

NDE Wireless Lock





\* Components shared with ND-Series lock.

Installation Preparation		A Install latch.	
<ul> <li>Tools Needed</li> <li>Phillips screwdriver</li> <li>Pin wrench</li> <li>Optional</li> <li>T-15 Tamper Torx screwdriver</li> </ul>	<b>Door preparation:</b> See P515-170 in package. Contact Product Support at <b>1-877-671-7011.</b>	The bevel must face toward the door stop.	
IMPORTANT NOTES			
The magnet is used to indicate door position. Door position MUST be calibrated using the application.			
Install and test lock with door open to avoid being locked out.			
ENGAGE™ WEB & MOBILE APPLICATIONS			
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Note: If dustbox is included, install first.



For 1¾" thick doors, NO ADJUSTMENT IS REQUIRED. Continue (j) to step 1.

For 15%" or 2" thick doors, complete the following door thickness adjustment steps.

#### А Remove chassis from outside assembly.

Pull lever post and rotate 10 degrees counter-clockwise until adjustment plate tabs align with cutouts on assembly, then remove chassis from escutcheon.



В Remove adjustment plate by rotating counter-clockwise. Remove door thickness insert using pin wrench.



С Reorient and replace door thickness insert.



**Chassis Side View** 

ww

#### D Reinstall adjustment plate.

Tighten until door thickness insert enters notch in adjustment plate.



E Secure chassis in outside assembly. Continue to next step.

## Install Outside Assembly

#### 1 Prepare outside assembly.

1a Check that slide hole on chassis is aligned with lever catch pin.

If not aligned, remove chassis and reassemble with correct orientation as shown below.





To remove chassis, pull lever post and rotate 10 degrees counterclockwise as shown below until adjustment plate tabs align with cutouts on assembly.



1b To change handing, pull lever post until it stops, then rotate 180 degrees.

Align lever catch pin and slide hole to latch side. Release lever post. Assembly will click into place.



The cable should be routed on top of the chassis! Connect cable from outside assembly to connector in chassis.

1c





Tuck connected chassis cable into appropriate channel.

### 2 Align assembly and install on door.

Let the wire hang on the other side, through the hole.

## WARNING

#### Do not pinch ribbon cable! WARNING

Ensure that the lever catch pin is aligned with latch side before continuing!



The latch tails must fit inside the slide and the latch prongs must fit into the chassis. If the latch tails are not at the proper depth the door thickness ring needs to be adjusted. See Door Thickness Adjustment.

### Install Inside Assembly.

**3** Install backplate first, then route ribbon cable.



# 4 Install spring cage.

Align lever catch pin to door edge. Make sure the outside escutcheon is square before tightening the bolts.



## 5 Install inside escutcheon.

5a Connect the cable from the outside escutcheon to the connector on the inside escutcheon.



5b Place inside escutcheon on backplate, and slide down to hook onto backplate. Secure with screws. Make sure escutcheon and spring cage are properly aligned before tightening screws





#### **Install Batteries**

## Install battery cover screw.

### 6 Install batteries into battery holder.

- 6a Push the tab on the right of the battery securing strap, and pull out to release battery holder.
- 6b Install four high-quality alkaline batteries into battery holder. Follow markings for polarity.

Install only new (4) AA alkaline batteries.

6c Connect cable from battery holder to connector on circuit board.



Do not allow battery pack to hang from the wires. When the batteries are connected, the lock will perform a Power On Self-Test (POST). The POST is a self-diagnostic test that the lock runs to verify that the lock is installed correctly. The POST takes approximately 30 seconds. During the POST, a series of audible beeps and LED flashes will occur. If no issues are detected, the POST will conclude with three green flashes of the outside LED and 3 audible

beeps. If the POST detects an issue, the outside LED will flash red 3 times. Once commissioned with the ENGAGE mobile application, any issues identified during POST can be viewed.

# At the completion of the POST the lock will transition to a secured (locked) state.

6d Snap the battery securing strap into place, then slide the strap down until snug.





#### 8 Install battery cover.

Install battery cover in place, then push up to secure the cover. Tighten bottom cover screw.



Do not pinch battery cable when installing battery cover.

#### CAUTION

Removing the battery cover will cause lock Tamper Mode, which halts BLE and Wi-Fi communications!

#### Electrical Ratings (6Vdc, 500mA, 3 W)

Note: The reader activates when it detects the user's hand holding the credential, so functionality may seem different than a powered wall-mounted reader.

