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MPA2C3
Access Control Unit

Installation Manual

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WARNING Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.

Regulatory Statements

Waste Electrical and Electronic Equipment (WEEE)

Correct Disposal of this Product (applicable in the European Union and other European countries with separate collection systems).

This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and procedures.

INSTALLATION

Install in accordance with the manufacturer's instructions.

Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.

POWER SOURCES - This product should be operated only from the type of power source indicated in the guide. If you are not sure of the type of power supplied to your facility, consult your product dealer or local power company.

MOUNTING SYSTEM - Use only with a mounting system recommended by the manufacturer, or sold with the product.

ATTACHMENTS/ACCESSORIES - Do not use attachments/accessories not recommended by the product manufacturer as they may result in the risk of fire, electric shock, or injury to persons.

SERVICING - Do not attempt to service this unit yourself. Refer all servicing to qualified service personnel.

REPLACEMENT PARTS - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards. Using replacement parts or accessories other than the original manufacturers may invalidate the warranty.

Warranty and Service

Subject to the terms and conditions listed on the product warranty, during the warranty period Honeywell will repair or replace, at its sole option, free of charge, any defective products returned prepaid.

Be sure to have the model number, serial number, and the nature of the problem available for the technical service representative.

Prior authorization must be obtained for all returns, exchanges, or credits. Items shipped to Honeywell without a clearly identified Return Merchandise Authorization (RMA) number may be refused.

Safety Notes

Read the instructions carefully and thoroughly before installing the device and putting it into operation.

They contain important information on installation, reprogramming and operation.

The device is a state-of-the-art product. Only use the device:

- In accordance with regulations,
- When it is has been installed and is functioning correctly,
- In accordance with technical data

The manufacturer is not responsible for damage that is caused by use not in accordance with regulations.

Installation and programming as well as maintenance and repair work may only be carried out by skilled, authorized personnel.

De-energize the entire system before soldering and connecting.

Carry out soldering work with a temperature-controlled electrically isolated soldering iron.

To avoid a short circuit with battery, Use isolated tools for installation and service.

Do not use the device in a potentially explosive environment or in rooms where metal or plastic decomposing vapours are emitted.

ATTENTION! Important security notes to dangerous voltage operation

- (Voltages >= 42,4 V peak value or >= 60 V DC, e.g. also 230 V AC).
- Work on primary voltage should only be carried out by **skilled, authorized personnel**.
- Only connect units as per IEC EN 62368-1 to the module.
- Appropriate overload protection must be provided in the mains circuit. For installation an appropriate mains separator is required.
- Switch off the primary circuit before carrying out installation or maintenance work.
- Only cables with double insulation may be used. e.g. NYM, NYM, H05VV, H05RR or similar cables.

- Up to a current of 6A, a cable cross-section of at least 0.75 mm² must be used, up to 10A a cable cross-section of at least 1.00 mm².
- Do not lengthen or connect the activating line in the housing without double insulation.
- Do not store loose, unused connecting cables in the housing.
- Route the incoming cable separately through the provided recess to the terminal.
- Minimum distances must be observed: Clearance: 4 mm, creepage distance: 5 mm.
- Strip the ends of the cores (approx. 4 mm).
- Use core end sleeves to clamp leads.
- Fix the incoming cable with the provided cable binder to the housing.
- Observe the VDE safety regulations and provisions of the local electricity supplier.

Caution: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to caution on the battery and all local and national regulations.

Caution: Replace the DC battery if it shows any sign of corrosion or leakage or if the battery is 2 years old or older. Replacing battery must be done by skilled person.

Safety Symbol

The following symblos are used in this manual:

Read carefully more details, regarding charging and discharging of battery.

Shock Risk-Isolate before attempting access.

Protective Earth

Caution- Instruction, or Information with vital importance for the safety of personnel, or equipment.

CHAPTER

1 INTRODUCTION

Introduction

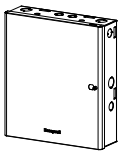
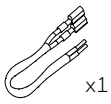
This document describes how to install the MPA2C3 access control unit, how to wire the access control panel to doors, readers, downstream devices, how to configure the system for different connection loops and so forth.

Note: *All figures shown in this manual are for illustration purpose only. Actual products may vary due to product enhancement.*

Packing List

The MPA2C3 access control unit includes compact plastic enclosures and standard metal enclosures. The compact plastic enclosure supports the access control panel (MPA2C3-4), and the standard metal enclosure supports the access control panel MPA2C3) or the 4-door licensed access control panel MPA2C3). There are multiple SKU configurations for the unit. For more information, refer to the tables below.

Table 1-1 MPA2MPSE/MPA4MPSE Packing List

Metal Housing (MPA2ENCME)	Enclosure Power Supply	 Enclosure
	Battery Cable	 x1
	Battery Terminal	 x2 Battery Terminal (for Battery)
	Cable Clamp	 x3

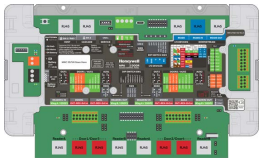
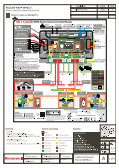
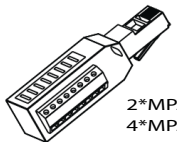
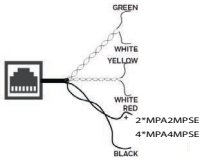
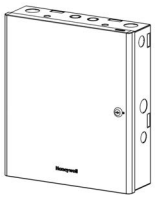
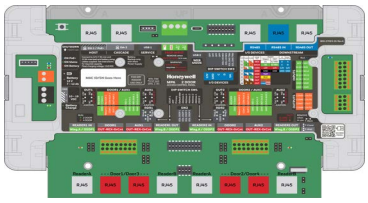
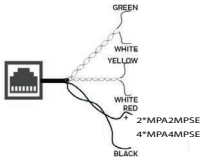
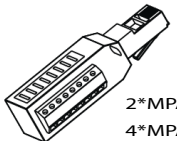
Access Control Panel (MPA2C3) (MPA2C3-4)	Access Control Panel	
	M5 Screw	 x4
	#6 Screw	 x4 #6 Screw
	#6 Anchor	 x4
	Resistor (2K2 Ohm)	 x24
	Quick Start Guide (800-26607-02)	
	Enclosure Label	
Additional Accessory	Convertor	 2*MPA2MPSE 4*MPA4MPSE
	Door Connection Cable	

Table 1-2 MPA2MPSU/MPA4MPSU Packing List

Metal Housing MPA2ENCMU	Enclosure	
	Battery Cable	
	Battery Terminal	
	Cable Clamp	
Access Control Panel (MPA2C3) (MPA2C3-4)	Access Control Panel	
	M5 Screw	
	#6 Screw	
	#6 Anchor	
	Resistor (2K2 Ohm)	
	Quick Start Guide (800-26607-02)	

Additional Accessory	Battery (MPA2BAT7)	
	Power Cable (MPA2S5)	
	Convertor	 2*MPA2MPSU 4*MPA4MPSU

Access Control Unit Overview

An MPA2C3 access control unit is a full-featured 2-door web-based access control system. The panel has all needed inputs/outputs and readers/door connections to be used as a 4-door panel (MPA2C3-4). The 4-door panel is enabled by a license.

The MPA2C3 panel includes a built-in web service by built-in Ethernet and USB support, and PoE+ (Power over Ethernet) capability. You can manage the access control system by using the built-in web services, MAXPRO® Cloud or WIN-PAK® XE/SE/PE/CS. For supported configurations, see Chapter 5 to view illustrations of the supported MPA2C3 system configurations.

Two types of enclosures, compact plastic enclosures and metal standard enclosures, are designed for the access control unit. A maximum of 2 doors are supported by the compact plastic enclosure. A maximum of 2 doors or up to 4 doors are supported by the standard metal enclosure. For the 3-door or 4-door system, a license is required.

Note: *The MPA2C3 built-in web services are intended for monitoring and programming use only.*

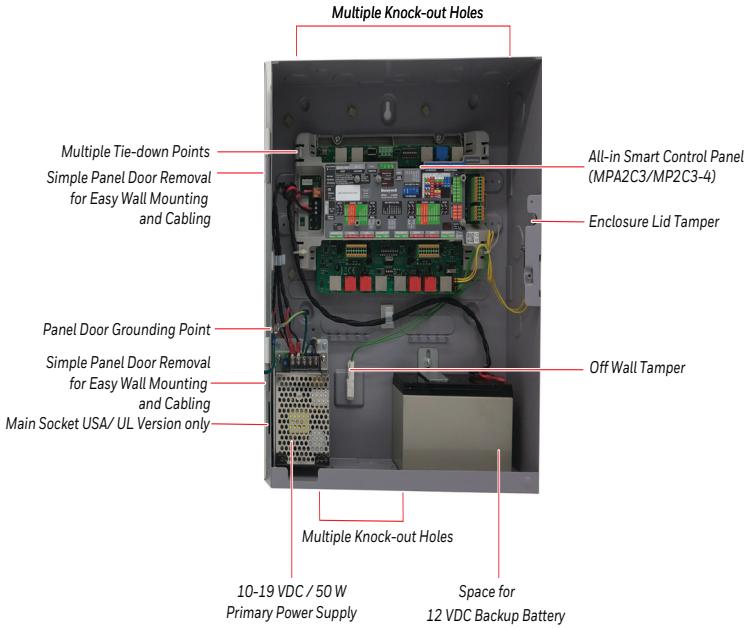
Note: *MAXPRO® Cloud and WIN-PAK® XE/SE/PE/CS software is intended for monitoring and programming use only and have not been evaluated by UL.*

Note: *To use MPA2C3 as a 4-door access control system, a license needs to be activated. Once the license file is applied on the panel, the user can use the 4-door controller (MPA2C3-4). Please contact Honeywell customer support in your region for 4-door support.*

Standard Metal Enclosure

The standard metal housing includes a metal enclosure and serveral accessories. For the detailed information, see Packing List on page 11. This unit can be powered by the power supply with a backup battery, or by PoE+.

Figure 1-1 MPA2ENCME/MPA2ENCMU Access Control Overview



Note: *For MPA2MPSE and MPA4MPSE the 12 VDC Battery must be purchased separately.*

Compliance Note

This device complies with Part 15 of the FCC Rules / Innovation, Science and Economic Development Canada's licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) L'appareil ne doit pas produire de brouillage;

(2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

To satisfy FCC / ISED RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

Les antennes installées doivent être situées de facon à ce que la population ne puisse y être exposée à une distance de moin de 20 cm. Installer les antennes de facon à ce

que le personnel ne puisse approcher à 20 cm ou moins de la position centrale de l' antenne.La FCC des éltats-unis stipule que cet appareil doit être en tout temps éloigné d'au moins 20 cm des personnes pendant son functionnement.

To obtain applicable EU Compliance Declaration of Conformities for this product, please refer to our website http://www.security.honeywell.com/hsce/international/index.html.

For any additional information regarding the compliance of this product to any EU-specific requirements, please contact:

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Phone 00497431801-0

CHAPTER

2 ACCESS CONTROL PANEL OVERVIEW

An access control system protects and preserves an enterprise's resources by providing authentication, authorization, and administration services.

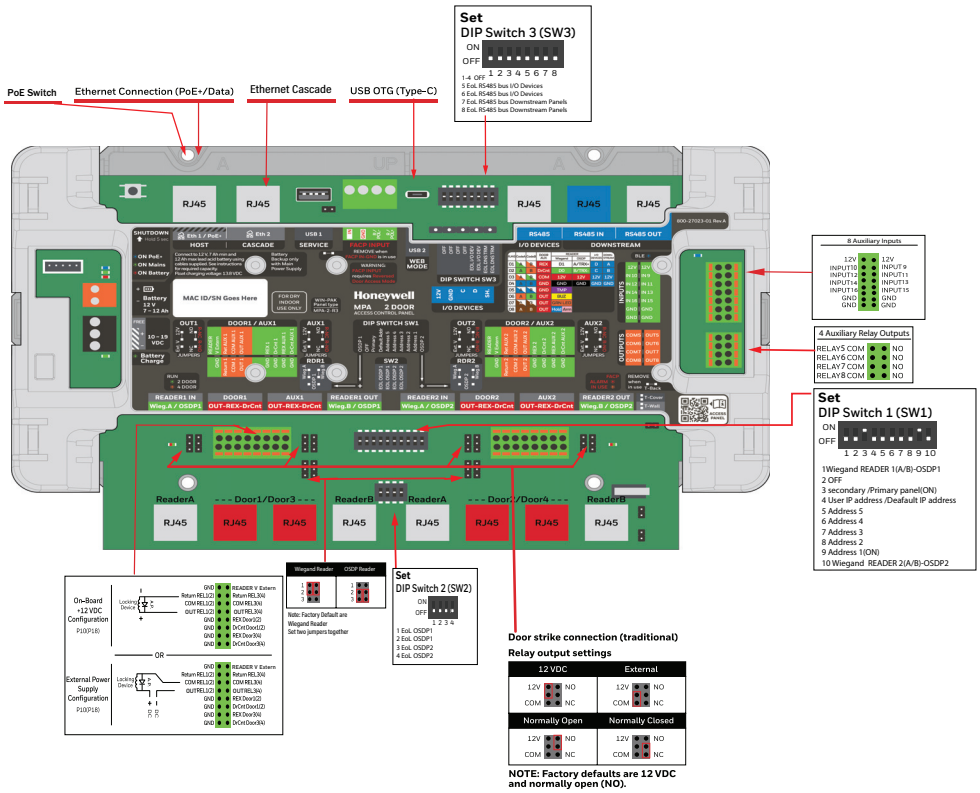
Authentication is a process that verifies a user's identity. If the user is verified, the system then either grants or denies access to specific areas and resources. Administration includes the creation and modification of user accounts and access privileges.

An access control system consists of hardware and software, usually configured in a network environment over a standard network protocol. Access control units, readers, door strikes, and video and other devices, for example, are configured to control and monitor the access to a company site.

Access Control Panel Wiring and Components

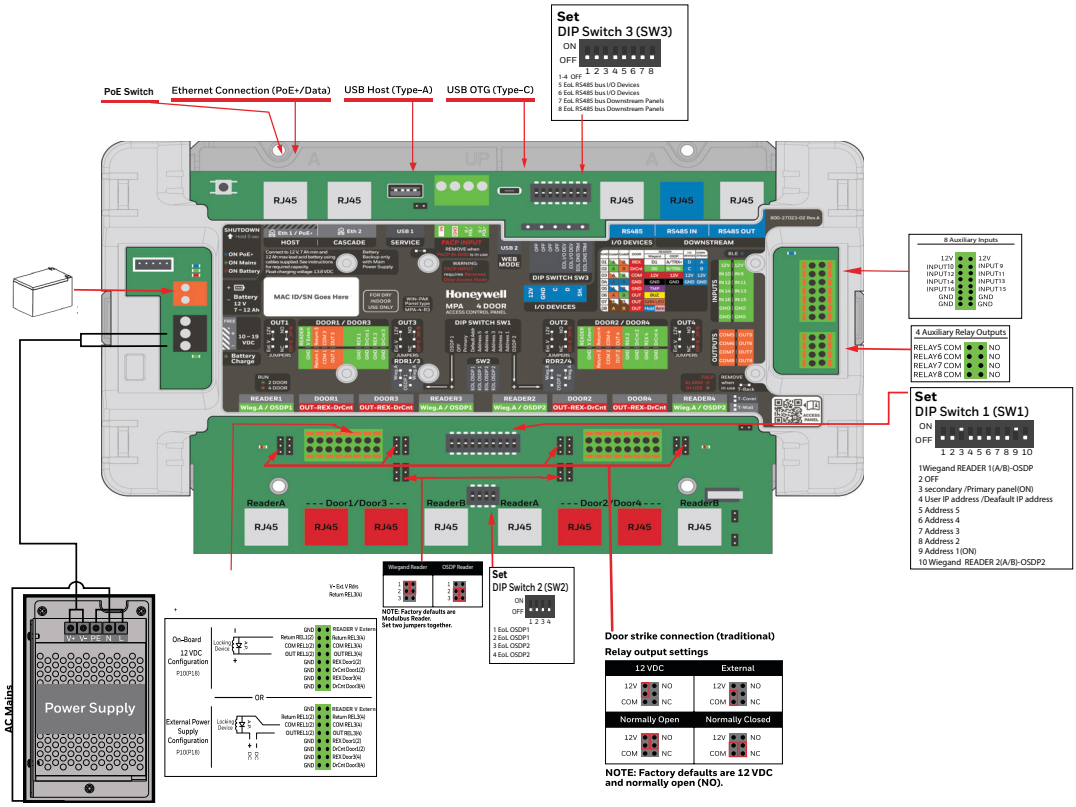
Note: *This device complies with part 15 of the FCC Rules (the FCC certification will be processed in the future). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

Figure 2-1 The following figures show the MPA2C3 panel wiring and components.



Warning: Do not plug in unknown USB devices (for example, USB Killers) which can damage hardware components. This access control unit is not designed with a protective function for any deliberately damaged USB devices. Honeywell is not responsible for your losses caused by using deliberately damaged USB devices.

Figure 2-2 Access Control Panel Wiring and Components – Standard Metal Enclosure



Note: *Maintain at least a 0.25 inch (0.65 cm) distance between the non-power limited wiring (100-240 VAC, 50/60Hz input wiring, power line filter wiring, and battery backup/charger wiring) and all other wiring, which is power-limited Class 2 wiring.*

Warning: Do not plug in unknown USB devices (for example, USB Killers) which can damage hardware components. This access control unit is not designed with a protective function for any deliberately damaged USB devices. Honeywell is not responsible for your losses caused by using deliberately damaged USB devices.

LEDs and Button

There are multiple LEDs and a Shutdown button designed for the panel, including ON mains LED, ON PoE+ LED, ON Battery LED, Heartbeat LED, and so forth. You can get the real-time system status according to the LEDs.

- Power LEDs indicate which power is used to power up the panel.
- Battery Charge LED indicates whether the battery is charged or not.
- Running LED indicates whether the panel is powered up successfully and how many doors are supported in the panel.
- BLE LED indicates if the panel is ready to receive BLE signals from or is connected with the Device Utility App
- FACP LED indicates the panel's Door Access mode (Normal: fail secure, or Reversed: fail safe) and if the FACP (Fire) input is triggered.
- Shutdown Button is used to shut down the panel.

Figure 2-3 LEDs and Button

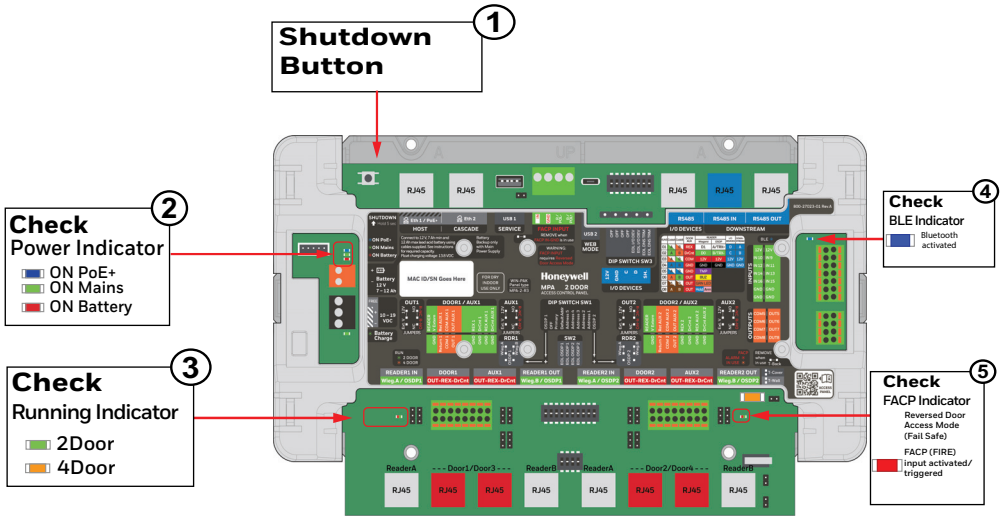


Table 2-1 LED and Button Information

LEDs	Color/Status		Descriptions
ON PoE+ Power LED	Blue	On	The system is powered through PoE+.
		Off	No power from PoE+.
ON Mains Power LED	Green	On	The system is powered through PSU (Power Supply Unit).
		Off	No power from PSU.
ON Battery Power LED	Red	On	The system is powered through backup battery.
		Off	No power from backup battery.
Battery Charge LED	Green	On	The battery is charged.
		Off	The battery is not charged.
Running LED	Blinking Green		For 2-door panels, the system is powered up.
	Blinking Orange		For 4-door panels, the system is powered up.
	Off		The system is powered off.
BLE LED	Blue	Blinking	Bluetooth is waiting for connection with Device Utility App
		ON	Panel is connected with the Device Utility App via Bluethooth
		OFF	Bluetooth is OFF
FACP LED	Orange	ON	REVERSED Door Access Mode active: Panel is in fail safe mode
		OFF	Normal Door Access Mode is active: Panel acts as a default access control panel
	RED	ON	FACP input (Fire) input is activated / triggered: all door relays are deactivated
SHUTDOWN Button			Press the SHUTDOWN button for 5 seconds to shut down the panel.

Power Supply

The system can be powered by PSU or PoE+. For the standard metal enclosure, either the PSU with a backup battery or the PoE+ can be supported. When the PSU fails to power, the backup battery will be activated to power the system automatically.

