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INSTALLATION

MAC318M

16+2 Multi-Reader Interface Door Access

MAC318M: 16+2 Multi-Reader Interface Door Access

Description

MAC318M is a professional multi-door control panel engineered for advanced and extensive access control management. It provides centralized, high-level control over user permissions, defining exactly who can access specific doors and at what times using various methods, such as card-only or card-plus-PIN authentication. Optimized for large-scale security environments, the MAC318M supports a substantial capacity of 15,000 users and features integrated global anti-passback functionality to maintain strict security protocols across all online readers.

Seamlessly integrating with MagEtegra software, the MAC318M offers a clean and efficient interface for real-time monitoring, centralized data collection, and manual control of connected electrical equipment.

Features

1. **Global Anti-Passback:** Achieves centralized door lock control with supported scheduled auto-reset to provide tamper-proof security across the entire network.

2. **High User Capacity:** Reliably manages a database of up to **15,000 cardholders** for large organizations.

3. **Extensive Reader Management:** Provides efficient monitoring and centralized data collection for up to **16 connected readers**.

4. **Flexible Access Scheduling:** Supports automated door unlocking based on pre-set time zone schedules, access time zone with multiple interval in same day and door group.

5. **Flexible Communication Modules:** Features a built-in RS-485 interface with an optional TCP/IP module for seamless network integration and computer management.

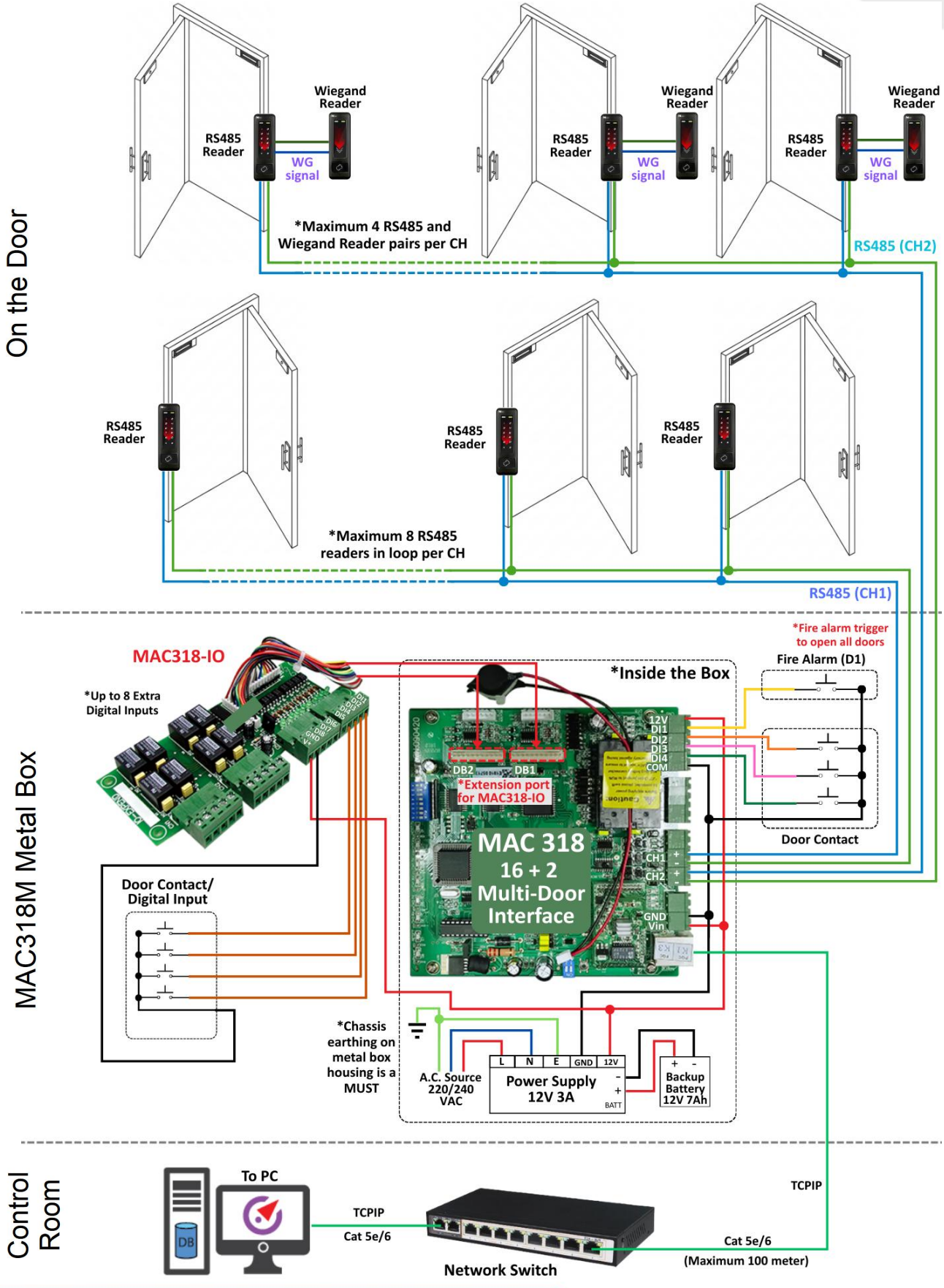
6. **Emergency Integration:** Includes an emergency release function that can automatically unlock all doors upon receiving a fire alarm or emergency signal.

7. **Centralized Monitoring:** Enables administrators to manually control electrical equipment and receive instant notifications for force entry or anti-passback errors.

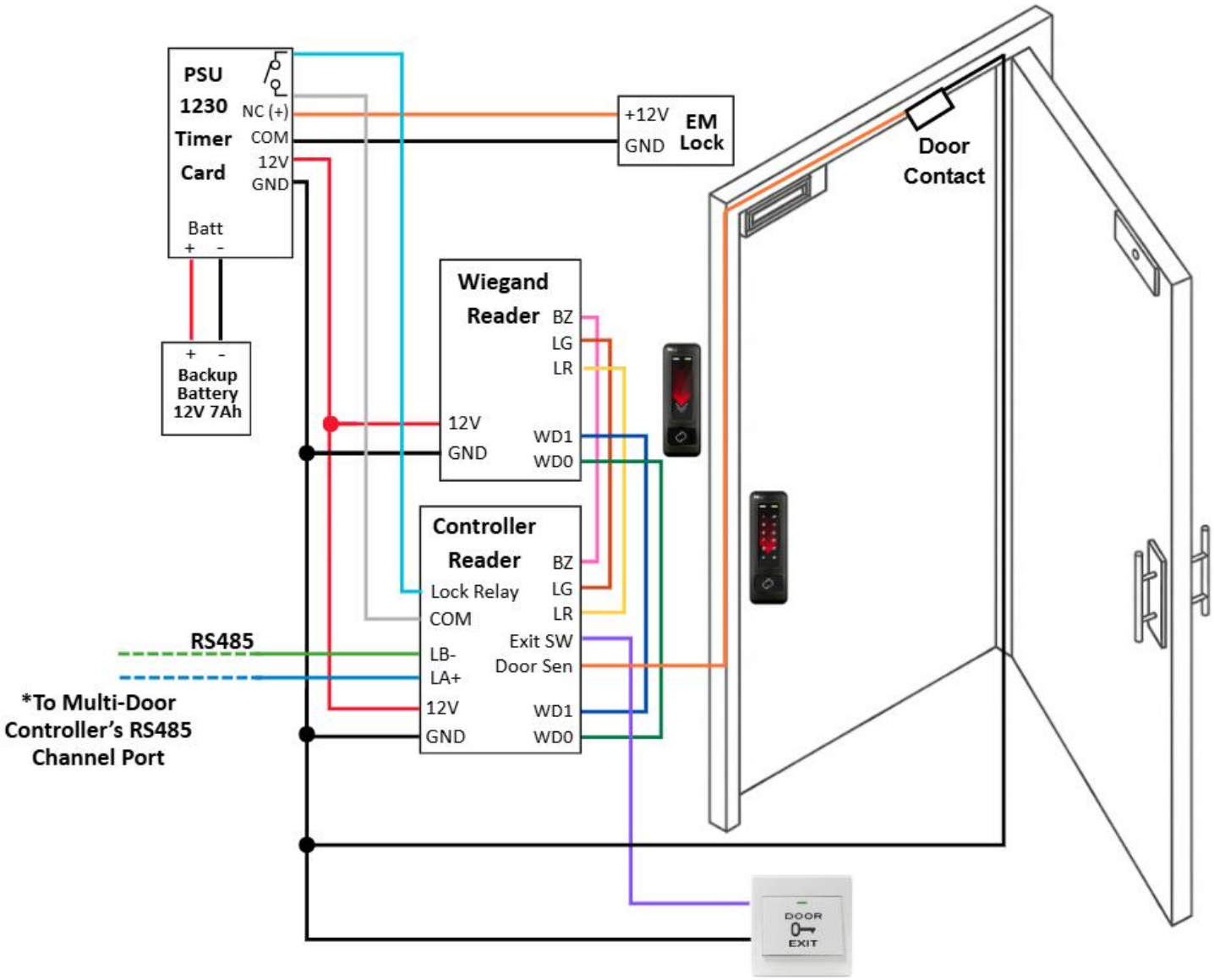
8. **Multi-Reader Support**: Connects up to **16 units of RS-485 readers** and **2 units of Wiegand readers**.

9. **Continuous Operation**: Supports rechargeable battery integration to keep the system running during power outages.

Connection Architecture

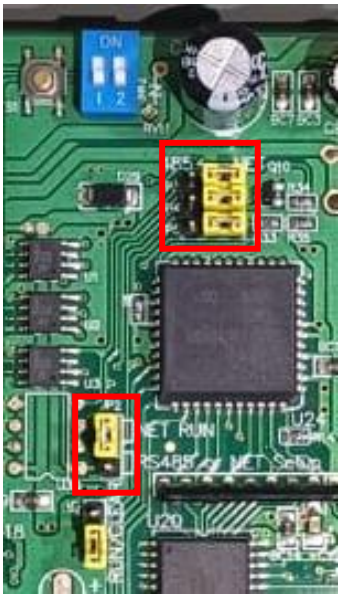


Door Wiring Diagram



MAC318 hardware setup

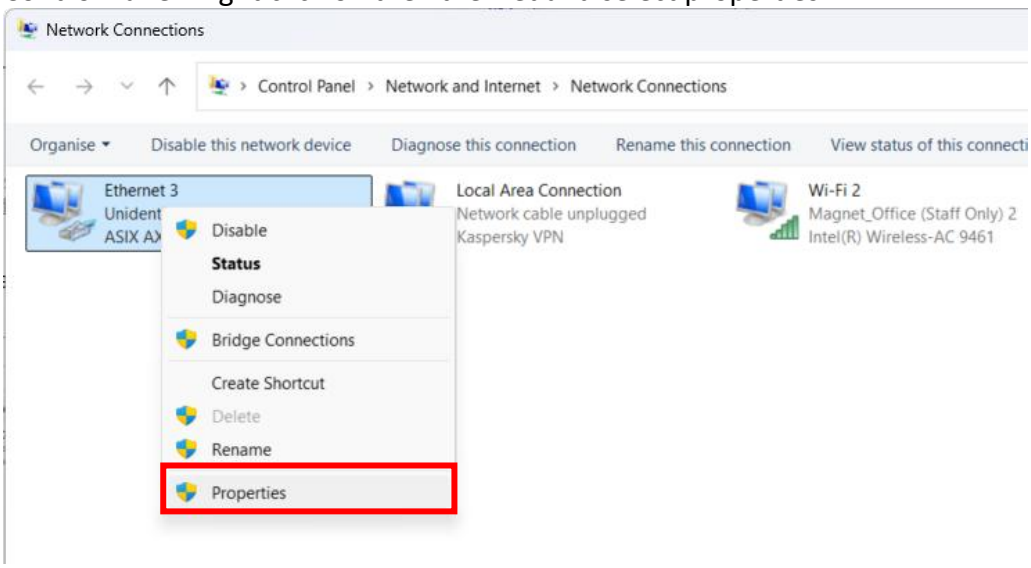
Before using the Ethernet mode, ensure that the yellow cap connectors are in the correct “NET” slots.



