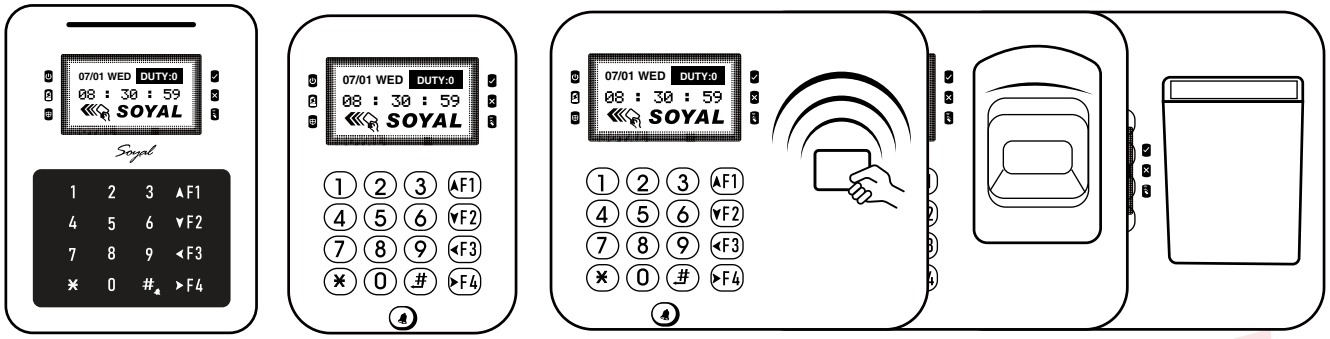
# Liquid Crystal Display Controller (E Series)




## AR-837-ER / E / EE / EF/ W

## 1. Product Features

### IP-Based Access Controller with LCD
### AR-837-ER

- Supports dynamic graphic control and timely jump to emergency events.
- Support for elevator scheduling control.
- Built-in 125KHz and 13.56MHz induction frequencies
- Support Electrostatic Detection Equipment(ESD) and Single-Person Entry and Exit Monitoring Equipment

### Graphic Display Multi-Function Proximity Controller
### AR-837-E/EE

- Supports dynamic graphic control and timely jump to emergency events.
- Support for elevator scheduling control.
- Built-in 125KHz and 13.56MHz induction frequencies
- IP-based controller supporting flush-mount and surface-mount

### RFID LCD Fingerprint Access Controller
### AR-837-EF9DO

- Supports dynamic graphic control and timely jump to emergency events.
- Support for elevator scheduling control.
- Built-in Door Bell button / Illuminated Keypad Design / Weatherproof

### LCD Card Energy Saver
### AR-837-W

- Optional Voice Module / Backlit Button Design / Enhanced Controller Splash-proof Design
- Built-in 125KHz and 13.56MHz induction frequencies
- Support for Standalone Deduction/Charge Functionality

## 2. Application

- **Elevator Timed Scheduling Control**
  - ► Software Manual - LiftControl
  - ► Lift Control Application
- **Mailbox/Locker Management Application**
  - ► Membership Storage and Consumption Management System
  - ► SOYAL Graphic Animation Case Sharing – Smart Mailbox
- **Dynamic Graphical Control and Real-time Jumping of Emergency Events**
  - ► Example of Monitoring Access Control Doors and Emergency Doors via 701ClientSQL Graphic Animation
  - ► BMS System & SOYAL Access Control Integration Solution
- **Stored Value and Deduction Application Case**
  - ► Electric Vehicles Charging Station with Balance Deduction Solution and Parking Space Monitoring System

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SOYAL®

# AR-837-ER / E / EE / EF/ W



## 01. How to Order

### AR-837-ER

| AR-837 | ER | X | R | 1 | 1 | B | 1 | X |
|---|---|---|---|---|---|---|---|---|



**Frequency**
B = 125kHz
D = 13.56MHz
S =125KHz+13.56MHz

**Communication**
1 = RS485

**Color**
B = Black Edge
O = Orange Edge

**Additional Module**
A = TCP/IP Module
P = POE Module

**Product Category**
ER = E Series Access Controller

**RTC**
R = Built-in RTC

**Waterproof**
1 = Weatherproof

**Language(LCD)**
1 = English/Chinese

### AR-837-E

| AR-837 | E | X | R | 1 | 1 | B | 1 | X |
|---|---|---|---|---|---|---|---|---|



**Frequency**
B = 125kHz
D = 13.56MHz
S =125KHz+13.56MHz

**Communication**
1 = RS485

**Color**
B = Black Edge
1 = Silver Edge

**Additional Module**
A = TCP/IP Module
P = POE Module

**Product Category**
E = E Series Access Controller

**RTC**
R = Built-in RTC

**Waterproof**
1 = Weatherproof

**Language(LCD)**
1 = English/Chinese

### AR-837-EE

| AR-837 | EE | X | R | 1 | 1 | B | 1 | X |
|---|---|---|---|---|---|---|---|---|



**Frequency**
B = 125kHz
D = 13.56MHz
S =125KHz+13.56MHz

**Communication**
1 = RS485

**Color**
B = Black Edge
1 = Silver Edge

**Additional Module**
A = TCP/IP Module
P = POE Module

**Product Category**
EE = E Series Access Controller

**RTC**
R = Built-in RTC

**Waterproof**
1 = Weatherproof

**Language(LCD)**
1 = English/Chinese

### AR-837-EF9DO

| AR-837 | EF | X | 9DO | B | X | X | A |
|---|---|---|---|---|---|---|---|



**Frequency**
B = 125kHz
D = 13.56MHz
S =125KHz+13.56MHz

**Color**
B = Black Edge
1 = Silver Edge

**Logo**
N = No Logo
X = Soyal Logo

**Product Category**
EF = E Series Access Controller

**Module**
9DO = Optical Module

**Type**
R = Roof Type
X = Standard Type

**Network**
A = TCP/IP Module

## AR-837-W



| AR-837 | EE | XR | | 11 | | B1 | | X |
|---|---|---|---|---|---|---|---|---|

**Frequency**
B = 125kHz
D = 13.56MHz
S =125KHz+13.56MHz

**Communication**
1 = RS485

**Color**
B = Black Edge
1 = Silver Edge

**Additional Module**
A = TCP/IP Module
P = POE Module

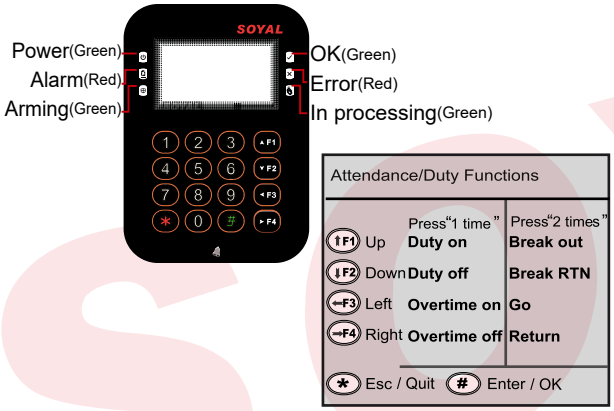
**Product Category**
W = LCD Card Energy

**RTC**
R = Built-in RTC

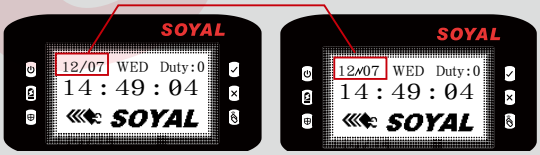
**Waterproof**
1 = Weatherproof

**Language(LCD)**
1 = English/Chinese

## 02. Function Description of Front Panel & Indicator




1. System will automatically exit Programming Mode when inactivating for 30 seconds.
2. LED status indicates controller's mode and status.
   OK (green) – blinking constantly when operating in Programming Mode
   – or flashing an existed card in card learn mode, it comes 2 beeps warning and LCD panel displays "Same Card: user address / card number"
   Error (red) – invalid card with 2 beeps warning and LCD panel displays "Card Number Err!"
   – or in anti-pass-back mode, when violates the access, it comes one beep warning and LCD panel displays "Anti-pass Error!"
   Arming (green) – arming on status
   Alarm (red) – any abnormal condition occurs
3. Keypad will be locked up 30 sec. when incorrect pin code or master code is constantly entered.
4. Maximum error input of pin code and master code can be changed via the software 701Server (default: 5 times)




Networking : / and ⁄ interactively flash between the Month and DAY.
[e.g.] 12/07←→12⁄07

Stand-alone : No flashing [e.g.] 12/07

(←Reference to picture)

## 03.Manu Tree

**1. Add/ Delete**
1. Add > Card ID
2. Add > RF Learn
3. Suspend > Address
4. Suspend > ID #
5. Delete > Address
6. Delete > ID #
7. Recover > Address
8. Recover > ID #
9. Antipass Group

**2. User Setting**
1. Password
2. Access Mode
3. Extend Options
4. Single Floor
5. Multi Floor
6. Enroll Finger
7. Delete Finger

**3. Parameters[1]**
1. Node ID
2. OnOff OpenZone
3. Door Relay Tm
4. Door Close Tm
5. Alarm Relay Tm
6. Alarm Delay Tm
7. Arming Delay Tm
8. Arming PWD

**4. Parameters[2]**
1. Auto Relock
2. Egress(R.T.E)
3. Miscellaneous
4. Force Open
5. Close & Stop
6. Anti-pass-back
7. Duress Code
8. Password Mode
9. Factory Reset

**5. Tools**
1. Language
2. Master Code
3. Master Range
4. Terminal RS-485
5. Ext.Comm CN11
6. Open Time Zone
7. Informations
8. Clock Setting
0. UART Port CN9
A. Event Logs
9. Daily Alarm

**6. Quit**

**7. Quit & Arming**

## 04.Full Function Command Menu Table

- **Entering**

Input *123456# or *PPPPPP#

[e.g.] The Default Value= 123456. If already changed the Master Code= 876112, input *876112#
→ Access programming mode

P.S.If no instruction is entered within **30 sec.**, it will automatically leave the programming mode.

