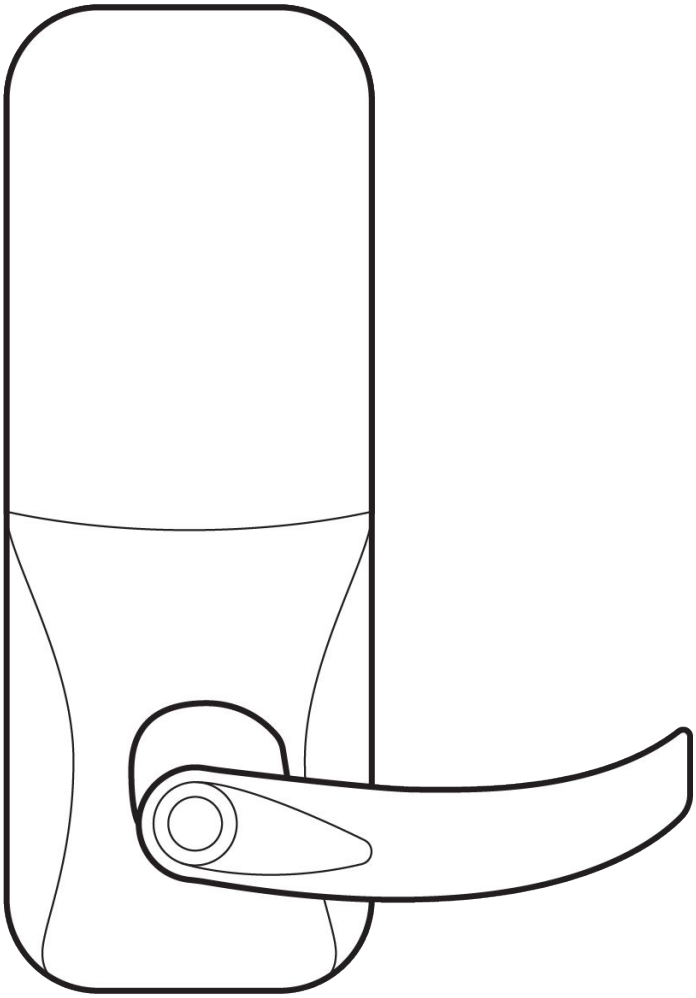
Install Guide

Schlage AD300, AD400



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Firmware

Firmware version can be verified on
Verkada Command command.verkada.com.

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Introduction

Schlage AD Integration into Verkada System.

See separate install guide(s) for hardware installation:

AD400

https://us.allegion.com/content/dam/allegion-us-2/web-documents-2/UserGuide/Schlage_AD-400_and_AD-401_Networked_Wireless_Lock_User_Guide_104387.pdf

AD300

https://us.allegion.com/content/dam/allegion-us-2/web-documents-2/UserGuide/Schlage_AD-300_and_AD-301_Networked_Hardwired_Lock_User_Guide_-_English_106415.pdf

Background

The Schlage AD series of locks come in two major variants, *the AD400 wireless lockset and the AD300 wired lockset*. The AD400 wireless lock connects to the Verkada AC41 through a wireless bridge called the PIM 400-485. The AD300 wired locks connect directly to the AC41. Both solutions communicate with the AC41 over RS485 via the aux RS485 port on the AC41 (the last cassette).

What's the difference between the AD400 and the AD300?

The AD series of locks has the AD400 wireless lockset and the AD300 wired lock set. They act the same to the end user. The only difference is the AD300 wires directly to the AC41 via RS485 and the AD400 connects to the AC41 through a wireless bridge called the PIM-400-485. The configuration process in Command is identical with the exception of selecting Wireless - AD400 or Wired-AD300 in Command when adding the locks.

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Common use cases

Many schools, universities, medical facilities and multi-tenant units use wireless locks to secure doors that are operated with low frequency

Schools/Campuses
Classroom doors, Offices, Break rooms

Universities/Medical Facilities
Dorm Rooms, Lecture Halls, Offices, Laboratories

In multi-tenant
Officeses, Supply closets

These verticals use wireless locks because they do not require expensive wiring to be run through walls and allow much more flexibility. They are also much more cost effective than wired doors. This integration allows us to work with existing customers with AD300 and AD400 wireless locks.

Important notes

Tips to help you do your best:

- Read all of the Allegion documentation for the AD400 and PIM400
- **Verkada support will NOT troubleshoot or RMA Allegion hardware!**
- Wireless locks are wireless products so wireless range is always a concern, please ensure that the PIM 400-485 is placed within range of all the connected locks.

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Installation Order of Operation

1. Install and configure the PIM 400-485
2. Install and configure the wireless lock
3. Configure the AC41

Items Required*

Tips to help you do your best:

1. Schlage Utility Software (SUS) cable
2. SUS phone or SUS device with the SUS app installed
3. PIM 400-485
4. AD400

*Will vary depending on install case. Please reach out to your Allegion ESE for assistance.