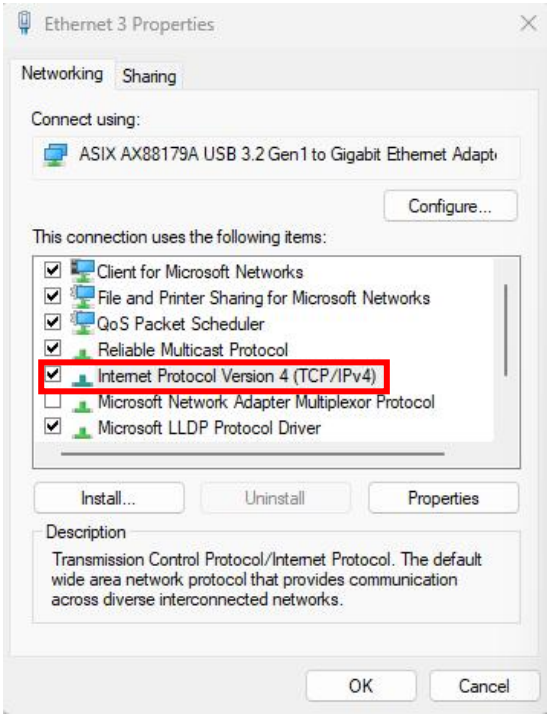
The default IP Address for MAC318 is 192.168.1.127. Ensure that the IP segment for the PC is similar.

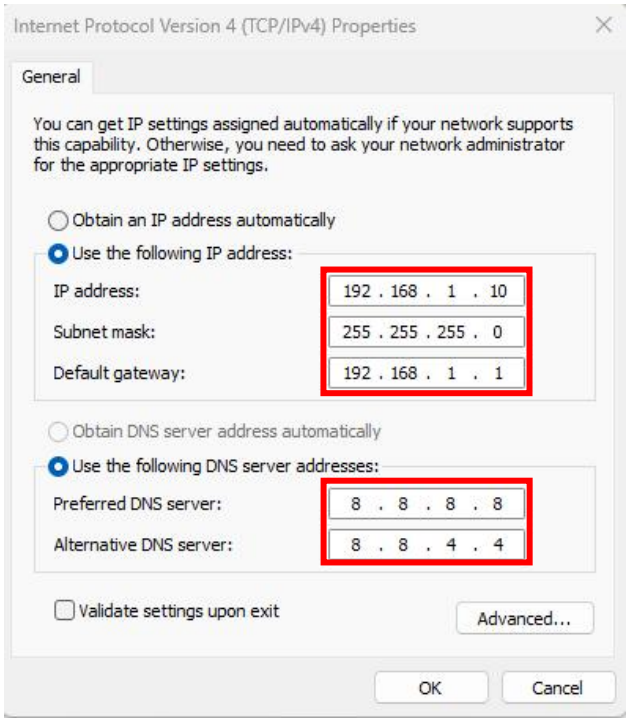
1. Setting the PC’s IP Address.

a) Go to the “Network connections” setting under “Network and Internet” option in the Control Panel. Right click on the Ethernet and select properties.



b) Double click “Internet Protocol Version 4 (TCP/IPv4)”. Tick the “Use the following IP Address”. Set the IP Address, Subnet mask and Default Gateway accordingly. Click “OK” to save the settings.

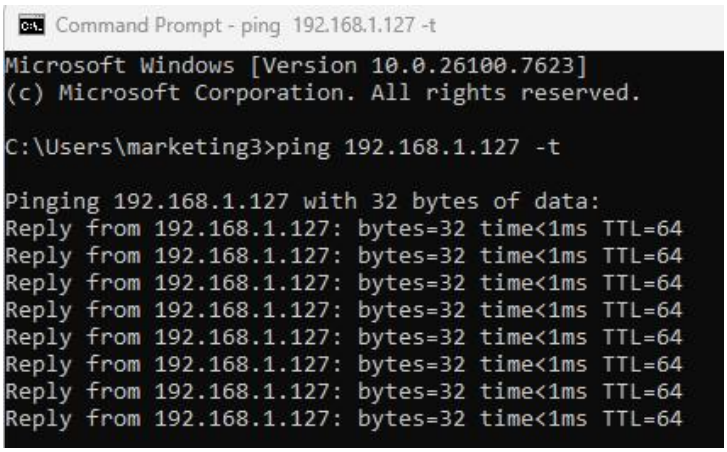


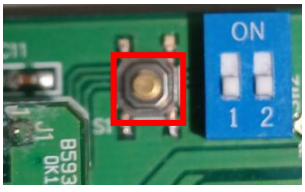


2. Set the IP Address for MAC318.

To make sure that the MAC318 successfully connected to the PC, open the command prompt and ping the device IP Address.

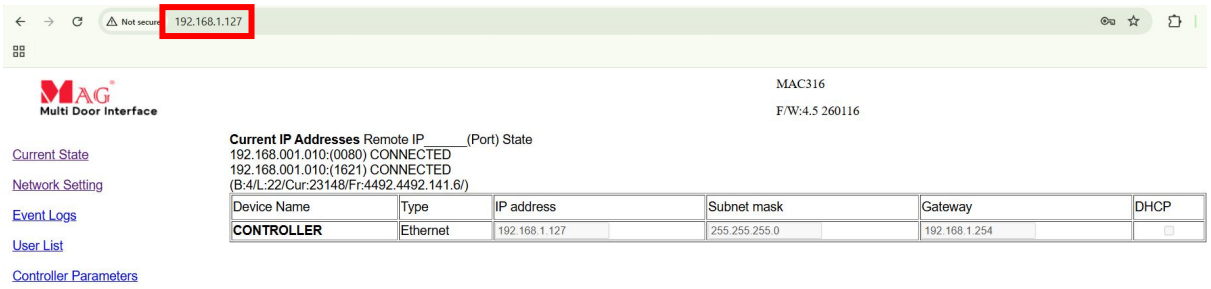
“ping 192.168.1.127 -t”



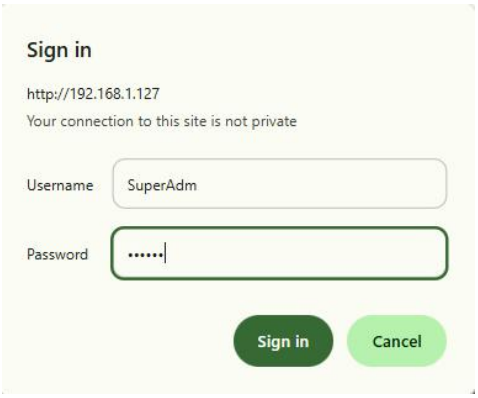


(if unsuccessful, try reseting MAC318. Hold for 5 seconds.)

a) Open the web browser, key in the IP Address on the search bar, then click “Network Setting”.



b) Enter “Username : SuperAdm” & “Password : 721568” then click “Sign in” to enter the network setting.



c) Set the IP Address, subnet mask, gateway and node ID accordingly. Click update to save the setting. If the IP segment is different, make sure to change the IP Address for the PC same IP segment same with the device.

Network Setting

After you have changed the IP address, the device will **restart** (hardware reset).
Please update the IP address in the browser after any changed.

Item	Setting
Device Name	CONTROLLER (Can be any unique identifier)
LAN IP Address	192.168.1.127
LAN Net Mask	255.255.255.0
Default Gateway	192.168.1.254
Primary DNS Server	0.0.0.0
Secondary DNS Server	0.0.0.0
MAC Address	00-13-57-06-35-51
DHCP Client	☐
TCP Listen Port	1621 (1024~65530)
HTTP Server Port	80 (80~65530)
Socket Timeout	120 (0~600)sec. (TCP Client Keep Alive:0)
Area ID (0~15)	0
Node ID (Device ID)	3
Message Server IP 1st	0.0.0.0
Message Port 1st	0 (1024~65530, 0:disable, 8031:Text Mode)
Message Server IP 2nd	0.0.0.0
Message Port 2nd	0 (1024~65530, 0:disable or 8031:Text Mode)
	Update

Node ID is set by DIP Switch.
Supports Node ID: 001 - 254

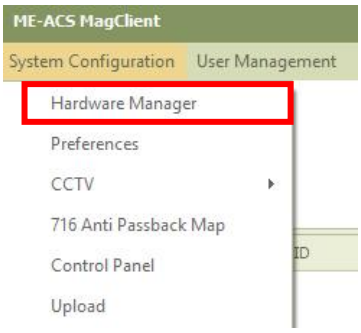
Value	1	2	4	8	16	32	64	128
DIP SW	1	2	3	4	5	6	7	8
Node 01	Off	ON	ON	ON	ON	ON	ON	ON
Node 02	ON	Off	ON	ON	ON	ON	ON	ON
Node 03	Off	Off	ON	ON	ON	ON	ON	ON
≀								
Node 253	Off	ON	Off	Off	Off	Off	Off	Off
Node 254	ON	Off	Off	Off	Off	Off	Off	Off

*DIP Switch Setting for Node ID: 3

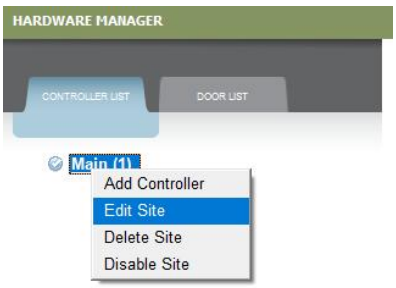
MagEtegra ME-ACS software setup

1. Add MAC318 into Hardware Manager

a) Run MagClient --> System Configuration --> Hardware Manager

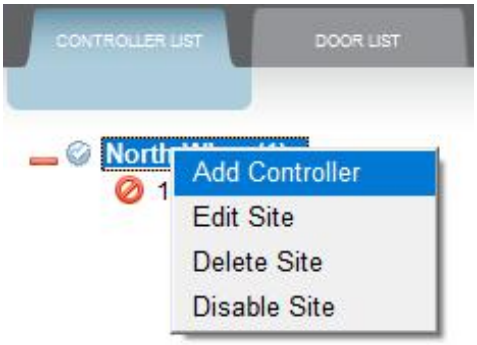


Right click on Main--> Click “Edit Site”

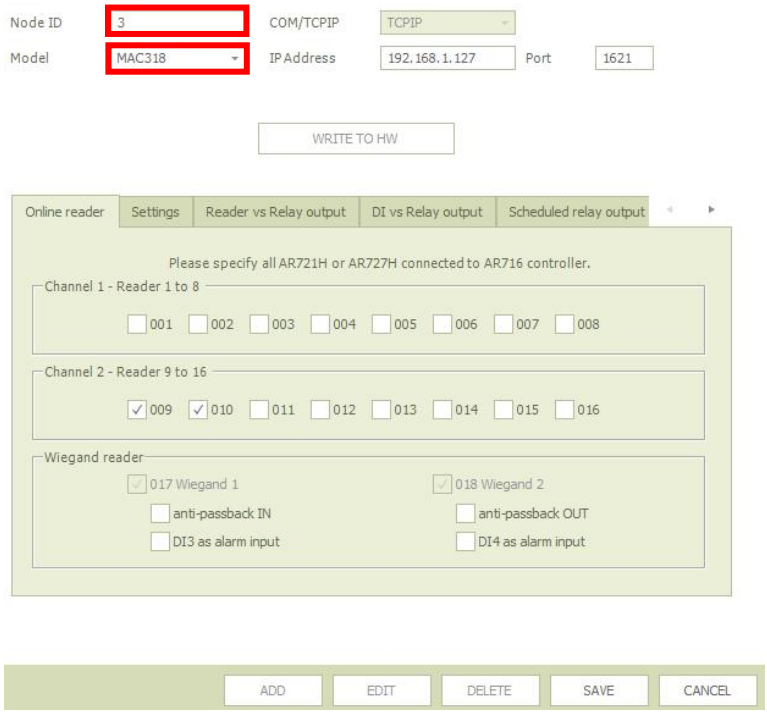


b) Select “TCPIP” and key-in the Site Name, MAC318’s IP address and port number.

c) Click on the selected site to highlight it, then right click and select “Add Controller” to add controller.



d) Key in the MAC318’s Node ID (Default is 1) --> Select Reader Model “MAC318”

