



**Wireless Lock Range**

# **Motorized Deadbolt Wireless Lock**

Installation Manual



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# Introduction

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This installation manual provides instructions and technical specifications for installation of the ICT Motorized Deadbolt Wireless Lock.

## About This Product

The ICT Motorized Deadbolt Wireless Lock combines an advanced-technology, intelligent wireless credential reader with leading motorized deadbolt locking system technology. With no cabling necessary this provides sites with the ability to deploy integrated electronic access control in areas where traditional wired locking solutions may not be possible.

Current features of the lock control card reader include:

- **Bluetooth®** Wireless Technology
- MIFARE and DESFire credential reading
- Keep alive transmission every 30 seconds for intelligent tamper management
- Integrated LED indicator provides read response and status signaling
- Supports online or offline operation
- Reader configuration programmable via the Protege Config App
- Advanced technology wireless operation provides 12 months battery life (10,000 activations )

# Installation Requirements

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This equipment is to be installed in accordance with:

- The product installation instructions
- UL 294 - Access Control System Units
- UL 681 - Installation and Classification of Burglar and Holdup Systems
- UL 827 - Central-Station Alarm Services
- UL 1034 - Burglary-Resistant Electric Locking Mechanisms
- CAN/ULC-S301, Central and Monitoring Station Burglar Alarm Systems
- CAN/ULC-S302, Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults
- CAN/ULC-S561, Installation and Services for Fire Signal Receiving Centres and Systems
- CAN/ULC-60839-11-1, Alarm and Electronic Security Systems – Part 11-1: Electronic Access Control Systems – System and Components Requirements
- The National Electrical Code, ANSI/NFPA 70
- The Canadian Electrical Code, Part I, CSA C22.1
- The Local Authority Having Jurisdiction (AHJ)

# Installation

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Installation of the wireless lock requires the following steps to be completed in the correct sequence.

1. **Install the latch** (see next page).
2. **Install the strike plate** (see next page).
3. **Install the outside trim** (see page 13).
4. **Install the inside mounting plate** (see page 14).
5. **Connect the cable** (see page 15).
6. **Install the inside trim** (see page 16).

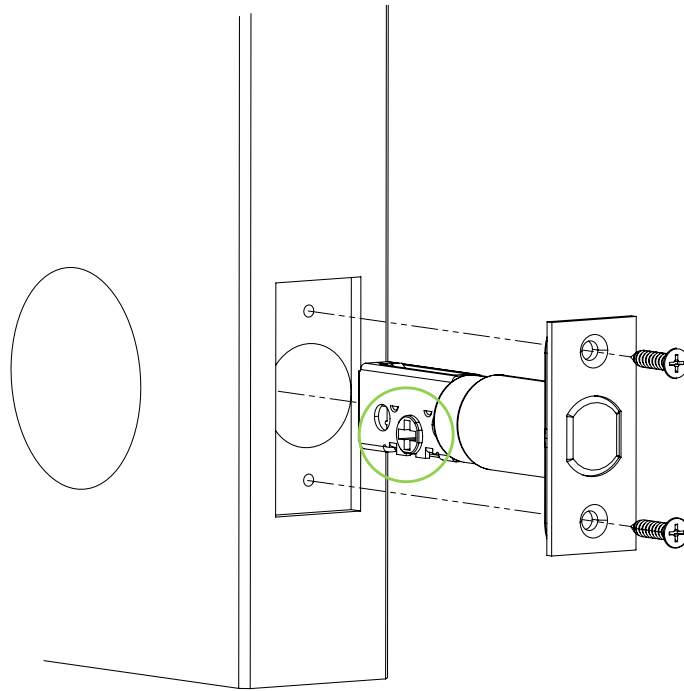
## What's Included?

The ICT Motorized Deadbolt Wireless Lock is supplied with the following components.

- 1 x 13.56MHz lock control card reader with Bluetooth® Wireless Technology  
The reader is built into the outside assembly.
- 1 x Grade 2 Deadbolt door latch
  - 2 x #18 x 3/4" combo screws for securing the latch
  - 1 x Strike plate
  - 2 x #12-24 combo screws for installing the strike plate
- 1 x Outside trim assembly with configurable handing
  - 1 x Key cylinder
  - 8-wire reader cable wiring loom with socket plug for connection to the reader
- 1 x Inside trim assembly
  - 1 x Electronic lock control board
  - 1 x Privacy thumbturn
  - 1 x Inside mounting plate
  - 1 x Rubber gasket
  - 2 x 1/4-28 x 2-1/4" flat head screws for securing the mounting plate and gasket
  - 2 x M4 x 12 pan head screws for securing the inside assembly
  - 1 x M3 x 18 pan head screw for securing the battery cover
  - 4 x Alkaline LR06 AA 1.5V batteries
- 1 x Door handle kit with sectional trim

