# DS901 Electronic Lock Specification

**CHINA TOWER**
**中国铁塔**

Latest compiled: 2024
Latest version: V1.0

# Contents

# 1．Product Introduction

DS901 is an intelligent anti-theft door lock developed and produced by our company. It adopts an integrated design and the lock shell is made of SU304 stainless steel, which is strong and durable. RS485 integrated into the lock body.It has multiple functions such as communication, Bluetooth, code scanning, and switch volume, which can realize remote control, Bluetooth scanning code unlocking, background monitoring and management, etc. Through the smartphone APP or remote control device, the door lock status can be monitored anytime and anywhere to achieve intelligent management. It adopts advanced encryption technology to ensure the security of door lock data. It integrates multiple functions to realize remote control, Bluetooth code scanning and background monitoring and management.

The functional design adopts one-click restart and emergency charging interface to cope with various complex environmental emergencies on site. Unlocking in emergency situations can be divided into two methods: mechanical and electronic according to needs. You can choose between the two. The two are mainly different from the equipment management and data recording of unlocking personnel.

This electronic lock is widely used in communication equipment rooms, tower base stations and other places. It is simple to install and easy to maintain. Lock functions can be selected according to your needs.

# 2．Technical parameters

| Overall specifications | Item | Specification/Condition | |
|---|---|---|---|
| | Model | DS901 | |
| | Overall dimensions | 305*75.5*68mm See drawing | |
| | Panel cutout | See drawing | |
| | Rated Voltage | DC 12V | |
| | Operating Voltage | DC 12V±20% | |
| | Maximum power | ≤7.2W | |
| | Rated Current | ≤0.6A | |
| | Protection degree | IP65 | |
| | Weight | 1.2Kg | |
| | Unlock method | RS485+Bluetooth+DO&DI+ electronic key/mechanical key (optional) | |
| | Anti-prying level | RC 4 | |
| | Fire-proof level | UL94-V0 | |
| | Mechanical lock cylinder type | Single pass configuration (001-200) Note: Domestic non-standard | |
| Part specifications | Name | Material | Surface treatment |
| | Front panel | Stainless steel | Brushed texture |
| | Rear panel | Stainless steel | Brushed texture |

| | Lock body | Stainless steel | Brushed texture |
|---|---|---|---|
| | Door magnet mounting plate | Stainless steel | Brushed texture |
| **Hardware specifications** | **Name** | **Specification** | |
| | Hardware platform | 32 bitARM Cortex™-M4F | |
| **Environmental conditions** | **Item** | **Condition** | |
| | working environment | Temperature: -30~70℃ Humidity: 10-90% | |
| | Storage environment | Temperature: -40~80℃ Humidity: 0-90% | |
| | Altitude | -60m-4000m | |
| | Packaging vibration resistance test | After packaging, there was no abnormality after applying 1.1G acceleration + vibration in XYZ three directions for 30 minutes. | |
| | Packaging impact resistance test | After being packed, it is 60 cm high, has 1 corner, 3 sides and 46 faces. It fell naturally without serious damage. | |

# 3．Operating instructions

## 3.1 RS485 remote unlocking

After the lock is powered on, the host computer connects the locks 485A and 485B, and sends the lock to the developer via RS485.
Lock command, trigger the lock to unlock, the green light turns on and the buzzer prompts, then press the handle to open the lock,
for detailed RS485 protocol, see "RS485 Communication Protocol".

## 3.2Bluetooth unlocking/scan code unlocking

3.2.1 Log in to PC for authorization
You need to enter http://152.136.192.99:8100/#/login on the PC to log in.
Administrator account, authorize the lock to the user account.

3.2.2 Log in to the applet
Search the "Jinfu IoT" applet in the WeChat applet on your mobile phone and log in with an authorized account.

3.2.3 Bluetooth/scan code unlocking operation
After logging in to your account, click on the Bluetooth logo on the main page, find the Bluetooth number of the corresponding lock, and click to unlock; or click to scan the logo and scan the QR code on the lock, and the phone can automatically connect to the Bluetooth of the electronic lock to perform the unlocking operation.

