP option plus MIFARE Classic and DESfire EV1	White with metal trim	1
2	820F558	Inside Mounting Kit (mounting plate & hardware)		1
3	820F549	IN100 Controller		1
4	N/A	AA battery		6
5	820F489	Inside Escutcheon	Black	1
	820F499	Inside Escutcheon	White	
	820F525 FIN*	Inside Escutcheon	Black with metal trim	
	820F535 FIN*	Inside Escutcheon	White with metal trim	
6	FM356	Field prep template (not shown)		1
7	T31203	Door manufacturers template (not shown)		1
--	FM404	Instructions (this manual)		1

* Specify finish

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IN100 Cylindrical Lock

Tools Required:
- • Phillips Screw Driver #2, #3
- • Flat Blade Screw Driver (Standard size)
- • 1/8" Security Allen Wrench (supplied)
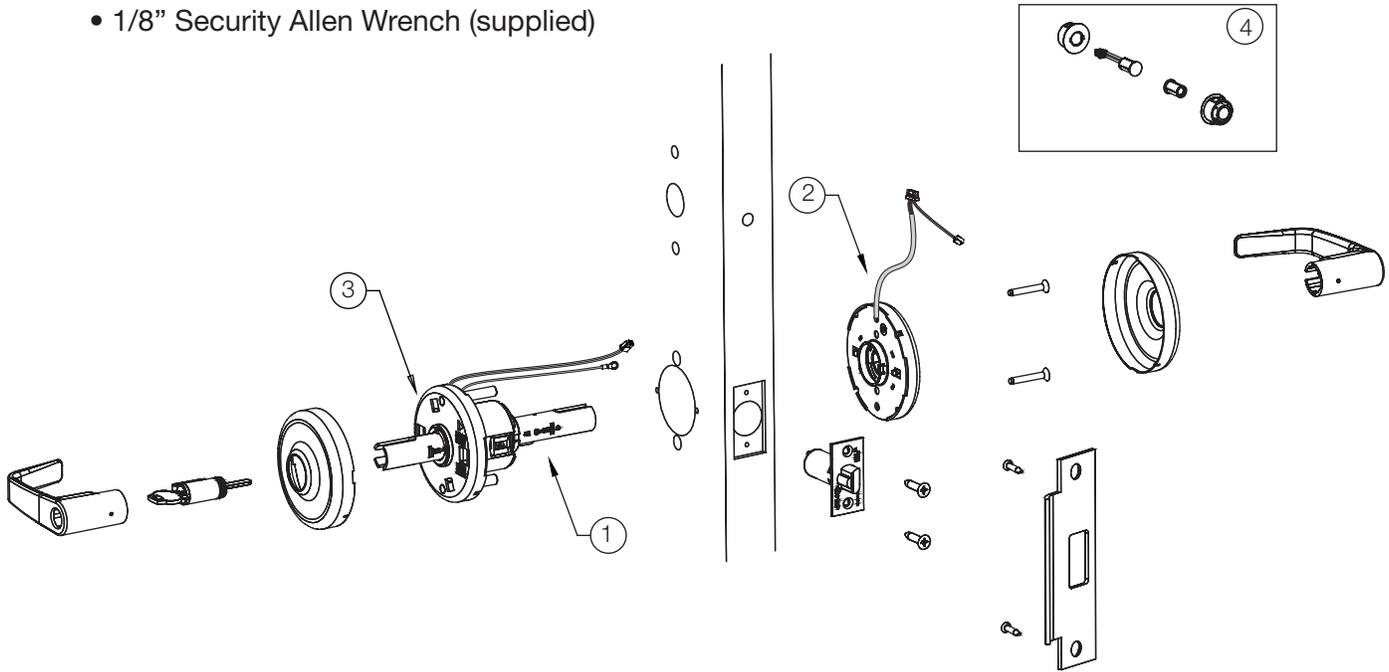
1*	785F628	CL33134 Cylindrical lock with fixed core cylinder	1
	785F638	CL33134 Cylindrical lock with removable core cylinder	
2	785F488	Inside Spring Cassette - IN100 REX (1-3/4" - 2" Door)	1
	785F498	Inside Spring Cassette - IN100 REX (2-1/4" Door)	
3	783F208	Outside Spring Cassette	1
4	820F609	DPS (Door Position Switch) Kit	1

*The IN100 CL33134 cylindrical lock supports Escape Return functionality.

For parts not listed, refer to CL3300 Parts and Service Manual.

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IN100 Cylindrical Lock

5) Installation Instructions

1.   Verify Hand and Bevel of door

Illustrations shown are as viewed from the outside or secure side of opening.
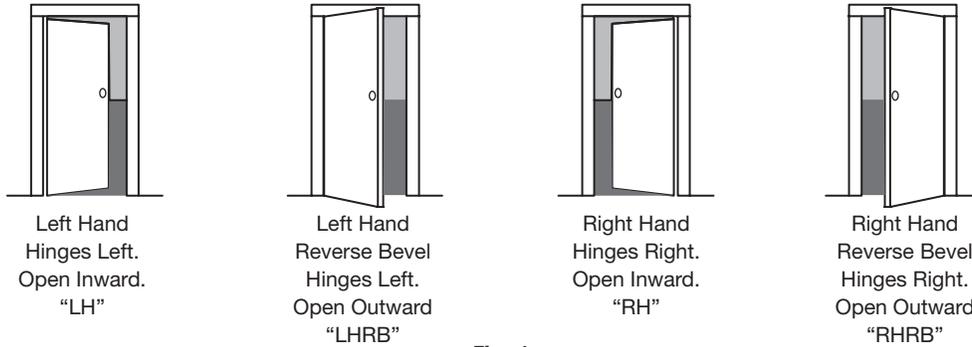
Left Hand
Hinges Left.
Open Inward.
"LH"

Left Hand
Reverse Bevel
Hinges Left.
Open Outward
"LHRB"

Right Hand
Hinges Right.
Open Inward.
"RH"

Right Hand
Reverse Bevel
Hinges Right.
Open Outward
"RHRB"

