

Aqara N100

Product Introduction



continuous connection

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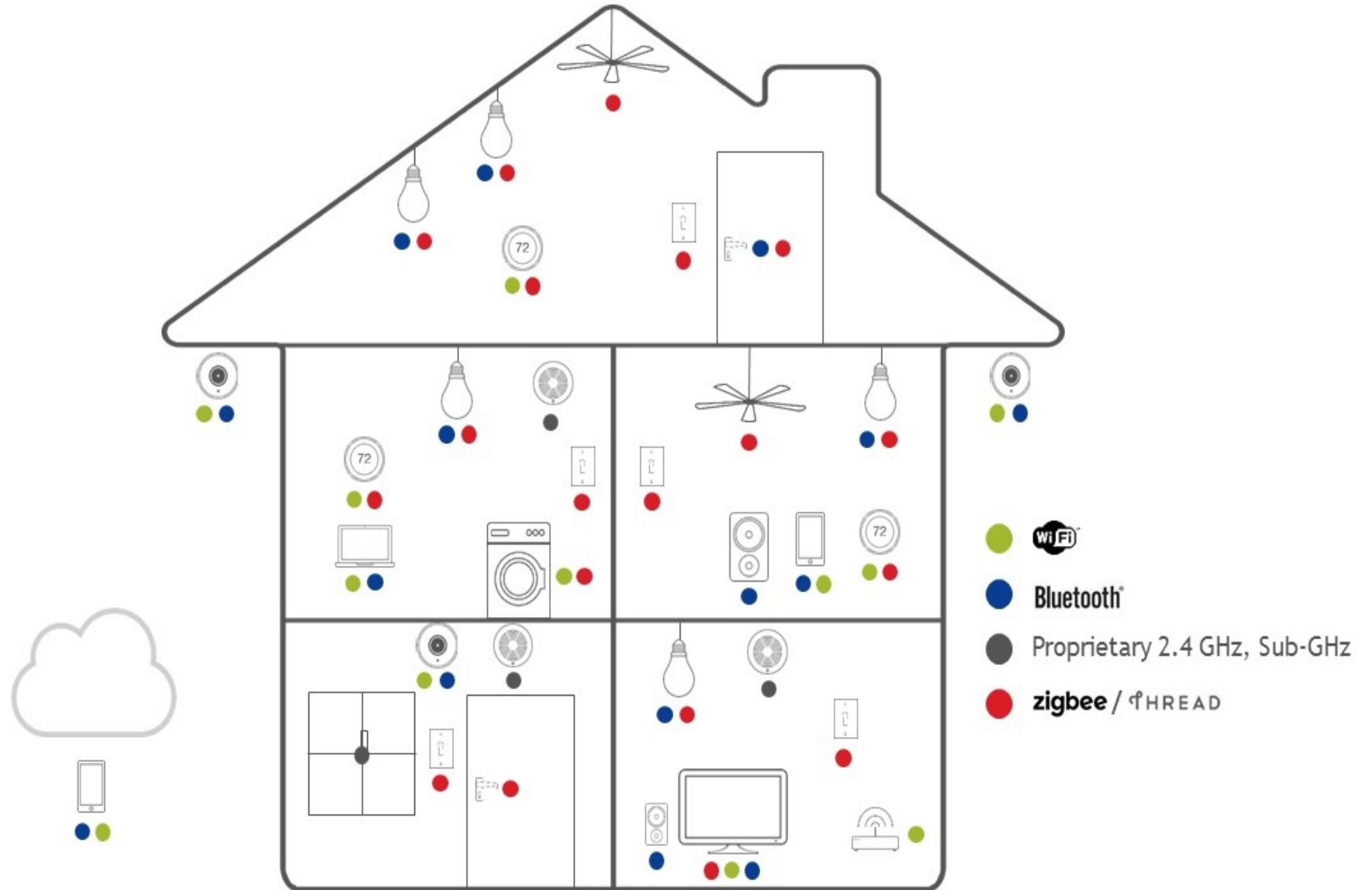


Part 1

Product Reviews

Smart Home

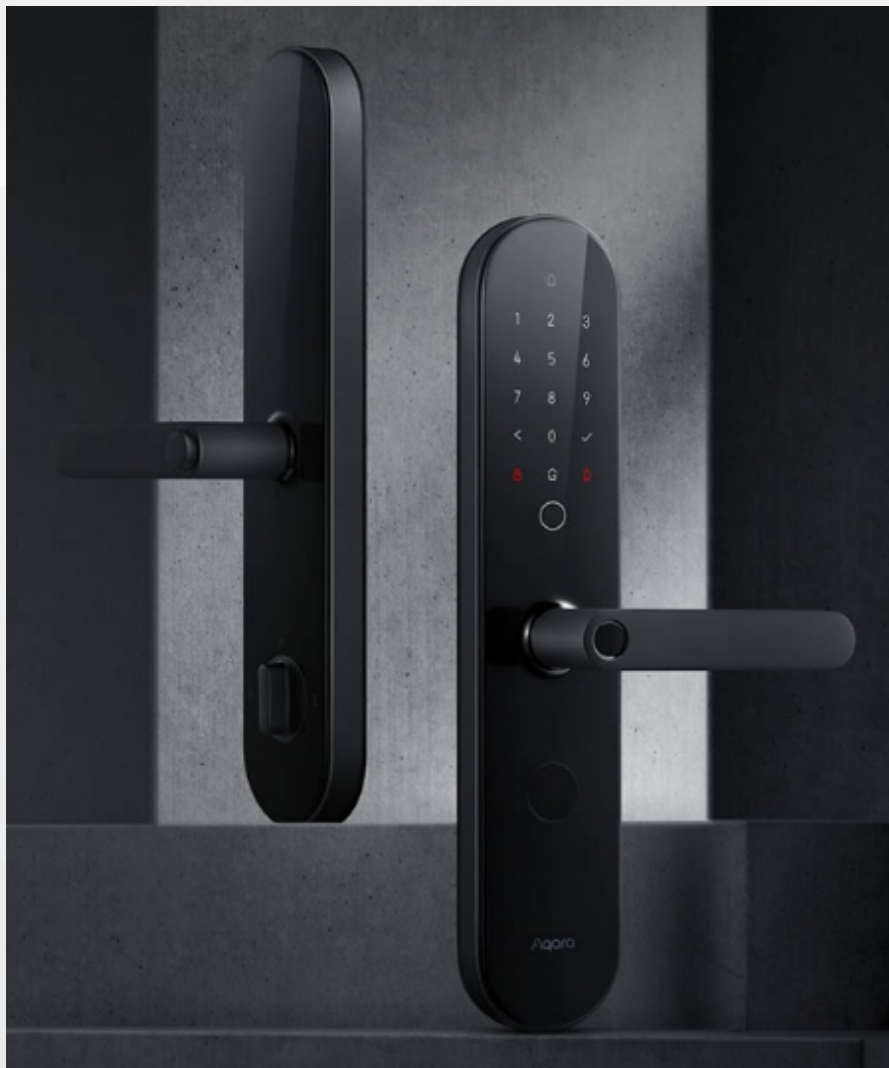
- RFID
- Sensor
- **Network**
 - Zigbee
 - Wifi
 - BLE
 - Thread
 - NB-IOT





Product Review

Aqara



- N100 can be unlocked by fingerprint, password, temporary password, emergency key, NFC, Bluetooth, HomeKit. Protocol are **BLE5.0 and Zigbee 3.0**. Support **HomeKit**.