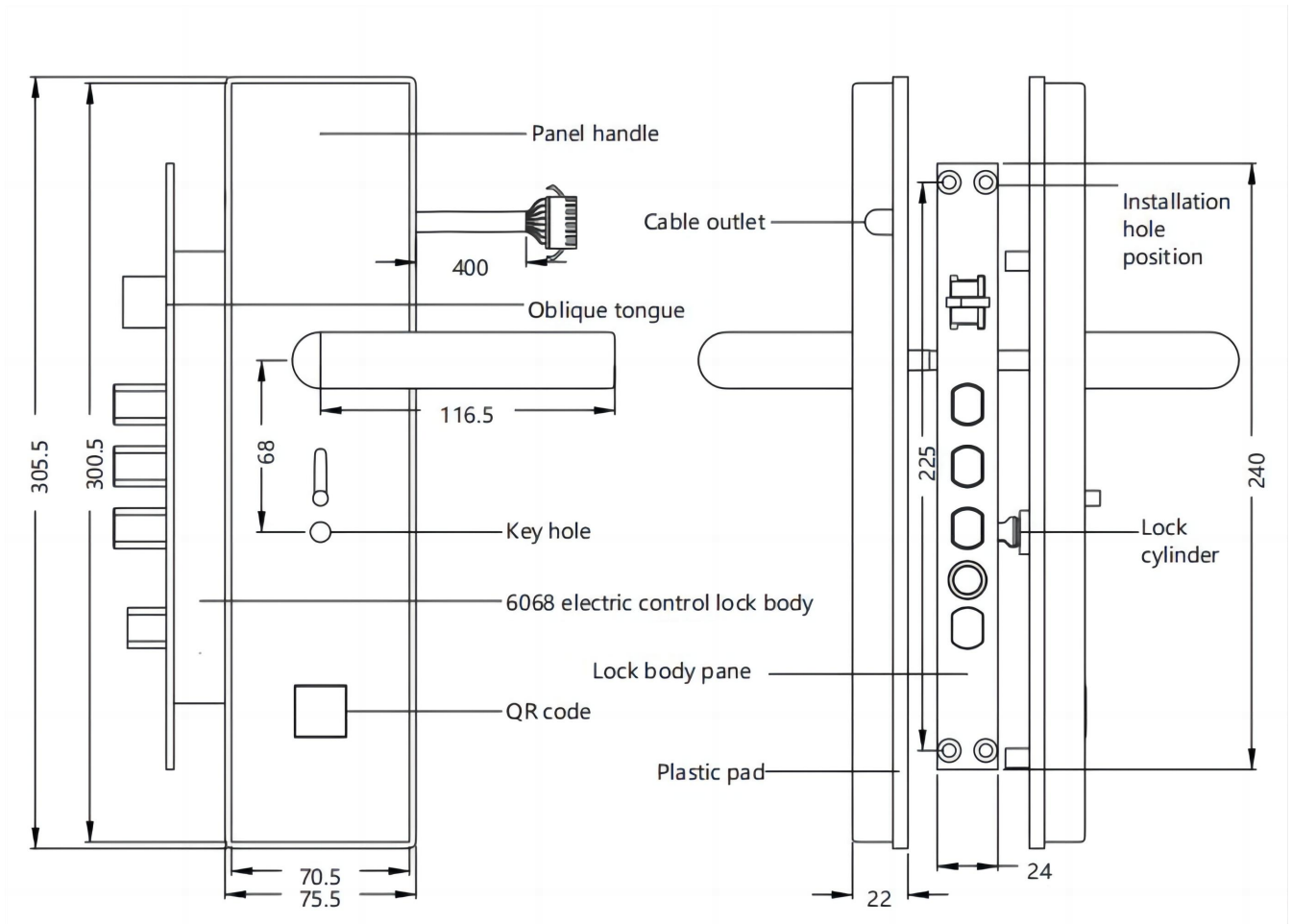## 3.3 Electronic key/mechanical key unlocking