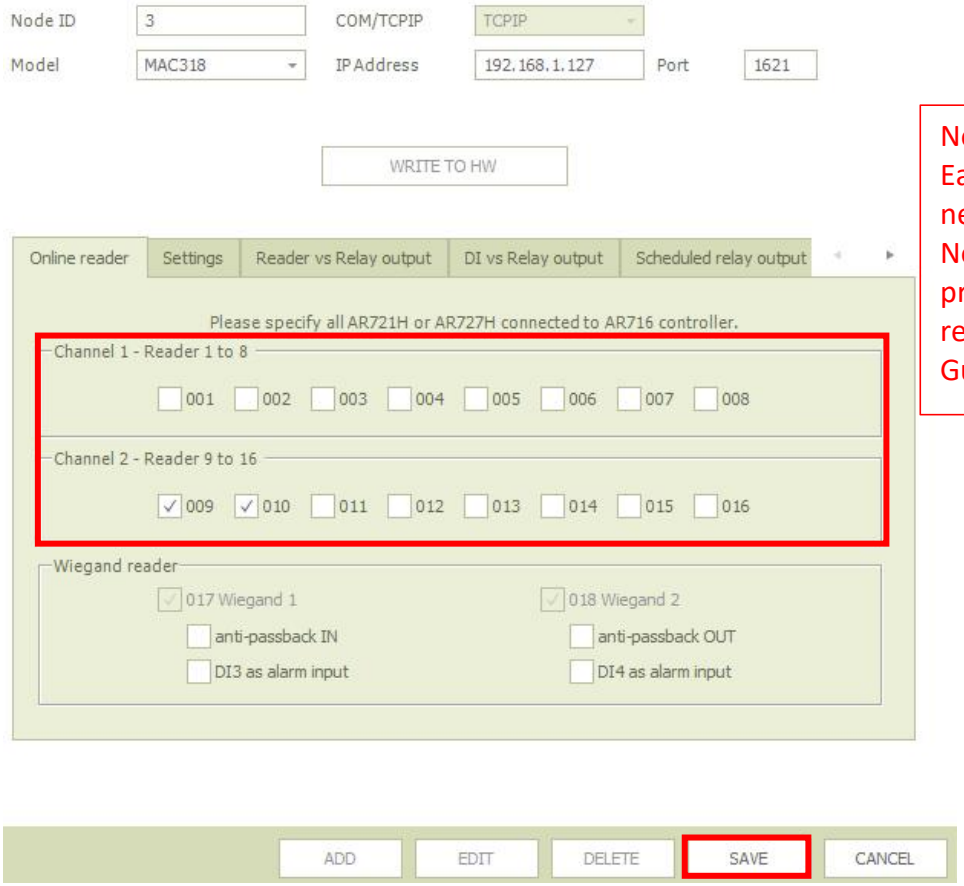


Node ID is set by DIP Switch.
Supports Node ID: 001 - 254

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

*DIP Switch Setting for Node ID: 3

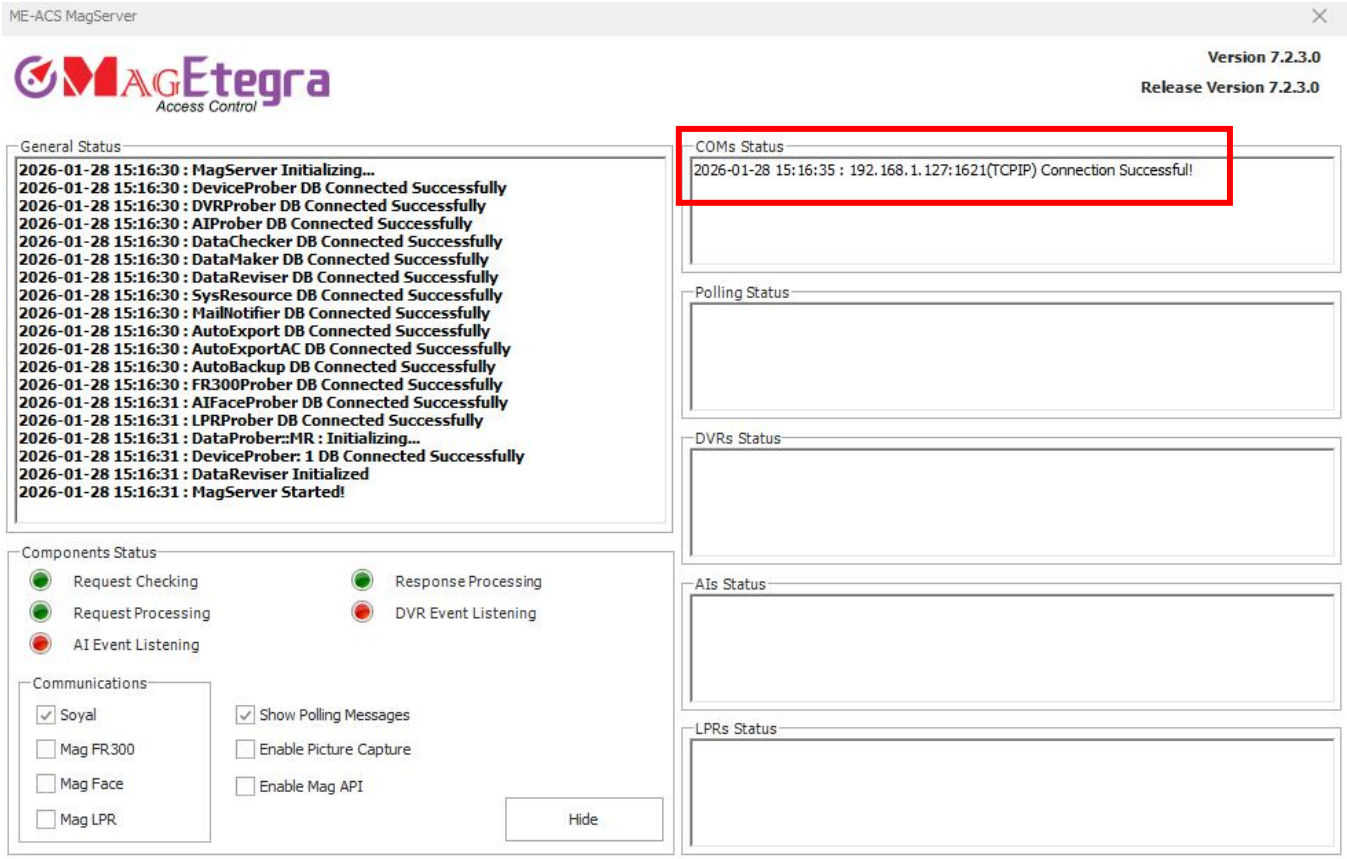
e) Select the respective Node ID's of all Readers being used. Click "Save" to save all settings.



Note:
Each connected RS485 Reader needs to be assigned a distinct Node ID. This has to be programmed manually (refer to respective RS485 Reader's User Guide)

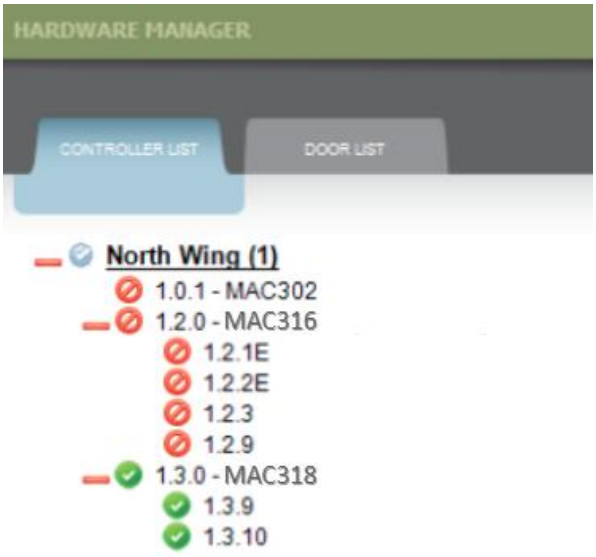
f) Select "Save & Write to HW" to save settings and upload to hardware.

g) Launch “MagServer” and wait for COMs Status



*If unsuccessful, check for loose cable connections or mistyped IP Address. By default, MAC318’s IP Address is “192.168.1.127”

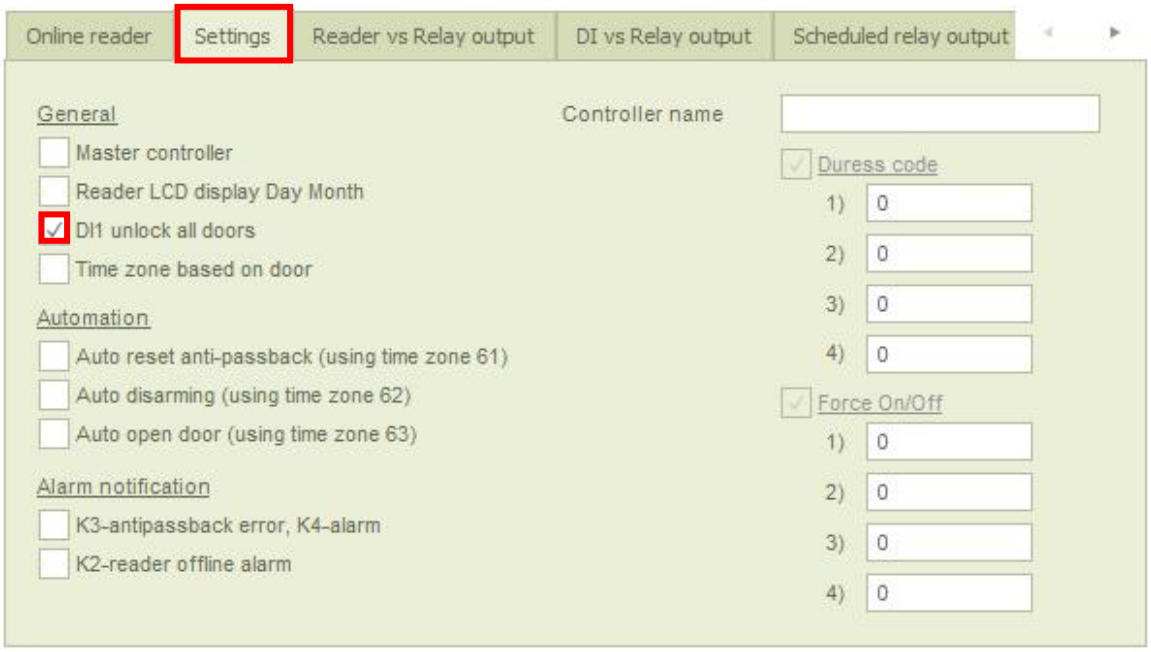
h) Green Icon means connection of MAC318 to MagEtegra Software is successful.