- **If the screen reverses after update, press " * " 6 times to restore.**




### 1. Add/ Delete

**1-1. Add -> Card ID**

1-1-1
User Address:
00000 XXXXX
Range: (0-16383)
↓
1-1-2
Set (User Address) Code:
00000 XXXXX
(1-10 Digital)
↓
1-1-3
Set (User Address) Code:
00000:_XXXX
Range: (0-65535)

**1-2. Add -> RF-learn**

1-2-1
User Address:
F3: Prev F4: Next
Range: (0-016383)
↓
1-2-2
Tag Uints (pcs)
Must be Sequence
Range: (1-016378)
↓
1-2-3
Close Tag
Into RF Area

**1-3. Suspend -> Address**

1-3-1
Input Start Address
Range: (0-16383)
↓
1-3-2
Input End Address
Range: (0-16383)

**1-4. Suspend > ID #**

1-4-1
Set Site:
00000:XXXXX
Range: (0-65535)
↓
1-4-2
Set Code:
00000:XXXXX
Range: (0-65535)

**1-5. Delete > Address**

1-5-1
Input Start Address
Range: (0-16383)
↓
1-5-2
Input End Address
Range: (0-16383)

**1-6. Delete > ID #**

1-6-1
Set Site:
00000:XXXXX
Range: (0-65535)
↓
1-6-2
Set Code:
00000:XXXXX
Range: (0-65535)

**1-7.** Recover > Address

1-7-1
Input Start Address
Range: (0-16383)
↓
1-7-2
Input End Address
Range: (0-16383)

**1-8.** Recover > ID #

1-8-1
Set Site:
00000:XXXXX
Range: (0-65535)
↓
1-8-2
Set Code:
00000:XXXXX
Range: (0-65535)

**1-9.** Antipass Group

1-9-1
Input Start Address
Range: (0-16383)
↓
1-9-2
Input End Address
Range: (0-16383)
↓
1-9-3
Enable Antipass
0: NO 1: YES
Data: 0

### 2. User Setting

**2-1. Password**

2-1-1
User Address:
F3: PreV F4: Next
Range (0-016383)
↓
2-1-2
Input PIN Code
Rang: 0000~9999

**2-2. Access Mode**

2-2-1
User Address:
F3: Prev F4: Next
Range (0-163833)
↓
2-2-2
0: Invalid 1: Card
2: Card or PIN
3: Card & Pin
↓
2-2-3 (837EF)
Finger / Face
0: Must 1: Ignore
000000=0

**2-3. Extend Options**

2-3-1
User Address:
F3: Prev F4: Next
Range (0-16383)
↓
2-3-2
Is Guard User
0: NO 1: YES
↓
2-3-3
Enable Antipass
0: NO 1: YES
Data: 1

**2-4. Single Floor**

2-4-1
User Address:
F3: Prev F4: Next
Range (0-016383)
↓
2-4-2
Set Single Floor
(Range: 01~64)
Clear the Others

**2-5. Multi Floors**

2-5-1
User Address:
F3: Prev F4: Next
Range: (0-016383)
↓
2-5-2
Select Range:
1: 01-16 2: 17-32
3: 33-48 4: 49-64
↓
2-5-3
0->NO 1->YES
Current Setting:
1000000000000000

**2-6. Enroll Finger (837EF)**

2-6-1 (837EF)
User Address:
F3: Prev F4: Next
Range: (0-016383)
↓
2-6-2 (837EF)
Enroll Fingers ?
Range: (1-2)
1
↓
2-6-3 (837EF)
Put 1st Finger Center
Image Pls
Scan Data …

**2-7. Delete Finger (837EF)**

2-7-1 (837EF)
User Address:
F3: Prev F4: Next
Range: (0-099999)
000000

## 04. Full Function Command Menu Table

### 3. Parameters [1]

**3-1. Node ID**

3-1-1
Input New NodeID
Range: 001~254
Current Data: 001

3-1-2
Main Door Number
Range: 000~255

3-1-3
WG1 Door Number
Range: 000~255

3-1-4
Show WG Message
0: NO 1:Enable
1

3-1-5
Enable DHCP
0: No 1: En 2: Exit
192.168.001.127*
0

3-1-6
IP Address (IPv4)
192.168.001.127
192.xxx.xxx.xxx

3-1-7
Net Mask (IPv4)
255.255.255.000
255.xxx.xxx.xxx

3-1-8
Gateway (IPv4)
192.168.001.254
192.xxx.xxx.xxx

**3-2. OnOff OpenZone**

3-2-1
Open Door Imm.
During Open Zone
0: No 1: Yes
0

3-2-2
Main Controller
Auto Open Zone
Dis/Enable (0/1)
0

3-2-3
WG1 Port Auto Open
Zone Dis/Enable (0/1)
0

**3-3. Door Relay Tm**

3-3-1
Main Door OpenTm
Range: 000~609
601~609=0.1~0.9
007

3-3-2
WG1 Door OpenTm
Range: 000~609
601~609=0.1~0.9
007

**3-4. Door Close Tm**

3-4-1
Main Door Close
delay time (Sec)
Range: 000~255
015

3-4-2
WG1 Door Close
delay time (Sec)
Range: 000~255
015

**3-5. Alarm Relay Tm**

3-5-1
Alarm Relay Time
Range: 000~609
601~609=0.1~0.9
015

**3-6. Alarm Delay Tm**

3-6-1
Alarm Output
Delay time (Sec)
Range: 000~255

**3-7. Arming Delay Tm**

3-7-1
Enter armed sta.
Delay time (Sec)
Range: 000~255
001

3-7-2
Armed Pulse out-
put time. (10ms)
Range:000~255
000

**3-8. Arming PWD.**

3-8-1
Input PIN Code
Range: 0000~9999
1234

**3-9. PIN&UID format**

3-9-1
User PIN Length
Range: 4~8
4

3-9-2
Card UID Length
Range: 2~8
4

※User PIN Length Range:4~8(4 is default value) ;
Card PIN Length Range:2~8(4 is default value)

3-9-3
Show UID :0=No
1=WG 2=ABA
3=HEX 4=WG26
5=ABA8
1

3-9-4
NFC 13.56MHz RF
0: Disable
1: Enable
1

3-9-5
RFID 125KHz RF
0: Disable
1: Enable
1

3-9-6
'#' is Door Bell
0: Disable
1: Enable
0

3-9-7
User Capacity:
0: 16384 1: 32768
2: 65536 (0~2)
0

3-9-8 (FW: V0405_250902 or later)
Buzzer Volume :
0: Silent Mode
1~9 : Volume Level
9

3-9-9 (FW: V0405_250902 or later)
LCD direction
0 : Keep current
1 : Reverse
0

### 4. Parameters [2]

**4-1. Auto Relock**

4-1-1
Main Controller
Auto Relock Door
0: NO 1:YES
0

4-1-2
WG Prot
Auto Relock Door
0: NO 1:YES
0

**4-2. Egress(R.T.E)**

4-2-1
Main Controller
Request To Exit
0: Dis 1:Enable
0

4-2-2
WG1 Port
Request To Exit
0: Dis 1:Enable
0

**4-3. Miscellaneous**

4-3-1
Main Controller
TimeAttendance
0: YES 1: NO
0

4-3-2
WG1 Port
TimeAttendance
0: YES 1: NO
0

4-3-3
Main Controller
Skip PIN Check
0: NO 1: YES
0

4-3-4
WG1 Port
Skip PIN Check
0: NO 1: YES
0

4-3-5
Main Controller
Pass any Tags
0: NO 1: YES
0

4-3-6
WG1 Port
Pass any Tags
0: NO 1: YES
0

# 04.Full Function Command Menu Table

## 4. Parameters [2]

### 4-3. Miscellaneous

4-3-7
WG1 Port
Share Main Relay
0: NO 1: YES
0

4-3-8
Tag Second time
interval (10ms)
Range: 0000~9999
0100

4-3-9
Max error times
for lock keypad
Range: (0~9)
5

4-3-10
Main Controller
On Egress Beeps
0: NO 1: Bi 2: Bibb
2

4-3-11
WG1 Port
On Egress Beeps
0: NO 1: Bi 2: Bibb
2

4-3-12
Lock Door Relay
0: NO 1: YES
0

4-3-13
Interlock to WG ?
0:NO 1:YES
0

4-3-14 (837EF)
Main Controller
Free Tag Always
0:NO 1:YES
0

### 4-4. Force Open ..

4-4-1
Main Controller
Force Open Alarm
0: NO 1: YES
0

4-4-2
WG1 Port
Force Open Alarm
0: NO 1: YES
0

### 4-5. Close & Stop

4-5-1
Main Controller
Close Door Stop
Alarm 0: NO 1:YES
0

4-5-2
WG1 Port
Close Door Stop
Alarm 0: NO 1:YES
0

### 4-6. Anti-passback

4-6-1
Main Controller
Anti-passback
0: NO 1: YES
0

4-6-2
WG1 Port
Anti-passback
0: NO 1: YES
0

### 4-7. Duress Code

4-7-1
Input PIN Code
Range: 0000~9999

### 4-8. Password Mode

4-8-1
Password Mode
0: Addr. & PIN(M4)
1: PIN(M8) 2:M6
1

### 4-9. Factory Reset

4-9-1
0: System Param.
1: User Setting
2: System & User
2

## 5. Tools

### 5-1. Language

5-1-1
0: English (USA)
1: Chinese (TW)
0

### 5-2. Master Code

5-2-1
Input MasterCode
000001~999999
123456

### 5-3. Master Range

5-3-1
Input Start Addr
Range: (0-16383)
000000

5-3-2
Input End Addr
Range: (0-16383)
000000

### 5-4. Terminal RS485

5-4-1
0: Lift 1: Host
2:LED 3: PRN
1

5-4-2
Baud Selection
0: 9600 1: 19200
2: 38400 3: 57600

### 5-5. Ext.Comm CN11

5-5-1
0: Suspend 1:Lift
2: Voice 3: PRN
1

5-5-2
0: 4800 1: 9600
2: 19200 3: 38400
1

5-5-3
Elevator floor
button available
Range: (1~600)
000

### 5-5. Ext.Comm CN11 (837EF)

5-5-1 (837EF)
0: FP-Type 1: Lift
2: Vein2000 3:
FP9000 4:……..

Note: AR-837-EF For this step, please select: **3: Fingerprint 9000**)

## 04. Full Function Command Menu Table

**5-6. Open Time Zone**

5-6-1

Set <F1~F4,#>: 01
00:00~00:00 ..
SuMoTuWeThFrSaHo
0 0 0 0 0 0 0 0

5-6-2

Time=00:00~00:00
Main Port (0/1):0
WG Port (0/1):0

5-6-3

Weekday: (0/1)
SuMoTuWeThFrSaHo
X X X X X X X X
0 0 0 0 0 0 0 0

**5-7. Informations**

5-7-1

F/w Ver: 4.4T
Users: 00000
Messages: 00000
Press any Key ...

