SOYAL®
ACCESS CONTROL SYSTEM

AR-716-E18

V220930

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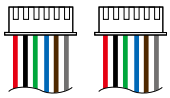
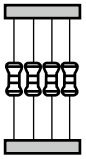


3 Resistance Wire



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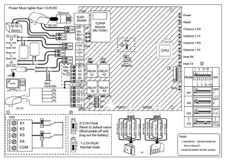
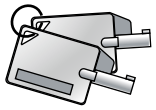
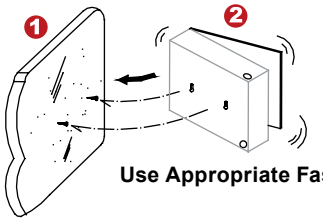


4 Keys

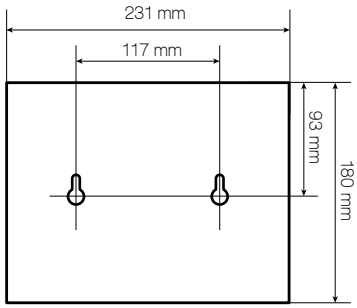


Installation



- According to the width of two holes on the backside of housing to nail.
- Screw the mounting nails.
- Screws on the wall, and then, hang Controller on the wall.

Dimmension (mm)



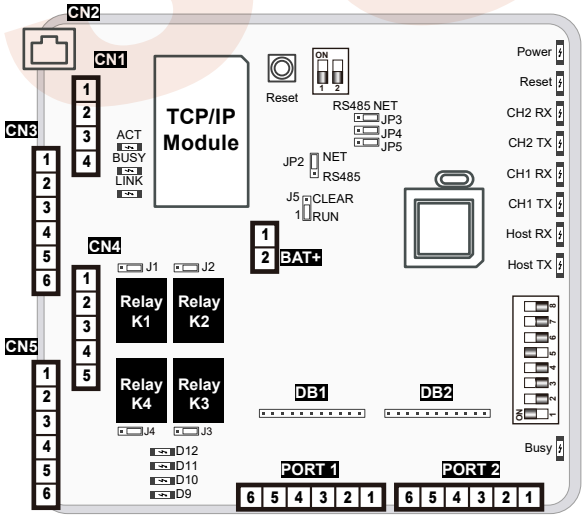
Specification

Host	RS-485 or TCP/IP	RS-485: 9600 bps or TCP/IP: 10/100M Base T (External Module)
Slave Reader	CH1 (RS-485)	8 Readers
	CH2 (RS-485)	8 Readers
	Wiegand	2 Readers
Door Numbers	18	
User Capacity	15,000	
Event Log	11,000	

DI	Engress X2 Fire Alarm input X1 Reserved DI X1
DO / Relay Output	Door Lock Relay X2 Alarm Relay X1 Reserved RO X1
Watchdog Function	Standard
Power Supply	9-24 VDC
Power Consumption	<2.5W
Communication Redundancy	No

Anti-Passback	16 Doors
Door Group	255
Time Zone	63
Others	Support UPS (purchasing external rechargable battery)
Dimension (mm)	PCB: 150(H)X163(W)X20(D) With Metal Casing : 180(H)X231(W)X62(D)
Net Weight (g)	PCB : approx. 250g With Metal Casing :approx. 1840g
Environment	-20℃ ~ +70℃

Connector Table



Note:

- Optional for TCP/IP Module.
- External battery for BAT position.
- J1~J4: Set N.O. or N.C. relay output (default value is N.O.).
- J5: EEPROM Restoring.
- JP2~JP5: Select the interface is the Ethernet mode or the RS-485 mode.
- DB1&DB2: Extension Relay Board.

