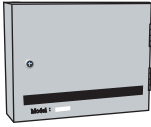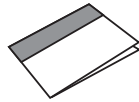## Contents

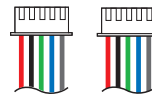| A.Controller	B.User Guide	C.Terminal Cables	D.Keys

Installation

Wall Surface ①

②

Use Appropriate Fasteners
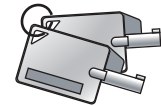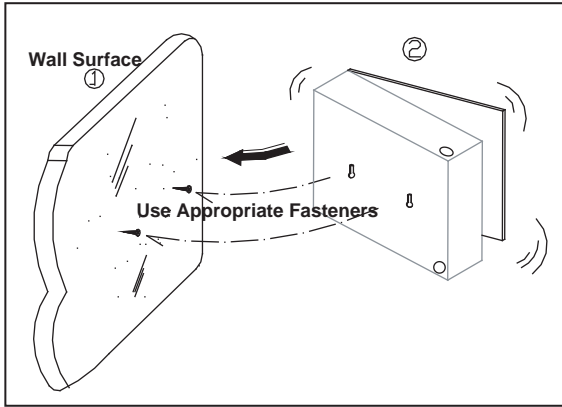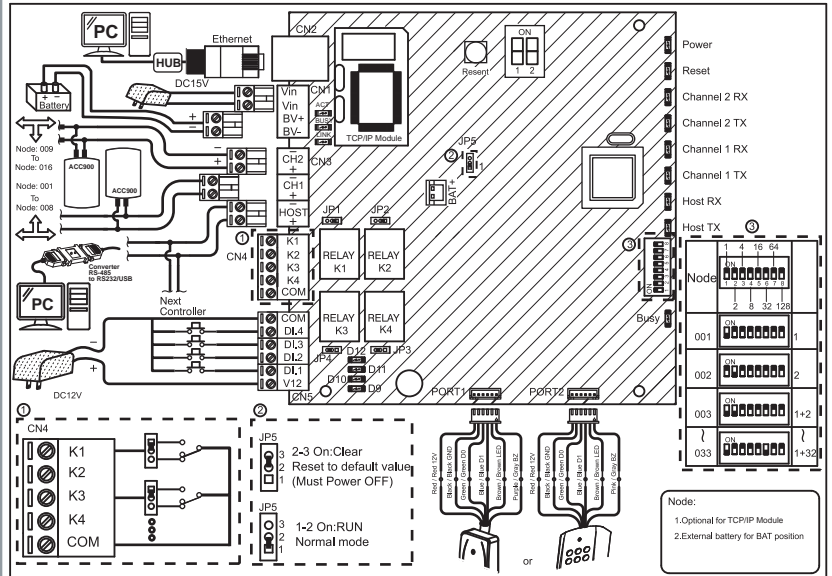
According to the width of two holes on the backside of AR-716E to nail/screw the mounting nails/screws on the wall, and then, hang AR-716E on the wall.

Diagram

Node:
1.Optional for TCP/IP Module
2.External battery for BAT position

TCP/IP Module Configuration

A.

Dip-Switch	Description
Switch 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.
Switch 2	Serial Set up Mode

ON 1 2

B. IP Resent Button
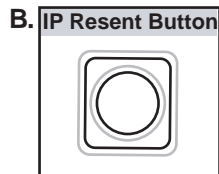
C.

LED Name	LED Color	LED Function
Link	Yellow	Media is connected.
Link	Off	Media is disconnected.
ACT	Green	10Mbps Ethernet is connected.
ACT	Off	Ethernet cable is disconnected or has a short.
Busy	Red	Serial Set up Mode is functioning.
Busy	Off	Serial Set up Mode is not functioning.