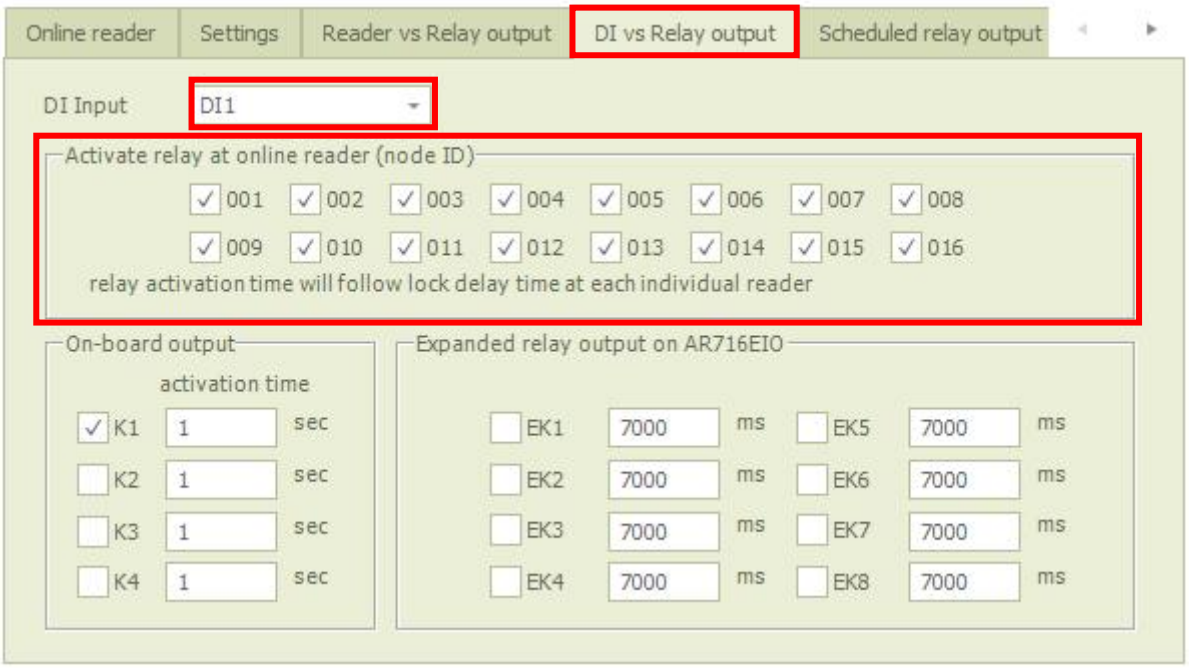
Advanced Application Set-up

Fire Alarm Integration to unlock all doors during emergency

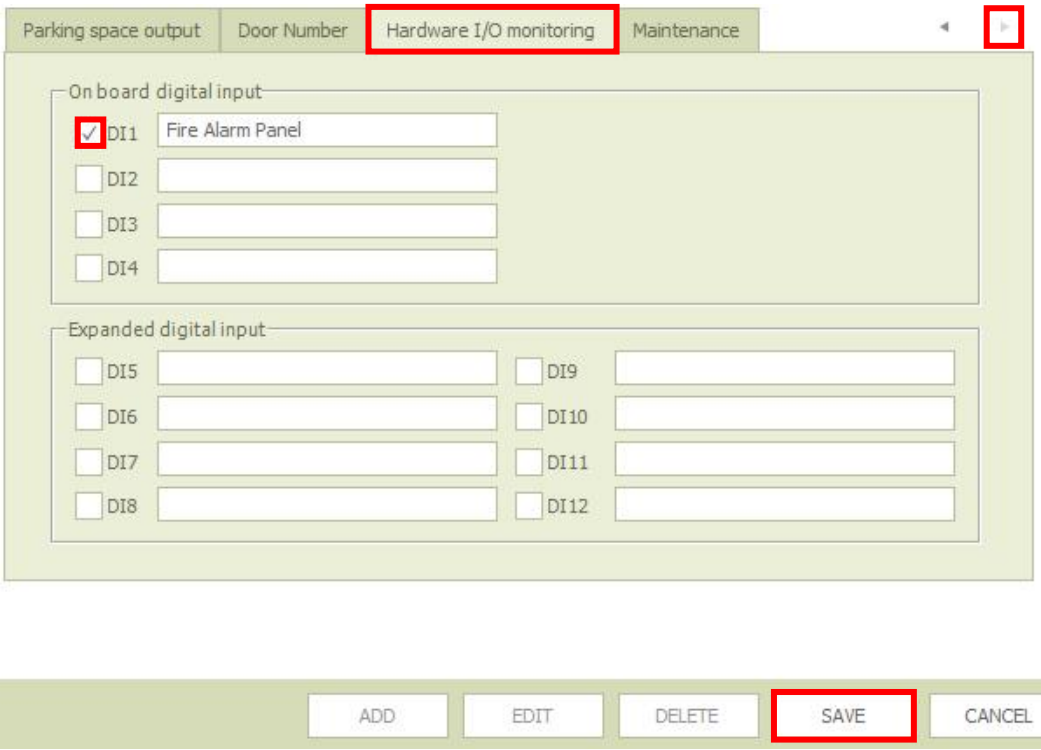
a) System Configuration --> Hardware Manager --> MAC318 --> Settings



b) Select “DI vs Relay output” and select all reader node ID’s for “DI 1”
(If you wish to keep specific doors locked during a fire emergency, you may choose to not select the respective door’s reader node ID)



c) Next tab arrow --> “Hardware I/O monitoring” --> Select “DI1” --> Click “Save” to save settings



Anti-passback

MAC318's Anti-passback security feature forces a user to "exit" a secured area (using their card/credential) before they can "enter" it again. This added feature prevents sharing credentials to let someone else in (passing back) or tailgating, ensuring one card equals one person per entry/exit cycle.

a) To activate the anti-passback feature, program the Controller Readers(CA413-RK) with the following command:

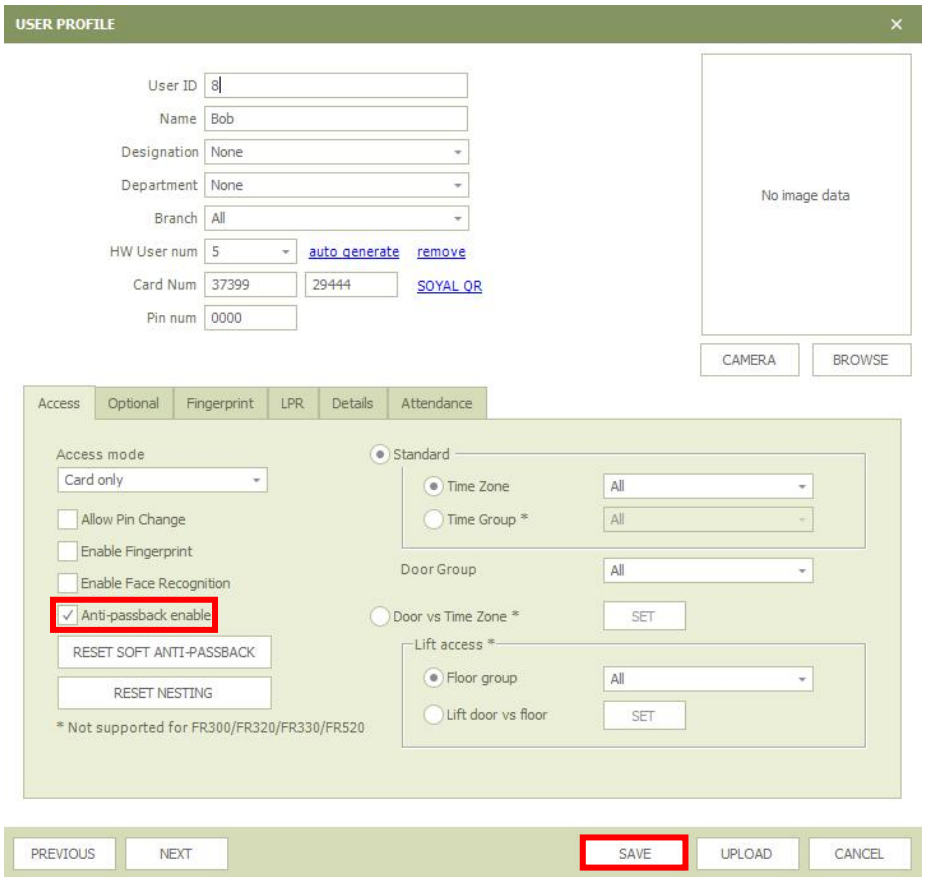
1. Enter Programming Mode (By default: *123456#)
2. Press the following code to differentiate the readers:

   ENTRY READER - 20 * 208 #
   EXIT READER - 20 * 144 #

3. Press *# to to save the setting and exit. (**# to save, arm and exit)

b) Anti-passback is enabled on all new users by default. To disable this feature on specific users:

1. Go to the specific user profile
2. Deselect "Anti-passback enable", click "Save".

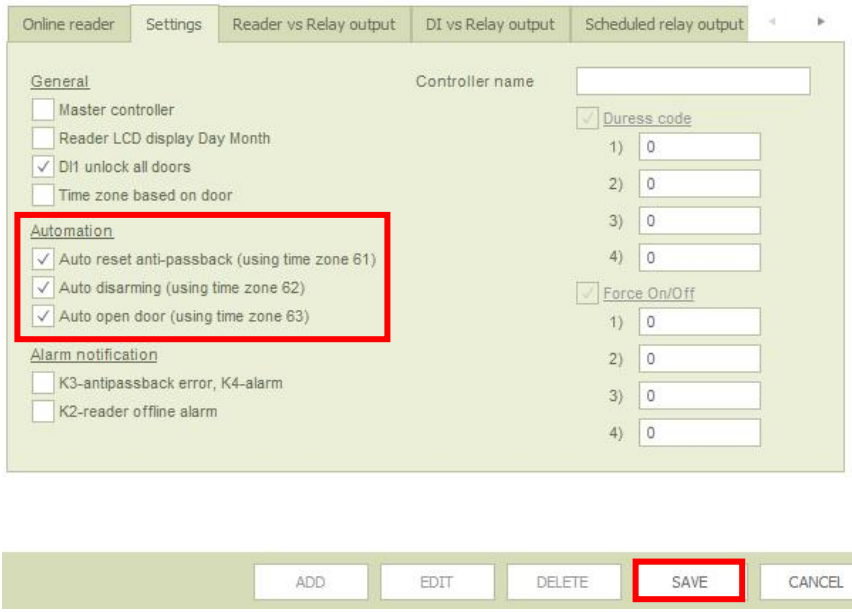


Automated Timezone Management

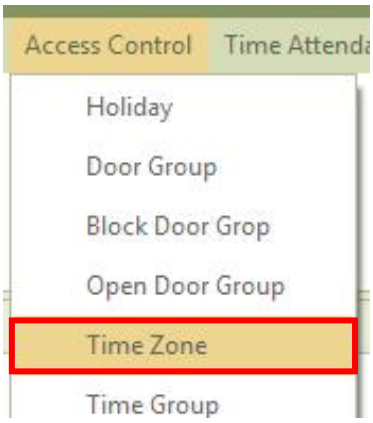
MAC318 has 3 Automation features when paired with MagEtegra software. This includes:

- **Auto reset anti-passback** - Automatically resets the anti-passback status for all users at an administrator-defined date and time.
- **Auto disarming** - Automatically disables the alarm function of **ALL readers** at an administrator-defined date and time.
- **Auto open doors** - Automatically releases **ALL door** locks at an administrator-defined date and time.

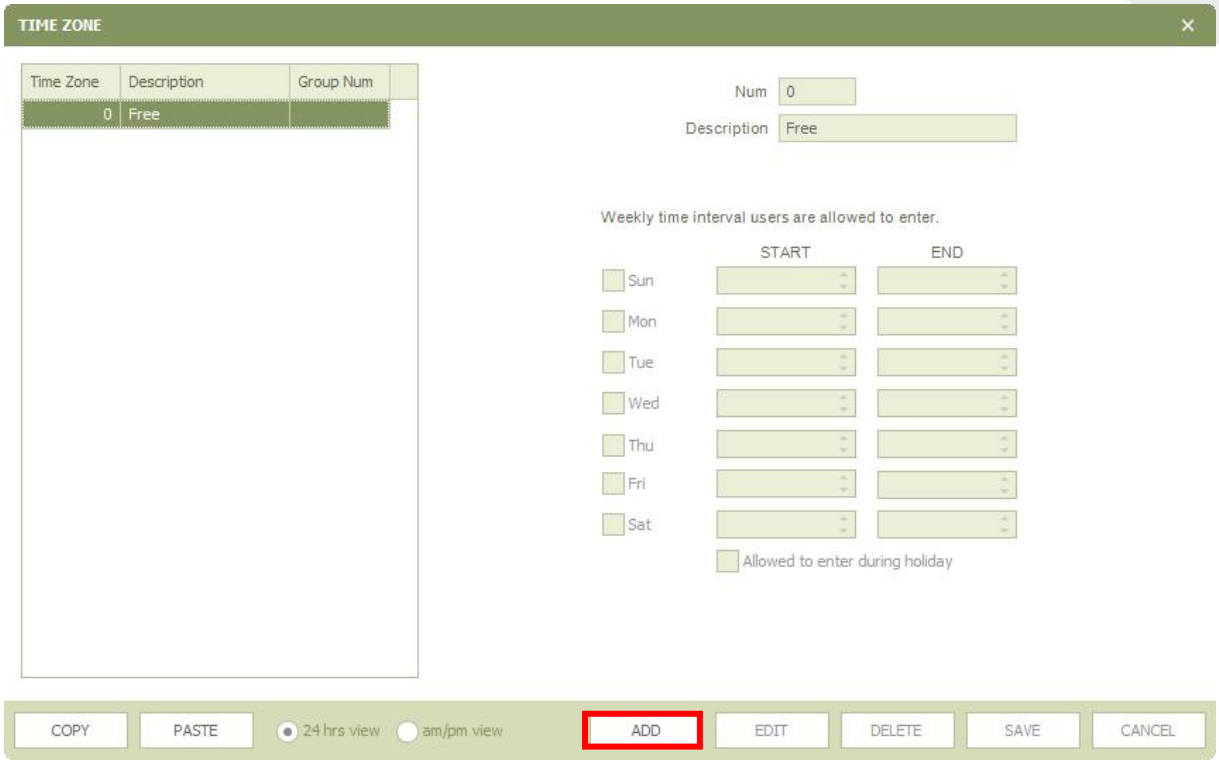
a) Select the controller under “Hardware Manager” and navigate to the “Settings” tab, select desired “Automation” option and click “Save”



b) Go to “Access Control” tab --> “Time Zone”



c) Select “ADD” and create the following TimeZones for the respective Automation feature:



Timezone 61 - Auto reset anti-passback

Select the required day(s) and set the exact time to reset all users’ anti-passback status.