Fig. 1

2.   Door Preparation

Prep door according to supplied door marker (FM356). For door manufacturer templates visit **www.corbinrusswin.com** and reference template # T31203.
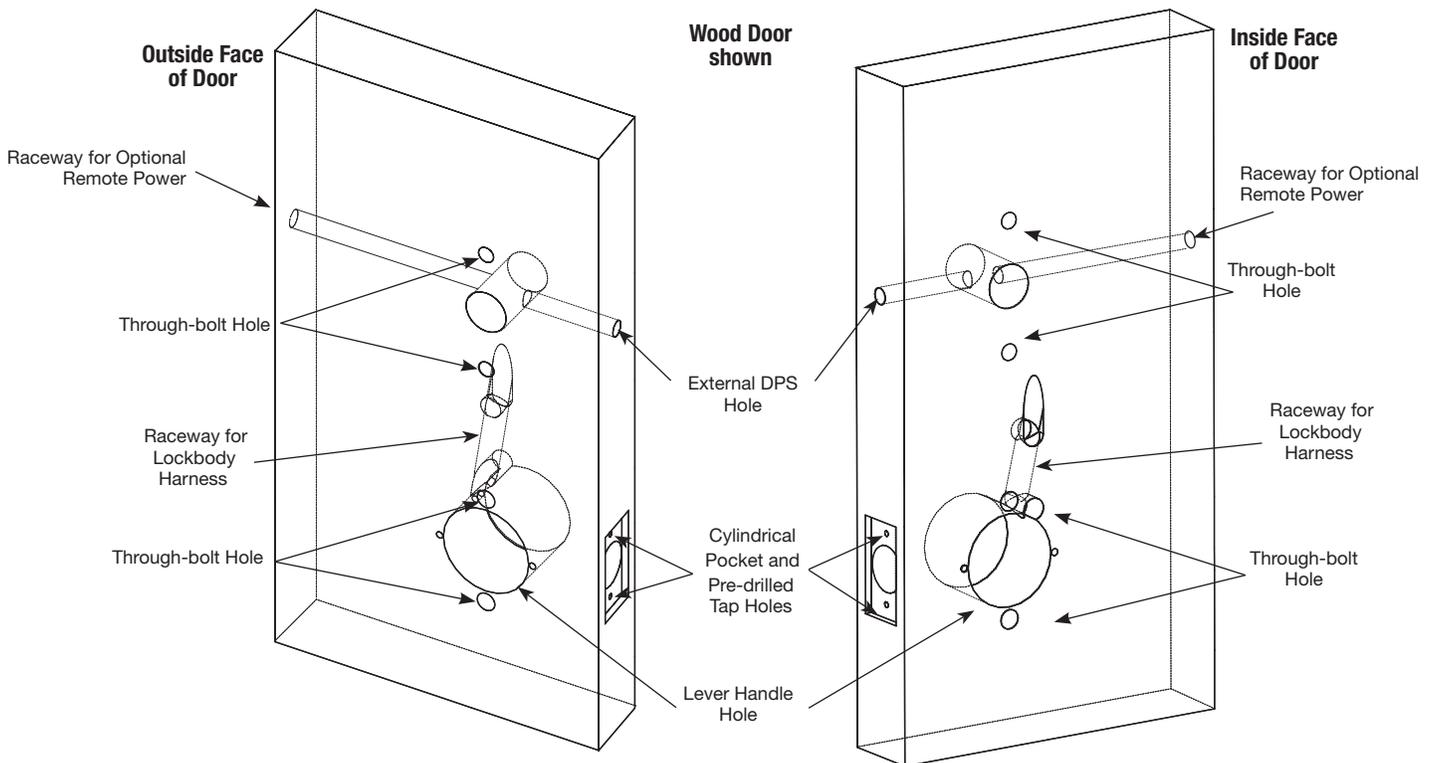
Outside Face of Door

Wood Door shown

Inside Face of Door

Raceway for Optional Remote Power

Through-bolt Hole

Raceway for Lockbody Harness

Through-bolt Hole

External DPS Hole

Cylindrical Pocket and Pre-drilled Tap Holes

Lever Handle Hole

Raceway for Optional Remote Power

Through-bolt Hole

Raceway for Lockbody Harness

Through-bolt Hole

Cable Hole

Fig. 2

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5) Installation Instructions (Continued)

3.   Install Door Position Switch (DPS)

a. Insert DPS into the raceway on the latch edge of the door.

b. Push wires through raceway toward lock prep.

c. Push DPS firmly into place by hand.
    Note: **DO NOT TAP SWITCH WITH ANY TOOL.**

d. Install magnet into door frame. Push firmly into place by hand.
    See instruction **A7983A**.

CAUTION: if DPS is not installed or is installed improperly, door status monitoring features will not function.
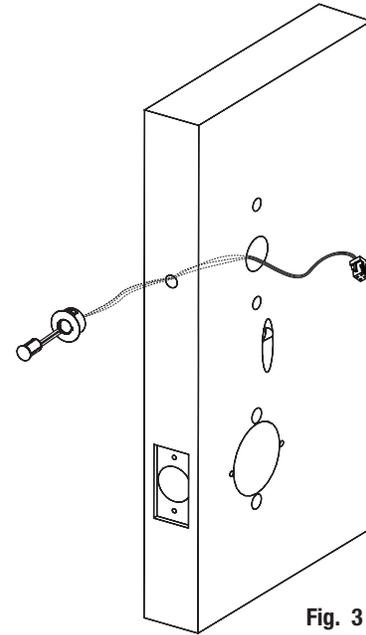
Fig. 3

4.   Install Latch Bolt

Install latch bolt with beveled bolt facing the strike using two #8 x 3/4" combination screws (Fig. 4):
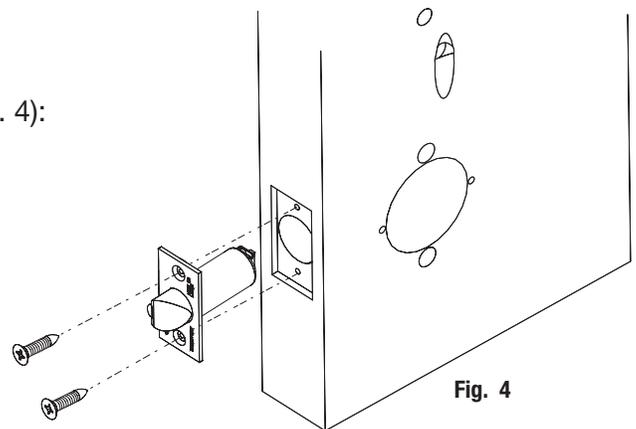
Fig. 4

5.   Install Strike Plate

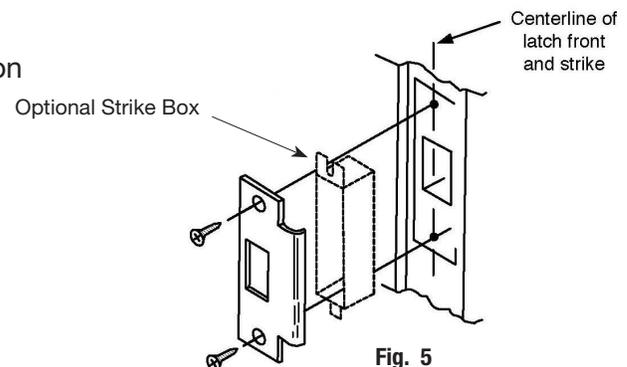Install Strike Plate using two #12 x 1" combination screws (Fig. 5):

Centerline of latch front and strike

Optional Strike Box

Fig. 5

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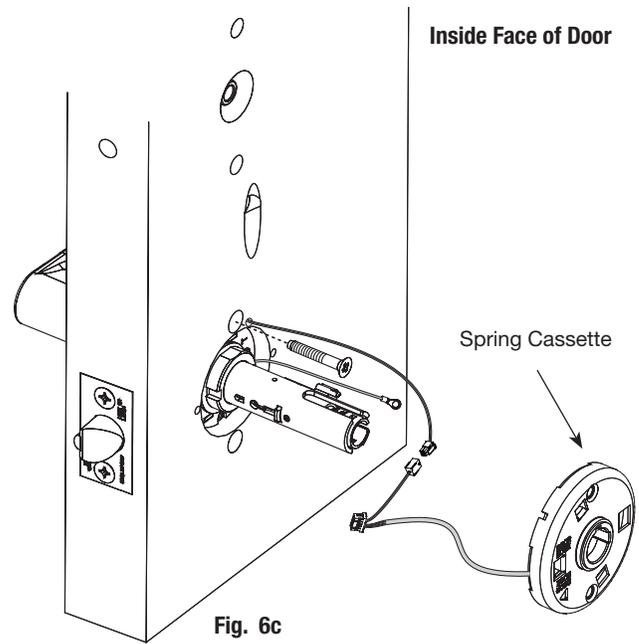
IN100 Cylindrical Lock

6.   Install Lock Body

a. Feed lock body and wire through 2-1/8" diameter hole from outside of door (Fig. 6a). Engage latch with lock body. Latch ears must slide into housing as shown (Fig. 6b).

b. Connect 4-pin connector from lock body to 4-pin on cassette (Fig. 6c).