**5-8. Clock Setting**

5-8-1

YY: XXXX MM: XX
Day: XX Hour: XX
Min: XX Sec: XX

5-8-2

Month/Day Format
0: DD/MM 1: MM/
DD

**5-9. Daily Alarm**

5-9-1

Set <F1~F4,#>: 01
00:00 Sec.=000
SuMoTuWeThFrSaHo
0 0 0 0 0 0 0 0

5-9-2

Start Tm=00:00
Effect Sec.=000

5-9-3

Weekday: (0/1)
SuMoTuWeThFrSaHo
X X X X X X X X
0 0 0 0 0 0 0 0

**5-0. UART Port CN9**

5-0-1

0: Lift9600 1: PRN
2: LED 3: Voice
0

5-0-2

Elevator floor
button available
Range: (1~600)
015

**5-A. Event Logs**

5-A-1

20'06/04 2359:26

(M24)Controller
Power On 00000

※**More Details**：[Introduction of New Function Commands for Enterprise E Controller and Home H Controller]

**6. Quit**

**7. Quit & Arming**

# 05. Programming

## A. Keyboard Lock/ Unlock

- **Lock/ Unlock**
  Press * and # simultaneously to lock keyboard. Press simultaneously again to unlock.

## B. Entering and Exiting Programming Mode

- **Entering**
  Input *123456# or *PPPPPP#
  [e.g.] The Default Value= 123456. If already changed the Master Code= 876112, input *876112# → Access programming mode
  P.S.If no instruction is entered within **30 sec.**, it will automatically leave the programming mode.

- **Exiting**
  Press the * * repeatedly → 6 Quit or 7 Quit and Arming (Please refer to alarm / arming setting)

- **Changing the Master Code**
  Access programming mode → 5 Tools → 2 Master Code → Input the 6-digit new master code → Succeeded

## C. Initial setup

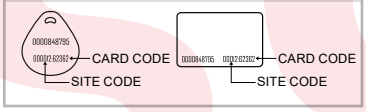
- **Language Setting**
  Access programming mode → 5 Tools → 1 Language → 0 EN → Succeeded → Initial system...

- **Node ID of Reader Setting**
  Access programming mode → 3 Parameters[1] → 1 Node ID → **Input New Node ID : 1~254** (default value:001) → **Main Door Number : 0~255** → **WG1 Door Number : 0~255** → **Show UID (0=No, 1=WG, 2=ABA, 3=HEX)** → **Enable DHCP(0:No, 1:En, 2=Exit)** → Succeeded

## D. Adding and Deleting Tag

**※ User capacity: 16384 (00000~16383)**

**Tag Information**




- **Adding Tag by Tag ID**
  Access programming mode → 1 Add/Delete → 1 Add -> Card ID → **Input 5-digit user address** → **Input Site Code** → **Input Card Code**

- **Adding Tag by RF Learn Function**
  Access programming mode → 1 Add/Delete → 2 Add -> RF-Learn → **Input 5-digit user address** → **Input Tag Units(pcs)** → **Close Tag into RF Area**
  ※If the batch of tags are **Sequential**, input Tag Units(pcs) in the quantity of the tags and present the tag with the **lowest number** to the controller for adding all the tag data; otherwise, the tags must be presented to the controller individually

- **Suspend User Address**
  Access programming mode → 1 Add/Delete → 3 Suspend -> Addr → **Input Start address** → **Input End address**

- **Suspend Tag by Tag ID**
  Access programming mode → 1 Add/Delete → 4 Suspend -> ID # → **Input Site Code** → **Input Card Code**

- **Recover User Address**
  Access programming mode → 1 Add/Delete → 7 Delete -> Addr → **Input Start address** → **Input End address**

- **Recover Tag by Tag ID**
  Access programming mode → 1 Add/Delete → 8 Delete -> ID # → **Input Site Code** → **Input Card Code**

- **Deleting User Address**
  Access programming mode → 1 Add/Delete → 5 Delete -> Addr → **Input Start address** → **Input End address**

- **Deleting Tag by Tag ID**
  Access programming mode → 1 Add/Delete → 6 Delete -> ID # → **Input Site Code** → **Input Card Code**

- **Setting up the access mode**
  Access programming mode → 2 User Setting → 2 Access Mode → **Input User Address** → **0: Invalid; 1: Card ; 2: Card or PIN; 3: Card & PIN**

## E. PIN Code

Access programming mode → 2 User Setting → 1 Password → **Input 5-digit user address** → **Input 4-digit PIN (0001~9999)** → Succeeded
Or via 701Client set it on Users screen

## F. Adding / Deleting Fingerprint

- **Adding**

  Access programming mode → 2 User Setting → 6 Enroll FP → Key in 5-digit user address →1 or 2 different fingers on the sensor lens → Succeeded
  P.S. The AR-837EF(9000DO) needs to collect twice for each fingerprint ; however, AR-837EF(1500DO) needs to collect three times for each fingerprint.

- **Deleting**

  Access programming mode → 2 User Setting → 7 Delete FP → Key in 5-digit user address → Succeeded
  P.S. If you want to delete all users' FP, key in **99999 #**

## G. Access Mode

※ Control mode can be set on hardware or software.

Hardware settings:
Access programming mode → 2 User Setting → 2 Access Mode → Key in 5-digit user address (00000~08999) → **0: Invalid; 1:Card; 2: Card or PIN; 3: Card and PIN**
(**837EA**: → Finger Identify: 0: Must ; 1: Ignore )→ Succeeded

※ If you select the access mode with PIN, please ensure the parameters in 4 Parameters【2】 → 3 Miscellaneous → Main Controller Skip PIN Check, select 0 to disable WG1 Port Skip PIN Check, select 0 to disable; It will mistake Controller and cannot get access if you select different access mode in 2 Access mode and 3 Miscellaneous

Software settings:
Enter 701ClientSQL → User Card edit → Set Access Mode
For detailed settings, please refer to the 701ClientSQL manual
Chapter 2-6 User Card Edit

| Access Mode | | Finger Identify (837EF/EA Only) | | Result (837EF/EA Only) |
|---|---|---|---|---|
| Hardware | 701Client | Hardware | 701Client | |
| 0:Invalid | Invalid / Card only / Card or PIN / Card and PIN | 0: Must | ☐ Just card ☐ Just Face / FP | Invalid User |
| | | 1: Ignore | ☑ Just card ☑ Just Face / FP | |
| 1:Card | Invalid / Card only / Card or PIN / Card and PIN | 0: Must | ☐ Just card ☐ Just Face / FP | Face+Card |
| | | 0: Must | ☐ Just card ☐ Just Face / FP | Card first, then Faceprint. Special firmware version (For requirements, contact SOYAL). APS837EF___V0405_230512 先卡片再按指紋.STM |
| | | 1: Ignore | ☑ Just card ☑ Just Face / FP | 1. Card Only 2. Face Only |
| 2:Card or PIN | Invalid / Card only / Card or PIN / Card and PIN | 0: Must | ☐ Just card ☐ Just Face / FP | 1. Face+Card 2. Face+PIN 3. Card+Face+PIN 4. Card+Face+Card 5. PIN+Face+PIN 6. PIN+Face+Card |
| | | 0: Must | ☐ Just card ☐ Just Face / FP | Card first, then Faceprint. Special firmware version (For requirements, contact SOYAL) APS837EF___V0405_230512 先卡片再按指紋.STM |
| | | 1: Ignore | ☑ Just card ☑ Just Face / FP | 1. Card Only 2. PIN Only 3. Face Only |
| 3:Card and PIN | Invalid / Card only / Card or PIN / Card and PIN | 0: Must | ☐ Just card ☐ Just Face / FP | Face+Card+PIN |
| | | 1: Ignore | ☑ Just card ☑ Just Face / FP | 1. Card+PIN 2. Face+PIN |

## H. Arming Password

Access programming mode → 3 Parameters[1] → 8 Arming PWD → **Input 4-digit PIN (0001~9999; Default: 1234)** → Succeeded
Or via 701Server and set it on AR-829E screen

## I. Arming Delay Time

Access programming mode → 3 Parameters[1] → 7 ArmingDelayTm → **Enter armed sta. Delay time(Sec), Range:000~255 ;**
**Armed pulse out-put time (10ms) ,Range : 000~255** → Succeeded

## J. PIN & UID Length setting

Access programming mode → 3 Parameters[1] → 9 PIN & UID format → **User PIN Length Range:4~8(4 is default value) ;**
**Card PIN Length Range:2~8(4 is default value)**

## K. Duress Code

Access programming mode → 4 Parameters[2] → 7 Duress Code → **4 sets (select one)** → **Input 4-digit PIN (0001~9999)** → Succeeded
Or via 701Server to set it on AR-829E-V5 screen
※Duress Code is only available in networking mode. It will substitute a personal pin code and send the message of Duress to computer as a warning signal.
※The Duress Code 0000 means that disable Duress Function and the default value is set as 0000 already.

## L. Terminal Port

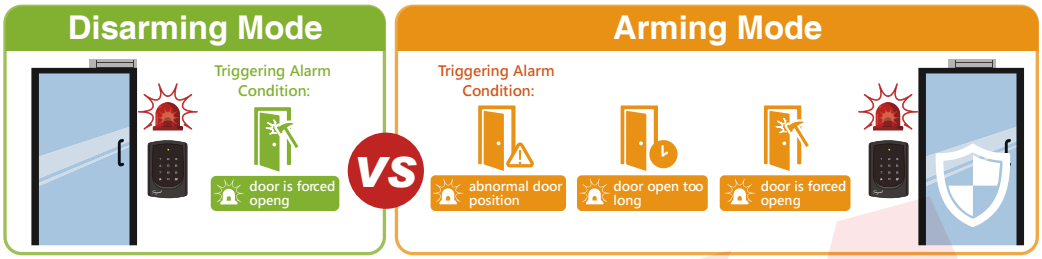
Access programming mode → 5 Tools → 4 Terminal Port → **0:Lift ; 1:Host ; 2:LED ; 3:PRN (default value:1)** → **Baud Selection (default value:9600)** → Succeeded

## M. Setting up the alarm / arming

In the security management of access control system, the controller or reader status is divided into Standby Mode or Disarming Mode and Arming Mode. The conditions for triggering the alarm in these two modes is different, as shown in the following comparison:

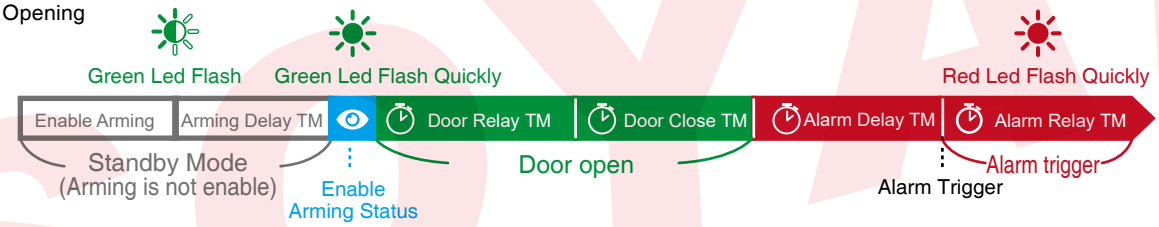
- **Alarm triggering condition of Disarming Mode:**
  1. Forced open

- **Alarm triggering condition of Arming Mode:**
  1. **The door sensor input is open-circuit:** Occurs when the door contact is disconnected at startup or the door is not fully closed, and the controller is in an armed state.
  2. **Exceed max. open time:** Door is opened exceeding door maximum open time limit plus door close time.
  3. **Forced open:** Access by force or illegal procedure, rather than valid card, PIN or biometric recognition.