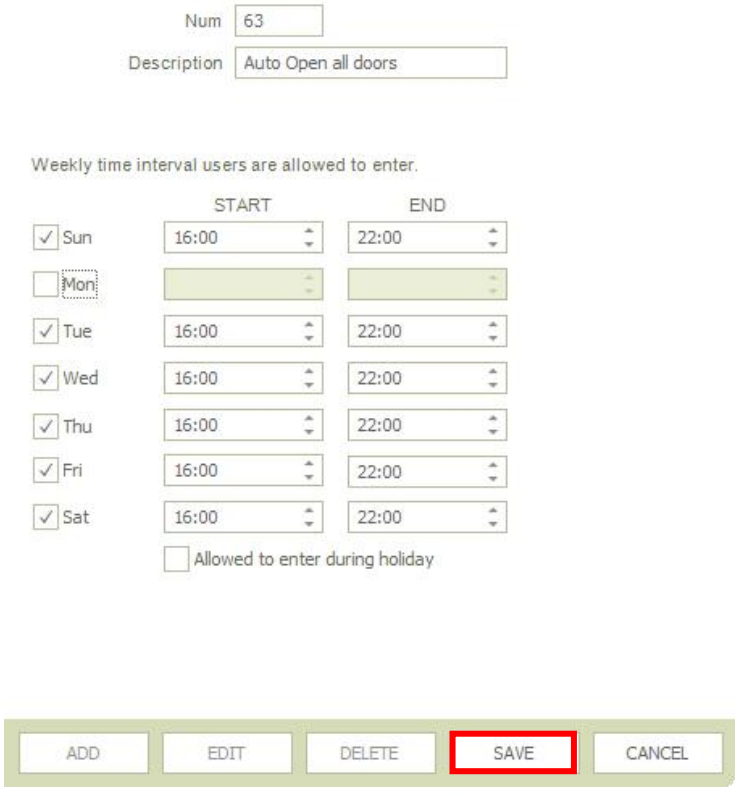
For proper execution, ensure that the “Start” and “End” times are configured to the same value on the selected day.

Timezone 62 - Auto disarming

Select the required day(s) and set the exact “Start” and “End” time to disarm all connected readers. The readers will be armed again after the set duration.

Timezone 63 - Auto open door

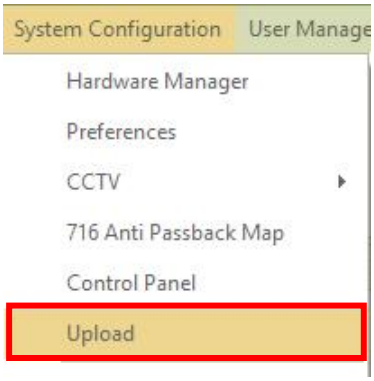
Select the required day(s) and set the exact “Start” and “End” time to unlock all doors associated with a connected reader. The doors will be locked again after the set duration.



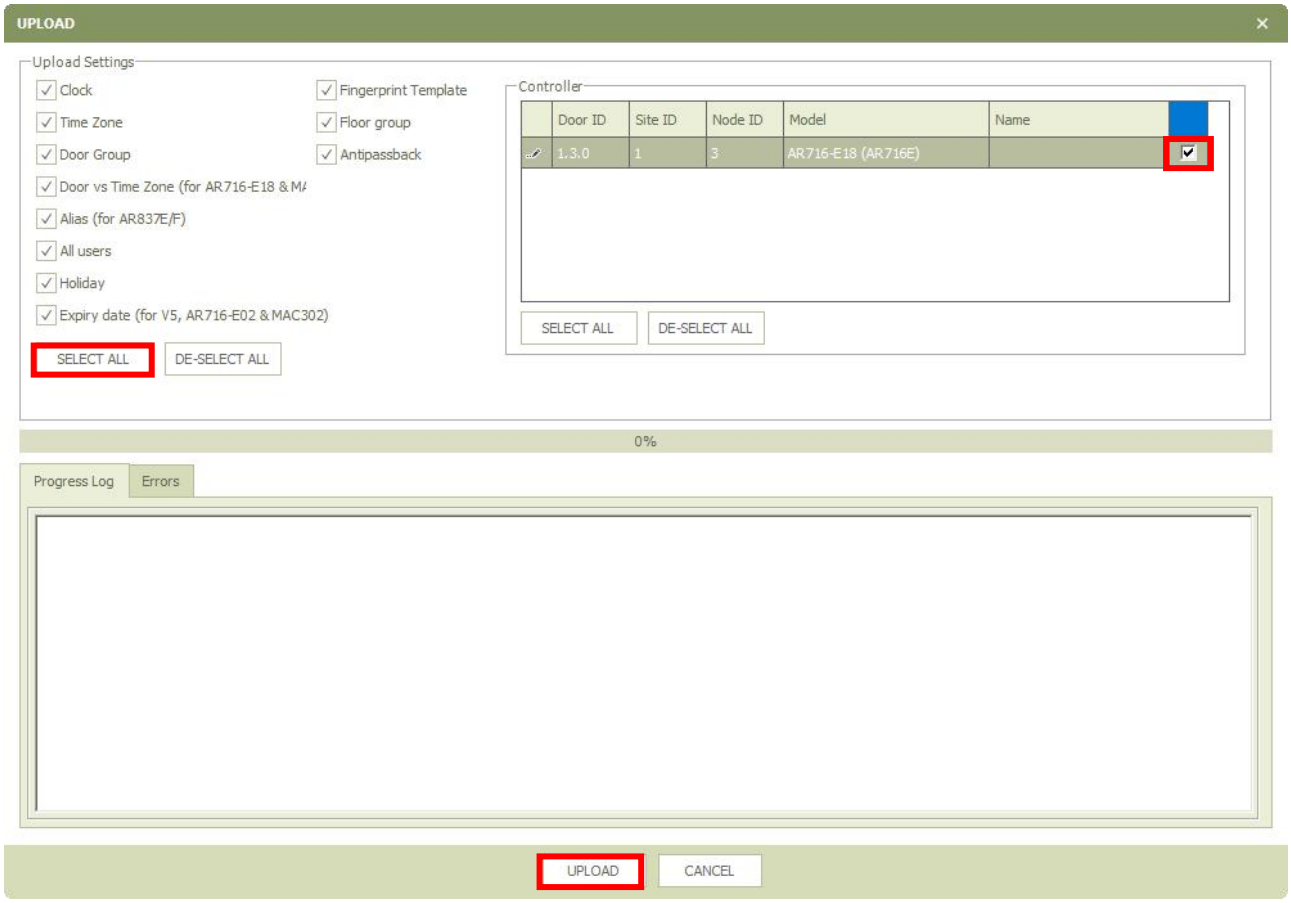
d) Program the Controller Readers(CA413-RK) with the following command:

1. Enter Programming Mode (By default: *123456#)
2. Press 24*001#(RK) or 20*0*020#(TK) to enable Open Zone Feature on the reader
3. Press *# to to save the setting and exit. (**# to save, arm and exit)

e) Go to “System Configuration” tab --> “Upload”



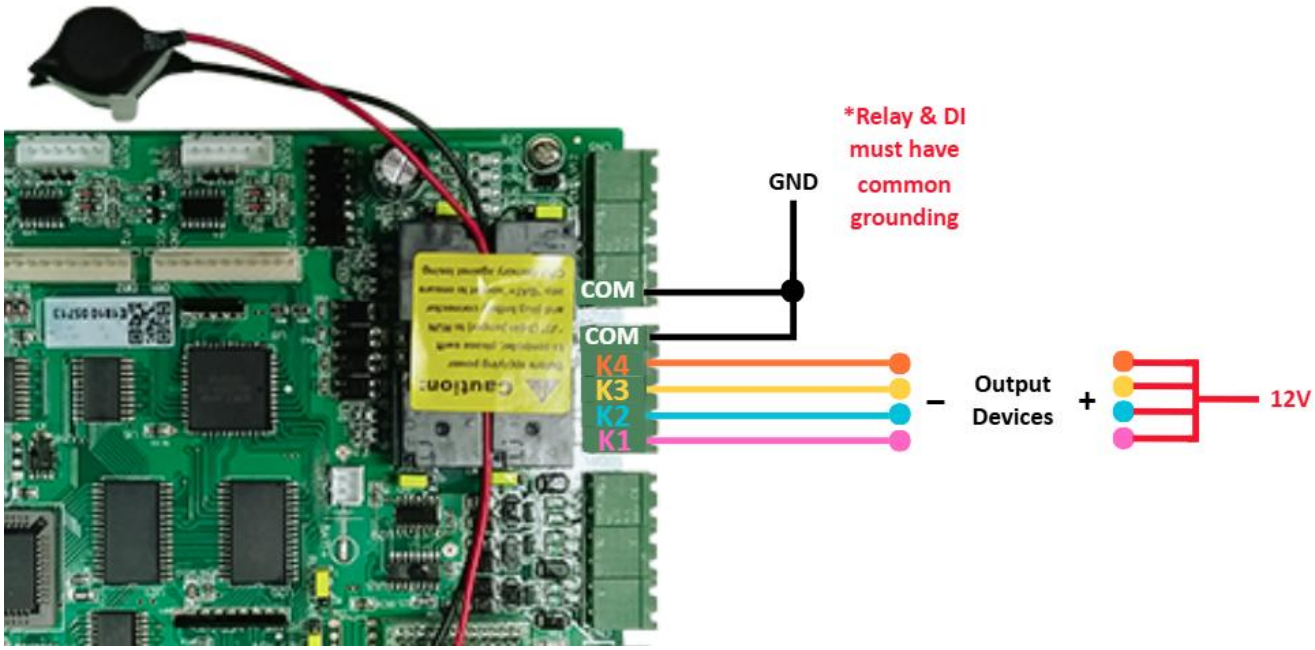
f) Click “Select All” and select the relevant Controllers. Click “Upload” to upload the new instruction set.