User Guide				
<b>NEED HELP?</b> See <b>Troubleshooting</b> on page 10.	2b Present credential to enroll for access. The LED will blink green five times and beep if successful.			
Lock Testing	2c To enroll more credentials, repeat steps 2a and 2b.			
Power On Self Test	<b>3</b> Remove user construction credentials.			
The Power On Self-Test (POST) is a self-diagnostic test that the lock runs to verify that the lock is installed correctly. The POST takes approximately 30 seconds. During the POST, a series of audible beeps and LED flashes will occur. If the POST detects an issue, the test will conclude with three red flashes of the outside LED. Once commissioned with the ENGAGE mobile application, any issues identified during POST can be viewed under the View Activity menu.	The only way to remove credentials from Standalone/Construction Access Mode is to perform a Factory Default Reset (FDR) on the lock and re-enter Standalone/Construction Access Mode by creating a new Master Programming Credential and re-enrolling the other credentials.			
Standalone/Construction Access Mode	ENGAGE cloud-based web and mobile applications make it easy to configure lock settings, manage user access and view audits and alerts			
CAUTION	from anywhere. Your new NDE wireless lock can be connected to your Wi-Fi network to			
Standalone/Construction Access Mode is NOT required to operate the lock!	receive updates automatically overnight or can be updated anytime form the ENGAGE mobile application when within Bluetooth range.			
Mobile Application" to commission the lock and begin using the ENGAGE cloud-based web and mobile applications to configure lock settings, manage user access, and view audits and alerts.	<b>Download the ENGAGE mobile application</b> Search for "Allegion ENGAGE" on the App Store (iOS) or Google Play Store (Android) to download the free ENGAGE mobile application.			
<ul> <li>Standalone/Construction Access Mode requires an electronic credential.</li> <li>Enabled by default and after a Factory Default Reset (FDR).</li> <li>The lock will remain in Standalone/Construction Access Mode until</li> </ul>	The ENGAGE app is compatible with iPhone 4S and newer models running iOS 7 or newer. Android devices require Android Kitkat 4.4 or newer.			
the mode is cancelled as described below.	Register a new ENGAGE account			
<ul> <li>No audits are captured while the lock is in Standalone/ Construction Access Mode.</li> </ul>	An account is required to use the ENGAGE cloud-based web and mobile			
① Once enabled, Standalone/Construction Access Mode requires a factory default reset to exit this mode and allow commissioning with the ENGAGE mobile application.	Register for an ENGAGE account in the mobile app by selecting the "Create an Account" button from the sign in screen. You can also register for a new account on the web at https://portal.allegionengage.com/			
1 Create the Master Programming Credential.	signup			
The first card presented to a new lock while turning the inside lever automatically becomes the Master Programming Credential. The Master	password, First and Last Name, and Site Name (for example, the business name where the locks will reside).			
<ul> <li>additional credentials.</li> <li>Use the same Master Programming Credential for all the locks in the facility.</li> </ul>	Note that the password must be at least 10 characters in length and contain three of the following: lower case letters (a-z), uppercase letters (A-Z), numbers (0-9) and special characters (e.g., !@#\$%^&*). No more than two identical characters in a row can be used.			
1a Turn and hold down the inside lever and present to the NDE reader the card you want to make the Master Programming Credential.	Select "Register" (in the mobile app) or "Sign-Up" (on the web) upon completing all of the required information. After registering for a new account, you will receive a verification email. You must click on the link in the message to verify your account. This is required to keep your			
The NDE LED will blink five times for successful enrollment of Master Programming Credential.				
CAUTION	Commission a lock			
Do NOT lose the Master Programming Credential. If lost, reset the lock to factory settings.	To manage your NDE lock with the ENGAGE cloud-based web and mobile applications, it must be commissioned with the ENGAGE app.     Before commissioning, the lock must be fully assembled with the			
WARNING	batteries installed and the battery connector plugged in. The battery cover MUST be installed			
If the first card presented to a new lock to create the Master Programming Credential is not accepted, the lock has either been programmed or already has a Master Programming Credential.	CAUTION If the lock has been put into Standalone/Construction Access Mode, a Factory Default Reset (FDR) will need to be performed			
2 Enroll user construction credentials.	(see Factory Default Reset).			
2a Present the Master Programming Credential. The NDE LED will shine steady for twenty seconds. If no credentials are presented during this time, the lock will leave construction enrollment mode and return to Standalone/Construction Access Mode.	<ol> <li>Sign in to the ENGAGE mobile app.</li> <li>iOS: Select "Connect from the tab bar at the bottom of the screen. Android: Select "Connect to Locks" from the menu.</li> </ol>			

- 3. Select the "+" icon in the upper right corner.
- 4. Follow the lock commissioning wizard to complete initial setup of the lock.