Outside Face of Door

Fig. 6b

Fig. 6a
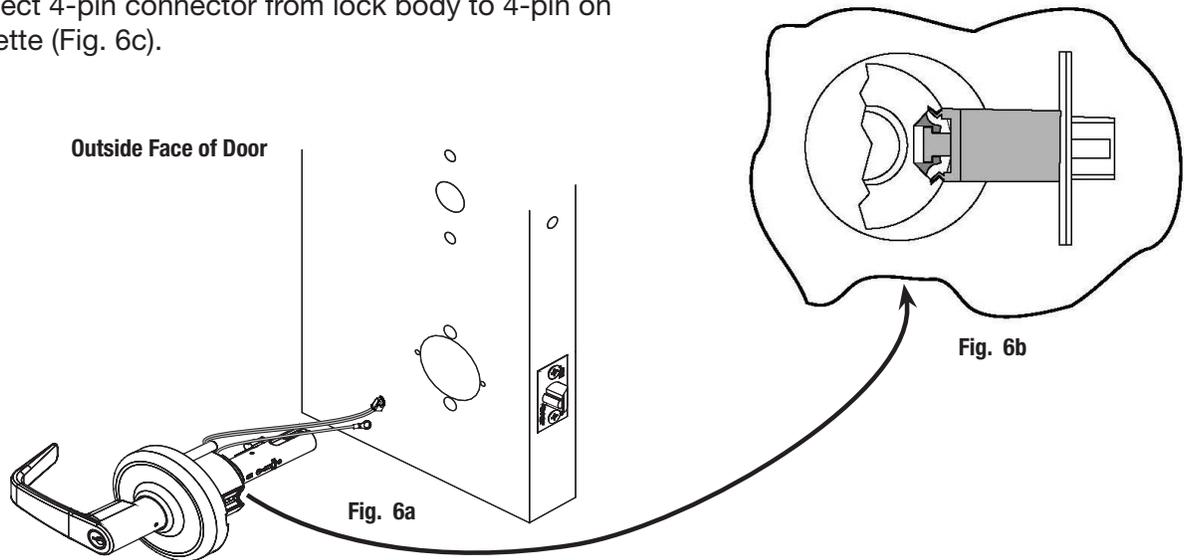
c. Temporarily install top throughbolt to hold chassis in door (Fig. 6c).

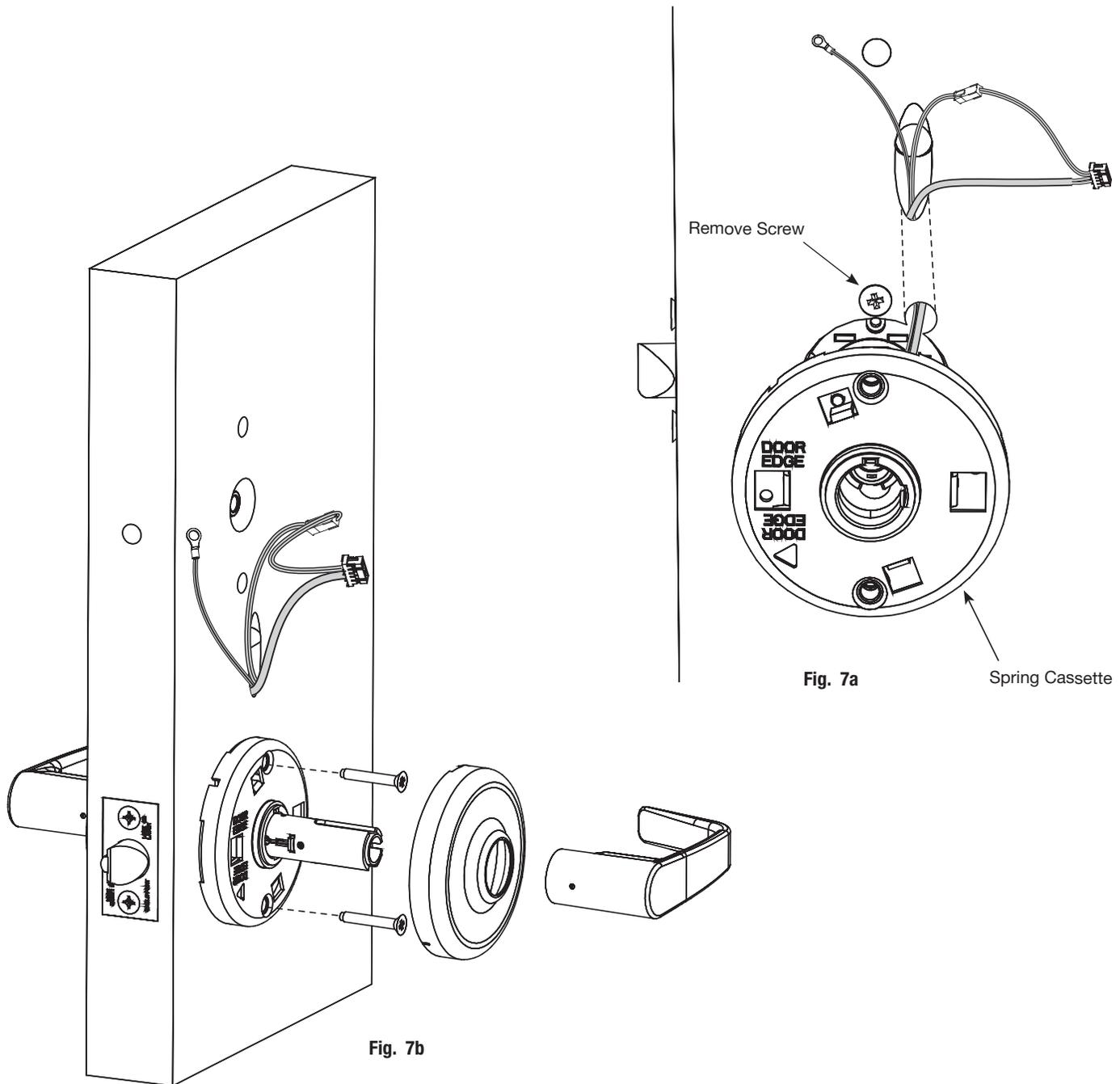Important: Door must remain open during installation.

Use door stop.

d. Connect REX wire from I/S cassette to lockbody harness.

Inside Face of Door

Spring Cassette

Fig. 6c

ASSA ABLOY, the global leader in door opening solutions
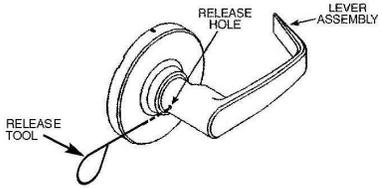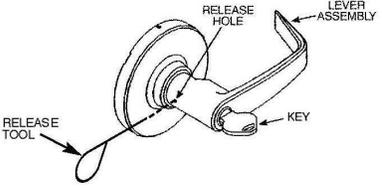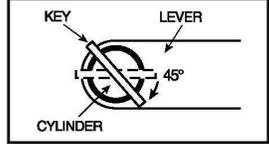
IN100 Cylindrical Lock

7.   **Install Inside Spring Cassette Lock**

  a. Feed harness wires and ground wire up through raceway (Fig. 7a).

  b. Remove screw from previous step.

  c. Slide on cassette and secure with (2) screws (Fig. 7b).

