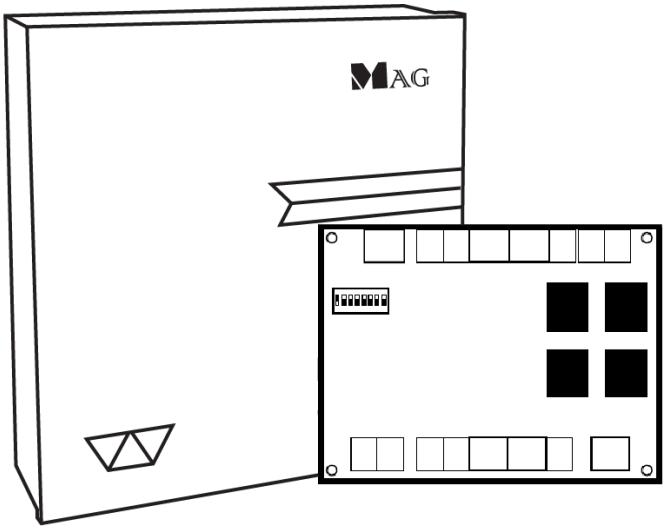
2- Doors Networking Control

AR-716-E02



1. Product Features

2- Doors Networking Control Panel **AR-716-E02**

- Built-in 2 WG input interface that can connect 2 WG slaver readers to complete 2 doors control

3. How to Order

AR-716	E	XX	X	X

Product
E = E Series Access Controller

Doors No.
02 = Dual Doors (WG)
16 = 16 Doors (RS485)+ 2 WG
18 = 18 Doors (RS485)+ 2 WG

Type
N/A = PCB
M = Metal Case
X = Plastic Mounting Base

(AR-716-E18 does not have plastic mounting base option)

Additional Module
A = TCP/IP Module

3. Related Links

FAQ : Set Door Number of WG Port Reader Under 2 Door Controller AR-716-E02 (old name AR-721E)?

Application : Smart Building-1

Table of Contents

01. Mode4/ Mode8

- **Mode 4:** 1.Card only; 2.Card and PIN (4-digit PIN) + [#]; 3.Card or User address (5-digit) + Individual PIN (4-digit individual PIN) + [#]
- **Mode 8:** 1.Card only; 2.Card and PIN (4-digit individual PIN) + [#]; 3.Card or PIN (4-digit individual PIN)

02. Command List

※ General instructions

Function	Command	Description	Notes
Entering programming mode	[*] PPPPPP [#]	PPPPPP=Master Code, default value=**123456**	
Exiting programming mode	[*] [#]		
Control mode setting	04 [*] N [#]	N=Mode 4=Mode4 ; 8=Mode8	
Master card setting	07 [*] SSSSS [*] EEEEE [#]	SSSSS-EEEEE=00000-02999; SSSSS=Starting user address; EEEEE=Ending user address	
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.	
Master code setting	09 [*] PPPPPPRRRRRR [#]	PPPPPP=New master code RRRRRR=Repeat the new master code	
Suspend / Delete tag	10 [*] SSSSS [*] EEEEE [#] 10 [*] SSSSS [9] EEEEE [#]	[*]=Suspend [9]=Delete; SSSSS=Starting user address, EEEEE=Ending user address	
Active the suspended cards	11 [*] SSSSS [*] EEEEE [#]	SSSSS=Starting card number, EEEEE=Ending card number	
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	
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	
Duress code setting	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**	
Card number modification	16 [*] UUUUU [*] SSSSSCCCCC [#]	UUUUU= User address; SSSSS=5-digit site code; CCCCC=5-digit card code	
Arming pass code setting	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**	
Door open waiting time	18 [*] TTT [#]	TTT=Door open waiting time: 001~600=1~600 sec.; default value: 15 sec.	
Add card by presenting(M4/M8)	19 [*] UUUUU [*] QQQQQ [#]	UUUUU=User address(Range: 00000~02999); QQQQQ=Card quantity(**00001**=Continuously inducting)	
Controller parameter setting	24 [*] DDD [#]	Please refer to function default value for details.	
Controller time clock setting	25 [*] YYMMDDHHmmss [#]	YYMMDDHHmmss: Year/ Month/ Day/ Hour/ Min./ Sec.	
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	
Controller control setting	28 [*] DDD [#]	Please refer to function default value for details.	
Delete all tags	29 [*] 29 [*] [#]		

※ Individual instruction set

Function	Command	Description	Notes
Keyboard Lock/ Unlock	[*] [#]	Press and hold for 2 seconds to lock the keyboard, again to unlock.	
Exiting programming mode and enabling arming status	[*] [*] [#]		
Node ID setting (for Reader)	00 [*] NNN [#]	NNN=Node ID, range: 001~254	
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.	
Alarm relay time setting	03 [*] TTT [#]	TTT=Alarm relay time 001~600=1~600 sec.	
Controller additional setting	20 [*] DDD [#]	Please refer to function default value for details.	