PIM 400-485

The PIM 400-485 is the wireless bridge used for the AD400 series of locks. It should be programmed before you add any Schlage doors in Command..

1. The Schlage Utility Software connects to the PIM 400-485. using the SUS cable. Connect the Schlage SUS cable to the phone using USB C.

2. Connect the PIM 400-485 to the power supply and connect the SUS-A cable to the phone and the PIM.

3. Launch the Schlage Utility Software app.

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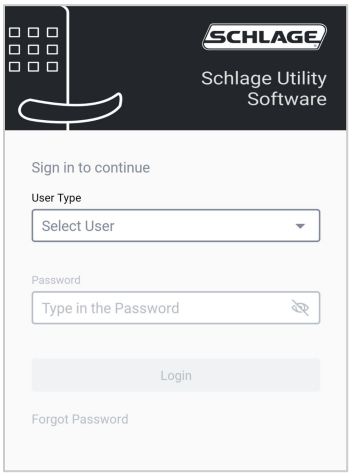
PIM-400-485 Cont.

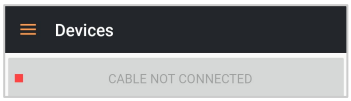
4. The Schlage Utility Software app will ask you to login. Use:
   User type: manager
   Password: verkada

   If you login to the SUS app and the SUS-A cable is not connected, you will get a screen that says “Cable not connected”.

5. Upon connecting the SUS-A cable the Android operating system will ask if you “Allow Schlage Utility Software to access SUS A-CABLE?”. Select “OK”.

6. When you connect the PIM to the phone you will need to couple it. This means that the PIM is programmed to communicate with the specific programming phone. You can only couple a PIM to one phone. If you try to do anything when the PIM isn't coupled, you'll get an authentication error.





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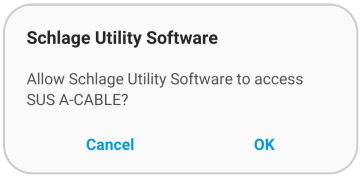

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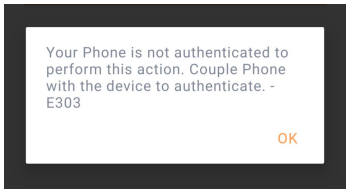

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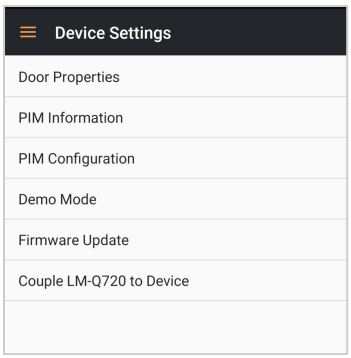
You can couple the PIM by placing it into coupling mode by pressing and holding the LINK1 button and then pressing the LINK2 button three times. Next, click “Couple [PHONE_NAME] to Device”



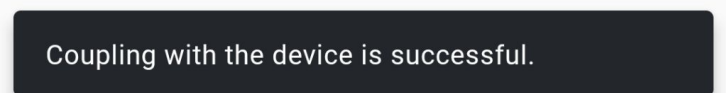
Please note:

- [PHONE_NAME] in the above example is a placeholder. Yours will be different.

If the PIM is already coupled to a device, these steps won’t work and you'll have to do a factory reset.

PIM-400-485 Cont.

If the coupling is successful, you will see a message at the bottom.
Now that you've coupled the PIM to the SUS phone, you can start programming it.

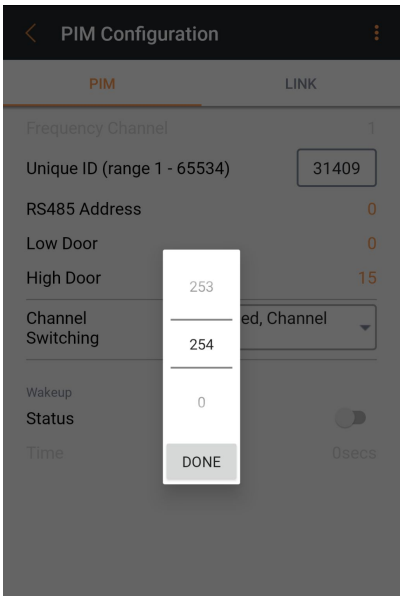


PIM 400-485 Programming

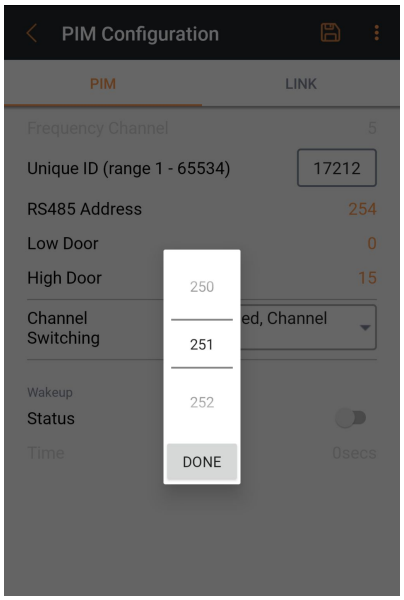
Tap into Device Configuration.

