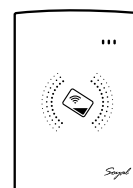
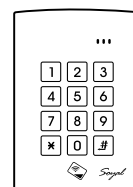


Flush Mount Illuminated Controller/Reader

AR-888-H / AR-888-K / AR-888-US



(EU)



(US)

1. Product Features

Flush-Mount Backlight Multi-Function Controller AR-888-H

- Optional 125KHz or 13.56MHz frequency, HB: 125KHz induction frequency / HD: 13.56MHz induction frequency
- Support for elevator scheduling control.

Flush Mount Illuminated Access Reader AR-888-K

- Elegant design with LED frame and illuminated panel

Flush Mount Illuminated dual-band Access Reader AR-888-US

- Diverse Panel Materials, including Tempered Glass and Scratch-Resistant Acrylic Panels
- Elegant design with LED frame and illuminated panel

2. Application

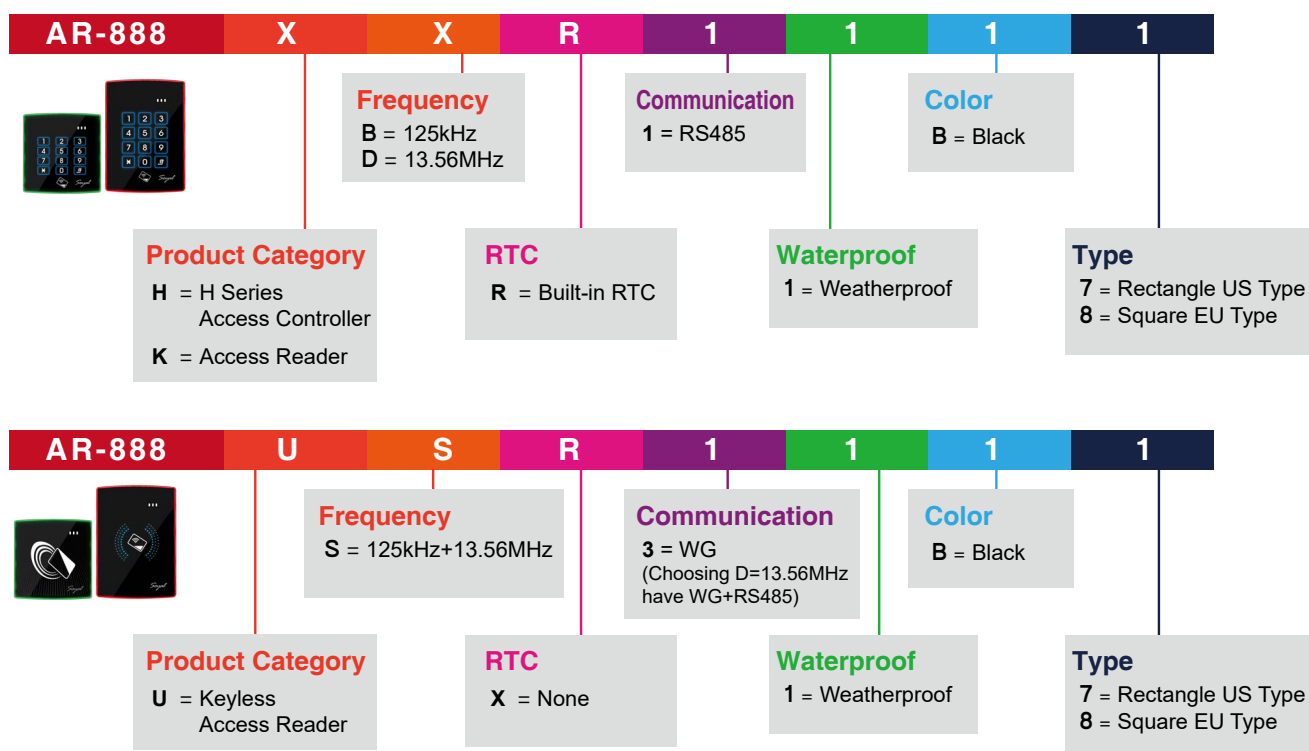


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01. Command List (Compatible with AR-888-H)

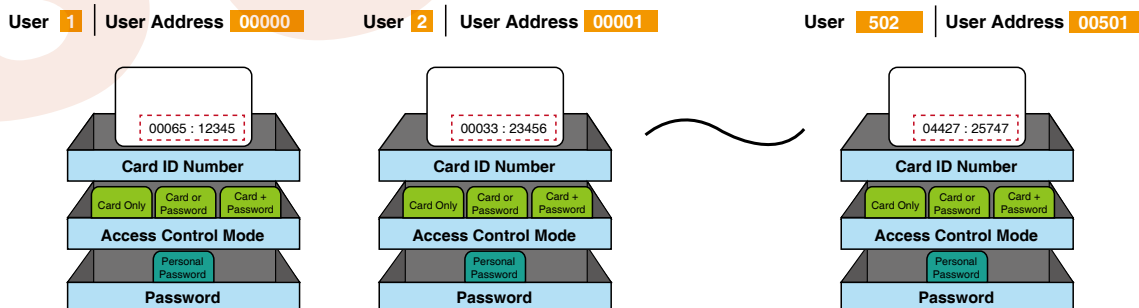
	Function	Command	Description
Master Code Setting	Enter program mode	* P P P P P #	P P P P P=Master Code, default value=123456
	Master code setting	09 * P P P P P R R R R R #	P P P P P=6-digit new master code R R R R R=Reconfirm the new master code
Card Setting Commands	Suspend tag	10 * S S S S S * E E E E E #	* =Suspend 9 =Delete;
	Delete tag	10 * S S S S S 9 E E E E E #	S S S S S=Starting User Address ; E E E E E=Ending User Address
	Add a batch of sequential cards by inputting card number (M6)	11 * S S S S S * E E E E E #	S S S S S=Starting card number E E E E E=Ending card number
	Recover the suspended cards(M4/M8)	11 * S S S S S * E E E E E #	S S S S S=Starting card number ; E E E E E=Ending card number
	Card number modification(M4/M8)	16 * U U U U U * S S S S S C C C C C #	U U U U U= User Address; S S S S S=5-digit site code; C C C C C= 5-digit card code
	Add card by presenting(M4/M8)	19 * U U U U U * Q Q Q Q Q #	U U U U U=User Address; Q Q Q Q Q=Card quantity (00001: for adding a single card or a batch of random numbering cards)
	Add/Delete tag by presenting(M6)	22 * N #	N=0(Delete tag); N=1(Add tag)
	Delete all tags	29 * 29 * #	
	Enable/Disable Door open for any Tag	0 #	After enabling Door Open For Any Tag, all cards in same frequency as controller can pass directly.
Additional Card Function Setting	Mifare tag / card format (Optional) (M4/M8)	01 * N #	N:0=ISO14443A ; 1=ISO14443B 2=ISO15693 ; 3=I Code1 ; 4=I Code2 PS.1. Please select the transmission standard first. 2. Ensure both reader and card using the same transmission standard.
	Administrator Card setting (M4/M8)	07 * S S S S S * E E E E E # (07 * Starting User Address * Ending User Address #)	S S S S S-E E E E E=00000-00255 (Administrator Card can enter the program mode after present the card and press in 3 seconds, also can exit program mode by present the card.)
	Enable the security trigger signal (with AR-721RB)	34 * D D D #	Change the "Arming" to the security trigger signal, when controller is connected with AR-721RB. Please refer to function default value for details.
Access Mode Setting	Control mode setting	04 * N #	N=4: M4; N=6: M6; N=8: M8
	Card or PIN (M4/M8) Modify the PIN with user address, change the pass mode into Card or PIN	12 * U U U U U * P P P P #	Pass by Card or PIN; U U U U U=User Address; P P P P=4-digit PIN (0001~9999); 0000=Set as card only
	Card and PIN (M4/M8) Modify the PIN with user address, change the pass mode into Card and PIN	13 * U U U U U * P P P P #	Pass by Card and PIN; U U U U U=User Address; P P P P=4-digit PIN (0000~9999)
	Card or PIN(M6) Set up the mutual PIN in Card or PIN mode	15 * P P P P #	P P P P=4-digit PIN(0001~9999 ; default value=4321)
	Card and PIN(M6) Set up the mutual PIN in Card and PIN mode	17 * P P P P #	P P P P=4-digit PIN(0001~9999 ; default value=1234) 0000= Set as card only
Arming /Duress Function Setting (M4/M8 applicable , but not M6)	Setting duress PWD(M4/M8)	15 * P P P P #	P P P P=4-digit PIN(0001~9999 ; default value=4321) ※The Duress Code 0000 means that disable Duress Function and the default value is set as 0000 already.
	Setting arming PWD(M4/M8)	17 * P P P P #	P P P P=4-digit PIN(0001~9999 ; default value=1234)
Node ID Setting	Node ID setting (Connected to 716E)(M4/M8)	00 * N N N #	N N N=Node ID of Access Controller (range: 001~016)
	Node ID setting (Connected to the PC directly without 716E) (M4/M8)	00 * N N N * V V V * n n n #	N N N=Node ID of Access Controller (range: 001~254) V V V=Virtual 716E Node ID, n n n=Door number (range:001~254)
Time /Delay Setting	Door Relay Time setting	02 * T T T #	T T T=Door relay time 000= Output continuously 001~600=1~600 sec. 601~609=0.1~0.9 sec.
	Alarm Relay Time setting	03 * T T T #	T T T=Alarm relay time 000= Output continuously 001~600=1~600 sec.
	Arming Delay Time setting	05 * T T T #	T T T=the buffer time before entering arming mode 001~600=1~600 sec.
	Alarm Delay Time setting	06 * T T T #	T T T=the buffer time before the alarm is activated 001~600=1~600 sec.
	Arming Pulse Time setting	14 * T T T #	T T T=Arming output time; 000=output continuously 001~250=0.1~2.5 sec.
	Door Close Time	18 * T T T #	T T T=Door Close Time: 001~600=1~600 sec.; default value: 15 sec.
	Controller time clock setting	25 * Y Y M M D D H H m m s s #	Y Y M M D D H H m m s s=Year/ Month/ Day/ Hour/ Min./ Sec.
	Same tag reading interval time	31 * T T T T #	T T T T=10~6000 (Base on 10ms, range from 10 to 6000; default value: 1 sec.: 0100)