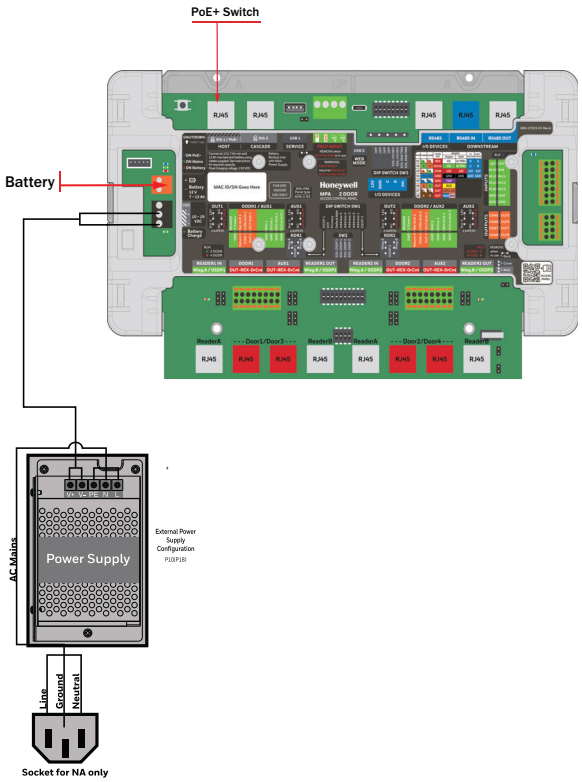
Note: *Do not connect the backup battery when using PoE+.*

- An MPA2C3 panel powered by PoE+ is 802.3at compliant, providing a maximum of PSE 30W of input power and maximum of 25.5 W of output power to the panel. This input power is split between on-board power consumption and external load consumption. A maximum current capacity of 1600mA @ 12±2 VDC is available for all external device combined.
- The PSU is a 10-19 VDC 50 W power supply with an international input of
- 100 VAC to 240 VAC (not be verified). The system also charges and monitors the condition of the battery.
- A maximum current capacity of 3A @ 12VDC nominal is available for all external devices combined.
- The backup battery is 12 VDC, 7 Ah min. and 12 Ah max. sealed lead acid battery. The battery provides standby backup power, depending upon system configuration and activity. When AC is lost, the power supply automatically switches to the backup battery for continuous 12 VDC power. Replace the battery every 2 to 2.5 years, or more often if the system has a high rate of backup use.

Note: *Battery cannot be used in combination with PoE+ operations.*

Note: *MPA2C3 units should be powered by a 100/240 VAC (not be verified) fused line. Ensure to disconnect the battery and AC power before servicing.*

Figure 2-4 Power Supply



Supervised and Non-Supervised Input Wiring

The supervised inputs are locate on the following terminal blocks:

Table 2-2 Table 5 Supervised Input Terminal Blocks/RJ45

Board Configuration	Terminal Block	RJ45
Battery	12V/7A~12Ah	
Main Board Rdr/Door 1 connector	DOOR 1 / AUX1 GND, DrCnt1 GND, DrCnt AUX1 DOOR 1/ DOOR 3 GND, DrCnt1 GND, DrCnt3	DOOR 1 Pin 4: GND, Pin 2: DrCnt1 AUX 1 Pin 4: GND, Pin 2: DrCnt AUX1 DOOR 3 Pin 4: GND, Pin 2: DrCnt3

Main Board Rdr/Door 2 connector	DOOR 2 / AUX2 GND, DrCnt2 GND, DrCnt AUX2 DOOR 2/ DOOR 4 GND, DrCnt2 GND, DrCnt4	DOOR 2 Pin4 GND; Pin2: DrCnt2 AUX2 Pin4 GND; Pin2 DrCnt AUX2 DOOR 4 Pin4 GND; Pin2: DrCnt4
Main Board Additional Input connector	INPUTS (AUX INPUTS) GND, IN9 - IN16	N/A

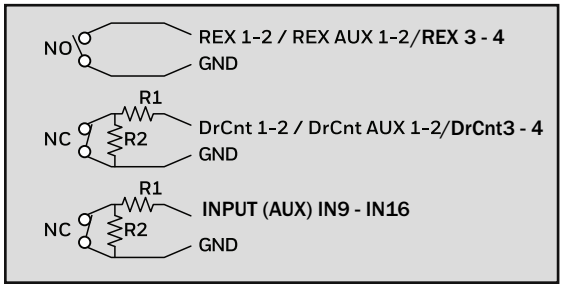
Table 2-3 Non- Supervised Input Terminal Blocks/RJ45

Board Configuration	Terminal Block	RJ45
Main Board Rdr/Door 1 connector	DOOR 1 / AUX1 GND, REX1 GND, REX AUX1 DOOR 1/ DOOR 3 GND, REX1 GND, REX3	DOOR 1 Pin 4: GND, Pin 1: REX1 AUX 1 Pin 4: GND, Pin 1: REX AUX1 DOOR 3 Pin 4: GND, Pin 1: REX3
Main Board Rdr/Door 2 connector	DOOR 2 / AUX2 GND, REX2 GND, REX AUX2 DOOR 2/ DOOR 4 GND, REX2 GND, REX4	DOOR 2 Pin 4: GND, Pin 1: REX2 AUX 2 Pin 4: GND, Pin 1: REX AUX2 DOOR 4 Pin 4: GND, Pin 1: REX4

Door contact (Drcnt) and Request to Exit (REX) for all doors may be configured for Normally Open or Normally Closed contacts as supervised or non-supervised. All inputs on the panel and eight additional inputs have default functions, but they can be configured for general purpose inputs.

The following figure shows the typical wiring for the supervised and non-supervised inputs.

Figure 2-5 Typical Supervised and Non- Supervised Input Wiring Diagram



Standard 2.2K Ohm resistors will be used. MPA2S5 cable includes built-in 2K2 EOL (End of Line) resistors for door contact.

Note: *Both resistors must have the same value.*

In addition, the reader tampers can be supervised and capable of being used as additional inputs if the default functionality is not needed.

The wire used for the inputs cannot exceed 30 Ohm over the entire length of the cable. Remember that the distance from the panel to the door must be doubled to determine the total resistance.

Caution: **The system has not been verified for compliance with UL1076 Burglar Alarm units and systems.**

MPA2C3 Access Control Unit

The panel is a 2 door access control unit, but can be bought as a 4 door access control unit (MPA2C3-4). The following table shows the input/output options:

Table 2-4 Readers/Doors Configurations

MPA2 READER / DOOR CONFIGURATIONS								
CONFIGURATION		INPUTS / OUTPUTS	WIEGAND PORT		OSDP CHANNEL / ADDRESSES			
# DOORS	DIRECTION		2 DOOR PANEL	4 DOOR PANEL	2 DOOR PANEL		4 DOOR PANEL	
					OSDP 1	OSDP 2	OSDP 1	OSDP 2
1 Door	IN	(Relay 1) OUT1, DrCnt1, REX1	READER1 IN	READER 1	1	-	1	-
	IN, OUT	(Relay 1) OUT1, DrCnt1	READER1 IN, OUT	-	1,2		1,2	
2 Door	IN	(Relay 1-2) OUT1-2, DrCnt1-2, REX1-2	READER1-2 IN	READER 1-2	1	1	1	1
	IN, OUT	(Relay 1-2) OUT1-2, DrCnt1-2	READER1-2 IN, OUT	-	1,2	1,2	1,2	1,2
3 Door	IN	(Relay 1-3) OUT1-3, DrCnt1-3, REX1-3	-	READER 1-3	-		1 3	1
	IN, OUT	(Relay 1-3) OUT1-3, DrCnt1-3		-			1,2 3,4	1,2
4 Door	IN	(Relay 1-4) OUT1-4, DrCnt1-4, REX1-4		READER 1-4			1 3	1 3
	IN, OUT	(Relay 1-4) OUT1-4, DrCnt1-4		-			1,2 3,4	1,2 3,4

You can use the panel as a standalone panel with independent card and transaction storage or, with a host software upgrade, as a fully monitored online access control device.

Panel inputs are capable of four state supervision: Normal, Alarm, Short and Cut. One input is used for door status on each door. Inputs for reader tampers are supplied as well. They can also be used as additional inputs when not required for their default purpose. Non-supervised inputs are used for Request to Exit button on each door.

Table 2-5 Limitations for 4-door Controller

Reader Type	Readers Supported for Door
OSDP	Reader A and B can be used for all the 4-door panels
Wiegand	Only reader A is configurable and reader B is disabled and is not visible to user.

Real-time Clock Protection

The panel RTC is backed up using a super capacitor. The super capacitor will power the real-time clock for longer than 336 hours (14 days) in the absence of primary power or a backup battery.

CHAPTER

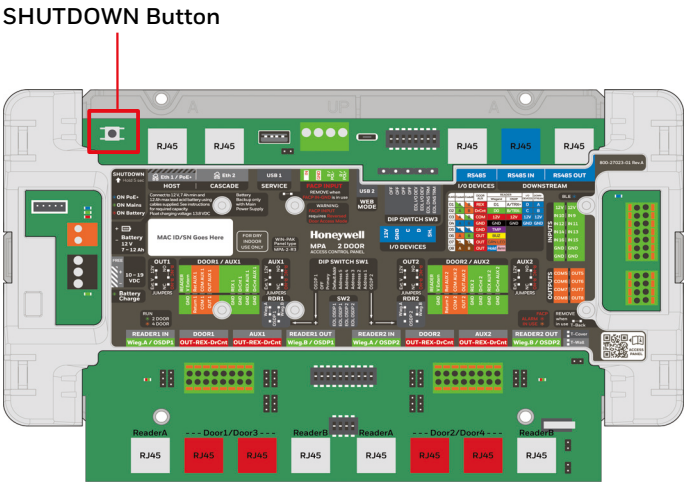
3 WIRING THE PANEL AND DEVICES

The connectors on the control panel are designed in multiple colors to make easy connections.

Shutting down and Restart the Panel

Shutting down the Panel

Figure 3-1 Pressing the SHUTDOWN Button



The SHUTDOWN button allows you to shut down the control panel securely. This ensures that the system can save all necessary data and status in the flash memory. Shutting down the panel disables the inputs/outputs, turns OFF the peripheral bus, AUX outputs and the PTCs. However, it cannot remove power from the panel (from the AC power adapter or the batteries).

1. Press the SHUTDOWN button for 5 seconds.
2. Running LED is off, Panel is shut down (hibernate state).

Note: *Note: If after shutdown the power is not removed from the panel, to restart the panel, please press Shutdown button shortly (NOT 5 Seconds).*

Note: *To completely power off the control unit.*

Note: *a. When the unit is powered by PSU, first disconnect the battery cable and then disconnect the AC power cable.*

Note: *b. When the unit is powered by PoE+, disconnect the PoE+ cable.*

Restart the Panel

Note: *Before powering up the access control unit, ensure that the access control unit is properly wired to the readers, doors, interface bus and downstream devices. Ensure the DIP Switches and jumpers are set for the corresponding readers.*

1. Apply Mains power first, then connect the back-up battery or connect PoE+ power to the panel.
2. Check the status of Running LED.

- Green Blinking - license is correct and application is running as 2-door panel
- Orange Blinking - license is correct and application is running as 4-door panel
- Orange ON - application is checking the license file

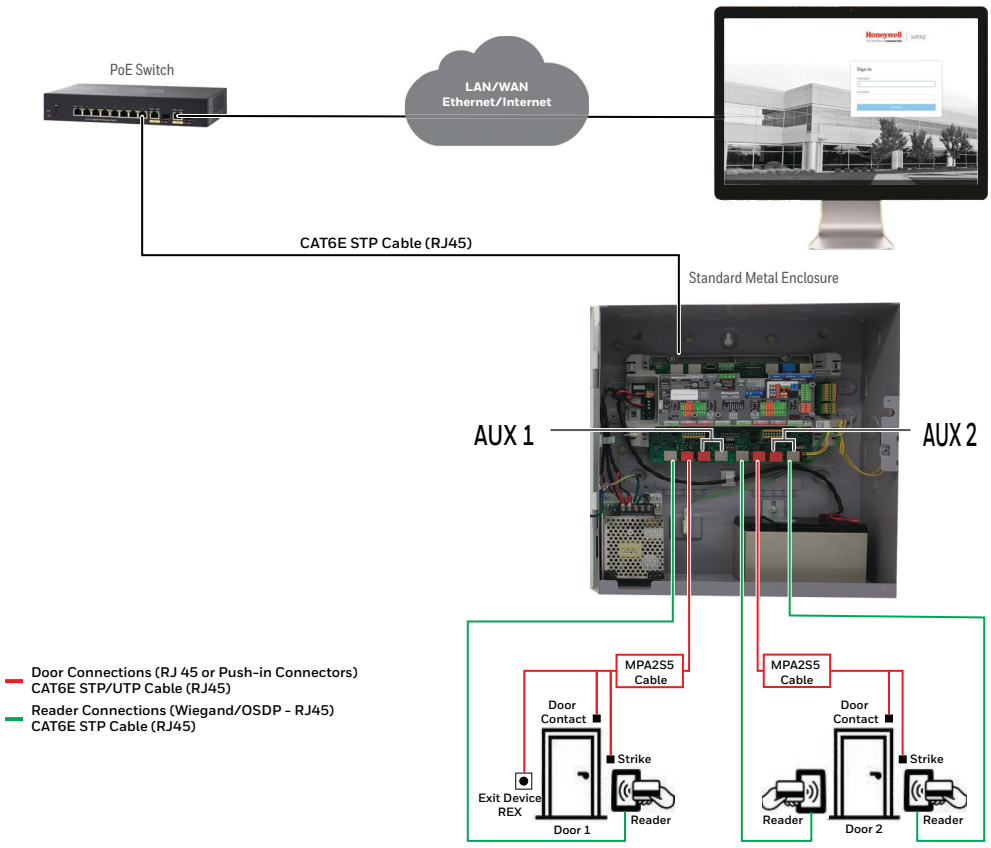
Note: *If only the battery is connected to the panel without the mains power, then the panel will not start.*

System Wiring Overview

- 2 Door system wiring overview
- 4 Door system wiring overview

2-door System Wiring Overview

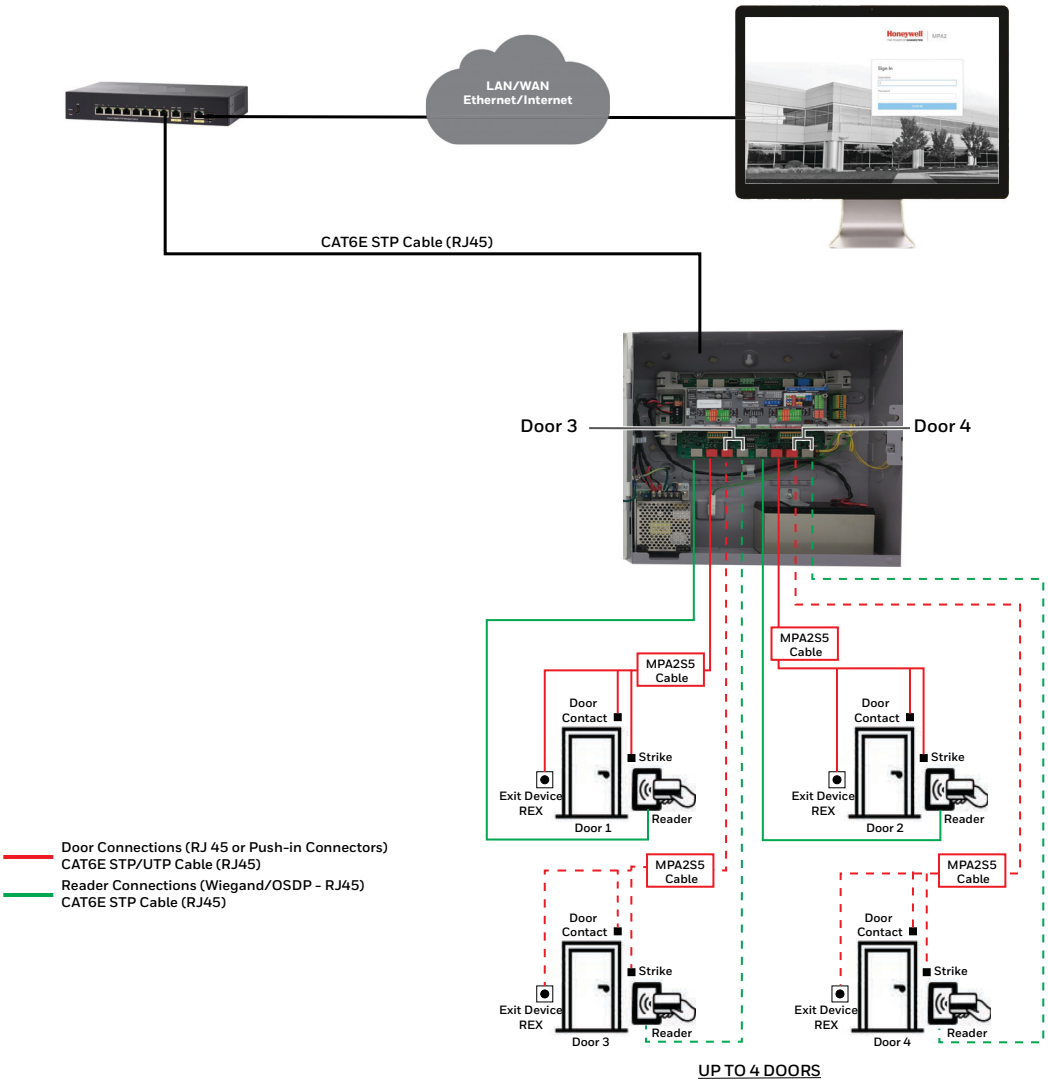
The standard metal enclosure is equipped with the panel MPA2C3 or the 4-door licensed panel MPA2C3-4.The access control unit with the panel MPA2C3 controls a maximum of 2 doors. The figure below illustrates how to connect cables between the panel and input/output devices of 2 doors. This figure takes PoE+ as an exaple. For the standard metal enclosure, PSU with a backup battery is also supported.



4-door System Wiring Overview

The standard metal enclosure is equipped with the panel MPA2C3 or the 4-door licensed panel MPA2C3-4.

The access control unit with the 4-door license controls up to 4 doors. The figure below illustrates how to connect cables between the panel and input/output devices of 4 doors (standard metal enclosure). This figure takes PoE+ as an example. For the standard metal enclosure, PSU with a backup battery is also supported.



Readers/Doors Options

The following table shows the the input/output options for 2-door or 4-door (Licensed) panels.

Figure 3-2 Readers/Doors Configurations

MPA2 READER / DOOR CONFIGURATIONS								
CONFIGURATION		INPUTS / OUTPUTS	WIEGAND PORT		OSDP CHANNEL / ADDRESSES			
# DOORS	DIRECTION		2 DOOR PANEL	4 DOOR PANEL	2 DOOR PANEL		4 DOOR PANEL	
					OSDP 1	OSDP 2	OSDP 1	OSDP 2
1 Door	IN	(Relay 1) OUT1, DrCnt1, REX1	READER1 IN	READER 1	1	-	1	-
	IN, OUT	(Relay 1) OUT1, DrCnt1	READER1 IN, OUT	-	1,2		1,2	
2 Door	IN	(Relay 1-2) OUT1-2, DrCnt1-2, REX1-2	READER1-2 IN	READER 1-2	1	1	1	1
	IN, OUT	(Relay 1-2) OUT1-2, DrCnt1-2	READER1-2 IN, OUT	-	1,2	1,2	1,2	1,2
3 Door	IN	(Relay 1-3) OUT1-3, DrCnt1-3, REX1-3	-	READER 1-3	-		1 3	1
	IN, OUT	(Relay 1-3) OUT1-3, DrCnt1-3		-			1,2 3,4	1,2
4 Door	IN	(Relay 1-4) OUT1-4, DrCnt1-4, REX1-4		READER 1-4			1 3	1 3
	IN, OUT	(Relay 1-4) OUT1-4, DrCnt1-4		-			1,2 3,4	1,2 3,4

You can use the panel as a standalone panel with independent card and transaction storage or as a fully monitored online access control device with a host software upgrade.

Panel inputs are capable of four state supervision: Normal, Alarm, Short and Cut. One input is used for door status on each door. Inputs for reader tampers are supplied as well. They can also be used as additional inputs when not required for their default purpose. Non-supervised inputs are used for REX (Request to Exit) button on each door.

Below table explains the limitation on reader type supported for 4-door access control panels (OSDP and Wiegand).

Table 3-1 Limitations for 4-door Access Control Panels

Reader Type	Readers Supported
OSDP	Reader A and B can be used for all the 4-door panels
Wiegand	Only reader A is configurable and reader B is disabled and is not visible to user.

Note: *For reader specifications, see Hardware Specifications*

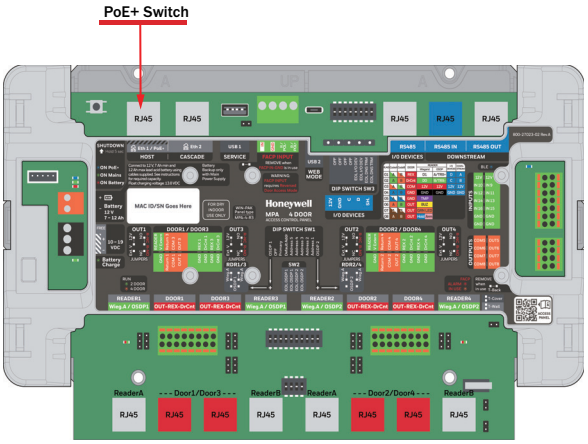
Wiring to PoE+ Switch

Warning: Use a static strap whenever touching the panel to ensure protection from ESD (Electrostatic Discharge).

Warning: Do not apply power at this time. Ensure the PoE+ switch is not powered.