Let's define the PIM addresses. There are three fields that need to be defined. They are:

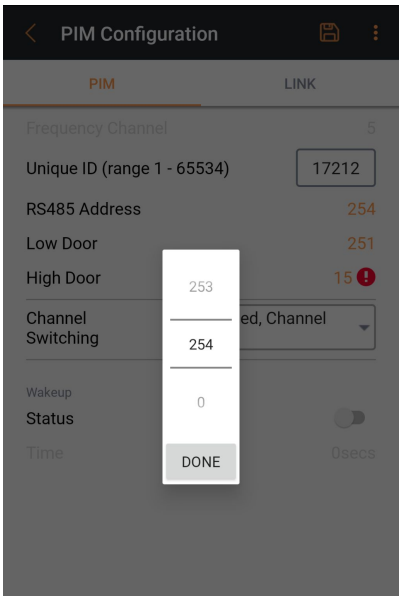
- **RS485 Address** - This is the address of the PIM in relation to the AC41.
- **Low Door** - this is the first door address belonging to the PIM.
- **High Door** - This is the address of the last door to be controlled by the PIM. It should be three more than the Low Door number. *For example* if your Low Door is 251, your High Door *Must* be 254.
- Any non-conflicting continuous span of max length 16 will work for one AC41. In the example below, we are showing a 4 door span from 251-254.



RS485 Address Tap on the zero next to RS485 address to define the address of the PIM unit.



Low Door This is the first RS485 bus address of the first lock.



High Door *Recommended*: Never use pim address 0, because every time a new pim is added it is assigned address 0 by default so it will cause collisions.

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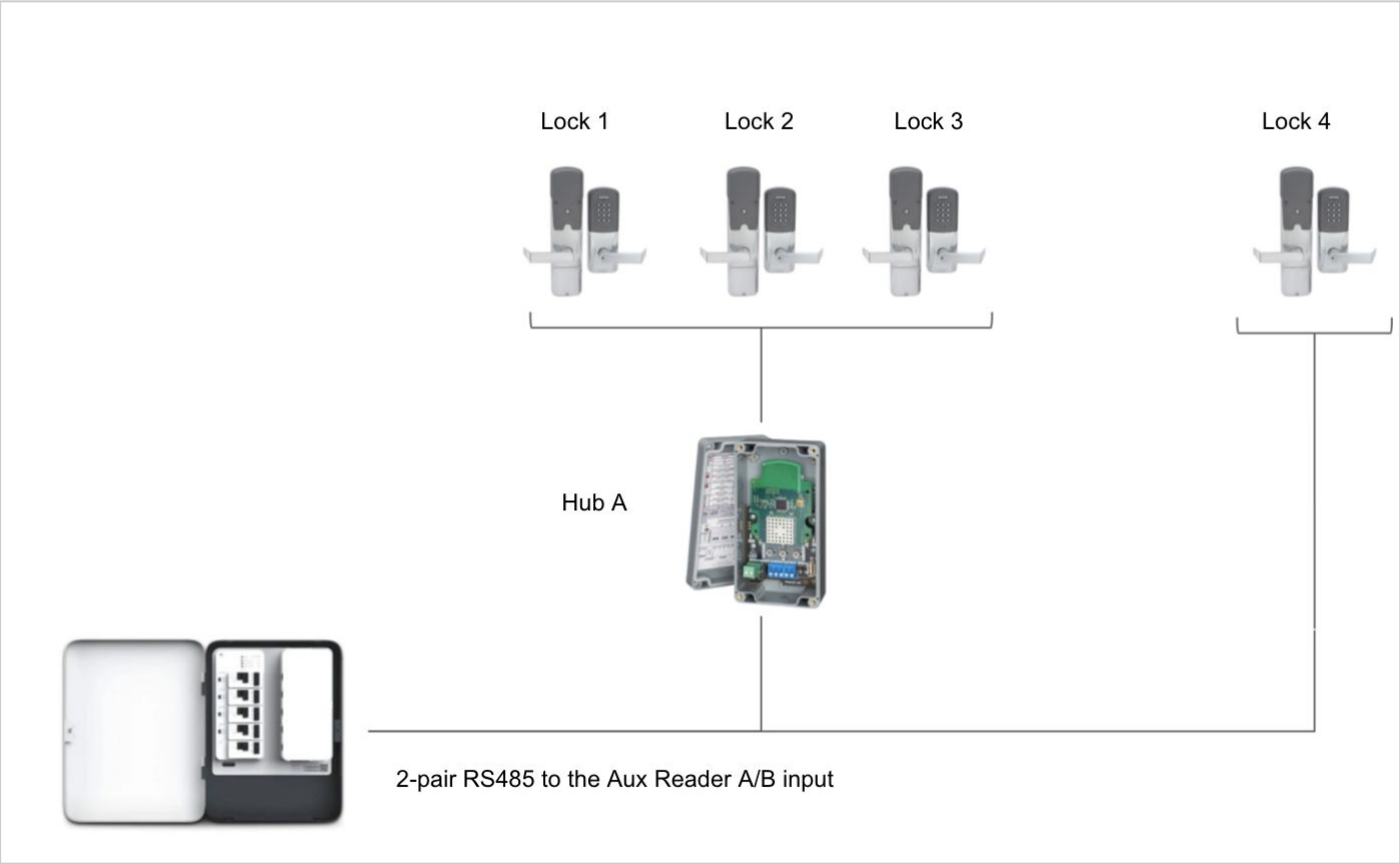
PIM 400-485 Programming Cont.

