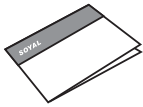# SOYAL®
ACCESS CONTROL SYSTEM

AR-723 (H)

Content & Feature
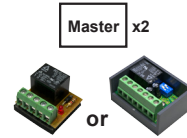
❶ Product ❷ User Guide ❸ Terminal Cables ❹ Optional

P3

AR-WG-KEYBOARD   AR-821-RB   **or**   AR-721-RB

Master x2

❺ Feature
- Standalone and Networking model for selection
- 1 Bi-color LED & 1 Buzzer
- Built-in Watch Dog to prevent system from hanging
- The Master Card function for adding/ deleting cards
- Can set parameters by external keyboard

Connector Table
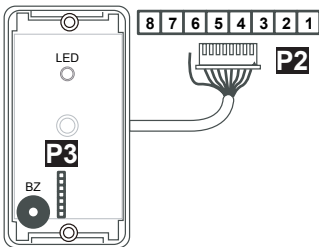
Stand-Alone [NO lift control]

6 5 4 3 2 1   **P1**

LED

P3

BZ

Networking

8 7 6 5 4 3 2 1   **P2**

LED

P3

BZ
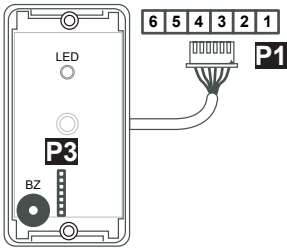
Standalone: P1 6 PIN   (NO RS-485)

Application	Wire	Color	Description
Power	1	Black	DC 0V (GND)
R.T.E	2	Brown	Negative Trigger Input
Power	3	Red	DC 12V
Door Contact	4	Orange	Negative Trigger Input
Alarm Relay	5	Yellow	Open collector output
Lock Relay	6	Green	Open collector output/ Security Trigger Signal

Networking: P2 8 PIN + GND   (RS-485)

Application	Wire	Color	Description
Power	1	Black	DC 0V (GND)
	2	Red	DC 12V
Alarm Relay	3	Gray	Open collector output
R.T.E	4	Purple	Negative Trigger Input
Door Contact	5	Orange	Negative Trigger Input
Lock Relay	6	White	Open collector output/ Security Trigger Signal
RS-485	7	Blue	RS-485 A+
	8	Green	RS-485 B-

P3 WG-KEYBOARD Socket

Application	Wire	Color	Description
――	1		――
――	2		――
――	3		――
WG	4	Blue	WG DATA 1
	5	Green	WG DATA 0
Power	6	Red	DC 12V
	7	Black	DC 0V (GND)

P4 TTL Cable (Optional)

Application	Wire	Color	Description
TTL	1	Yellow	TX
	2	White	TE
	3	Orange	RX
――	4		――
――	5		――
Power	6	Red	DC 12V
	7	Black	DC 0V (GND)

- When update firmware or set function for standalone model, please order **P4**.
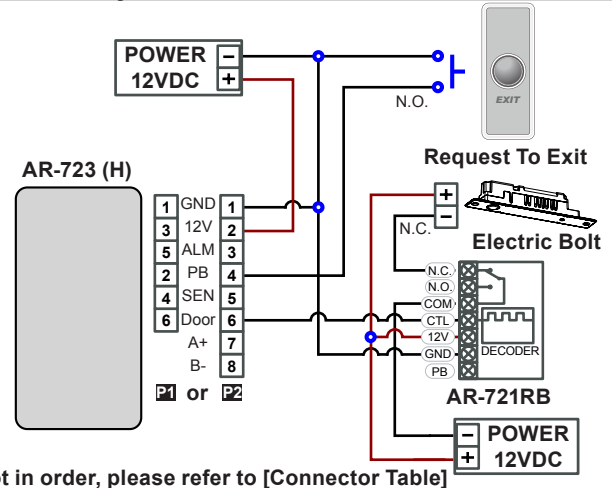- Please unplug **P3** cable before using **P4** cable.
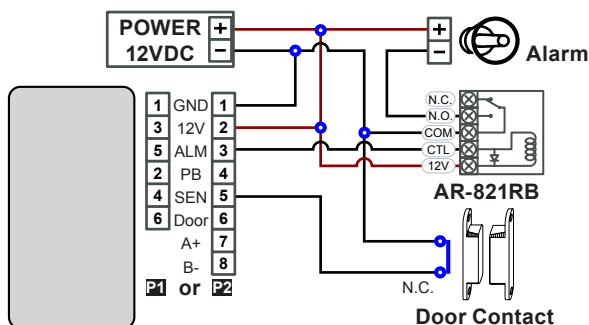
Diagram