3.3.1 Use a mechanical key to open the mechanical lock cylinder in an emergency and rotate the handle to unlock action;

3.3.2 Using an electronic key to unlock the door requires the operator to have permission to unlock the door. The electronic key is connected to the mobile phone.After the mini program is Bluetooth, click to unlock, align the key with the electronic lock cylinder and hear the beep, then rotate the lock. The core performs the unlocking action.
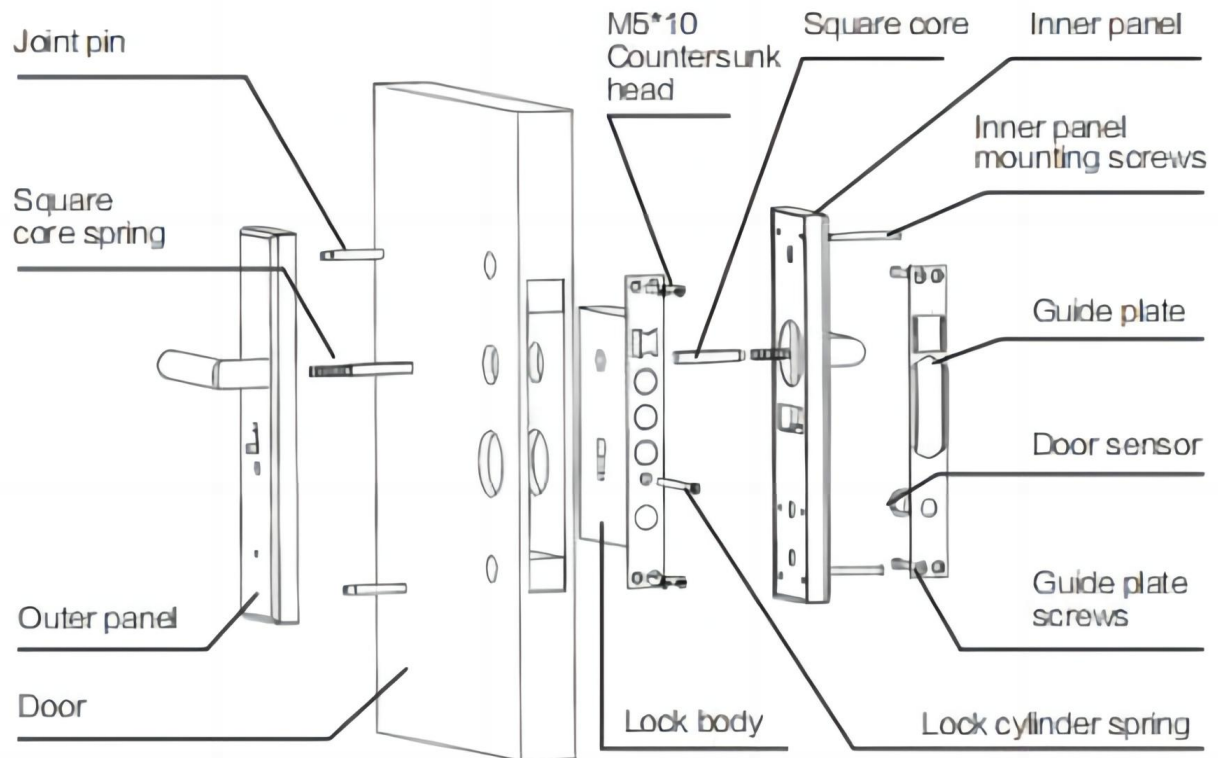
## 3.4 DO&DI unlock

After the lock is powered on, touch the green wire and black wire, the lock will light up green and the buzzer will sound. Press the handle to open the lock.

# 4．Dimension diagram

# 5．Installation diagram



Joint pin

Square core spring

Outer panel

Door

M5*10 Countersunk head

Square core

Inner panel

Inner panel mounting screws

Guide plate

Door sensor

Guide plate screws

Lock body

Lock cylinder spring

# 6．Wiring diagram

| No. | Color | | Signal |
|---|---|---|---|
| 1 | Red | | +12V |
| 2 | Black | | GND |
| 3 | Yellow | | Door sensor status + |
| 4 | White | | Door sensor status - |
| 5 | Green | | Lock  tongue status - |
| 6 | Blue | | Lock tongue status + |
| 7 | Purple | | 485A |
| 8 | Grey | | 485B |
| 9 | Brown | | DO&DI + |
| 10 | Orange | | DO&DI - |

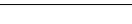## Notes:

1. When the lock tongue is open, pin 5 and pin 6 are disconnected; when the lock tongue is closed, pin 5 and pin 6 are connected;

2. When the door sensor is open, pin 3 and pin 4 are disconnected; when the door sensor is closed, pin 3 and pin 4 are connected;

3. Short-circuit pin 9 and pin 10 for 1 second, and the lock will open.

4. There is no need to connect the jumper to the 12V of pin 1 or the GND of pin 2 on the switching lines of pin 9 and pin 10. If there is a jumper connected to the DO port of the FSU end, you need to remove the original jumper first. line before installing our lock, otherwise it will cause malfunction.