Verkada's AC41 supports any combination of wireless locks (via the PIM 400-485) hub and wired AD300 locks, up to sixteen per AC41. When connecting multiple RS485 devices, connect each of the data pins (A and B) in parallel to each other and to the AC41's AUX RS485 bus.

Please note that that the Verkada integration limits each PIM to 16 wireless locks.



If using multiple Schlage devices, such as a PIM hub and an AD300, wire the data pins in parallel to each other. They are addressed so the AC41 knows which one it's talking to.

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AD400

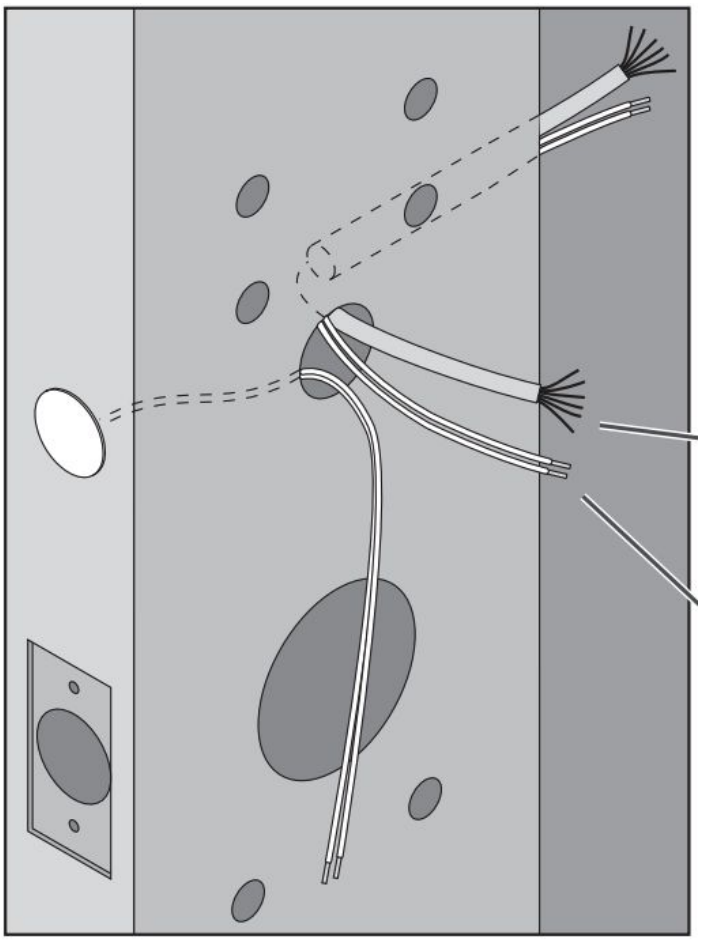
Setting up the AD400 with the AC41 requires several steps:

1. Mount the hardware and configure the lock
2. Configure the PIM module (you should have done this before installing the AD400)
3. Setup in Command

AD400 Lock Installation

Most of the time the locksmith or contractor will be doing this part following the included instructions. The AD400 requires more holes to be bored into the door for it to function. This is because it has a built in DPI sensor and has extra holes for wires to pass through.

For hardware installation instructions, please see:
Schlage AD Series Cylindrical Installation Instructions
https://us.allegion.com/content/dam/allegion-us-2/web-documents-2/InstallInstructions/Schlage_AD-Series_for_Cylindrical_Installation_Instructions_102104.pdf



Note:

- The cables are *fragile* and should be handled carefully.
- If the lid isn't screwed on tight enough, the tamper switch will repeatedly and randomly throw errors.
- You will need to get your own wire to connect the AD400 to the PIM. Standard shielded low voltage cable will be fine. 22/4 , 22/6, or 18/4 should all work flawlessly.