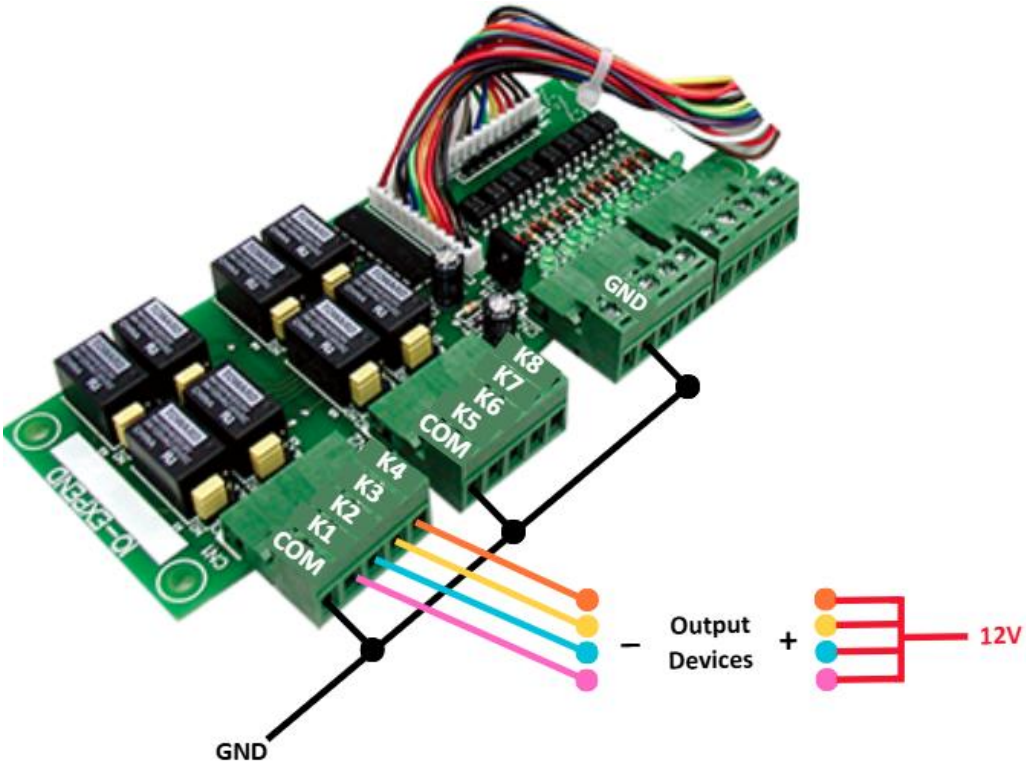
Output Relay Settings

a) Wire the relay accordingly

MAC318

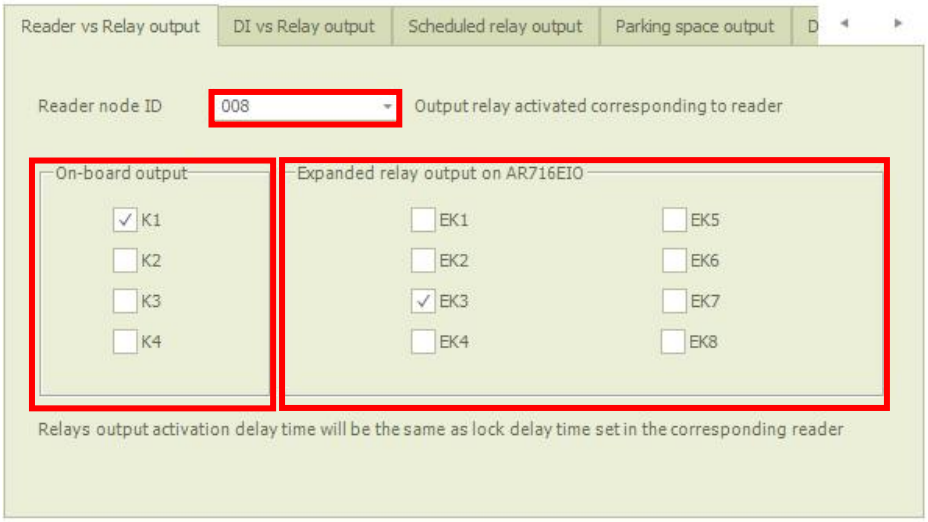


MAC318-IO



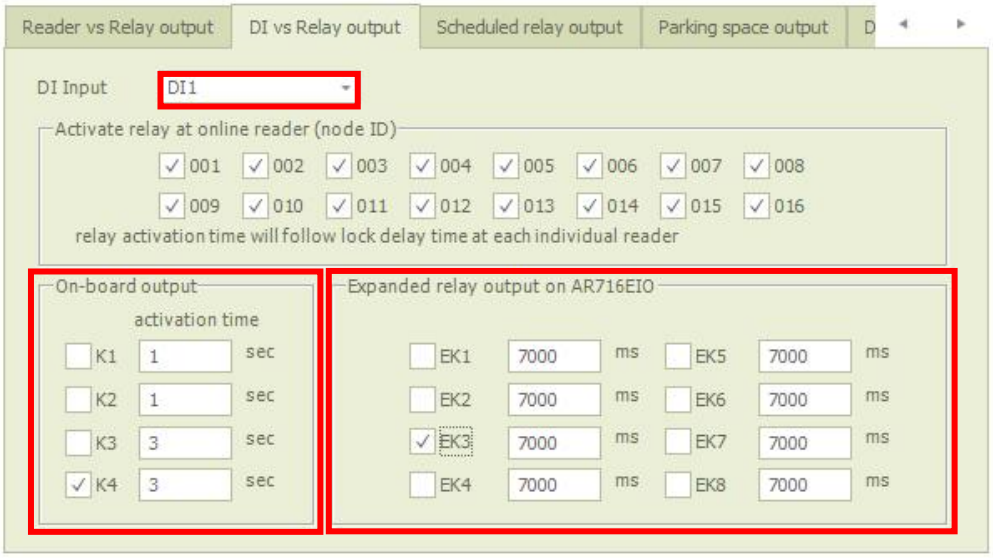
b) To trigger a relay output by reader verification, go to “Reader vs Relay output” tab:

1. Select the reader’s Node ID from the drop-down list
2. Tick the relay that you want to trigger when the selected reader verifies access
3. Click “Save” to save settings



c) To trigger a relay output by Digital Input (DI), go to “DI vs Relay output” tab:

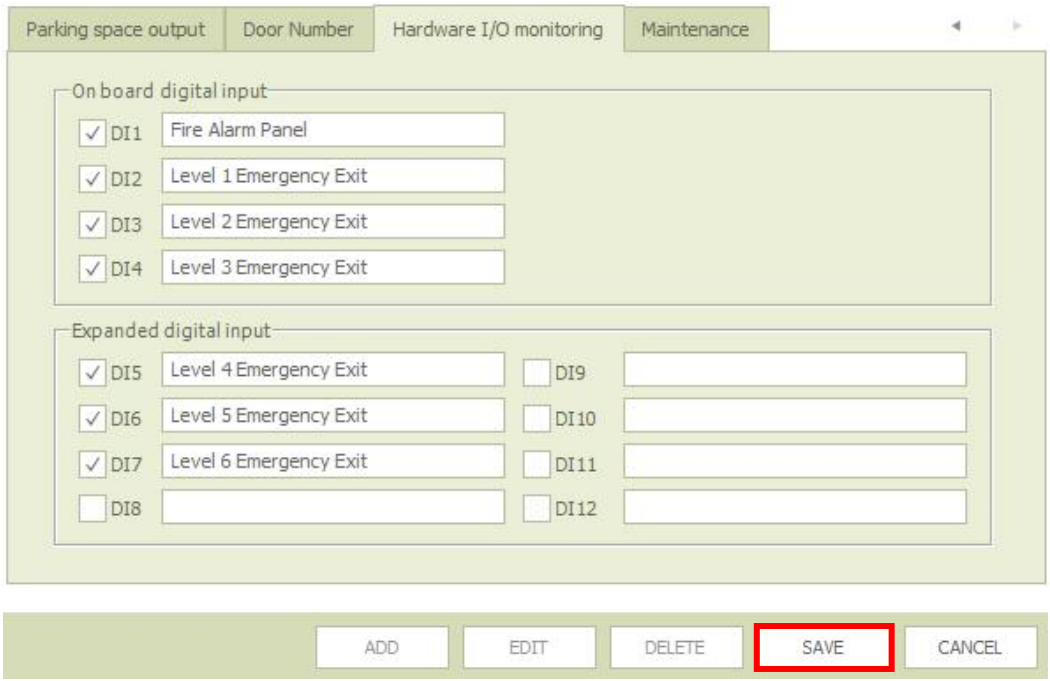
1. Select the correct DI from the drop-down list
2. Select the relays that you want to trigger upon DI activation. This feature can trigger controller readers to unlock doors as well.
3. Set the relay activation(12V HIGH) time and click “Save” to save alll settings.



E-map (Door contact monitoring)

*Refer to Connection Architecture in page 3 for Digital Input(DI) hardware connection.

a) System Configuration --> Hardware Manager --> MAC318 --> “Hardware I/O monitoring”
Select and name the respective Digital Input ports being used.
Click “Save” to save all settings.



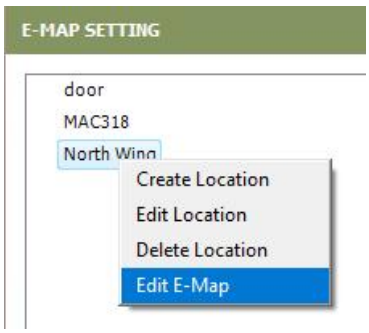
To check if selected digital inputs are online, you can access “Monitoring” --> “I/O Commander”

List of online Digital Inputs

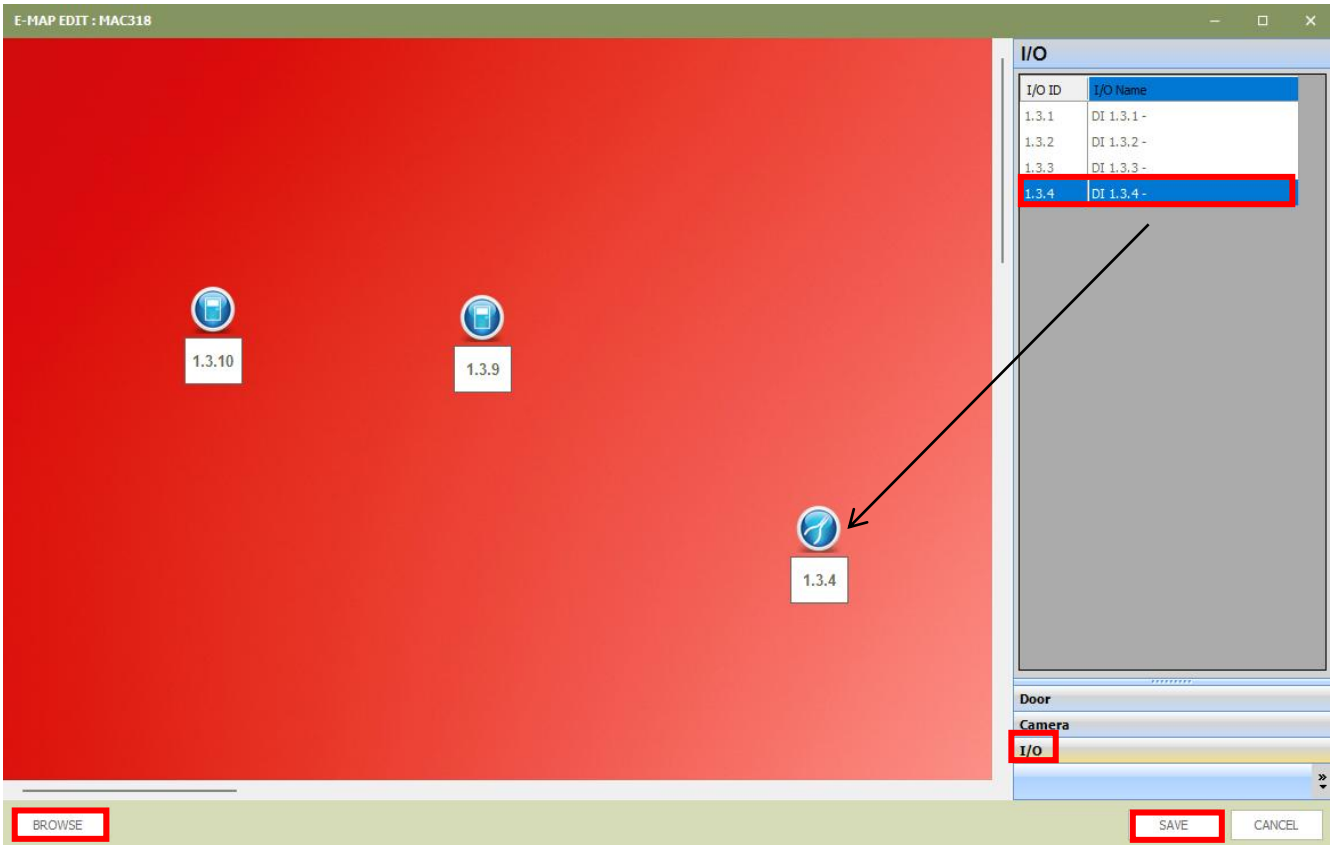
b) “Monitoring” --> “E-map” --> “E-Map Setting”

c) Right Click --> “Create Location” --> insert location name

d) Select new location --> Right Click --> “Edit E-Map”



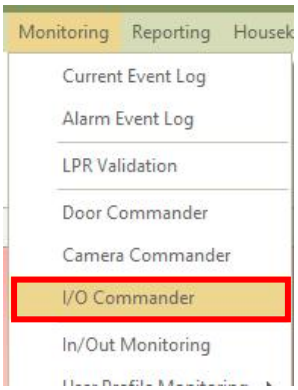
e) Click “Browse” and select E-Map layout
Click I/O Tab --> Right Click and drag Digital Input Icon to E-map
Click “Save” to save all settings



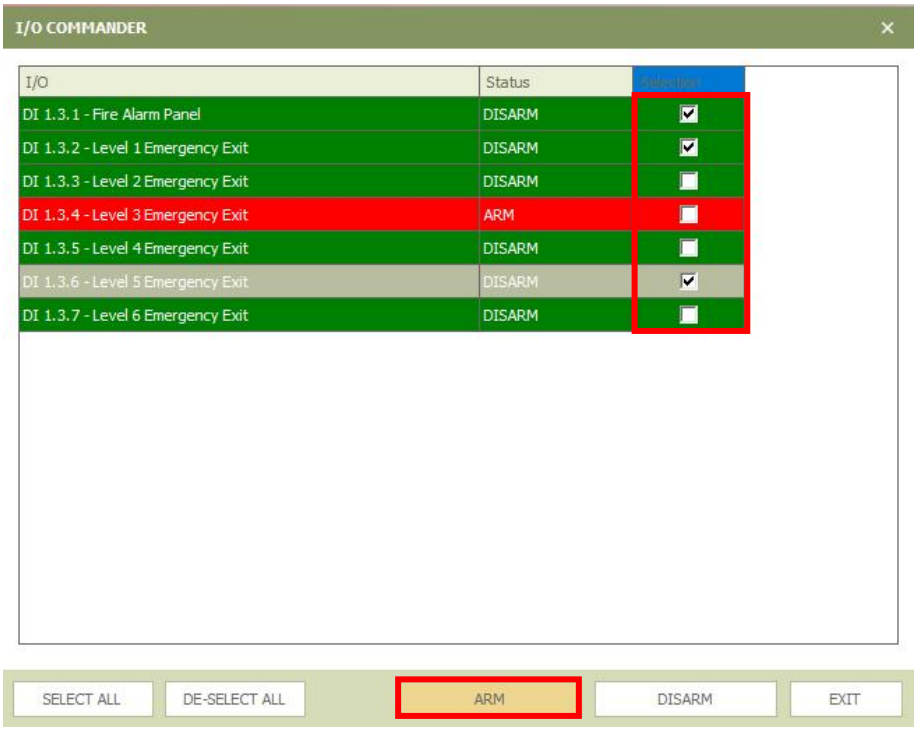
f) “Monitoring” --> “E-map” --> “E-Map Monitoring”
Right Click the Digital Input Icon, select “I/O Commander”

g) Select “Arm” to arm Door Contact

For a listed view to “Arm” or “Disarm” Multiple Digital Inputs at the same time, go to: “Monitoring” --> “I/O Commander”



