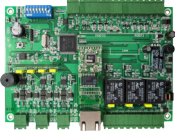
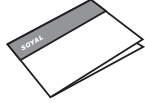


## Contents

**1** Product



**2** User Guide



**3** Panel Mounting Base (AR-721E-V2-X)



AR-701B-X  
Fit 35mm DIN Rail or Mount directly

Option

**4** Metal Box (AR-721E-V2-M)

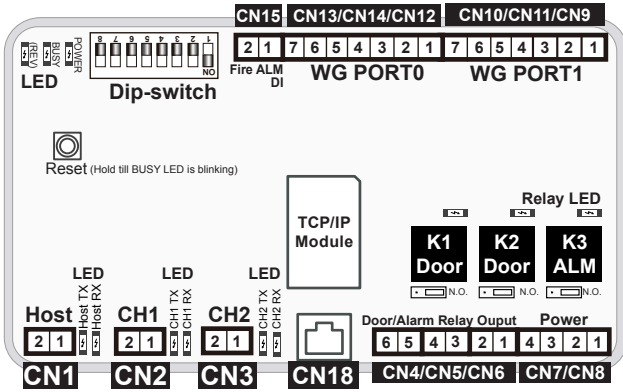


Option

## Specification

CPU	32bit / ARM32 72MHz / Flash 512KB	Temperature	-20°C ~ +60°C	Aux. WG Port	WG 26 / WG 34
Memory	2048KB (2MB)	Digital Input	2 Door Open Button/ 2 Door Sensor/ 1 Fire-alarm	Anti-pass-back	Reserved
Power Supply	12 ~ 24VDC	Relay Output	2 Door Relay / 1 Alarm Relay	Lift Control	Yes
Power Consumption	< 3W	Door Relay Time	Toggle, 0.1~600 Sec.	Door Group	255
Interface / Baud Rate	RS-485 : 9600 bps (N, 8, 1)	Alarm Relay Time	Toggle, 0.1~600 Sec.	Time Zone	63 (stand-alone /networking)
	Ethernet : 10/100M Base T	User Capacity	16,000	Real-time Clock	YES
External Readers	2 RS-485 + 2 WG	Event log	32,000	DIP_SW	8 (Node ID: 1~254)

## Connector Table



### Connector **CN18** Host TCP/IP

Code	Pin	Description
TCP/IP Socket	1	CAT5

### Connector **CN1** Host RS-485

Code	Pin	Description
LA+	1	Host RS-485(A+)
LB-	2	Host RS-485(B-)

### Connector: **CN2** CH1 Slave RS-485

Code	Pin	Description
LA+	1	RS-485(A+)
LB-	2	RS-485(B-)

### Connector **CN3** CH2 Slave RS-485

Code	Pin	Description
LA+	1	RS-485(A+)
LB-	2	RS-485(B-)

### Connector **CN4/CN5/CN6** WG Door / Alarm Relay

Code	Pin	Description
Alarm Relay Output	1	K3-N.O./N.C.
	2	COM
Door 1 Relay Output (WG1)	3	K2-N.O./N.C.
	4	COM
Door 0 Relay Output (WG0)	5	K1-N.O./N.C.
	6	COM

### Connector **CN7/CN8** Power Supply

Code	Pin	Description
GND	1	0V Input
VIN (721E-V2)	2	12VDC Input
GND	3	0V Output
VOUT(Slave units)	4	12VDC Output

### Connector **CN9/CN10/CN11** WG Port 1

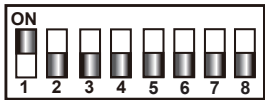
Code	Pin	Description
WG0	1	Wiegand DAT: 0 Input
WG1	2	Wiegand DAT: 1 Input
BZ	3	Beeper Output
LEDG	4	LED Green Output
LEDR	5	LED Red Output
SEN (N.C.)	6	Door Status Input
EGR: PB (N.O.)	7	Exit Button Input

### Connector **CN12/CN13/CN14** WG Port 0

Code	Pin	Description
WG0	1	Wiegand DAT:0 Input
WG1	2	Wiegand DAT:1 Input
BZ	3	Beeper Output
LEDG	4	LED Green Output
LEDR	5	LED Red Output
SEN (N.C.)	6	Door Status Input
EGR: PB (N.O.)	7	Exit Button Input