## 7．Packing List

| Attachment No. | Attachment description | Unit | Qty | Remark |
|---|---|---|---|---|
| 1 | Electronic lock | set | 1 |  |
| 2 | Connection line | pair | 1 | / |
| 3 | Door magnet mounting plate | set | 1 | / |
| 4 | Lock body accessories screws | set | 9 | / |
| 5 | Square steel | set | 1 | / |
| 6 | Rubber mat | set | 2 | / |
| 7 | Panel mounting screw kit | piece | 1 | / |

# Typical application  1

Compatible with scanning code unlocking, Bluetooth unlocking, DO&DI unlocking and other unlocking methods, no programming required, simple use DO&DI control method to realize remote unlocking, mobile phone applet to query lock status (system supported), unlock records and other functions.
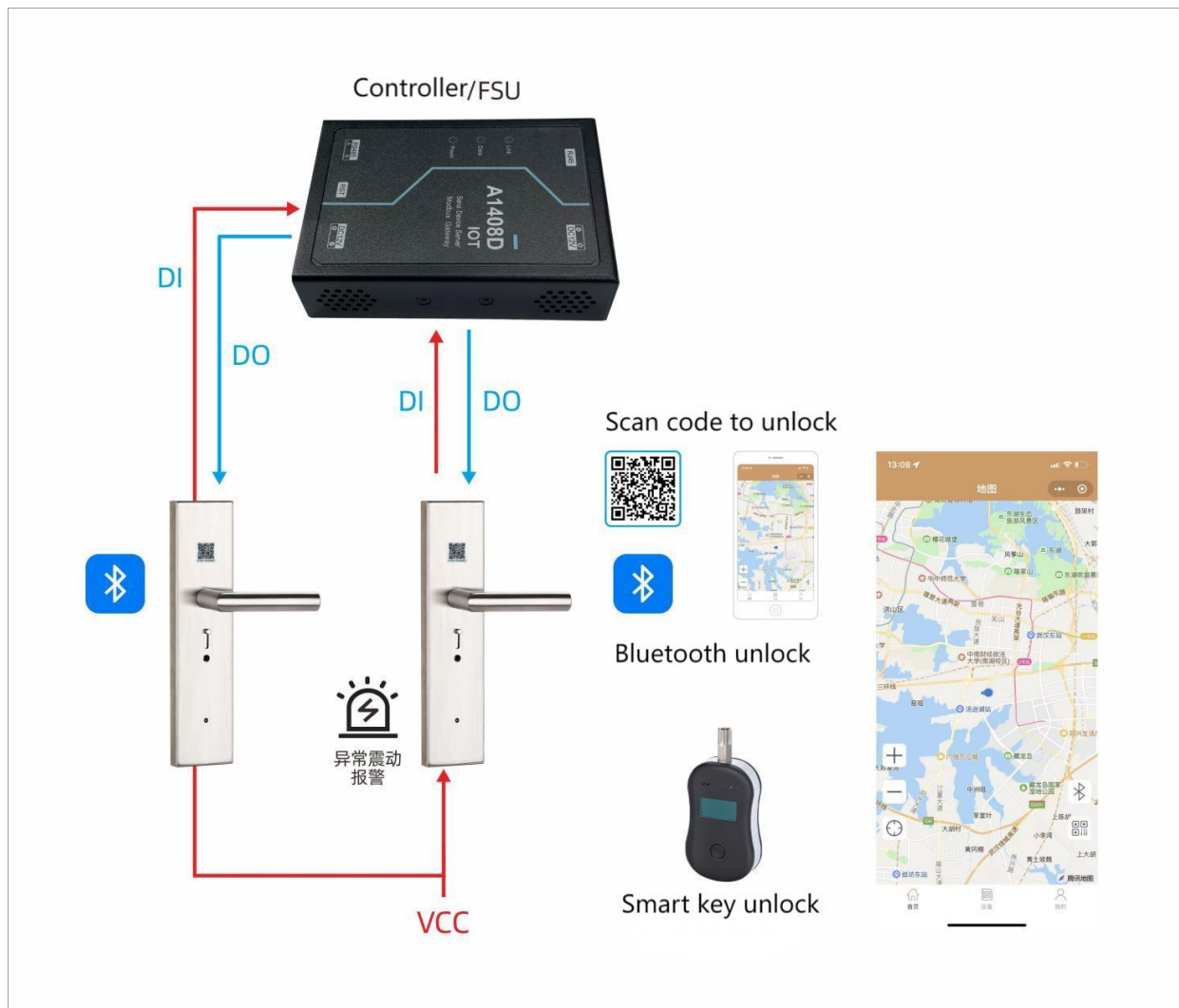
# 8．Manage platform