1. Connect the Ethernet cable to the RJ45 port Eth1 / PoE+ - HOST

Figure 3-3 Connecting the Ethernet Cable for PoE+



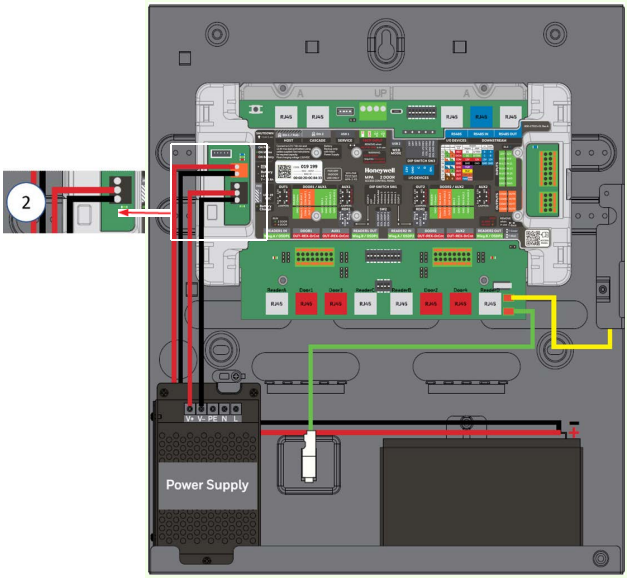
Wiring to Power Supply and Tamper Connector – Standard Metal Enclosure

Warning: Use a static strap whenever touching the panel to ensure protection from ESD (Electrostatic Discharge).

Warning: Do not apply power at this time.

Connect prepared low voltage power supply cable (red, black) to the PSU terminals (V+, V-). Ensure to secure the power cable by the cable clamp.

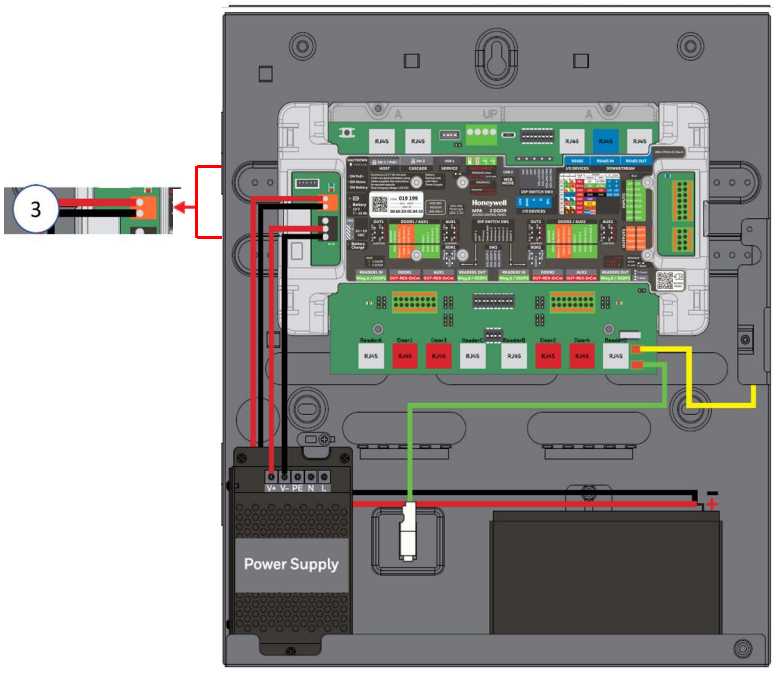
Figure 3-4 Connecting the Power Supply Cable



Warning: Do not apply power at this time. Ensure the power cable is disconnected from the external power source before following this step. The battery cable is included in the accessory bag.

Wire the battery cable, as shown in the below picture.

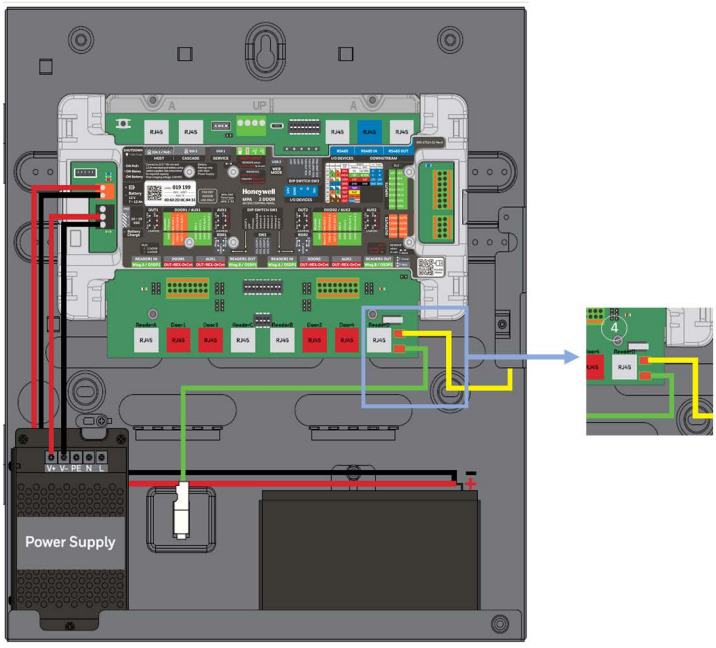
Figure 3-5 Connecting the Battery Cable – 7 Ah Battery



Note: *To avoid short circut, use isolated tools for installing battery and battery cable.*

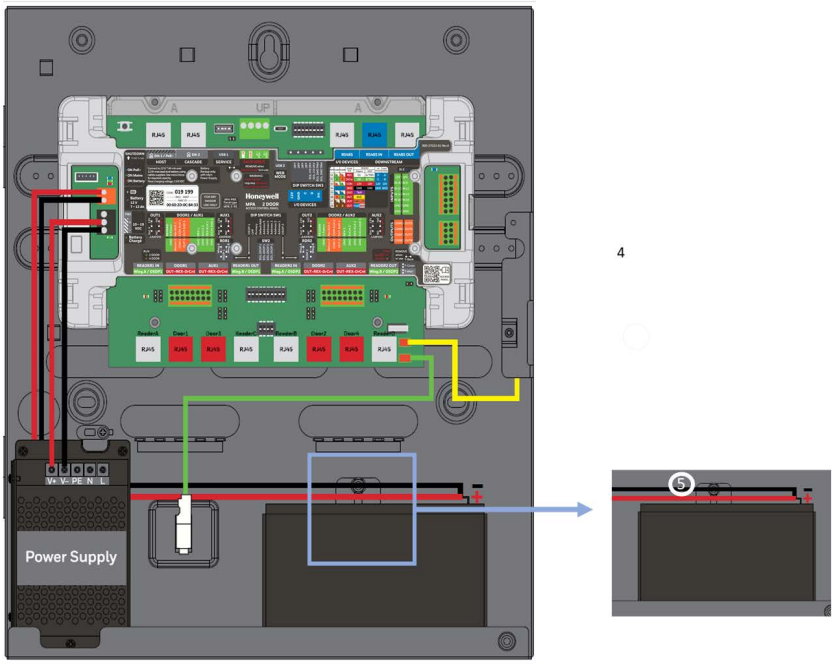
Plug in the prepared tamper connector, as shown in the below picture

Figure 3-6 Connecting the off-wall Tamper and Enclosure Lid Tamper Cables



Installing the battery bracket on top of the battery, as shown in the below picture.

Figure 3-7 Battery Bracket installation on top of the battery

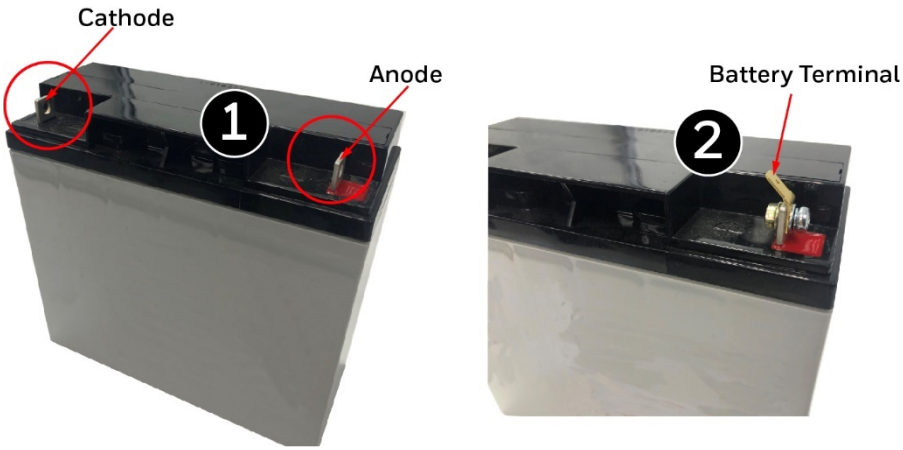


Installing Battery Terminals

The battery recommended for the MPA2C3 is 12V / 7Ah or 12V / 12Ah. For some batteries, 2 battery terminals need to be installed for wiring. These 2 battery terminals are included in the packing list.

1. Remove the screws that attaching on the electrodes (+, -).
2. Attach the battery terminal onto the electrode and secure it. (Two battery terminals are included in the standard metal enclosure package.)

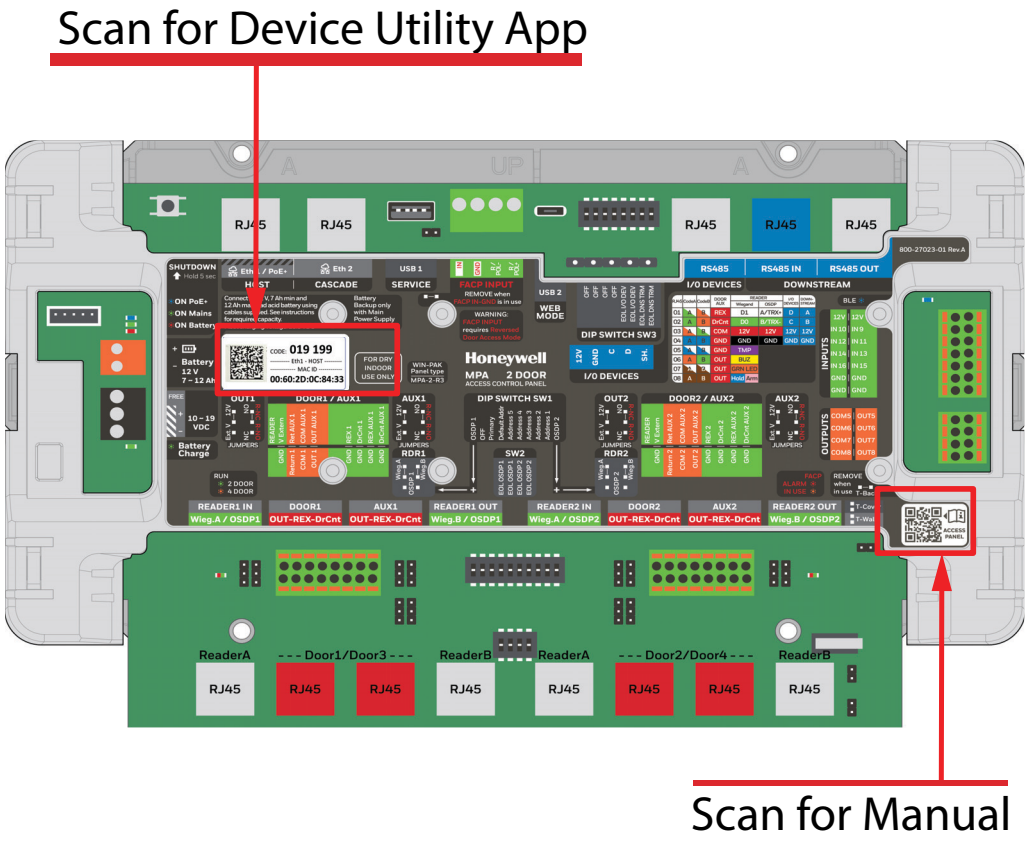
Figure 3-8 Installing the Battery Terminals



3. Connect the battery cable to the newly installed battery terminals.
4. The Battery included in package is UL compliant.
5. If the users want to purchase Battery by themselves, please contact Honeywell Technical Support first, to confirm the requirement or limitation of Battery.
6. Incorrect Battery may cause the system damaged.

Information Card

The MPA2C3 contains an information card as shown below.



The information card represents the reader, door, inputs, and outputs connections, power and battery input, Ethernet and USB connections, RS485 bus information, LED, DIP Switch and Jumper locations and functions.

The Information card also includes 2 QR codes. One to get the manual digitally on your mobile device and one as a unique identifier for e.g. the Device Utility App.

Each door (or barrier) is controlled and monitored by a set of peripheral devices:

- IN Reader – a identification device (e.g. a card reader) that can identify a valid credential (eg a card) to grant access to the protected area behind the door / barrier.
- OUT Reader – an optional identification device (e.g. a card reader) that can identify a valid credential (eg a card) to allow exit from the protected area.
- Door Contact (DrCnt) - a sensor that monitors the state of the door (open or closed state)
- Request to Exit (REX) device – A switch or sensor that allows a person to unlock the door without a valid identifier (eg a card) to exit from the protected area. A REX device is not needed if and OUT Reader on that door is applied.
- Door lock / door strike / magnetic lock - a locking device that is controlled by the panels Door output

Note: *When wiring doors use separate cables for readers and monitoring / locking peripherals*

Figure 3-9 Door with 1 Reader

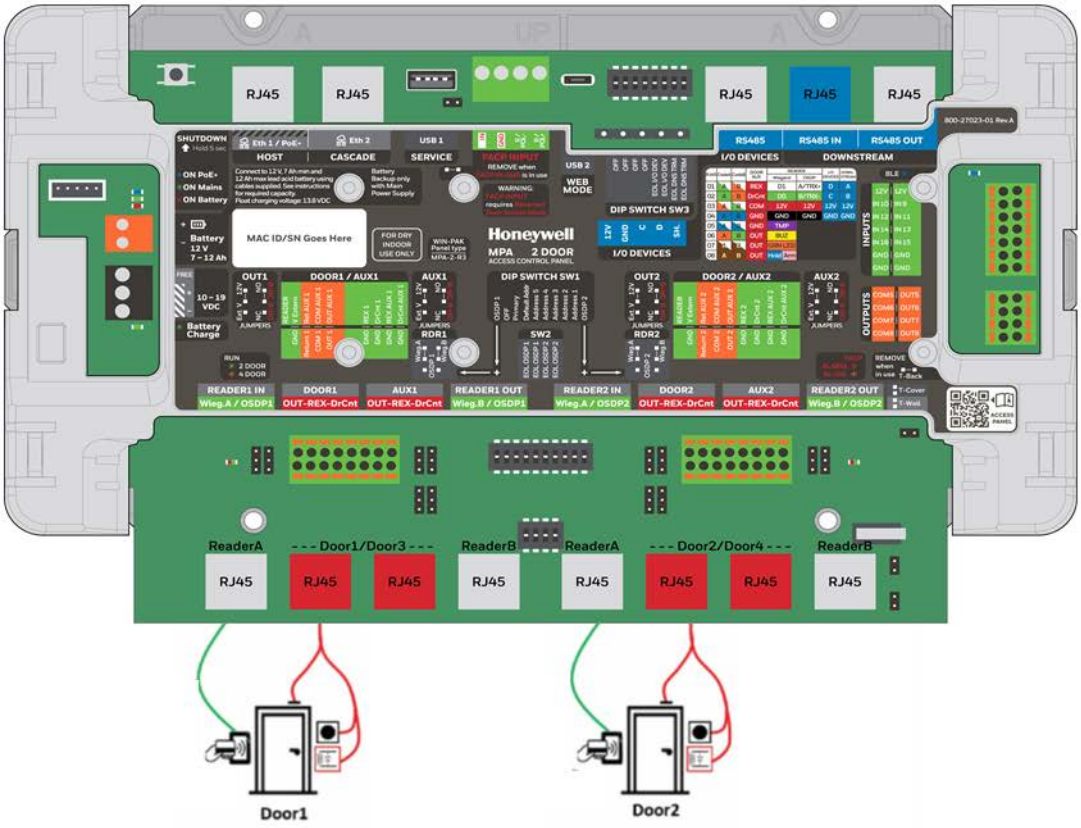
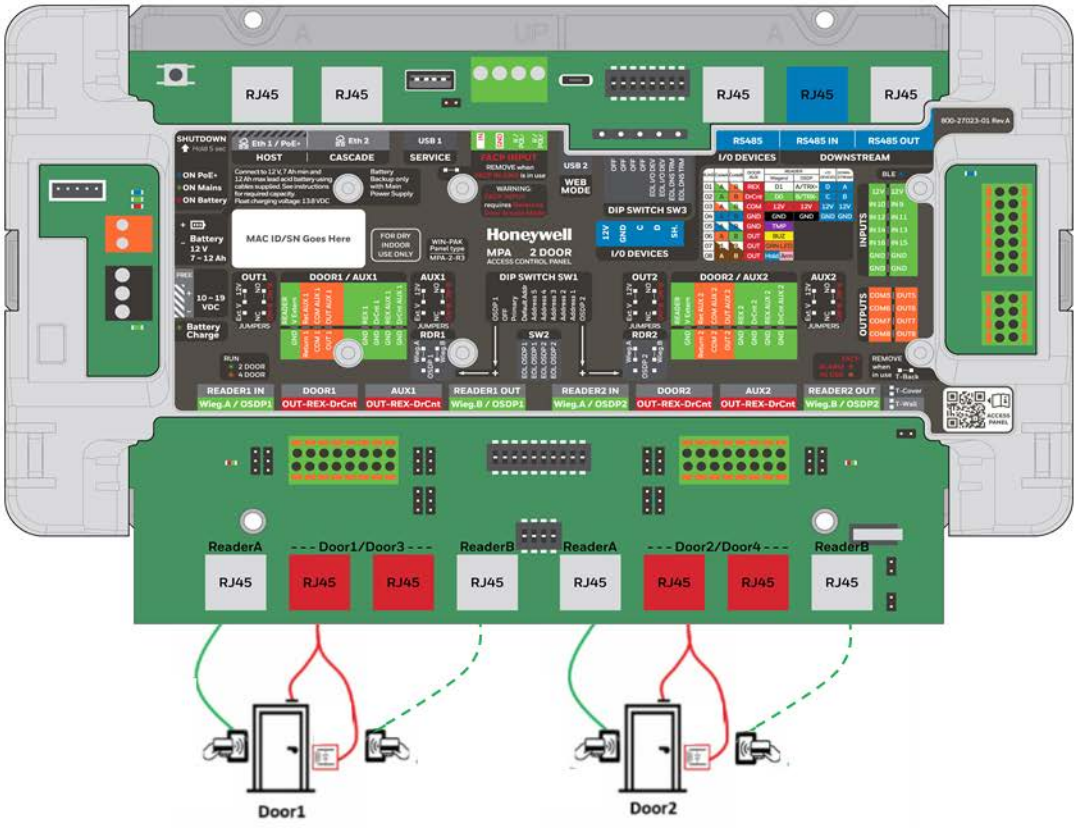
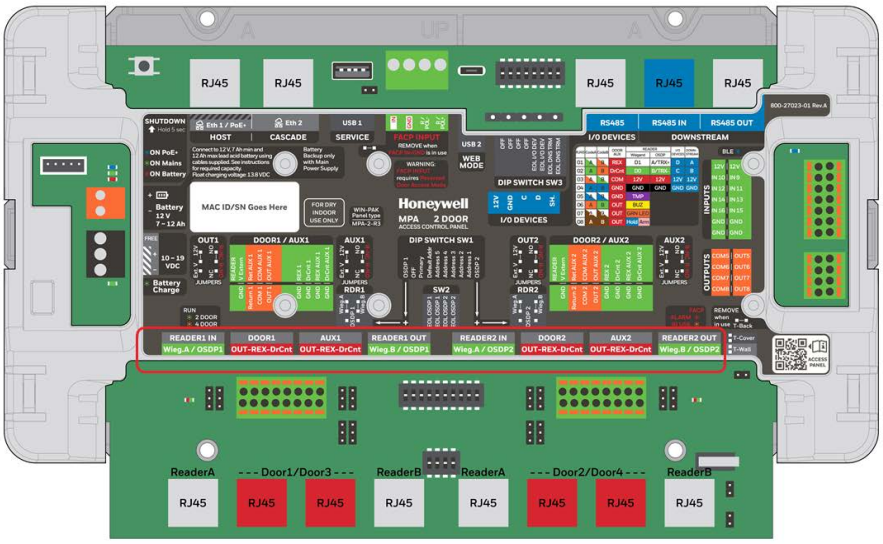


Figure 3-10 Door with 2 Readers



The MPA2C3 Access Control Panel supports two types of readers: Wiegand Readers and OSDP Readers. Four RJ45 terminals are designed to wire readers. The information card on the panel identifies these terminals as eg READER1 IN, or READER4 .



In a 2-door MPA2C3 controller, each door supports one or two readers (entry (IN) and exit (OUT) readers) with Wiegand output format.

In a 4-door MPA2C3-4 controller or when a license is applied for 4 door panel, each door supports one reader (entry (IN) only) with Wiegand output format.

When IN and OUT readers are needed in a 4 door configurated MPA2C3-4 panel, then you must use OSDP readers

(see Table 3-2, “Table for reference.,” on page 41)

OSDP (Open Supervised Device Protocol) is a bi-directional RS485 Multi-drop AES128 Encrypted protocol.

Each RJ45 connection supports up to 2 OSDP readers connected in daisy chain (multi drop) or Y-configuration at the door.

Table 3-2 Table for reference.