### Connector **CN15** Fire-alarm Input

Code	Pin	Description
Fire-ALM	1	Fire-alarm Input
GND	2	DC Power 0V Output

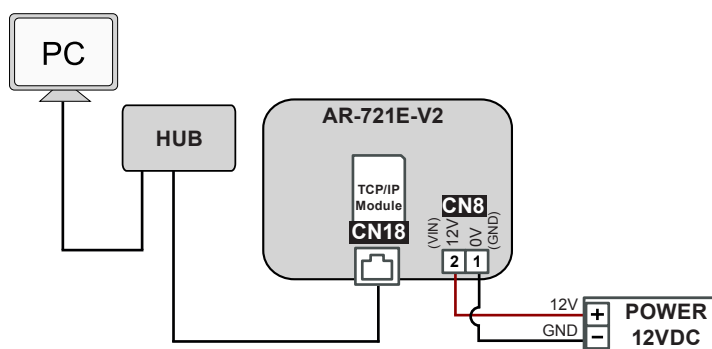


• Node ID is set by  
DIP\_Switch, Node ID: 001~254

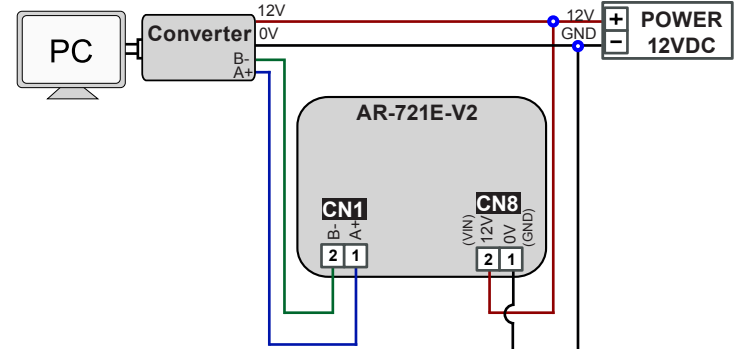
Value	1	2	4	8	16	32	64	128
DIP SW	1	2	3	4	5	6	7	8
Node 01	ON	Off	Off	Off	Off	Off	Off	Off
Node 02	Off	ON	Off	Off	Off	Off	Off	Off
Node 03	ON	ON	Off	Off	Off	Off	Off	Off
⋮								
Node 253	ON	Off	ON	ON	ON	ON	ON	ON
Node 254	Off	ON	ON	ON	ON	ON	ON	ON

