



SOYAL AR-401-IO-1608R WEB PLC and Expansion I-O Module Instruction Manual

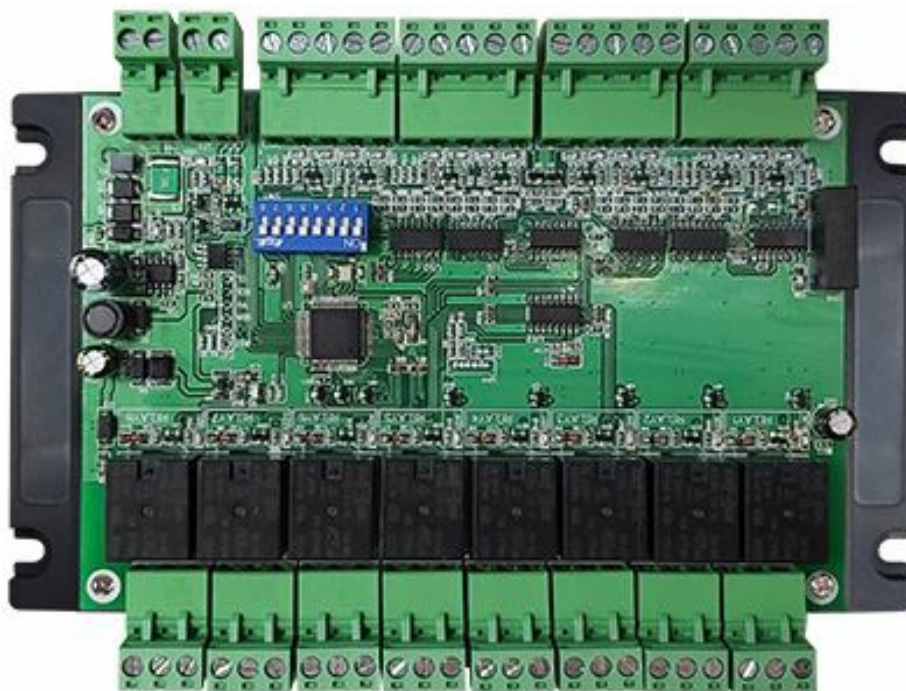
[Home](#) » [SOYAL](#) » SOYAL AR-401-IO-1608R WEB PLC and Expansion I-O Module Instruction Manual 

Contents

- 1 SOYAL AR-401-IO-1608R WEB PLC and Expansion I-O Module
- 2 Contents
- 3 Features
- 4 Specification
- 5 Installation(mm)
- 6 PIN Assignments
- 7 Module I/O (16 Optical Isolation Input / 8 Relay Output)
- 8 Wiring Diagram
- 9 Feature Introduction
- 10 Software Setting
- 11 Documents / Resources
 - 11.1 References