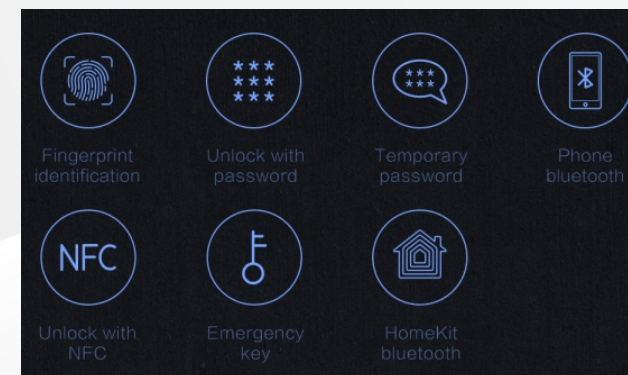


Works with
Apple HomeKit



- Mi Home/Apple dual security chips with over 20 ultra advanced technologies.

- Seven ways to unlock
Light up your convenient life



*N100 conforms to Chinese relevant industrial standard

continuous connection



Product Review

Aqara

Carbon black with Standard
Lock Body



Front and Rear Panel



IML Faceplate, scratch-resistant



continuous connection



20+ ultra advanced technologies

Aqara

1

One-piece handle design

One-piece design protects the lock from violent disassembly.

2

Anti-pick sensor embedded in the front panel

Alarm immediately if the front panel is removed from the door lock.

3

Anti-stalking, highly secure

The door lock will lock automatically after being unlocked.

4

Anti-burglary design

Protect the door from being unlocked by damaging the peephole.

5

Independent lock-out button

Can only unlock with administrator's fingerprint and password.

6

Protected from tesla coil attack

Anti-electromagnetic interference. Multiple block layers to protect the lock.

7

Latch bolt sensor

Detects if the door is not closed completely.

8

Dead bolt sensor

Monitors the locked door status in real time.

9

Assistant bolt sensor

Detects door opening and closing in real time.

10

Lock-out bolt sensor

Monitors the lock-out status of the door in real time.

11

Encrypted bound door panels

The door panels are bound to each other and the data transmission between them is encrypted.

The diagram shows an exploded view of the Aqara door lock assembly. It includes the front handle panel (1), the main lock body (2), the internal mechanism (3), the anti-burglary shield (4), the lock-out button (5), the anti-EMF shield (6), the latch bolt sensor (7), the dead bolt sensor (8), the assistant bolt sensor (9), the lock-out bolt sensor (10), and the encrypted bound door panels (11). Other components shown include the peephole (12), the anti-pick sensor (13), the anti-stalking sensor (14), the anti-burglary sensor (15), the anti-EMF sensor (16), the anti-stalking sensor (17), the anti-burglary sensor (18), the anti-EMF sensor (19), the anti-stalking sensor (20), the anti-burglary sensor (21), the anti-EMF sensor (22), and the anti-stalking sensor (23).

Continuous connection



20+ ultra advanced technologies

Aqara

12

Direct mortice

The mortice goes through the whole lock body.
Complete mechanical lock structure is retained.

13

3D semiconductor fingerprint identification

Unlock in one step. Identification with high accuracy.

14

Swedish fingerprinting algorithm of financial security level

Image feature points + image fusion algorithm.
No more fake fingerprints.

15

Unlock with Apple HomeKit

Fully encrypted transmission, securer with MFi chip.

16

One-piece structure

More powerful to prevent burglary.

17

Duplex bearing and anti-overload structure

Passed the test of pulling down the door handle 100 thousand times.

18

Anti-peep with virtual password

Supports 20-digit password.

19

Clutch embedded in the lock body

Prevent unlocking by removing the panel violently.

20

Master control chip placed in the rear panel

Securer with master control chip in the rear panel.

21

Mi Home chip of high security

With separate private key and certificate,
bluetooth transmission is securer.

22

Type-c emergency power supply

Use power bank to provide power for the lock in emergency.

23

Door lock real time logs

Get to know about the door opening and closing clearly.

The diagram illustrates the internal components of the Aqara door lock in an exploded view. The components are labeled with numbers 1 through 23, corresponding to the list on the left. The main body of the lock is shown in the center, with various internal parts like the fingerprint sensor (13, 14), the motor (17), and the handle (1) shown in their relative positions. The rear panel (20) and the front panel (1) are also shown separately. The diagram highlights the complexity and precision of the lock's internal structure.

continuous connection

Part 2

Selling Point

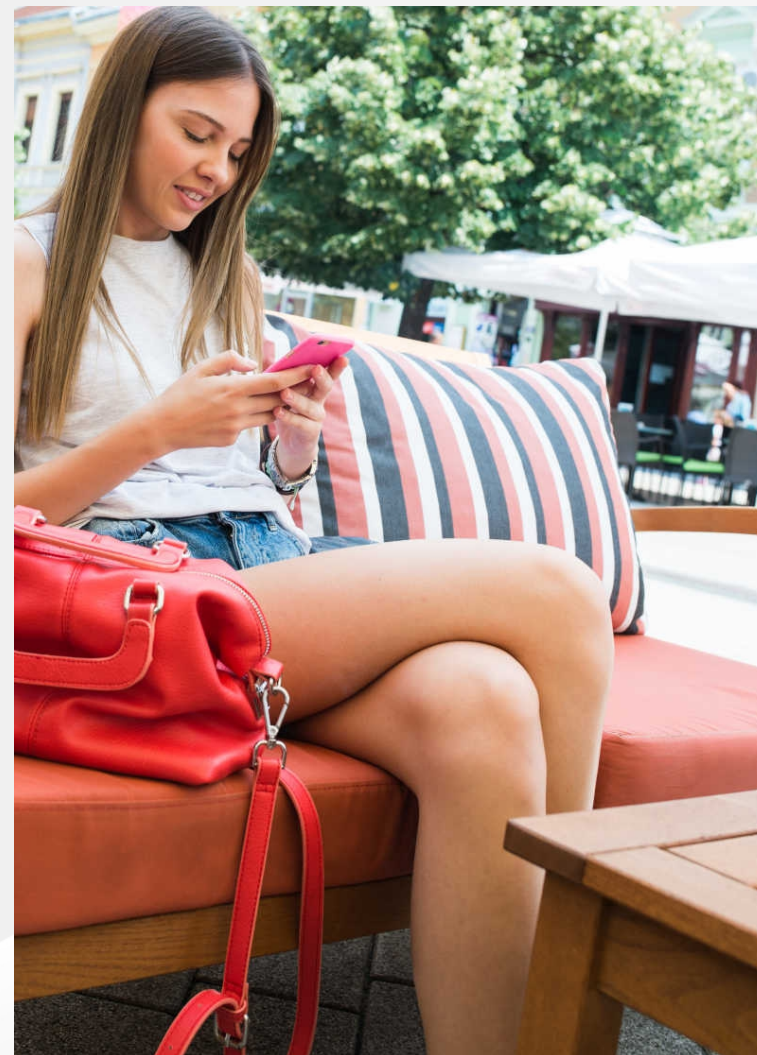
Let someone in when you away

When N100 is connected to the Apple Homekit, you can unlock your door from your phone from anywhere.

Create one-time passcodes for family, guests and people you trust.