Locks can be commissioned as new, from a previously created profile, or cloned from an existing lock in your site. Upon selecting from these options (described below), the LED on the outside of the lock will begin blinking red to indicate connectivity with the app.

- Select "Create New" to commission the lock with new configuration and access rights. This is the most common scenario when commissioning a lock.
- Select "Assign" if you have already created a profile for the lock in the "Manage Locks" view in the mobile app or in the ENGAGE web portal (if you have already created the lock in the ENGAGE cloud).
- Select "Clone" to give the lock the same configuration and access rights as another lock you've already commissioned on your site.

If you're unsure which option to choose, select "Create New."

When commissioning multiple locks for a site, remove the battery cover from all locks except for the lock you are commissioning. This will ensure that you are connecting to and commissioning the intended lock.

#### **Configure Wi-Fi**

Your NDE wireless lock can be connected to a Wi-Fi network to receive updates from the ENGAGE cloud automatically, overnight.

Prior to configuring the Wi-Fi connection settings for your lock, consider contacting your network administrator to obtain the SSID, security type, password, and in some higher security configurations, the user ID.

Wi-Fi configuration can be set in the lock during the commissioning process or any time while connected to the lock from the "Connect" (iOS) or "Connect to Locks" (Android) menu.

- Connect to the lock. The lock must be within approximately 50 feet of your mobile device.
- 2. Select "Wi-Fi."
- 3. From the Wi-Fi menu, toggle Wi-Fi on.
  - a. Enter Wi-Fi SSID.
  - b. Choose the correct security protocol.
  - c. Enter the username (for WPA-Enterprise security only).
  - d. Enter the password.
  - e. Select "Finish" or "Save."
- ① For applications using WPA-Enterprise (PEAP) security protocol, a unique user name and password (common across all NDE locks) is recommended.

Upon completing Wi-Fi set-up, the lock will turn on its Wi-Fi and attempt to connect to the network, indicated by a flashing amber LED on the reader.

① Do not attempt to guess Wi-Fi configuration details. Prior to configuring the Wi-Fi connection settings for your lock, confirm configuration details with your network administrator.

# Add a user (credential holder) to the cloud database and enroll a credential

The first step in granting access rights for a user to a lock is to create a profile and enroll a credential for them in the ENGAGE cloud database.

- 1. iOS: Select "Users" from the tab bar at the bottom of the screen. Android: Select "Manage Users" from the menu.
- 2. Select the "+" icon in the upper right corner.
- 3. Enter the new user's first name and last name.
- 4. Select "Credentials" from the menu.
- 5. Select the "+" icon in the upper right corner.
- 6. Select the device you want to use to enroll the credential (any commissioned NDE lock can be used as an enrollment reader).

- 7. When the Credentials detail screen displays, present the credential to the reader. (You will have 10 seconds to present the credential). The mobile app will show that the credential was received, and it will be given a name based on the order it was added to the user record (for example: Credential 1, Credential 2, etc.).
- 8. Select the Credential Type (the default is "Normal").
  - **Normal:** Unlocks the lock momentarily (with a specified relock delay period).
  - **Toggle:** Changes the state of the lock from locked to unlocked, or vice versa.
  - **Freeze:** Freezes the lock in the current state. Lock remains frozen until Freeze credential is presented again. Disables all other credentials except for Pass Through.
  - **Pass Through:** Unlocks a lock momentarily, regardless of state. Overrides a lock in Freeze and Lock Down states.
  - Lock Down: Changes the state of the lock to locked and disables all credentials except for Pass Through and Freeze. Present a Freeze to return lock to normal state.
  - One Time Use: Allows only one Normal access per assigned lock.
  - Delete with Alarm: Denies access to the lock and records the access attempt as an audit.
- 9. Select "Save".

Upon successfully completing these steps, a new user will be created with a credential enrolled to them in the ENGAGE cloud database. The new user does NOT yet have access to any locks.

#### Grant a user access rights to locks in the cloud database

The next step in granting access rights for a user to a lock is to assign access rights to locks in the ENGAGE cloud database.

- 1. iOS: Select "Users" from the tab bar at the bottom of the screen. Android: Select: "Manage Users" from the menu.
- 2. Select the desired user.
- 3. Under "Manage Access," select "Locks."
- 4. Select the locks you wish to assign the user access to. Selected locks will have a check mark.
- 5. Select "Save" or "Done."

Upon successfully completing these steps, a user will be granted access rights to locks in the ENGAGE cloud database. **The lock must be updated for the change to take effect.** 

#### Send updates to user access rights to the lock

If the lock has been configured to connect to a Wi-Fi network, it will automatically update overnight.