SOYAL®

SOYAL AR-401-IO-1608R WEB PLC and Expansion I-O Module



Contents

Product



AR-401-IO-1608R

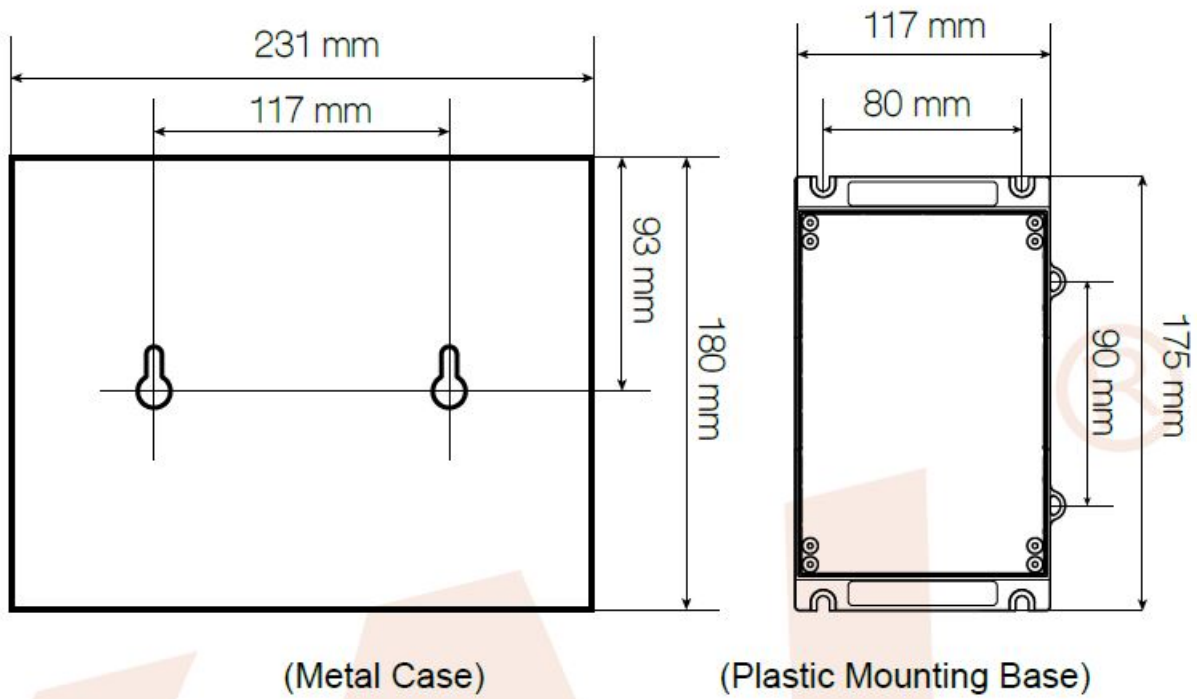
Features

- Support for a high-security centralized access control system with separation of reading and control.
- Supports Modbus and SOYAL communication protocols, suitable for various IoT integration applications.
- Built-in input optocoupler protection function, effectively achieving electrical isolation, high voltage protection, lightning resistance, and avoiding noise interference.
- Versatile application modes: standard I/O, multi-door interlock, people counting, crowd control, etc., easily meeting various application scenarios.
- Compatible with Modular DIN Rail Mounting Base (AR-701B)