	Function	Command	Description
Controller Additional Function Setting	Reader additional setting	20 * DDD #	Please refer to function default value for details.
	Controller parameter setting	24 * DDD #	
	Double Door Control / Force Open Alarm	28 * DDD #	
	Auto-open time zone setting	08 * N * HHMMhhmm * 7123456H #	N= 0 (1st time zone) / 1 (2nd time zone) HHMM= Starting time; hhmm= ending time (i.e.: 08301600=08:30 to 16:00) 7123456H= 7 days of week (Sun/Mon/Tue/Wed/Thu/Fri/Sat)+ Holiday(H= 0: disable; 1: enable); Holidays can be set by 701Client software.
	Anti-pass-back (Enable user)	26 * SSSSS * EEEEE * N #	SSSSS=Starting User Address; EEEEEE=Ending User Address; N=0: Enable; N=1: Disable; N=2: Reset
	Enable/Disable keypad lock	* # (simultaneously)	After enabling keypad lock function, press any button will only has two beeps and no reaction. Disable the keypad lock function will bring controller keypad function back to normal. (only Keypad Controllers have this function ex. AR-721-H; Touch Keypad Controllers do not have this function ex. AR-725-H)
Lift Control Setting	Controller parameter setting	24 * 002 #	
	Lift control setting: multi-floor(M4/M8)	21 * UUUUU * S * FFFFFFFF #	UUUUU=User Address, S=4 sets of lift control (0~3); FFFFFFFF=8 assigned floor(F=0: Disable, 1: Enable)
	AR-401RO16 Lift Relay Activated TM (M4/M8)	23 * NNN * TTT #	NNN=site number, TTT= relay time: 000~600=1~600 sec.
	Lift control setting: single floor(M4/M8)	27 * UUUUU * FF #	UUUUU=User Address; FF=Floor (01~32 floor)
Exit Program Mode	Exit program mode	* #	
	Exit program mode and enter arming mode(M4/M8)	* * #	

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

※ Note 1: User Address Description

Each H-Series card reader can store 1,024 (or 3,000) user addresses. Each user must be assigned a dedicated slot, referred to as a "User Address." Before use, a user address must be selected for each user. Each address includes settings such as the Card ID number, Access Control Mode, and Password.



Example :

User Address	Add card by presenting 19 * UUUUU * QQQQQ #	Card number modification 16 * UUUUU * SSSSSCCCCC #	Access Control Mode	
			Card or PIN 12 * UUUUU * ??? #	Card and PIN 13 * UUUUU * ??? #
00000				
00001	19 * 00001 * 00001 #	16 * 00001 * 0003323456 #	12 * 00001 * 1234 #	13 * 00001 * 1234 #
...	...	...	...	...
00501	19 * 00501 * 00001 #	16 * 00501 * 0002734567 #	12 * 00501 * 1234 #	13 * 00501 * 1234 #
...	...	...	...	...

UUUUU = User Address ; QQQQQ = Card quantity (00001: for adding a single card or a batch of random numbering cards) ;
SSSSS = 5-digit site code ; CCCCC = 5-digit card code ; ??? = 4-digit PIN (0000~9999)

02. Master Code modification / Change the Node ID of Controller(Compatible with AR-888-H)

A. Enter / Exit Program Mode

• Enter the program mode

Input *123456 # or *PPPPPP #

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

• Exit the program mode

Input * #

• Master Code modification

Enter program 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. Change the Node ID of Controller

Enter program mode → 00 *NNN # [Node ID: 001~254; if the access controller is connected to AR-716E, its Node ID will be 001~016.]

03. M4 / M6 / M8 (Compatible with AR-888-H)

Mode	Networking/ Standalone	User Capacity	Access Mode	Auto-show Duty time	Event log Capacity	120 Holidays	Duress Function	Time Zone	Lift Control	Anti-pass- back
M4	Networking/ Standalone	3,000	1.Card only 2.Card and PIN (4-digit PIN)+ # 3.User Address (5-digit) + PIN (4-digit Private PIN) + #	Yes	1,500	Yes	Yes	11	32	Yes
M6	Standalone	65,535	1.Card only (using 17* command to set Arming PWD as 0000) 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 (Default Value)	Networking/ Standalone	3,000	1.Card only 2.Card and PIN (4-digit Private PIN)+ # 3.Card or PIN (4-digit Private PIN)	Yes	1,500	Yes	Yes	11	32	Yes

※ Confirm the access mode by assessing the beep sounds while entering the Program Mode(M4-4 beeps/M6-6 beeps/M8-8 beeps)

※ M6: the user capacity can be 65535 because it only reads 5-digits **CARD CODE**, while in M4/M8 it reads both **SITE CODE** and **CARD CODE**(10 digits).

※ Default Card UID Length is 4 (Could not change by command and only be able to change by customized firmware)

C. Set up M4/M6/M8

Enter program mode → 04 *N # [N=4/6/8]

(Note : The modification of controller mode between M4/M8(networking) and M6(standalone) will reset the data, user data will be required to rebuild.)

04. Adding and Deleting Tag (Compatible with AR-888-H)

M4/M8

Add New Tags

• Add by Presenting Tags (apply to Single Tag or a Batch of Tags)

※**Important Notice:** Please remember the last user address being added to make sure the old user data is not being over written with the new card in the future.

Add Non-consecutive Tags:

[Add single tag] Add a new tag for selected user address 100:

Enter program mode → 19 *00100 *00001 # → Present the tag → Successfully added tag of user 100

[Add 2 additional tags] Add new tags to the following user address 101-102:

Enter program mode → 19 *00101 *00001 # → Present (User 101) card → Present (User 102) card

→ Successfully added tags of user 101-102

[Add 10 additional tags] Add new tags to the following user address 103-112

Enter program mode → 19 *00103 *00001 # → Present (User 103) card → Present (User 104) card → Present (...) card
→Present (User 111) card →Present (User 112) card →Successfully added tags of user 103-112

Add Consecutive Tags:

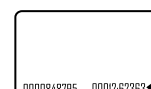
[Add 50 consecutive tags] Add 50 new tags with consecutive card number following user address 00050-00150:

Enter program mode → 19 *00050 *001001 # →Successfully added tags of user 50-150

Tag Information (125kHz) ※ For Mifare tags, the separator between Site Code & Card Code is comma ","



0000848795
000262363
— CARD CODE
— SITE CODE



0000848795 000262363
— CARD CODE
— SITE CODE

Suspend Tags

• Suspend Single Tag or a Batch of Tags (by Card Code in Sequence)

Input * 123456 # (or Master Code) → 10 * SSSSS * EEEEE #

[e.g.] Suspend by Card Code: 00058

Enter program mode → 10 * 00058 * 00058 #

[e.g.] Suspend by Card Code: 00058~00063

Enter program mode → 10 * 00058 * 00063 #

Delete Tags

• Delete Single Tag or a Batch of Tags (by Card Code)

Input * 123456 # (or Master Code) → 10 * SSSSS 9 EEEEE #

[e.g.] Delete by Card Code: 00058

Enter program mode → 10 * 00058 9 00058 #

[e.g.] Delete by Card Code: 00058~00063

Enter program mode → 10 * 00058 9 00063 #

• Delete All Tags

Input * 123456 # (or Master Code) → 29 * 29 * #

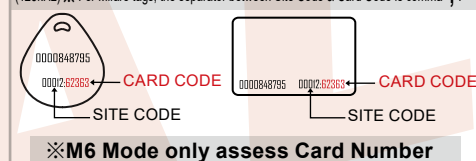
M6

The default value of access function of M6 is Card and PIN, it will have 3 beeps for hinting you input PIN number after card presentation. Access function modification please refer the table below:

Access Mode	Command	Description
Card and PIN	17 * ??? # 15 * 0000 #	???=4-digit PIN(0001~9999 ; default value=1234)
Card only	17 * 0000 # 15 * 0000 #	
Card or PIN	17 * 0000 # 15 * ??? #	???=4-digit PIN(0001~9999 ; default value=4321)

Tag Information

(125kHz) * For Mifare tags, the separator between Site Code & Card Code is comma ",".