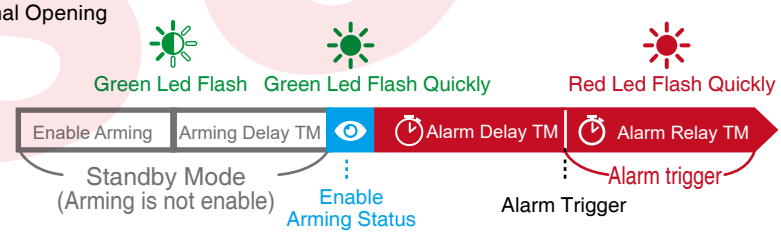



- **Arming Setting and Alarm Trigger Procedure :**

1.Normal Opening




2.Abnormal Opening




- **Enable Arming status:**

| **Standby Mode** | | | |
|---|---|---|---|
| **Card only** | | **Card or Passcode** | **Card and Passcode** |
| **Enable all devices** | **Enable particular device** | Input 5 digit user address → Input 4 digit pass code → # → Input 4 digits arming code → * * # or * 0 or 1 # | Induct valid card → Input 4 digit pass code → # → Input 4 digits arming code → * * # or * 0 or 1 # |
| Induct valid card → Input 4 digit arming code → * * # | Induct valid card → Input 4 digit arming code → * 0 or 1 # or # | | |
| **Enter Program Mode** | | | |
| **Enable all devices:** Access programming mode → * * # | | **Enable particular device:** Access programming mode → * * 0 or 1 # | |

- **Disable Arming status:**

| **Standby Mode** | | | |
|---|---|---|---|
| **Card only** | | **Card or Passcode** | **Card and Passcode** |
| **Disable all devices** | **Disable particular device** | Input 5 digit user address → Input 4 digit pass code → # → Input 4 digits arming code → * 9 # or * 0 or 1 # | Induct valid card → Input 4 digit pass code → # → Input 4 digits arming code → * 9 # or * 0 or 1 # |
| Induct valid card → Input 4 digit arming code → * 9 # | Induct valid card → Input 4 digit arming code → * 0 or 1 # or # | | |

※ **Factory default armingcode is: 1234. 0 or 1=Reader unit (0=Main Controller Parameter Setting,1=WG Input Port Parameter Setting ).**

- **Enable/Disable the arming status:**

| **Standby Mode** | | | |
|---|---|---|---|
| Card only | | Card or PIN | Card and PIN |
| Open the door | No open the door | **Input user address** → **Input 4-digit individual PWD** → # → **Input 4-digit arming PWD** → # | Present the tag to reader → **Input 4-digit individual PWD** → # → **Input 4-digit arming PWD** → # |
| Present the tag to reader → **Input 4-digit arming PWD** → # | * → **Input 4-digit arming PWD** → Present the tag to reader | | |
| **Access Programming mode** | | | |
| **Enable:** Access programming mode → 7 Quit & Arming | | **Disable:** Access programming mode → 6 Quit | |

※ **[Use FP] can substitute for [Induct valid card].**

## N. Anti-pass-back

While connecting with AR-721-U, AR-737-H/U(WG mode) and AR-661-U for anti-pass-back function, the access mode must be "Card" only.

- **Device enable**

  Access programming mode → **4** Parameters[2] → **6** Anti-pass-back → master controller select [1: Yes] → WG select [1: Yes]

- **Card user enable**

  Access programming mode → **1** Add/ Delete → **9** Antipass Group → **Input 5-digit starting user address** → **Input 5-digit ending user address** → must select [1: Yes]

## O. Lift control

[e.g.] Connect with **AR-401RO16B** to control which floor the user will be able to access. (BAUD9600)

- **Setting Lift control**

  Access programming mode → 5 Tools → 4 Terminal Port → **0 : Lift Controller** → **Baud Selection 0 : 9600**

  Access programming mode → 5 Tools → 5 Terminal Port → **1 : Lift Controller**

  **(**need to use 725L485**)**

| Set | Floor/ Stop | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

- **Single floor**

  Access programming mode → 2 User Setting → 4 Single Floor →
  **Input 5-digit user address** → **Input single floor number: 1~64**

- **Multi floors**

  Access programming mode → 2 User Setting → 5 Multi Floor → **Input 5-digit user address** → **Select range: 1 or 2 or 3 or 4** → **Input 16 digits multi floors number [0:disable, 1: enable]**

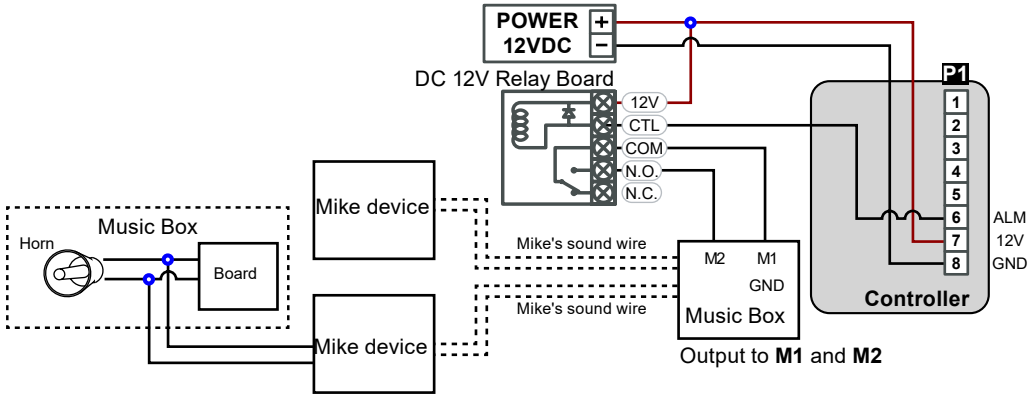
  [e.g.] Set NO. 114, can use it through the 8 F and 16F:

  Access programming mode → 2 User Setting → 5 Multi Floor → **114** # → **1** # → **0000000100000001** #

## P. Alarm Clock (for Factory)

Access programming mode → **5** Tools → **9** Daily Alarm → **Set (00~15)** → **Set Start Tm (24 Hours) ; Set Effect Sec. (Seconds as the bell time, Range:1~255)** → **Set Weekday (0:disable, 1: enable)** → Succeeded

- **Hardware installation**



## Q. OpenZone

Access programming mode → 3 Parameters[1] → 2 OnOff OpenZone → **Main Controller Auto Open Zone (0:disable, 1:enable)** → **Open Door Imm. During Open Zone (0:No, 1:Yes)** → **WG1 Port Auto Open Zone (0:disable, 1:enable)** → **Open Door Imm. During Open Zone (0:No, 1:Yes)** → Succeeded

## R. Open TimeZone

Access programming mode → 5 Tools → 6 Open TimeZone → **Set (00~15)** → **Time (24 Hours) ; Main Port (0:disable, 1: enable) ; WG Port (0:disable, 1: enable)** → **Weekday (0:disable, 1: enable)** → succeeded

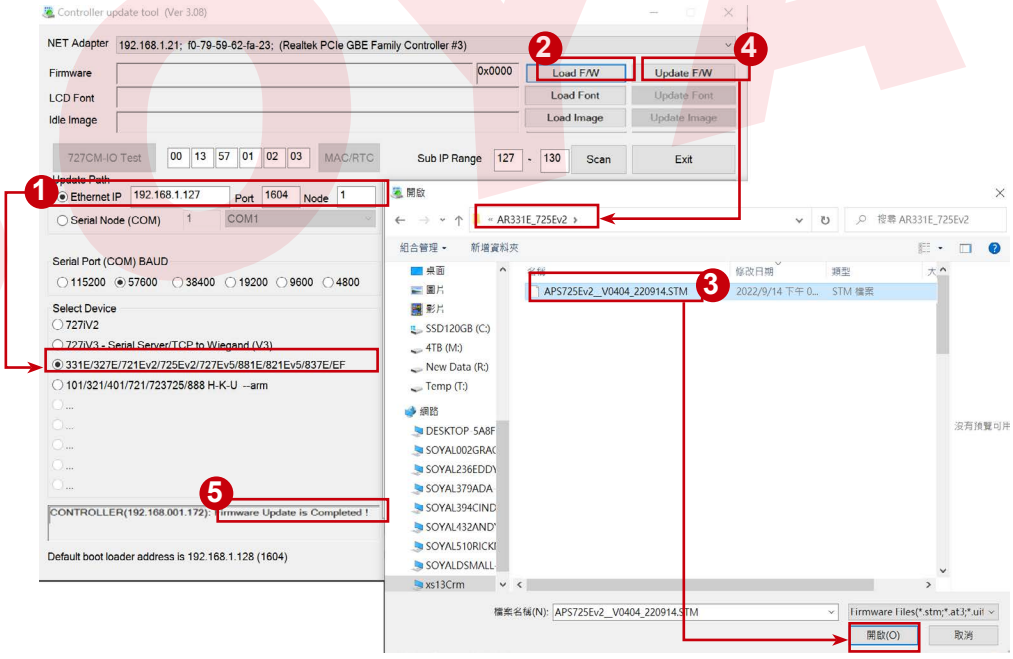
※ Method and Steps to Configure Automatic Door-Opening Periods Using 701ClientSQL Software
FAQ : Automatic Door Opening Schedule Setup Guide — Applicable to All SOYAL Controllers (Including Time Synchronization Tips)

※ The automatic door-opening period can be used in conjunction with the automatic scheduling (auto alarm) feature, allowing devices to automatically turn on or off at specified times. This is suitable for lighting, door locks, fans, motors, and other equipment requiring timed control. For instructions on setting up automatic scheduling, please refer to the 701ServerSQL Manual – Alarm Schedule Section.