CN1

Wire Application	Pin	Description
Power	1	Vin+
	2	Vin-
Battery Power	3	BV+
	4	BV-

CN2 (Only for AR-716Ei)

Wire Application
Host Interface for Ethernet

CN3

Wire Application	Pin	Description
Channel 2 (RS-485 input)	1	B-
	2	A+
Channel 1 (RS-485 input)	3	B-
	4	A+
Host Interface for (RS-485 output)	5	B-
	6	A+

CN4

Wire Application	Pin	Description
Relay Output	1	K1
	2	K2
	3	K3
	4	K4
	5	COM

CN5

Wire Application	Pin	Description
Digital Input	1	COM
	2	DI.4
	3	DI.3
	4	DI.2
	5	DI.1
	6	12V

BAT (in the case)

Wire Application	Pin	Description
Memory power	1	Vin+
	2	Vin-

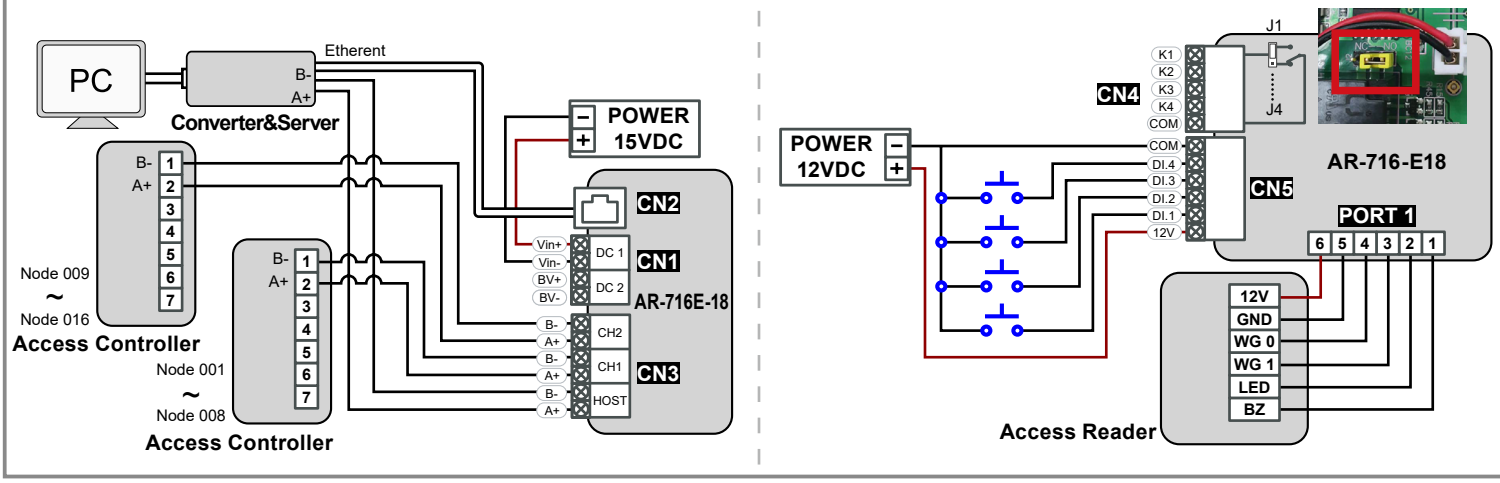
PORT 1 & PORT 2

Wire Application	Pin	Color	Description
Buzzer	1	Gray	Buzzer Output
LED	2	Brown	LED Output
Wiegand	3	Blue	WG DAT: 1 Inpu ABA Clock Input
	4	Green	WG DAT: 0 Input ABA Data Input
Power	5	Black	GND
	6	Red	12V

Multi-Door Networking Controller

V220930

Wiring Diagram



TCP/IP Module Configuration

A. 2 PIN Dip-Switch setting

Dip-Switch	Description for ON
SW_1	DHCP Function TCP/IP module supports the auto-configuration of IP, gateway Address and subnet mask; however, must be sure the DHCP server is available.
SW_2	It will send the signal of IP address at per second.

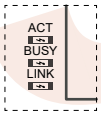
※**Note:** After finished setting up parameter, switch DIP SW_1 and SW_2 to "OFF" position.