Add New Tags

• Add a Single Tag (by Presenting the Tag) :

Input * 123456 # (or Master Code) → 22 * 1 #

[e.g.] Add single tag :

Enter program mode → 22 * 1 #

→ Present the tag to Access Controller → OK

• Add a Batch of Tags (by Presenting the Tags):

Input * 123456 # (or Master Code) → 22 * 1 #

[e.g.] There are 20 tags to add:

Enter program mode → 22 * 1 #

→ Present 20 tags one by one → OK

• Add Single Tag (by Card Code) * Card Code should not be repeated

Input * 123456 # (or Master Code) → 11 * SSSSS * EEEEE # → OK

[e.g.] Add one card with Card Code 61632

Enter program mode → 11 * 61632 * 61632 # → OK

• Add a Batch of Tags (by Card Code) * Card Code should not be repeated * by Card Code in Sequence

Input * 123456 # (or Master Code) → 11 * SSSSS * EEEEE # → OK

[e.g.] Add a batch of user with sequential Card Number of user address 12058 until 12559 (total 500 tags)

Enter program mode → 11 * 12058 * 12599 # → OK

Delete Tags

• Delete Tag (by Presenting the Tag) :

Input * 123456 # (or Master Code) → 22 * 0 #

[e.g.] Delete single tag :

Enter program mode → 22 * 0 # → Present the tag to Access Controller → OK

• Delete Tags (by Card Code) :

Input * 123456 # (or Master Code) → 10 * SSSSS 9 EEEEE # → OK

[e.g.] Delete a tag with card code 62362

Enter program mode → 10 * 62362 9 62362 # → OK

• Delete All Tags:

Input * 123456 # (or Master Code) → 29 * 29 * #

05. Operation process (Compatible with AR-888-H)

D. Set up the password

• M4/M8: Private PIN

Card or PIN: Enter program mode → 12 * UUUUU * PPPP # [e.g. User Address: 00001 and pass code: 1234, input 12 * 00001 * 1234 #]

Card and PIN: Enter program mode → 13 * UUUUU * PPPP # [e.g. User Address: 00001 and pass code: 1234, input 13 * 00001 * 1234 #]

• M6: Public PIN

Card or PIN: Enter program mode → 15 * PPPP # [Input 4-digit PIN, default value: 4321; PPPP=0000: cancel the function of simply inputting PIN to get access]

Card and PIN: Enter program mode → 17 * PPPP # [Input 4-digit PIN, default value: 1234; PPPP=0000: access mode will be "Card Only"]

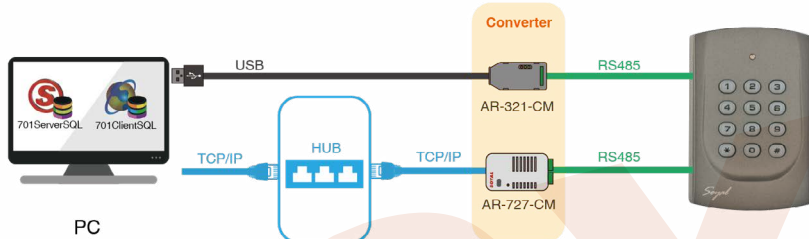
Change the Node ID & Door Number of Controller

Do Not Duplicate Station Numbers

The default station number of the controller is 001. Since identical station numbers cannot exist on the same network, please assign a unique station number to each controller before connecting.

The station number and door number are default set to 001, and there are two ways to configure them:

• Directly connect controller to PC (without going through multi door controllers)



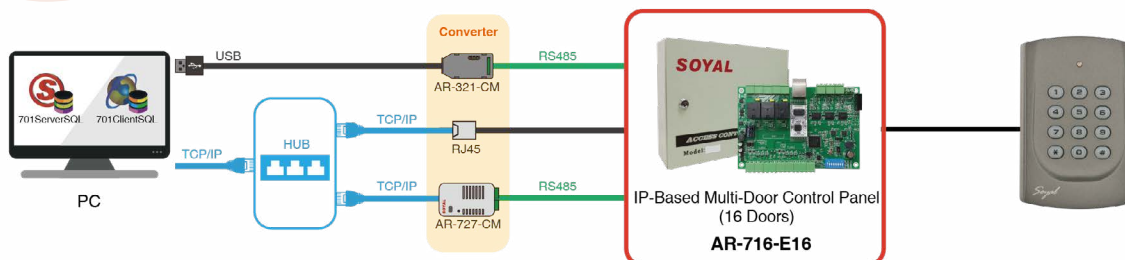
When changing the controller station number, the door number will be automatically set to match the station number.

Enter program mode → 00 * NNN # [NNN = Node ID, setting range 001~254]

[e.g.] Controller Node ID and Door Number are both set to 3. Enter program mode → 00 * 003 #

※ If the customer needs to set a passage door name for each door and display it in the 701ClientSQL software, it is necessary to set the door number for each controller. In this case, the door number and station number are independent parameters. Please refer to the FAQ for the modification process : [How to setup the door number of controller and reader in different configurations?](#)

• Controller connect to multi-door control panel



When connected to a multi-door controller such as AR-716-E16 or AR-716-E18, the station number is fixed to 1-16. When you change the controller's station number, it will automatically set the door number to be consistent with the station number.

Enter program mode → 00 * NNN # [NNN=Node ID, setting range 001~016]

[e.g.] Controller Node ID and Door Number are both set to 3. Enter program mode → 00 * 003 #

※ Door number settings are primarily configured through the multi-door controller parameter settings screen. Please refer to the relevant documentation for the configuration process : [AR-716-E16 Manual](#)

※ If the customer needs to set a passage door name for each door and display it in the 701ClientSQL software, it is necessary to set the door number for each controller. In this case, the door number and station number are independent parameters. Please refer to the FAQ for the modification process : [How to setup the door number of controller and reader in different configurations?](#)

E. Double Door Control (M4/M8)

Controller with a reader to perform the "Double Door Control".

Enter program mode → 28 * 064 # [064= Double Door Control]

F. Anti-pass-back (M4/M8)

Usually, anti-pass-back is commonly applied to parking areas in order to prevent from multi-entry with one card at a time, or to locations that need entry and exit control.

• Enable controller

Enter program mode → 20 * DDD # [128= Anti-pass-back(0=Disable; 1=Enable)/ 064=Entrance/Exit(0=Exit; 1=Entrance).]

[e.g.] Enable Anti-pass-back, and set to Exit door= (128 x 1) + (064 x 0) = 128

Enter program mode → 20 * 128 # (Please refer to function default value for details.)

• Enable card

Enter program mode → 26 * SSSSS * EEEEE * N #

[SSSSS= Starting User Address; EEEEE= Ending User Address; N=0(control)/ 1(Not control)/ 2(reset)]

[e.g.] Enable the anti-pass-back function of User Address from 00152 to 00684: 26 * 00152 * 00684 * 0 #

[e.g.] The anti-pass-back function of User Address 00154 has been enabled. After presenting the card to get in, the user doesn't present the card to leave. When s/he tries to present the card to get in again, since the in-in sequence violates the anti-pass-back rule, s/he will be rejected. To solve this problem, you can reset it as follows. Enter program mode → 26 * 00154 * 00154 * 2 # → Reset

G. Auto-Open Time Zone

Door will remain open after flashing one valid card. There are 2 time zones supported when Standalone, and 63 time zones when connected to AR-716-E. Please refer to paragraph [Function Default Value](#) below to ensure command 20 * DDD # / 24 * DDD # will not reset the functions that already had been changed.

• Enable/Disable auto-open time zone

Enter program mode → 20 * 004 # [004= enable Auto-Open Time Zone; 000= disable Auto-Open Time Zone]

• Enable/Disable auto open door without presenting one valid card

Enter program mode → 24 * 001 # [001=enable auto-open door without presenting one valid card : 000=disable auto-open door without presenting one valid card]

• Set up auto-open time zone

Enter program mode → 08 * N * HHMMhhmm * 7123456H #

N: 2 sets of auto-open zone (N=0=1st set; N=1=2nd set)

HHMMhhmm=Starting time to ending time (e.g. 08301200=08:30 to 12:00)

7123456H= 7 days of a week (Sun/Mon/Tue/Wed/Thu/Fri/Sat) + Holiday (H= 0: disable; 1: enable); Holidays can be set via 701Client software.

[e.g.] To set the second time zone as 9:30 AM to 4:20 PM, Monday, Wednesday and Friday: 08 * 1 * 09301620 * 01010100 # → Done

※ 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](#).

H. Lift control

Connect with AR-401-RO16 to control access floors of users.