Connect to Electric Strike

POWER 12VDC − +

N.O.

Request To Exit EXIT

AR-723 (H)

1	GND	1
3	12V	2
5	ALM	3
2	PB	4
4	SEN	5
6	Door	6
	A+	7
	B-	8

P1 or P2

Diode

+ −

Electric Strike

N.C. / N.O. / COM / CTL / 12V

AR-821RB

POWER 12VDC − +
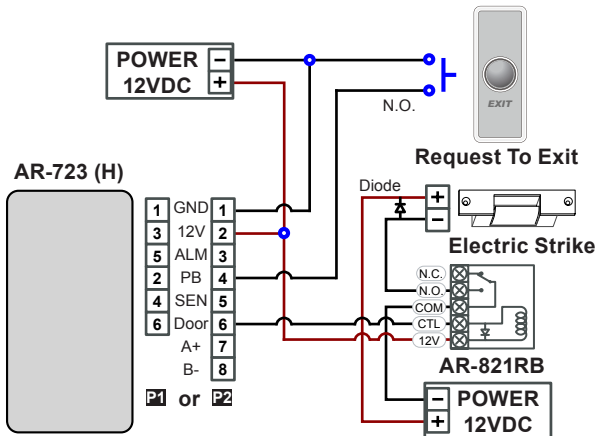
※ **P1** are not in order, please refer to [Connector Table]

Strengthen security with AR-721RB

POWER 12VDC − +

N.O.

Request To Exit EXIT

AR-723 (H)

1	GND	1
3	12V	2
5	ALM	3
2	PB	4
4	SEN	5
6	Door	6
	A+	7
	B-	8

P1 or P2

+ −
N.C.

Electric Bolt

N.C. / N.O. / COM / CTL / 12V / GND / PB

DECODER

AR-721RB

POWER 12VDC − +

※ **P1** are not in order, please refer to [Connector Table]

Connect to Door Contact and Alarm

POWER 12VDC + −

+ − **Alarm**

1	GND	1
3	12V	2
5	ALM	3
2	PB	4
4	SEN	5
6	Door	6
	A+	7
	B-	8

P1 or P2

N.C. / N.O. / COM / CTL / 12V

AR-821RB

N.C.

Door Contact

AR-723 (H)

※ **P1** are not in order, please refer to [Connector Table]

Connect to Reader or Keyboard

AR-723 (H)

LED

BZ **P3**
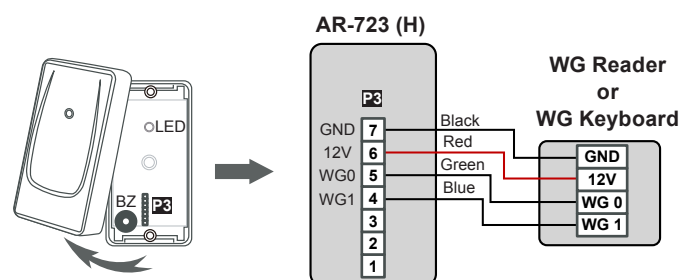
- Please unload the cover before plug in **P3** cable.

P3

GND	7
12V	6
WG0	5
WG1	4
	3
	2
	1

Black / Red / Green / Blue

WG Reader or WG Keyboard

| GND |
| 12V |
| WG 0 |
| WG 1 |

- If you need to use **P4** cable, unplug **P3** cable and then plug in **P4** cable.