B. IP Address Reset

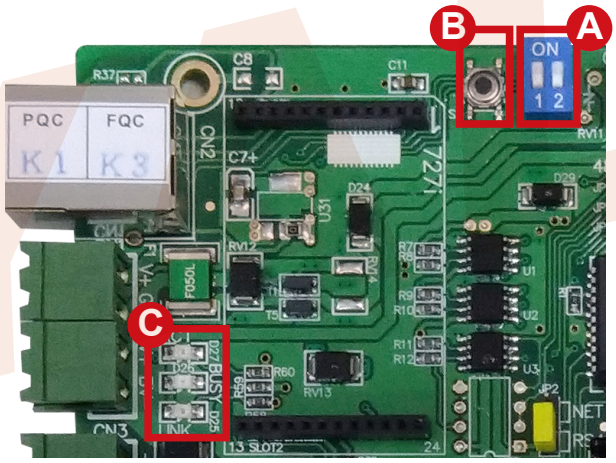
- Press IP reset button more than 5 seconds, and then TCP/IP module will restore to factory default value as follows.

※ Factory Default: http://192.168.1.127

C. Description for LED



LED name	Color	Description
LINK	Yellow	Media is connected.
	Off	Media is disconnected.
ACT	Green	10/100M base T Ethernet is connected.
	Off	Ethernet cable is disconnected or has a short.
BUSY	Red	Reset the IP address.
	Off	No Action.

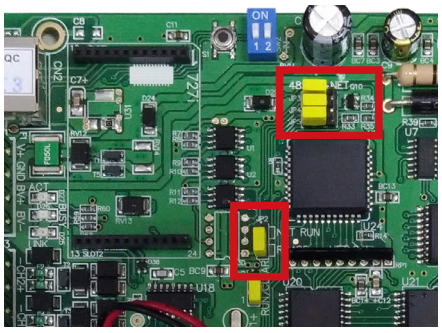


Operation

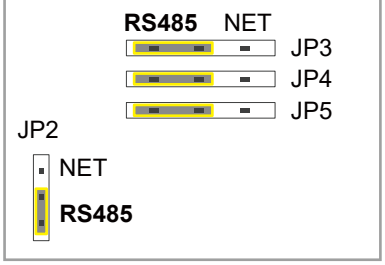
A. TCP/IP Mode

- **Hardware**

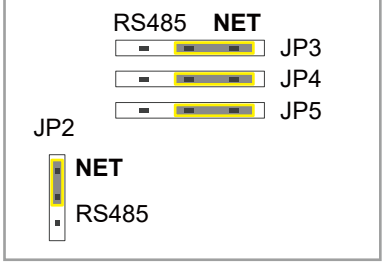
Before use the Ethernet Mode, please note that JP2 ~ JP5 is transferred to the NET position.



RS-485 Mode



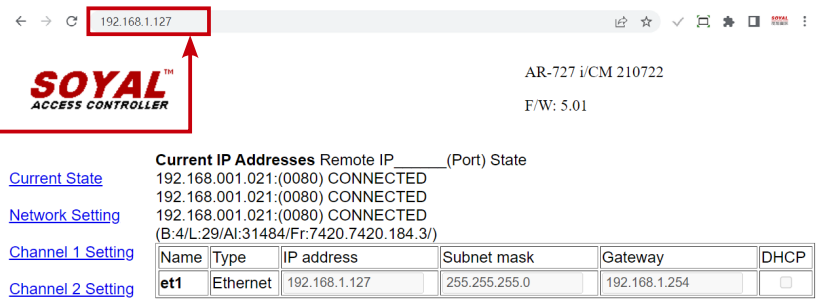
Ethernet Mode



IP Setting

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

If the IP address of AR-716-E18 has been changed, we must enter the new IP address.