All commands below are only able to set up by connected with WG key-panel reader.

03. Adding and Deleting Tag

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

Delete Tags

- **Delete Single Tag or a Batch of Tags (by User Address)**

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

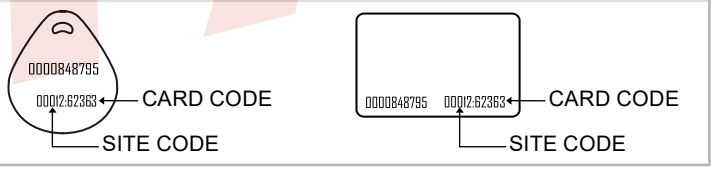
[e.g.] Delete User Address: 00058
Enter program mode → 10 * 00058 9 00058 #

[e.g.] Delete User Address: 00058~00063
Enter program mode → 10 * 00058 9 00063 #

- **Delete All Tags**

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

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



04. 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**

* #

- **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. Chang the Node ID of Reader

Access programming mode → 00 * NNN # [Node ID: 001~255]

C.Set up M4/M8

Access programming mode → 04 * N # [N=4/8]

D. Set up the password

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 #]

E. Anti-pass-back(Reader A and Reader B must to be setting)

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 situations need access and exit monitor.

- **Controller enable**

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

  [e.g.] Enable Anti-pass-back, and set to Exit door= (128 x 1) + (064 x 0) = 128
  Access programming mode → 20 * 128 # (Please refer to function default value for details.)

- **Card enable**

  Access programming mode → 26 * SSSSS * EEEEE * N #

  [SSSSS= User address start; EEEEE= User address end; N=0(control)/ 1(Not control)/ 2(reset)]
  [e.g.] User address from 00152 to 00684 enable the anti-pass-back function: 26 * 00152 * 00684 * 0 #

  [e.g.] No. 154 enable the anti-pass-back, and induction into the door has not been induced to leave. When he re-induction into the door will become invalid , then he needs to set the reset. Access programming mode → 26 * 00154 * 00154 * 2 # → Reset

F. Auto Open Time Zone

Door will keep open after the first flashing card.There are 2 time zones supported. 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 zone**

  Access programming 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**

  Access programming 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 open time**

  Access programming mode → 08 * N * HHMMhhmm * 6543217H #

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

  HHMMhhmm=Staring time to ending time (e.g. 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.
  [e.g.] To set the second time zone as 9:30 AM to 4:20 PM, Monday, Wednesday and Friday: 08 * 1 * 09301612 * 01010100 # → Done

I. Setting Up the Arming

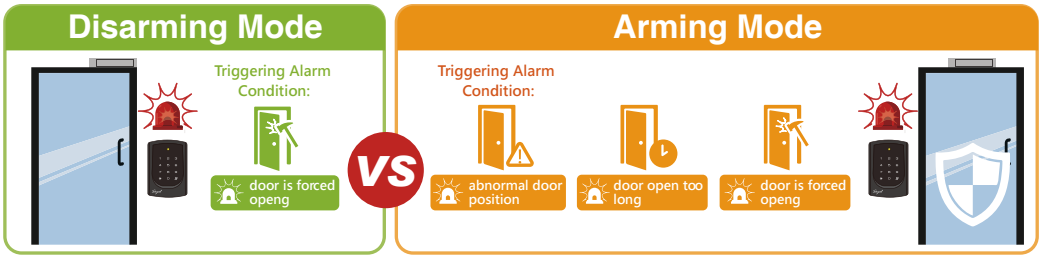
In the security management of access control system, the controller or reader status is divided into Standby Mode or Disarming Mode and Arming Mode. The conditions for triggering the alarm in these two modes is different, as shown in the following comparison:

- **Alarm conditions:**

  1. Door is forced open

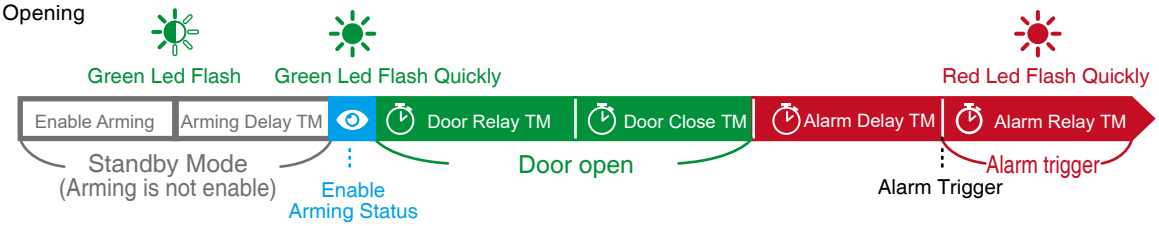
- **Application:**

  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.

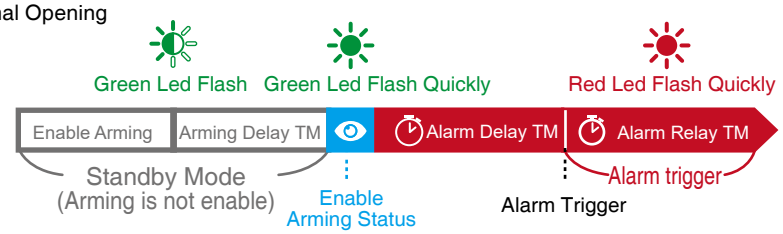


- **Arming Setting and Alarm Trigger Procedure :**

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).**

05. Function Default Value

Weighted Value Manual :

Step 1:
Select the **"Function"** that you need for each Compound Command category (20 *, 24 *, etc)

Step 2:
"Selection" of the function that you need is either have 0 or 1 value.

Step 3:
Substract the **"Value"** of each Option with Selection.
Function = [0(deactive)*Value] ; [1(activate)*Value]

Step 4:
Add up all of the Function per Compound Command (20 * , 24 * ,etc)

20 * DDD # ※Default Value

Function	Selection		Bit	Value	Application
Attendance	※0: Yes	1: No	0	001	Networking
Auto Re-lock	※0: Disable	1: Enable	1	002	Networking/Stand-Alone
Auto Open	※0: Disable	1: Enable	2	004	Networking/Stand-Alone
Door open button input	0: Disable	※1: Enable	4	016	Networking/Stand-Alone
Master Reader of Network	※0: Slave	1: Mater	5	032	Networking
Access/Exit	※0: Exit	1: Access	6	064	Networking
Anti-pass-back	※0: Disable	1: Enable	7	128	Networking

24 * DDD # ※Default Value

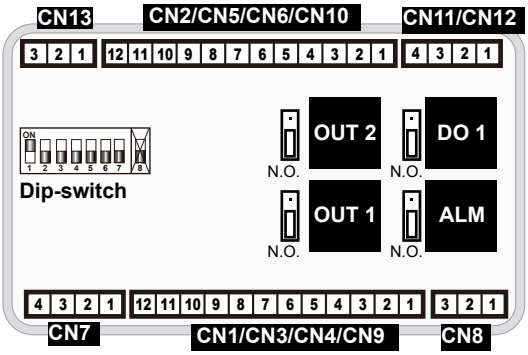
Function	Selection		Bit	Value	Application
Auto-open door without cards at auto open zone	※0: Disable	1: Enable	0	001	Networking/Stand-Alone
Stop Alarm by door close or by push button	※0: None	1: Yes	6	064	Networking/Stand-Alone

28 * DDD # ※Default Value

Function	Selection		Bit	Value	Application
Can be password-free in the Card or PIN mode	※0: Disable	1: Enable	5	032	Networking/Stand-Alone
Reset the Anti-pass-back by the software	※0: Disable	1: Enable	6	064	Networking/Stand-Alone
Arming for force open	※0: Disable	1: Enable	7	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” =004+016+128=148;
As a result of that, the command will be 20 *148 #.