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AD400 Lock Programming

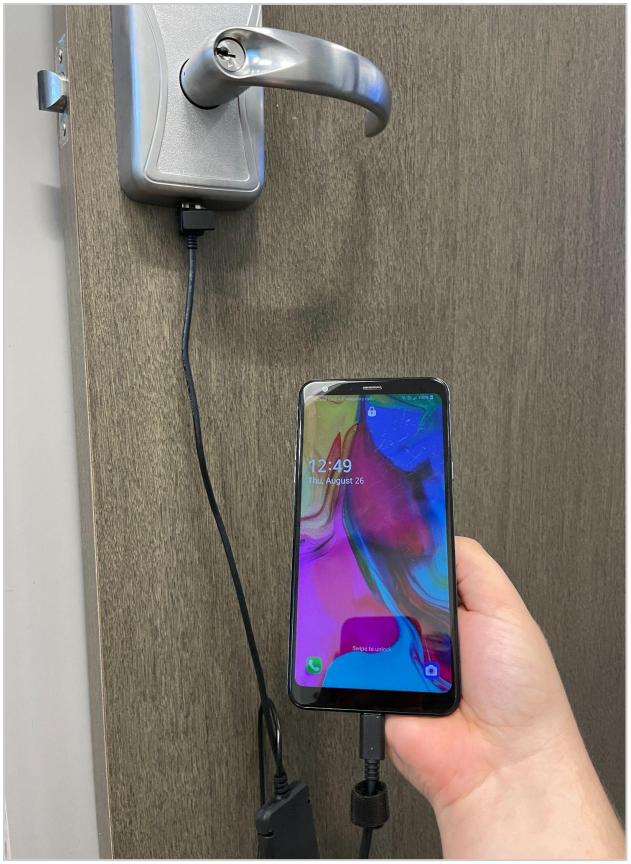
All AD400 locks need to be given an address. This is done using the Schlage Utility Software (SUS,) which is a free Android app (there is no iOS app).

To configure the AD400, you first start by linking it to the PIM. The first step is to couple the PIM to the phone to enable it to program itself.

1. The Schlage Utility Software connects to the lock using the SUS cable. Connect the Schlage SUS cable to the phone using USB C.

2. The SUS cable connects the AD lock via a USB A host connection. The AD has a hidden USB port under a rubber cover on the bottom of the unsecured side of the door.

3. A connected SUS cable.

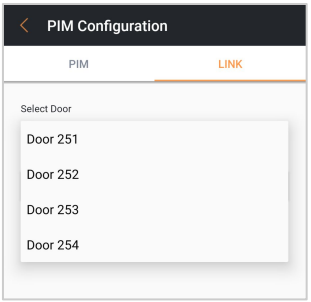


Now that the cable is connected you can put the AD lock into communication mode by pressing and holding the # key on ADs that have a keypad or the Schlage button on readers that don't have a keypad.

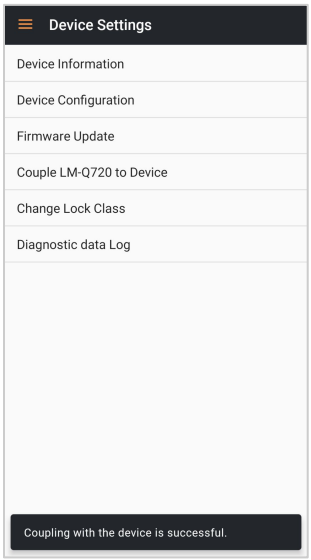
Couple the device by selecting Couple [PHONE_NAME] to Device. This will fail if the device is not in coupling mode.

Please note: If a device is already coupled to a different SUS phone, you will need to reset it completely to couple it.

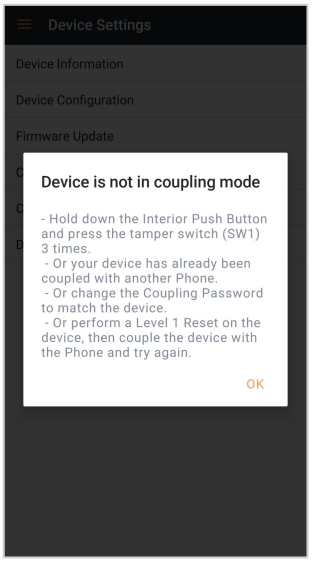
The next step is to pair the AD400 to the PIM device. With the SUS cable plugged into the PIM, NOT the AD400, select device configuration, then link.



Select the door address you would like to link an AD400.



Successful coupling



Failed coupling

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AD400 Lock Programming Cont.