## Wiring Diagram

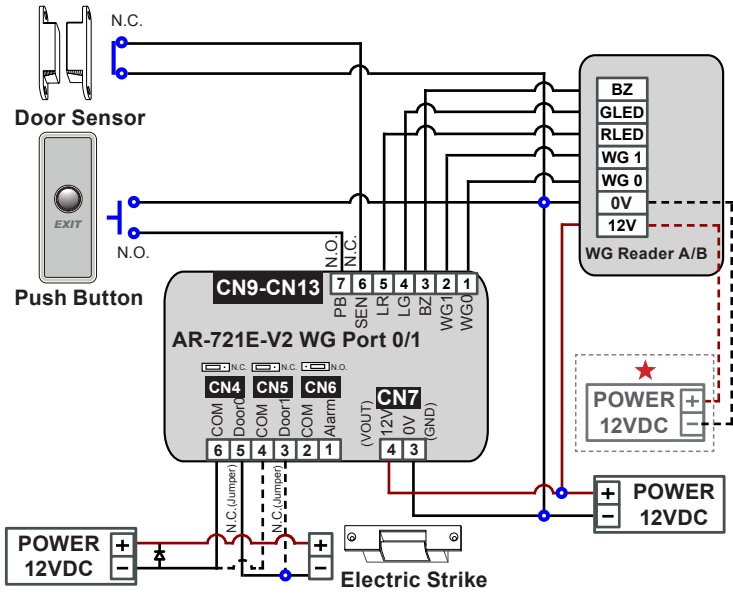
### **CN18** Connect to PC via TCP/IP



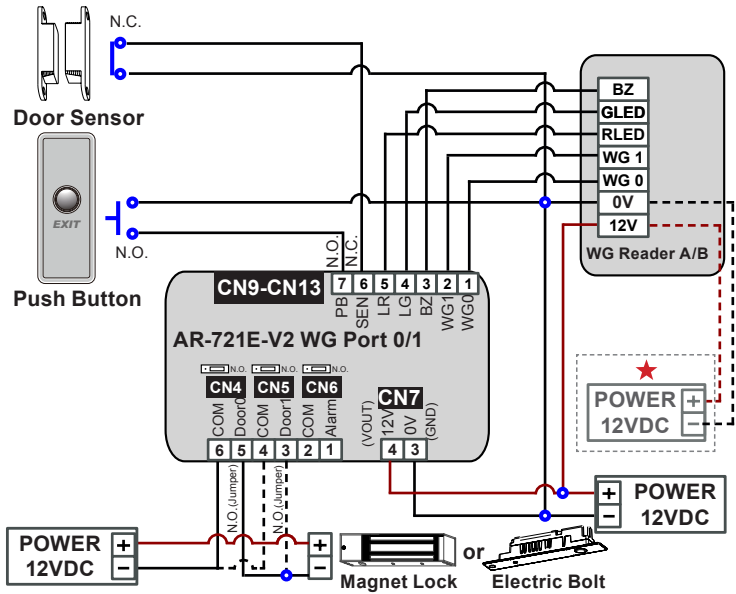
### **CN1** Connect to PC via Host (RS-485)



## WG Port 0/1 Connect to Electric Strike

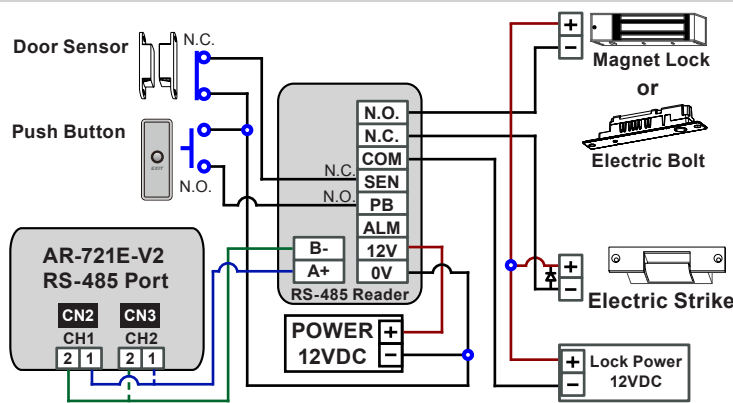


## WG Port 0/1 Connect to Magnet Lock or Electric Bolt

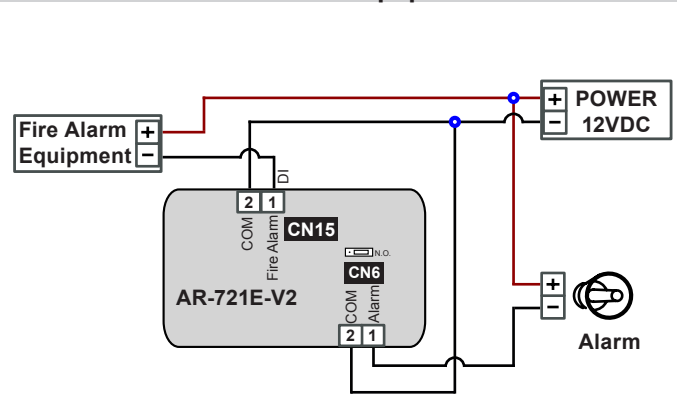


- ★ If the wire length of Controller and Reader is more than 100 meters, it is recommended **NOT** to use the "Wiegand Power."
- Check connection mode within the dashed box: Controller and Reader must use the "common-COM-point."