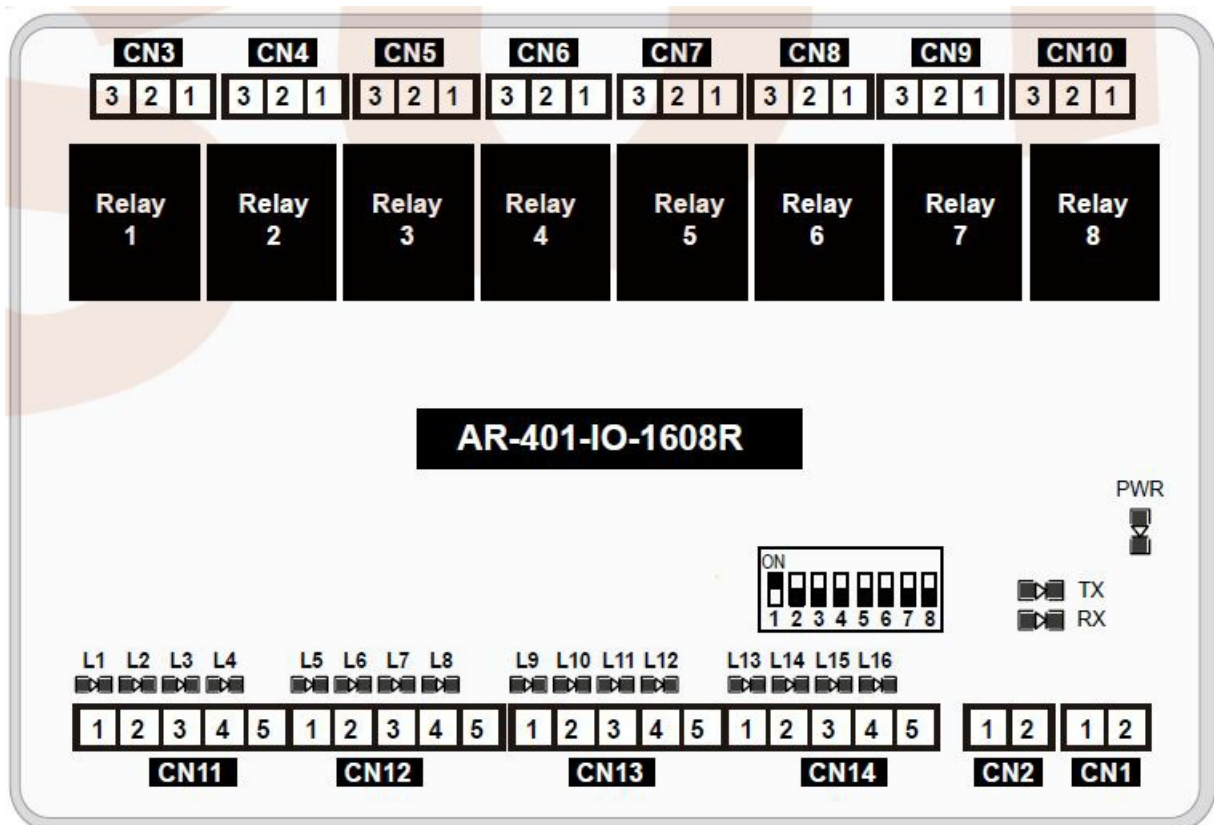
Specification

Interface	Serial port	RS485 X 1 port
	Baud Rate	9600,19200 bps (N,8,1)
Input/Output		16 Digital Input / 8 Relay Output (Form C)
Protocol		Modbus, Soyal protocol
LED Indicator		Power,Tx/Rx, D.O./D.I
Watchdog function		Yes
Operating Temperature		-20°C ~ +70°C
Fuses		Power and RS485 Isolation protection
Noise Isolation		Input optical isolation
Power Supply		9-24 VDC
Power Consumption		<4W
Dimension(mm)		PCB:117(H)x148(W)x20(D) Panel Mounting Base :117(H)x175(W)x30(D) Metal Box:180(H)x231(W)x62(D)
Weight(g)		100±10(PCB Only)

Installation(mm)



PIN Assignments



CN1

Function	Pin	Description
Main Power Supply (Single Power Supply Mode) (DC12V /1W)	1	V+
	2	V-

CN2

Function	Pin	Description
External Port 1 (RS-485 input)	1	L1-(B-)
	2	L1+(A+)

CN3~10

Function	Pin	Description
Relay output 1~8	1	N.O.
	2	COM
	3	N.C.

- 701ClientSQL Graphic Animation I/O mapping starts from 00(Physical IO Address DI1 →Symbol IO №:00, Physical IO Address DI16 →Symbol IO №:15