• Enable

Enter program mode → 24 * 002 # [002= enable lift control]

• Single floor

Enter program mode → 27 * UUUUU * FF #

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

[e.g.] User Address NO. 45, allowed to access the 24th floor: 27 * 00045 * 24 #

Please refer to below floor chart

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

• Multi floors

Enter program 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:

Enter program mode → 21 * 00168 * 0 * 00100000 # → 21 * 00168 * 2 * 00001000 #

I. Setting Up the 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

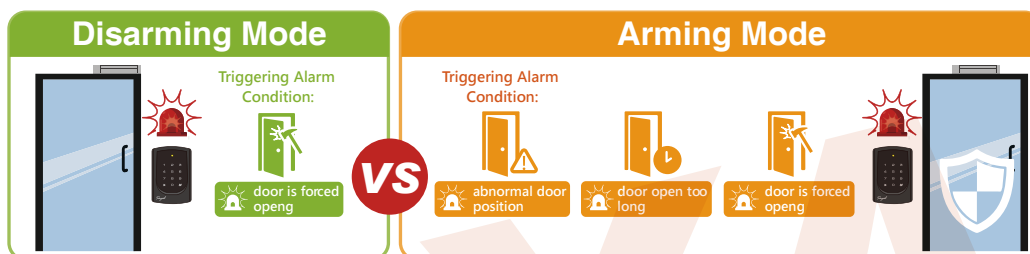
• Alarm triggering condition of Arming Mode:

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.

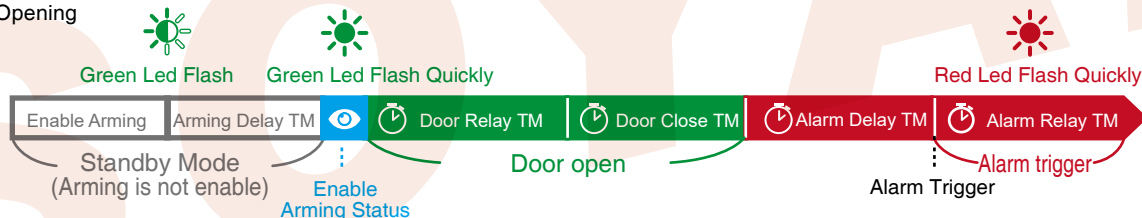
2. Exceed max. open time: Door is opened exceeding door maximum open time limit plus door close time.

3. Forced open: Access by force or illegal procedure, rather than valid card, PIN or biometric recognition.

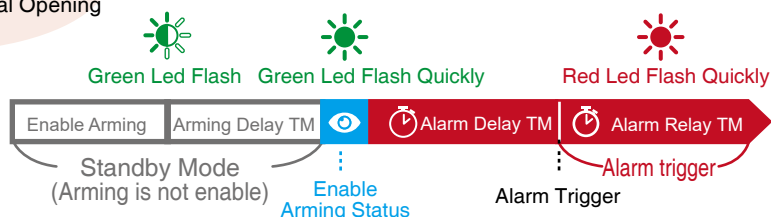


• Arming Setting and Alarm Trigger Procedure :

1. Normal Opening



2. Abnormal Opening



• Enable/Disable Arming status (for M4/M8):

Enter Programming Mode
Enable: Enter program mode → * * #
Disable: Enter program mode → * #

Without Enter Programming Mode (Standby Mode): Enter Arming Code (default value of arming PWD is: 1234)
After door open : The normal procedure to open door → Input 4-digit arming PWD → #
Do not open the door : * → Input 4-digit arming PWD → Present a valid card

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

※ Read the [Command List-Arming /Duress Function Setting] below to modify arming PWD.

※ M6 is Standalone Mode, the mode is without Arming /Duress Function.

More Details:

- [SOYAL Security Related Function](#)

06. Function Default Value (Compatible with AR-888-H)

AR-888-H

20 * DDD #				※Default Value
Function	Selection		Value	Application
Time Attendance	※0: Yes	1: No	001	Networking
Auto Relock	※0: Disable	1: Enable	002	Networking/Standalone
Auto Open	※0: Disable	1: Enable	004	Networking/Standalone
Exit by RTE Button	0: Disable	※1: Enable	016	Networking/Standalone
Master Controller of Network	※0: Slave	1: Mater	032	Networking
Entrance/Exit	※0: Exit	1: Entrance	064	Networking
Anti-pass-back	※0: Disable	1: Enable	128	Networking

Select the desired function, Weighted Value = Selection Index (0 or 1) x Value.

[e.g.] DDD (total weighted value of all functions): Enable "Auto Open" + "Exit by RTE Button" + "Anti-pass-back" = $1 \times 004 + 1 \times 016 + 1 \times 128 = 148$; As a result of that, the command will be 20 * 148 #.

28 * DDD #				※Default Value
Function	Selection		Value	Application
Double Door Control	※0: Disable	1: Enable	064	Networking/Standalone
Force Open Alarm Output	0: Disable	※1: Enable	128	Networking/Standalone

24 * DDD #				※Default Value
Function	Selection		Value	Application
Auto Open without Presenting in Auto-open Time Zone	※0: Disable	1: Enable	001	Networking/Standalone
Alarm Output/ Lift Control	※0: Alarm Output	1: Lift Control	002	Networking/Standalone
Stop Alarm by pressing RTE Button or Closing the Door	0: None	※1: Yes	064	Networking/Standalone
Doorbell	※0: Disable	1: Enable	128	Networking/Standalone

34 * DDD #				※Default Value
Function	Selection		Value	Application
Enable the RF after door sensor closed to GND	※0: Deactivate	1: Activate	001	Networking/Standalone
Invalid card to activate alarm relay	※0: Deactivate	1: Activate	002	Networking/Standalone
Turn off all sounds of beeper	※0: Deactivate	1: Activate	003	Networking/Standalone
Mute the sounds of egress button (RTE)	※0: Deactivate	1: Activate	004	Networking/Standalone
Reserved	※0: Deactivate	1: Activate	016	Networking/Standalone
Keep beeping while arming is enabled	※0: Deactivate	1: Activate	032	Networking/Standalone
Door relay connected to AR-721RB (suited to models without relay built-in)	※0: Deactivate	1: Activate	064	Networking/Standalone
Arm relay connected to AR-721RB (suited to models with relay built-in)	※0: Deactivate	1: Activate	128	Networking/Standalone

07. Factory Reset by its commands (Compatible with AR-888-H)

Reset User Data	Reset User Data & Controller Parameter (incl. Master Code)	Reset User Data & Controller Parameter (incl. Master Code) & Reset Parameter Setting- SOR
Enter program mode → 29 * 29 * # → Exit the programming mode	Enter program mode → 29 * 20 * # → Exit the programming mode	Enter program mode → 29 * 21 * # → Exit the programming mode

※ If forgotten the current Master Code, Reset through software tools is required. Please refer to the FAQ for more detail : [How to change or reset different kinds of Controller Settings, including Master Code, Parameter Setting and User Data?](#)

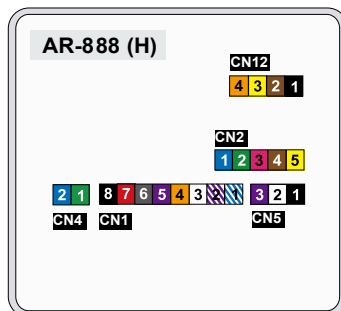
08. Notice

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. 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 make the reader malfunction.

3.Power supply:The standard installation: Door relay and lock use the same power supply, and reader use independent power supply.

09. Connector Table



888-H Cable : CN1

Wire Application	Pin	Color	Description
Lock Relay	1	Blue White	(N.O.) DC24V1Amp
	2	Purple White	(N.C.) DC24V1Amp
Common-COM-Point	3	White	(COM) DC24V1Amp
Door Sensor	4	Orange	Negative Trigger Input
Exit Switch	5	Purple	Negative Trigger Input
Alarm Relay	6	Gray	Low output; Max 12V/100mA (Open Collector)
Power	7	Thick Red	DC Power 12V
	8	Thick Black	DC Power 0V

888-K/U Cable : CN1

Wire Application	Pin	Color	125kHz Description	13.56MHz Description
	1	—	—	—
	2	—	—	—
	3	—	—	—
Output Selection	4	Orange	—	SET2
	5	Purple	—	SET1
Card Present	6	Gray	—	Reading card Active Low
Power	7	Thick Red	DC Power 12V	DC Power 12V
	8	Thick Black	DC Power 0V	DC Power 0V

Cable : CN2

Wire Application	Pin	Color	888-H Description	888-K/U (125kHz , 13.56MHz) Description
Wiegand	1	Thin Blue	Wiegand DAT:1 Input	—
	2	Thin Green	Wiegand DAT:0 Input	—
Beeper	3	Pink	Beeper Output 5V/100mA, Low	Beeper Output 5V/100mA, Low
LED	4	Brown	LED Green Output 5V/20mA, Max	LED Green Output 5V/20mA, Max
	5	Yellow	LED Red Output 5V/20mA, Max	LED Red Output 5V/20mA, Max

Cable : CN4

Wire Application	Pin	Color	888-H Description	888-K/U (13.56MHz) Description
RS-485 Port	1	Green	RS-485(B-)	RS-485(B-)
	2	Blue	RS-485(A+)	RS-485(A+)