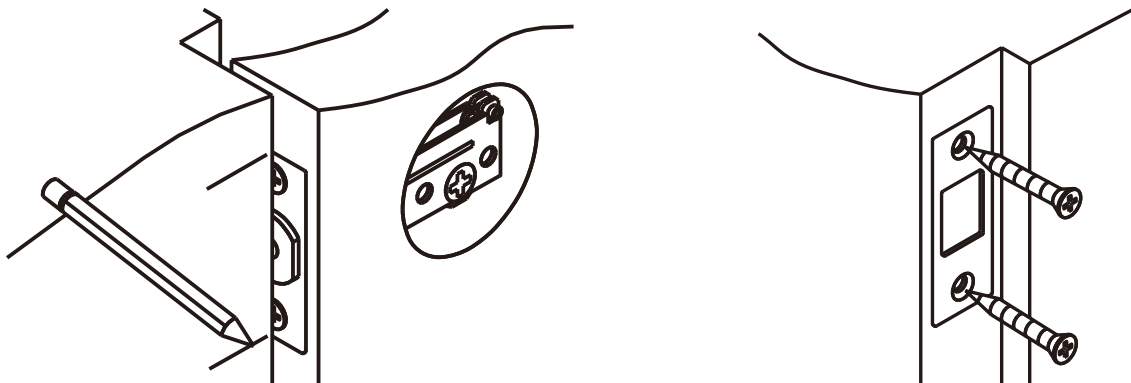
## Installing the Latch

1. Prepare the door according to the door template.
2. Install the latch with the cross slot for the tailpiece towards the bottom.
3. Using the 2 x #18 x 3/4" combo screws provided, secure the latch in position.



## Installing the Strike Plate

1. Close the door and, using the faceplate as a guide, mark the position for the strike plate.
2. Prepare the door jamb for the strike plate.
3. Using the two #12-24 combo screws provided, secure the strike plate in position.

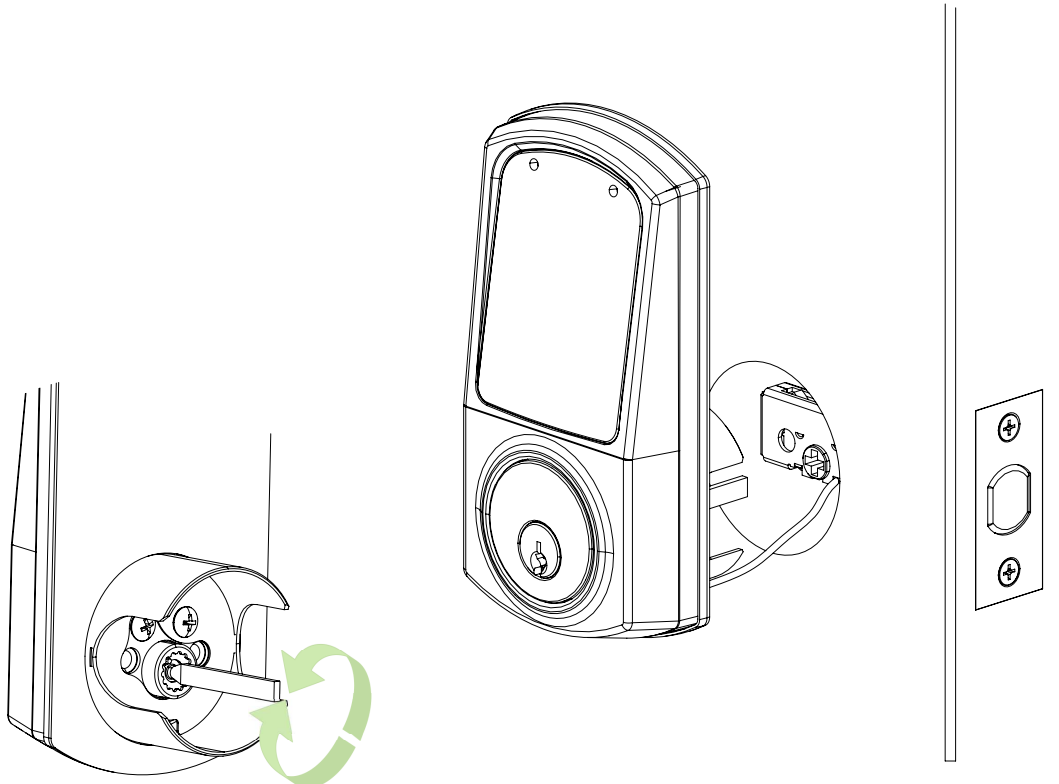


## Installing the Outside Trim

1. Set the door handing.
  - **Left Hand Door:** Rotate the tailpiece **clockwise** until it stops in the vertical orientation.
  - **Right Hand Door:** Rotate the tailpiece **counter-clockwise** until it stops in the vertical orientation.
2. From the outside of the door, feed the reader cable through the hole to the other side.