MPA2C3 (2 door)	**Wiegand Reader**	
Reader mode	RJ45 Connector READER	Reader Function
Wiegand	READER 1 IN **Wieg.A** / OSDP 1	Door1 IN reader
	READER 1 OUT **Wieg.B** / OSDP 1	Door1 OUT reader
	READER 2 IN **Wieg.A** / OSDP 2	Door2 IN reader
	READER 2 OUT **Wieg.B** / OSDP 2	Door2 OUT reader

MPA2C3-4 (4 door)	**Wiegand Reader**	
Reader mode	RJ45 Connector READER	Reader Function
Wiegand	READER 1 **Wieg.A** / OSDP 1	Door1 IN reader
	READER 2 **Wieg.A** / OSDP 2	Door2 IN reader
	READER 3 **Wieg.A** / OSDP 1	Door3 IN reader
	READER 4 **Wieg.A** / OSDP	Door4 IN reader

MPA2C3 (2 door)	OSDP Reader		
Reader mode	RJ45 Connector READER	Reader Address	Reader Function
OSDP	READER 1 IN Wieg.A/ **OSDP 1**	1	Door1 IN reader
	READER 1 OUT Wieg.B / **OSDP 1**	2	Door1 OUT reader
	READER 2 IN Wieg.A / **OSDP 2**	1	Door2 IN reader
	READER 2 OUT Wieg.B / **OSDP 2**	2	Door2 OUT reader

MPA2C3-4 (4 door)	**OSDP Reader**		
Reader mode	RJ45 Connector READER	Reader Address	Reader Function
OSDP	READER 1 Wieg.A / **OSDP 1**	1	Door1 IN reader
		2	Door1 OUT reader
	READER 2 Wieg.A / **OSDP 2**	1	Door2 IN reader
		2	Door2 OUT reader
	READER 3 Wieg.A / **OSDP 1**	3	Door3 IN reader
		4	Door3 OUT reader
	READER 4 Wieg.A / **OSDP 2**	3	Door4 IN reader
		4	Door4 OUT reader

The 2 RJ45 reader terminals (READER1 IN/OUT or READER1/3) on the left lower side can be simultaneously set to Wiegand or OSDP mode. Both DIP Switch SW1 bit1 (OSDP1) AND Jumper RDR 1(/3) have to be set to the correct positions for the required Wiegand or OSDP reader mode.

In OSDP mode the RS485 termination can be set by DIP Switch SW2 Bit 1&2 (EOL OSDP1). See OSDP Bus termination (page 55).

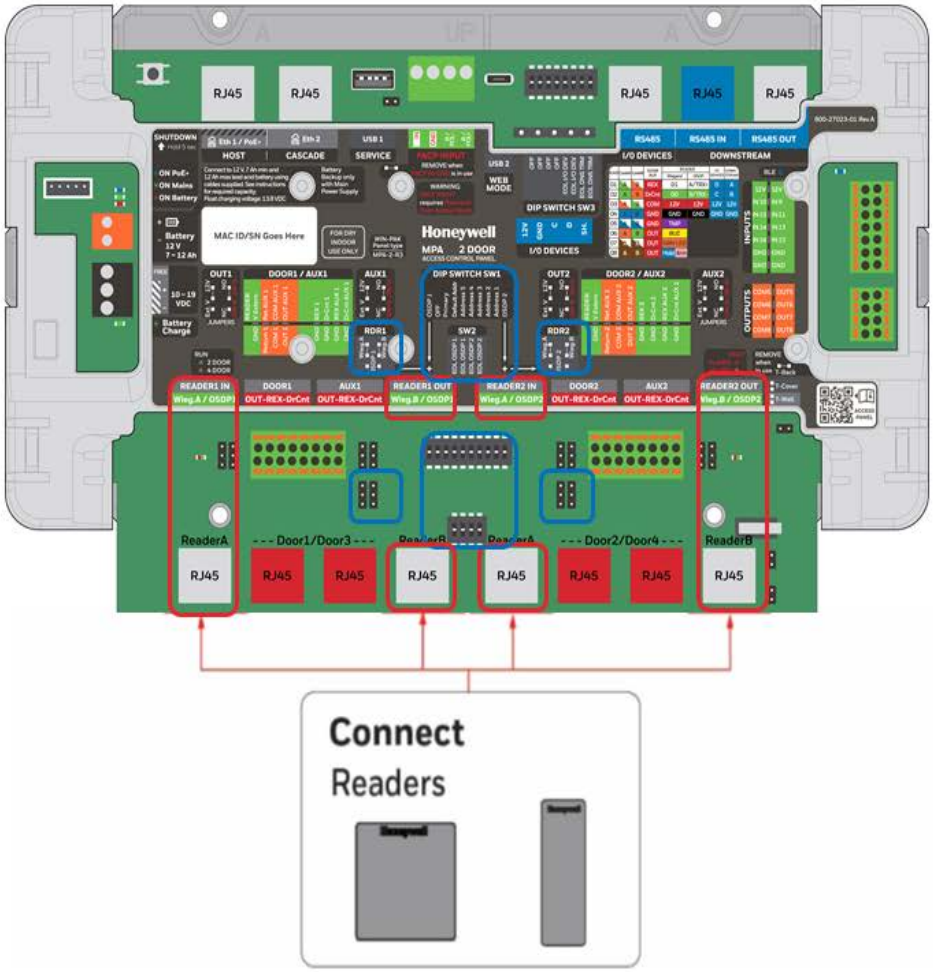
Separately the 2 RJ45 reader terminals (READER2 IN/OUT or READER 2/4) on the right lower side can be simultaneously set to Wiegand or OSDP mode. Both DIP Switch SW1 bit10 (OSDP2) AND Jumper RDR 2(/4) have to be set to the correct positions for the required Wiegand or OSDP reader mode.

In OSDP mode the RS485 termination can be set by DIP Switch SW2 Bit 3&4 (EOL OSDP2). See OSDP Bus termination (page 55).

It is possible to set the left 2 RJ45 reader terminals to Wiegand mode and the right 2 reader terminals to OSDP mode.

The default factory reader setting is Wiegand mode for all reader terminals.

Figure 3-11 The RJ45 reader terminals, dipswitches and jumpers and the representation on the information card

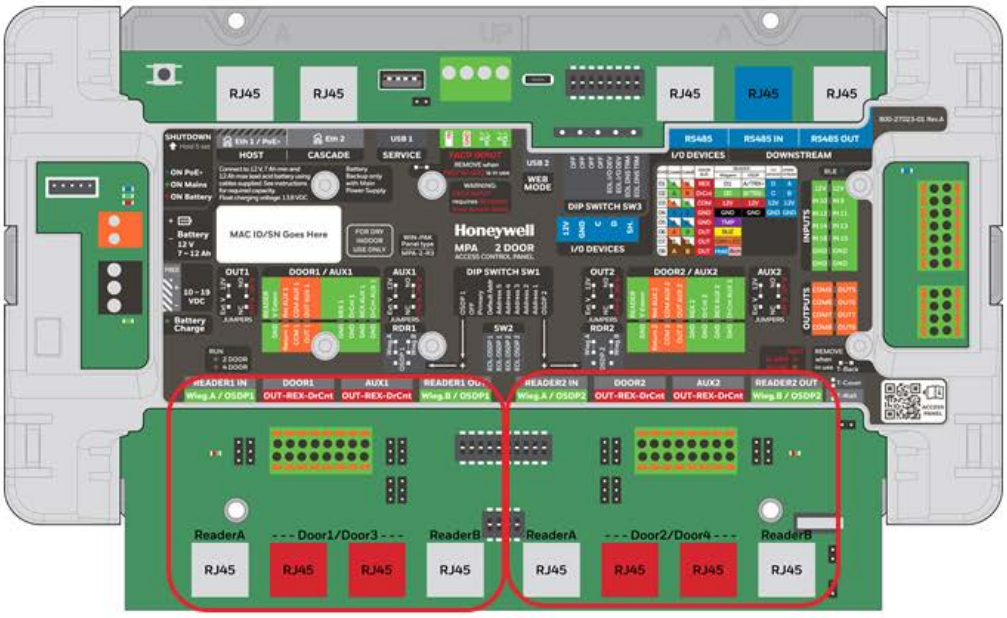


Warning: MPA2C3 reader terminals are using shielded or foiled CAT5E, 6 or 7 S/FTP or F/UTP cable with RJ45 connector. Be aware that this is NOT an Internet/Ethernet protocol and so should not be mixed or connected to standard Ethernet Network devices as switches or routers.

MPA2C3 2-door system reader configurations

In a 2-door system the left 2 RJ45 reader terminals are designated to Door 1 and the readers can be connected as READER1 IN and READER1 OUT reader. The right 2 RJ45 reader terminals are designated to Door 2 and the readers can be connected as READER2 IN and READER2 OUT reader

Figure 3-12 Location of the reader ports



Wiegand mode panel setting

The MPA2C3 2-door system Wiegand mode can manage up to 4 readers to support 2 doors with IN and OUT readers per door.

Note: *Any Wiegand reader is supported for either 2-door or 4-door configuration. There is no need for Wiegand hold wire supported readers.*

Note: *For retrofitting Wiegand hold wire configurations from MPA2C1 and MPA2C1-4, the reader can be reused in the original MPA2C1 or MPA2C1-4 configuration. The hold wire control will not be used in the MPA2C3 and will be in a state, that the reader will function as normal.*

To set up the MPA2C3 in Wiegand mode per door DIP Switch
Table 3-3 settings and Jumper

MPA2C3 (2 Door)	**DIP Switch**		**Jumpers***		**Reader**	
Reader Mode	SW1	SW2	RDR 1	RDR 2	Reader mode READER	Function
Wiegand (DEFAULT)	Bit 1: OFF (OSDP1)	Bit 1&2: OFF (EOL OSDP1)	Enable 1-2 (Wieg.A/B)		READER 1 IN **Wieg.A** / OSDP 1	Door1 IN reader
					READER 1 OUT **Wieg.B** / OSDP 1	Door1 OUT reader
	Bit 10: OFF (OSDP2)	Bit 3&4: OFF (EOL OSDP2)		Enable 1-2 (Wieg.A/B)	READER 2 IN **Wieg.A** / OSDP 2	Door2 IN reader
					READER 2 OUT **Wieg.B** / OSDP 2	Door2 OUT reader

- RDR 1 (JP13/JP14) and RDR 2 (JP15/JP16) both jumpers must be set synchronized

Once the reader terminals have been set to Wiegand mode correctly, the two LEDs on the RJ45 connector will have the following function:

- Left yellow LED
  - Idle: OFF
  - Card reading and transmitting to panel: flashing

Right green LED : OFF

OSDP mode panel setting

The MPA2C3 2-door system OSDP mode can manage up to 4 readers to support 2 doors with IN and OUT readers per door.

The OSDP readers are connected to the panel's AES encrypted OSDP protocol (v 2.x). The OSDP reader are connected to the panels bus (OSDP1 or OSDP2). OSDP readers must have an address to get the proper function. The combination OSDP bus (1 or 2) and the address of the reader determines the function of the reader for which door. See table below.

In OSDP mode more than one reader can be connected to an OSDP RS485 bus.

- OSDP1 is one RS485 OSDP bus with RJ45 terminals READER1 IN and READER1 OUT
- OSDP2 is one RS485 OSDP bus with RJ45 terminals READER2 IN and READER2 OUT

To set up the MPA2C3 in OSDP mode per door DIP Switch.

Table 3-4 DIP Switch settings and Jumpers

MPA2C3-4 (4 door)	**DIP Switch**		**Jumpers*** **		
Reader mode	SW1	SW2**		RDR 1/3	RDR 2/4
OSDP	Bit 1: ON	Bit 1&2:	RS485 Termination	Enable 2-3	
	(OSDP1)	(EOL OSDP1)	OFF: NO EOL ON : EOL	(OSDP 1)	
	Bit 10: ON	Bit 3&4:	RS485 Termination		Enable 2-3
	(OSDP2)	(EOL OSDP2)	OFF: NO EOL ON : EOL		(OSDP 2)

1. * OSDP Readers must be addressed to achieve required function
2. ** SW2: Bit 1 and 2 must be set synchronized for OSDP 1 bus;
   SW2: Bit 3 and 4 must be set synchronized for OSDP 2 bus
3. *** RDR 1 (JP13/JP14) and RDR 2 (JP15/JP16) both jumpers must be set synchronized

Once the reader terminals have been set to OSDP mode correctly, the two LEDs on the RJ45 connector will have the following function:

Left yellow LED: OFF

Right green LED

- OSDP reader not connected: OFF
- Valid OSDP reader connected to panel: flashing

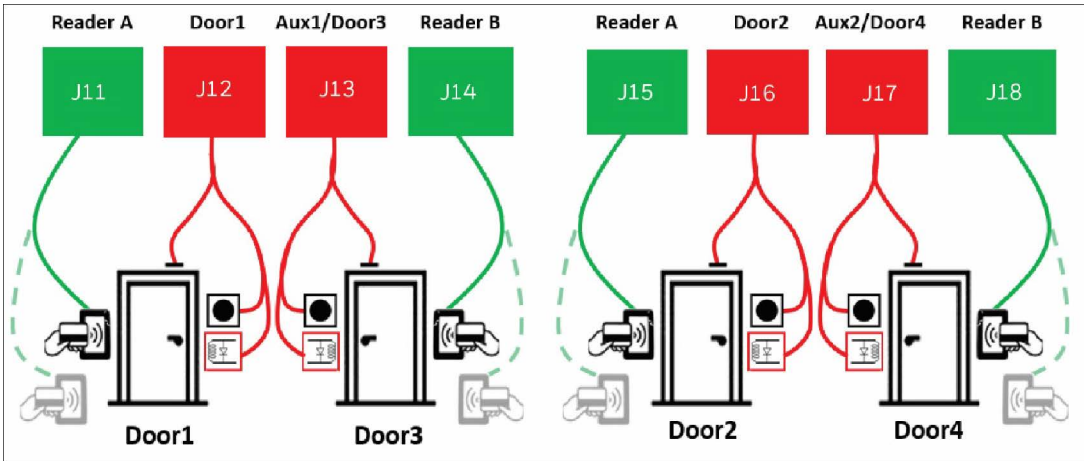
- Card reading and transmitting to panel: flashing

If anything on the reader has been set up incorrectly the following indications are available

OSDP RJ45 READER TERMINAL LED indications				
Yellow LED	Green LED			Description
OFF	Flashing	per	every	
OFF	4 times fast	1 second	5 seconds	OSDP reader, invalid baud rate/ invalid address
OFF	4 times fast	1 second	5 seconds	OSDP reader, invalid baud rate
OFF	4 times fast	1 second	9 seconds	OSDP reader, invalid address
OFF	4 times slow	3 seconds	7 seconds	Wiegand reader connected instead of OSDP reader

To trouble shoot the OSDP reader connection please test the reader one by one on OSDP1 or OSDP2 bus, disconnecting the other readers on the OSDP1 or OSDP2 bus.

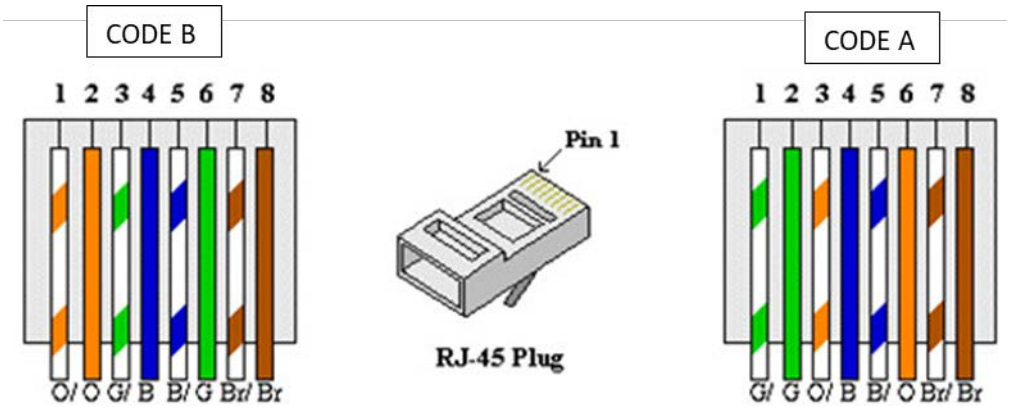
Figure 3-13 The preferred connections for the doors are illustrated



The RJ45 reader terminals are used for both Wiegand or OSDP readers. On the information card is a description for the wiring to the RJ45 PINs and wire functions.

RJ45	CodeA	CodeB	DOOR AUX	READER		I/O DEVICES	DOWN-STREAM
				Wiegand	OSDP		
01	A	B	REX	D1	A/TRX+	D	A
02	A	B	DrCnt	D0	B/TRX-	C	B
03	A	B	COM	12V	12V	12V	12V
04	A	B	GND	GND	GND	GND	GND
05	A	B	GND	TMP			
06	A	B	OUT	BUZ			
07	A	B	OUT	GRN LED			
08	A	B	OUT	Hold	Arm		

Figure 3-14 The Pin number correspond with the below RJ45 connector setting.



Use the correct RJ45 connector type for the correct type and size of the wires, when using CAT cable.

When using thicker cables (AWG18 - AWG20), an MPA2RJ (RJ45 -8 screw connector) is required to connect the reader to the panel.

Figure 3-15 MPA2RJ

Power limitations for the reader connections

Readers are powered via the RJ45 terminals, Pin 03 and 04. By default the power for the readers is supplied by the MPA2C3 panel. The reader power output voltage for the reader is defined in the below table.

Panel's Power source	Voltage output readers at the RJ45 terminal Pin 03, Pin 04
Mains (110-230VAC)	13.5V
Battery	Battery Voltage - 0.5V
PoE+	11.5V

External reader power

The voltage to the reader connections can be increased by injecting an external power supply to the panel.

2-Door Panel

- Input DOOR1/AUX1: READER V EXTERN, GND (P10:PIN 1, PIN 2) to externally power the RJ45 reader Terminals READER1 IN and READER1 OUT.
- Input DOOR2/AUX3: READER V EXTERN, GND (P18:PIN 1, PIN 2) to externally power the RJ45 reader Terminals READER2 IN and READER2 OUT.

4-Door Panel:

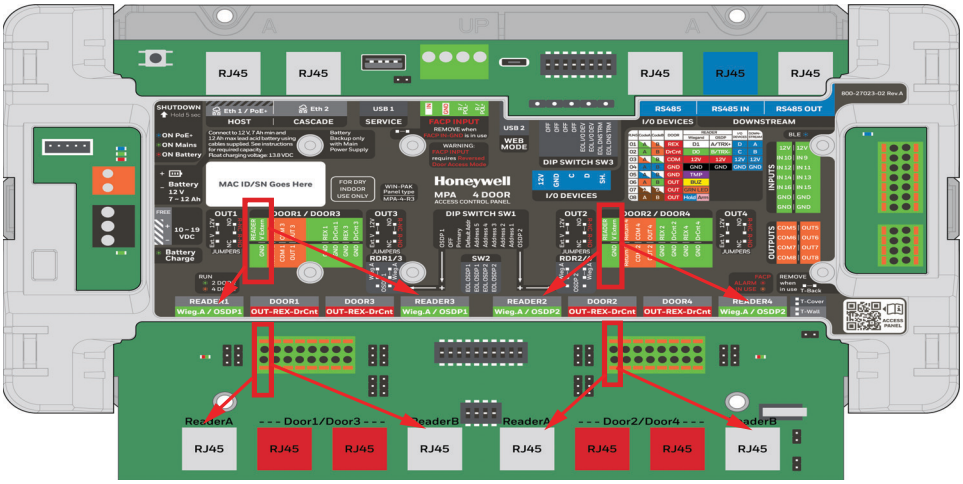
- Input DOOR1/DOOR3: READER V EXTERN, GND (P10:PIN 1, PIN 2) to externally power the RJ45 reader Terminals READER1 and READER3.
- Input DOOR2/DOOR4: READER V EXTERN, GND (P18:PIN 1, PIN 2) to externally power the RJ45 reader Terminals READER2 and READER4

The external PSU must supply a voltage in range 14VDC~24VDC. The output rating current of this external PSU must be higher than actual work load.

To ensurecompliance with UL 62638-1 standard, the evternal PSU must be UL 62368-1 or UL 60950-1 listed and its maximum operating temperature must be equal to higher than 45℃.

The increased voltages allow cable lengths with low diameter wire cores to increase for the reader cable or allow matching the reader specific voltage / power requirements.

Note: *If more than one OSDP reader is connected to the RJ45 connector, the voltage drop between panel and reader is doubled. In that case the external power supply unit allows the readers to be powered correctly. Always check the reader input voltage range (12V + or – x%, or Min / Max Voltage) before connecting the reader to other voltages than the default.*



Warning: Before wiring the reader, see the below table on power limitations

The below table describes the power limitations for the RJ45 reader terminals. Please note the difference between internal power source (12V from panel) and reader external power supply, inserted in the push in terminal blocks (READER V EXTERN, GND). The power limitations are for both combined RJ45 reader terminals.

Power source	Power limitation		Maximum current	
	@ RJ45 Reader terminals			
Voltage range	2-Door	4-Door	RJ45 terminal	both RJ45 terminals combined
internal: 10-14VDC	READER1 IN	READER1	500mA	500mA
	READER1 OUT	READER3	500mA	
internal: 10-14VDC	READER2 IN	READER2	500mA	500mA
	READER2 OUT	READER4	500mA	
External: 14-24VDC DOOR1/AUX1/ DOOR3 (READER V EXTERN, GND)	READER1 IN	READER1	500mA	1000mA
	READER1 OUT	READER3	500mA	
External: 14-24VDC DOOR2/AUX2/ DOOR4 (READER V EXTERN, GND)	READER2 IN	READER2	500mA	1000mA
	READER2 OUT	READER4	500mA	

Wiegand Reader Wiring

The RJ45 READER terminals can fully support an 8-wire cable (18-24 AWG). Preferably use the standard FTP cable with RJ45 plug 8-wire CAT6E/7 (recommended) 8-conductor cable.