## RS-485 CH1/CH2 Port Connect to Electric Lock



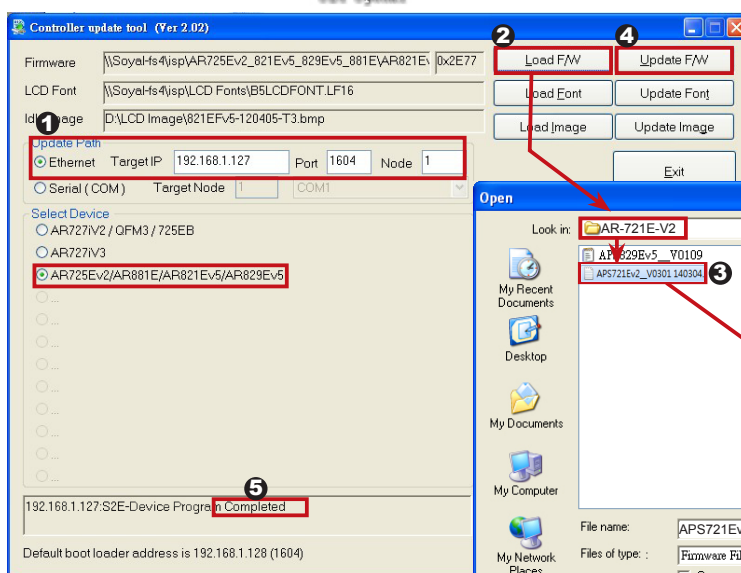
## Connect to Alarm or Other Equipment



## Firmware Upgrade

Get the upgrade software from SOYAL or our distributor and run "UdpUpdater" software, which has been included in SoyalDeviceTools.exe

- Execute the software The software is within SOYAL CD or please login the SOYAL website to download



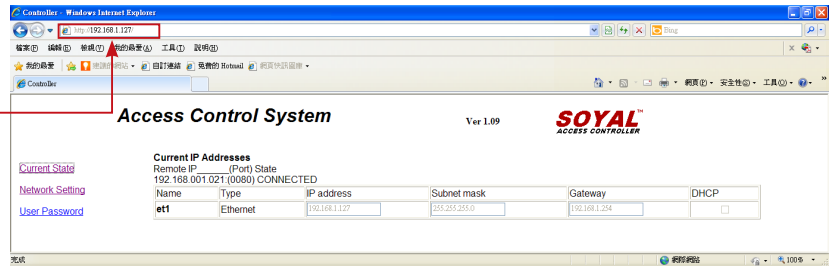
- Update the firmware [Please login the SOYAL website: [www.soyal.com](http://www.soyal.com) to download the new ISP Firmware.]

- Input the Target Address and Port
- [Load F/W] open the documents that have the new ISP Firmware
- Click the new ISP Firmware and [Open] it
- Click [Update F/W] to start the firmware update
- Done when the screen shows [Firmware Update is Complete]

## IP Setting

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

If the IP address of AR-721E-V2 has been changed, we must enter the new IP address.



- Page menu

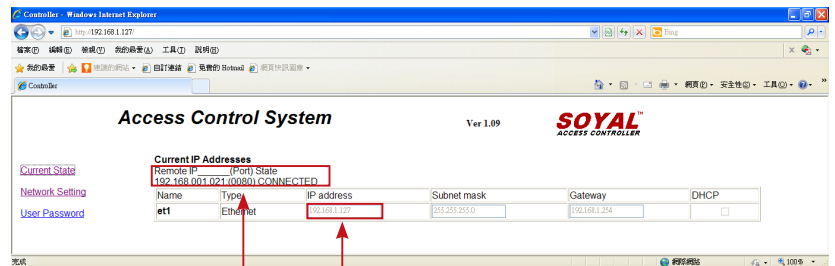
- [Current Status](#) ← Monitor the on-line computer
- [Network Setting](#) ← IP Setting
- [User Password](#) ← Change the Log-in information

- Current State

Online Status is able to be monitored showing which computer is linking on Ethernet Module

Show which computer is linking on Ethernet Module.

Current IP address of the AR-721E-V2



- Log-in User Password

When you choose the "Networking Setting" or "User Password," Log-in window will pop out and please input user name and password.