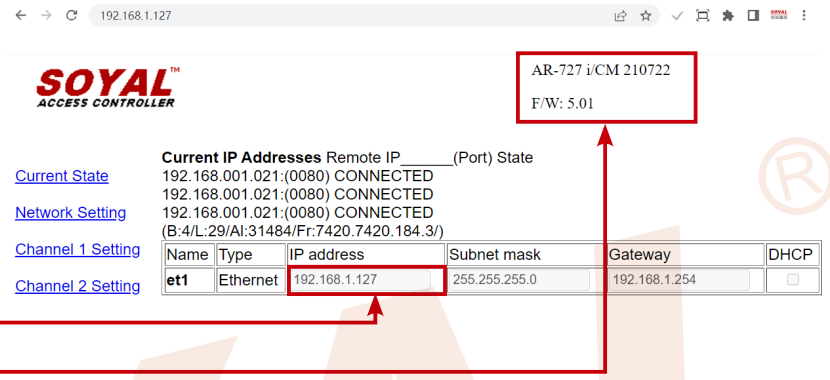


- **Page menu**

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

Current IP address of the AR-716-E18

The version of ISP Firmware

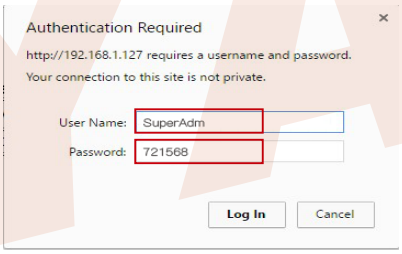
- **Log-in User Password**

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 -

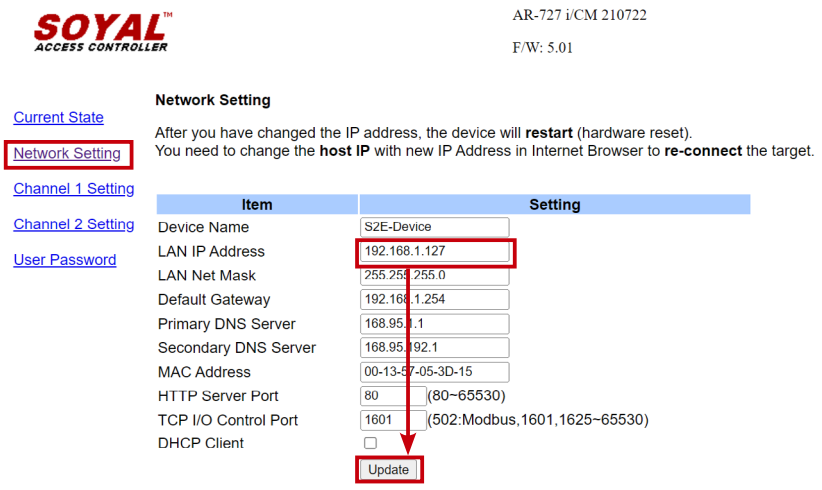
User name: SuperAdm

Password: 721568



- **Network Setting**

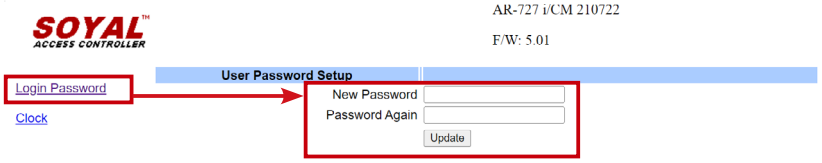
You will see initial IP Address 192.168.1.127 and make sure MAC Address is identical to the sticker on Ethernet Module device. Please alter the IP address as you want, and then click “Update” button. After updating the IP, please re-connect the Web Browser with the new IP address.



- **User Password**

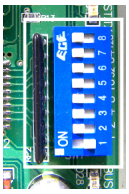
Change the log-in password to lock the IP setting of Ethernet Module.

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



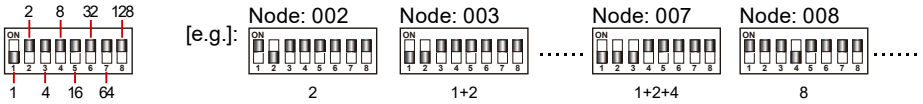
B. Node ID setting

※ The hardware setup is complete, the software can be set.