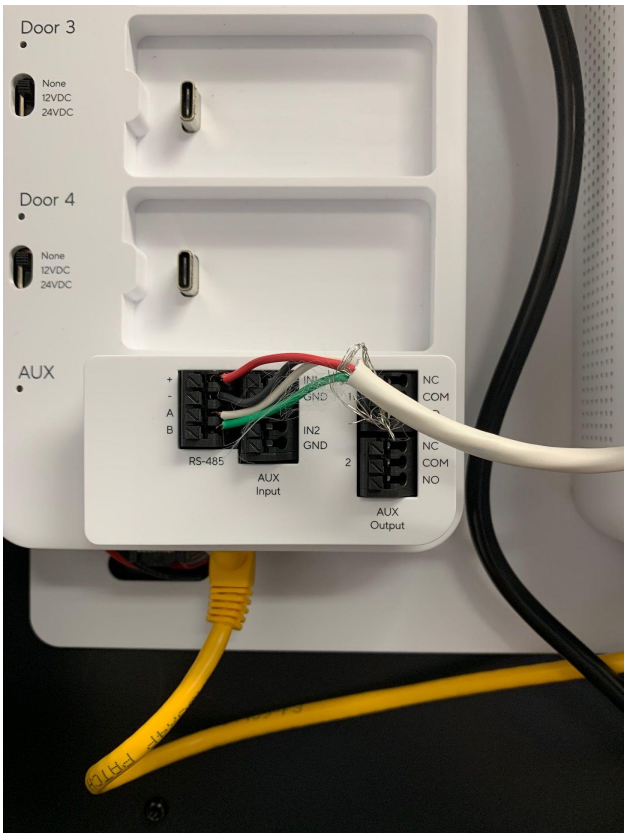
Now that the cable is connected to the PIM, you can put the AD lock into link mode by pressing and holding the # key on ADs that have a keypad or the Schlage button on readers that don't have a keypad. The PIM400 will stay in link mode for up to 30 minutes.

When the linking is complete, the PIM400 will automatically exit link mode

Connecting the PIM/AD300 to the AC41

The PIM (or AD300 lock) connects to the AC41 over single pair RS485. This means that you need to use two wires for data and two wires for power. You can take power from one of the 12v outputs in the AC41.
The port on the PIM labeled TDA- goes into the A port of the Aux cassette of the AC41.
The port on the PIM labelled RDB+ goes into the

B port of the Aux cassette of the AC41.



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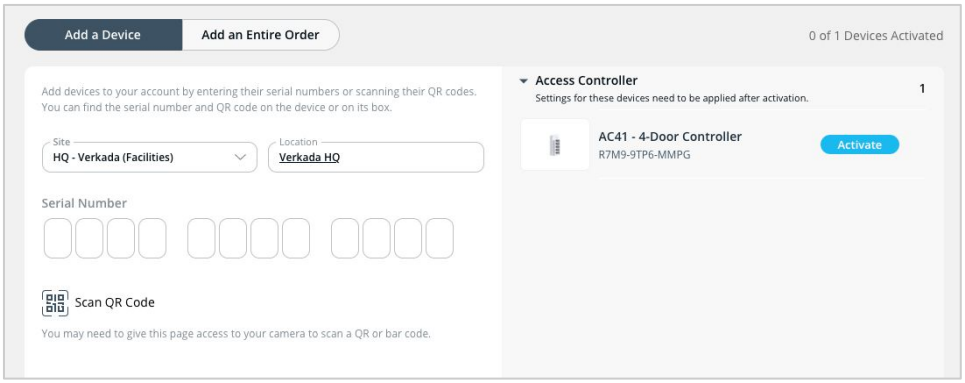
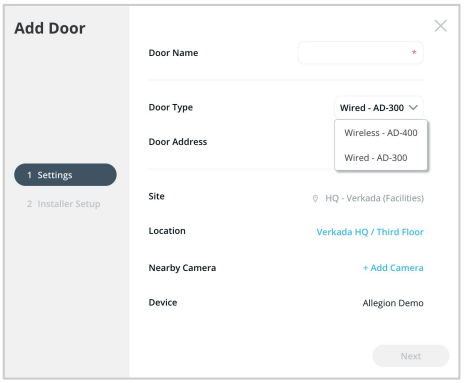
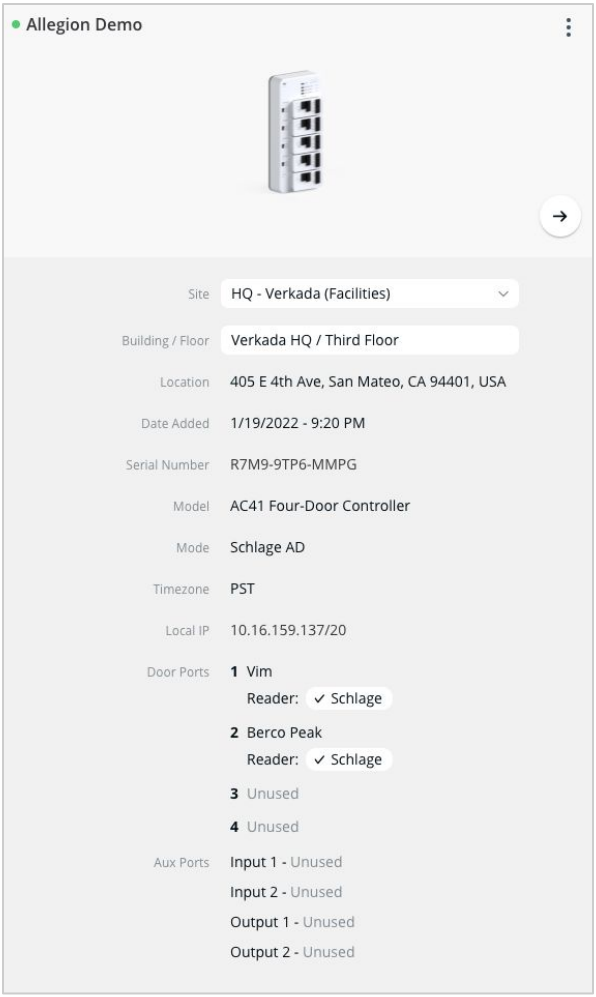
Adding the AC41 to Command