CN11

Function	Pin	Description
DI input	1	DI.1
	2	DI.2
	3	DI.3
	4	DI.4
	5	COM

CN12

Function	Pin	Description
DI input	1	DI.5
	2	DI.6
	3	DI.7
	4	DI.8
	5	COM

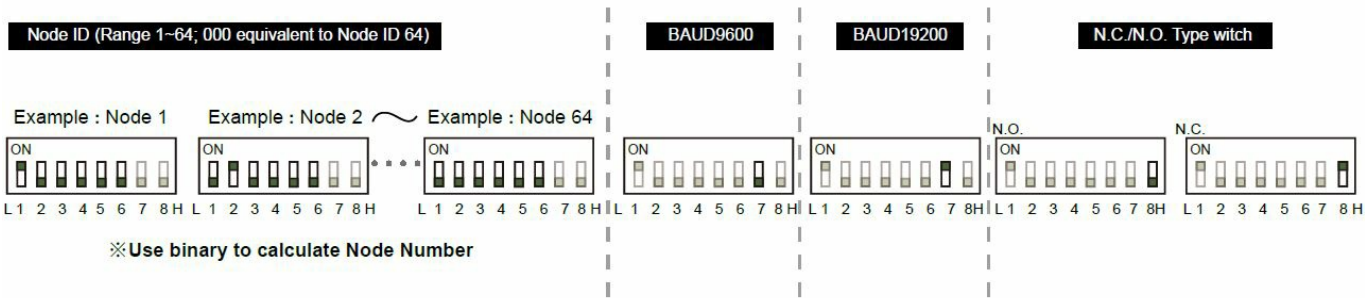
CN13

Function	Pin	Description
DI input	1	DI.9
	2	DI.10
	3	DI.11
	4	DI.12
	5	COM

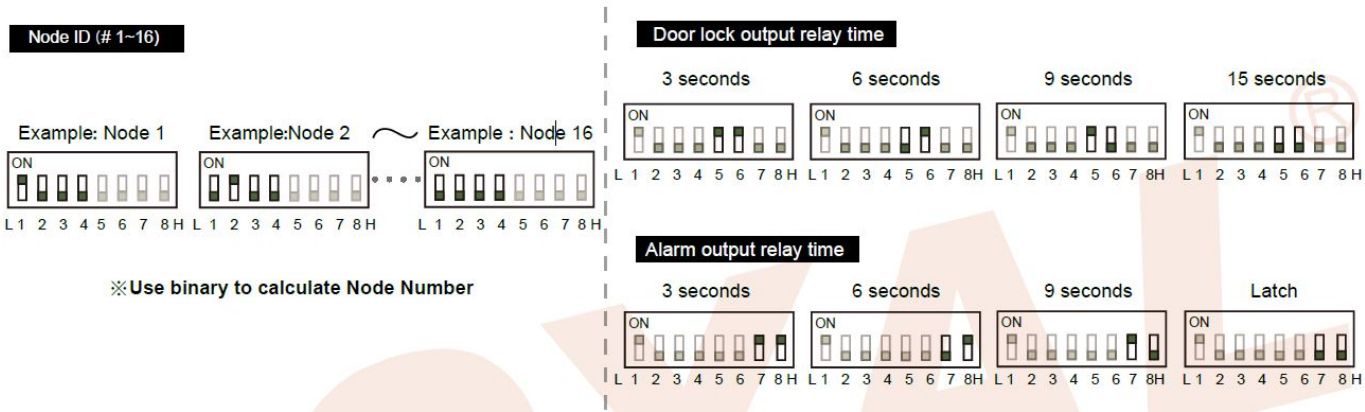
Function	Pin	Description
DI input	1	DI.13
	2	DI.14
	3	DI.15
	4	DI.16
	5	COM