**Important:** You must feed the reader cable **under** the latch.

3. Install the outside trim assembly, guiding the tailpiece into the cross slot in the latch.

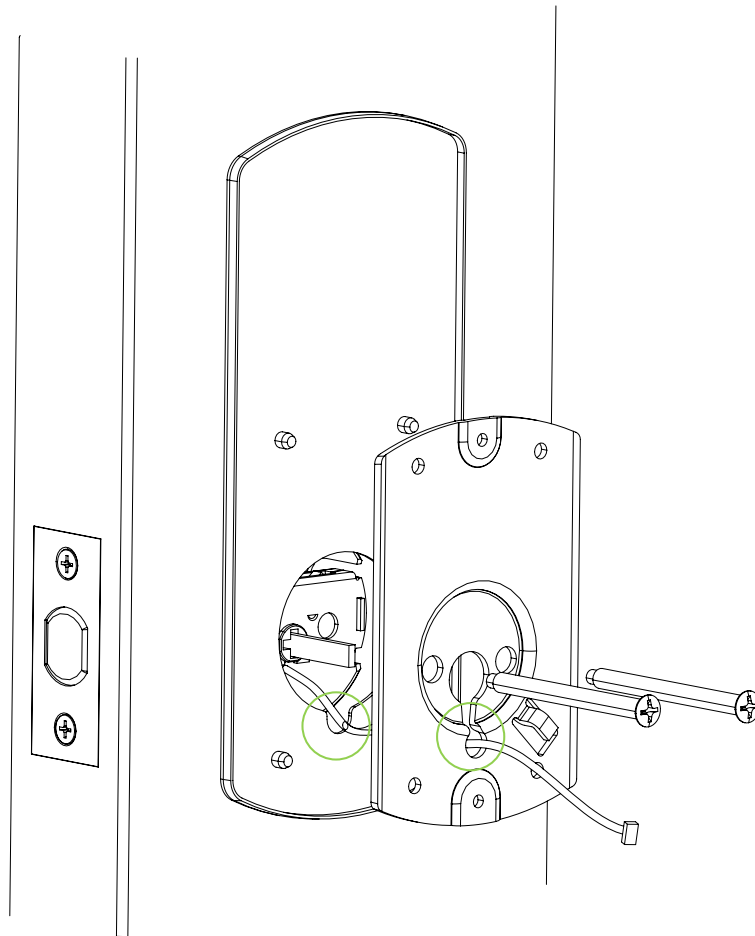


## Installing the Inside Mounting Plate

1. Feed the reader cable through the cable slot at the bottom of both the mounting plate and rubber gasket.
2. Position the mounting plate in place over the hole in the door, followed by the rubber gasket.

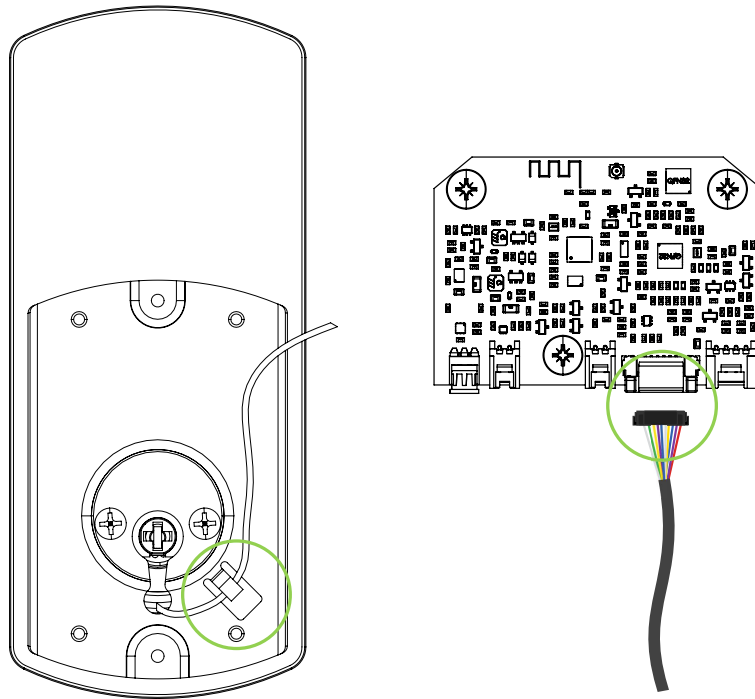
Ensure the rubber gasket is on the outside of the mounting plate, as shown below. It needs to be installed between the mounting plate and the inside trim.

3. Using the 2 x 1/4-28 x 2-1/4" flat head screws provided, secure both the rubber gasket and inside mounting plate in position.



## Connecting the Cable

1. Secure the reader cable through the hook in the mounting plate as shown below.
2. Ensuring the cable is not twisted or knotted, plug the reader cable into the main socket at the bottom of the lock control board firmly so that it clicks into place.