ACT
BUSY
LINK

TCP/IP Module
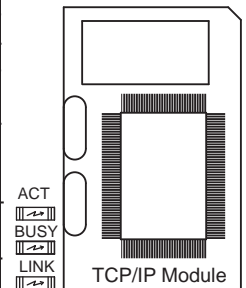
Programming

A.Restoring Factory Settings

1.EEPROM Restoring

Power Off → Take off the battery connector from "BAT+" socket → J5 jumper shift to "Clear" position for 15 seconds → Shift J5 back to "RUN"position → Plug in battery connector → Re-apply the power → Done

2.IP Address Reset

a. Shift 2 dip-switch of TCP/IP module to "OFF"

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

IP Address : 192.168.001.127
Gateway IP : 192.168.001.254
Subnet Mask : 255.255.255.000
Serial Port : 9600,N,8,1
TCP Port : 1621
Password : None

a.
ON
1 2

b.
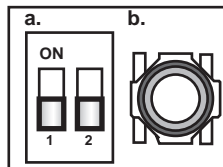
B.Setting up the IP Address

1.Get IP address by Net727 software

If the computer has no DHCP Server built-in, user could get default IP address and modify it as their real IP address by Net727 software.

a.Get PC's IP configuration (Please write down the IP Address)
  (1) By Net727 version 2.08 (Local IP)
  (2) WinXP/2000: Start → Programs → Accessories → Command Prompt → C:\ipconfig
  (3) Win98: Start → Execute → winipcfg

b. Press "IP Reset" button to ensure TCP/IP has restored to factory default value.
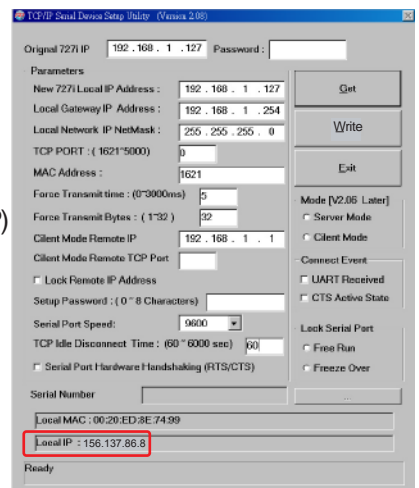
c. Go "My Network Places" → Click right of mouse "Properties" → Local Area Connection → Click right of mouse "Properties" → Click "Internet Protocol (TCP/IP)" twice to open its properties
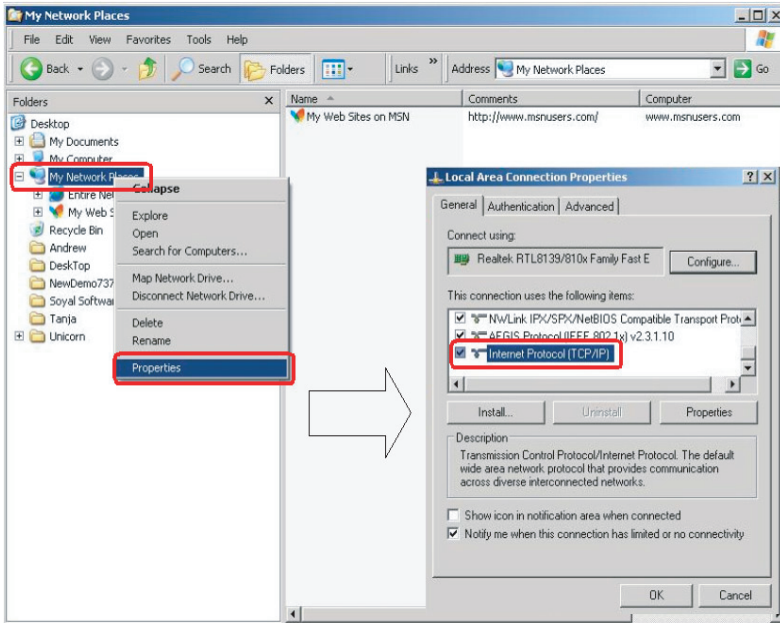
d. Select "Use the following IP address" and key-in
   IP address: 192.168.001.64 (Assumed original IP:156.137.86.8)
   Subnet mask: 255.255.255.0
   →"OK " to exit