Get alerts whenever someone unlocks and locks the door when set away guard.

*To achieve this ,set HomePod, HomePod mini or Apple TV as a home hub



Easy to use

Check the status of your door and unlock it from anywhere with the Homekit app.

Unlock by fingerprint verification

Unlock by password

Unlock by temporary password

Unlock by emergency key

Arm mode (automation)

Remote configuration

18 months battery life and notification reminder if lock power less than 20%.USB (Type-c) emergency power supply is also available.

*The **orange font** is the unique feature;

*The **red font** is the dominant feature.;

One Smart Door Lock, Convenience for Everybody



Users with clear
fingerprints

Much faster with
fingerprint unlocking.



The aged and
kids

More reliable with
NFC/password unlocking.



Nanny and building
administrator

With periodic
password, privacy is
ensured.

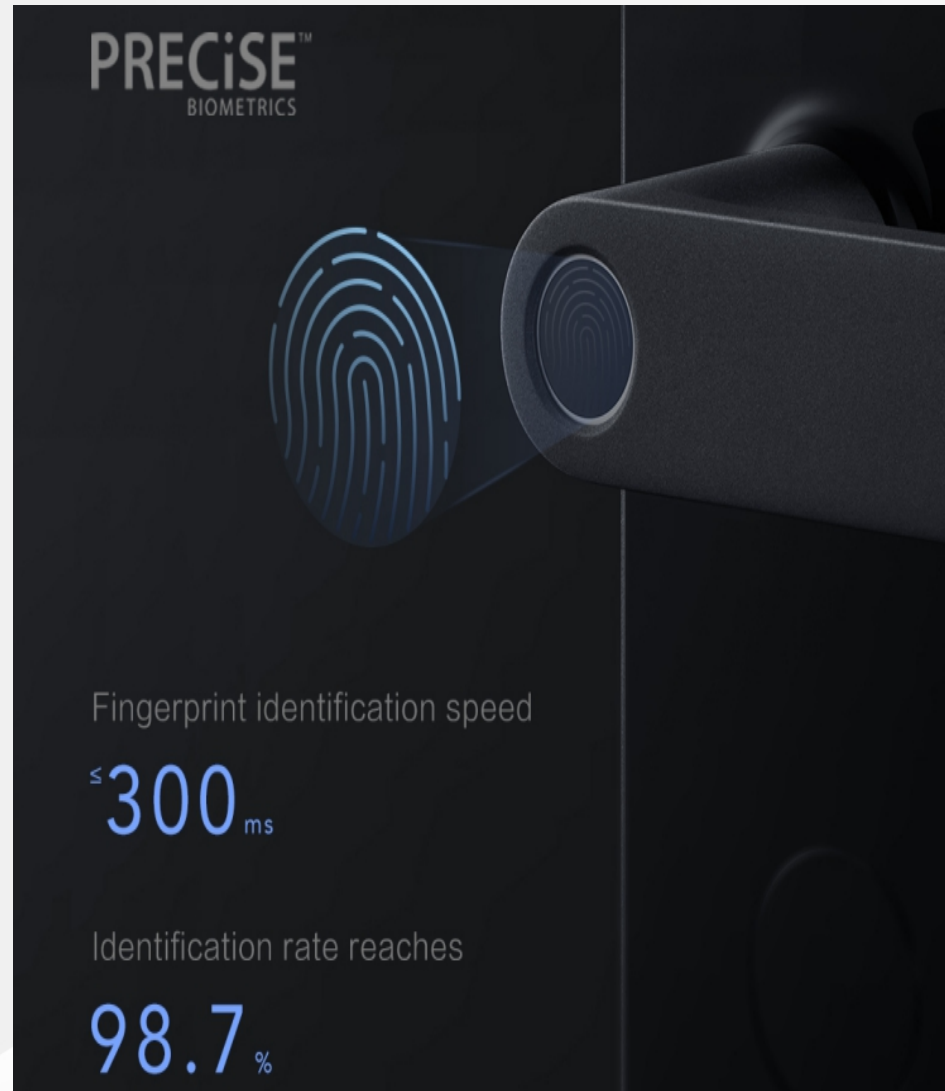


Relatives and
friends

With temporary password
effective once, great
convenience for
everybody.

Ultimate Security

- 3D capacitive fingerprint sensor
- Fingerprinting Algorithm of financial security level
- Direct mortise lock
- Mi home security chip
- Anti-pick sensor embedded in the front panel
- Away mode
- Anti-peephole unlock
- Anti-peep with virtual password
- Door unclosed warning
- Whole bolts Detection
- Master chipset in the rear



Whole house automation

By binding the lock to a Zigbee hub, users can set up home automation with light bulb, curtains, AC ect.

e.g. Fingerprint recognition scene
IF Me opens the door THEN turn on the cold ceiling light, set AC to 18 °C

IF Girlfriend opens the door THEN turn on the warm pendant light, set AC to 24 °C, turn on the music



Part 3

Product features



Unlock

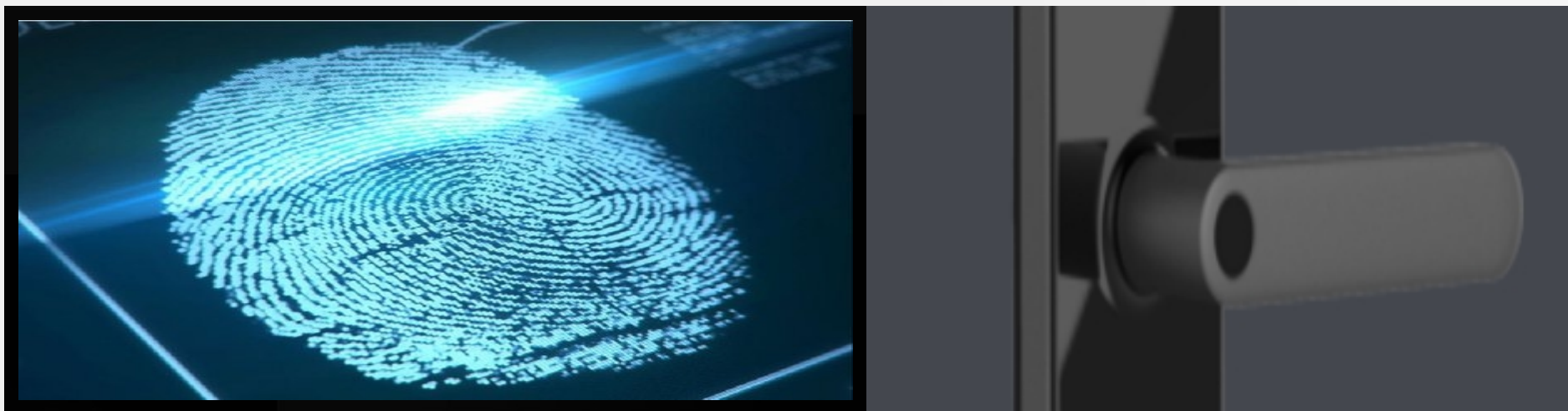
1. Fingerprint
2. Password
3. Temporary password
4. NFC card
5. Bluetooth
6. Emergency key

Other Features

7. App Configuration
8. Log & Status
9. Door-Unclosed Warning
10. Picklock alarm
11. Bolt status detection
12. Automation
13. Arm Mode button
14. Anti-peephole unlock
15. Bluetooth Connection
16. Firmware Upgrade
17. Clutch in lock body
18. Master chipset security