888-H Cable : CN5

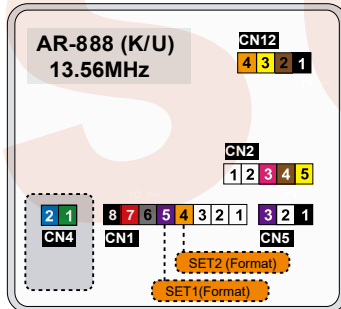
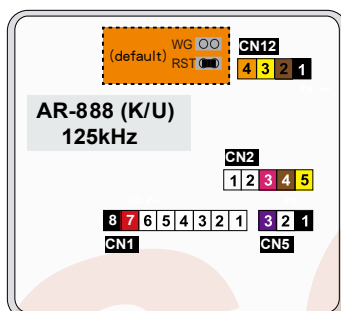
Wire Application	Pin	Color	Description
	1	Black	GND.
3-PIN Connector	2	White	Duress
	3	Purple	Arming/ Security trigger signal

888-K/U (125kHz , 13.56MHz) Cable : CN5

Wire Application	Pin	Color	Description
GND.	1	Black	GND.
	2	White	WG 0 Output
WG Output	3	Purple	WG 1 Output

Cable : CN12

Wire Application	Pin	Color	888-H Description	888-K/U (125kHz , 13.56MHz) Description
GND.	1	Black	GND.	GND.
LED	2	Brown	GLE Input (Active High)	GLE Input (Active High)
	3	Yellow	RLED Input (Active High)	RLED Input (Active High)
Tamper	4	Orange	Tamper Switch(Active Low)	Tamper Switch(Active Low)

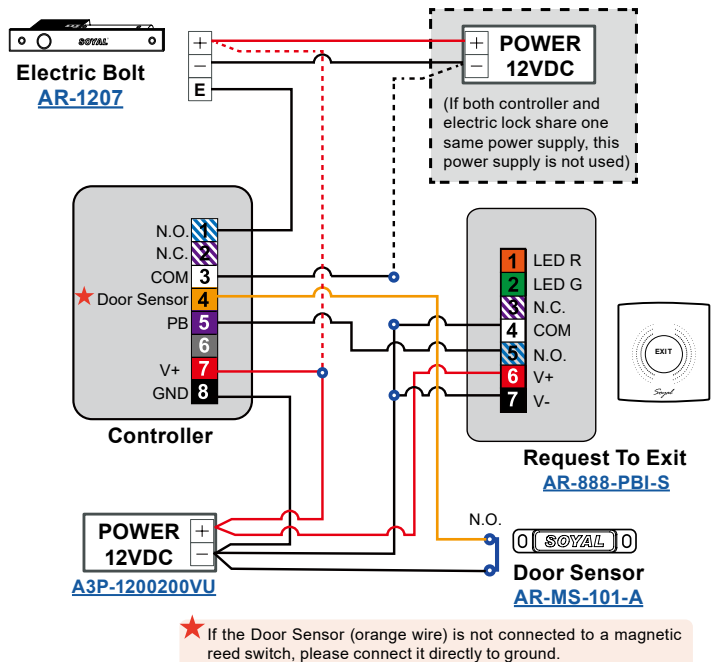


AR-888 (K/U) 125kHz WG/ABA/RS232 Format (By order or changable by shorted on PCB)		
Format	WG	RST/Bits
WG 26	ⓧ Open	ⓧ Open
WG 34(default)	ⓧ Open	ⓧ Short
ABA-8	ⓧ Short	ⓧ Short
ABA-10	ⓧ Short	ⓧ Open

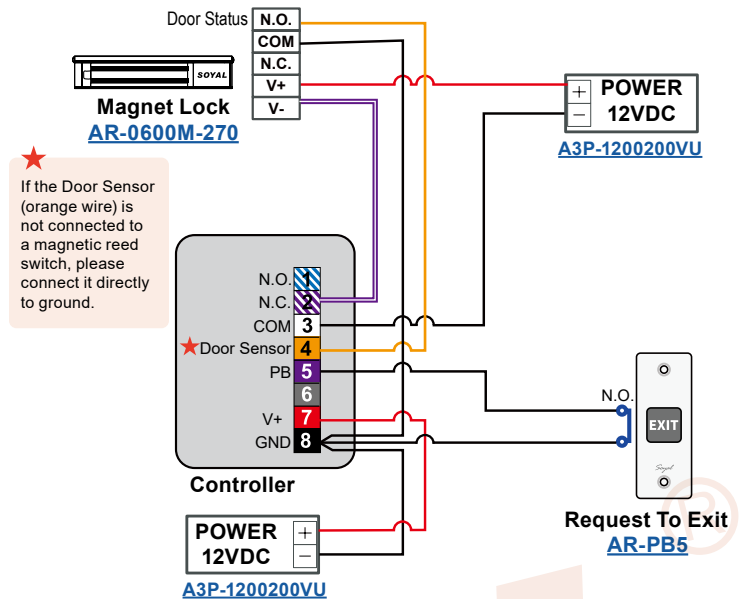
AR-888 (K/U) 13.56MHz WG/ABA Format (Change by wires connection)			
Format	SET 1	SET 2	Note
WG 26	Open	Open	HEX
WG 34	Open	To GND	HEX
ABA-10	To GND	Open	BCD10
ABA-5-5	To GND	To GND	BCD