06. Connector Table



- Node ID is setting by DIP_Switch, Node ID: 01~128

Value	1	2	4	8	16	32	64	
DIP SW	1	2	3	4	5	6	7	8
Node 01	ON	off	off	off	off	off	off	
Node 02	off	ON	off	off	off	off	off	
Node 03	ON	ON	off	off	off	off	off	
≀								
Node 127	ON	ON	ON	ON	ON	ON	ON	
Node 128	off	off	off	off	off	off	off	

Connector: P1 RS-485 / Power

Code	Pin	Description
LA+	1	RS-485(A+)
LB-	2	RS-485(B-)
GND	3	DC Power 0V
DC 12V	4	DC Power 12V

Connector: P2 WG Port 1

Code	Pin	Description
COM	1	COM
OUT1	2	N.C./N.O.
BZ	3	Beeper Output
GLED	4	LED Green Output
RLED	5	LED Red Output
TAM (N.C.)	6	Tamper Switch Input
SEN (N.C.)	7	Door Status Input
PB (N.O.)	8	Exit Button Input
WG1	9	Wiegand DAT:1 Input
WG0	10	Wiegand DAT:0 Input
GND	11	DC Power 0V Output
12V	12	DC Power 12V Output

Connector: P3 Digital Input

Code	Pin	Description
GND	1	DC Power 0V Output
DI2	2	DI 2
DI1	3	Fire-alarm Input

Connector: P4 Relay / Alarm Output

Code	Pin	Description
DO1	1	N.C./N.O.
COM	2	COM
ALM	3	N.C./N.O.
COM	4	COM

Connector: P5 WG Port 2

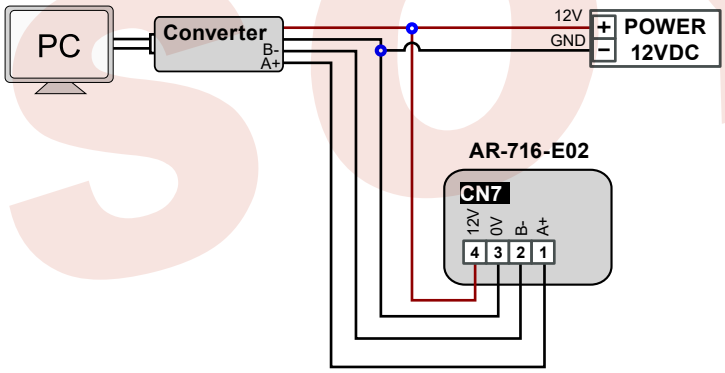
Code	Pin	Description
OUT2	1	N.C./N.O.
COM	2	COM
RLED	3	LED Red Output
GLED	4	LED Green Output
BZ	5	Beeper Output
PB (N.O.)	6	Exit Button Input
SEN (N.C.)	7	Door Status Input
TAM (N.C.)	8	Tamper Switch Input
WG0	9	Wiegand DAT:0 Input
WG1	10	Wiegand DAT:1 Input
12V	11	DC Power 12V Output
GND	12	DC Power 0V Output

Connector: P6 Transistor Output

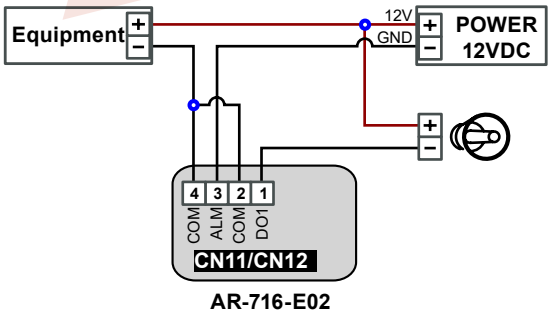
Code	Pin	Description
DO3	1	DO 3
DO2	2	DO 2
GND	3	DC Power 0V Output