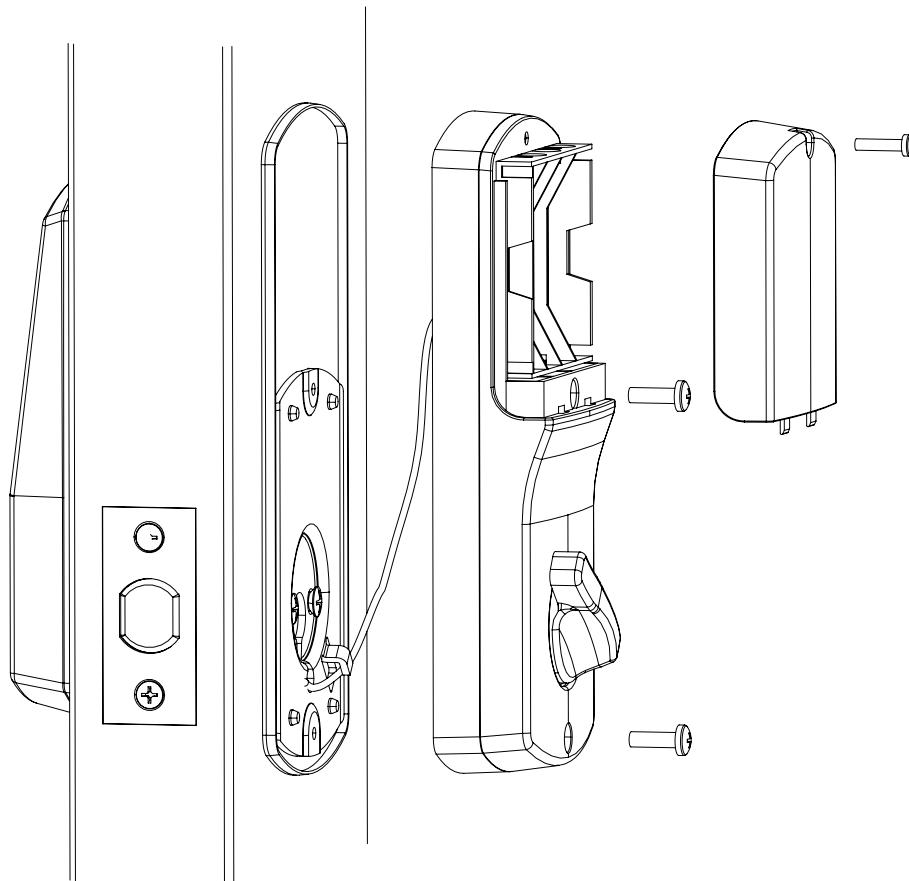


## Installing the Inside Trim

1. Taking care not to pinch the cable, install the inside trim onto the door.
2. Confirm that the thumbturn correctly operates the deadbolt latch.
3. Using the two M4 x 12 pan head screws provided, secure the inside trim in position.
4. Insert the 4 x AA batteries provided.

Rechargeable batteries are not recommended due to reduced charge time and lock operation.

5. Using the M3 x 18 pan head screw provided, secure the battery cover in position.



For UL installations (UL 294), UL approved batteries must be used.

For ULC installations (CAN/ULC 60839-11-1), ULC approved batteries must be used.

Approved batteries include Energizer Ultimate Lithium and Energizer MAX Alkaline.

# Bluetooth® Node Connection

Online operation is achieved using a Bluetooth® communication node, wired to the controller's RS-485 port to act as a network connection point between the wireless lock and the controller.

One Bluetooth® node supports up to 20 wireless locks operating in online mode.

Using the recommended cables, splice the cable together with the pigtail of the Bluetooth® node and seal the splice. Route the cable from the node to the host module. Connect the cable to the module port as shown in the connection diagram that follows.

The recommended cable types for RS-485 are:

- Belden 9842 or equivalent
- 24 AWG twisted pair with characteristic impedance of 120ohm

Maximum distance: 900m (3000ft)