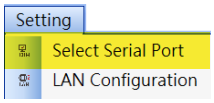


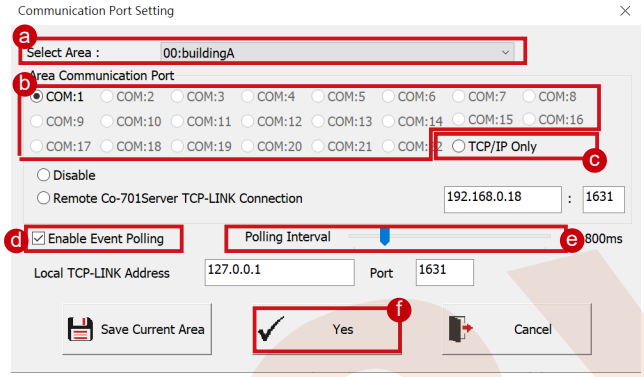
- **Hardware**

  Power Off → Take off the battery connector from [BAT+] socket → Set up node number by 8 dip-switch → Plug in battery connector → Re-apply the power

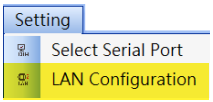


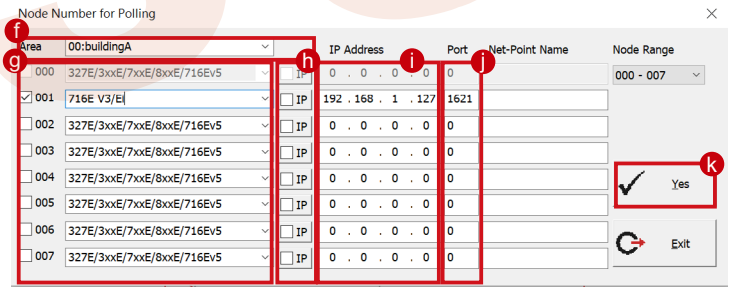
- **Software**

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



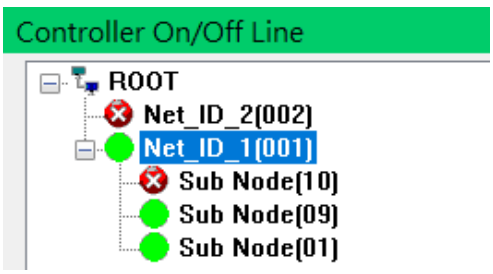
a. Select Area
b. By the computer Detection results to select the port. (Use the RS-485)
c. Select [TCP/IP Oonly]. (Use the Ethernet)
d. Selection the options: Polling Message From Controller.
e. Polling Setting
f. Press YES

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



f. Select Area
g. Selection node ID (for example:001) and access controller
h. If use the Ethernet mode, please check the "IP"; if use the RS-485 mode don't need to check.
i. If use the Ethernet mode, input IP in "IP Address" field. (Default value: 192.168.1.127)
j. Input 1621 in "Port" field. (Default value: 1621; these Port number is SOYAL designed for connection to the network.)
k. Press YES

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

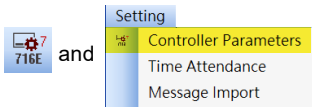


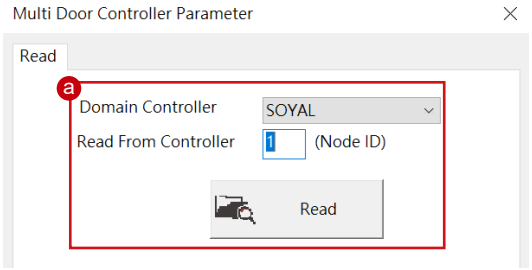
- Well: controller successfully connected to PC.
- Not connected well: recommends the following checks.