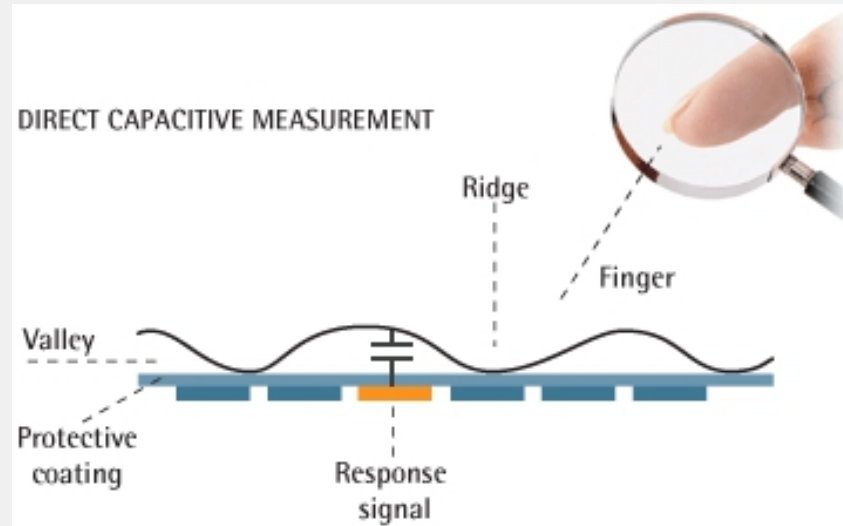


1.1 Fingerprint Verification



- The fingerprint head is integrated into the door handle, so users can verify the fingerprint when they hold the handle and open the door directly;
- High-resolution fingerprint module and the latest fingerprint self-learning algorithm are utilized to significantly improve the speed of fingerprint recognition;
- Fingerprint groove design + Circular fingerprint sensor to fit finger shape;
- Input fingerprint in multiple angles to improve recognition success rate.

1.2 3D Capacitive fingerprint sensor



- **Optical fingerprint identification:** The identification image is entirely determined by the surface fingerprint, so skin damage or foreign matter on it can affect the recognition result; In addition, it is possible to make 2D fingerprint images from fingerprints collected by other devices to unlock the lock.
- Aqara smart door lock N100 utilized **3D capacitive fingerprint sensor**. The electronic signal can reach the dermis and read the deep fingerprint. The verification is not affected by the dead skin of the epidermis. Additionally, the fake 2D fingerprint image can't pass verification. (Real fingerprint ridges data are required to verify when unlock the door) 。

1.3 PB Algorithm-Safe and Reliable



- Adopt Precise Biometrics, a Swedish fingerprint algorithm, to detect false fingerprints which is widely used in financial institutions all round the world.
- Fingerprint features + image fusion and recognition algorithm
- Adopt the latest fingerprint self-learning algorithm to ensure that verification time is less than 500ms and the sensitivity become higher.

1.4 Fingerprint module encryption binding



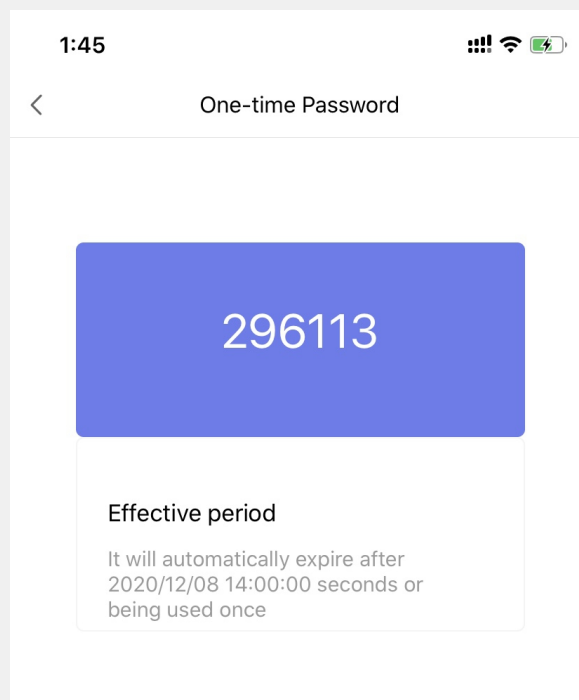
- The fingerprint module of each N100 has a unique encrypted serial number, and bound to the master chip of the door lock panel in factory. If the fingerprint module is destroyed, disassembled or replaced, the door lock won't communicate with it anymore ;
- It is impossible to crack the lock by replacing the fingerprint module.

2.1 6~10 digits of password



- N100 support 6~10 digits of password(more than 10 billion combinations);
- N100 support 20 digits of password in total (real+scramble). Any enabled password can be accompanied by "dummy" symbols that will protect it
- This feature prevents your password from being secretly peeped when you get back home together with others.
- 5 times of password continuously and incorrectly entering would cause keyboard lockout for 5 minutes. If once again, it would lockout for 15 minutes(lockout duration won't exceed 15 minutes)
- App push notification to users when the keyboard is lockout.

3.1 One-time password



- One-time password is set to open the door remotely, and it will be invalid after use.
- Periodic temporary password can be set repeatedly valid during certain time in the selected day. House host can set one for baby-sitter.
- Any enabled password can be accompanied by "dummy" symbols that will protect it
- * Periodic temporary password functions could be unavailable at the time of sales start, and will be added with subsequent firmware updates.

4.1 Financial level NFC security



- Adopt financial NFC chip which can't be duplicated.
- Certificate signature mechanism, point-to-point encryption and financial NFC chips guarantee the NFC security together.

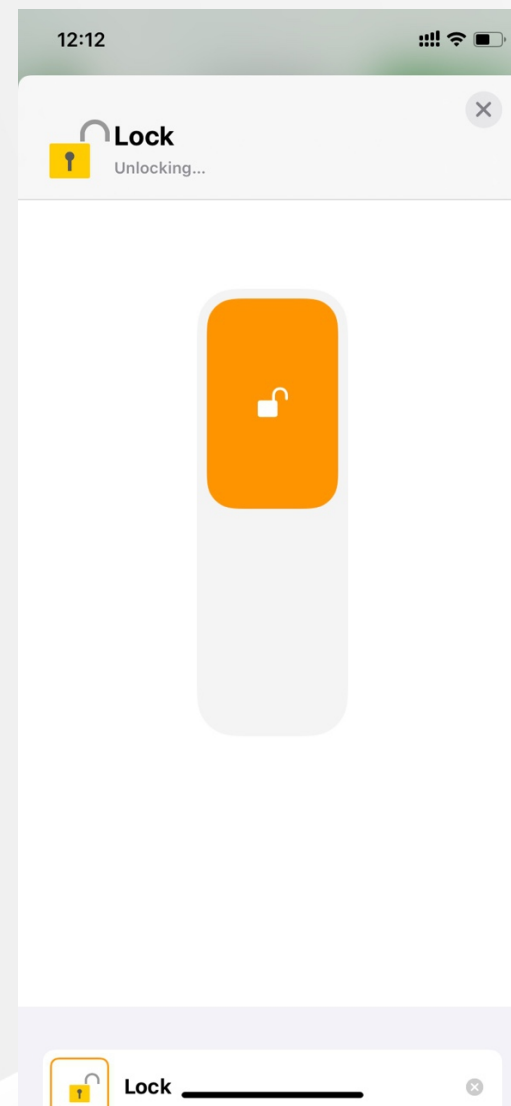
*The NFC chips are certified by EAL6 information security of Common Criteria which is higher than that of bank card(EAL5).