10. Wiring Diagram

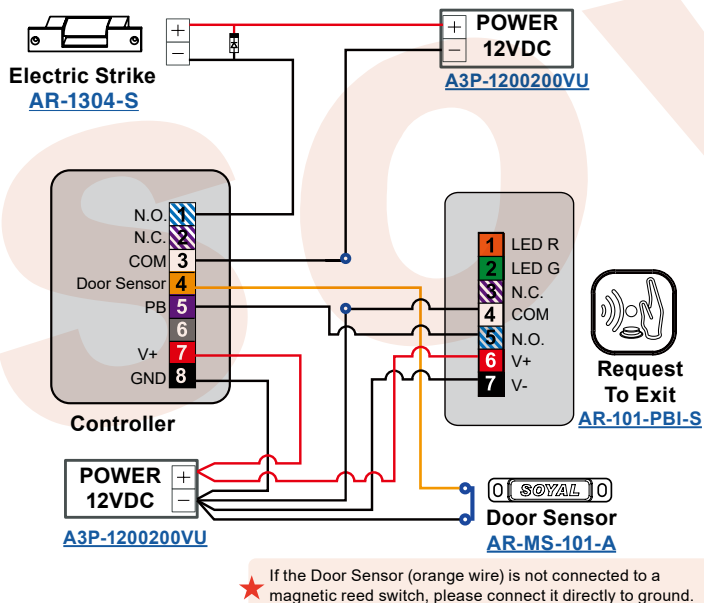
Connect to Electric Bolt



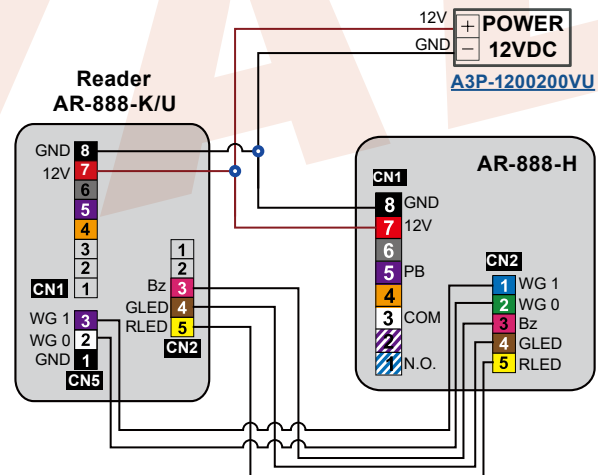
Connect to Magnetic Lock



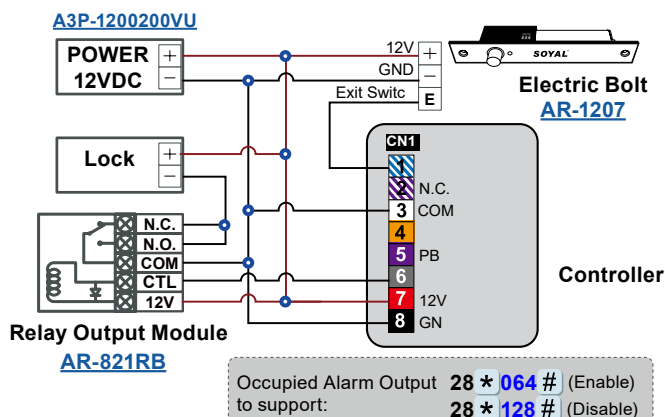
Connect to Electric Strike



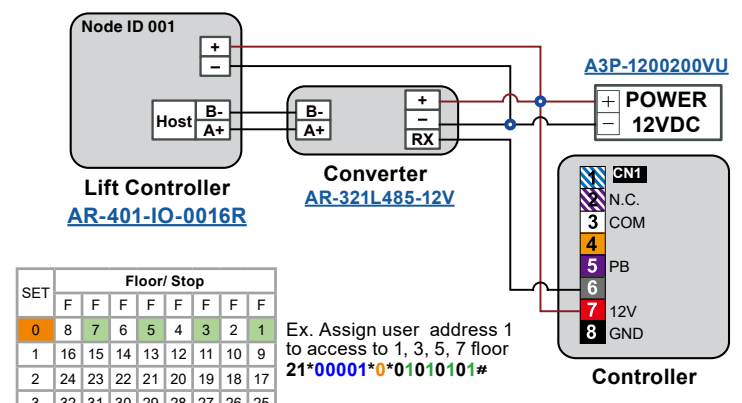
Connect to Reader



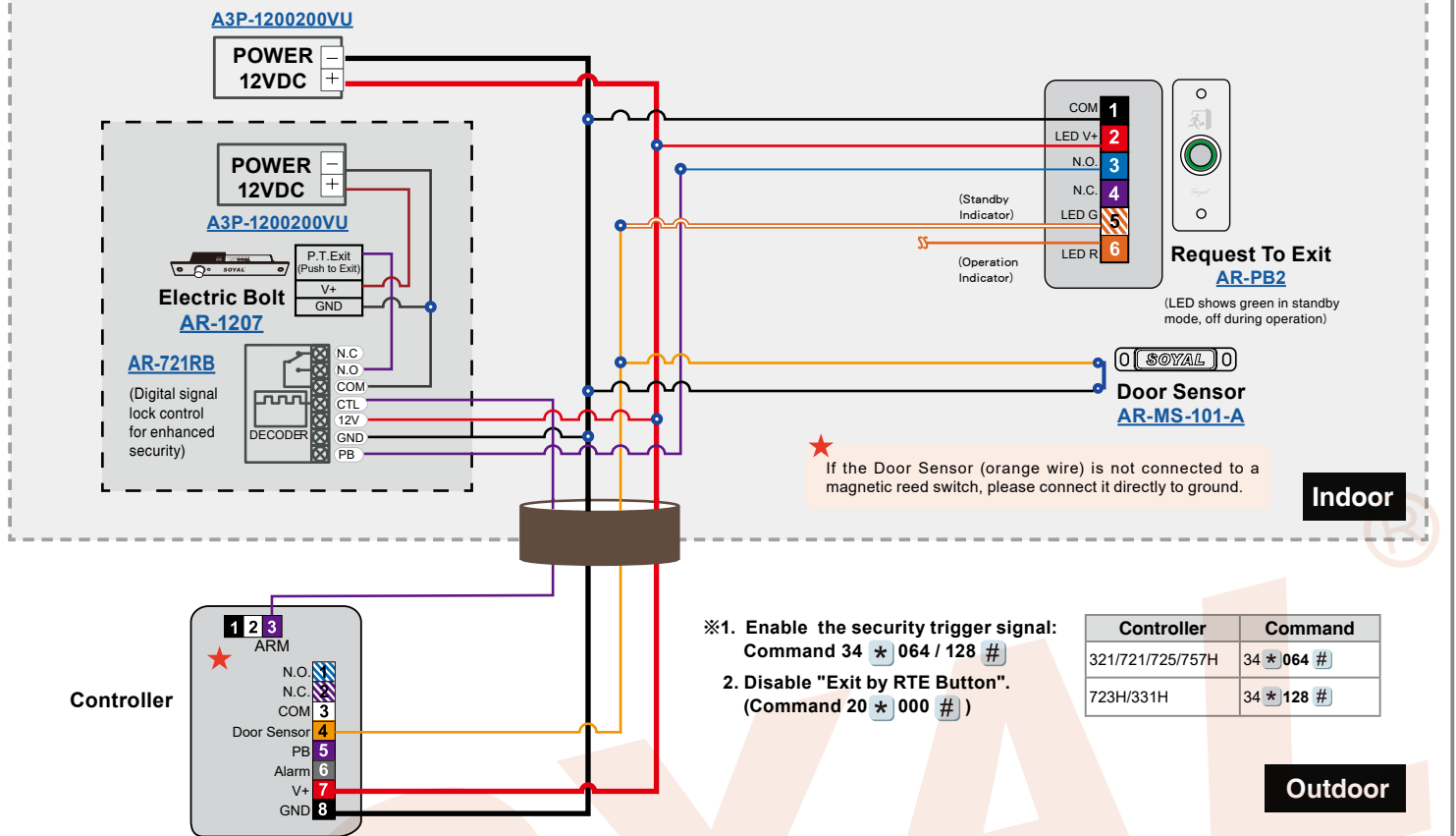
Alarm Output - WG Dual Door Control Wiring



Alarm Output - Lift Control Wiring



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

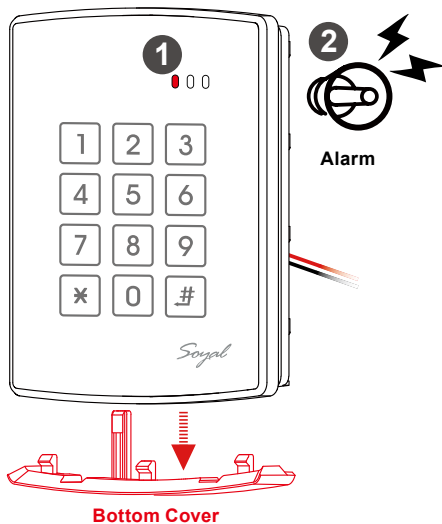


AR-888-H/K/U Tamper Alarm

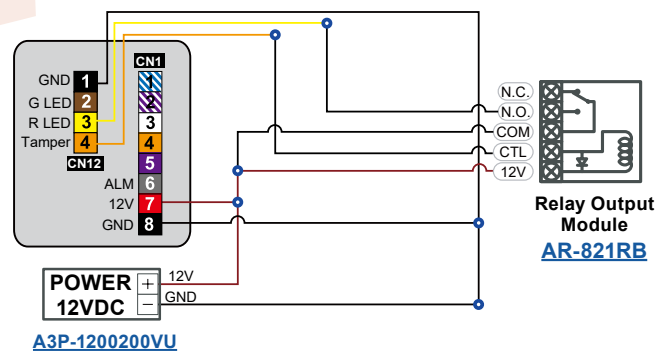
※ Tamper Alarm Trigger Condition:
Removal of the cover while AR-888-H/K/U is powered on.

※ Alarm Notification Method (Choose one):

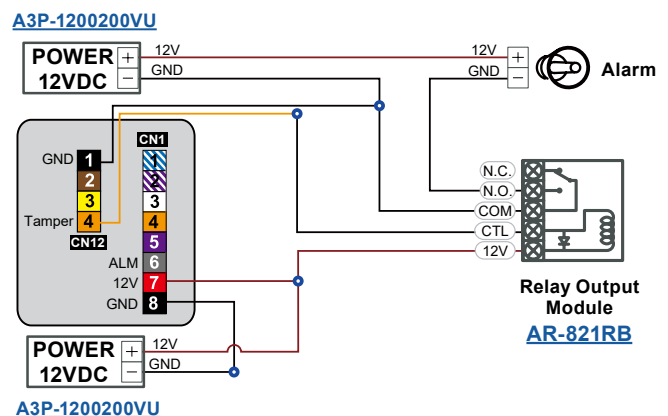
- The first LED on the top right of the panel stays lit in red (or breathes in white when in standby mode).
- Trigger an external alarm device.



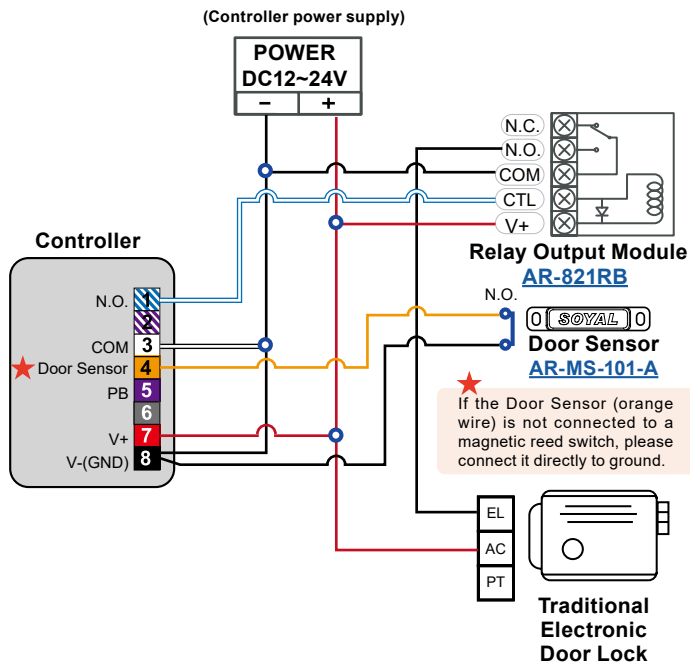
1 Panel LED Constant Red Light Wiring Diagram