Remove Screw

Fig. 7a   Spring Cassette

Fig. 7b

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8.   Installation and Removal of Lever and Standard Cylinder

LEVER STYLE	REMOVAL	INSTALL
PLAIN LEVER	**PUSH RELEASE TOOL**	**SLIDE LEVER OVER**
	Push release tool Into release hole, Remove lever	Slide lever over Lever catch Pull on lever. *Make sure lever will not pull off*
CYLINDER LEVER	**ROTATE KEY**	**INSERT KEY AND ROTATE**
	Rotate key 45° clockwise (from shed position), Push in release tool into Release hole, remove lever	Insert key and rotate 45° (from Shed position), slide lever on *Make sure lever will not pull off*

Install Standard Cylinder

Make sure cylinder tailpiece is aligned in same direction as cylinder bible. Slide cylinder all the way into lever.
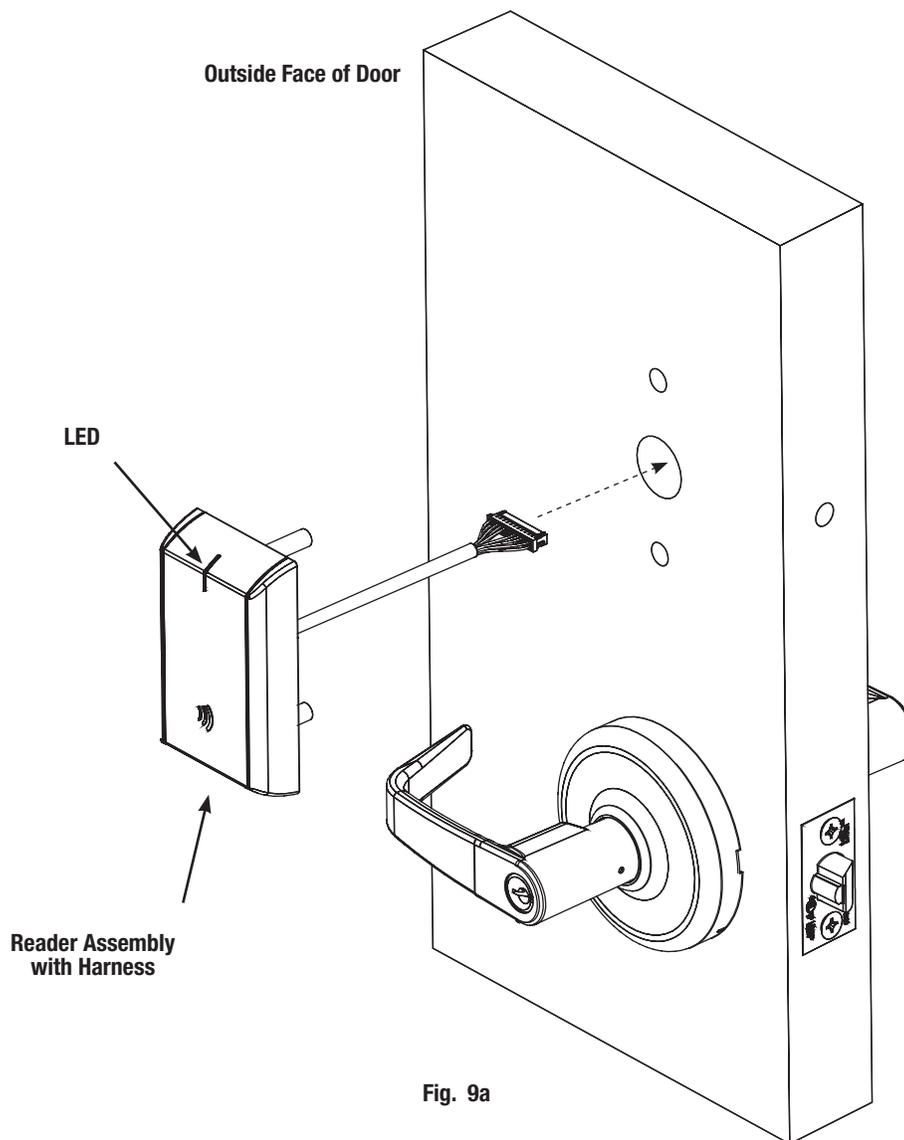**For 6 pin cylinder:** Fold retainer at hinge and press fit retainer halves together as shown.
For 7 pin cylinder: Break retainer at hinge and discard spacer section. Also remove black cylinder spacer from inside of chassis rollback for clearance.

Standard Cylinder Tailpieces

Dimensions are given in inches (mm).

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IN100 Cylindrical Lock
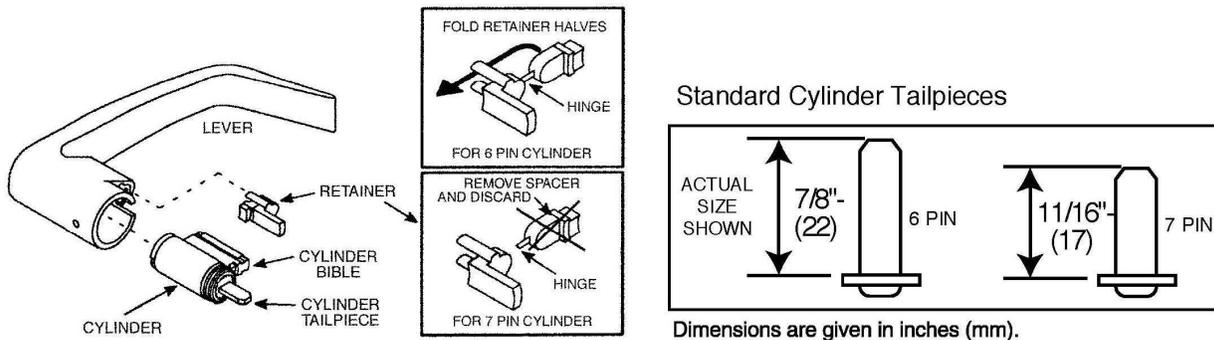
9. Install Outside (Reader) Escutcheon and Inside Mounting Plate

a. Orient the reader so the LED lens is at the top.

b. Feed reader harness through door (from outside to inside).

c. Install the reader to the outside of door by aligning the mounting posts with the door preparation holes. Hold the reader flush against door while ensuring proper alignment.