When using thicker cables (AWG18 - AWG20), an RJ45 -8 screw convertor (P/N: MPA2RJ) is required to connect the reader to the panel.

For reader cable lengths and power requirements, please look in chapter xxxx.

Figure 3-16 The wire connections are listed below vs the orientation of the RJ45 connector.

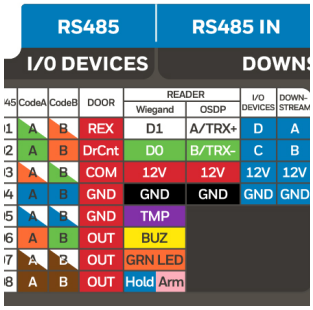


Table 3-5 e wire connections are listed below vs the orientation of the RJ45 connector.

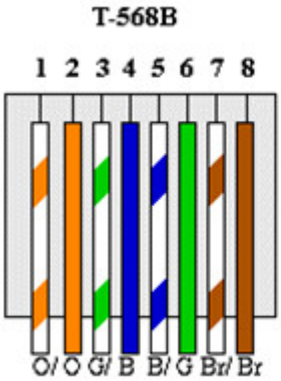
RJ45 PIN	Reader wire Colour*	Wiegand	Description
01	White	D1	D1 data signal from reader
02	Green	D0	D0 data signal from reader
03	Red	12V	Reader power 12VDC from panel OR higher voltage from external power source**
04	Black	GND	Reader power 0V / GND
05	Purple	TMP	Tamper from reader
06	Yellow	BUZ	Buzzer control from panel
07	Orange	GRN LED	Green LED control from panel
08	Blue	Hold	Hold wire (NOT NEEDED, but can be connected)
	Pink	Arm	Future use

1. * The wire colors of our recommended readers is implemented in the table: OmniSmart, OmniClass,
   OmniProx, HID SIGNO and iCLASS and luminAXS.

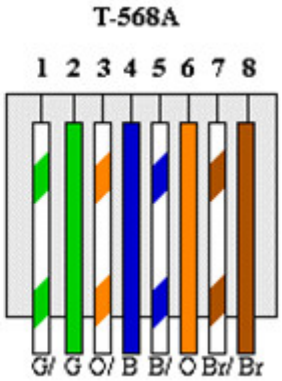
Note: *The reader wire colors can be different for various readers. Please see the reader's manual*

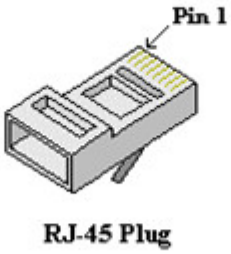
2. ** See previous chapter for voltage range and maximum currents.

CODE B



CODE A





3.6.4.2 OSDP Reader Wiring

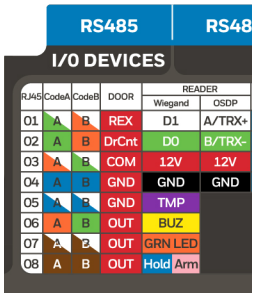
The RJ45 READER terminal can fully support an 8-wire cable (18-24 AWG). Preferably use the standard FTP cable with RJ45 plug 8-wire CAT6E/7 (recommended) 8-conductor cable.

When using thicker cables (AWG18 - AWG20), an RJ45 -8 screw convertor (P/N: MPA2RJ) is required to connect the reader to the panel.

For reader cable lengths and power requirements, please look in chapter 6.6.

Table 3-6 The wire connections are listed below vs the orientation of the RJ45 connector.

RJ45 PIN	Colour*	OSDP	Description
01	White	A/TRX+	RS485A data signal
02	Green	B/TRX-	RS485B data signal
03	Red	12V	Reader power 12VDC from panel OR higher voltage from external power source
04	Black	GND	Reader power 0V / GND
05	Not used		
06			
07			
08			

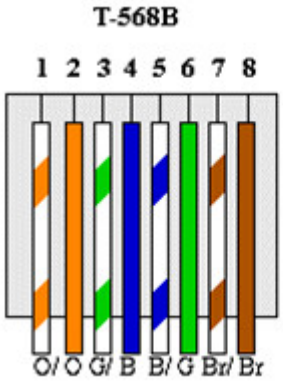


1. * The wire colors of our recommended readers is implemented in the table: OmniSmart, OmniClass,
   OmniProx, HID SIGNO and iCLASS and luminAXS.

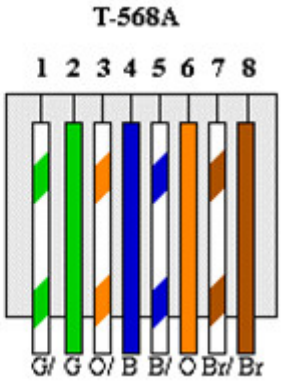
Note: *The reader wire colors can be different for various readers. Please see the reader's manual*

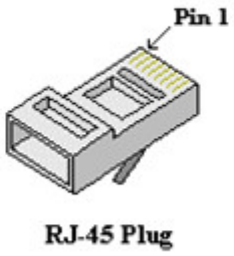
2. ** See previous chapter for voltage range and maximum currents.

CODE B



CODE A





MPA2C3 has a fixed baud rate for both OSDP busses at 9600 bits per second (bps)

Similarly the OSDP reader Baud Rate. must be set to 9600 bps

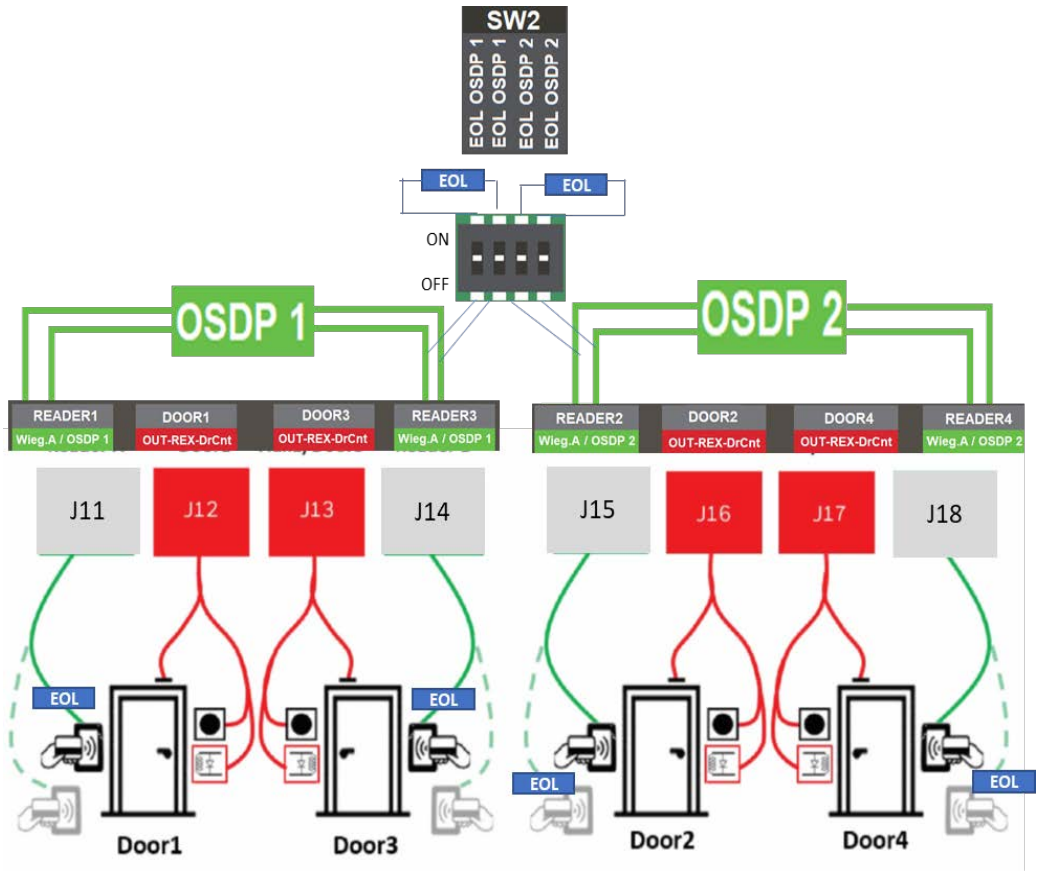
OSDP Bus transmission speed (baud Rate)

MPA2C3 has a fixed baud rate for both OSDP busses at 9600 bits per second (bps)

Similarly the OSDP reader Baud Rate. must be set to 9600 bps

OSDP Bus termination

Because OSDP is an RS485 protocol, for long distances the balanced RS485A and RS485B signal wires must be terminated at both ends of the OSDP reader cable with an 120 Ohm resistor.



Because there are 2 OSDP RS485 busses (OSDP1 and OSDP2), for each OSDP bus this has to be set up correctly.

The below tables give examples of readers connected to various RJ45 terminals and the DIP Switch SW2 setting and resistor placement at the reader.

OSDP EOL Termination in 2 - Door Panel

Table 3-7 OSDP EOL Termination in 2 - Door Panel

OSDP bus termination					Add Resistor on OSDP readers	DIP Switch SW2			
readers connected						EOL OSDP1		EOL OSDP2	
QTY	Function	RJ45 Terminal	OSDP BUS	Addr	A/B signal wires	Bit1	Bit2	Bit3	Bit4
1	Reader 1 IN	READER1 IN	OSDP1	1	120 OHM	ON	ON	OFF	OFF
1	Reader 2 IN	READER2 IN	OSDP2	1	120 OHM	OFF	OFF	ON	ON
2	Reader 1 IN	READER1 IN	OSDP1	1	120 OHM	OFF	OFF	OFF	OFF
	Reader 1 OUT	READER1 OUT	OSDP1	2	120 OHM				
2	Reader 1 IN	READER1 IN	OSDP1	1	120 OHM	ON	ON	ON	ON
	Reader 2 IN	READER2 IN	OSDP2	1	120 OHM				
3	Reader 1 IN	READER1 IN	OSDP1	1	120 OHM	OFF	OFF	ON	ON
	Reader 1 OUT	READER1 OUT	OSDP1	2	120 OHM				
	Reader 2 IN	READER2 IN	OSDP2	1	120 OHM				

3	Reader 1 IN	READER1 IN	OSDP1	1	120 OHM	ON	ON	OFF	OFF
	Reader 2 IN	READER2 IN	OSDP2	1	120 OHM				
	Reader 2 OUT	READER2 OUT	OSDP2	2	120 OHM				
4	Reader 1 IN	READER1 IN	OSDP1	1	120 OHM	OFF	OFF	OFF	OFF
	Reader 1 OUT	READER1 OUT	OSDP1	2	120 OHM				
	Reader 2 IN	READER2 IN	OSDP2	1	120 OHM				
	Reader 2 OUT	READER2 OUT	OSDP2	2	120 OHM				

OSDP EOL termination in 4-door panels

OSDP bus termination					Add Resistor on OSDP readers	DIP Switch SW2			
Readers connected						EOL OSDP1		EOL OSDP2	
QTY	Function	RJ45 Terminal	OSDP BUS	Addr	A/B signal wires	Bit1	Bit2	Bit3	Bit4
1	Reader 1 IN	READER1	OSDP1	1	120 OHM	ON	ON	OFF	OFF
1	Reader 2 IN	READER2	OSDP2	1	120 OHM	OFF	OFF	ON	ON
1	Reader 3 IN	READER3	OSDP1	3	120 OHM	ON	ON	OFF	OFF
1	Reader 4 IN	READER4	OSDP2	3	120 OHM	OFF	OFF	ON	ON
2	Reader 1 IN	READER1	OSDP1	1	-	ON	ON	OFF	OFF
	Reader 1 OUT*			2	120 OHM				
2	Reader 2 IN	READER2	OSDP2	1	-	OFF	OFF	ON	ON
	Reader 2 OUT*			2	120 OHM				
2	Reader 3 IN	READER3	OSDP1	3	-	ON	ON	OFF	OFF
	Reader 3 OUT*			4	120 OHM				
2	Reader 4 IN	READER4	OSDP2	3	-	OFF	OFF	ON	ON
	Reader 4 OUT*			4	120 OHM				
2	Reader 1 IN	READER1	OSDP1	1	120 OHM	OFF	OFF	OFF	OFF
	Reader 3 IN	READER3		3	120 OHM				
2	Reader 2 IN	READER2	OSDP2	1	120 OHM	OFF	OFF	OFF	OFF
	Reader 4 OUT	READER4		3	120 OHM				
2	Reader 1 IN	READER1	OSDP1	1	120 OHM	ON	ON	ON	ON
	Reader 2 IN	READER2	OSDP2	1	120 OHM				
2	Reader 1 IN	READER1	OSDP1	1	120 OHM	ON	ON	ON	ON
	Reader 4 IN	READER4	OSDP2	1	120 OHM				
2	Reader 3 IN	READER3	OSDP1	1	120 OHM	ON	ON	ON	ON
	Reader 2 IN	READER2	OSDP2	1	120 OHM				
2	Reader 3 IN	READER3	OSDP1	1	120 OHM	ON	ON	ON	ON
	Reader 4 IN	READER4	OSDP2	1	120 OHM				
3	Reader 1 IN	READER1	OSDP1	1	-	ON	ON	ON	ON
	Reader 1 OUT			2	120 OHM				
	Reader 2 IN	READER2	OSDP2	1	120 OHM				
3	Reader 1 IN	READER1	OSDP1	1	120 OHM	ON	ON	ON	ON
	Reader 2 IN	READER2	OSDP2	1	-				
	Reader 2 OUT			2	120 OHM				

4	Reader 1 IN	READER1	OSDP1	1	-	ON	ON	ON	ON
	Reader 1 OUT			2	120 OHM				
	Reader 2 IN	READER2	OSDP2	1	-				
	Reader 2 OUT			2	120 OHM				
4	Reader 1 IN	READER1	OSDP1	1	120 OHM	OFF	OFF	OFF	OFF
	Reader 3 IN	READER3		3	120 OHM				
	Reader 2 IN	READER2	OSDP2	1	120 OHM				
	Reader 4 IN	READER4		3	120 OHM				
5	Reader 1 IN	READER1	OSDP1	1	-	OFF	OFF	ON	ON
	Reader 1 OUT			2	120 OHM				
	Reader 3 IN	READER3		3	120 OHM				
	Reader 2 IN	READER2	OSDP2	1	-				
	Reader 2 OUT			2	120 OHM				
5	Reader 1 IN	READER1	OSDP1	1	-	OFF	OFF	OFF	OFF
	Reader 1 OUT			2	120 OHM				
	Reader 3 IN	READER3		3	120 OHM				
	Reader 2 IN	READER2	OSDP2	1	120 OHM				
	Reader 4 IN	READER4		2	120 OHM				
8	Reader 1 IN	READER1	OSDP1	1	-	OFF	OFF	OFF	OFF

OSDP ADDRESSING VIA PANEL

OSDP reader's functions (IN or OUT reader for Door 1-4) are determined by the connected OSDP bus and the configured address in the reader. In the below tables the address and respective functions are described.

MPA2C3 (2 door)	OSDP Reader		
Reader Connection mode	RJ45 Connector READER	Reader Address	Reader Function
OSDP	READER 1 IN	1	Door1 IN reader
	Wieg.A / **OSDP 1**		
	READER 1 OUT	2	Door1 OUT reader
	Wieg.B / **OSDP 1**		
	READER 2 IN	1	Door2 IN reader
	Wieg.A / **OSDP 2**		
	READER 2 OUT	2	Door2 OUT reader
	Wieg.B / **OSDP 2**		
MPA2C3-4 (4 door)	OSDP Reader		

Reader Connection mode	RJ45 Connector	Reader Address	Reader Function
OSDP	READER		
	READER 1	1	Door1 IN reader
	Wieg.A / **OSDP 1**	2	Door1 OUT reader
	READER 3	3	Door3 IN reader
	Wieg.A / **OSDP 1**	4	Door3 OUT reader

OSDP READER ADDRESS ASSIGNMENT FEATURE VIA PANEL

Usually OSDP readers are delivered with address “0”.

The reader needs to be readdressed to the appropriate address for the assigned function per the above table. The readdressing can be done with the addressing tool of the reader (see instruction or installation manual of the reader manufacturer).

The MPA2C3 panel has an auto addressing function.The procedure is described below.

OSDP reader controls

When an invalid card has been swiped to the reader, the access is denied to the card holder and the reader red LED will flash twice and generates two beeps.

This is different than the Wiegand controls.

OSDP READER ADDRESS ASSIGNMENT FEATURE VIA PANEL

Usually OSDP readers are delivered with address 0.

The reader needs to be readdressed to the appropriate address for the assigned functions per the above table. The readdressing of the reader can be done with the addressing tool of the reader. See instruction or installation manual of the reader manufacturer.

The MPA2C3 panel has a built-in addressing tool for OSDP readers. Using the below procedure you are able to connect readers one by one and program the reader to the designated address for the dedicated function of the reader (e.g. Door 1, Reader A (IN) or Door 2 Reader B (Out)). Functions of the readers and the respective addresses are explained in previous section. Below steps are described for Honeywell OSDP readers from factory with default settings: Address 0 and 9600 baud communication speed.

When this menu is active, then normal operation of the panel is postponed and will not allow normal card access control.

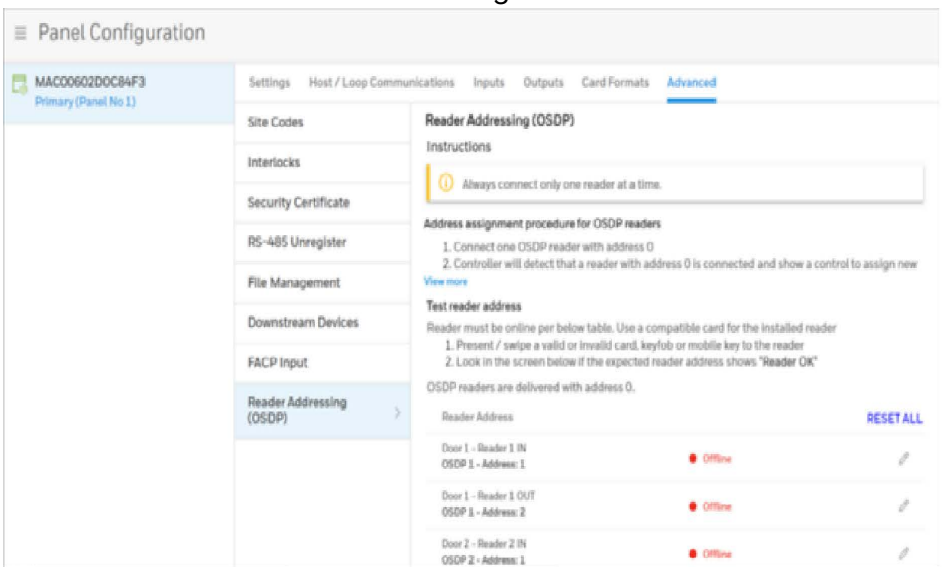
Prequisites for OSDP Reader addressing tool:

1. Set up the panel using Dip Switches and jumpers for OSDP1 and / or OSDP2 to be active See "DIP Switch Settings" on page 101 and See "Jumper Settings" on page 104
2. All readers to be connected must be set to address 0
3. Reader communication speed must be set at 9600 Baud (factory setting).
4. Only one factory reader must be connected at a time for addressing to work

Address assignment procedure for OSDP readers

Addressing readers in a new MPA2C3 panel can be done by the panel.

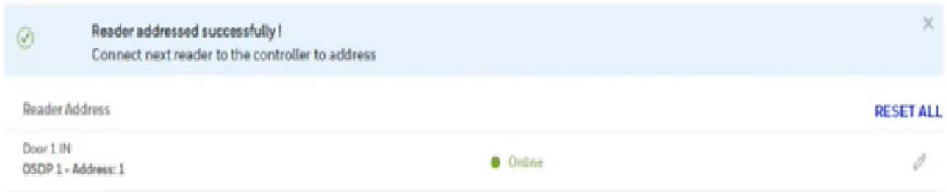
First step is to log in to the panel's web interface and select menu Panel Configuration / Advanced / Reader Addressing.