e. Switch both DIP-SW 1 and DIP-SW 2 to "OFF"
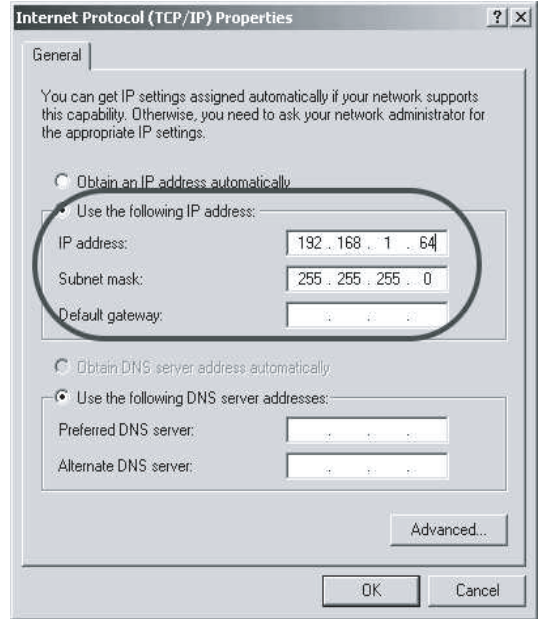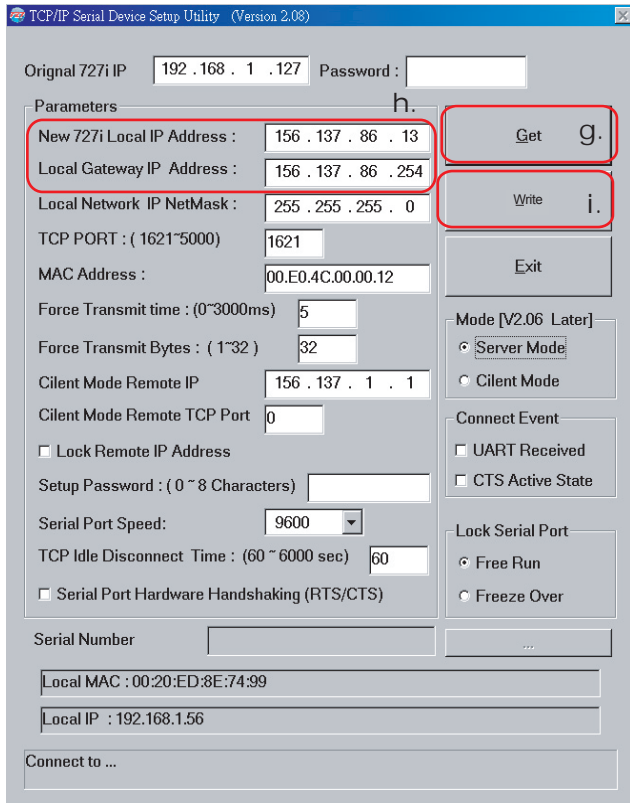f. Install "Device Tools.exe", and then run the Net727 software Net727
g. Click "Get" to get TCP/IP module's default local IP address, gateway, netmask and TCP port.
h. Change new IP address, gateway, netmask and TCP port instead of default values
i. Click " Write " to change the data

j.Please chang yau PC IP back to 156.137.86.8 or tick Obtain an IP address automatically at Internet Protocol (TCP/IP) Properties