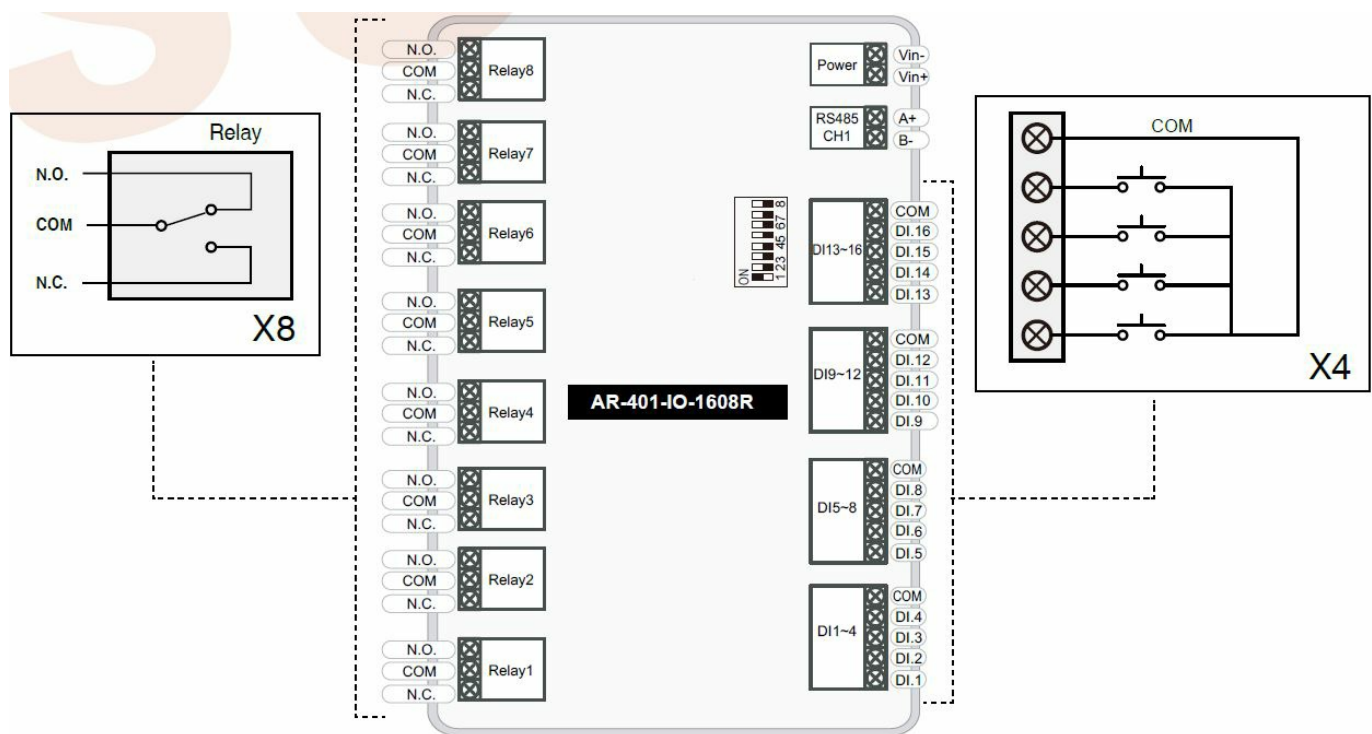
Module I/O (16 Optical Isolation Input / 8 Relay Output)