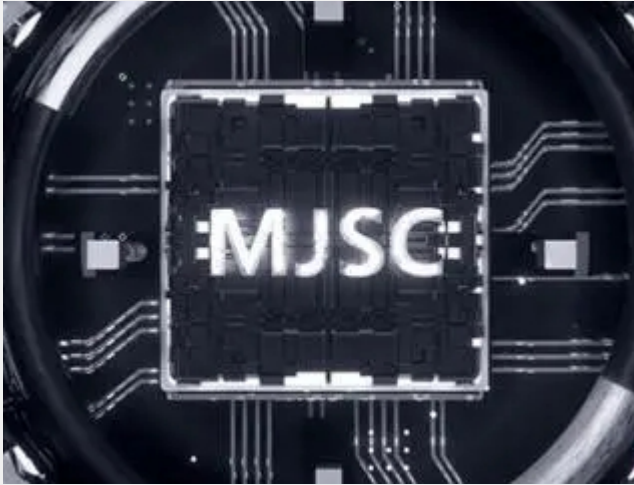
5.1 Unlock by Bluetooth

- Add N100 to Apple home App, users can unlock by bluetooth of mobile phone locally or from anywhere.

*To achieve this ,set HomePod, HomePod mini or Apple TV as a home hub



5.2 Financial level security chip

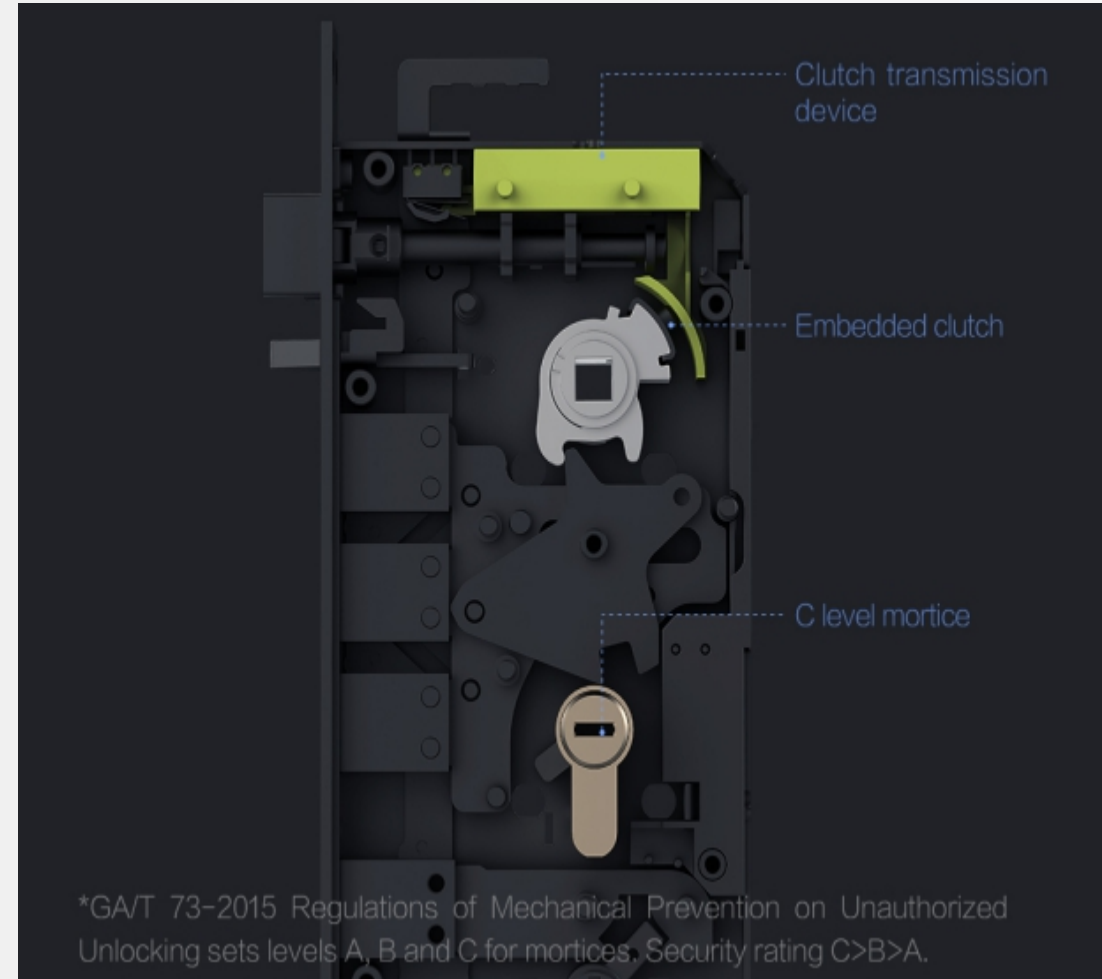


- The N100 adopts Mijia security chip, which can encrypt all bluetooth communications and ensure safety and reliability;
- The product has built-in mijia custom security chip (MJSC), which adopts the same security standard as the bank card ELA4+, and each chip has a unique private key and certificate;
- N100 has built-in Apple security chip and officially certified by MFI Apple. N100 can work with other products that support HomeKit as well.

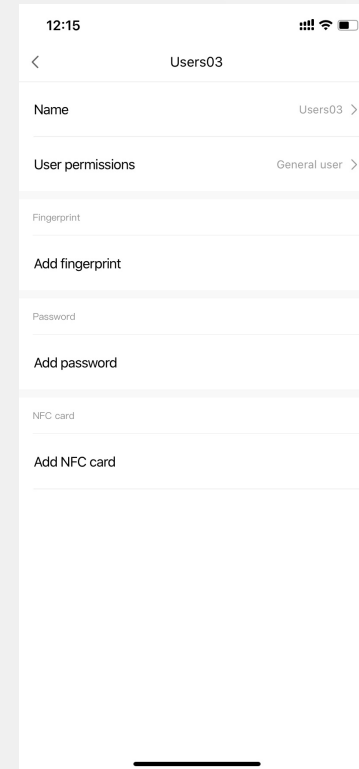
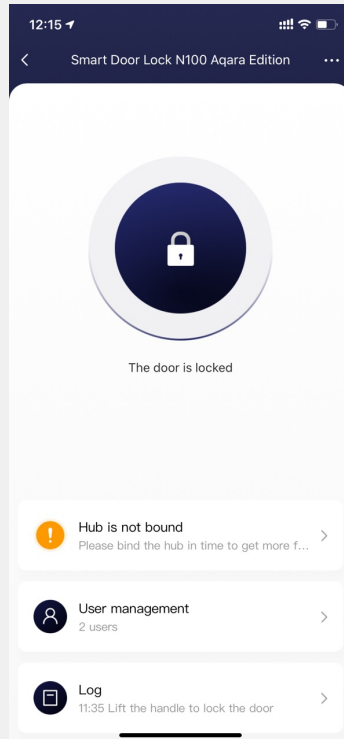
6.1 Mortise Lock

- N100 adopts C-class lock cylinder. Even if the front panel is damaged and removed, it is still a complete door with C-class lock cylinder.
- While antique mortise lock has lower level security. After the front panel is damaged or removed, the lock can be opened by a screw directly.