4. Download real time clock to AR-716E by clicking.

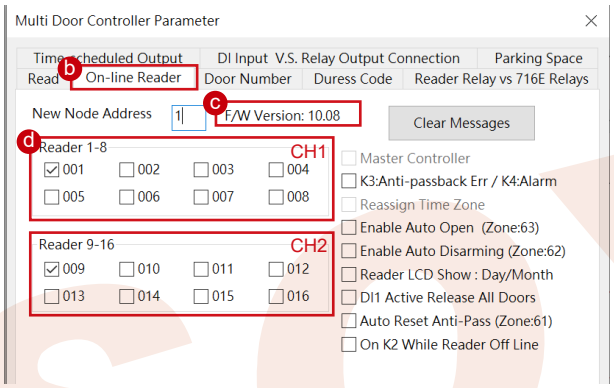
5. Setting up AR-716E parameters:

There are two ways to open the 701E Parameter window: and

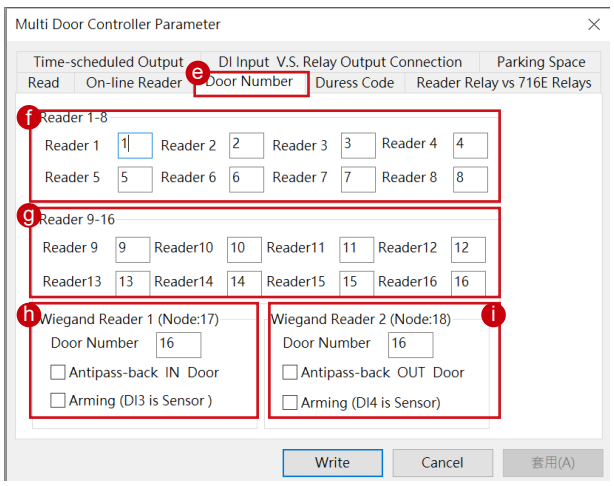


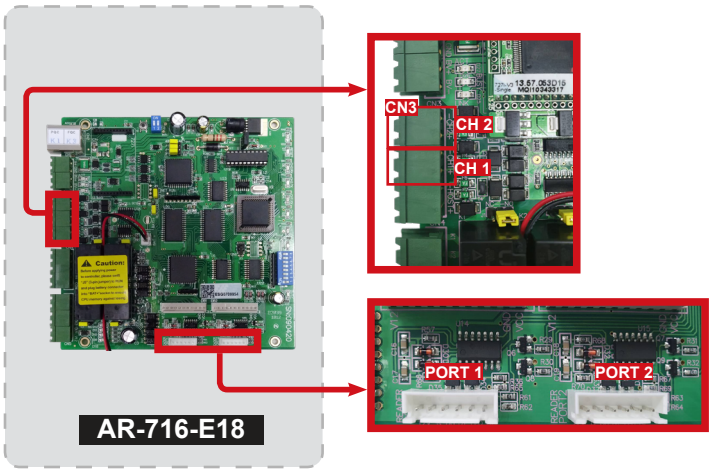


a. There is filled in AR-716-E18 node ID to get in AR-716-E18 parameter for others setting.



b. Setting up "On-line Reader" of readers
c. AR-716-E18 firmware version
d. Current readers connected with AR-716-E18.
※ Node ID of reader must be ticked, or it will show disconnected.





e. Setting up "Door Number" of readers
f. The RS-485 Access Controllers connector to the "Channel 1" of the [CN3]
g. The RS-485 Access Controllers connector to "Channel 2" of the [CN3]
h. The Access Reader connector to the [PORT 1]
i. The Access Reader connector to the [PORT 2]
※ Setting up door number of readers Each door number should be unique.

Multi-Door Networking Controller

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C. Restoring Factory Settings

- **EEPROM Restoring**

  Power Off → Take off the battery connector from [BAT+] socket → [J5] jumper shift to “Clear” position for **0.5** seconds → Shift [J5] back to “RUN”position → Plug in battery connector → Re-apply the power → Done

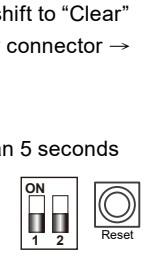
- **IP Address Reset**

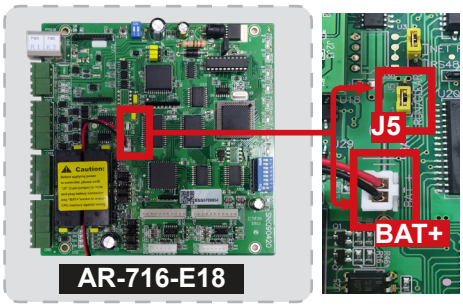
  Shift 2 dip-switch of TCP/IP module to “OFF” → Press IP reset button more than 5 seconds → TCP/IP module will restore to factory default value as follows