TCP/IP Module Specification

Setting	Value	Notes
Local IP Address	192.168.001.127	Defines own IP Address of the TCP/IP module
Local Gateway IP Address	192.168.001.254	Defines the IP Address of the default gateway
Local Subnet Mask	255.255.255.000	Defines the IP Address range for the local network segment
TCP Port	1621	The TCP port that o use to contact this device. To avoid conflicts with standard TCP ports.
MAC Address	00.E0.4C.00.00.50	The MAC (Media Access Control) address is a unique identifier set at the factory.
Force Transmit time	5	Forces TCP/IP time into the same data frame.
Force Transmit Bytes	32	Defines the amount of data in the serial, Ethernet buffer at which the break condition will be generated and the contents of buffer will be sent out via the Ethernet port.
Lock Remote IP Address	-	Allows contact with only the specified remote IP address.
Lock Serial Port (Free Run or Freeze Over)	-	To avoid the hacker use this IP to intercept data when Remote IP Address doesn't receive data.
Setup Password	none	Console password
Serial Port Speed	9600	Changes current baud rate of the TCP/IP module's serial port (from 2400bps to 57600bps).
TCP Auto Disconnect Time (Second)	60	This device automatically closes TCP connection if there is no TCP activity for the given time.
Serial Port Hardware Handshaking (RTS/CTS)	-	An exchange of signal over specific wires which each device indicates its readiness to send or receive data.
DHCP	-	Selecting the enable option allows DHCP to automatically assign the TCP/IP module's IP address.

2.Get IP address by DHCP server

a. Power off and plug in CAT5 cable to AR-716E

b. PCB diagram as follows by using DHCP function
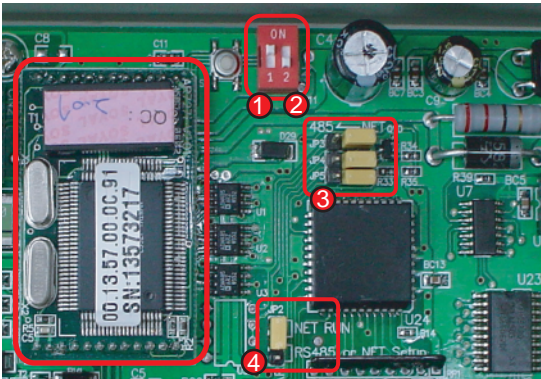
❶ Switch DIP SW-1 to "ON" position.

❷ Switch DIP SW-2 to "OFF" position.

❸ Switch Jumper J3, J4 and J5 to NET position.

❹ Switch Jumper J2 to NET position.

k. Key-in any temporary name.It is not important matter.

m. Set up COM oort properties as 9600, 8,None, 1, and click "OK" to save.

c. Power on. In begging state the ACT LED will flashing, after IP has got ACT LED will off and auto save the new IP address to EEPROM.

d. Power off.

e. Shift JP2 jumper RS-485 position.

f. Then, Switch DIP SW-1 to "OFF" position and Switch DIP SW-2 to "ON" position. (return to Serial Setup Mode)

g. Connect Converter (RS485 to RS232) to the HOST of the PCB.

h. Power on.

i. To modify parameter on the TCP/IP module through the Hyper-Terminal function of the Window. (Start → Programs → Accessories → Communication → Hyper Terminal)

j. Click "Hyper-Terminal". Shown as follows:
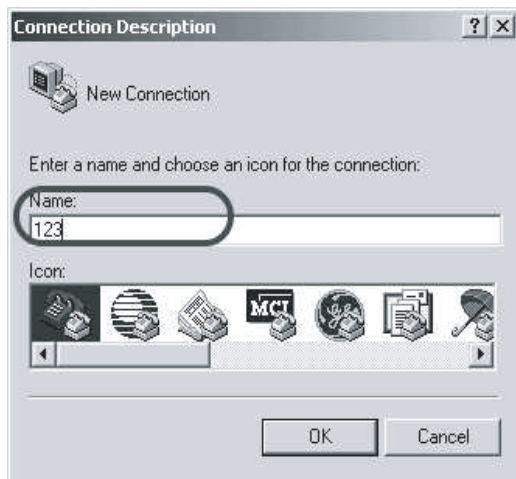
l. Choose which COM port that Converter (RS485 to RS232) connect and click "OK" to exit.