Select the respective Digital Inputs to modify their “Arm” status



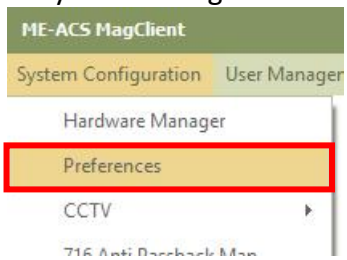
Note:
To prevent accidental triggers during installation, all Digital Inputs default to **'Disarm.'**

To enable alarm functionality, simply switch the status of the desired DI to **'Arm.'**

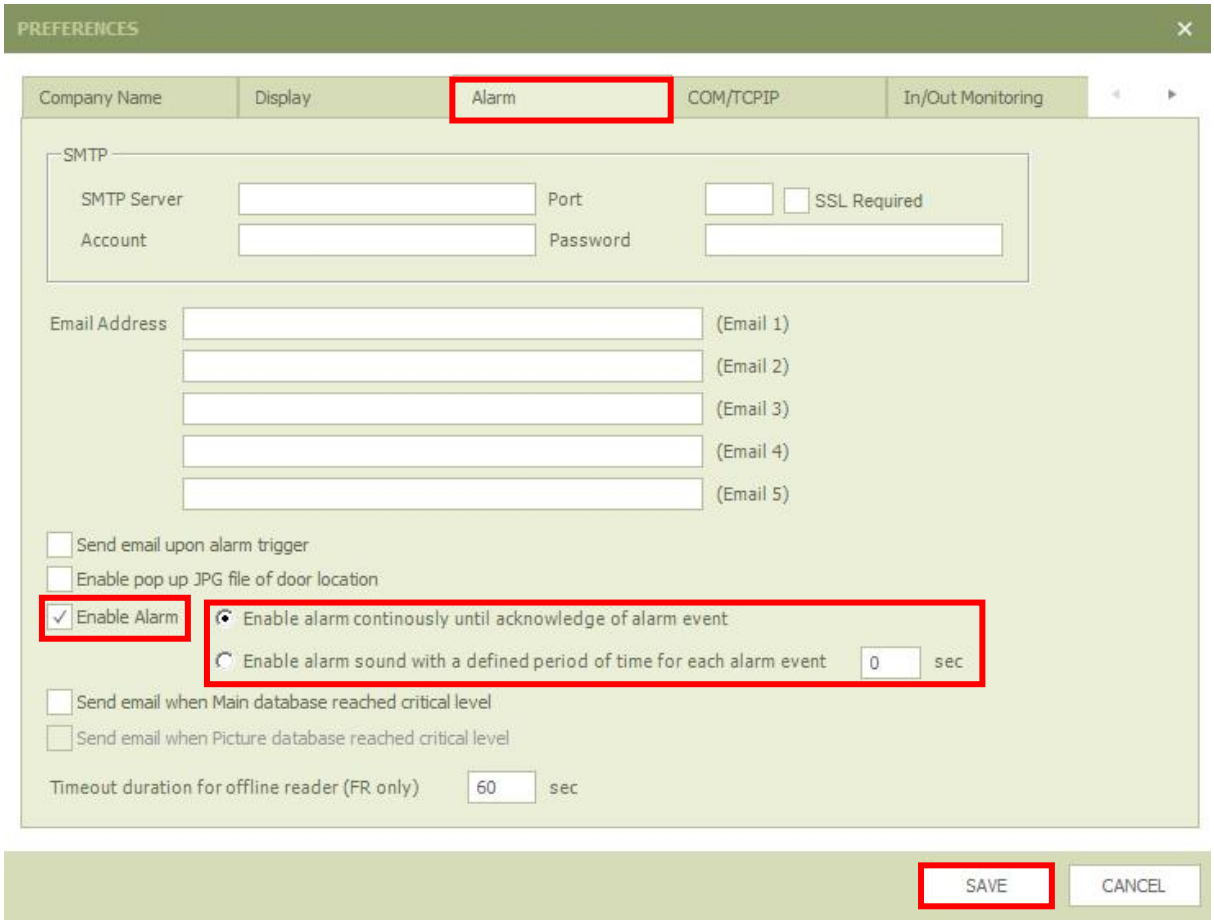
Enable Software Alarm (Pair with E-map)

To enable the audible software alarm, go to:

1. System Configuration Tab --> Preferences



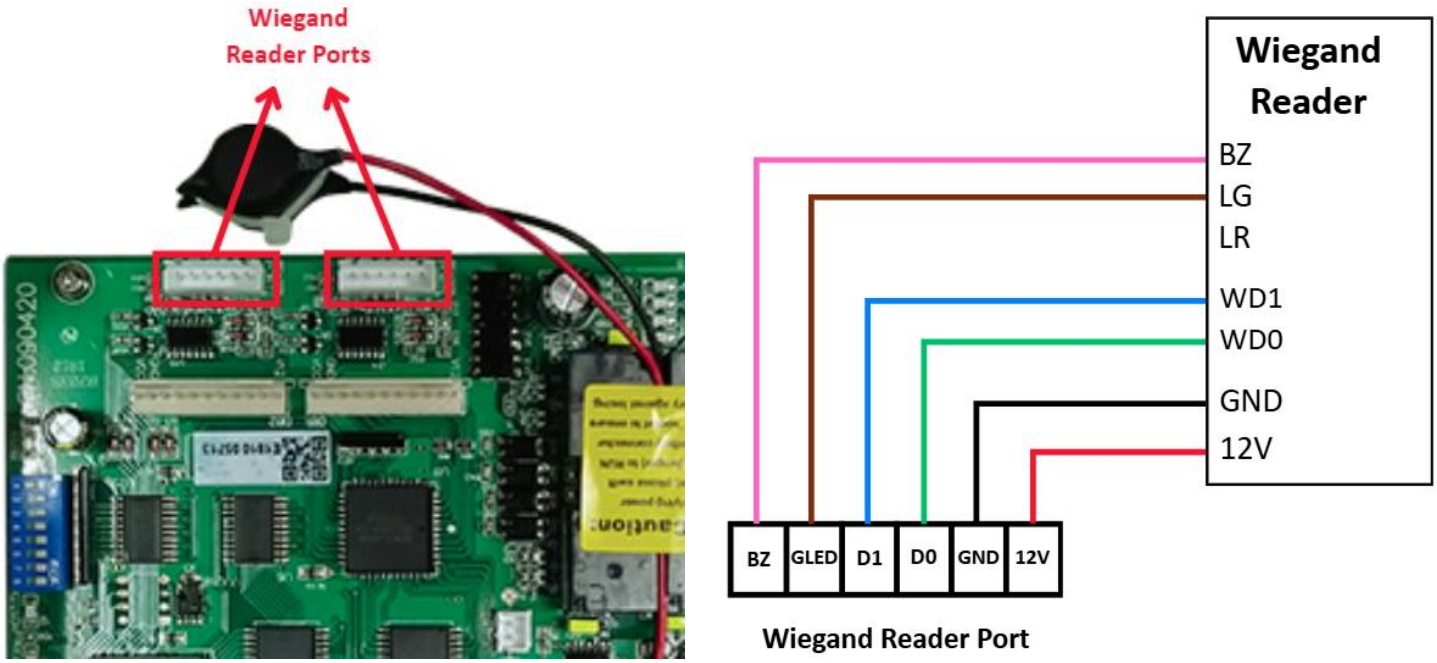
2. Click the “Alarm” tab and select “Enable Alarm”.
Choose between a continuous alarm or a fixed time period alarm.
Click “SAVE” to save all settings.



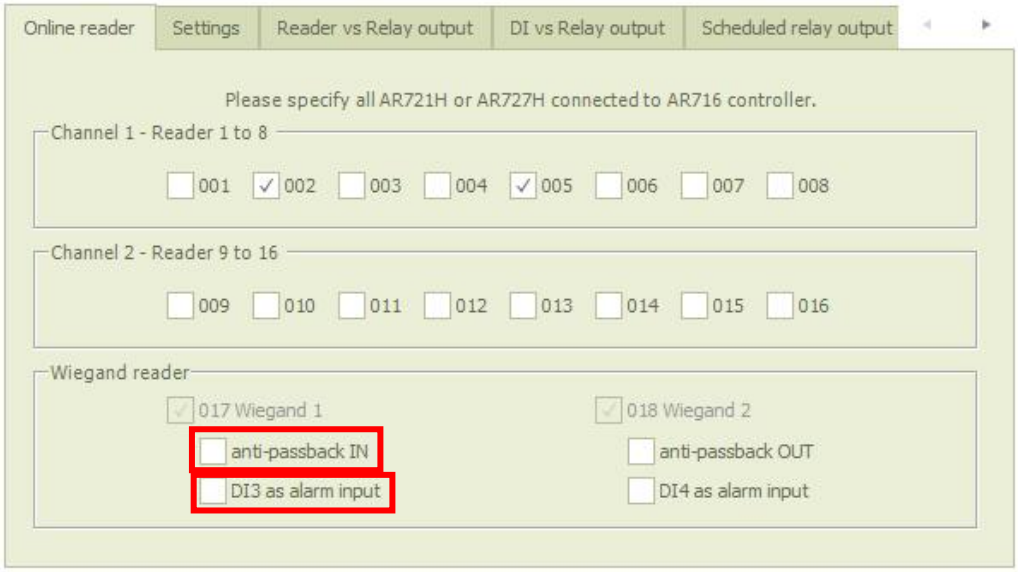
Dual Wiegand Integration

The MAC318 Controller comes with 2 wiegand port integration. The following steps shows how to utilise these two wiegand ports for your project's application.

a) Wire the wiegand reader accordingly:



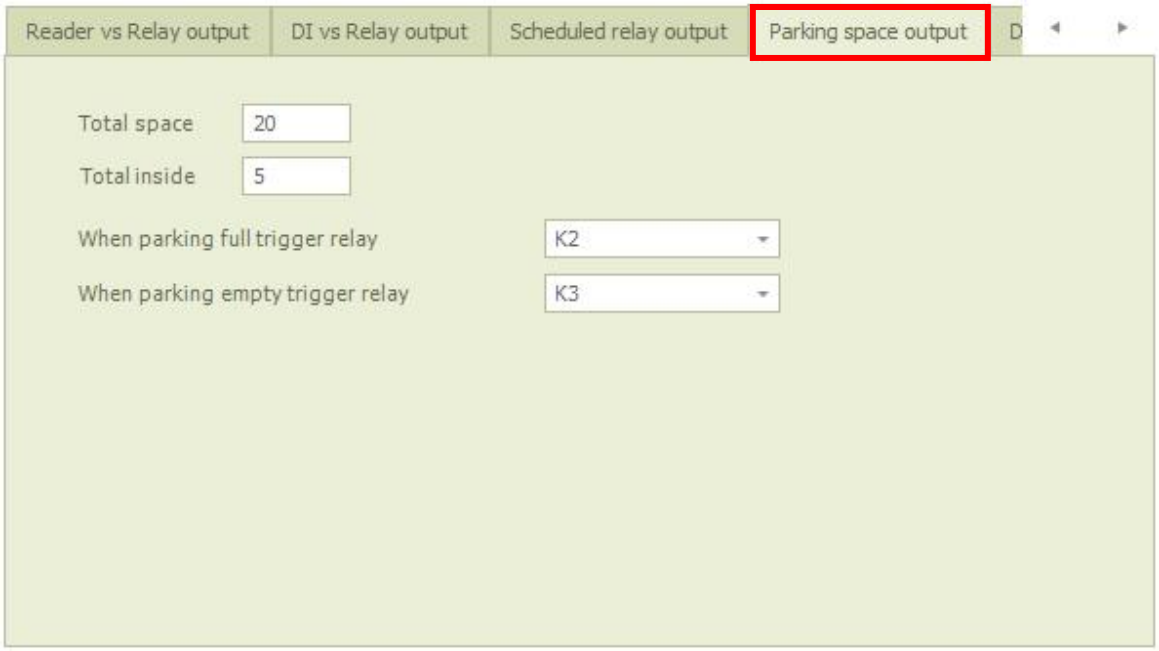
b) Software Settings



- Wiegand Readers are enabled by default.
- Enabling "Anti-passback IN/OUT" activates Anti-passback feature, where Wiegand 1 is entry reader and Wiegand 2 is exit reader.
- DI3 is the default digital input port for the Door Sensor/Tamper Switch signals for Wiegand 1, while DI4 is the default digital input port for Wiegand 2.