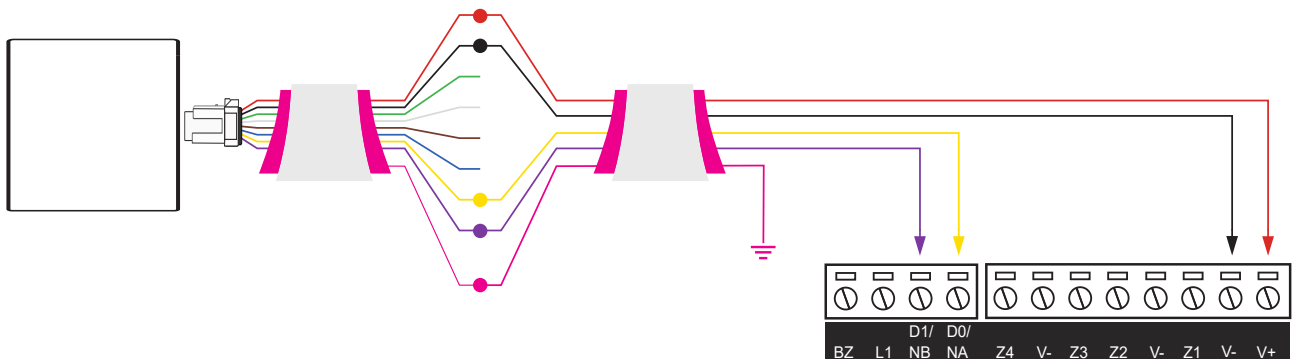


For UL installations, a UL Listed (UL 294) node and controller must be used.

For ULC installations, a ULC Listed (CAN/ULC 60839-11-1) node and controller must be used.

## RS-485 Node Connection

The connection of a Bluetooth® communication node to a controller.



### Wiring Connections

| Color  | Wire   | Connection                                            |
|--------|--------|-------------------------------------------------------|
| Red    | Red    | <b>V+</b> 12VDC positive                              |
| Black  | Black  | <b>V-</b> 12VDC negative                              |
| Yellow | Yellow | <b>DO/NA</b> RS-485 A                                 |
| Violet | Violet | <b>D1/NB</b> RS-485 B                                 |
| Shield | Shield | Shield (drain) wire. Frame grounded at one point only |

## Shield Connection

Connect the Bluetooth® node pigtail shield and cable shield wires together at the node pigtail splice. Connect the cable shield to a suitable earth point. **Do not** connect the cable shield to a ground or AUX connection. The node pigtail shield wire is **not** terminated inside the reader.

### Important:

- The node must be connected to the module port using a shielded cable.
- The shield must only be connected at one end of the cable in the metallic enclosure (frame grounded).
- Do not connect the cable shield to an AUX-, OV or V- connection on the module.
- Do not connect the cable shield to any shield used for isolated communication.
- The node pigtail shield and cable shield wires should be joined at the node pigtail splice.
- Do not terminate the node shield wire inside the node.

# Programming the Reader

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ICT credential readers can be programmed for a wide range of functionality to suit your site's requirements.

Programming options are dependent on hardware compatibility and firmware versions.

Readers can be programmed using a mobile device running the Protege Config App. Reader configuration is programmed by applying specific TLV (Type Length Value) settings to the reader to enable, disable and configure reader options.

**Important:** Readers can only be programmed within 2 minutes of startup. You will need to remove the batteries to disconnect the power supply, then apply the programming within 2 minutes of powering up.

## Protege Config App

The Protege Config App provides a secure, convenient and flexible method for programming ICT credential readers.

To use the Config App you will need:

- An app account
- A mobile credential

## Programming Summary

To program a reader using the Config App:

1. Log in to the app using your app account.
2. Select your **Credential Profile**.

Your credential profile is automatically assigned to your app account with your mobile credential, and is based on the credential issuer and the site the credential was allocated to.

3. Create a **Reader Configuration** (config) comprising the required TLV settings.
4. Activate Bluetooth® on your device (if not already activated).
5. Power cycle the reader you want to program.
6. Select the **config** to program the reader with.
7. Apply the configuration to the reader, within two minutes of startup. Hold your mobile device close to the reader and tap **Scan Closest** to apply the configuration.

When programming is successful the reader will beep 4 times quickly, then restart.

For information on using the Config App, see the Protege Config App User Guide, available from the ICT website.

# Operation

ICT wireless locks provide specific audio and visual signals to indicate read response and current status. The following table describes the available LED and beeper response signals.

## Beeper Indicators

- **Short** beeps have a sound and interval duration of **100ms**.
- **Long** beeps have a sound and interval duration of **1 second**.

## Low Battery Indicators

- **Yellow** flash indicates battery voltage less than 3.8V. Batteries need to be replaced within 2-3 **months**.
- **Red** flash indicates battery voltage less than 3.55V. Batteries need to be replaced within 2-3 **weeks**.

| Operation                                               | LED Indication                                                                      | LED Description                                                | Beeper  |
|---------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------|---------|
| Access Granted                                          |    | 3 Green flashes<br>(100ms/100ms)                               | 2 short |
| Access Granted - Battery Low < 3.8V                     |    | 2 Green flashes<br>(100ms/100ms)<br>1 Yellow flash<br>(200ms)  | 2 short |
| Access Granted - Battery Low < 3.55V                    |  | 2 Green flashes<br>(100ms/100ms)<br>1 Red flash<br>(200ms)     | 2 short |
| Access Denied                                           |  | 3 Red flashes<br>(100ms/100ms)                                 | 1 long  |
| Access Denied - In Privacy Mode                         |  | 3 Red flashes<br>(200ms/200ms)                                 | 1 long  |
| Access Denied - Battery Low < 3.8V                      |  | 2 Red flashes<br>(100ms/100ms)<br>1 Yellow flash<br>(200ms)    | 1 long  |
| Access Denied - Battery Low < 3.55V                     |  | 2 Red flashes<br>(100ms/100ms)<br>1 Red flash<br>(200ms)       | 1 long  |
| Construction Mode - Access Granted                      |  | 3 Purple flashes<br>(100ms/100ms)                              | 2 short |
| Construction Mode - Access Granted - Battery Low < 3.8V |  | 2 Purple flashes<br>(100ms/100ms)<br>1 Yellow flash<br>(200ms) | 2 short |