n. TCP/IP module already gets IP address now shown as follows: Note that save it after set all parameters.

```
IP Address :192.168.001.127  |
Gateway IP :192.168.001.254
Netmask IP :255.255.255.000
TCP Port   :1621
Remote IP  :192.168.001.001
Password   :

===  TCP/IP module Ver: 2.07   ===
        0. Local IP
        1. Gateway IP
        2. Netmask IP
        3. TCP Port
        4. Remote IP
        5. Password
        6. Save
==> Quit(OFF DIP SW:1) or Enter a choice:
```

o. Power off. Then switch DIP SW-2 to "OFF" position, shift JP2 jumper to "NET" position and take off Converter.

3.Get IP address by COM Port

At first, PCB diagram as follows and Connect a Converter (RS485 to RS232) to the HOST of the PCB:

❶ Switch DIP SW-1 to "OFF" position.
❷ Switch DIP SW-2 to "ON" position.
   (Serial Setup Mode)
❸ Switch Jumper J3, J4 and J5 to
   RS-485 position.
❹ Switch Jumper J2 to RS-485
   position.

a. Power on.
b.To modify parameter on the TCP/IP module through the
   Hyper-Terminal function of the Window.
   (Start → Programs → Accessories →
   Communication → Hyper Terminal)
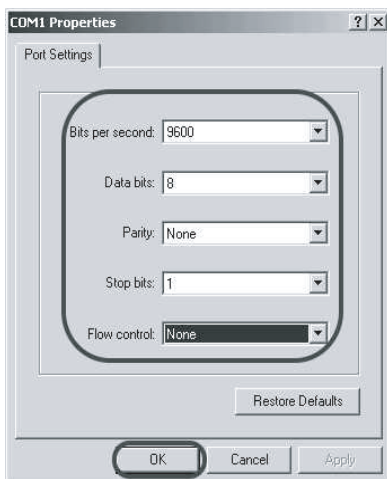
c. Click "Hyper-Terminal". Shown as follows:

d. Key-in any temporary name. It is not important matter.

e. Choose which COM port that Converter connect and click "OK" to exit.

f. Set Port Settings to 9600, 8, None, 1, None and click "OK" to save.

g. TCP/IP module already gets IP address now shown as follows:

h. Please refer above ❶ item and enter item on the ❷ so that set all parameters.
i. Note that enter item 6 on the ❸ to save parameter after finished setting up parameter.
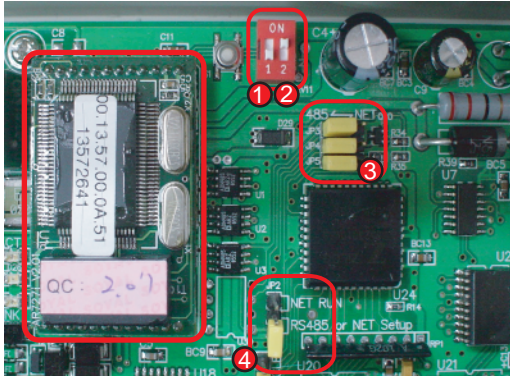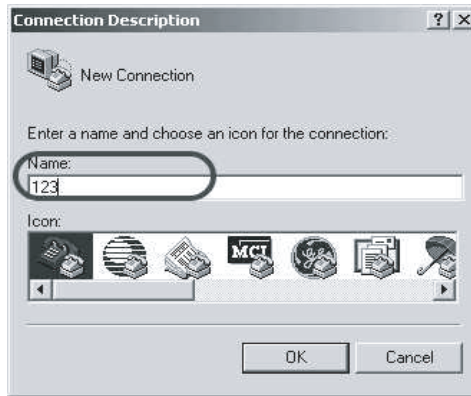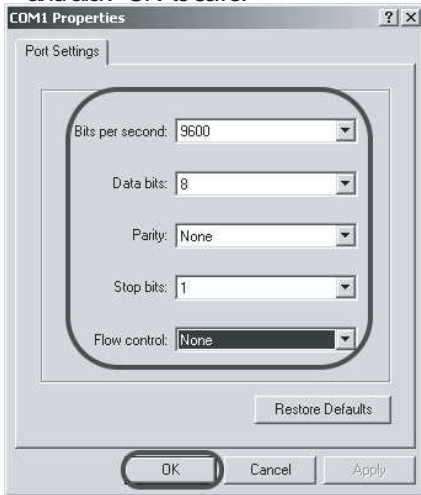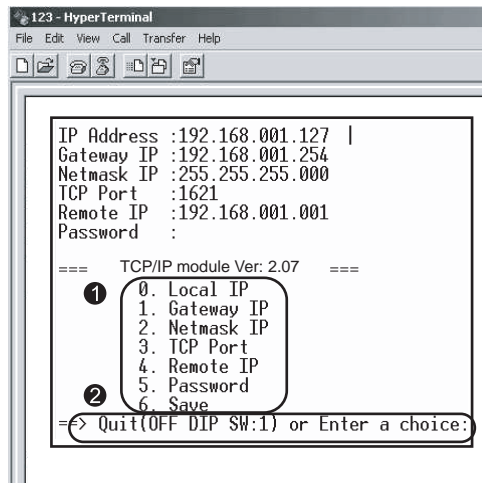j. Then switch DIP SW-1 and SW-2 to "OFF" position.

```
IP Address :192.168.001.127
Gateway IP :192.168.001.254
Netmask IP :255.255.255.000
TCP Port   :1621
Remote IP  :192.168.001.001
Password   :

===    TCP/IP module Ver: 2.07    ===
❶  0. Local IP
    1. Gateway IP
    2. Netmask IP
    3. TCP Port
    4. Remote IP
    5. Password
❷  6. Save
=> Quit(OFF DIP SW:1) or Enter a choice:
```

C.Software Operation

1.Set up communication port at 701Server software.
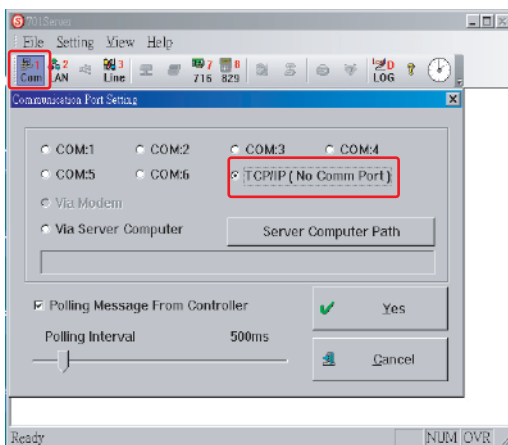
2.Node ID setting
a.Hardware
   Power Off → Take off the battery
   connector from BAT+ socket →
   Set up node number by
   8 dip-switch → Plug in battery →
   Re-apply the power

b.701Server software
(1)Tick Node ID
(2)Tick IP and key-in the new IP address you had changed by
    Net 727 Software.

3.Check the networking connection
   Y means the device is connected (On-line).
   X means the device is disconnected (Off-line).