Outside Face of Door

LED

Reader Assembly with Harness

Fig. 9a

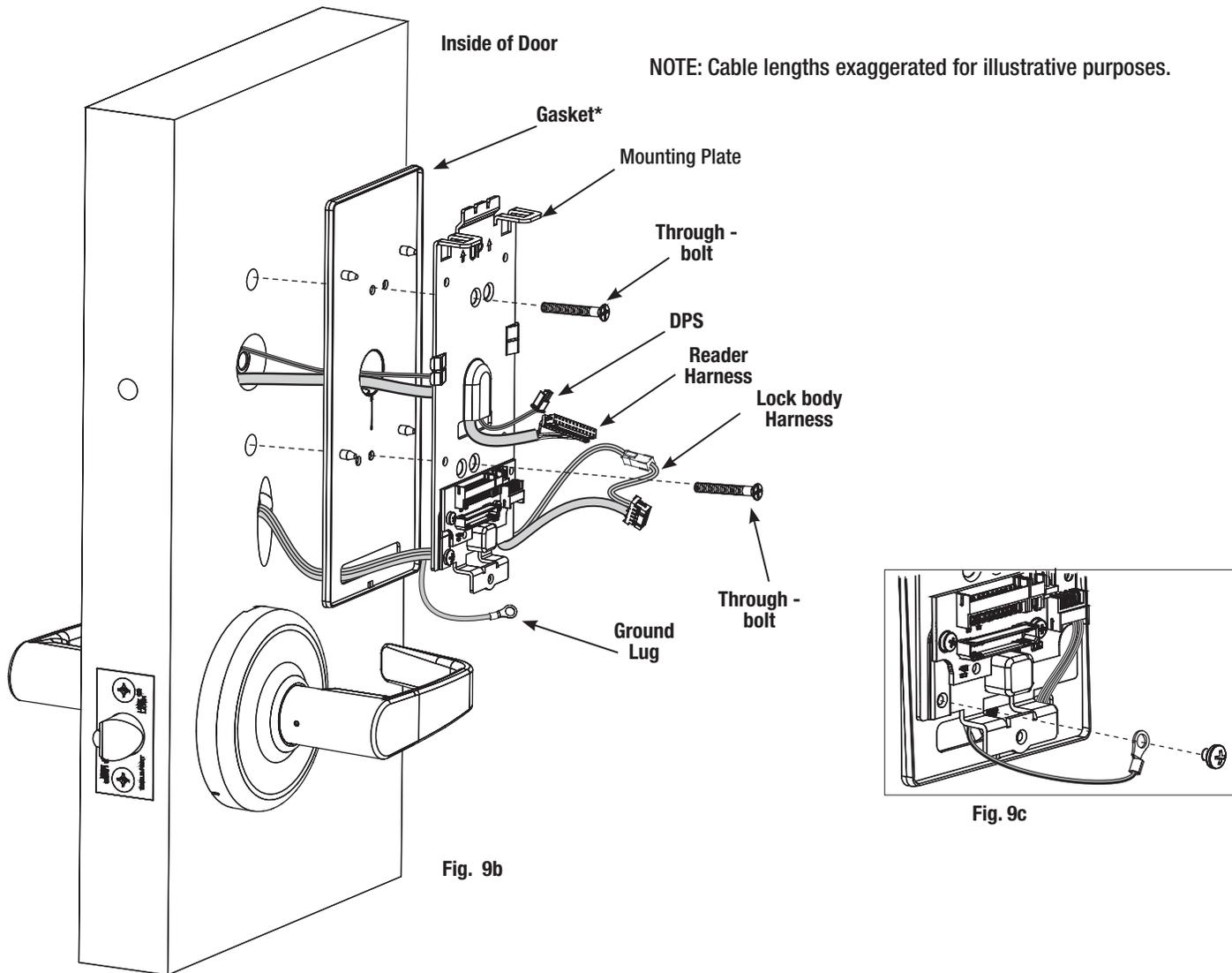ASSA ABLOY, the global leader in door opening solutions

5) Installation Instructions (Continued)

d. Feed the reader harness and DPS connectors through the inside mounting assembly (and gasket if required*). See Figure 9b.

   IMPORTANT: Do not run wires through bottom flange hole in plate (Fig. 9b, c) - it will damage wires and the controller connector. Route wires around flange, do not route wires through the flange hole (Fig. 9c).

e. Tuck excess cable into wire hole on inside of door.

f. Begin to secure the mounting assembly by partially tightening the (2) through-bolts on the inside of the door while ensuring proper alignment as you secure the reader (Fig. 9b).

Inside of Door

NOTE: Cable lengths exaggerated for illustrative purposes.

Gasket*

Mounting Plate

Through - bolt

DPS

Reader Harness

Lock body Harness

Through - bolt

Ground Lug

Fig. 9b

Fig. 9c

g. Secure ground lug with #6-32 machine screw (Fig. 9c).

   *Gasket is required for outdoor installations.

   If installing with gasket; separate gasket from mounting plate to feed cables/connectors through holes as indicated (Fig. 9b).

   Once cables/connectors are fed through, reattach gasket to mounting plate.

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IN100 Cylindrical Lock

10. Installation of Connectors

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

Secure the following connectors to their respective terminals (Fig. 10D):

A. Secure the 4-pin DPS connector.

B. Secure the 10-pin lock body assembly connector.

*NOTE: Optional 2-pin external 9-24VDC power connector.

IMPORTANT: Do not run wires through bottom hole in plate - it will damage wires and the controller connector.
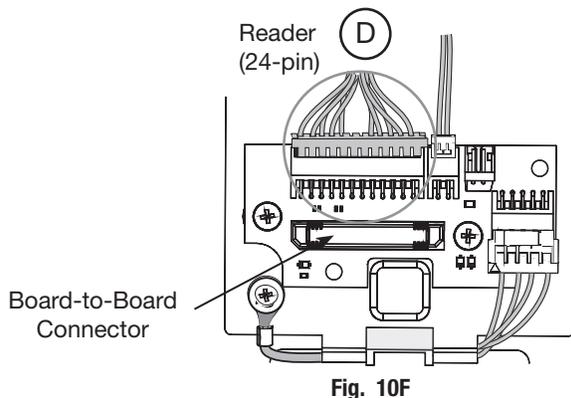Route wires around flange, do not route wires through the flange hole (Fig. 10B, D).

C. When all connections have been made, tuck excess cable into wire hole on inside of door.

DPS (4-pin) 9-24VDC Power*

Ground Lug

Fig. 10D   Lock Body (10-pin)
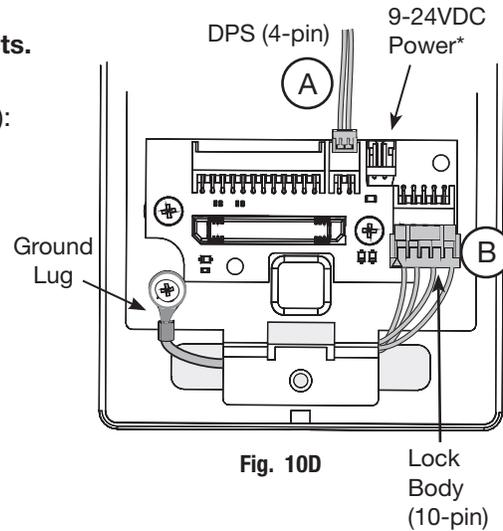
Secure Mounting Plate

D. Secure the mounting assembly while ensuring proper alignment of outside reader and tighten the (2) through-bolts on the inside of the door to secure the reader (Fig. 10E).