- **Factory default value of IP Address**

IP Address: 192.168.1.127
Gateway IP: 192.168.1.254
Subnet Mask: 255.255.255.0

Serial Port: 9600, N, 8, 1
TCP Port: 1621
Password: None





D. About LED (right of the PCB)

- **POWER**

  When the controller is connected to the power, [POWER] will turn from green LED; if no light, mean the power supply have problems.

- **RESET**

  After "EEPROM Restoring", [RESET] will flash the red LED and then clear the memory before the action started.

- **CH2 RX & CH2 TX**

  [CH2 RX] receive Access Controllers Node 9 ~ Node 16 of the information on behalf of each flash a green LED to receive a data controller.

  [CH2 TX] send data to the Access Controllers Node 9 ~ Node16, will flash red LED.

  CH1 RX & CH1 TX

  [CH1 RX] receive Access Controllers Node 1 ~ Node 8 of the information on behalf of each flash a green LED to receive a data controller.

  [CH1 TX] send data to the Access Controllers Node 1 ~ Node8, will flash red LED.

  [e.g.] How to find the external Access Controllers have problem, from the LED.

  If "Channel 1" external 6 Access Controllers, under normal circumstances [CH1 RX] will always be in twinkle.

  LED flash frequency: twinkle, twinkle, twinkle, twinkle, twinkle, twinkle.....

  If LED flash frequency become: twinkle, no, twinkle, no, twinkle, twinkle.....

  It means the Node 2 and Node 4 have problem.

  ※ Because the default value [Node 1] and [Node 9] are checked, so [CH1 TX] and [CH2 TX] will continue to flash, when there are not external the Access Controller.

- **HOST RX & HOST TX**

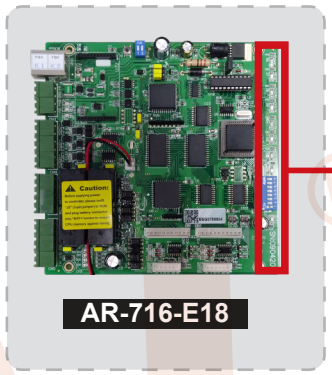
  [HOST RX] sent by the host PC to receive incoming data, the connection has been blinking green LED.

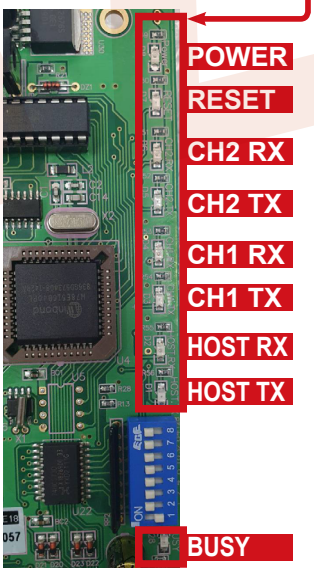
  [HOST TX] to send data to PC host, the connection will remain after the red LED flashes.

- **BUSY**

  When the red LED is lit, the memory is running clear and restores the factory default action.

  ※ If you do not perform "EEPROM Restoring", but the [RESET] and [BUSY] has been lit red, indicating a problem with PCB should be excluded.





E. About LED (lift of the PCB)

- **ACT**

  When the Ethernet mode is successful, [ACT] will be the green LED.

- **BUSY**

  After "IP Address Reset", [BUSY] will be the red LED, and restore to factory default value.

- **LINK**

  After Ethernet connect to [CN2], [LINK] will be the yellow LED.

  ※ If [LINK] lit, but the [ACT] did not light up, indicating a problem with the Ethernet connection to be excluded.

- **D9~D12**

  Representative [CN5] DI1 ~ DI4 on the output state; if "DI1" output signal, [D9] will light green LED.