*The key is for emergency case when the door is out of operation or run out of battery.



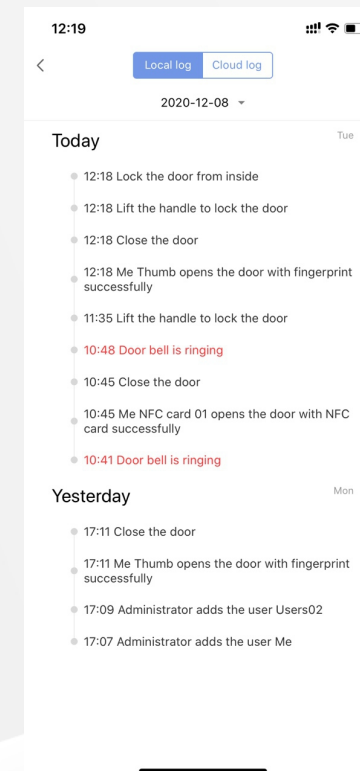
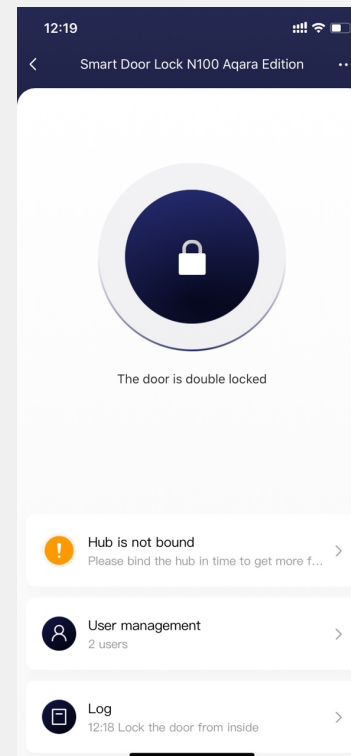
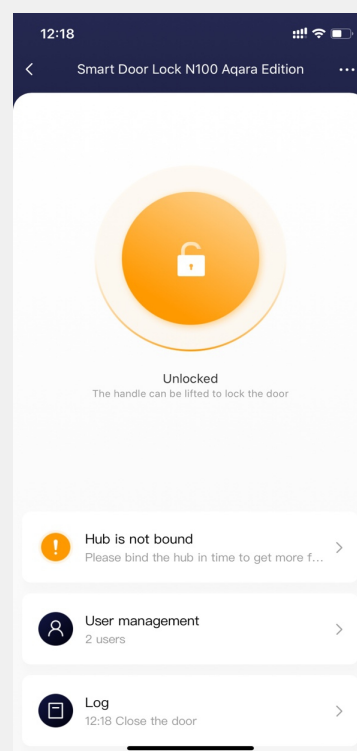
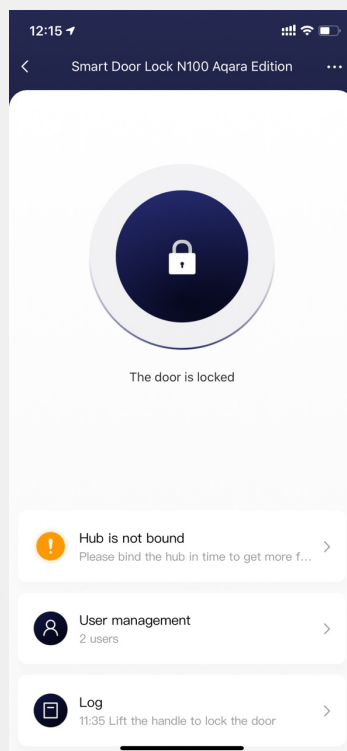
7.1 Configure via Aqara Home APP



- Users can manage N100 via Aqara home app, such as "add/delete user", "change users' permission", ect.
- Add/delete fingerprint, password, NFC, temporary password



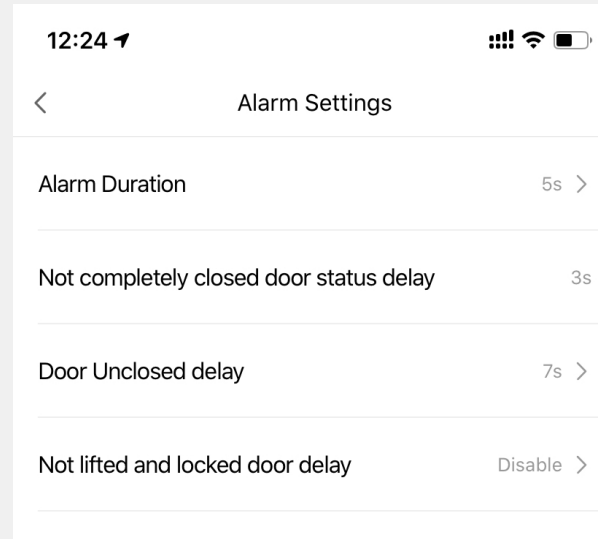
8.1 APP Control



- check lock status by Aqara Home App remotely;
- Check operation log remotely
- Push notification in abnormal situation

*Only if N100 connects to a BLE hub, above features are available.

9.1 Door-Unclosed Warning



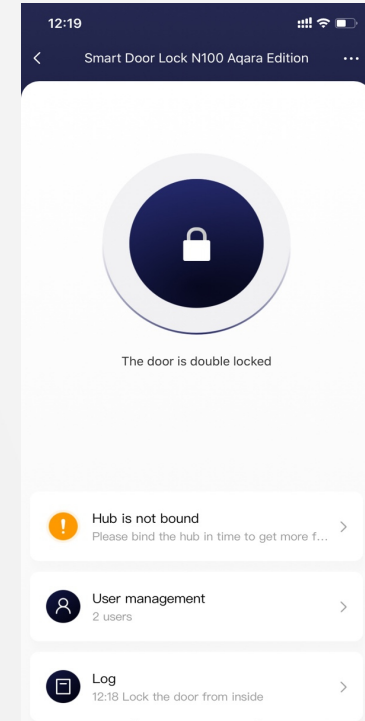
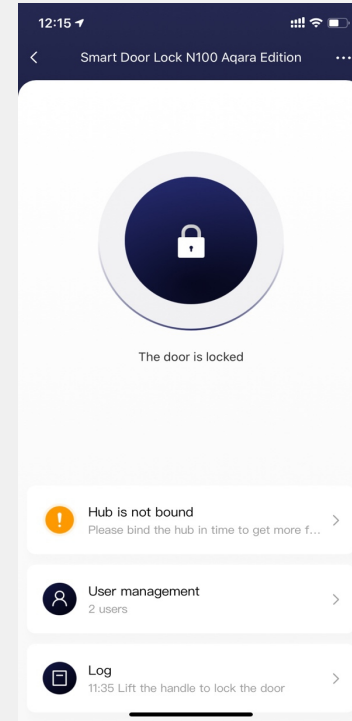
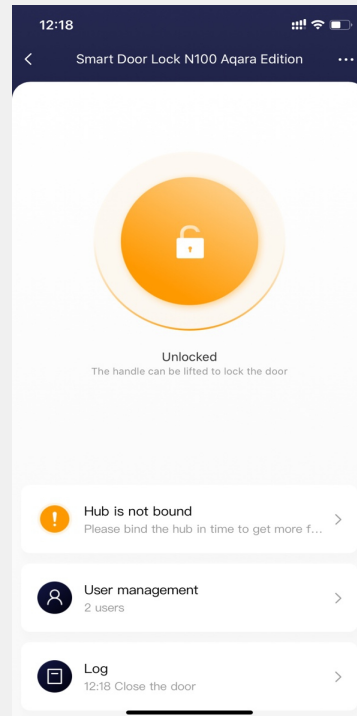
- **Door-unclosed warning:** If the door is not **closed** within a certain period of time, alarm will be triggered. front panel indicator keeps flashing and there is a voice prompt.
- **Door-unlocked warning:** If the door is not **locked** within a certain time after closing the door, the door will trigger the alarm. front panel indicator keeps flashing and there is a voice prompt.
- **Door-unlatched warning:** If the door is left unlocked or unlatched (The latch is not in the right position, there is gap left), alarm will be triggered. front panel indicator keeps flashing and there is a voice prompt.
- Users can enable/disable these features by the App.