Access Controller

About Master Card

MASTER CARD Setting for Stand-Alone

- Plug in **P4** cable instead of **P3** cable, the wire connection is as below figure. After connection, then have power transmission to controller.
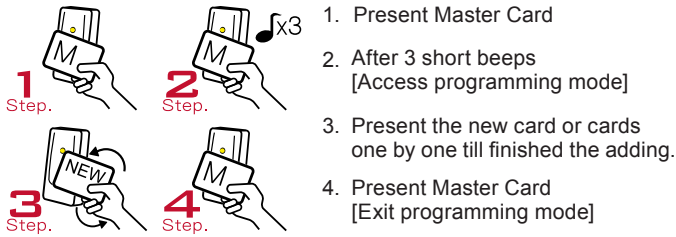

P3		
GND	7	Black
12V	6	Red
	5	
	4	
RX	3	Orange
TE	2	White
TX	1	Yellow

Converter TTL ↔ USB → PC
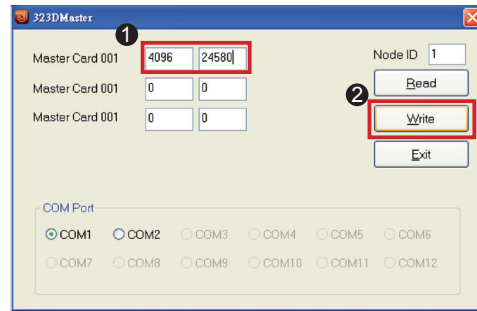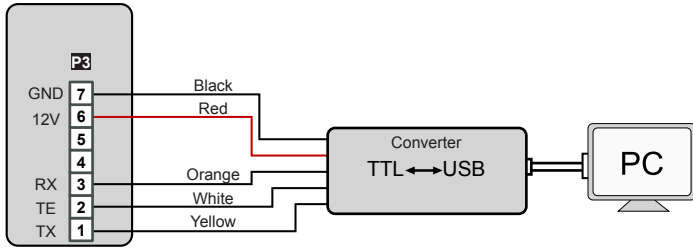
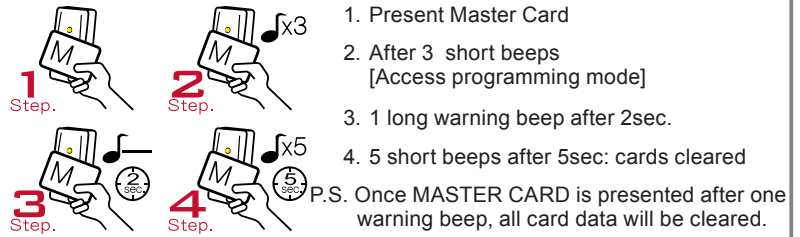- Use the MASTER CARD software

  323DMaster

- Input the MASTER CARD number, and press [Write].
- Cut off and then transmit the power, the master card number will be activated.
- Present the card, and the reader will flash green light 3 times and sound 3 beeps. Then the card becomes MASTER CARD and accesses programming mode.If MASTER CARD is presented again, it will exit programming mode.

Adding Tag

1. Present Master Card
2. After 3 short beeps [Access programming mode]
3. Present the new card or cards one by one till finished the adding.
4. Present Master Card [Exit programming mode]

Deleting All Tags

1. Present Master Card
2. After 3 short beeps [Access programming mode]
3. 1 long warning beep after 2sec.
4. 5 short beeps after 5sec: cards cleared

P.S. Once MASTER CARD is presented after one warning beep, all card data will be cleared.

Operation process

A. Enter/ Exit Program Mode

- **Enter the program mode**

  Input ✱123456# or ✱PPPPPP#

  [e.g.] The Default Value= 123456, if already changed the Master Code= 876112, input ✱876112# → program mode accessed

- **Exit the program mode**

  Input ✱ #

- **Master Code modification**

  Access programming mode → 09✱PPPPPPRRRRRR# [Input the 6-digit new master code twice.]