1. Connect one OSDP reader with address 0

2. Controller will detect that a reader with address 0 is connected and show a control to assign new address (or door)

3. Select the preferred function and assign it to the detected reader, the reader will show online state



4. Leave the Connected reader with new address in.

5. Connect another OSDP reader with address 0 and repeat steps 2 to 4.

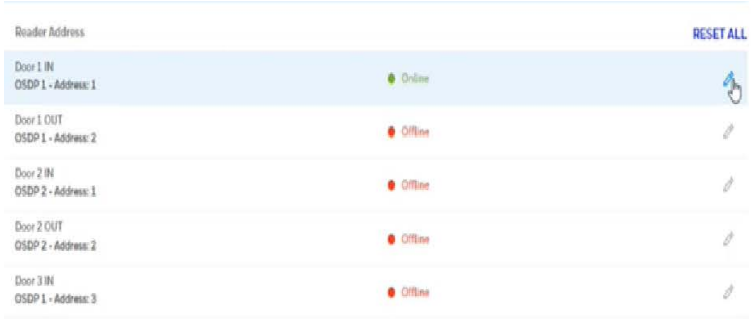
Note: *It is not required to disconnect previously addressed reader while assigning address to a factory reader.*

Correcting/Editing Reader Address

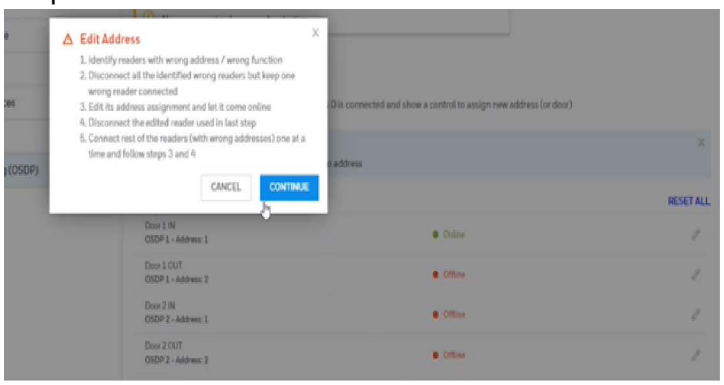
Address correction can be done by correcting address of individual reader or by resetting addresses of all the connected readers.

a. Identify readers with wrong address / wrong function
b. Disconnect all the identified wrong readers but keep one wrong reader connected.
c. Edit its address assignment and let it come online

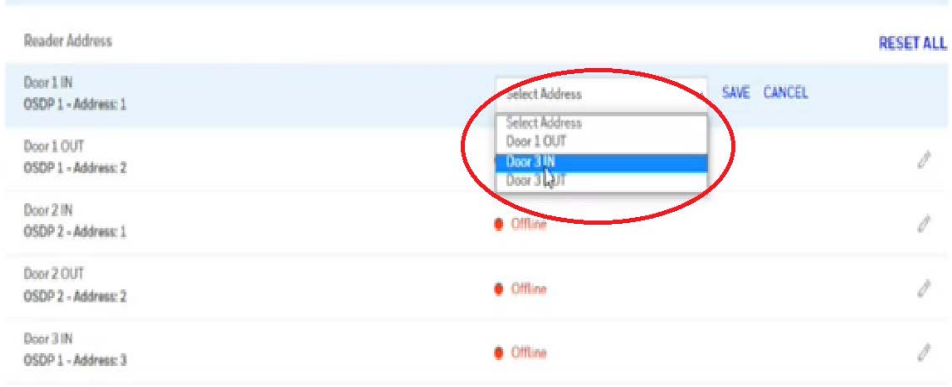
Step 1. Click Edit icon of the reader to be edited



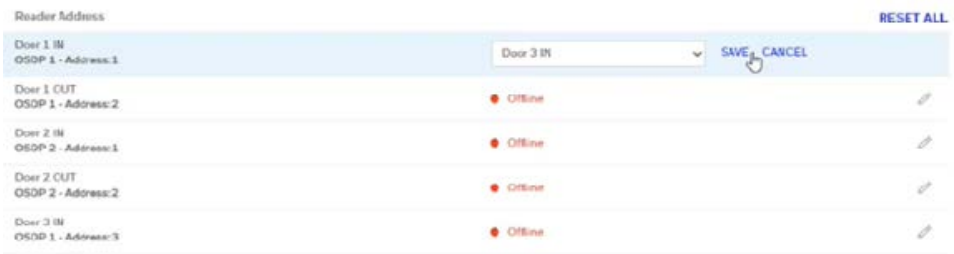
Step 2. Click “Continue”



Step 3. Select new function / address

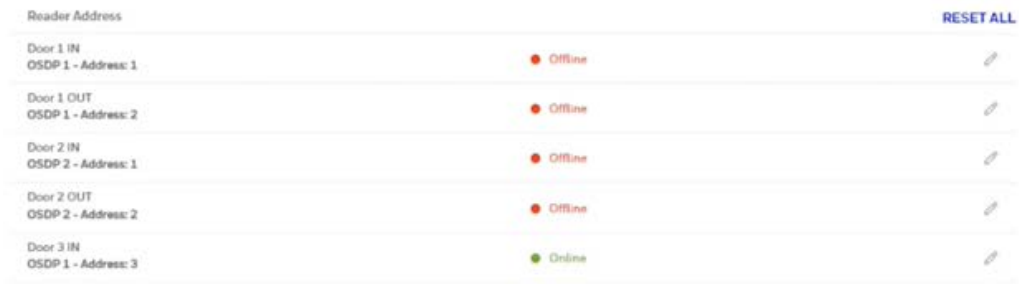


Step 4. Click Save



Confirmation of Panel

Step 5. System displays new reader function as Online. Previous function is now Offline



4. Disconnect the edited reader used in last step
5. Connect rest of the readers (with wrong addresses) one at a time and follow steps 3 and 4

e.g. Readers R1 and R2 installed physically at a door 1 IN and door 1 OUT are wrongly assigned as Door 1 OUT and Door 1 IN respectively.

1. Disconnect Reader R2
2. Edit Reader R1 and assign address Door 1, Reader IN
3. Disconnect Reader R1 and connect Reader R2

4. Edit Reader R2 and assign address Door 1, Reader OUT
5. Connect readers in the panel and test the reader functions

OSDP address reassignment when migrating from MPA2C1 to MPA2C3 panel

Note: *Below the description of the panels are MPA2C1 and MPA2C3. For MPA2C1 the following part numbers can be filled in as well: MPA2C1-4, MPA1002U-MPS, MPA1004U-MPS, MPA1002E-MPS and MPA1004E-MPS. For MPA2C3 the following part numbers can be filled in as well: MPA2C3-4, MPA2MPSU, MPA4MPSU, MPA2MPSE and MPA4MPSE.*

When an MPA2C1 (first generation MPA2) is replaced by an equivalent MPA2C3 panel, then the OSDP addresses in the already installed readers are wrongly addressed for the new MPA2C3 panel. The below table shows the old and new addressing and functions of the OSDP readers.

TABLE : Reader function and different addresses when migrating panels

Panel type	MPA2C1		MPA2C3	
Reader function	Connected READER RJ45 terminal	Address	Connected READER RJ45 terminal	Address
Door 1, Reader A (IN)	LEFT 2	0	OSDP1	1
Door 1, Reader B (OUT)	LEFT 2	1	OSDP1	2
Door 3, Reader A (IN)	LEFT 2	2	OSDP1	3
Door 3, Reader B (OUT)	LEFT 2	3	OSDP 1	4
Door 2, Reader A (IN)	**RIGHT 2**	**0**	**OSDP2**	**1**
Door 2, Reader B (OUT)	**RIGHT 2**	**1**	**OSDP2**	**2**
Door 4, Reader A (IN)	**RIGHT 2**	**2**	**OSDP2**	**3**
Door 2, Reader B (OUT)	**RIGHT 2**	**3**	**OSDP2**	4

To make the installed readers compatible with the new MPA2C3 panel the addresses of the installed OSDP readers must be edited by adding 1 to their current address.

Below the two possible procedures to edit the readers.

Option 1: Connect reader with highest address first.

First on OSDP1 (Readers for Door 1 and 3). If the panel is a 2-door panel, then the steps 1 to 4 are discarded.

1. Connect Door 3, Reader OUT from MPA2C1 on MPA2C3 OSDP1 terminal and let it come online, it will show up in the Web interface as Door 3, Reader IN
2. Edit reader address and assign Door 3, Reader OUT
3. Connect Door 3, Reader IN from MPA2C1 on MPA2C3 OSDP1
4. terminal and let it come online, it will show up as Door 1, Reader OUT
5. Edit reader address and assign Door 3, Reader IN
6. Connect Door 1, Reader OUT from MPA2C1 on MPA2C3 OSDP1
7. terminal and let it come online, it will show up as Door 1, Reader IN
8. Edit reader address and assign Door 1, Reader OUT
9. Connect Door 1, Reader IN from MPA2C1 on MPA2C3 OSDP1
10. terminal and let it come online, it will show up as “New Reader with address 0”
11. Assign reader address as Door 1, Reader IN

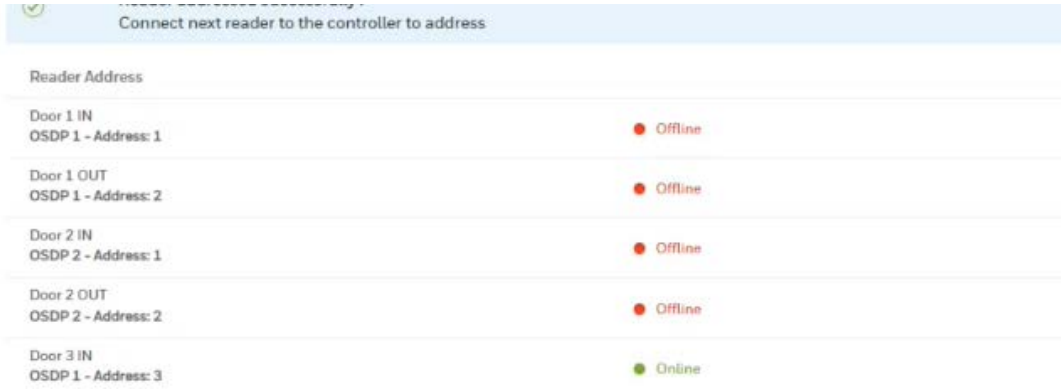
Next on OSDP2 (Readers for Door 2 and 4). If the panel is a 2-door panel, then the steps 9 to 12 are discarded.

1. Connect Door 4, Reader OUT from MPA2C1 on MPA2C3 OSDP2 terminal and let it come online, it will show up in the Web interface as Door 4, Reader IN
2. Edit reader address and assign Door 4, Reader OUT
3. Connect Door 4, Reader IN from MPA2C1 on MPA2C3 OSDP2
4. terminal and let it come online, it will show up as Door 2, Reader OUT
5. Edit reader address and assign Door 4, Reader IN
6. Connect Door 2, Reader OUT from MPA2C1 on MPA2C3 OSDP2
7. terminal and let it come online, it will show up as Door 2, Reader IN
8. Edit reader address and assign Door 2, Reader OUT
9. Connect Door 2, Reader IN from MPA2C1 on MPA2C3 OSDP2

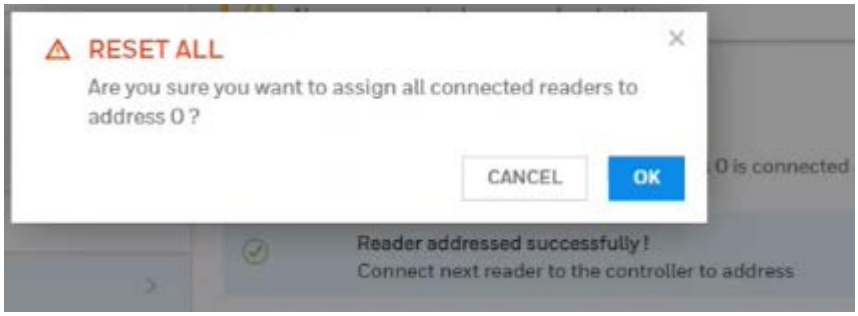
10. terminal and let it come online, it will show up as “New Reader with address 0”
11. Assign reader address as Door 2, Reader IN

Option 2: reset all reader and reassign all one by one

1. Connect all readers from MPA2C1 to MPA2C3 panel to the designated OSDP1 and OSDP2 terminals
2. Click “RESET ALL” to reset addresses of all the connected reader to address 0



A warning will appear.



3. Click OK to reset all connected readers to address 0
4. Click Cancel to keep the addresses as they were

1. Disconnect all the readers and follow the steps in "6.x.2 Address assignment procedure for OSDP readers "

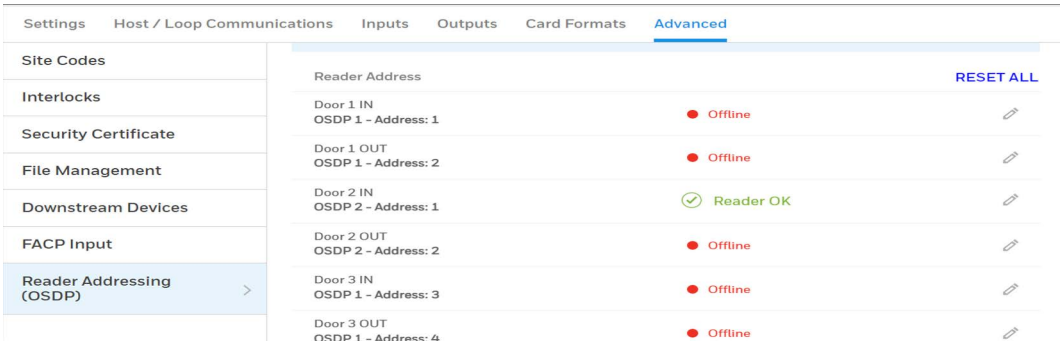
Testing the Reader Addresses

In order to test the addresses of the set OSDP readers, you can use any compatible card, keyfob or credential for that reader. The credential does not have to be valid in the system for this function.

Select menu Panel Configuration / Advanced / Reader Addressing.

See the instruction in the web interface.

1. Apply / swipe the compatible card to the reader to be tested
2. Look into the web interface and decide if “Reader OK” at the correct address or reader function will appear
3. See below table, indicating the Reader OK



Note: *“Reader OK” will turn back into online after 10 seconds.*

4. If the reader OK does not appear on the expected, edit the address / function to the correct per the previous paragraphs

Correcting/editing reader address

Address correction can be done by correcting address of individual reader or by resetting addresses of all the connected readers.

1. Identify readers with wrong address / wrong function
2. Disconnect all the identified wrong readers but keep one wrong reader connected.
3. Edit its address assignment and let it come online
4. <<Figure ghi: Show screenshot assigned Reader is edited and show online status>>
5. Disconnect the edited reader used in last step
6. Connect rest of the readers (with wrong addresses) one at a time and follow steps 3 and 4

Example: Readers R1 and R2 installed physically at a door 1 IN and door 1 OUT are wrongly assigned as Door 1 OUT and Door 1 IN respectively.

1. Disconnect Reader R2
2. Edit Reader R1 and assign address Door 1, Reader IN
3. Disconnect Reader R1 and connect Reader R2
4. Edit Reader R2 and assign address Door 1, Reader OUT
5. Connect readers in the panel and test the reader functions

OSDP address reassignment when migrating from MPA2C1 to MPA2C3 panel

Note: *Below the description of the panels are MPA2C1 and MPA2C3. For MPA2C1 the following part numbers can be filled in as well: MPA2C1-4, MPA1002U-MPS, MPA1004U-MPS, MPA1002E-MPS and MPA1004E-MPS. For MPA2C3 the following part numbers can be filled in as well: MPA2C3-4, MPA2MPSU, MPA4MPSU, MPA2MPSE and MPA4MPSE.*

When an MPA2C1 (first generation MPA2) is replaced by an equivalent MPA2C3 panel, then the OSDP addresses in the already installed readers are wrongly addressed for the new MPA2C3 panel. The below table shows the old and new addressing and functions of the OSDP readers.

Table 3-8 Reader function and different addresses when migrating panels

Panel type	MPA2C1		MPA2C3	
Reader function	Connected READER RJ45 terminal	Address	Connected READER RJ45 terminal	Address
Door 1, Reader A (IN)	LEFT 2	0	OSDP1	1
Door 1, Reader B (OUT)	LEFT 2	1	OSDP1	2
Door 3, Reader A (IN)	LEFT 2	2	OSDP1	3
Door 3, Reader B (OUT)	LEFT 2	3	OSDP1	4
Door 2, Reader A (IN)	**RIGHT 2**	**0**	**OSDP2**	**1**
Door 2, Reader B (OUT)	**RIGHT 2**	**1**	**OSDP2**	**2**
Door 4, Reader A (IN)	**RIGHT 2**	**2**	**OSDP2**	**3**
Door 4, Reader B (OUT)	**RIGHT 2**	**3**	**OSDP2**	**4**

To make the installed readers compatible with the new MPA2C3 panel the addresses of the installed OSDP readers must be edited by adding 1 to their current address. Below the two possible procedures to edit the readers.

Option 1: Connect reader with highest address first.

First on OSDP1 (Readers for Door 1 and 3). If the panel is a 2-door panel, then the steps 1 to 4 are discarded.

1. Connect Door 3, Reader OUT from MPA2C1 on MPA2C3 OSDP1 terminal and let it come online, it will show up in the Web interface as Door 3, Reader IN
2. Edit reader address and assign Door 3, Reader OUT
3. Connect Door 3, Reader IN from MPA2C1 on MPA2C3 OSDP1
4. terminal and let it come online, it will show up as Door 1, Reader OUT
5. Edit reader address and assign Door 3, Reader IN
6. Connect Door 1, Reader OUT from MPA2C1 on MPA2C3 OSDP1
7. terminal and let it come online, it will show up as Door 1, Reader IN
8. Edit reader address and assign Door 1, Reader OUT
9. Connect Door 1, Reader IN from MPA2C1 on MPA2C3 OSDP1
10. terminal and let it come online, it will show up as “New Reader with address 0”’
11. Assign reader address as Door 1, Reader IN

Next on OSDP2 (Readers for Door 2 and 4). If the panel is a 2-door panel, then the steps 9 to 12 are discarded.

1. Connect Door 4, Reader OUT from MPA2C1 on MPA2C3 OSDP2 terminal and let it come online, it will show up in the Web interface as Door 4, Reader IN
2. Edit reader address and assign Door 4, Reader OUT
3. Connect Door 4, Reader IN from MPA2C1 on MPA2C3 OSDP2
4. terminal and let it come online, it will show up as Door 2, Reader OUT
5. Edit reader address and assign Door 4, Reader IN
6. Connect Door 2, Reader OUT from MPA2C1 on MPA2C3 OSDP2
7. terminal and let it come online, it will show up as Door 2, Reader IN
8. Edit reader address and assign Door 2, Reader OUT
9. Connect Door 2, Reader IN from MPA2C1 on MPA2C3 OSDP2
10. terminal and let it come online, it will show up as “New Reader with address 0”
11. Assign reader address as Door 2, Reader IN

Option 2: reset all reader and reassign all one by one

1. Connect all readers from MPA2C1 to MPA2C3 panel to the designated OSDP1 and OSDP2 terminals.
2. Click “RESET ALL” button to reset addresses of all the connected reader to address 0
3. Disconnect all the readers and follow the steps in "6.x.2 Address assignment procedure for OSDP readers "

Wiring Input/Output Devices of Doors

Door Monitoring and Locking Devices set up

The MPA2C3 Access Control Panel supports up to 4 doors. Each door supports:

Two Inputs for

Door Contact (DrCnt) - a sensor that monitors the state of the door (open or closed state)

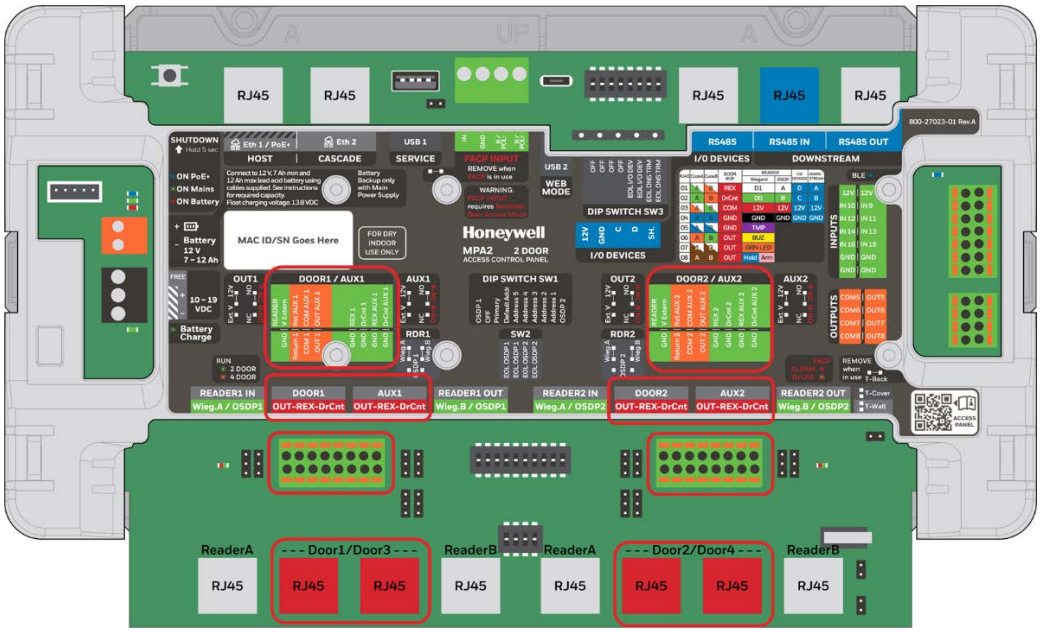
Request to Exit (REX) device – A switch or sensor that allows a person to unlock the door without a valid identifier (eg a card) to exit from the protected area. A REX device is not needed if and OUT Reader on that door is applied.

Output for

Door lock / door strike / magnetic lock - a locking device that is controlled by the panels Door output

There are 4 Red RJ45 terminals and in parallel 2 removable push-in terminal blocks, designed to wire the inputs and output . The information card on the panel identifies these terminals as eg DOOR1, AUX2, DOOR 4 (RJ45 Terminals) or as eg DOOR2 / AUX2 or DOOR1 / DOOR3 (Terminal Blocks).

Note: *RJ45 Connectors allow standard structured cable (CAT 5E / CAT6/7) to be used to wire a door. A door connection convertor (PN:MPA2S5) converts these wires in 2 input connections and 1 outputs connection.*



In a 2-door MPA2C3 controller, each Door I/O (Input/Output) is identified with DOOR1 and DOOR2.