# 06. Firmware Upgrade

**Get the upgrade software from SOYAL or our distributor and run "UdpUpdater" software**

- **Execute the software**  The software is Login the SOYAL web to downloads




- **Update the firmware**

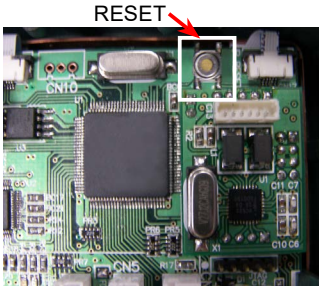
**[Please login the SOYAL web to download the new ISP Firmware.]**

1. Input the Target Address and Port
2. [Load F/W] open the documents that have the new ISP Firmware
3. Click the new ISP Firmware and [Open] it
4. Click [Update Device] to start the firmware update
5. Till the screen shown [Firmware Update is Complete]

※**More Details**： Software Manual - UDP UPDATER

## 07.Restoring Factory Settings

### Reset all device parameters and user card data

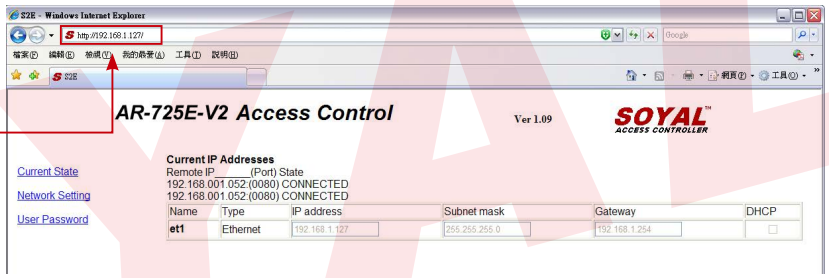



- **Reset all device parameters and user card data:**
  Access programming mode → 4 Parameters2 → 9 Factory Reset →**0 : System Param ;**
  **1 : User Setting ; 2 : System & User**
- **Reset IP Setting:**
  When the device's power is on, press the【RESET】button on the main board untill the ERR (Red) LED of screen lights up. (Refere to the picture beside)

**※ After operation as above, you will hear a long reminder sound,and wait until the sound disappears, and then reset the power of the controller. The device will be restored to factory settings.**
**※ After having done the "Factory Reset," the External Communication Port must be reset. Or the biometric sensor won't be functional.**
**5 Tools → 5 Ext. Comm Port (0:FP-200 ; 1:Lift ; 2:Vein2000 ; 3:FP-9000 ; 4:Reserved )**

## 08.IP Setting

- **Open your Web Browser and input factory default IP address: http://192.168.1.127**




- **Page menu**




- **Current State**
  Online Status is able to monitor and
  show which computer is linking on Ethernet Module

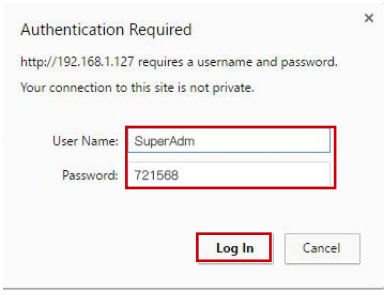



- **Log-in User Password**
  When you choose the "Networking Setting" or "User Password" at first.
  Log-in window will pop out and please input
  ※ At the Factory Default
  User name: SuperAdm / Password: 721568

**NOTE :**

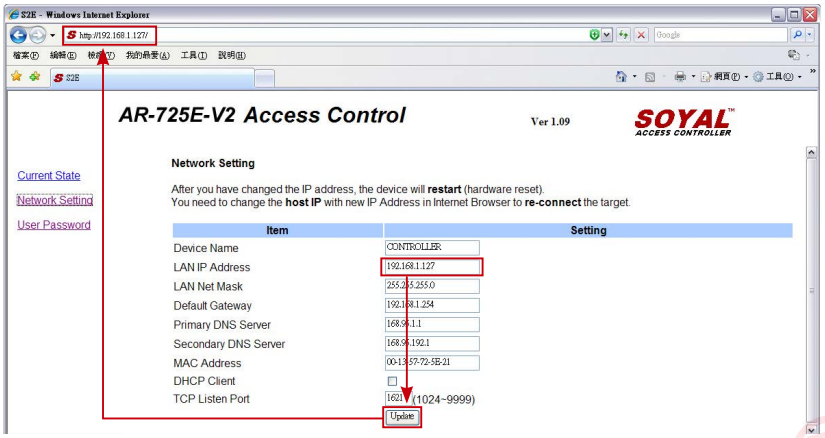
- User Name is different from old and new version, password can be modify via [User Password] setting on the list but will not be change from updating new version. If you forgot the password, the solution is pressing Reset Button to reset it as default value.

| Firmware Version | User name | Password (changeable) |
|---|---|---|
| After 2020/01/21 | SuperAdm | Default Password : 721568 or self-definition |
| Before 2020/01/21 | admin | Default Password : admin/ password not required or self-definition |



- **Networking Setting**

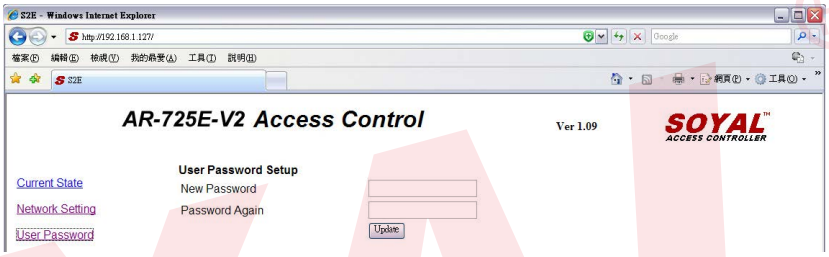
  You will find initial IP Address 192.168.1.127 and check MAC Address is identical to the sticker on Ethernet Module device. Please alter the IP address as you want, and then click “Update” button. After updating the IP, please re-connect the Web Browser by the new IP address.




- **User Password**

  Change the log-in password to lock the IP setting of Ethernet Module.

  The password is composed of 10 characters at most which can be either A~Z or 0~9.

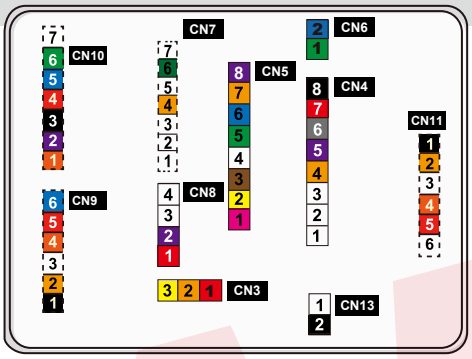


## 09. Notice

**1.Tubing:** The communication wires and power line should NOT be bound in the same conduit or tubing.
**2.Wire selection:** Use AWG 22-24 Shielded Twist Pair to avoid star wiring, CAT 5 cable for TCP/IP connection
**3.Power supply:** Don't equip reader and lock with the same power supply. The power for reader may be unstable when the lock is activating, that may cause a malfunction in the reader.
The standard installation: Door relay and lock use the same power supply, and reader should use another independent power supply.

## 10. Connector Table

### Connector Table (1)




**Cable: CN3**

| Wire Application | Wire | Color | Description |
|---|---|---|---|
| Anti-Tamper Switch | 1 | Red | N.C. |
| | 2 | Orange | COM |
| | 3 | Yellow | N.O. |

**Cable: CN4 Main Port**

| Wire Application | Wire | Color | Description |
|---|---|---|---|
| Lock Relay | 1 | Blue White | (N.O.)DC24V1Amp |
| | 2 | Purple White | (N.C.)DC24V1Amp |
| Lock Relay COM | 3 | White | (COM)DC24V1Amp |
| Door Sensor | 4 | Orange | Negative Trigger Input |
| Exit Switch | 5 | Purple | Negative Trigger Input |
| Alarm Relay | 6 | Gray | N.O./N.C. Optional (by jumper) |
| Power | 7 | Thick Red | DC 12V |
| | 8 | Thick Black | DC 0V |

**Cable: CN5 WG Port**

| Wire Application | Wire | Color | Description |
|---|---|---|---|
| Beeper | 1 | Pink | Beeper Output 5V/100mA, Low |
| LED | 2 | Yellow | Red LED Output 5V/20mA, Max |
| | 3 | Brown | Green LED Output 5V/20mA, Max |
| Door Output | 4 | Blue White | Transistor Output Max. 12V/100mA (Open Collector Active Low) |
| Wiegand | 5 | Thin Green | Wiegand DAT: 0 Input |
| | 6 | Thin Blue | Wiegand DAT: 1 Input |
| WG Door Sensor | 7 | Orange | Negative Trigger Input |
| WG Exit Switch | 8 | Purple | Negative Trigger Input |

**Cable: CN6**

| Wire Application | Wire | Color | Description |
|---|---|---|---|
| RS-485 for Lift Controller | 1 | Thick Green | RS-485(B-) |
| | 2 | Thick Blue | RS-485(A+) |

**Cable: CN8**

| Wire Application | Wire | Color | Description |
|---|---|---|---|
| Reserved | 1 | Red | -- |
| Security trigger signal | 2 | Purple | Security trigger signal Output |
| Arming | 3 | Red White | Arming Output |
| Duress | 4 | Yellow White | Duress Output |

**Cable: CN13**

| Wire Application | Wire | Color | Description |
|---|---|---|---|
| Door Bell | 1 | Black White | Transistor Output Max.DC12VDC/ 100mA (Open Collector Active Low) |
| | 2 | Black | DC 0V |

※AR-837-ER does not support the CN13 doorbell output function, and the doorbell function can only be triggered through the # key by enabling it using command 3-9-6. When using this special method, the output point is the CN4 alarm output gray wire.