Node ID of AR-716E

Node ID of reader connected with AR-716E

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

5.Setting up AR-716E parameters
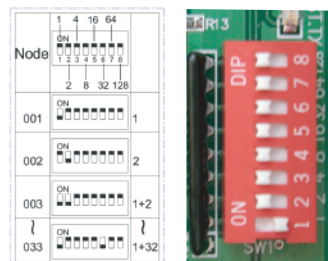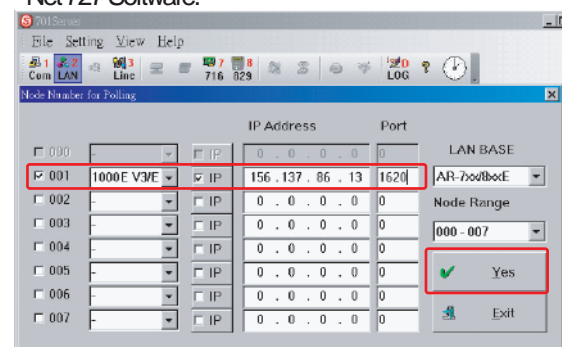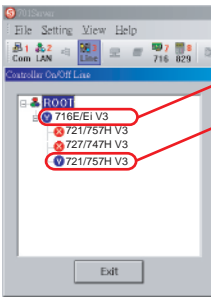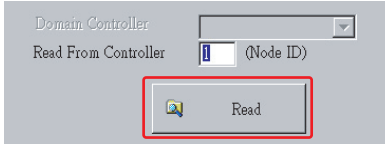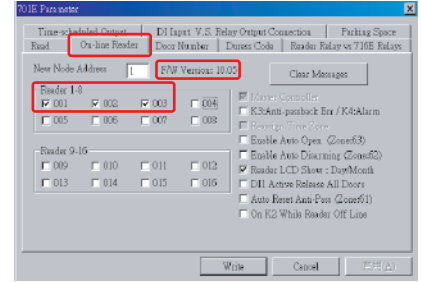   a.Setting up reader of AR-716E

Domain Controller
Read From Controller   1   (Node ID)

Read

b.Setting up door number of readers

❶ AR-716E firmware version
❷ Current readers connected with AR-716E.
    Node ID of reader must be ticked, or it
    will show disconnected.

c.Setting up door number of readers Each door number should be uniqe
i.e.

Domain Controller
Read From Controller   1   (Node ID)

Read

701E Parameter

| Time-scheduled Output | | DI Input V.S. Relay Output Connection | | Parking Space |
| Read | On-line Reader | Door Number | Duress Code | Reader Relay vs 716E Relays |

Reader 1-8

| Reader 1 | 1 | Reader 2 | 2 | Reader 3 | 3 | Reader 4 | 4 |
| Reader 5 | 5 | Reader 6 | 6 | Reader 7 | 7 | Reader 8 | 8 |

Reader 9-16

| Reader 9 | 9 | Reader10 | 10 | Reader11 | 11 | Reader12 | 12 |
| Reader13 | 13 | Reader14 | 14 | Reader15 | 15 | Reader16 | 16 |

Wiegand Reader 1 (Node:17)
  Door Number   17
  ☐ Antipass-back IN Door
  ☑ Arming (DI3 is Sensor)

Wiegand Reader 2 (Node:18)
  Door Number   18
  ☐ Antipass-back OUT Door
  ☑ Arming (DI4 is Sensor)

Write   Cancel   套用(A)

Domain Controller
Read From Controller   2   (Node ID)

Read

701E Parameter

| Time-scheduled Output | | DI Input V.S. Relay Output Connection | | Parking Space |
| Read | On-line Reader | Door Number | Duress Code | Reader Relay vs 716E Relays |

Reader 1-8

| Reader 1 | 19 | Reader 2 | 20 | Reader 3 | 21 | Reader 4 | 22 |
| Reader 5 | 23 | Reader 6 | 24 | Reader 7 | 25 | Reader 8 | 26 |

Reader 9-16

| Reader 9 | 27 | Reader10 | 28 | Reader11 | 29 | Reader12 | 30 |
| Reader13 | 31 | Reader14 | 32 | Reader15 | 33 | Reader16 | 34 |

Wiegand Reader 1 (Node:17)
  Door Number   35
  ☐ Antipass-back IN Door
  ☑ Arming (DI3 is Sensor)

Wiegand Reader 2 (Node:18)
  Door Number   36
  ☐ Antipass-back OUT Door
  ☑ Arming (DI4 is Sensor)

Write   Cancel   套用(A)