10.1 Picklock Alarm



- **Picklock alarm:** If the gap between the front panel and the door is too large, the door lock will sound alarm. Additionally, users can also set up automation to trigger alarm on other devices, like play e hub.

11.1 All Status Detection



- Latch bolt, dead bolt, counter lock bolt, triangle bolt are all available on N100. Compared with other smart door lock in the market, it can detect the door's open/close status by triangle bolt, and all the bolts status also can be detected.
- N100 also support handle status detection. N100 can distinguish user's operations: unlock the door outside by fingerprint/password/temporary password /NFC/ mobile phone bluetooth/emergency key; lock, double lock, unlock double lock, close door, ect.



12.1 Set up Automation via Aqara Home

Open outdoor
Lift the handle to lock the door
Unlock the door by random fingerprint
Unlock the door by random password
Unlock the door by random NFC device
Unlock by assigned fingerprint
Unlock by assigned password
Unlock by assigned temporary password
Unlock by assigned NFC device
Enable arm mode
Someone press the door bell

Unlock indoor
Double lock
Disable double lock

Door is close

Door lock is picked
Door is open
Door is not locked
Multile failure in fingerprint verification
Multile failure in password verification
Multile failure in NFC verification

■ Users can set up the above as conditions for home automation.

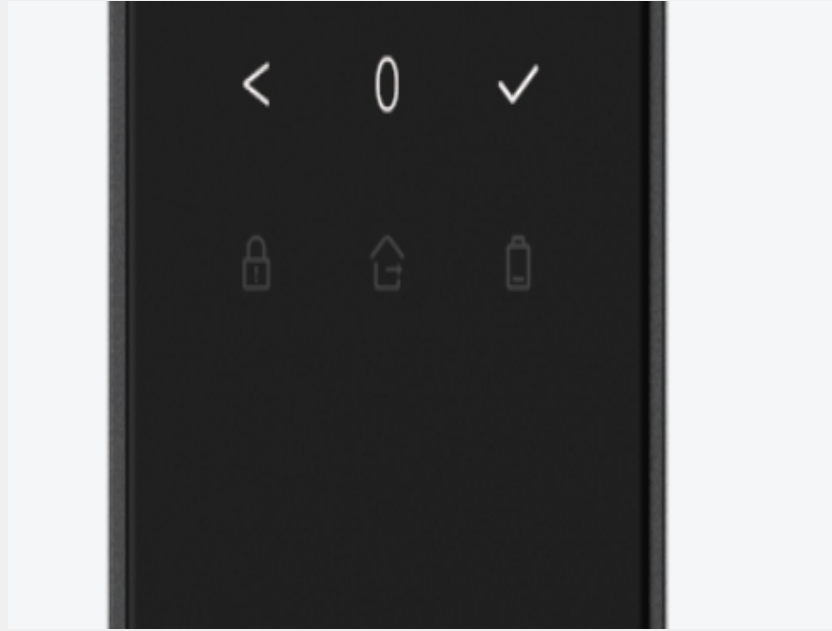
*the door lock must work with bluetooth hub to realize automation.

12.2 Automation Example



- **Away mode:** (motion is detected/door and window sensor is detected open, alarm triggers; set up a camera to monitor) ---turn off all the lights, air conditioner; close curtain in the living room,push notification when door is unlocked from inside.
- **Home mode:** remove away mode when the door is opened by fingerprint(other methods also support)---disarm(disable camera), turn on the light in the living room, open curtain , turn on the air conditioner;
- **Automation for baby-sitter:** when baby-sitter open the door with temporary password, door lock disarm but keep the camera running to monitor her work;
- **Push notification when children is home, or the lock is pried**

13.1 Smart Arm mode



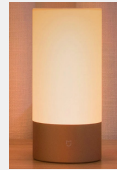
- Users can manually enable arm mode---when someone is trying to open door by pulling down the handle from inside, App will push notification to the user, in case of thievery.
- Users can also set arm mode button as a condition in automation.

14.1 Anti-peephole unlock button



- Common door lock can be force opened by a special tool and removing the cat eye from outside.(as pic 1)
- N100 can't be open by above method as it has an anti-peephole unlock button. Only if press this button and pulling down the handle at the same time, the door can be opened.

15.1 Support Bluetooth Connection



Connect to Zigbee gateway, report status, log, automation



Connect the door lock with bluetooth to configure the door lock

- When the door lock connects to the Zigbee hub, only data can be reported, status and log can be uploaded, automation can be set and app pushes notification ;
- When the mobile phone is connected to the door lock via bluetooth, it support two way communication and users can configure the door lock.
- It is secured by Mi Home security chip.

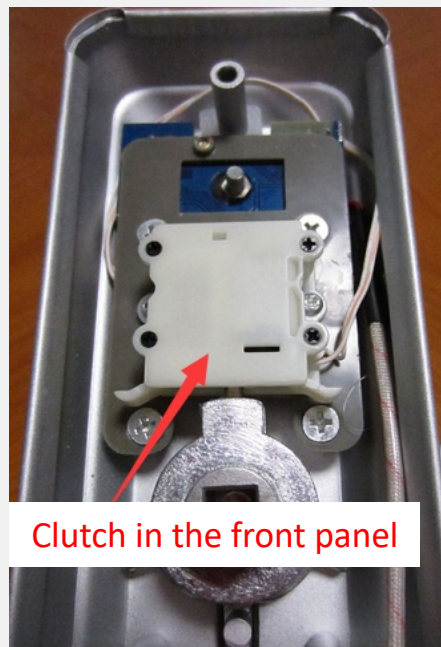
16.1 OTA Upgrade



- N100 supports full function (all programs) online upgrade, so users can always have the latest firmware with new features;

*Some of the competing smart door locks do not support OTA upgrade, or only support some of the program upgrade online.