  [e.g.] Set the Master code to be 876112, input ✱123456# → 09✱876112876112#

B. Set up the password [Only for connect to external K-series reader]

- **M4/M8: Individual pass code**

  Card or PIN: Access programming mode → 12✱UUUUU✱PPPP# [e.g. User address: 00001 and pass code: 1234, input 12✱00001✱1234#]

  Card and PIN: Access programming mode → 13✱UUUUU✱PPPP# [e.g. User address: 00001 and pass code: 1234, input 13✱00001✱1234#]

- **M6: Public pass word**

  Card or PIN: Access programming mode → 15✱PPPP# [Input 4-digit pass code, default value: 4321]

  Card and PIN: Access programming mode → 17✱PPPP# [Input 4-digit pass code, default value: 1234; PPPP=0000: change into Card Only]

C. Lift control

Connect with **AR-401RO16B** to control floors which the user will be able to access.

- **Enable**

  Access programming mode → 24✱002# [002= enable lift control]

- **Single floor**

  Access programming mode → 27✱UUUUU✱FF#

  UUUU=User Address FF=Floor number (01~32 floor)

  [e.g.] User address NO. 45, allow to access the 24th floor: 27✱00045✱24#

- **Multi floors**

  Access programming mode → 21✱UUUUU✱S✱FFFFFFFF#

  [UUUUU=User address S: 4 sets of lift control (Input: 0~3) FFFFFFFF: 8 floors setting (F=0=Disable, F=1=Enable)

  [e.g.] User address NO. 168, only to the 6th and the 20th floor:

  Access programming mode → 21✱00168✱0✱00100000# → 21✱00168✱2✱00001000#

Set	Floor/ Stop							
	F	F	F	F	F	F	F	F
0	8	7	6	5	4	3	2	1
1	16	15	14	13	12	11	10	9
2	24	23	22	21	20	19	18	17
3	32	31	30	29	28	27	26	25

D. Setting Up the Arming [Only for connect to external K-series reader]

● **Alarm conditions:**

1. Arming is enabled

2. Alarm system connected

● **Application:**

1. **Door open too long**: Door is open longer than door relay time plus door close time.

2. **Force open** (Opened without a valid user card): Access by force or illegal procedure.

3. **Door position abnormal**: Arming is enabled and the power is suddenly off then on.

● **Enable/Disable Arming status (for M4/M8; Factory default armingcode is: 1234) :**

Standby Mode	
After door open	Do not open the door
The normal procedure to open door → **Input 4 digit arming code** → #	* → **Input 4 digit arming code** → **Present valid card**
Enter Program Mode	
Enable: Access programming mode → * * #	**Disable:** Access programming mode → * #

※ **[The normal procedure to open door] can refer to [Access Mode].**

Function Default Value

20 * DDD #   ※Default Value

Function	Selection		Value	Application
Attendance	※0: Yes	1: No	001	Networking
Auto Re-lock	※0: Disable	1: Enable	002	Networking/Stand-Alone
Auto Open	※0: Disable	1: Enable	004	Networking/Stand-Alone
Door open button input	0: Disable	※1: Enable	016	Networking/Stand-Alone
Master Controller of Network	※0: Slave	1: Mater	032	Networking

24 * DDD #   ※Default Value

Function	Selection		Value	Application
Auto-open door without cards at auto open zone	※0: Disable	1: Enable	001	Networking/Stand-Alone
Alarm Output/ Lift Control	※0: Alarm Output	1: Lift Control	002	Networking/Stand-Alone
Stop Alarm by door close or by push button	0: None	※ 1: Yes	064	Networking/Stand-Alone

28 * DDD #   ※Default Value

Function	Selection		Value	Application
Dual Door Control	※0: Disable	1: Enable	064	Networking/Stand-Alone
Force Open Alarm Output	※0: Disable	1: Enable	128	Networking/Stand-Alone

Selection= 0(none value)/ 1(1 x each value)