| Operation                                                | LED Indication                                                                       | LED Description                                                           | Beeper  |
|----------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------|
| Construction Mode - Access Granted - Battery Low < 3.55V |     | 2 Purple flashes (100ms/100ms)<br>1 Red flash (200ms)                     | 2 short |
| Construction Mode - Access Denied                        |     | 3 Orange flashes (100ms/100ms)                                            | 1 long  |
| Construction Mode - Access Denied - Battery Low < 3.8V   |     | 2 Orange flashes (100ms/100ms)<br>1 Yellow flash (200ms)                  | 1 long  |
| Construction Mode - Access Denied - Battery Low < 3.55V  |     | 2 Orange flashes (100ms/100ms)<br>1 Red flash (200ms)                     | 1 long  |
| Exit Leaves Open Mode - Lock/Unlock Granted              |     | 1 Green flash (100ms)                                                     | 1 short |
| Exit Leaves Open Mode - Lock/Unlock Denied               |     | 3 Red flashes (100ms/100ms)                                               | 1 long  |
| Opening Not Allowed - Battery Flat                       |   | 1 Red flash (20ms)                                                        | 1 short |
| Powering Up                                              |   | Flashing Blue (200ms/200ms) until ready to read (typically 1.5s)          | 2 short |
| Powering Up - Battery Low < 3.8V                         |  | Flashing Blue (200ms/200ms) until ready to read<br>1 Yellow flash (200ms) | 2 short |
| Powering Up - Battery Low < 3.55V                        |  | Flashing Blue (200ms/200ms) until ready to read<br>1 Red flash (200ms)    | 2 short |
| Factory Reset                                            |  | 5 White flashes (100ms/100ms)                                             |         |
| Blob Version Not Supported                               |   | 1 White flash (100ms)                                                     |         |
| Blob Contains No Configuration                           |   | 1 White flash (500ms)                                                     |         |

# Maintenance

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ICT motorized deadbolt wireless locks have an expected battery life of approximately 1 year (10,000 activations), dependent on usage levels and reader configuration.

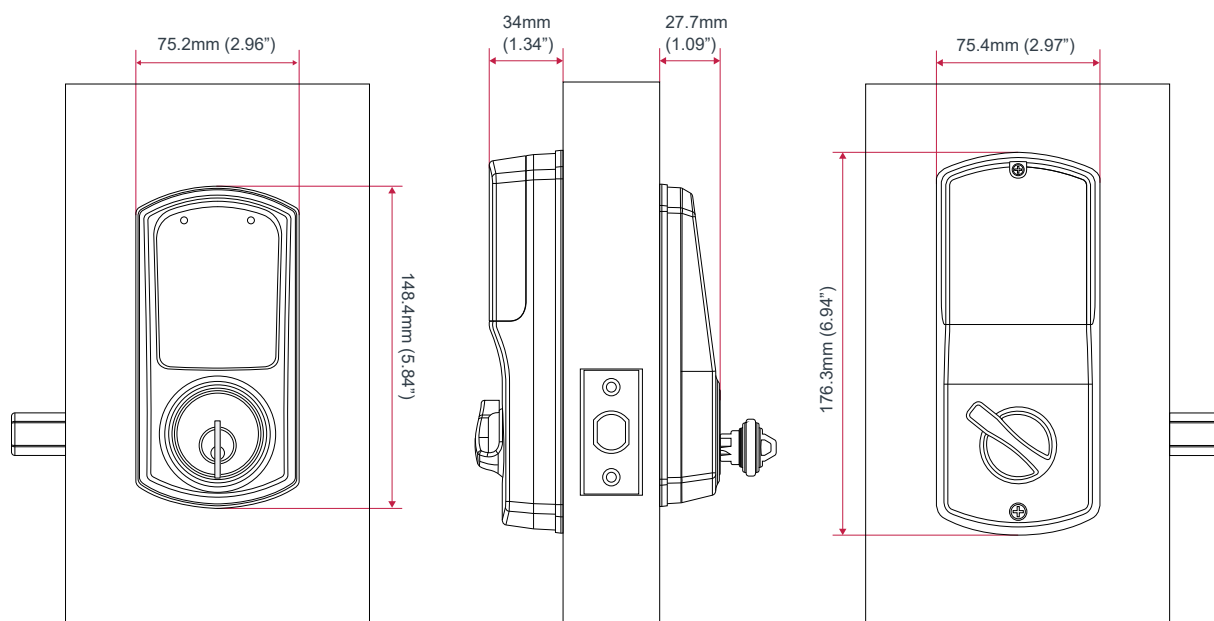
- Maximum 17,000 activation cycles with MIFARE/DESFire or NFC credentials
- Maximum 18,000 activation cycles with Bluetooth® Wireless Technology credentials

Batteries should be replaced every year, or earlier if required.