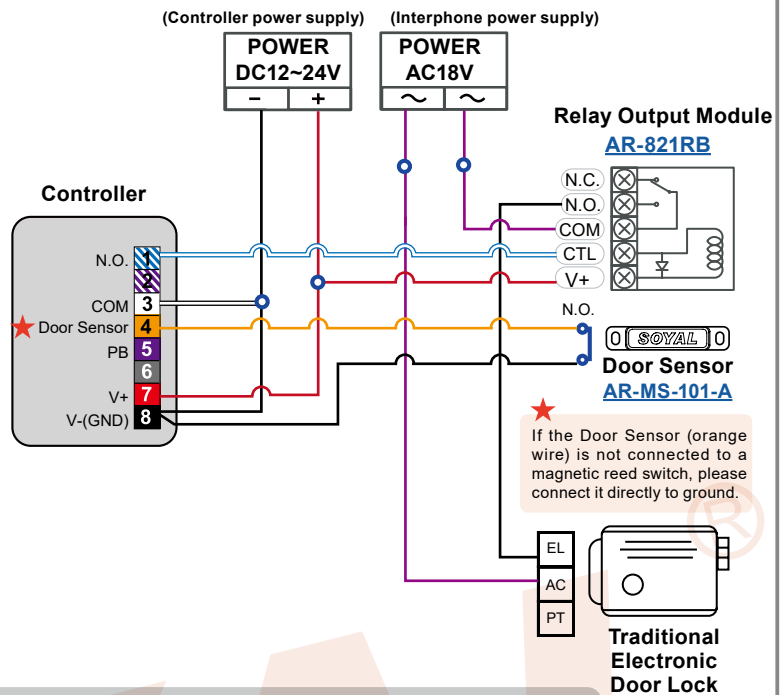
2 External Alarm Device Trigger Wiring Diagram



Traditional Electronic Door Lock wiring diagram adopted with controller power supply

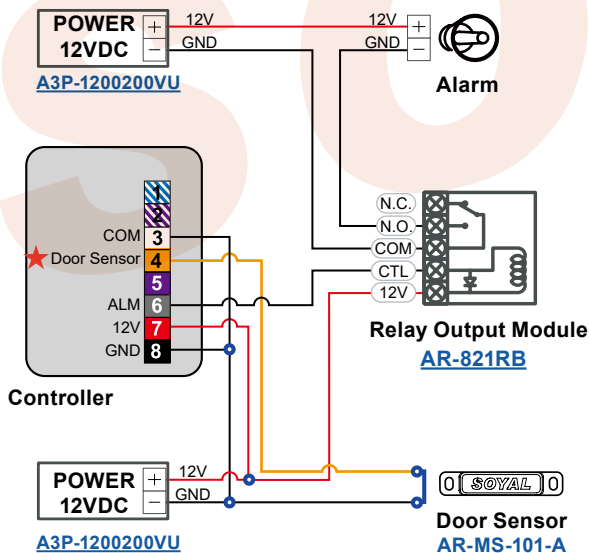


Traditional Electronic Door Lock wiring diagram adopted with interphone power supply

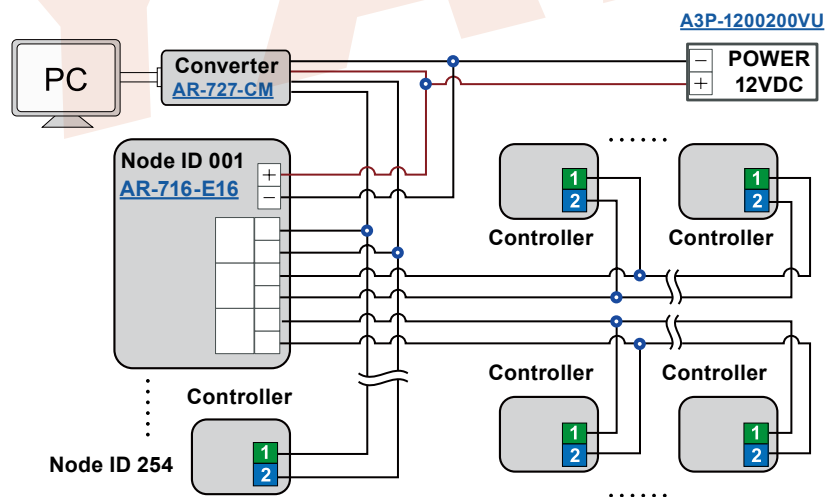


※ This wiring diagram function is required to setup Door Relay Time in 1 sec, please refer to 02 * TTT # command.

Connect to Door Sensor



Connect to Networking



Set up Node ID :

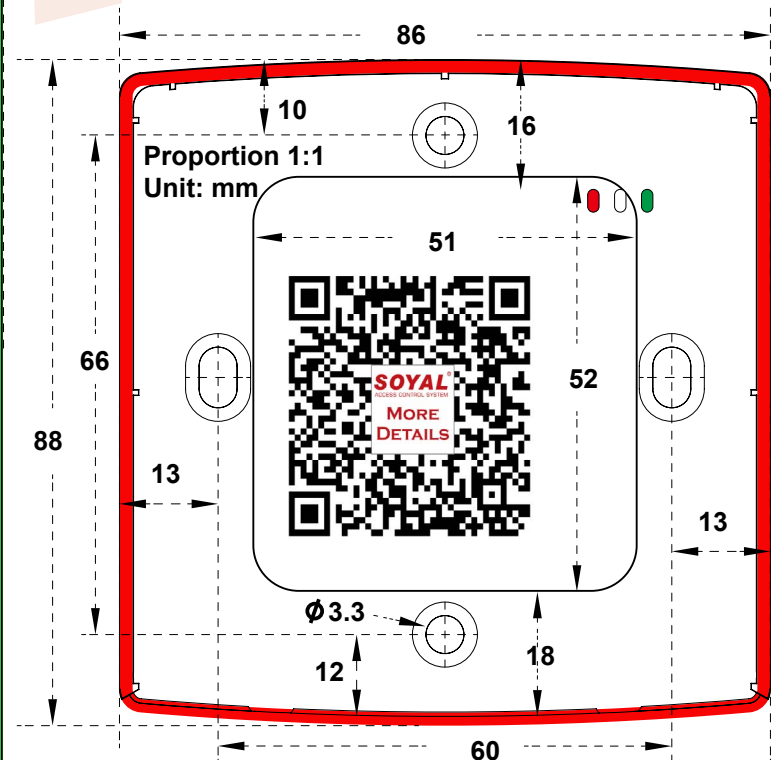
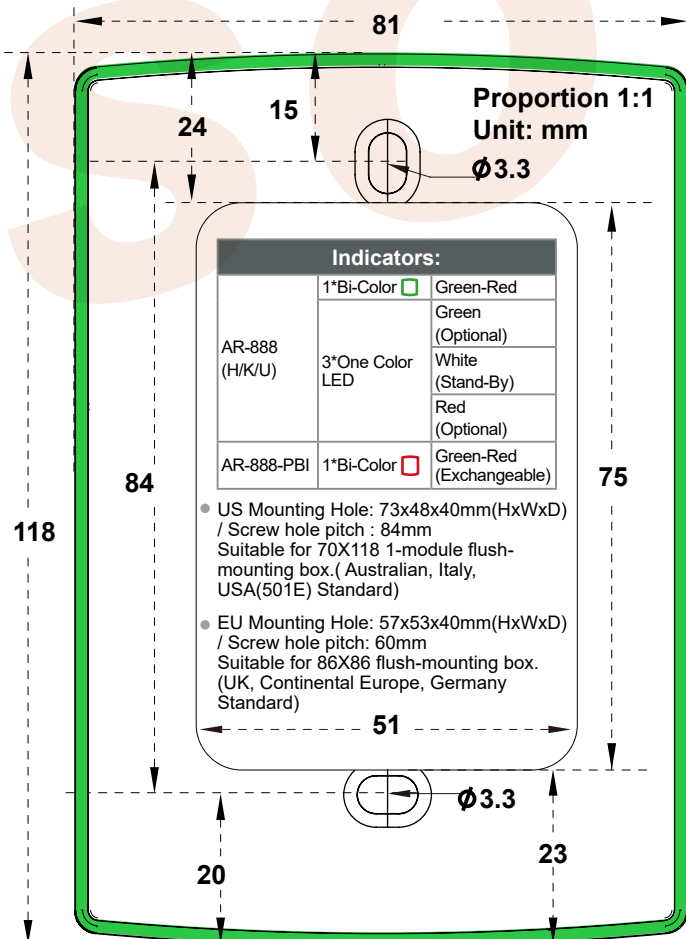
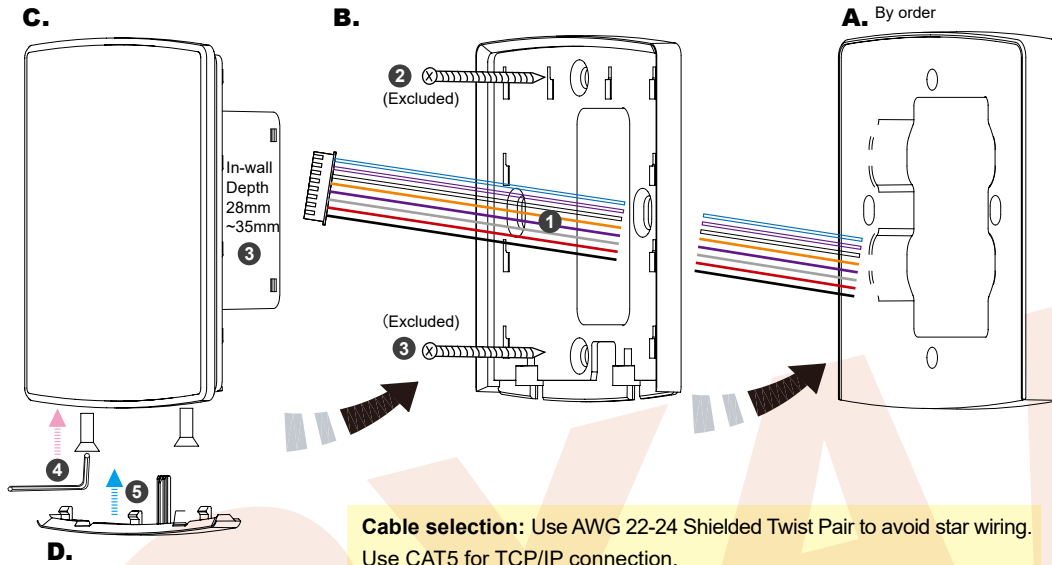
		(All Range:001~254)	
Ex. Node 32 connected to PC		032	Node ID of Access Controller
00 * 032 * 032 * 032 #		032	Virtual 716E Node ID
		032	Door number
		Range: 001~254	
Ex. Node 9 connected to 716E		009	Node ID of Access Controller
00 * 009 #			