### Connector Table (2): Optional

**Cable: CN7**

| Wire Application | Wire | Color | Description |
|---|---|---|---|
| | 1 | --- | --- |
| | 2 | --- | --- |
| TCP/IP Output | 3 | Orange White | Net - TX+ |
| | 4 | Orange | Net - TX- |
| | 5 | Green White | Net - RX+ |
| | 6 | Gerrn | Net - RX- |
| | 7 | --- | --- |

**Cable: CN10**

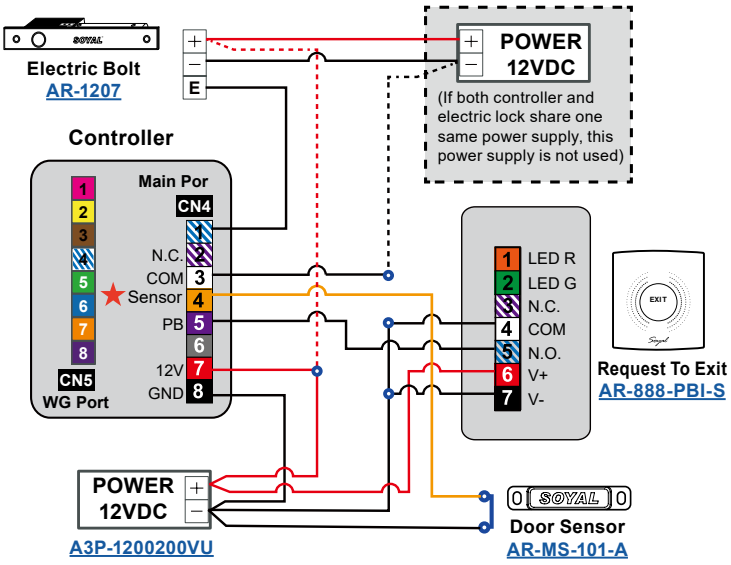
| Wire Application | Wire | Color | Description |
|---|---|---|---|
| HID RF Module | 1 | Orange | ANT 1 |
| | 2 | Purple | ANT 2 |
| | 3 | Black | DC 0V |
| | 4 | Red | DC 5V |
| | 5 | Blue | Wiegand DAT: 1 Input |
| | 6 | Green | Wiegand DAT: 0 Input |
| | 7 | White | -- |

**Cable: CN9** (Optional:Voice Module; SW:RS485-3)
**CN11** (Optional:Lift Control w/ AR-321L485-5V; SW:RS485-2)

| Wire Application | Wire | Color | Description |
|---|---|---|---|
| TTL Port for Lift Control or Voice Module (*Required speaker 8Ω / 1.5W (Max.2W) | 1 | Black | DC 0V |
| | 2 | Yellow | TX |
| | 3 | White | TE |
| | 4 | Orange | RX |
| | 5 | Red | DC 5V |
| | 6 | --- | -- |

# 11. Wiring Diagram

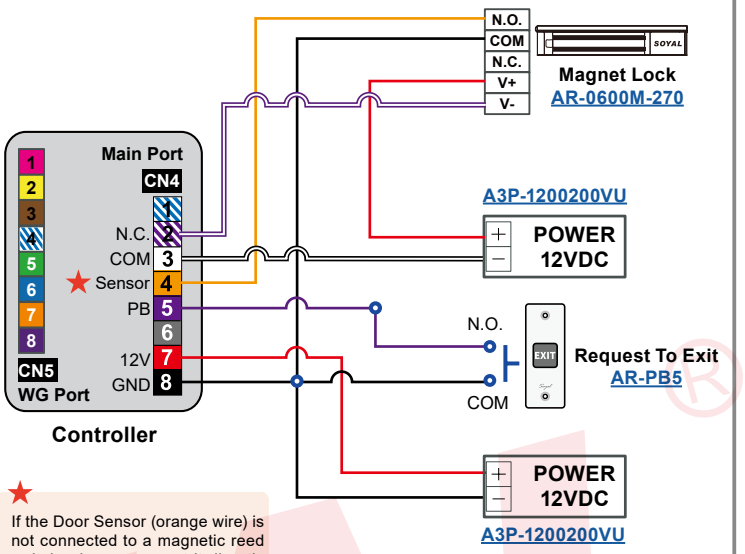
## Connect to Electric Bolt




※ The above wiring diagram is used for two power supply configuration. If the controller and the electric lock share one same power supply, please connect the V+ & V- of the electric lock to the V+ and V- of the power supply of the controller.

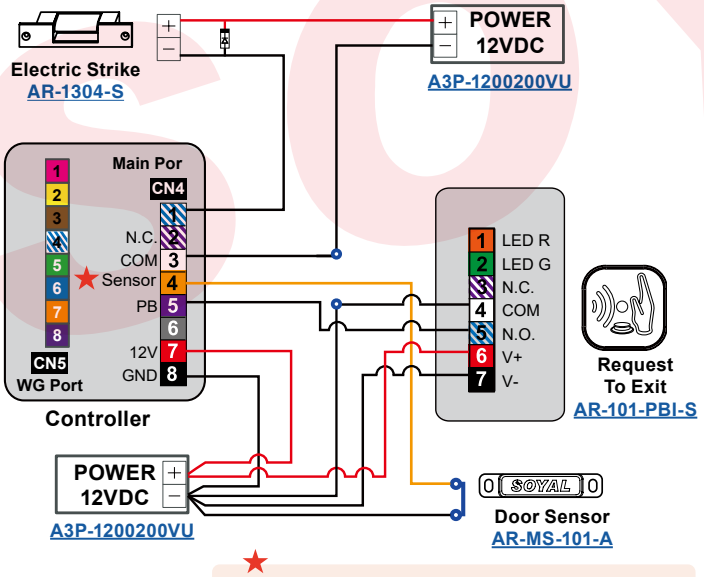
★ If the Door Sensor (orange wire) is not connected to a magnetic reed switch, please connect it directly to ground.

## Connect to Magnetic Lock



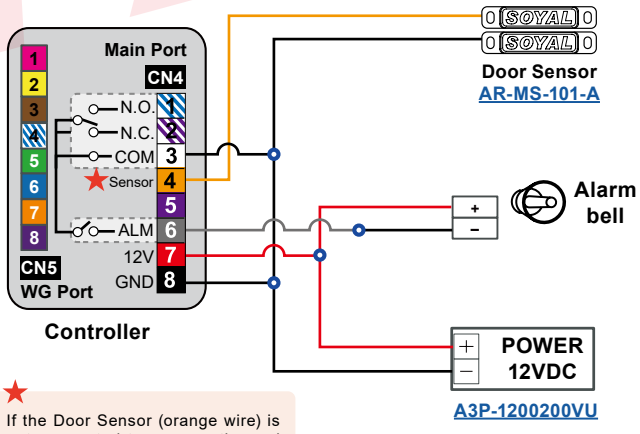

★ If the Door Sensor (orange wire) is not connected to a magnetic reed switch, please connect it directly to ground.

## Connect to Electric Strike



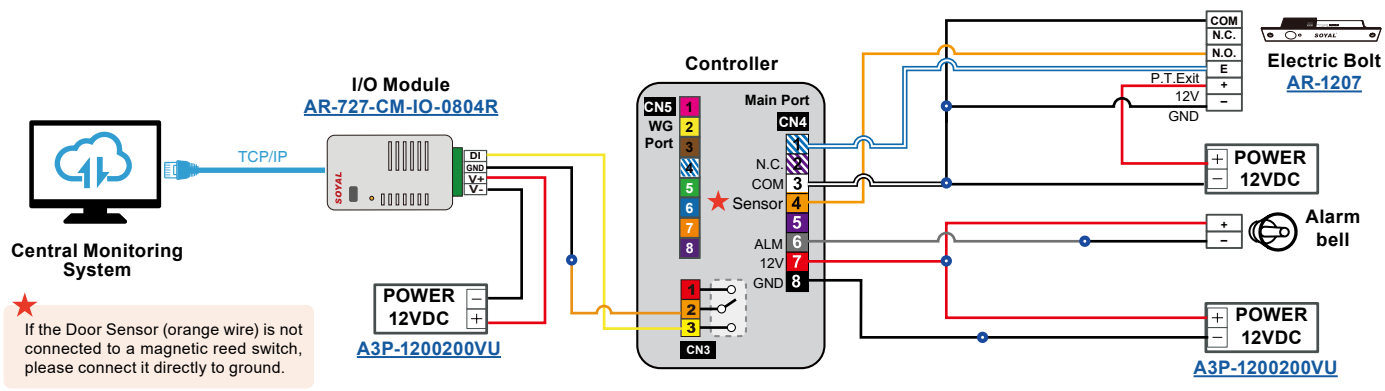

★ If the Door Sensor (orange wire) is not connected to a magnetic reed switch, please connect it directly to ground.

## Door Open Too Long Alarm Wiring Method (External Sensor)




★ If the Door Sensor (orange wire) is not connected to a magnetic reed switch, please connect it directly to ground.

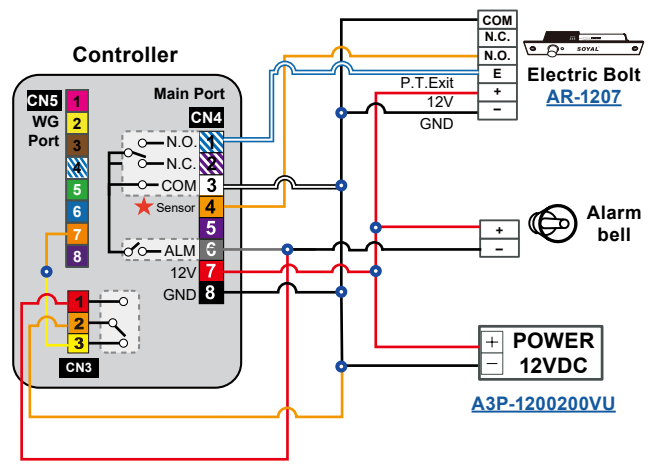
## Tamper-Switch Alarm Wiring Method (Cloud Monitoring Active Reporting Type-TCP)




★ If the Door Sensor (orange wire) is not connected to a magnetic reed switch, please connect it directly to ground.

## Tamper-Switch Alarm Wiring Method

(Simplified Peace of Mind Type-WG Port Sensor Wiring Method)

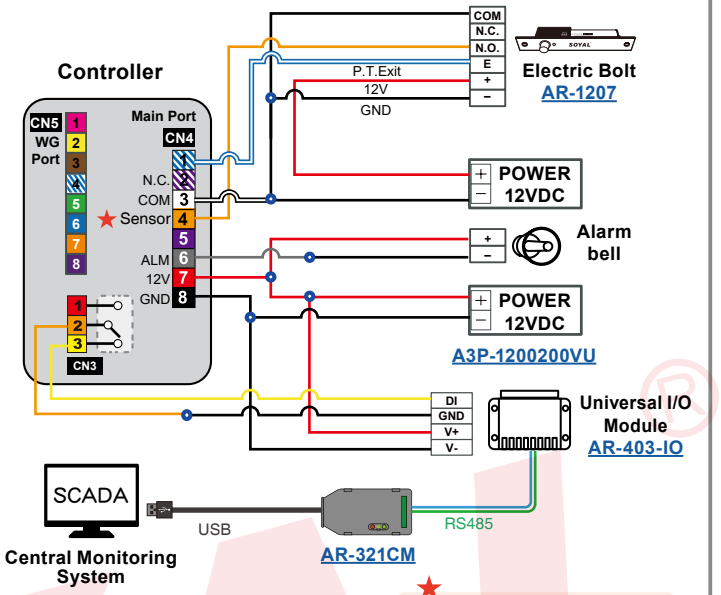



※ Enable [Share Door Relay] & WG Port option [Enable Force Alarm] via Parameter Setting of 701Server Software

★ If the Door Sensor (orange wire) is not connected to a magnetic reed switch, please connect it directly to ground.