In case of battery failure, emergency access can be gained via key or thumbturn.

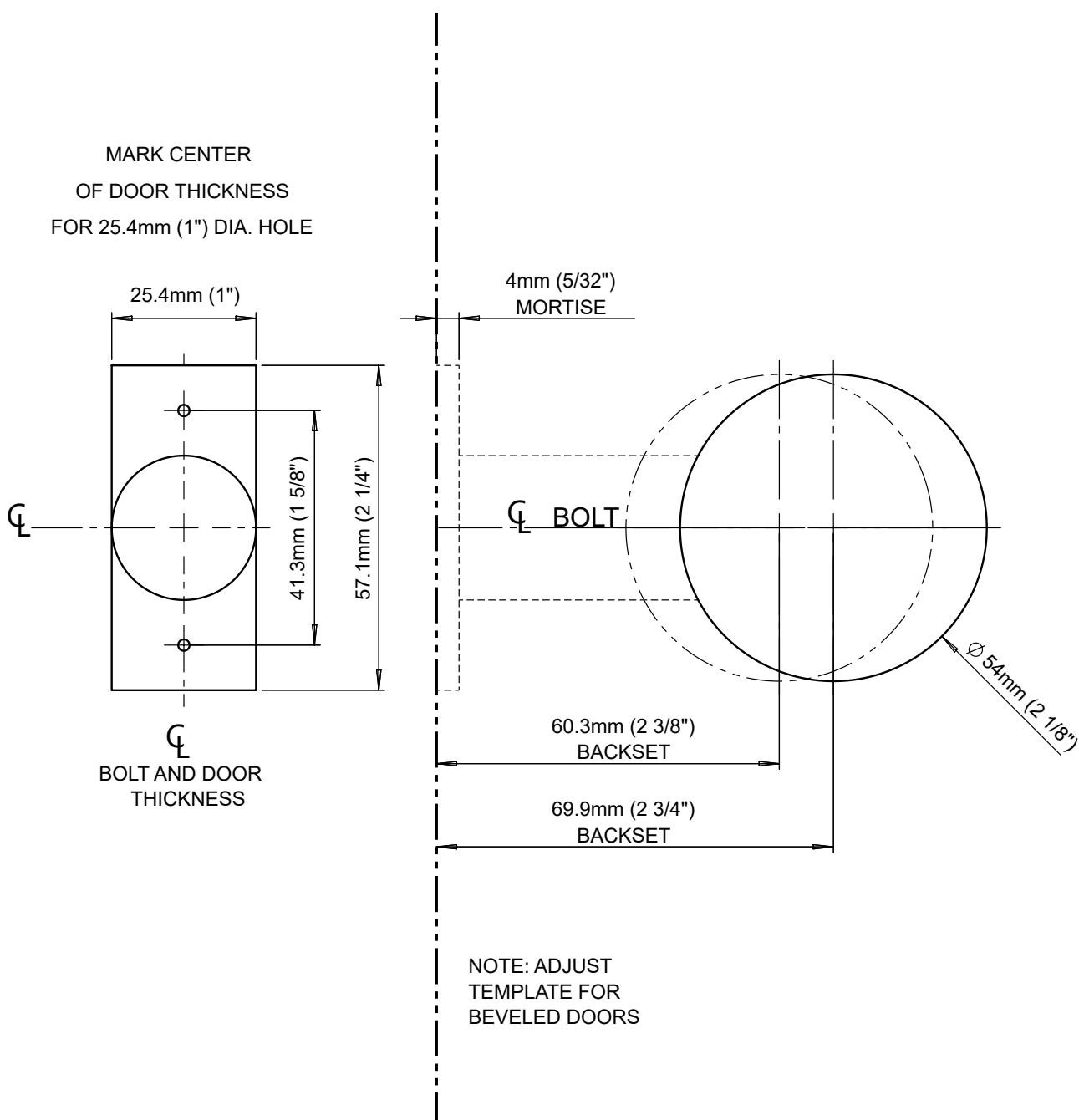
# Mechanical Layout

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# Door Template

May not be to scale.



# New Zealand and Australia

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## Intentional Transmitter Product Statement

The R-NZ compliance label indicates that the supplier of the device asserts that it complies with all applicable standards.