When adding the AC41 to Command, the AC41 will need to be set to “Schlage Mode”. This setting can only be set when adding the controller to Command. If you forget, you will need to decommission the AC41 and then re-add it.





You can verify that your device is in “Schalge Mode” in the devices list page. **Only Schlage locks can be connected to a Schlage mode AC41.**



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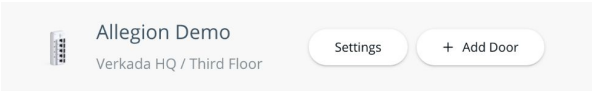
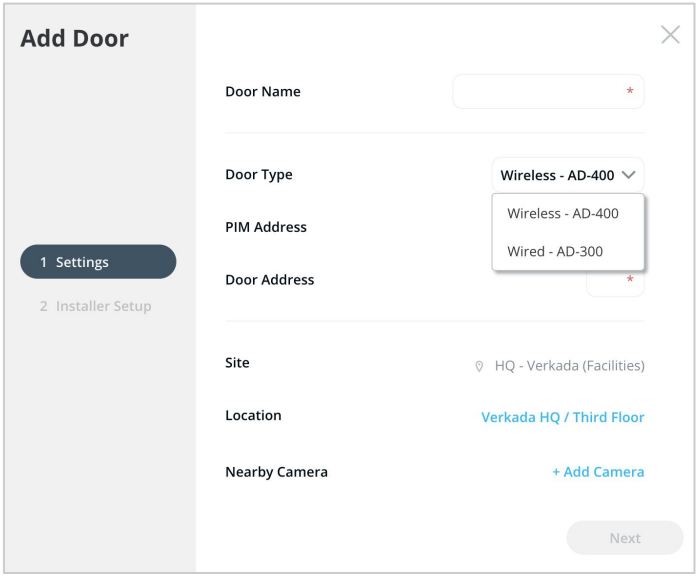
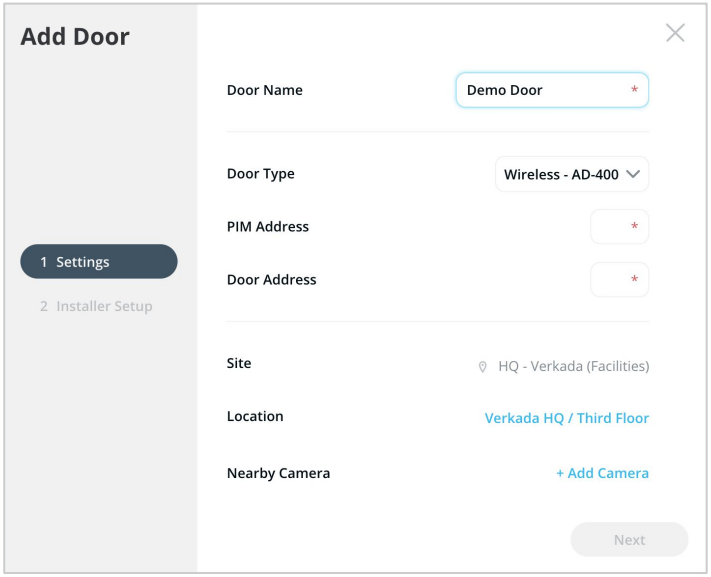
Adding an AD400 Door