Parking Management System

a) System Configuration --> Hardware Manager --> MAC318 --> Parking space output --> Click "Save" to save all settings

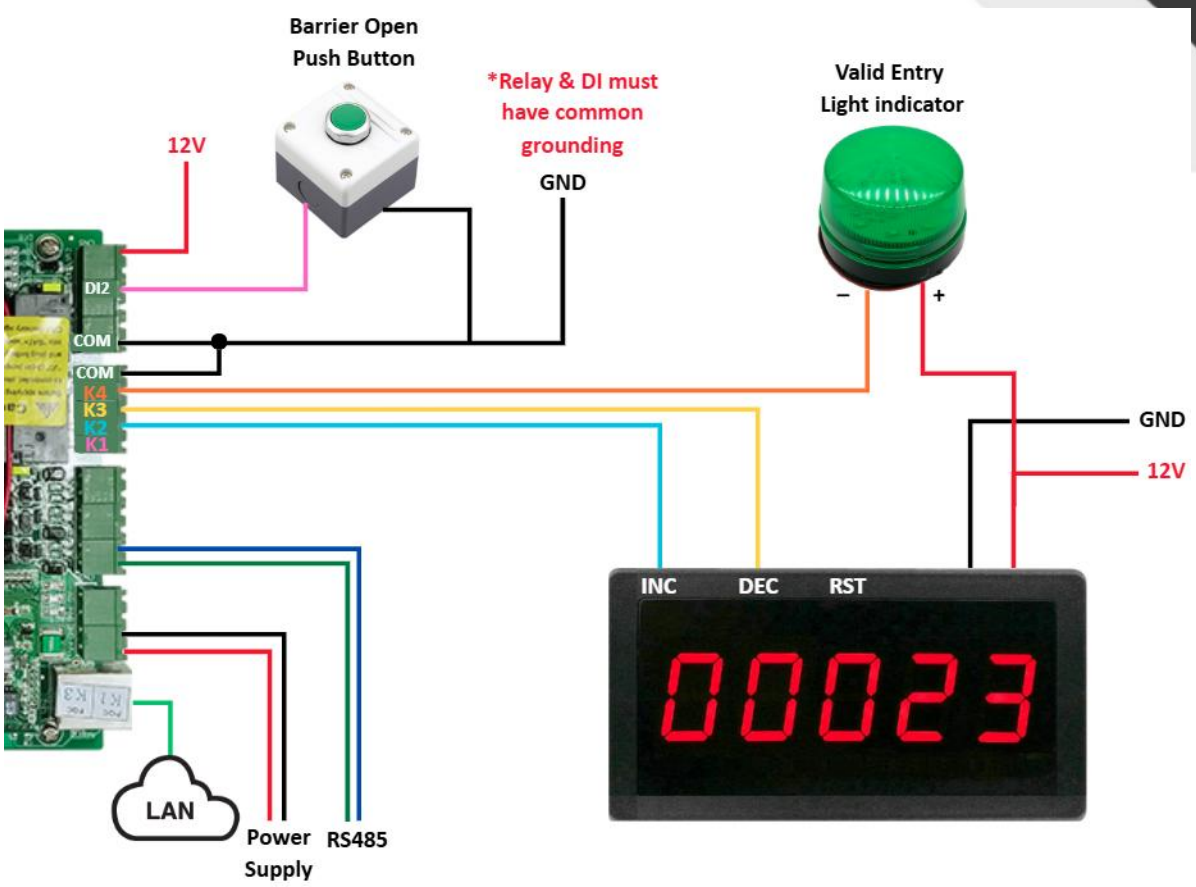


Total Space -> Total number of allowed entries into the space at any given moment

Total Inside -> Number of scanned entries currently in the space

When parking full trigger relay -> Output signal when Total Space limit is reached

When parking empty trigger relay -> Output signal when Total Inside is exactly "0"



<u>The diagram consists of</u>

1) A parking counter with the following relay connections:
   K2 - Increment
   K3 - Decrement

2) A Push Button connected to DI 2, which triggers Node ID 002 to open its barrier gate(visitor lane).

<u>How this works</u>

A 3 lane entry, 3 lane exit parking system is employed with MAC318 with one visitor lane controlled by Node ID 001. When a car enters by scanning the entry reader(Node ID 002~004) successfully, relay K2 is triggered and increases the counter. When a car leaves the parking lot by scanning the exit reader(Node ID 005~007) successfully, relay K3 is triggered and decreases the counter.

Should a visitor enter by the visitor lane, the guards can push the push button which triggers DI 2, lifting the visitor lane barrier gate. Every instance of entry is also recorded in MagEtegra's Event Log.

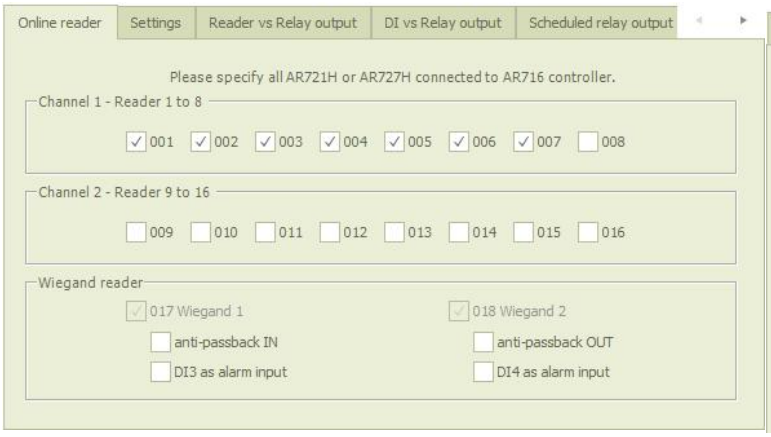
Visitor lane entry by guardhouse push button

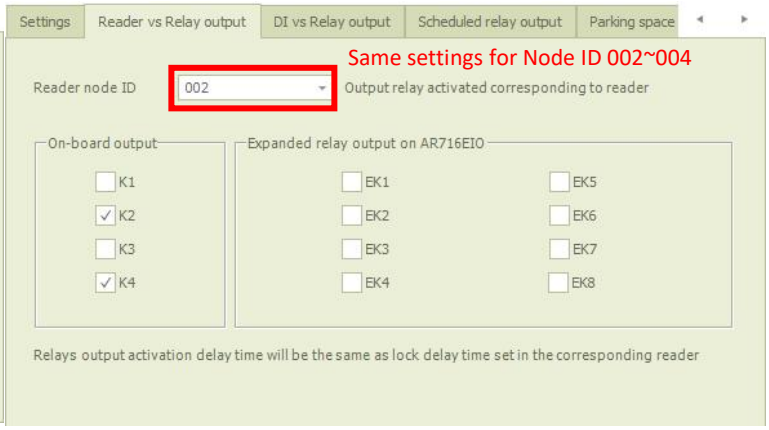
Date	Time	Door	Event	User ID	Name	Site Code	Card Code
06/03/2026	18:01:27	DI 3.2 Visitor Barrier Gate Push Button	716E DI status change : ON				
06/03/2026	18:01:25	1.3.5 - Exit 1 Barrier Gate	Normal access by card only	8	Bob	37399	29444
06/03/2026	18:01:24	1.3.2 - Entrance 1 Barrier Gate	Normal access by card only	8	Bob	37399	29444

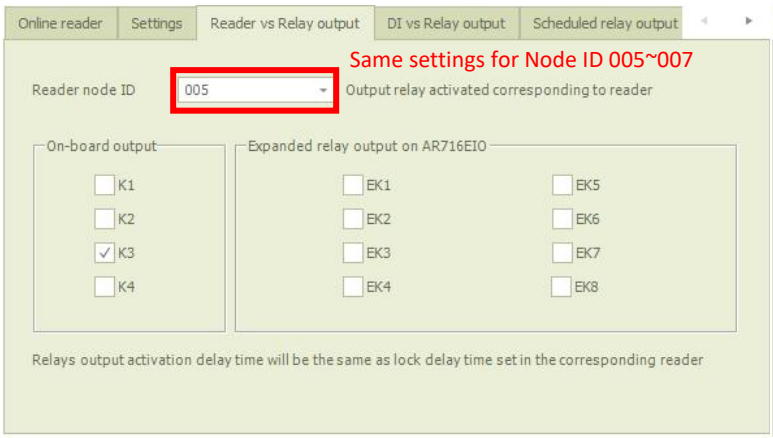
Entry by card reader

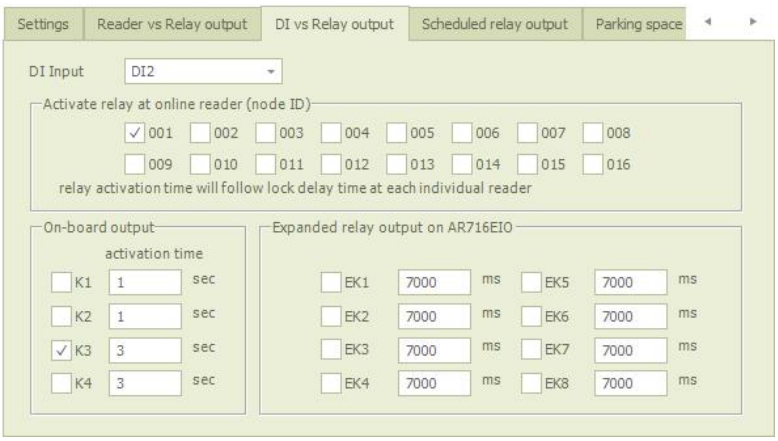
Exit by card reader

Software Settings

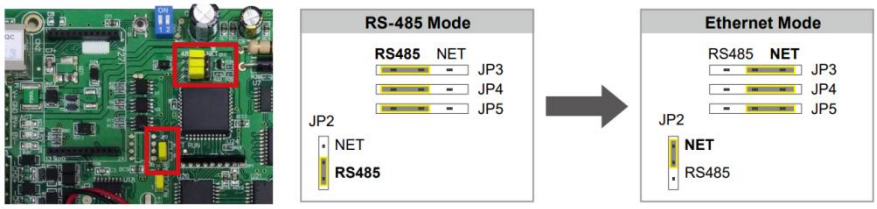








FAQ

Problem	Solution
Door opens with a delay after a card is flashed.	The card data must be sent to the MAC controller for verification before the door unlocks. Poor-quality cables or excessive wiring distance can slow RS485 communication. Use proper wiring such as Cat5 (up to 100m), RS422 cable like Belden 1419A (up to 300m), or RS485 cable such as Belden 9842 (up to 1km) to ensure stable performance.
No output when flashing a card at a Wiegand reader connected to MAC.	Ensure the Wiegand reader and MAC share a common GND reference. If they use separate power supplies, connect the GND of both power supplies together to establish proper signal reference.
MAC controller is easily damaged by surge.	Outdoor electronic devices are vulnerable to surge. Connect the MAC metal enclosure to EARTH from the AC socket to create a low-impedance reference shared with other equipment. Proper grounding and surge protection are especially important in exposed areas or locations prone to lightning strikes.
MAC controller behaves intermittently or unpredictably.	Surge events may partially damage the CPU without visible burn marks, causing unstable or random behavior. Installing proper surge protection and grounding can prevent this issue and ensure stable system operation.
Unable to ping the controller or access the web interface.	Check that all network jumpers are set to **"NET"**.  Verify that the **Node ID is correctly configured** according to binary numbering. Ensure the controller is using the correct IP address.

Unable to access the controller web interface.	Use the default IP **192.168.1.127**. Log in with the default credentials: **Username: SuperAdm** **Password: 721568**.
How to reset MAC318 controller to factory settings.	Set the **two DIP switches on the TCP/IP module to OFF**, then press and hold the **IP Reset button for more than 5 seconds**.  The TCP/IP module will restore to factory default settings.