## Tamper-Switch Alarm Wiring Method

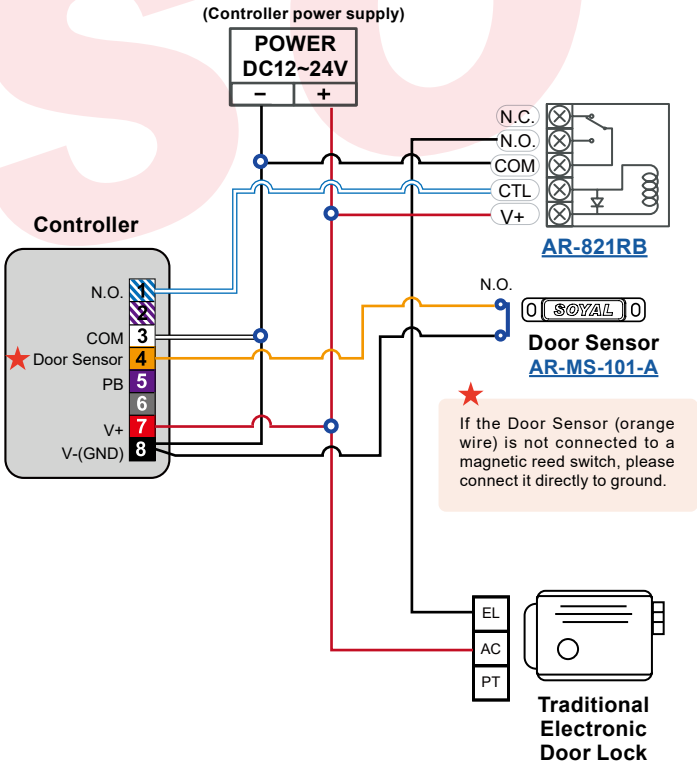
(Centralized Monitoring Type with Assurance(RS485)-Connect to Central Monitoring System through Modbus via Universal I/O Module)




※ Enable [Share Door Relay] & WG Port option [Enable Force Alarm] via Parameter Setting of 701Server Software

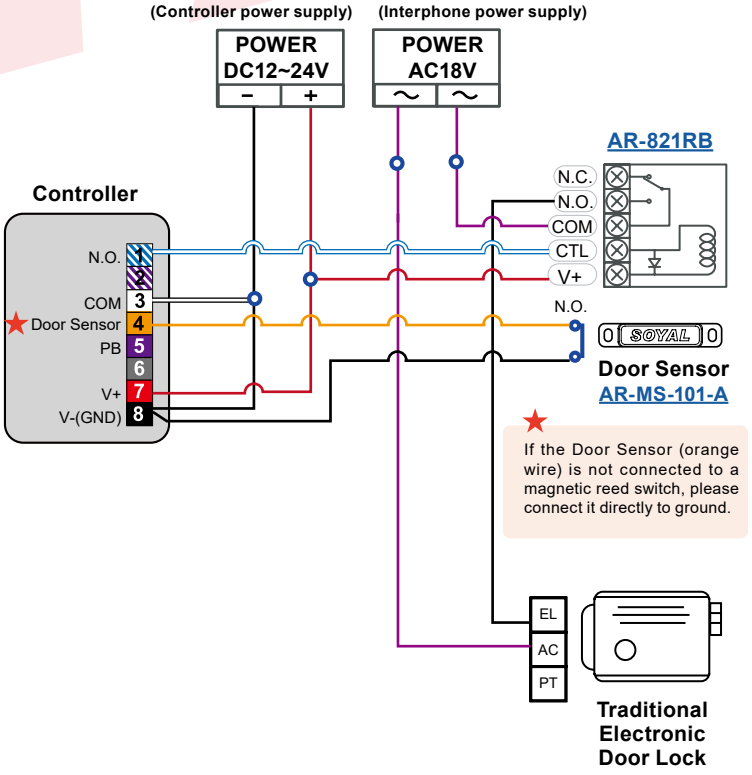
★ If the Door Sensor (orange wire) is not connected to a magnetic reed switch, please connect it directly to ground.

## Traditional Electronic Door Lock wiring diagram adopted with controller power supply




★ If the Door Sensor (orange wire) is not connected to a magnetic reed switch, please connect it directly to ground.

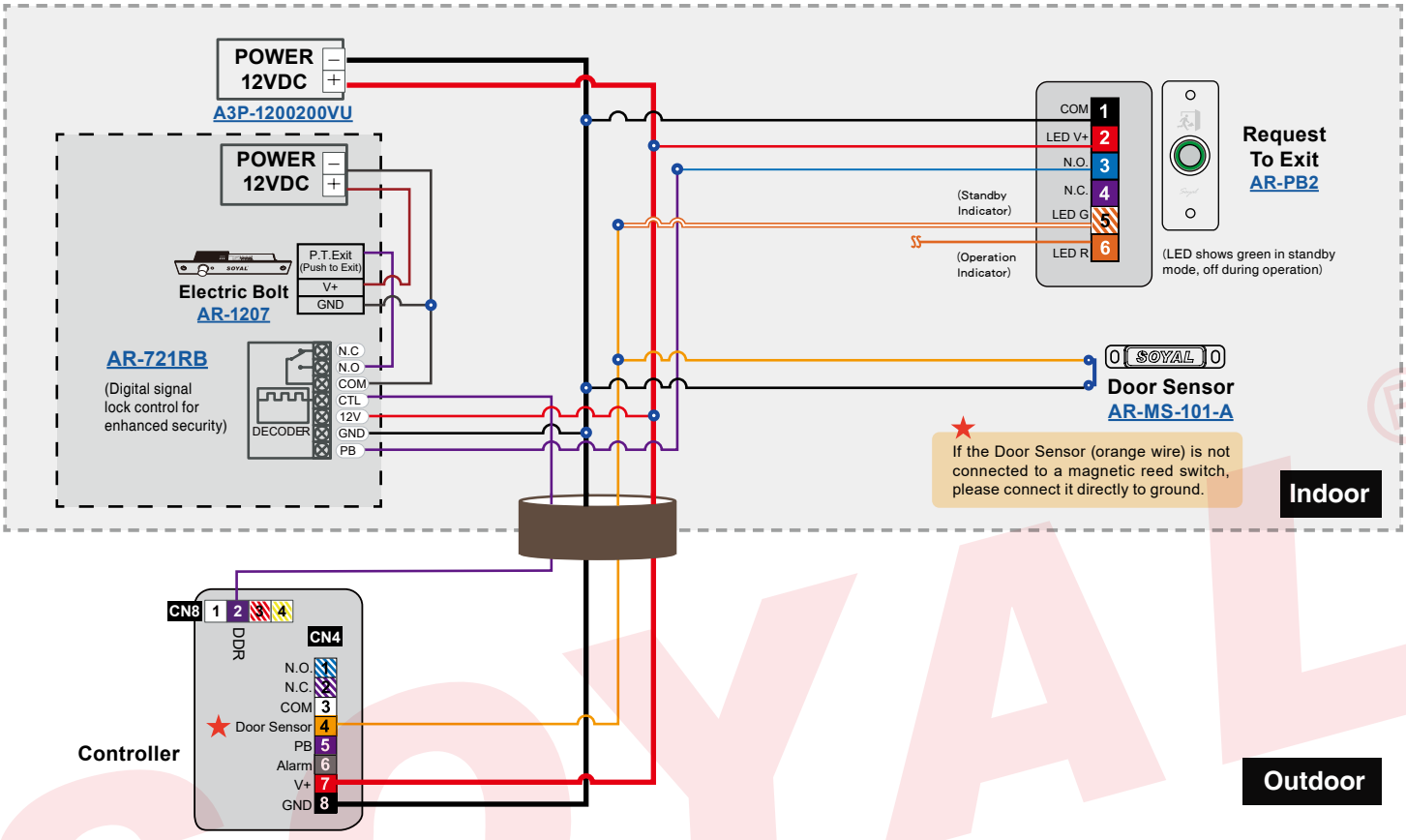
## Traditional Electronic Door Lock wiring diagram adopted with interphone power supply




★ If the Door Sensor (orange wire) is not connected to a magnetic reed switch, please connect it directly to ground.

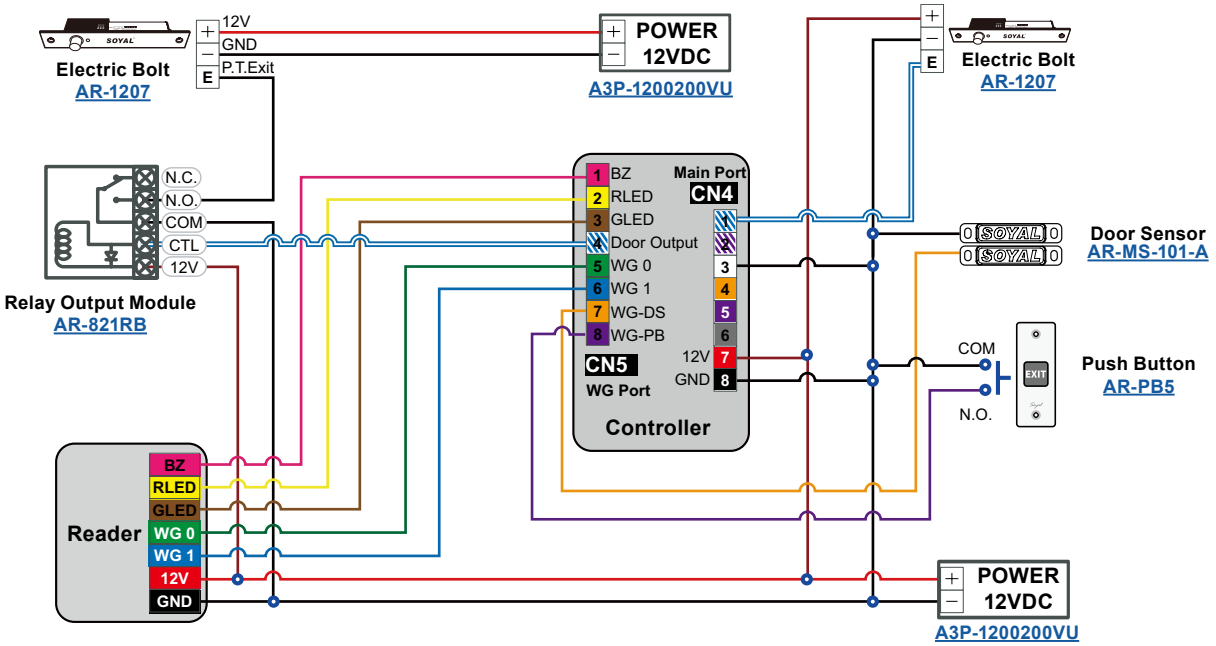
※ This wiring diagram function is required to setup Door Relay Time in 1 sec, please refer to 02 * TTT # command.