1. Navigate to the “Add Door” page in command

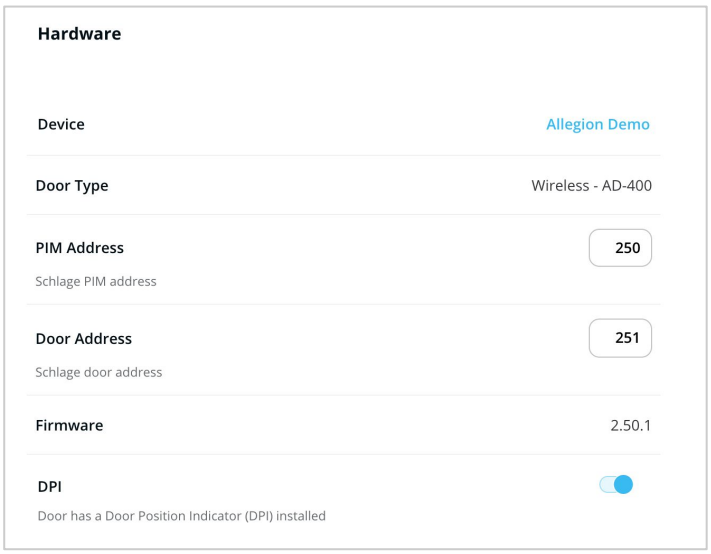


2. Select the type of door you would like to add. Then, fill in the PIM 400-485 Addresses and corresponding AD400 Address. You will be able to see the paired pim and door addresses in the schlage sus app. Once this information is entered it will be associated with the door.





3. AD400s have DPI and Rex built into the device. So, in the door installer settings page you will see that both DPI and Rex are on by default. If your DPI requires additional door hardware that is not installed please disable DPI.



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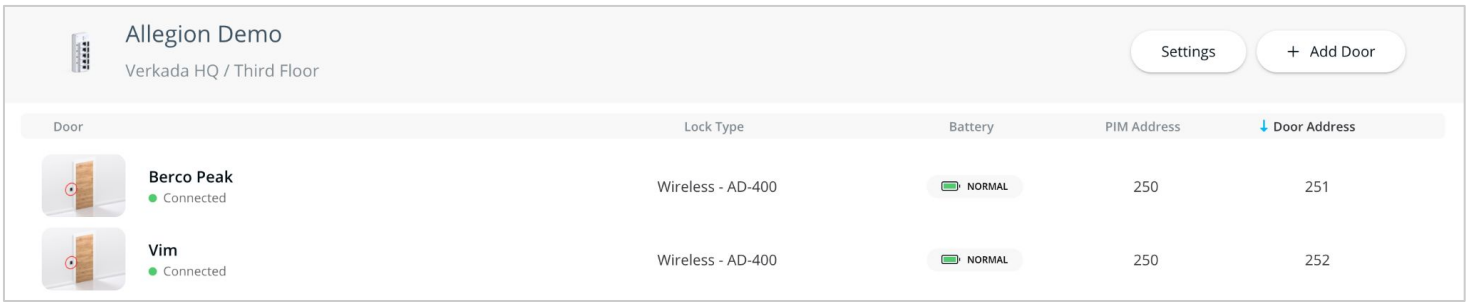
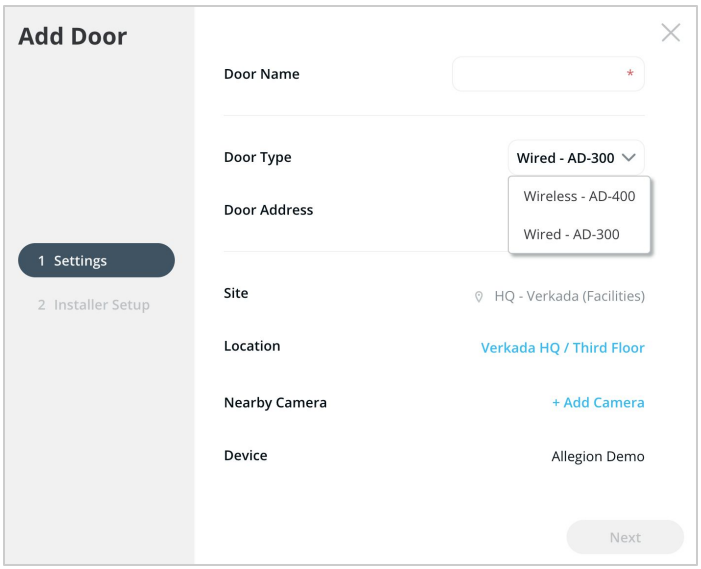
Adding an AD400 Door Cont.

4. You will now see that you have added an AD400 door. It can take a couple minutes for the door to come online.



Adding an AD300 Door

- You do not use the PIM with the AD300 - it wires directly to the AC41 aux cassette
  - We can support multiple AD300s can be connected to one AC41 by wiring them in parallel.
  - At max, 1 AC41 can support 16 doors total.
- You have to select Wired - AD300 when adding AD300 locks to command
- You only configure the door address for AD300s since there is no PIM to configured an address for.



Troubleshooting Guidelines

1. Verify that your ACU is in schlage mode - if you forgot to set it to Schlage mode, you will need to decommission it and re-add it.
2. Verify that the AD400s and PIM 400-485s have been successfully paired
3. Ensure that the addresses for each PIM400-485 and AD400 were successfully configured. Additionally, ensure that the addresses provided when setting up the door in command are correct.

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Support

Thank you for purchasing this Verkada product. If for any reason things don't work right, or you need assistance, please contact us immediately.

verkada.com/support
Sincerely, The Verkada Team

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