E. Secure the 24-pin card reader connector (Fig. 10F).

Fully tighten

Fig. 10E

Reader (24-pin) D

Board-to-Board Connector

Fig. 10F

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IN100 Cylindrical Lock
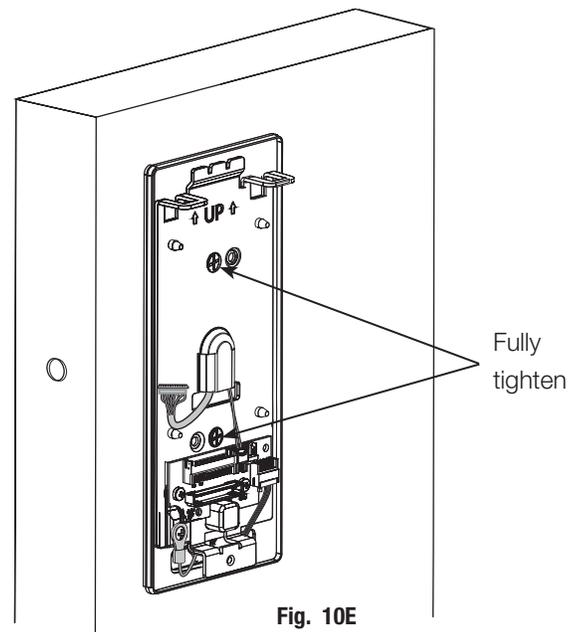
11.   Installation of Inside Component Assembly

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.

a. Insert top tabs of controller into slots on mounting plate (Fig. 11).

b. Ensure proper alignment of board-to-board connectors while pivoting bottom of controller toward door until tab on bottom snaps securely into place on mounting plate.
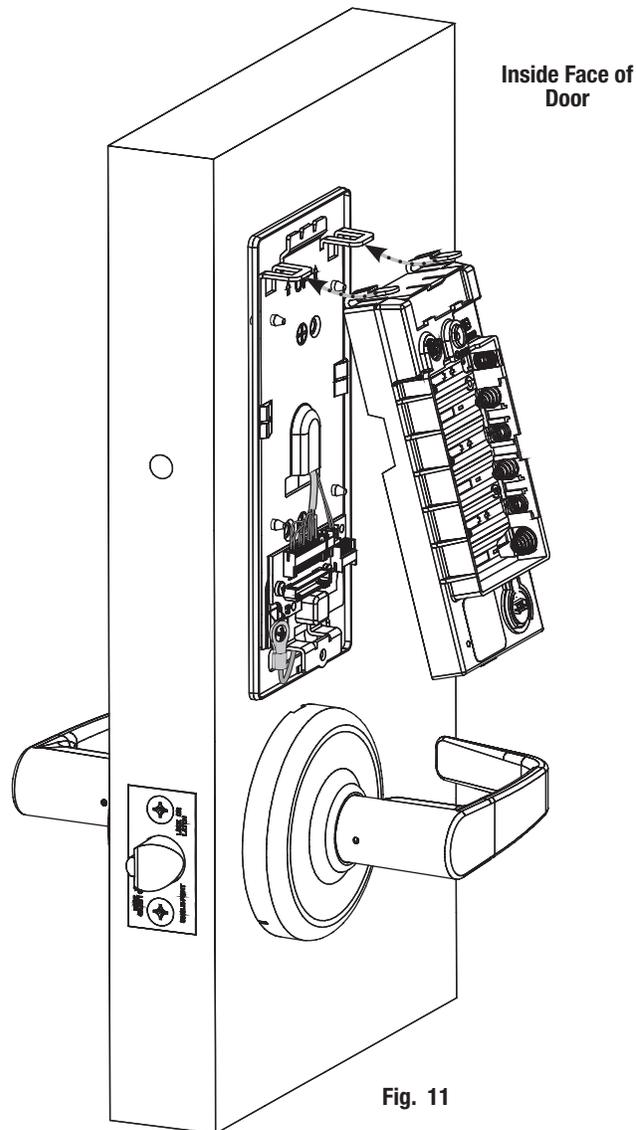

Inside Face of Door

Fig. 11

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IN100 Cylindrical Lock

12.   Battery Installation

1. Place (6) "AA" alkaline batteries in the compartment, being careful to align polarity properly (Fig. 12).

2. After batteries are installed, there is a slight delay; then red and green flash, audible "beep" and lock motor will cycle.
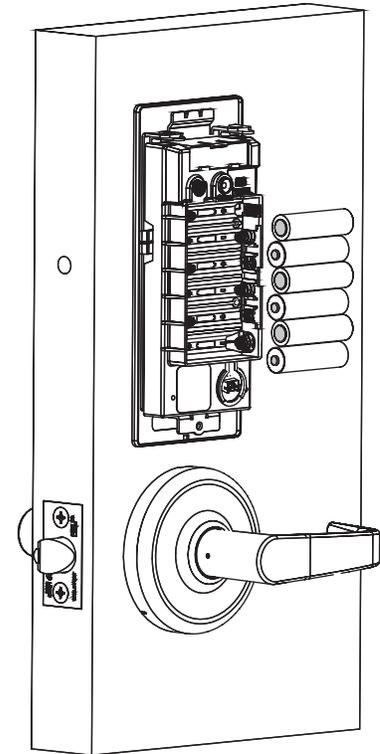
Fig. 12

13.   Inside Cover Installation

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 security allen wrench (provided).

Inside Cover

Security Allen Screw

Fig. 13

ASSA ABLOY, the global leader in door opening solutions
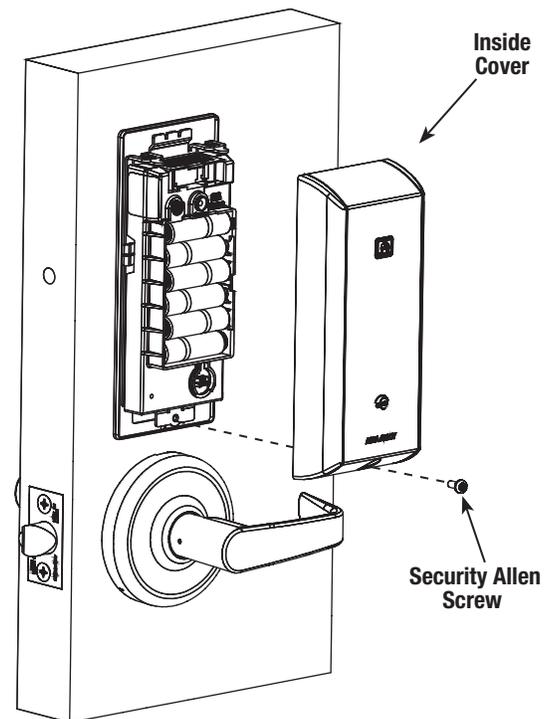
6) Operational Check

When lock is fully installed, perform the following steps:

a. Insert key into cylinder and rotate (Fig. 14a).

b. There should be no friction against lock case, wire harness or any other obstructions.

c. Check that the key retracts the latch.

d. The key should rotate freely.

e. Try the inside lever; ensure it retracts latch.

f. Present a valid credential* (Fig. 14b) to unlock outside lever; turn lever handle to ensure latch retracts.

Fig. 14a

Fig. 14b

Note: The credential should approach the inscription on the reader as indicated (Fig. 13b) to ensure that the credential is read properly.

Do not wave credential.