Notice:

- At every 32 units or at every 300M connection to add a RS485 Booster.
- Suggest to connect up to 32 units for each CH of AR-727CM

11. Installation

- Pull the cables from the square holes of the eva foam gasket and mounting plate.
- Use a screwdriver to screw the mounting plate **B** onto the wall with Flat Head Cap Philips Tapping Screws (Excluded, the Installer should prepare before installation).
- Connect the cables to the backside of body **C** and attach **C** to **B** at lower position of **B**. Push **C** up to make the cogging hooked completely.
- Use the Allen key and screws to assemble the body **C** onto the mounting plate **B**. Attach the Back Cover **D** to **C**.
- **Hands-off and clear any objects around the 888-H/K.** Turn on the power and LED will light-up and beep will sound. Wait the Touch IC start for 10 sec. to operate.



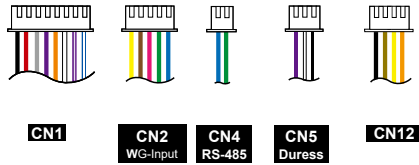
12. Contents

AR-888-H: Flush-Mount Backlight Multi-Function Controller - LED Ring (Green/Red Only)

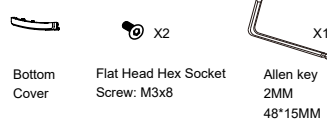
1 Product (US/EU)



2 Terminal Cables



3 Tools



4 Easy Install Kit (By Order)



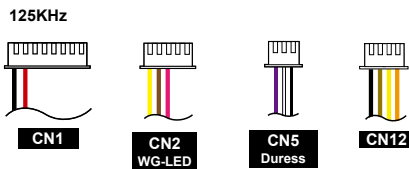
AR-888-K/U: Flush Mount Illuminated Access Reader - LED Ring (Green/Red Only)

1 Product (US/EU)

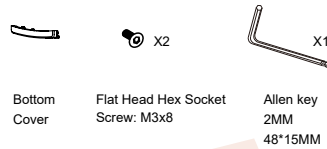


AR-888-K

2 Terminal Cables



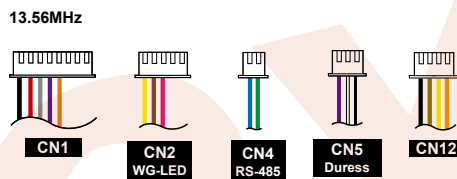
3 Tools



4 Easy Install Kit (By Order)



or



AR-888-U

13. Communication Protocol Function Description

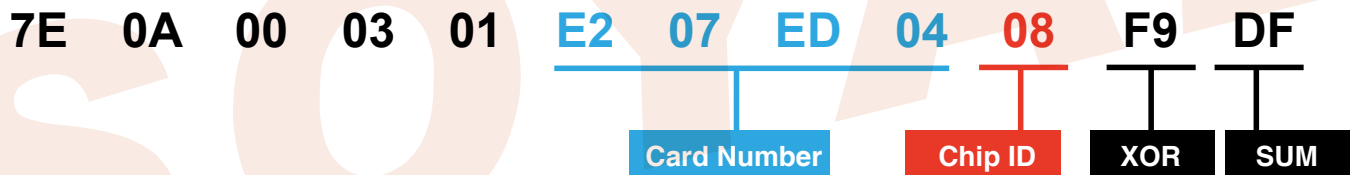
13-1. 13.56MHz: RS485 Communication

This is the standard communication protocol format. A customized communication protocol is also available; please refer to Section [13-3: Modbus Communication Method](#).

Table 13-1-1. RS485 Communication Protocol Function Description

Echo	Value	Description		
Head	7E	Initial Value		
Length	0A	Compute the data length from Node to the end including XOR and SUM		
Node Function	00	The value 00 is fixed, the message would be sent to PC from the device		
Data Field	03	Receive data from Controller (early version 71)		
	01			
UID 0~31bits	04	Site H	Site Code – High	[UID31-24]
	D2	Site L	Site Code – Low	[UID23-16]
	DD	Card H	Card Code – High	[UID15-8]
	D5	Card L	Card Code – Low	[UID7-0]
Type	08	Type Mapping (Please refer to Table 13-1-2)		
XOR	--	--		
SUM	--	--		

Using card number = **57863:60676** as an example (format: Mifare ISO14443A)



Card Format Description:

For example, if the value 08 is read, it is converted to an 8-bit binary value: 00001000. The first 5 bits can be ignored; only the last 3 bits (000) are used for determination. Referencing the table below, this indicates that the card format is ISO14443A.

BIN 0000 1000

Table 13-1-2. Type Mapping

Tags	ISO14443A	ISO14443B	ISO15693	125kHz (EM)
Code	0x00	0x01	0x02	0x03

13-2. Dual Frequency (125kHz & 13.56MHz) : RS485 Communication

This is the standard communication protocol format. A customized communication protocol is also available; please refer to Section [13-3: Modbus Communication Method](#).

Table 13-2-1. RS485 Communication Protocol Function Description

Echo	Value	Description		
Head	7E	Initial Value		
Length	0D	Compute the data length from Node to the end including XOR and SUM		
Node Function	00	The value 00 is fixed, the message would be sent to PC from the device		
Data Field	71	Flag Value		
UID 0~31bits	04	Site H	Site Code – High	[UID31-24]
	D2	Site L	Site Code – Low	[UID23-16]
	DD	Card H	Card Code – High	[UID15-8]
	D5	Card L	Card Code – Low	[UID7-0]
Type	01	Mifare IC Model Installed on the Reader (Please refer to Table 13-2-2)		
UID 32~64bits	04	Site H	Site Code – High	[UID63-56]
	D2	Site L	Site Code – Low	[UID55-48]
	DD	Card H	Card Code – High	[UID47-40]
	D5	Card L	Card Code – Low	[UID39-32]
XOR	--			
SUM	--			

Using card number =**57863:60676** as an example (format: Mifare ISO14443A 7 byte)

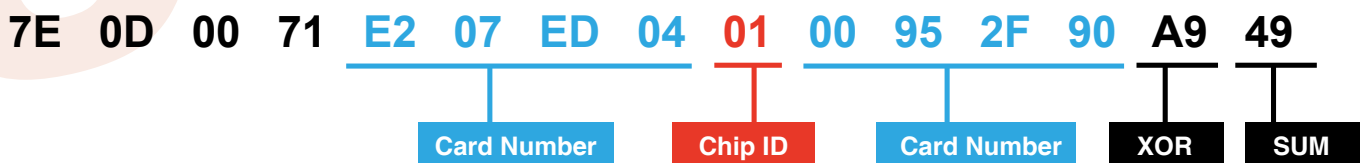


Table 13-2-2. 13.56MHz Chip ID Mapping

Chip	Unknown	Ultra Light	Standard 1K	Plus 4K	ISO15693	Mifare DESFire	Mifare Pro(X)	SOR-LAM	SOR-UIM	SOR-CIM	SOR-SIM
Code	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x22	0x42	0x42	0x82

13-3. Modbus Communication

Table 13-3-1. Modbus Communication Protocol Function Description

Echo	Value	Description		
Slave address	01	Slave address		
Function code	10	Function code		
Starting Address	00	register Address		
	02			
Quantity of Registers	00	Total of 7 registers to be read		
	07			
Byte Count	0E	14 byte		
Area	00	Area		
Node ID	01	Node ID		
Floor	77	8 bytes, representing access rights for a total of 64 floors		
	00			
	00			
	00			
	00			
	00			
	00			
	00			
UID 0~31bits	04	Site H	Site Code – High	[UID31-24]
	D2	Site L	Site Code – Low	[UID23-16]
	DD	Card H	Card Code – High	[UID15-8]
	D5	Card L	Card Code – Low	[UID7-0]
CRC	--	CRC checksum used to verify data integrity		
	--			

Using card number = 00033 : 23700 as an example ,access is granted to floors 1F–3F and 5F–7F

01 10 00 02 00 07 0E 00 01 77 00 00 00 00 00 00 00 94 5C 21 00 E6 90

Area Node ID Floor Card Number

Access floor calculation method:

The 8-bit binary value 00001000 converts to Hex as 7700000000000000

Floor	8F	7F	6F	5F	4F	3F	2F	1F
BIN	0	1	1	1	0	1	1	1

HEX 77
DEC 119
OCT 167
BIN 0111 0111