# R-NZ

# European Standards

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## CE Statement

Conforms where applicable to European Union (EU) Low Voltage Directive (LVD) 2014/35/EU, Electromagnetic Compatibility (EMC) Directive 2014/30/EU, Radio Equipment Directive (RED) 2014/53/EU and RoHS Recast (RoHS2) Directive: 2011/65/EU + Amendment Directive (EU) 2015/863.

This equipment complies with the rules, of the Official Journal of the European Union, for governing the Self Declaration of the CE Marking for the European Union as specified in the above directive(s).



### Information on Disposal for Users of Waste Electrical & Electronic Equipment

This symbol on the product(s) and / or accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product(s) to designated collection points where it will be accepted free of charge.

Alternatively, in some countries you may be able to return your products to your local retailer upon purchase of an equivalent new product.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

### For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

### Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union. If you wish to discard this product please contact your local authorities or dealer and ask for the correct method of disposal.

## EN50131 Standards

This component meets the requirements and conditions for full compliance with EN50131 series of standards for equipment classification.

EN 50131-1:2006+A2:2017, EN 50131-3:2009, EN 50131-6:2008+A1:2014, EN 50131-10:2014, EN 50136-1:2012, EN 50136-2:2013, EN 60839-11-1:2013

### Security Grade 4

### Environmental Class II

Equipment Class: Fixed

Readers Environmental Class: IVA, IK07

SP1 (PSTN – voice protocol)

SP2 (PSTN – digital protocol)

SP6 (LAN – Ethernet) and DP1 (LAN – Ethernet + PSTN)

SP6 (LAN – Ethernet) and DP1 (LAN – Ethernet + USB-4G modem)

**Tests EMC (operational)** according to EN 55032:2015

**Radiated disturbance** EN 55032:2015

**Power frequency magnetic field immunity tests** (EN 61000-4-8)

# UK Conformity Assessment Mark

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## General Product Statement

The UKCA Compliance Label indicates that the supplier of the device asserts that it complies with all applicable standards.



# UL and ULC Installation Requirements

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Only UL / ULC listed compatible products are intended to be connected to a UL / ULC listed control system.

## CAN/ULC-60839-11-1

- This card reader is CAN/ULC-60839-11-1 Listed for Class I applications only.
- Exit devices and wiring must be installed within the protected area.
- The card reader must be connected with shielded, grounded cable.
- Fail secure locking mechanism shall only be installed where allowed by the local authority having jurisdiction (AHJ) and shall not impair the operation of panic hardware and emergency egress.
- If fire resistance is required for door assembly, portal locking device(s) must be evaluated to ULC-S533 and CAN/ULC-S104.
- Must be installed with CAN/ULC-60839-11-1 Listed portal locking device(s) for ULC installations.
- Input power must be supplied by a Class 2 or power limited device.

## UL 294

- This card reader is UL 294 Listed for Class 1 applications only.
- Exit devices and wiring must be installed within the protected area.
- The card reader must be connected with shielded, grounded cable.
- Fail secure locking mechanism shall only be installed where allowed by the local authority having jurisdiction (AHJ) and shall not impair the operation of panic hardware and emergency egress.
- If fire resistance is required for door assembly, portal locking device(s) must be evaluated to UL10B or UL10C.
- Must be installed with UL 1034 Listed electronic locks for UL installations.
- Input power must be supplied by a Class 2 or power limited device.
- A means of verification shall be employed by the user to enable access to the wireless electronic device such as a PIN or biometric feature, which subsequently provides access to the credential application software present on the wireless electronic device.
- The access control system shall have the means to distinguish between the type of credential used via code or description (e.g. authentication/digital signature keys received from a physical card vs. authentication/digital signature keys received from a wireless electronic credential.)

## UL 10B

- This lock is rated in Fire Tests of Door Assemblies for resistance endurance of 20 minutes.

## UL 10C

- This lock is rated in Positive Pressure Fire Tests of Door Assemblies for resistance endurance of 20 minutes.

# FCC Compliance Statements

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## FCC PART 15, WARNINGS: INFORMATION TO USER

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.

Changes or modifications not authorized by the party responsible for compliance could void the user's authority to operate this product.

This device complies with Part 15 of the FCC rules.

Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

# Industry Canada Statement

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This class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

CAN ICES-3 (A)/NMB-3(A)

# Disclaimer and Warranty

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**Disclaimer:** Whilst every effort has been made to ensure accuracy in the representation of this product, neither Integrated Control Technology Ltd nor its employees shall be liable under any circumstances to any party in respect of decisions or actions they may make as a result of using this information. In accordance with the ICT policy of enhanced development, design and specifications are subject to change without notice.

For warranty information, see our [Standard Product Warranty](#).

Designers & manufacturers of integrated electronic access control, security and automation products.  
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