[e.g.] DDD value of Enable "Auto Open" + "Exit by Push Button + "Anti-pass-back"
    =(0x1)+(0x2)+(1X4)+(1x16)+(0x32)+(0x64)+(1x128)=148 ; As a result of that, the command will be 20 * 148 #

Mode4 / Mode6 / Mode8

Mode	Networking/ Stand-Alone	User Capacity	Access Mode	Auto-show Duty time	Event log Capacity	120 Holidays	Anti force	Time Zone	Lift Control	Anti-pass-back
M4	Networking/ Stand-Alone	1,024	1.Card only 2.Card and PIN (4-digit PIN)+ # 3.Card or User address (5-digit) + Individual PIN (4-digit individual PIN) + #	Yes	1,200	Yes	Yes	No	32	Yes
M6	Stand-Alone	65,535	1.Card only 2.Card and PIN (4-digit public PIN= Arming PWD)+ # 3.Card or PIN (4-digit public PIN= Duress code)	No	No	No	No	No	No	No
M8	Networking/ Stand-Alone	1,024	1.Card only 2.Card and PIN (4-digit individual PIN)+ # 3.Card or PIN (4-digit individual PIN)	Yes	1,200	Yes	Yes	No	32	Yes

※ **Mode 6,** the number of users up to 65535, since it reads **CARD CODE**(5 digits) only, unlike that Mode4/Mode8 read **SITE CODE** and **CARD CODE**(10 digits).
    If Access Mode setting to use the PIN, it need to external the K-series Readers.

Factory Reset by its commands

● **When the device is stand-alone (not networking)**

Access programming mode → 20 * 016 # → 24 * 064 # → 26 * 00000 * 01023 * 1 # → 28 * 000 # → 29 * 29 * #

※Note: After the Master Code is changed, factory reset doesn't restore the Master Code back to 123456.