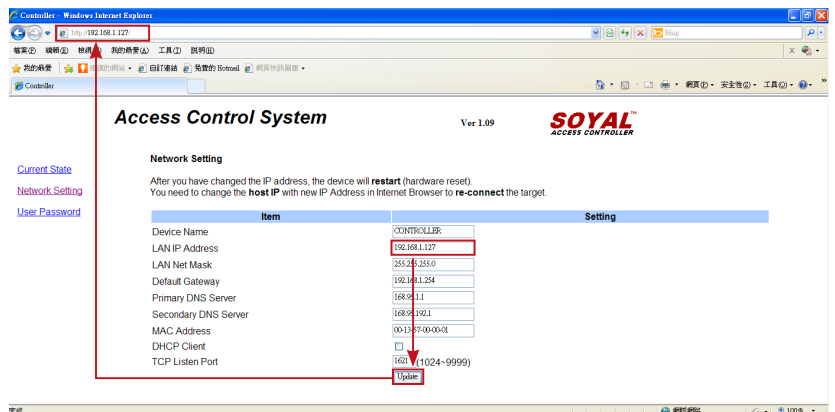
※ At the Factory Default Status -  
**User name: admin**

Password: None by default, so please just go skip and click "OK" to log-in



- Networking Setting

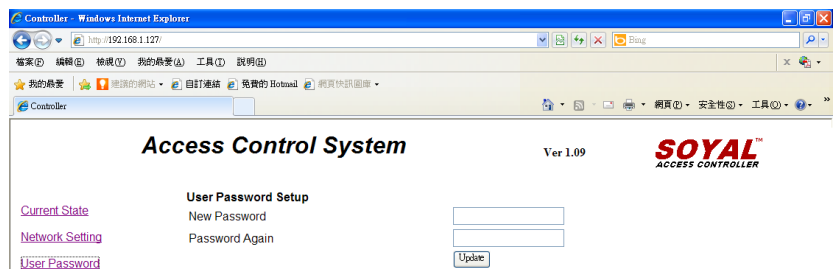
You will see initial IP Address 192.168.1.127 and make sure MAC Address is identical to the sticker on Ethernet Module device. Please alter the IP address as you want, and then click "Update" button. After updating the IP, please re-connect the Web Browser with the new IP address.



- User Password

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

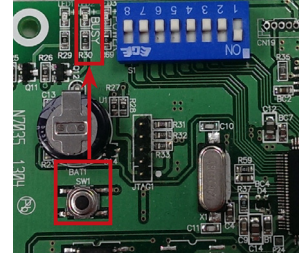
The password can be made up of 10 characters at most, and it can be either A~Z or 0~9.



## Factory Reset

### Reset Button:

When the device's power is on, press the [RESET] button on the main board until the BUSY LED is blinking. Once RESET the IP, the IP address will be changed back to default value : 192.168.1.127 (Refer to picture)



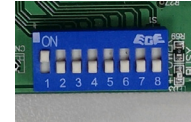
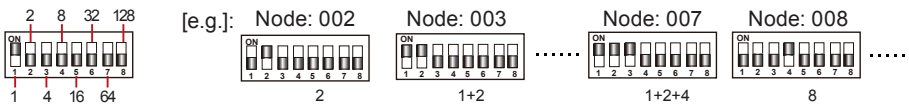
### Remarks: LED Description

- POWER LED**  
 When the controller is connected to the power, [POWER] will turn on green LED; if there is no light, it means the power supply has some problems.
- BUSY LED**  
 When the red LED is lit, the memory is being cleared and restored to the factory default action.  
 ※ If you do not perform "Flash Restoring", but the [RESET] and [BUSY] has been blinking in red, that indicates a PCB problem should be excluded.
- RS-485 Connection: HOST RX & HOST TX LED**  
 [HOST RX] : When receiving incoming data from the host PC, the green LED will keep blinking  
 [HOST TX] : When transmitting the data back to the host PC, the red LED will be blinking

## Initial Setup:

### Hardware: Node ID / Reader ID Setting

- 721E-V2 Node ID is set up by shifting the 8-pin dip-switch on the main board.  
 Power Off → Set up node number by 8 dip-switch (Please Refer to the value chart of Connector Table)→ Re-apply the power