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7) LED Indications
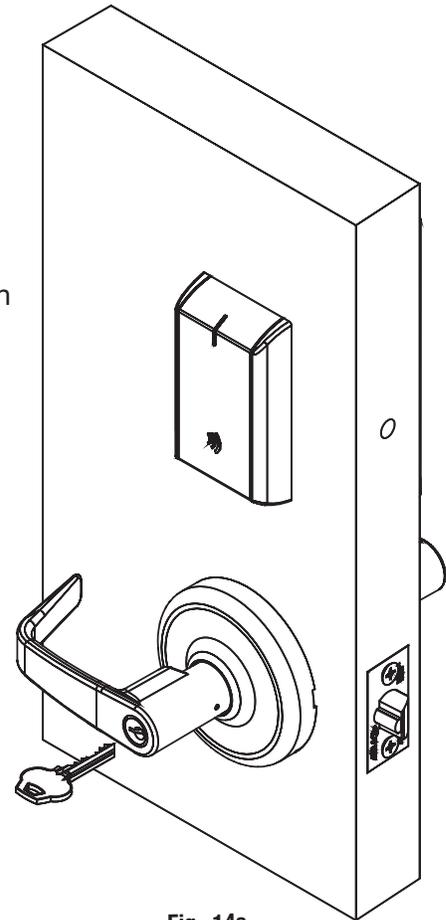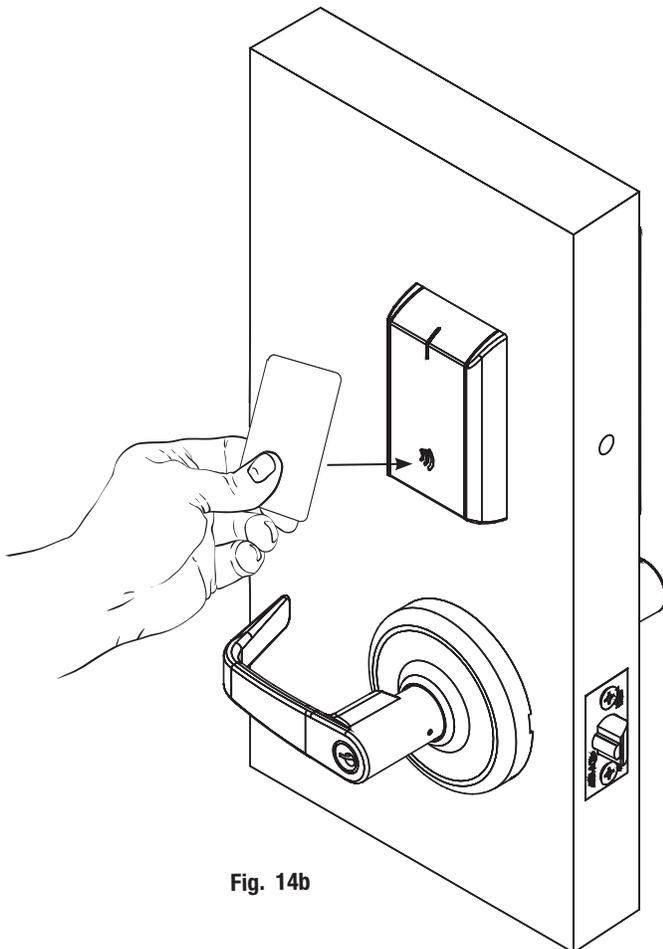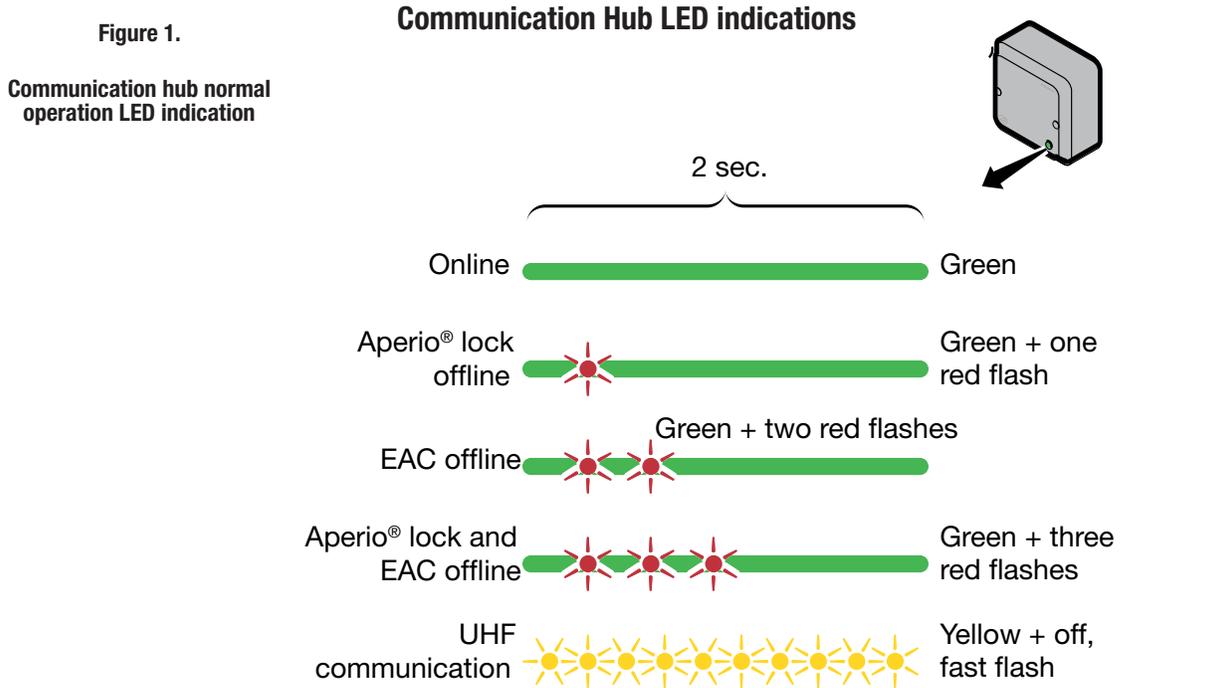
The communication hub has a single LED. It supports an optical scheme of red, green and yellow.

The indication scheme is described by the figures below:

Communication Hub LED indications

Figure 1.

Communication hub normal operation LED indication

2 sec.

Online — Green

Aperio® lock offline — Green + one red flash

Green + two red flashes

EAC offline —

Aperio® lock and EAC offline — Green + three red flashes

UHF communication — Yellow + off, fast flash

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

2 sec.

Figure 2.

Communication hub maintenance LED indication

Pairing active — Yellow + green
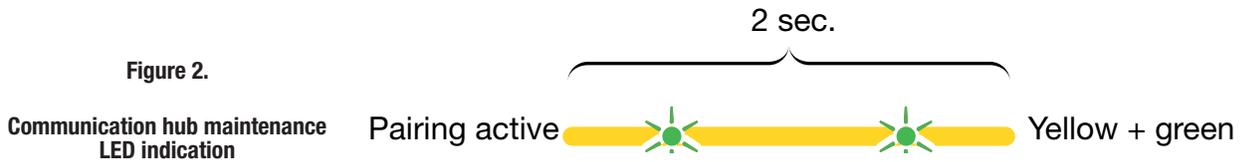
Ethernet LED indication

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

2 sec.

Figure 3.