# Functional characteristics

## Home interface
● Site location search
● Alarm message reminder
● Distinguish between base stations

## District boundary setting
● Boundary search
● Can add, delete or modify district boundaries, account management
● Account search
● Can add, delete or modify accounts, operation logs
● Log search
● Can delete and export logs

## Menu management
● Menu search
● Can add and delete data

## Role management
● Select a role to assign menu operations
● You can set data operation permissions for roles

## Dictionary management
● Dictionary category search
● Batch deletion, export and creation of dictionary categories can be performed

## Temporary site application
- Check the temporary site application for site personnel
- Batch deletion and batch review operations of application information for reviewers can be performed
- Validity account and password can be issued after review

## Site management
- You can view site installation, operation and maintenance information,,
- Import personnel information

## Electronic lock management
- Search device information based on conditions
- You can view the setting status, online status, door status and lock status
- You can perform business operations on device information
- Can unlock the device, edit information, view information and delete the device

## Electronic key management
- Search electronic key device information based on conditions
- You can add, delete, modify and check electronic key equipment
- You can edit, view and delete electronic key information

## Authorization management
- Electronic locks and electronic keys can be operated such as authorized time, door opening method, authorized user and authorized site
- Can add、delete、 modify and query authorized tasks

## Record query
- You can search and query door opening records and reporting records
- Can delete and export records

## Collection management
- You can view favorite site information based on conditions
- Can delete and export favorite sites

## Sign-in records
- Search for sign-in records based on conditions
- Can export and view sign-in records

## Alarm records
- Search alarm records based on conditions
- Alarm records can be deleted and exported
- You can view the alarm type, alarm time and processing time

# Work order management
- You can view all work orders, work orders to be completed, work orders to be reviewed and archived work orders
- Work orders can be deleted, exported and created,
- You can edit, view details and delete work order information

# Data statistics
- You can control the number of sites, users, electronic locks, electronic keys, work orders, and alarms quantitative statistics
- You can check the site status, unlocking times, work order status, lock map distribution and video surveillance status of each site

# Video surveillance
- Search and monitor based on monitoring status
- Can view on-site monitoring

# Account management

- **Account Search**

- **You can perform operations such as adding, deleting, and modifying accounts**

# Operation Log
- **Log search**
- **Can delete and export logs**

# 9.Matters need attention

1、Please do not use it beyond the limited parameter in this specification, otherwise we will not offer any warranty.

2、In case of any changes of the specification specified on this document.A written notice is requested in advance.

3、Please do not wrap the power cord around the lock or pull the power cord hard, otherwise the power cord may be damaged and cause function failure.

4、If any information and documents are different from this document, this document will be taken as the main reference.

5、Please do not use in hazardous environment or any environment with flammable gas .

6 、Please be cautious when handling or installing, it may cause damage if electronic lock fell to the ground.

7、The torque of the screw is not allowed to exceed 3N.m,and the torque of the handle is not allowed to exceed 30N.m.

8 、During the installation, any strike to the lock body is not allowed to avoid damage to the components.Installer should wear gloves.

9、The door must be kept stable during installation, and the cutout of cabinet door must match the lock.

10、Do not strike the lock body by force to prevent the lock from corrosion,please do not use chemical substances to wipe the surface of the lock body.

11 、After installation, the lock body should kept flat and vertical. The lock can reach the waterproof grade of IP65 without coating any waterproof glue.