The AUX1 and AUX2 I/O are not controlled as a Door I/O, however the Inputs REX and Door Contact and Output AUX1 can be controlled as additional auxiliary device controls.

In a 4-door MPA2C3 controller, each Door I/O (Input/Output) is identified with DOOR1 – DOOR4.

MPA2C3 2-door peripherals configurations

Table 3-9 The connections for monitoring and locking devices

DOOR #	Terminal Block Pin	RJ45 Terminal Pin	Function	Software Name

Door I/O						
DOOR 1	DOOR1 / AUX1	REX 1 , GND	DOOR1	(REX) PIN 1	REX / Free Egress	Door 1 Egress
				(GND)PIN 3		
		DrCnt 1, GND		(DrCnt) PIN 2	Door Contact	Door1 Status
				(COM) PIN 3		
		OUT1 , COM1 / Return1		(OUT) PIN 6,7,8	Door Lock	Relay 1
				(GND) PIN 4,5		
DOOR 2	DOOR2 / AUX2	REX 2 , GND	DOOR2	(REX) PIN 1	REX / Free Egress	Door 2 Egress
				(COM) PIN 3		
		DrCnt 2, GND		(DrCnt) PIN 2	Door Contact	Door2 Status
				(COM) PIN 3		
		OUT2 , COM2 / Return2		(OUT) PIN 6,7,8	Door Lock	Relay 2
				(GND) PIN 4,5		
Auxiliary Door related I/O						

AUX1	DOOR1 / AUX1	REX AUX 1 , GND	AUX1	(REX) PIN 1	REX / Free Egress	Door 3 Egress
				(GND)PIN 3		
		DrCnt AUX 1, GND		(DrCnt) PIN 2	Door Contact	Door3 Status
				(COM) PIN 3		
		OUT AUX 1 ,		(OUT) PIN 6,7,8	Door Lock	Relay 3
		COM AUX1 / Return AUX1		(GND) PIN 4,5		
AUX2	DOOR2 / AUX2	REX AUX 2 , GND	AUX2	(REX) PIN 1	REX / Free Egress	Door 4 Egress
				(GND)PIN 3		
		DrCnt AUX 2, GND		(DrCnt) PIN 2	Door Contact	Door4 Status
				(COM) PIN 3		
		OUT AUX 2,		(OUT) PIN 6,7,8	Door Lock	Relay 4

MPA2C3 4-door peripherals configurations

The below table describes the connections for monitoring and locking devices.

Figure 3-17 The connections for monitoring and locking devices

DOOR #	Push in Terminal Block		Red RJ45 Terminal		Function	Software Name
	Pin		Pin			
Door I/O						

DOOR 1		REX 1 , GND	DOOR1	(REX) PIN 1	REX / Free Egress	Door 1 Egress
	DOOR1 / DOOR3			(GND)PIN 3		
		DrCnt 1, GND		(DrCnt) PIN 2	Door Contact	Door1 Status
				(COM) PIN 3		
		OUT1 , COM1 / Return1		(OUT) PIN 6,7,8	Door Lock	Relay 1
				(GND) PIN 4,5		
DOOR 2	DOOR2 / DOOR4	REX 2 , GND	DOOR2	(REX) PIN 1	REX / Free Egress	Door 2 Egress
				(COM) PIN 3		
		DrCnt 2, GND		(DrCnt) PIN 2	Door Contact	Door2 Status
				(COM) PIN 3		
		OUT2 , COM2 / Return2		(OUT) PIN 6,7,8	Door Lock	Relay 2
				(GND) PIN 4,5		
DOOR 3	DOOR1 / DOOR3	REX 3 , GND	DOOR3	(REX) PIN 1	REX / Free Egress	Door 3 Egress
				(GND)PIN 3		
		DrCnt 3, GND		(DrCnt) PIN 2	Door Contact	Door3 Status
				(COM) PIN 3		
		OUT3 , COM3 / Return3		(OUT) PIN 6,7,8	Door Lock	Relay 3
				(GND) PIN 4,5		
DOOR 4	DOOR2 / DOOR4	REX 4 , GND	DOOR4	(REX) PIN 1	REX / Free Egress	Door 4 Egress
				(GND)PIN 3		
		DrCnt 4, GND		(DrCnt) PIN 2	Door Contact	Door4 Status

				(COM) PIN 3		
		OUT4 , COM4 / Return4		(OUT) PIN 6,7,8	Door Lock	Relay 4
				(GND) PIN 4,5		

Door Monitoring Devices / Inputs

Connect per door the sensors for Door status (DrCnt) and Ergess/Request-to-EXit (REX) to the push in terminal blocks or the corresponding red RJ45 Door terminal.

Push in Terminal Block

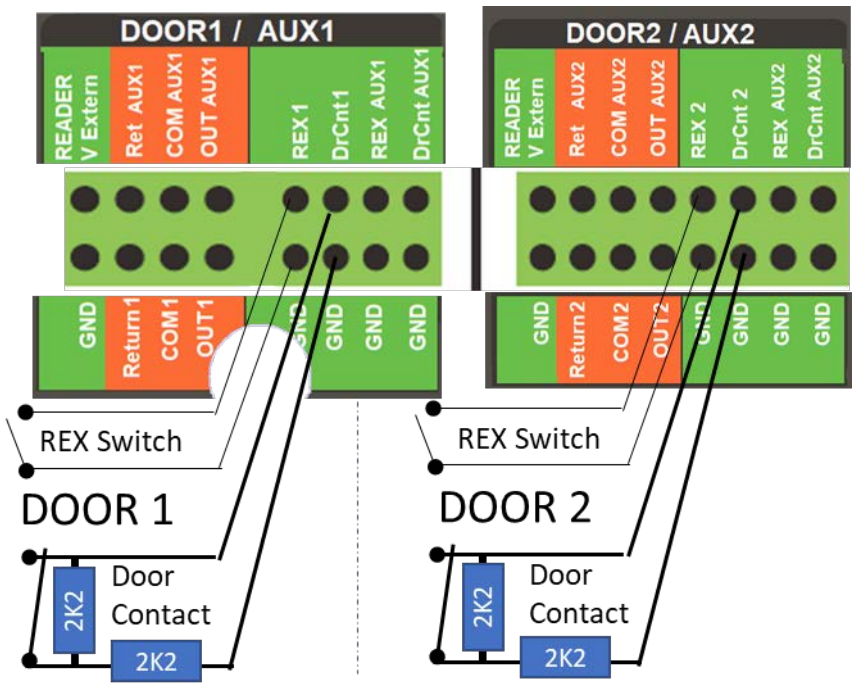
The default settings for the door inputs are, using the push in terminal blocks :

The REX input is a Normally Open (NO) input, without end-of-line (EOL) resistors.

- You can connect the NO contacts of the REX switch or sensor immediately to the REX and GND input of the panel.

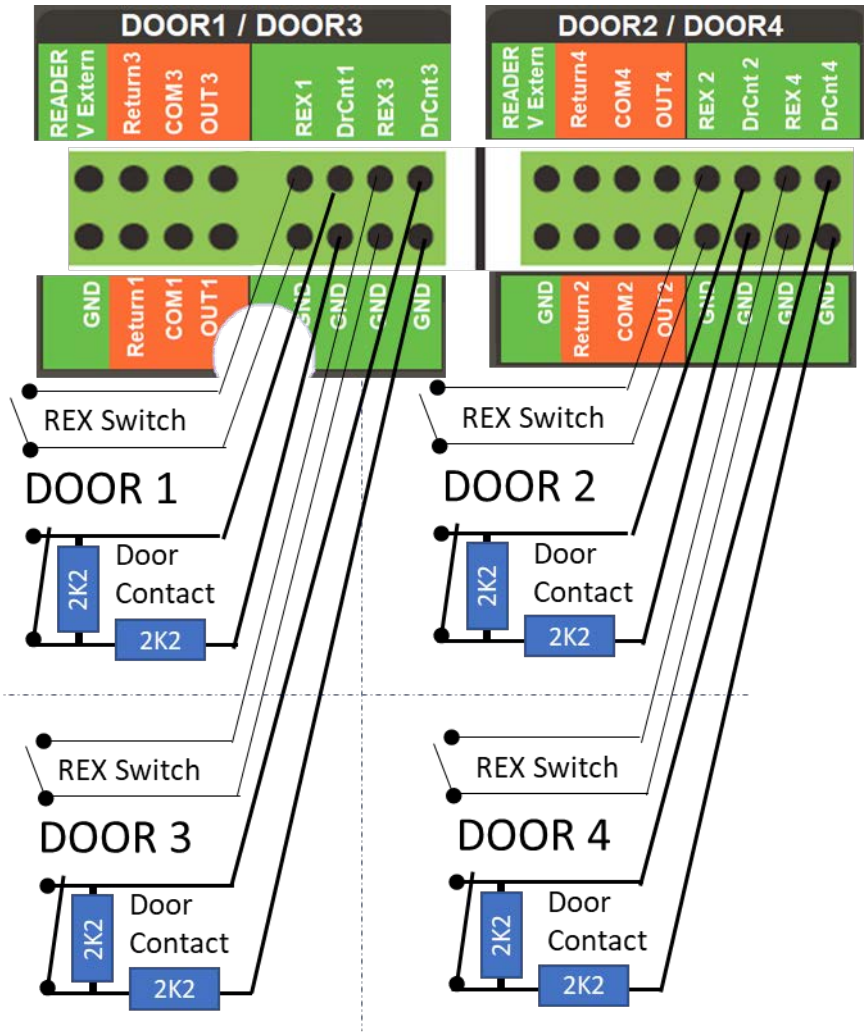
DrCnt input is a supervised, Normally Closed (NC) input, set for 2.2 kOhm EOL resistors.

- You can connect the NC contacts of the Door monitoring switch or sensor with two 2.2 kOhm to the DrCnt and GND input of the panel. See picture per below.



Both Rex and DrCnt inputs can be configured for unsupervised or supervised input. Supervised inputs can be set for 1 kOhm, 2.2 kOhm, 4.7 kOhm or 10kOhm. Both resistors must be the same per value.

Figure 3-18 For a 4 door configuration, the connections are



Red RJ45 Door terminal

The default settings for the door inputs are, using red RJ45 door terminals:

The REX input is a Normally Open (NO) input, without end-of-line (EOL) resistors.

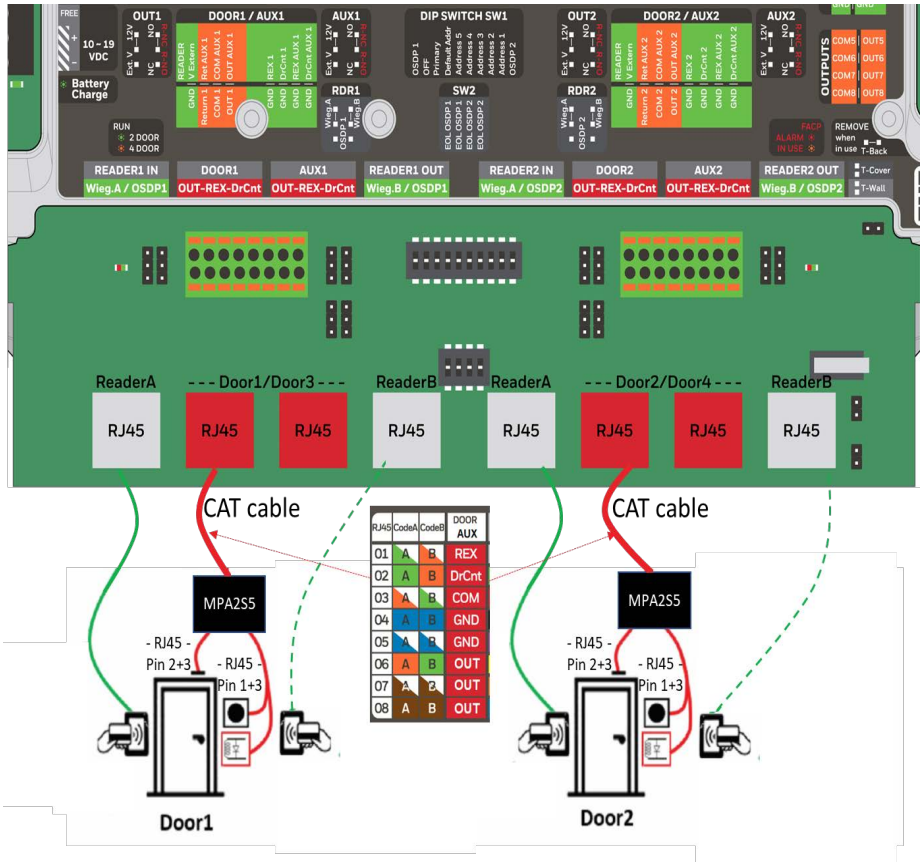
- You can connect the NO contacts of the REX switch or sensor immediately to the REX and GND input of the panel.

DrCnt input is a supervised, Normally Closed (NC) input, set for 2.2 kOhm EOL resistors.

- You can connect the NC contacts of the Door contact or sensor with two 2.2 kOhm resistors to the DrCnt and GND input of the panel.
- When using the MPA2S5, there is no need to add the two EOL resistors at the
- Door Contact or sensor. See picture per below.

Both Rex and DrCnt inputs can be configured for unsupervised or supervised input. Supervised inputs can be set for 1 kOhm, 2.2 kOhm, 4.7 kOhm or 10kOhm. Both resistors must be the same per value.

Note: *When using the MPA2S5 at the door, the DrCnt must be set (as default) to supervised with 2.2 kOhm EOL resistors. The MPA2S5 has built in 2.2 kOhm resistors for the Door contact / sensor. The MPA2S5 convertor must be installed at the door can be connected to the CAT structured cable via RJ45 connection.*



Note: *For a 4-door configuration the RJ45 door terminals for Door3 and Door4 have the same configuration.*

Door Locking Devices / Output configurations

Connect per door the locking devices for Door OUTput / Relay (OUT) to the push in terminal blocks or the corresponding red RJ45 Door terminal.

Each Door output (or AUX output) can be configured in 2 ways, by jumpers.

1. Output selection for locking devices powered by panel's internal power source (12V – by default) or by external power supply (Ext V – voltage fee contact).

Note: *Current and Voltage limitations for locking power is different per power source selection.*

Below tables are reflecting current and voltage limitation for 2 and 4 door system.

Table 3-10 The reflecting current and voltage limitation for 2 and 4 door system

Outputs 2-door system		
Output Contact type	OUT 1-2, AUX1-2	Selectable per jumper OUT 1-2, AUX1-2: NO (Normally Open) or NC (Normally Closed)
Relay contact max switching voltage and current	OUT 1-2, AUX1-2 @ RJ45	500mA @ 30VDC,
(dry contact)		500mA @ 22VAC
	OUT 1-2, AUX1-2 @ push in terminal block**	3A @ 30VDC,
		1A @ 22VAC
Max output Voltage at Door1/AUX1 output when OUT1, AUX1 jumper onboard "12V" is used (wet contact)	OUT 1 @ RJ45 or	10VDC ~ 14VDC
	OUT 1 @ push in terminal block**,	
	AUX 1 @ RJ45 or	
	AUX 1 @ push in terminal block**	
Max output current at Door1/AUX1 output when OUT1, AUX1 jumper onboard "12V" is used (wet contact)	OUT 1 @ RJ45 **,	500mA per RJ45, limited to 750mA @ 12VDC combined over both door output contacts
	AUX 1 @ RJ45 **	
	OUT 1 @ push in terminal block**,	750mA @ 12VDC combined over both door output contacts
	AUX 1 @ push in terminal block**	

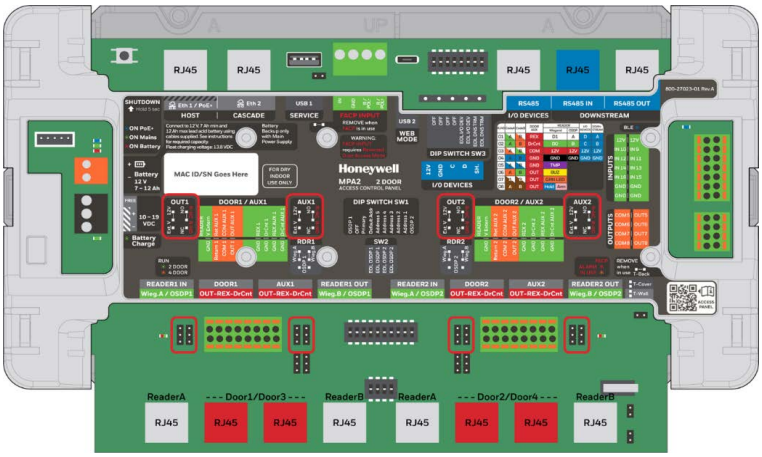
Max output Voltage at Door1/AUX1 output when OUT2, AUX2 jumper onboard "12V" is used (wet contact)	OUT 2 @ RJ45 or OUT 2 @ push in terminal block**, AUX 2 @ RJ45 or AUX 2 @ push in terminal block**	10VDC ~ 14VDC
Max output current at Door2/AUX2 output when OUT2, AUX2 jumper onboard "12V" is used (wet contact)	OUT 2 @ RJ45 **, AUX 2 @ RJ45 **	500mA per RJ45, limited to 750mA @ 12VDC combined over both door output contacts
	OUT 2 @ push in terminal block**,	750mA @ 12VDC combined over both door output contacts
	AUX 2 @ push in terminal block**	
**** Connect either RJ45 or push in terminal block; do not connect same Door output on both RJ45 and push in terminal block.**		

1. Output selection for Normally Open (NO - by default) or Normally Closed (NC) operation. Jumpers are available to select the desired operation, depending on the type of lock connected.

If a lock is a power-to-unlock type (normal door strike – for fail secure installations) then this jumper needs to be set to NO.

If a lock is a power-to-lock type (fail safe door strike or magnetic lock – for fail safe installations) then this jumper needs to be set to NC.

Figure 3-19 Indicate the location of the Jumpers.



Push-in terminal block

You can connect a solid or braided wire up to 18 Gauge (0.5 mm diameter) in the connection points.

The default settings for the door outputs are, using the push in terminal blocks:

The Door output is a Normally Open (NO) output

- Move jumper to NC when Power-to-unlock device is connected

The Door output is powered from the panel's internal 12V power source.

- Always apply a surge device, e.g a diode in antiparallel configuration at the locking device.

Internal power source for locking devices for a 2-door panel

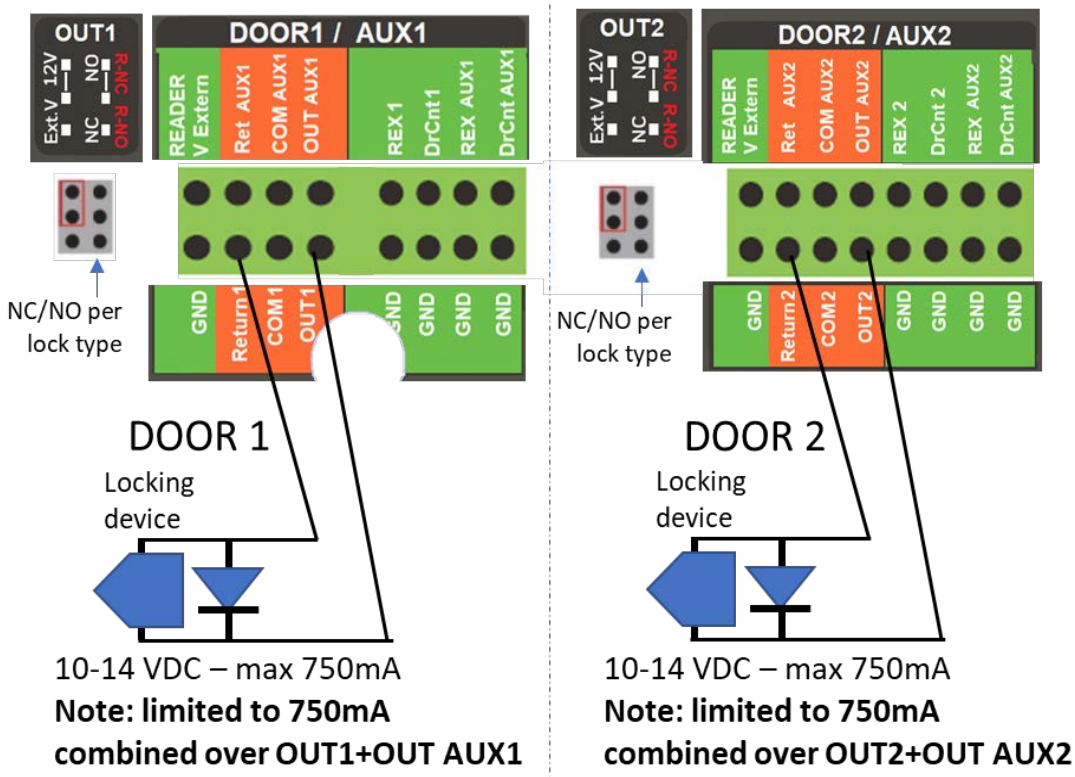
When the power source is internal 12V, set the jumper OUT to 12V and connect the locking device on OUT and Return

The available voltage range is 10VDC – 12VDC. The maximum current that can be switched is 750mA. The internal power source is shared between OUT1 and OUT AUX1 which has a combined current of maximum 750mA. Separately this internal power source is shared between OUT2 and OUT AUX2 which has a combined current of maximum 750mA.

The below figure shows the connection and relevant jumper setting when internal power is used to the outputs in a 2-door panel.