07. Wiring Diagram

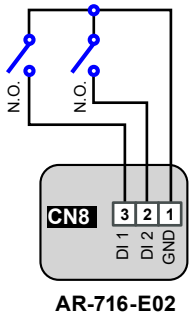
Connect to PC



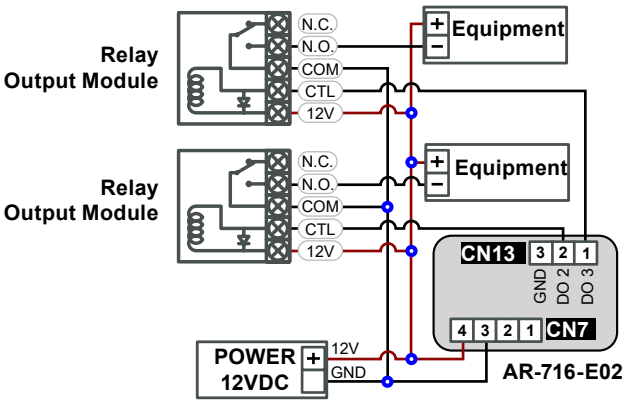
Connect to Alarm or Other Equipment



About Digital Input

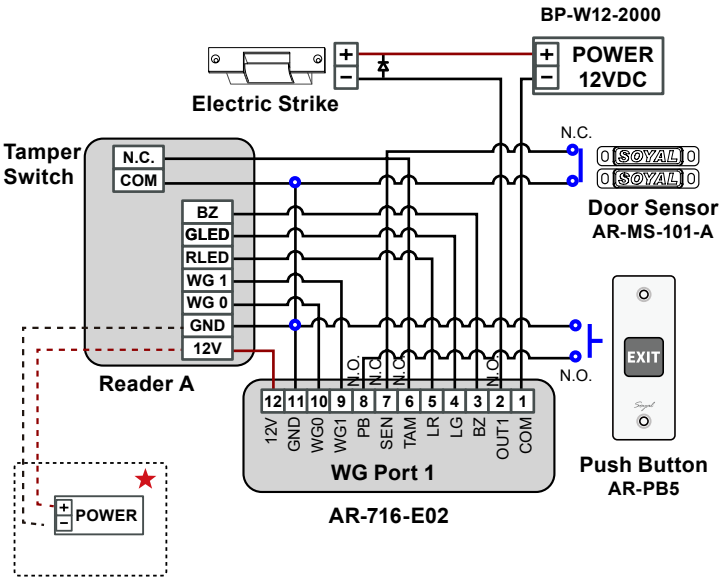


About Transistor Output

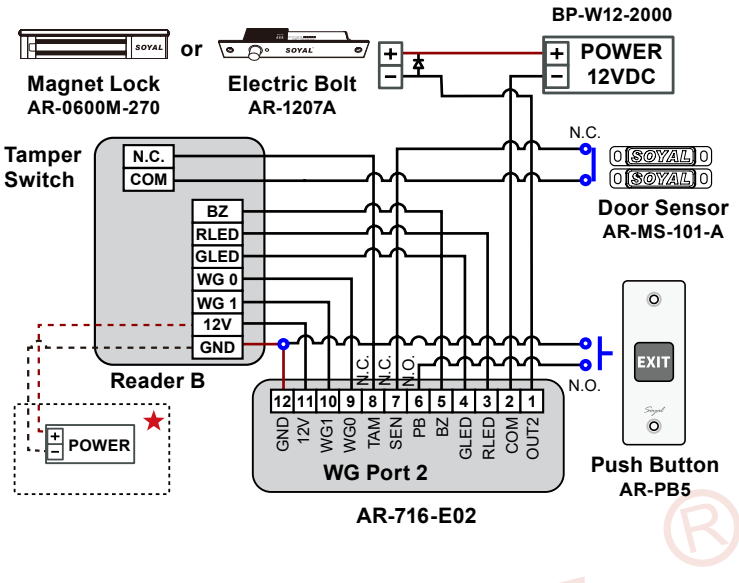


2 Door WG Controller

Connect to Electric Strike



Connect to Magnet Lock or Electric Bolt



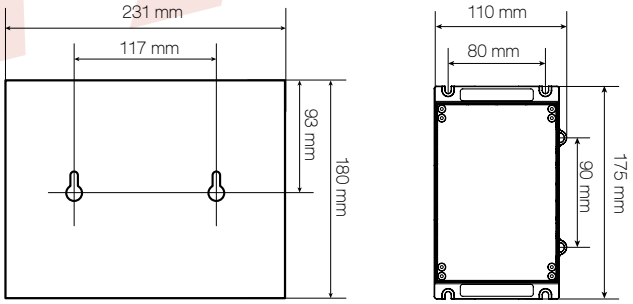
★ If the Power line more than 100 m between the Controller and Reader, it is recommended **NOT** to use the "**Wiegand Power**".

● See connection mode within the dashed box , Controller and Reader must to do "**common-COM-point**".

08. Specification

CPU	8 bit CPU
RAM	512 k Bits
Power Supply	9 ~ 24
Power Consumption	< 2W
Interface	RS-485
Baud Rate	9600 bps,N,8,1
External WG Readers	2 WG (Controller power supply)
Temperature	−20℃ ～ +70℃
Event log	1456
Aux. WG Port	WG 26 / WG 34

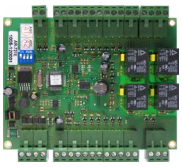
09. Installation(mm)



▲ Metal Box ▲ Plastic Mounting Base

10. Contents

❶ Product



❸ **Panel Mounting Base**

Option

Panel Mounting Base (DIN35)

Fit 35mm DIN Rail or Mount directly

❹ **WG Key-panel Reader**

AR-721K AR-725K AR-331K

Option

For Stand-alone Command Setting