DIP Switch Setting
Standard Firmware



Interlock Door Solution



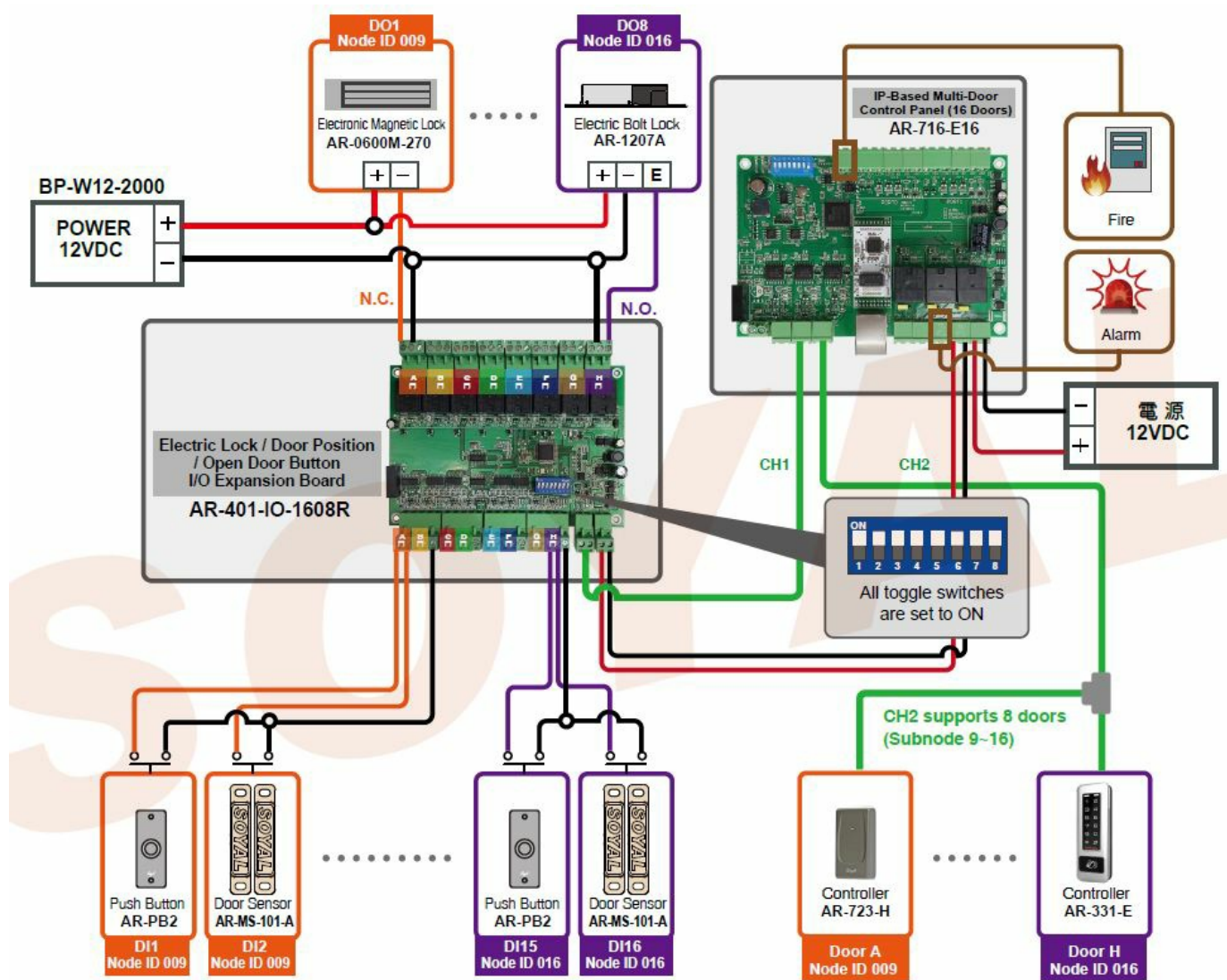


Wiring Method for High-Security Mode

Feature Introduction

- The high-security mode architecture offers several advantages:
- Power Failure Continuation: A backup mechanism for uninterrupted operation during power outages.
- Centralized Control: Electric locks, open door buttons, and door position detection are all centralized in the equipment room, reducing the risk of I/O control leakage.
- Advanced Anti-Tailgating: Support for interlock control of up to 8 doors to prevent unauthorized entry.