17.1 Clutch is Inside the Lock Body



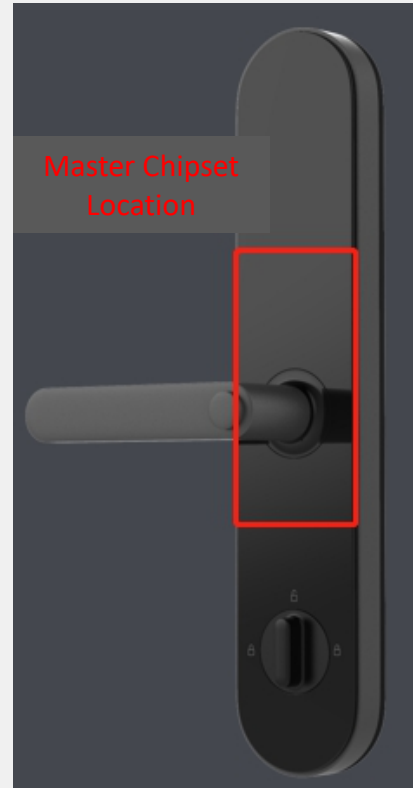
Clutch in the front panel



Clutch inside the lock body

- The clutch of some competing smart lock is inside the front panel. After destroying the front panel, the lock can be unlocked directly.
- N100's clutch is inside the lock body, which makes it more secure in case of burglary.

18.1 Master Control on the Rear Panel



- The master chipset of some competing smart doors are in the front panel. After removing it, the door can be directly opened by controlling the clutch.
- **N100:** All the program of verification along with the driving circuit for unlocking are set into the master chipset in the rear panel. The door can't be unlocked by removing or destroying the front panel.

Part 4

Parameter and Certification

Geographic distribution

Q2 Survey results validated by biggest retailer websites

Northern Europe:

- Different type of locks, "Scandi"
- Standardized doors opening outside
- Multi-point locks are most popular



ID-Lock
(Multipoint)



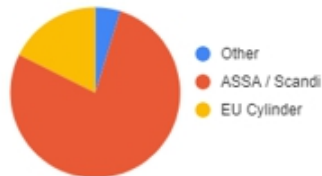
Yale
Doorman
(Multipoint)



Glue
(Scandi Retrofit)



Danalock Scandi
(Scandi Retrofit)



UK + Ireland:

Mixed standard with EU Cylinder being most popular (50%+)



Yale Conexis
(Multipoint)



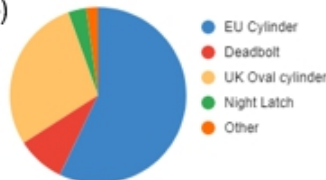
Yale
(Latch)



Yale Linus (NEW)
(Euro Retrofit)



Nuki
(Euro Retrofit)



Continental Europe + CIS:

Euro Profile Cylinder is the only wide-spread standard



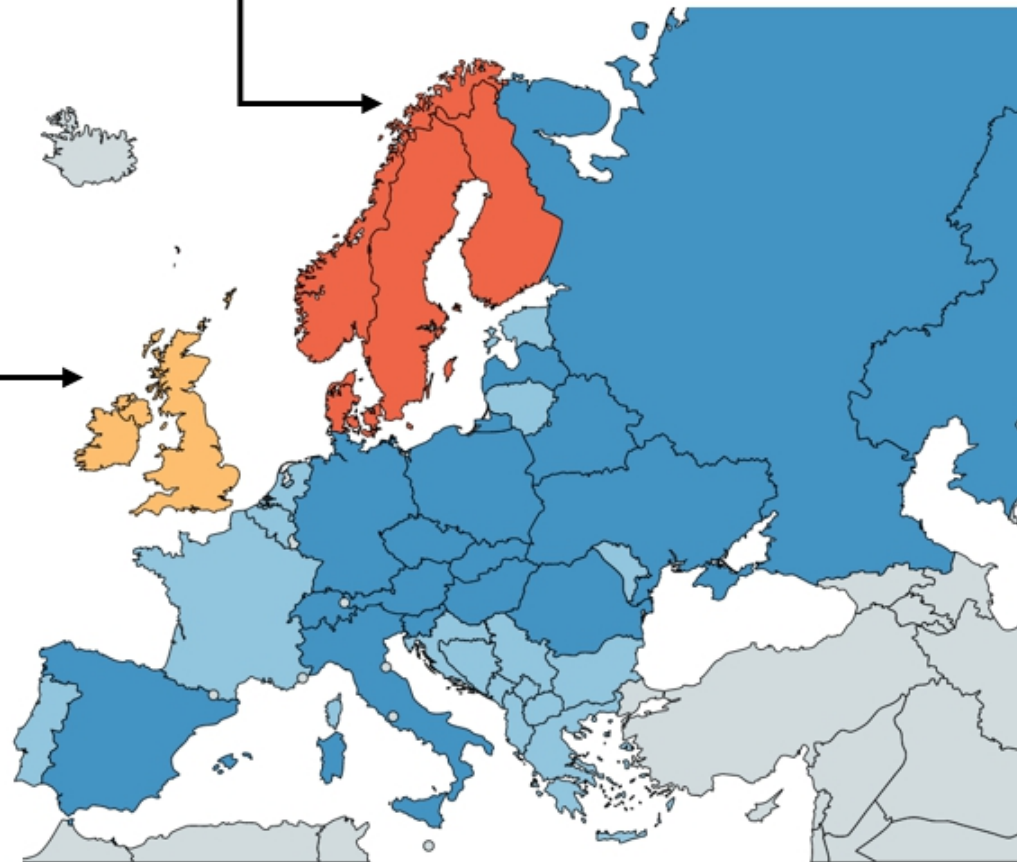
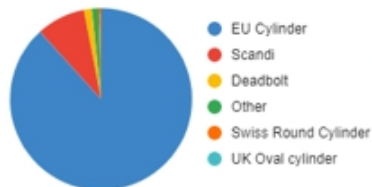
Nuki
(Euro Retrofit)



Danalock + Cylinder
(1-side cylinder)



Yale Linus (NEW)
(Euro Retrofit)



Competitive product comparison

Lock types

Overall options for overseas door locks

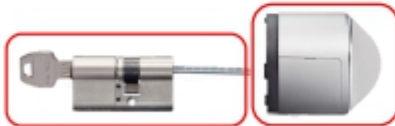
Red frame
indicates parts
being sold

Aqara

1. **Retrofit** (Nuki) - works with existing cylinder by moving an inserted key or a knob



2. **Cylinder 1-side** (Danalock): existing cylinder should be replaced by the one bought with the lock, but from the outside it looks like a normal lock



3. **Cylinder 2-side** (Tapkey etc.) cylinder has electronic parts from both sides, which makes NFC / fingerprint functions possible



4. **Deadbolt** – Different Mainly US, no continental Europe. Completely different. Shouldn't be considered unless



5. **Mortise / Multi-point:**
(Aqara N100, ID-Lock, Yale Conexis etc.)



6. **Latch:** doesn't have a cylinder and is attached to the door at a desirable place, can have a keypad / NFC module



continuc n

Specification	
Name	Aqara Smart Door Lock N100
Model	ZNMS16LM
Product Code	DZFDS-L-B-II/ZNMS16LM
Dimension	380.7×76.8×23.5mm （panel size）
Net Weight	4.2kg
Power Supply	8*AA battery(6V DC), Type-C emergency power supply(5V DC)
Volume	50 fingerprints, 50 permanent passwords, 25 NFC devices, 25 periodic temporary passwords, 8 one-time passwords
Wireless	BLE5.0,Zigbee 3.0
Executive Standard	GA 374-2019、 GA/T 73-2015(Lock Cylinder)、 GB21556-2008
Operating Temperature	-25℃~+70℃
Operating Humidity	0~93% RH, non-condensing
Product Security Level	B
Lock Cylinder Security Level	C

Thank you

门锁中心技术支持组

continuous connection