If the lock has not been configured to connect to a Wi-Fi network, or if the update is urgent, connect to the lock with the ENGAGE app to send the update.

Bluetooth must be enabled on your device and you must be within approximately 50 feet of the lock to connect.

- 1. iOS: Select "Connect" from the tab bar at the bottom of the screen. Android: Select "Connect to Locks" from the menu.
- 2. Select the desired lock.
- 3. Select "Update Door File."

Upon successfully completing these steps, the lock will be updated with the latest user access rights and the audit history will be uploaded to the ENGAGE cloud database.

### View lock audit information

Audit information for each lock can be viewed from anywhere with the ENGAGE mobile app.

Audit information is stored and viewed from the ENGAGE cloud database. If the lock has been configured to connect to the Wi-Fi network, audit information will be uploaded to the ENGAGE cloud database daily. If the lock has not been configured to connect to a Wi-Fi network, you must first connect to the lock with the ENGAGE mobile app and select "Update Door File" or "Get Audits."

- 1. iOS: Select "Locks" from the tab bar at the bottom of the screen. Android: Select "Manage Locks" from the menu.
- 2. Select the desired lock.
- 3. Under "Lock Audits," select "Display Activity."
- To see basic information related to access history, use the Activity view. To view the results of the built in diagnostic test or for troubleshooting related to Wi-Fi connectivity or other issues, use the Diagnostics view.

# Invite others to assist with administrative duties for your site

- 1. iOS: Select "My Team" from the tab bar. Android: Select "My Team" from the menu.
- 2. Select the "+" icon in the upper right corner.
- 3. Enter the email address, first name, last name and role of the person you wish to invite.
  - Administrator: The most trusted administrative access role. The Administrator can perform all duties within the ENGAGE web and mobile applications.
  - **Manager:** Same administrative privileges as an Administrator but cannot invite or remove other Managers or Administrators.
  - Operator: The most limited access. An operator can only connect to locks to send updates or perform diagnostics.
- 4. Select "Save."

Α

# Factory Default Reset (FDR)

A Factory Default Reset (FDR) will return the NDE lock settings to the original settings as shipped from the factory. Removes configurations, databases, and requires the lock to be re-captured. A FDR will not remove the lock from your ENGAGE account.

Press and hold the FDR button for five seconds.

The NDE will blink green two times and beep two times.

B Turn the inside lever three times within 20 seconds. LED will blink red and lock will beep with each turn.

C Reinstall battery cover, then use the app to capture your lock.

Turn the inside lever. The NDE will communicate on BLE looking for your mobile device for two minutes after each lever turn in FDR mode.

If you have used this NDE in Construction Access Mode, you must complete a FDR before it will communicate on BLE.

## Safe Mode

## CAUTION

Enter Safe Mode only as a last resort! Entering Safe Mode causes the lock to load a special version of firmware intended to be immediately updated. Once in safe mode, commission the lock with the ENGAGE mobile application and perform a firmware update.

To put the lock in Safe Mode:

- 1. Remove power from the lock.
- 2. Turn the inside lever 2 times.
- 3. Apply power to the lock.
- 4. When the inside LED begins to blink, turn and hold the inside lever.
- 5. Press the FDR button 3 times to begin Safe Mode process.

# The lock will not perform the Safe Mode process if the above sequence is not completed within 10 seconds.

## Lock Indicator Guide

Indicators	Meaning	
Fast flash green x5	Construction Access Mode: Successful creation of master or user construction credential.	
Steady green until timeout (20 seconds)	Construction Access Mode: Waiting for credential after presentation of master construction credential.	
Long flash red x2	Manual/Construction Mode: Timed out to construction mode.	
Flash red x9 followed by the respective credentials indication	Low battery.	
Flash green x1 + beep, then flash red x1 upon relock	Access granted.	
Flash green x2 + beep	Already unlocked.	
Flash red x12 + beep	In secure privacy/lockdown mode.	
Flash red x1 + beep	Access denied	
Flash alternate green- red x5 + beep	Freeze/Lockdown mode.	
Flash red x4 + beep	Access denied. Outside credential schedule.	
Flash red x1 per second	BLE communicating.	
Fast flash green x3 + fast beep x3	Power On self test - Pass.	
Fast flash red x3	Power Off self test - Fail.	