Wiring Diagram



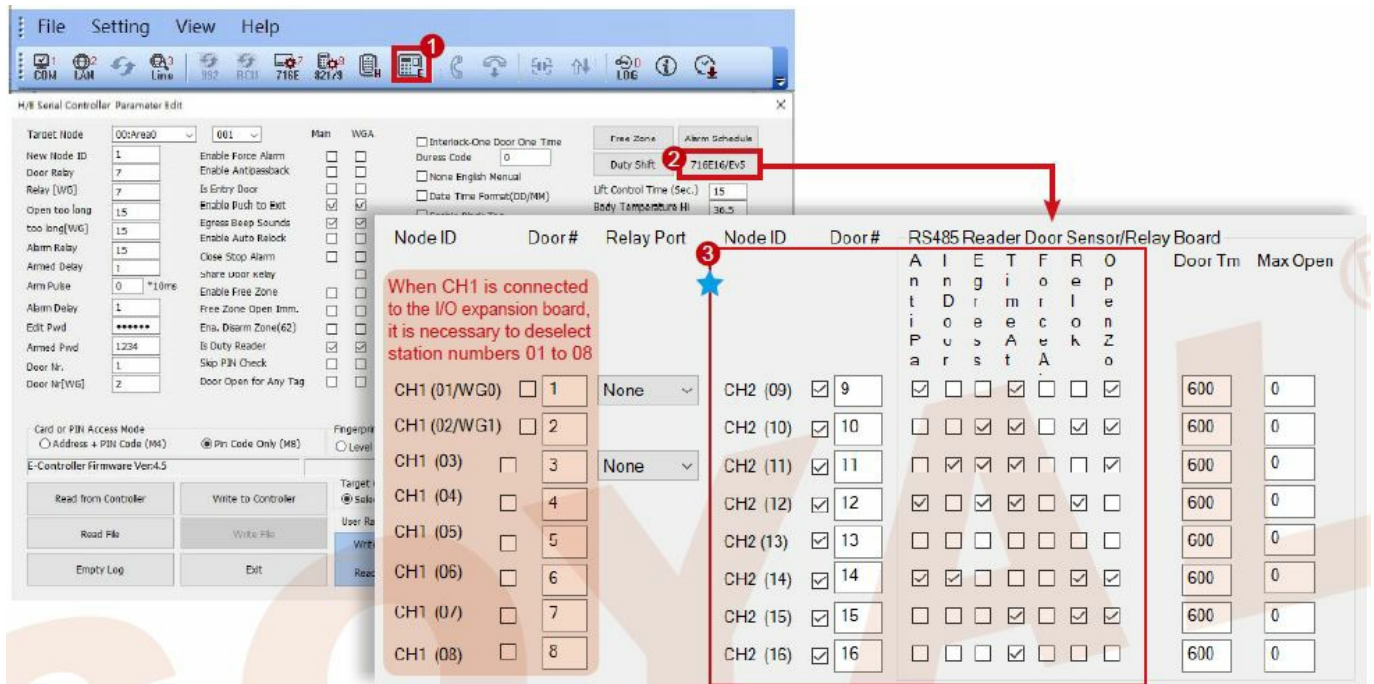
Door Name	Channel 1			Channel 2	Common Contact
	Lock	Push Button	Door Sensor	Controller	
Door A	DO1	DI1	DI2	Node ID 009	Fire Alarm
Door B	DO2	DI3	DI4	Node ID 010	
Door C	DO3	DI5	DI6	Node ID 011	
Door D	DO4	DI7	DI8	Node ID 012	
Door E	DO5	DI9	DI10	Node ID 013	
Door F	DO6	DI11	DI12	Node ID 014	
Door G	DO7	DI13	DI14	Node ID 015	
Door H	DO8	DI15	DI16	Node ID 016	

Software Setting

Setting Method



- **STEP 1:** Select in 701ServerSQL.
- **STEP 2:** Click "721E16/Ev5"
- **STEP 3:** Check the required functions for RS-485 card readers with station numbers 09 to 16 on CH2.
- When CH1 is connected to the I/O expansion board, it is necessary to deselect station numbers 01 to 08.



	701ServerSQL Screen Names	Function Description
1	Anitipa	Anti-pass-back
2	Indoor	Entry/Exit Reader
3	Egress	Exit by Push Button
4	TimeAt	Entry and Exit Access is recorded on the Duty Report
5	ForceA	Enable force Open trigger alarm
6	Relok	Activate close door automatically lock (Auto-Relock)
7	OpenZo	Auto Open

Documents / Resources



SOYAL
Module IO (16 Optical Isolation
Inputs & Relay Output)
AR-401-IO-1608R

SOYAL

- 1. Introduction
- 2. Features
- 3. Specifications
- 4. Pin Assignments
- 5. Connections
- 6. Programming
- 7. Troubleshooting
- 8. Appendix
- 9. Safety
- 10. Warranty

[SOYAL AR-401-IO-1608R WEB PLC and Expansion I-O Module](#) [pdf] Instruction Manual
AR-401-IO-1608R, AR-401-IO-1608R WEB PLC and Expansion I-O Module, WEB PLC and Expansion I-O Module, PLC and Expansion I-O Module, Expansion I-O Module, I-O Module, Module

References

- [User Manual](#)