Access Controller

V130311

Command List

Function	Command	Description	Mode
Entering programming mode	* PPPPPP #	PPPPPP=Master Code, default value=**123456**	M4/M6/M8
Exiting programming mode	* #		M4/M6/M8
Exiting programming mode and enabling arming status	* * #		M4/M8
Node ID setting (Connecting to 716E)	00 * NNN #	NNN=Node ID, range: 001~254	M4/M8
Node ID setting (Connecting to PC directly without via 716E)	00 * NNN * VVV * nnn #	NNN=Node ID of Access Controller, VVV=Virtual 716E Node ID, nnn=Door number; range:001~254	M4/M8
Mifare tag / card format (Optional)	01 * N #	N: 0=ISO14443A; 1=ISO14443B; 2=ISO15693; 3=I Code1; 4=I Code2 PS.1. Please select the compliance,first. 2. Make sure reader and card using the same compliance.	M4/M8
Door relay time setting	02 * TTT #	TTT=Door relay time 000= Output constantly 001~600=1~600 sec. 601~609=0.1~0.9 sec.	M4/M6/M8
Alarm relay time setting	03 * TTT #	TTT=Alarm relay time 001~600=1~600 sec.	M4/M6/M8
Control mode setting	04 * N #	N=Mode 4=Mode4; 6=Mode6; 8=Mode8	M4/M6/M8
Arming delay time setting	05 * TTT #	TTT=Alarm relay time 001~600=1~600 sec.	M4/M6/M8
Alarm delay time setting	06 * TTT #	TTT=Alarm delay time 001~600=1~600 sec.	M4/M6/M8
Master card setting	07 * SSSSS * EEEEE #	SSSSS-EEEEE=00000-01023 (00000-03000 for AR-725H); SSSSS=Starting user address; EEEEE=Ending user address	M4/M8
Auto-open time zone setting	08 * N * HHMMhhmm * 6543217H #	N= 0(1st time zone) / 1(2nd time zone) HHMM= Starting time; hhmm= ending time (i.e.: 08301200=08:30 to 12:00) 6543217H= 7 days of week (Sat/Fri/Thu/Wed/Tue/Mon/Sun)+ Holiday (F= 0: disable; 1: enable); Holidays establish by the software.	M4/M6/M8
Master code setting	09 * PPPPPPRRRRRR #	PPPPPP=New master code RRRRRR=Repeat the new master code	M4/M6/M8
Setting — Suspend tag(M6)	10 * SSSSS * EEEEE #	* =Suspend 9 =Delete; SSSSS=Starting user address, EEEEE=Ending user address	M4/M6/M8
Setting — Delete tag(M4)	10 * SSSSS 9 EEEEE #		M6
Set a sequence of cards as "read and access"	11 * SSSSS * EEEEE #	SSSSS=Starting card number; EEEEE=Ending card number	M4/M8
Active the suspended cards	11 * SSSSS * EEEEE #	SSSSS=Starting user address; EEEEE=Ending user address	M4/M8
Set the cards as Card mode OR PIN mode by user address	12 * UUUUU * PPPP #	Access mode: **Card or PIN**; UUUUU=user address; PPPP=4-digit pass code 0001~9999	M4/M8
Set the cards as Card AND PIN mode by user address	13 * UUUUU * PPPP #	Access mode: **Card and PIN**; UUUUU=user address; PPPP=4-digit pass code 0001~9999	M4/M6/M8
M4: Duress code setting / M6: Public PIN setting (Card or PIN)	15 * PPPP #	PPPP=4-digit pass code (default value=**4321**) P.S. Duress code will be unavailable and become a public PIN at access mode "**Card or PIN**" of **M6**	M4/M8
Card number modification	16 * UUUUU * SSSSSCCCCC #	UUUUU= User address; SSSSS=5-digit site code; CCCCC=5-digit card code	M4/M6/M8
M4: Arming pass code setting / M6: Public PIN setting (Card and PIN)	17 * PPPP #	PPPP=4-digit pass code (default value=**1234**; disable Arming PWD=**0000**) P.S. Arming PWD code will be unavailable and become a public PIN at access mode "**Card PIN**" and of **M6**	M4/M6/M8
Door open waiting time	18 * TTT #	TTT=Door open waiting time: 001~600=1~600 sec.; default value: 15 sec.	M4/M8
Set the card by induction (M4)	19 * UUUUU * QQQQQ #	UUUUU=User address; QQQQQ=Card quantity(**00001**=Continuously inducting)	M4/M6/M8
Reader additional setting	20 * DDD #	Please refer to function default value for details.	M4/M6/M8
Lift control setting: multi-doors	21 * UUUUU * S * FFFFFFFF #	UUUUU=User address, S=4 sets of lift control(0~3); FFFFFFFF=8 assigned floor (F=0: Disable, 1: Enable)	M4/M8
Add/Delete tag by induction (M6 only)	22 * N #	N=0(Delete tag); N=1(Add tag)	M6
AR-401ROsite number dip switch	23 * NNN * TTT #	NNN=site number, TTT= relay time: 000~600=1~600 sec.	M4/M8
Controller parameter setting	24 * DDD #	Please refer to function default value for details.	M4/M6/M8
Controller time clock setting	25 * YYMMDDHHmmss #	YYMMDDHHmmss: Year/ Month/ Day/ Hour/ Min./ Sec.	M4/M6/M8
Anti-pass-back (Enable user)	26 * SSSSS * EEEEE * N #	SSSSS=Starting user address; EEEEE=Ending user address; N=0/Enable; N=1/Disable; N=2/Initial	M4/M8
Single floor setting	27 * UUUUU * FF #	UUUUU=User Address; FF=Floor (01~32 floor)	M4/M8
Dual door control/ Active or inactive arming for force open	28 * DDD #	Please refer to function default value for details.	M4/M6/M8
Delete all tags	29 * 29 * #		M4/M6/M8
Enable the security trigger signal (with AR-721RB)	34 * 064 # (Enable) / 34 * 000 # (Disable)	To Change the "Door Lock" become the security trigger signal, when controller is connected with AR-721RB.	M4/M6/M8