AH40 Communication hub Ethernet LED indication

Ethernet link connected — Green

Ethernet communication — Green + off fast flash
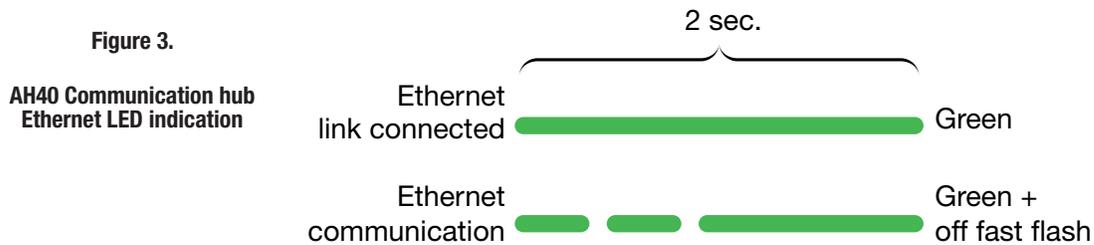
*For more information, refer to Aperio Online Quick Installation Guide
(Document No: ST-001322-PF Date: 2015-12-23)

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IN100 Cylindrical Lock

Lock LED indications

The lock has three LEDs. They support an optical scheme of red, yellow and green.
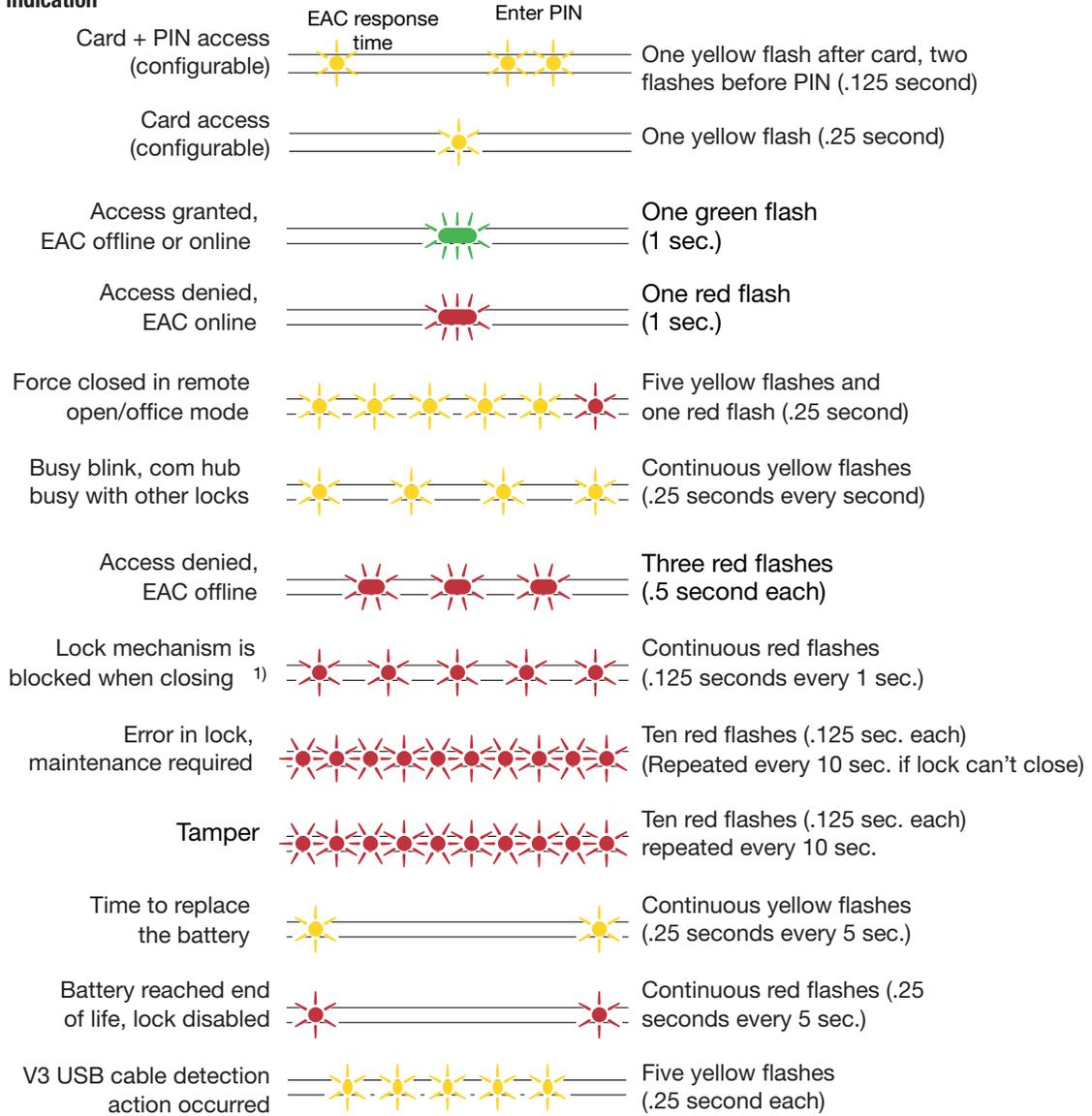
The indication scheme is described by the figures below:

Figure 4. 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 and one red flash (.25 second)

Busy blink, com hub busy with other locks — Continuous yellow flashes (.25 seconds every second)

Access denied, EAC offline — Three red flashes (.5 second each)

Lock mechanism is blocked when closing 1) — Continuous red flashes (.125 seconds every 1 sec.)

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

Tamper — Ten red flashes (.125 sec. each) repeated every 10 sec.

Time to replace the battery — Continuous yellow flashes (.25 seconds every 5 sec.)

Battery reached end of life, lock disabled — Continuous red flashes (.25 seconds every 5 sec.)

V3 USB cable detection action occurred — Five yellow flashes (.25 second each)

ⓘ 1) When the lock mechanism is blocked (lock jammed) the lever must be turned to release the lock mechanism.

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

Figure 5. Lock hub normal operation LED indication

Enter configuration mode — Five yellow flashes (.125 second each)

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Lock Self-Test LED indication

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 the figures below.

LED indication after power up/replacement of the battery

8.3.1   Battery not fully charged

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

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

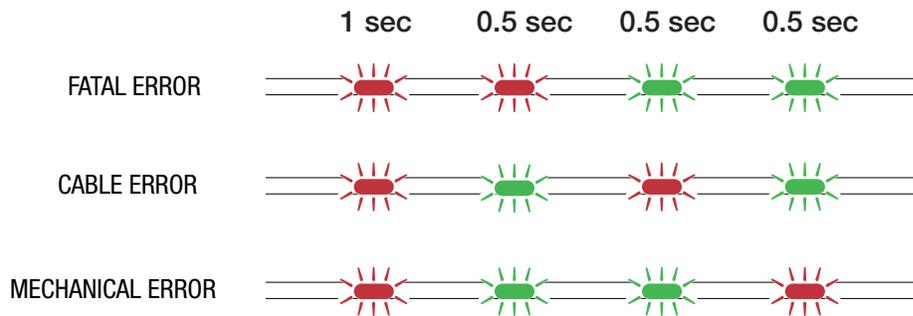#### 8.3.2   Test pass

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

Figure 6. Lock POST LED indication   POST Successful   One red, one green flash (1 second)

8.3.3   Test fail

1 red (1s) + 3 blinks (.5 sec, green or red), at least one test failed (red), see table below.

If a fatal error is detected the lock will enter an Error state and continuously indicating fatal error and will not read cards nor unlock.

	1 sec	0.5 sec	0.5 sec	0.5 sec
FATAL ERROR	red	red	green	green
CABLE ERROR	red	green	red	green
MECHANICAL ERROR	red	green	green	red

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

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