**Uses digital signal to release the electric lock for enhanced safety.**
**[AR-721RB requires direct connection to the electric lock.]**

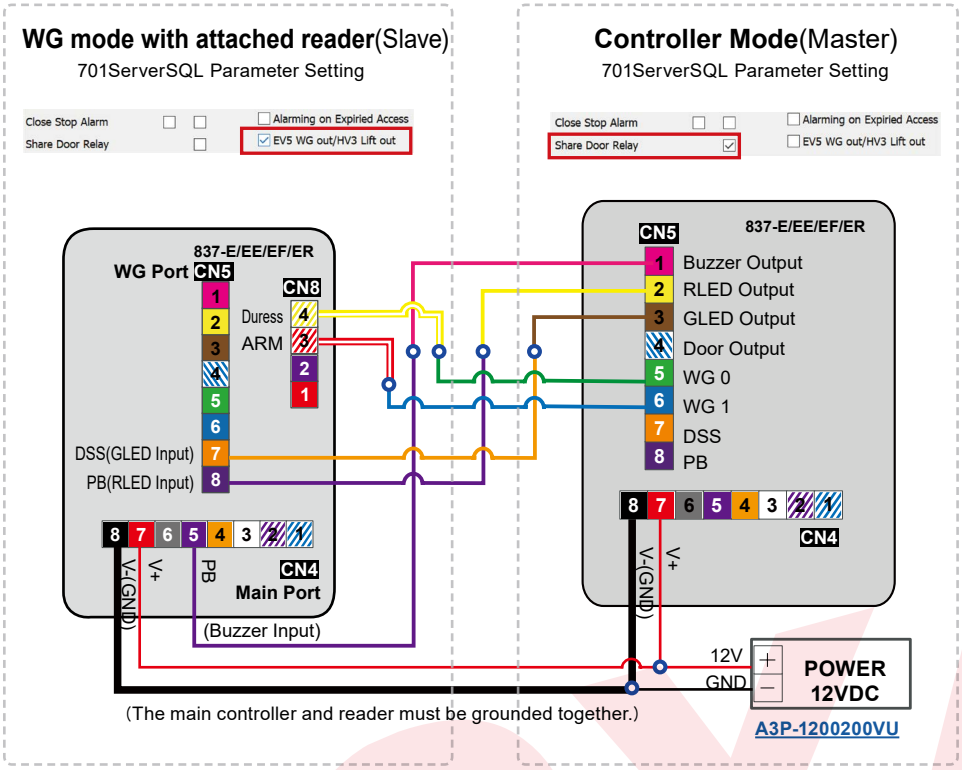



Enable "Share Door Relay" to open the same electronic lock regardless of whether it is triggered by the main controller or the Wiegand reader. This is achieved by using the NO contact of the blue-white wire in CN4, suitable for systems where the controller and the reader control the same lock.
Disable "Share Door Relay" for card swiping on the main controller, triggering the NO contact of the blue-white wire in CN4. For card swiping on the Wiegand reader, triggering the NO contact of the blue-white wire Door Output in CN5 WG Port. This allows the main controller and the reader to independently control two electronic locks.

## Connect to Reader



## WG Mode / Controller Mode Setting Method ,AR-725-E become WG mode (28 * 000 #)




1. AR-725-E can be set up as WG26/WG34/ WG64 while the Controller is in WG Mode. These Controller can also be paired with the Controller that has WG input function.

2. Networking Setting: Select E Series Controller Parameter Edit in 701Server,tick up the function “Ev5 WG out/Hv3 Lift out”

3. Please restart the controller after pressing “Write to Controller”.

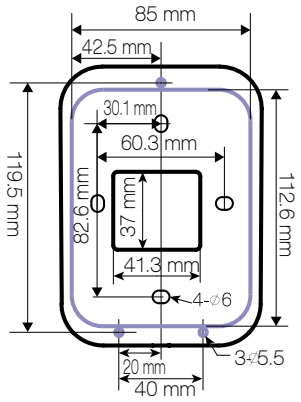
※Using Rule :
Finger : Both 725-E Master mode and 725-E WG mode must store all the same FP data and real or visual card number.
Card : Can pass WG message to controller.

**※Please refer to the FAQ for software configuration instructions:** How to set the E Series card reader to Wiegand output mode?

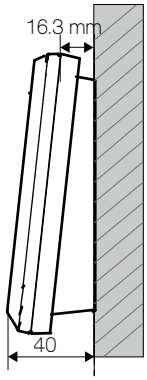
**※FAQ :** How to setup biometric controller of AR-837EF/AR-837EA as weigand reader and enable Anti-Pass back function?

## 12. INSTALLATION

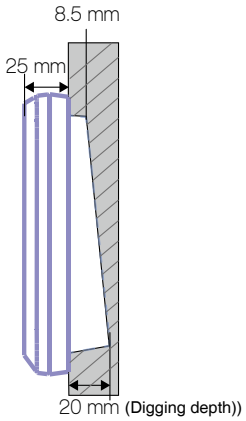
### AR-837-E




- Surface mounting hole(Front View)
- Flush mounting hole(Front View)

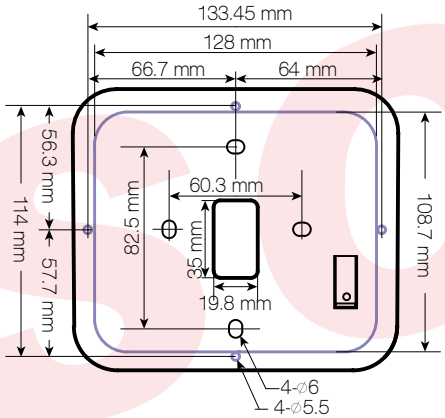



- Surface mounting hole (Side view)

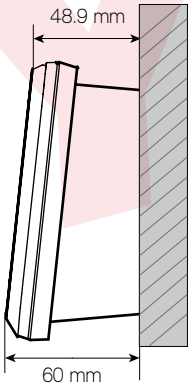



- Flush mounting hole (Side view)

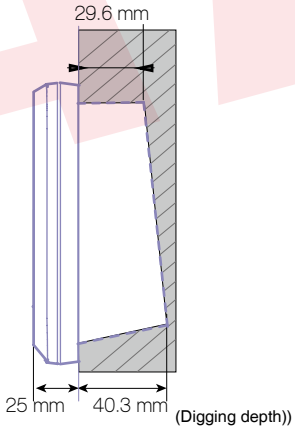
### AR-837-EE/EF/W




- Surface mounting hole(Front View)
- Flush mounting hole(Front View)

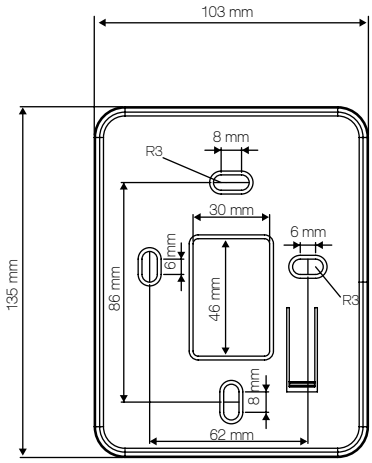



- Surface mounting hole (Side view)

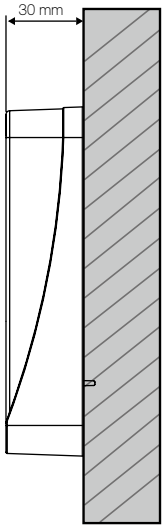



- Flush mounting hole (Side view)

### AR-837-ER




- Surface mounting hole(Front View)




- Surface mounting hole (Side view)

## 13. Installation (AR-837-E/EE/EF/W)

A-1.Surface Mounted　A-2.Embedded　B.




- A-1.Surface Mounted: Use a screwdriver to screw the mounting plate to the wall. A-2.Embedded: To dig a hole for 837-E:85mmx113mm / 837-EF:128mmx109mm; and then, use a screwdriver to screw the mounting plate to the wall.
- Pull cable ends through the access hole in the mounting plate.
- Attach AR-837-E or AR-837-EF to the mounting plate and install screws (supplied) into the holes at the bottom with the allen key.
- Apply power. LED (green) will light up with one beep.

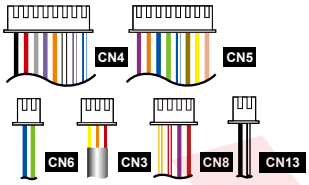
## 14. Contents

### AR-837-EF:Fingerprint

1 Products




2 Terminal Cables




3 Tools

Screws

Water proof Strip

4 Optional

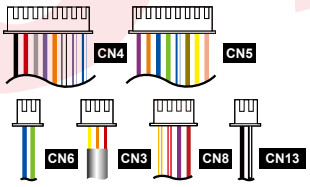
- Ethernet : DMOD-NETMA10 (TCP/IP Module included RJ45 Connector) or DMOD-NETMA11 (TCP/IP Module with POE function)
- Any Wiegand Output Module (CN10)
- AR-MDL-721V (Voice Module)
- AR-321L485-5V (TTL to RS-485 Converter)

### AR-837-E/ EE / ER:LCD Access Controller

1 Products




2 Terminal Cables




3 Tools

Screws — AR-837-E/ER

Screws — 837-EE

Water proof Strip — AR-837-E/EE

Water proof Strip — 837-ER

4 Optional

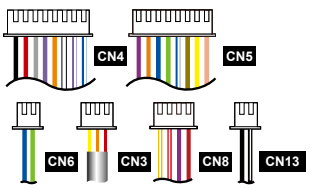
- Ethernet : DMOD-NETMA10 (TCP/IP Module included RJ45 Connector) or DMOD-NETMA11 (TCP/IP Module with POE function)
- Any Wiegand Output Module (CN10)
- AR-MDL-721V (Voice Module)
- AR-321L485-5V (TTL to RS-485 Converter)

### AR-837-W:LCD Card Energy Saver

1 Products



2 Terminal Cables




3 Tools

Screws

Water proof Strip

4 Optional

- Ethernet : DMOD-NETMA10 (TCP/IP Module included RJ45 Connector) or DMOD-NETMA11 (TCP/IP Module with POE function)
- Any Wiegand Output Module (CN10)
- AR-MDL-721V (Voice Module)
- AR-321L485-5V (TTL to RS-485 Converter)