- CH1 Slave RS-485 Reader: Node ID fixed to start at 003**  
 Key-Panel Type: Access programming mode: Input \* 123456 # or \* PPPPP # → 00 \* 003 # → Exist programming mode \* #  
 LCD Type: Access programming mode → 3 Parameters[1] → 1 Node ID → Input New Node ID : 3 or 003 (default value:001, CH1 Node ID fixed to 003) → Door Number (H) : 0~255 (Default Value: 001, Skip or Set up as same as 721E-V2's Node ID) → Door Number (L): 0~255 (Default Value: 001, Skip or Set up as same as Door Number on 701Server) → Show UID (0=No, 1=WG, 2=ABA, 3=HEX) → Succeeded → \* #

### CH1 RX & CH1 TX LED

[CH1 RX] : When receiving incoming data from Access Controllers of Node 3, the green LED will keep blinking  
 [CH1 TX] : When transmitting data back to Access Controllers of Node 3, the red LED will be blinking

- CH2 Slave RS-485 Reader: Node ID fixed to start at 009**  
 Key-Panel Type: The same as above CH1 but Node ID must be 009  
 LCD Type: The same as above CH1 but Node ID must be 009

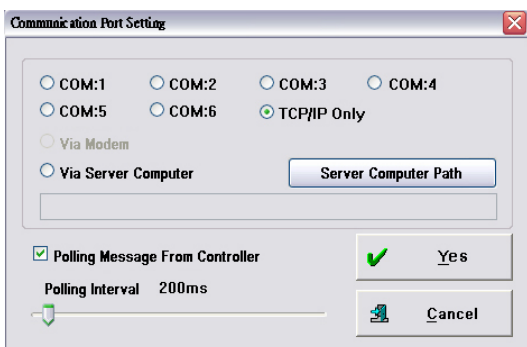
### CH2 RX & CH2 TX LED

[CH2 RX] : When receiving incoming data from Access Controllers of Node 9, the green LED will keep blinking  
 [CH2 TX] : When transmitting the data back to Access Controllers of Node 9, the red LED will be blinking

- WG Port 0: Fixed at Node ID 017 in system and no need to set up
- WG Port 1: Fixed at Node ID 018 in system and no need to set up

### Software: Connection

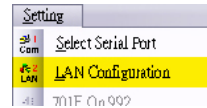
- Open the "701 Server" Software → There are two ways to open the Communication Port setting window: and → Communication Port Setting



- According to the computer Detection results to select the port (Use the RS-485)
- Select [TCP/IP Only] (Use the Ethernet)
- Select the option: Polling Message From Controller
- Polling Interval: 200ms - meaning the PC polls the controller every 200ms once it accesses the message from the controller
- Click YES

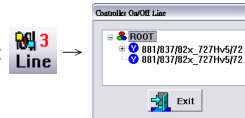
## Software: Connection

2. After COM Port setting, there are two ways to open the Node Number for Polling window: and → Node Number for Polling



- Select node ID (for example:001) and access controller " 881/837/82x\_721Hv5/725Ev2/721Ev2"
- If use the Ethernet mode, please check the "IP"; if use the RS-485 mode, there's no need to check
- If use the Ethernet mode, input IP in "IP Address" column (Default value: 192.168.1.127)
- Input 1621 in "Port" column (Default value: 1621; the Port number is predetermined by SOYAL for connection to the network)
- Select LAN BASE
- Click YES

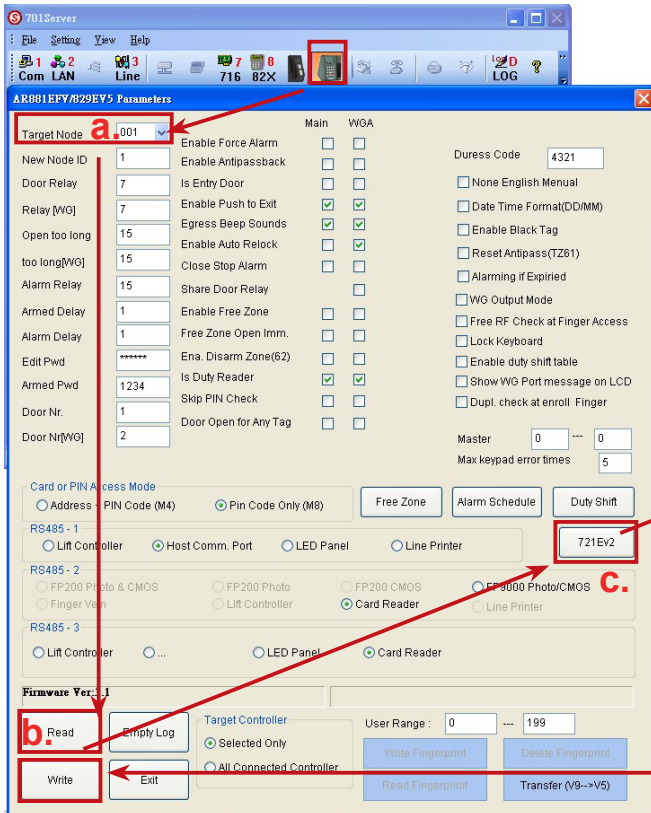
3. Open Controller On/Off Line window to check the device connection status:



- Well: controller successfully connected to PC.
- Not connected well: the following checks are required.

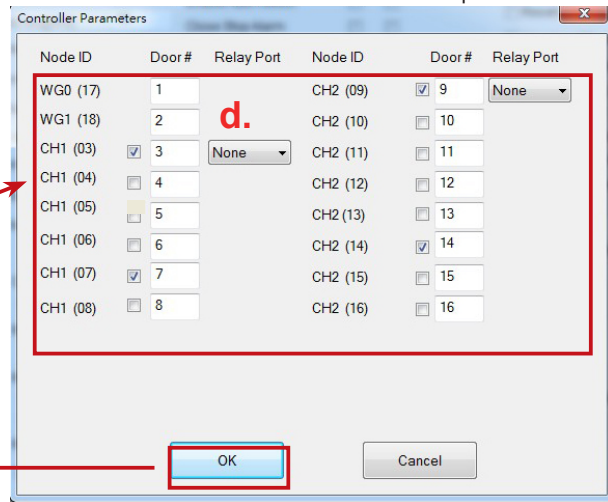
## Software: Parameters Setting: Door Number and Users Edit

1. After the 701Server Software connection, go click 82x Parameters Setting to set up 721E-V2's door number



- Roll and select the Targe Node ID of 721E-V2 (The same as the dip-switch)
- Click "Read" to read back the parameter of 721E-V2
- Click "721E-V2" button to set up Door Number
- Input the new Door Number of Slave Reader, which door number must be unique and non-repetitive

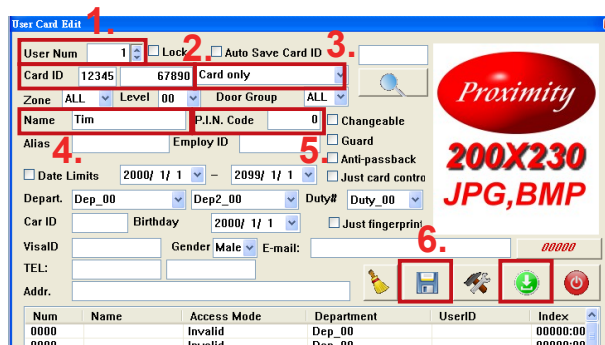
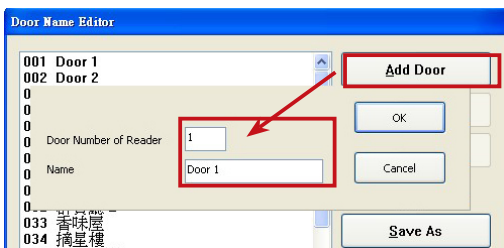
**Remarks:**  
 WG0: Node ID fixed to 17 while connected and Fixed to trigger the K1 Relay  
 WG1: Node ID fixed to 18 while connected and Fixed to trigger the K2 Relay  
 CH1: RS-485 Reader Node ID must be set up from 03 to 08  
 CH2: RS-485 Reader Node ID must be set up as 09 to 16



2. Set up the Door Name in 701Client Software by clicking A. Door Name Edit

3. Add/Delete/Modify Users in User Card Edit

; then, the even log will show Door Name while the user gets access



- Required Information:**
- Input user number
  - Input card code
  - Select the access mode
  - User name
  - If necessary, add Pin
  - Save Download info to controller