# Troubleshooting

Problem	Possible Cause	Action
No beeps or blinks when battery pack is connected.	<ul> <li>Improper plug connection.</li> <li>Pinched wires or bent pins.</li> <li>Reversed battery or dead battery.</li> </ul>	<ul> <li>Check all wiring, and the three plugs.</li> <li>Check that battery voltage is 6 VDC or better with new batteries.</li> </ul>
Fails power up self test. There were no three green LED blinks and beeps at the end of power up, just three RED LED blinks and beeps.	<ul><li>Motor not connected.</li><li>Battery voltage low.</li></ul>	Check all three plug connections, inspect for cut or pinched through door wires. Measure battery voltage, must be over 6 VDC.
Unable to connect to the device with BLE, don't see the expected lock name, or "Schlage Lock".	<ul> <li>The battery cover must be installed to avoid Tamper Mode before BLE will work.</li> <li>The tamper switch could be broken.</li> </ul>	<ul> <li>Press "+" in the app.</li> <li>Install the battery cover.</li> <li>Turn the outside lever, and check for the name again by pressing "+" in the app.</li> </ul>
Latch is not retracting when access is granted.	Latch tail assembly incorrect.	Check installation step 2.
NDE is crooked in the door preparation.	Check installation step 2, that the latch tail fits in the slide slot.	Center and square the lock in the door prep.
Outside lever won't go on.	<ul><li>Key cylinder is assembled incorrectly.</li><li>Follow lever installation pull/push instructions.</li></ul>	<ul> <li>See Cylinder and Lever installation.</li> <li>Check cam rotation and key rotation for handing.</li> </ul>
Batteries are hot.	A battery is reversed.	<ul> <li>Replace all batteries, with polarity per the battery pack markings. Measure the battery voltage as 6 VDC or more when new to confirm proper insertion.</li> </ul>
Can't do a Factory Default Reset (FDR)	Motor/RTX cable is disconnected. Pins are bent or cut.	<ul> <li>Hold down the FDR button until there are two green blinks and beeps; then turn the inside lever three times. Check all connections are correct and no wires are cut or pins are bent.</li> </ul>
No Wi-Fi connection	Wrong Wi-Fi Configuration.	<ul> <li>Check the Wi-Fi configuration for the location. You must have the SSID, Security type, Password, and in some higher security configurations, the user ID.</li> </ul>
Intermittent Wi-Fi connection Wi-Fi signal is weak	<ul> <li>Your phone's Wi-Fi may be turned off.</li> <li>You may be too far from a Wi-Fi access point or have walls blocking the Wi-Fi signal.</li> </ul>	<ul> <li>Use your smart phone Wi-Fi settings to confirm the desired SSID is present and listed under "Choose a Network" on your phone.</li> <li>Use the same SSID, password, and user name to connect your smart phone to the Wi-Fi to confirm the Wi-Fi is functioning at this door location. The NDE lock and phone can both connect with the proper Password and User ID.</li> <li>Make sure the SSID assigned to the lock is at the nearest access point with a strong signal.</li> </ul>
After enrolling credentials and access files into the NDE, all valid cards are still denied.	<ul> <li>DPS (door position sensor) is not calibrated.</li> <li>Activation or Expiration date errors.</li> </ul>	<ul> <li>Calibrate DPS using your mobile application.</li> <li>The DPS must be calibrated before access is granted. Use the ENGAGE mobile application to calibrate the DPS.</li> <li>The NDE clock is set automatically with the first communication to the Engage mobile application. Check the User Credential information in the app to make sure you have enrolled the "User Configuration" with the proper access Activation and Expiration dates.</li> </ul>
Reader does not respond to credentials, (no beeps or LEDs) but lock passed power up self-test.	Lock is not detecting a user in the area around the reader.	<ul> <li>Credentials should be presented by hand directly over the logo on the front of the reader. Avoid interference from lanyards, wallets, or purses.</li> </ul>

## **FCC Statement**

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 communication. 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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this 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.

#### FCC Radiation Exposure Statement

To comply with FCC/IC RF exposure requirements for mobile transmitting devices, this transmitter should only be used or installed at locations where there is at least 20 cm separation distance between the antenna and all persons.

#### **Industry Canada Statement**

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 permitted for successful communication.

#### Industrie Canada Déclaration

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.

#### Industry Canada Radiation Exposure Statement

This Device complies with Industry Canada License-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

#### Industrie Canada l'exposition aux radiations

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## **UL Statements**

- · Outside lever is normally locked. Inside lever always allows egress.
- · Unit shall not interfere with the operation of Panic Hardware.
- Wireless communications, Wi-Fi, Bluetooth, Door Position, and Request to Exit switch features are not part of UL Listed product.
- Tested to compliance with UL 294 5th Edition Class I.

#### **Customer Service**

1-877-671-7011

www.allegion.com/us