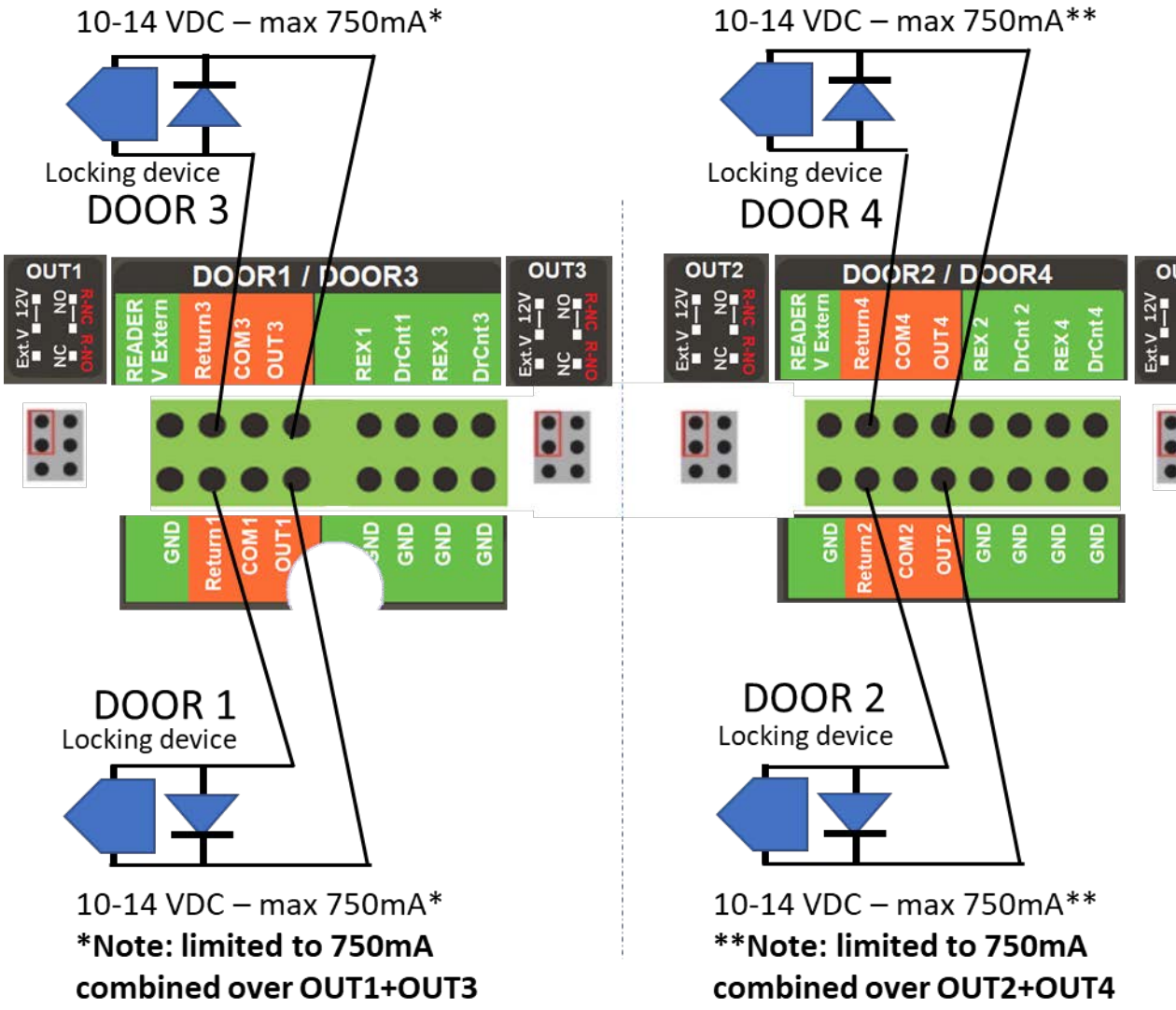
Figure 3-20 . The connection and relevant jumper setting when internal power is used to the outputs in a 2-door panel

Note: *Always apply a surge device, e.g a diode in antiparallel configuration at the locking device.*



The below figure shows the connection and relevant jumper setting when internal power is used to the outputs in a 4-door panel.

Figure 3-21 The connection and relevant jumper setting



Note: *Always apply a surge device, e.g a diode in antiparallel configuration at the locking device.*

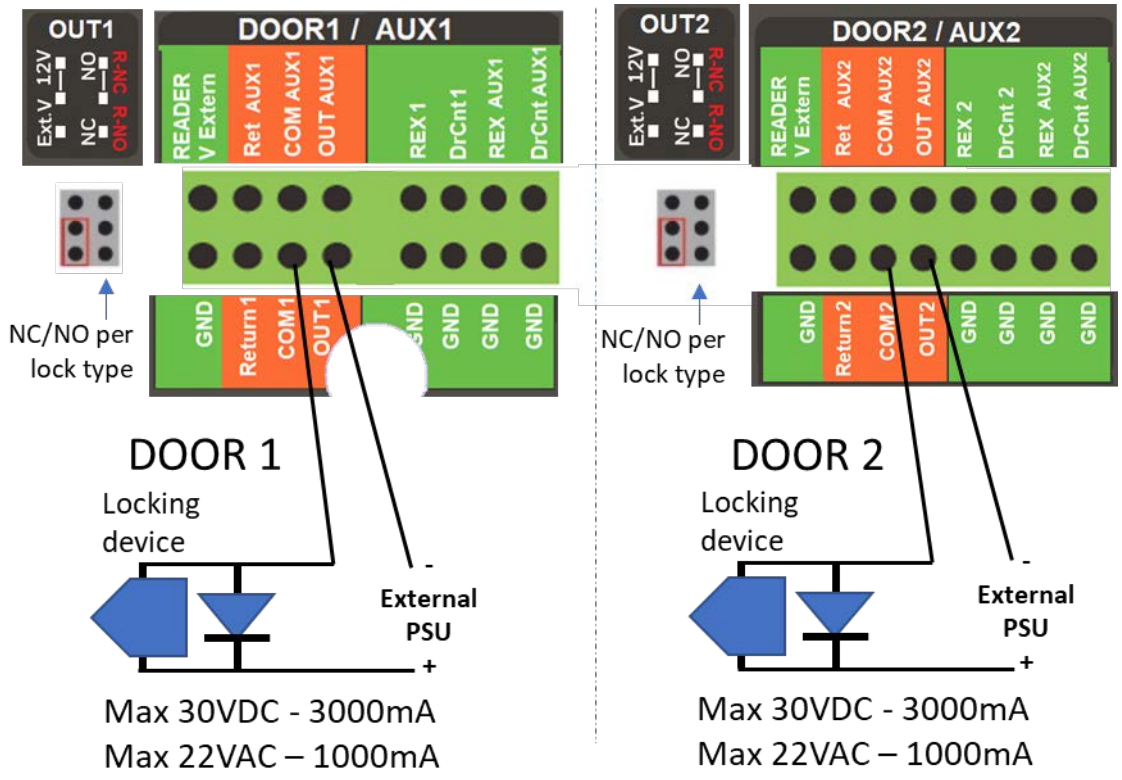
External power source for locking devices or voltage free contact

When the power source is an external power supply or a voltage free contact is needed, set the jumper OUT to Ext.V and connect the locking device on OUT and COM

The maximum voltage range for the output is 30VDC-3000mA or 22VAC-1000mA.

The below figure shows the connection and relevant jumper setting when external power source is used to the outputs in a 2-door panel.

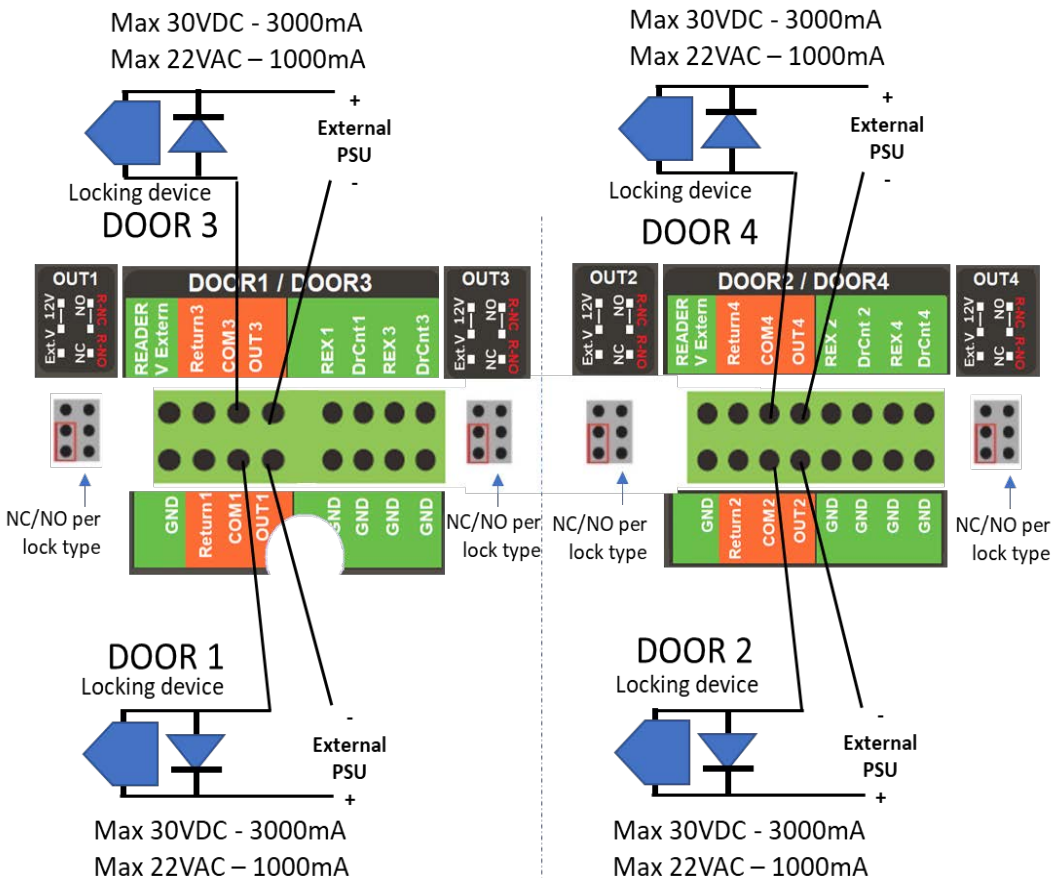
Figure 3-22 The connection and relevant jumper setting2-door panel



Note: *Always apply a surge device, e.g a diode in antiparallel configuration at the locking device*

The below figure shows the connection and relevant jumper setting when external power source is used to the outputs in a 4-door panel.

Figure 3-23 The connection and relevant jumper setting he outputs in a 4-door panel


Max 30VDC - 3000mA
Max 22VAC – 1000mA
+
External
PSU
-
Locking device
DOOR 3
DOOR 4
OUT1
DOOR1 / DOOR3
OUT3
OUT2
DOOR2 / DOOR4
OUT4
READER
V Extern
Return3
COM3
OUT3
REX 1
DrCnt1
REX 3
DrCnt3
Return4
COM4
OUT4
DrCnt 2
REX 4
DrCnt4
GND
Return1
COM1
OUT1
Return2
COM2
OUT2
NC/NO per
lock type
DOOR 1
DOOR 2

Red RJ45 Door terminals

The default settings

for the door outputs are, using the Red RJ45 Door Terminals:

The Door output is a Normally Open (NO) output

- Move jumper to NC when Power-to-unlock device is connected

The Door output is powered from the panel's internal 12V power source

- Always apply a surge device, e.g a diode in antiparallel configuration at the locking device.
- When using the MPA2S5, there is no need to add the surge device at the locking device Only with internal power source.

Internal power source for locking devices

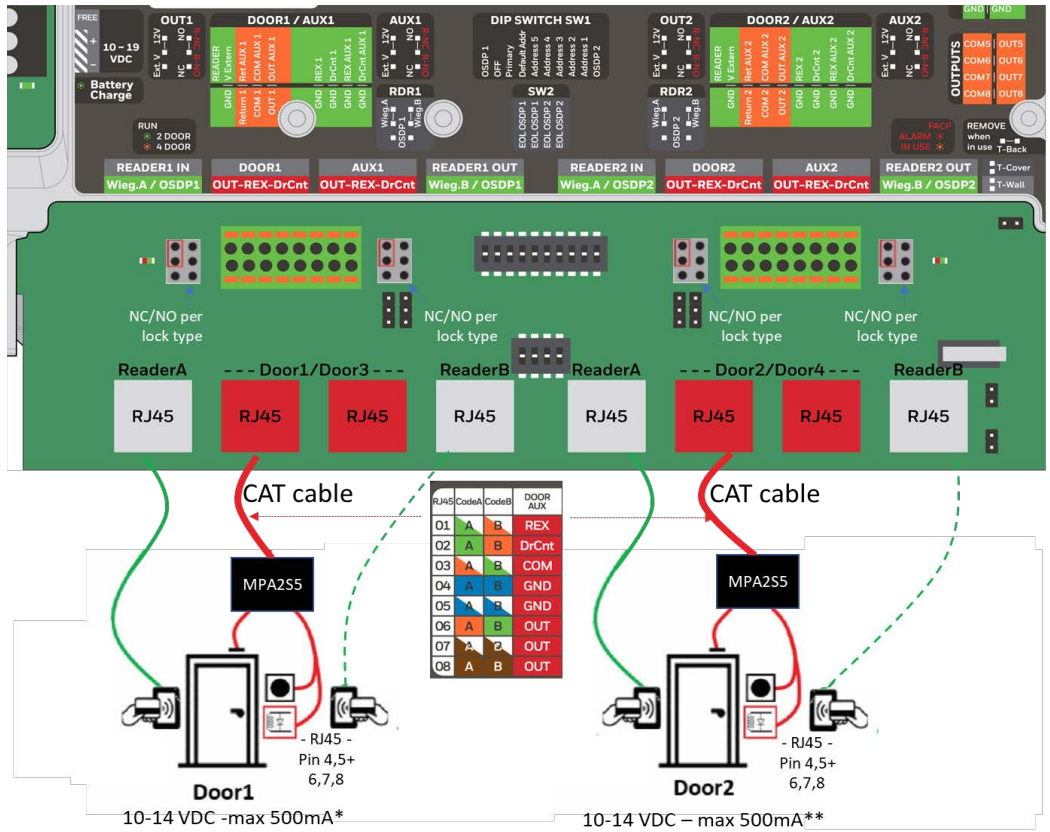
When the power source is internal 12V, set the jumper OUT to 12V and connect the locking device on RJ45 pins 6,7,8 (OUT) and pins 4,5 (GND).

The available voltage range is 10VDC – 12VDC. The maximum current that can be switched is 500mA. The internal power source is shared between OUT1 and OUT AUX1 which has a combined current of maximum 750mA. Separately this internal power source is shared between OUT2 and OUT AUX2 which has a combined current of maximum 750mA.

Note: *The maximum current in a CAT cable is specified. Make sure the right gauge / wire thickness is used for locking device currents*

The below figure shows The connection and relevant jumper setting when internal power is used to the outputs in a 2-door panel.

Figure 3-24 The connection and relevant jumper setting when internal power is used to the outputs in a 2-door panel.



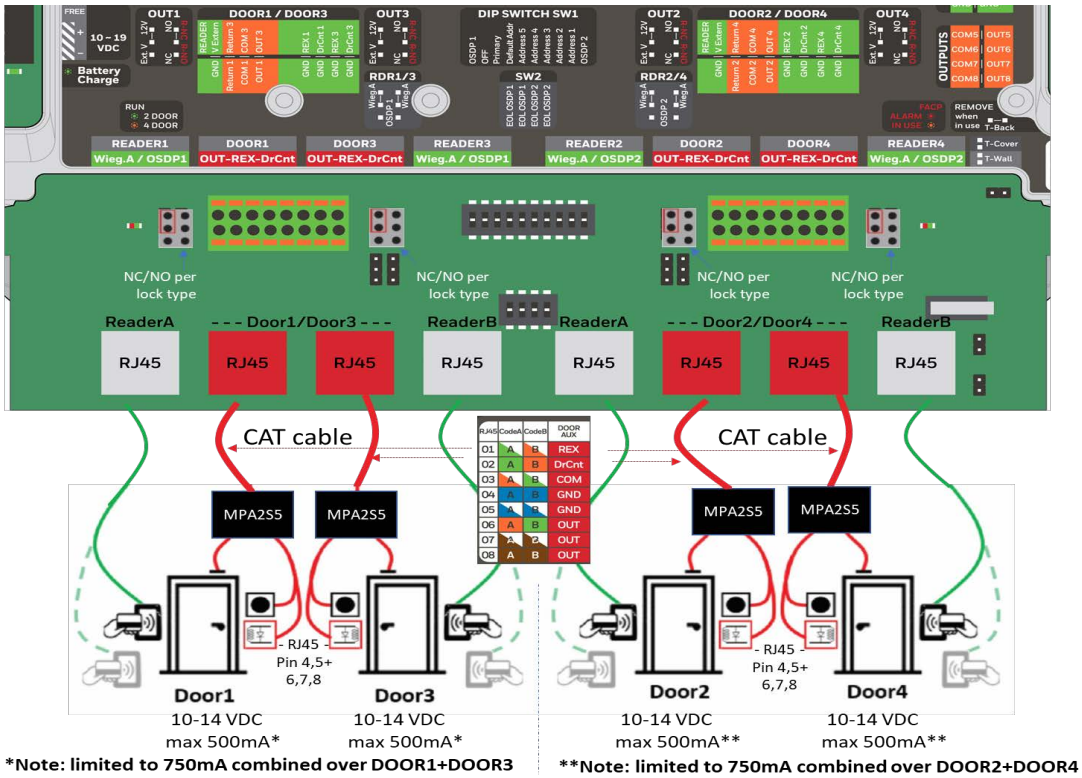
RJ45	CodeA	CodeB	DOOR AUX
01	A	B	REX
02	A	B	DrCnt
03	A	B	COM
04	A	B	GND
05	A	B	GND
06	A	B	OUT
07	A	B	OUT
08	A	B	OUT

***Note: limited to 750mA combined over DOOR1+AUX1**

****Note: limited to 750mA combined over DOOR2+AUX2**

The below figure shows The connection and relevant jumper setting when internal power is used to the outputs in a 4-door panel.

Figure 3-25 . The connection and relevant jumper setting when internal power is used to the outputs in a 4-door panel



External power source for locking devices or voltage free contact

When the power source is an external power supply or a voltage free contact is needed, set the jumper OUT to Ext.V and connect the locking device on OUT and COM

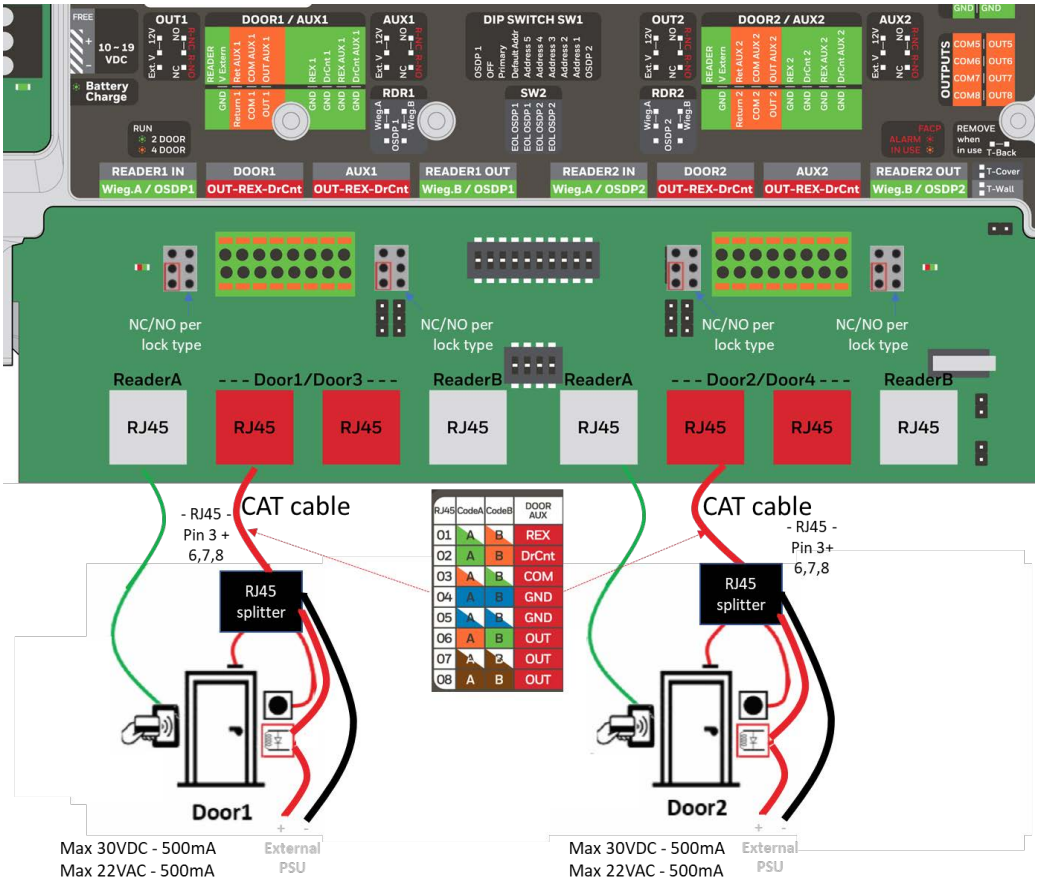
The maximum voltage range for the output is 30VDC-500mA or 22VAC-500mA.

Note: *This configuration is not supported by the MPA2S5 convertor*

Note: *The maximum current in a CAT cable is specified. Make sure the right gauge / wire thickness is used for locking device currents*

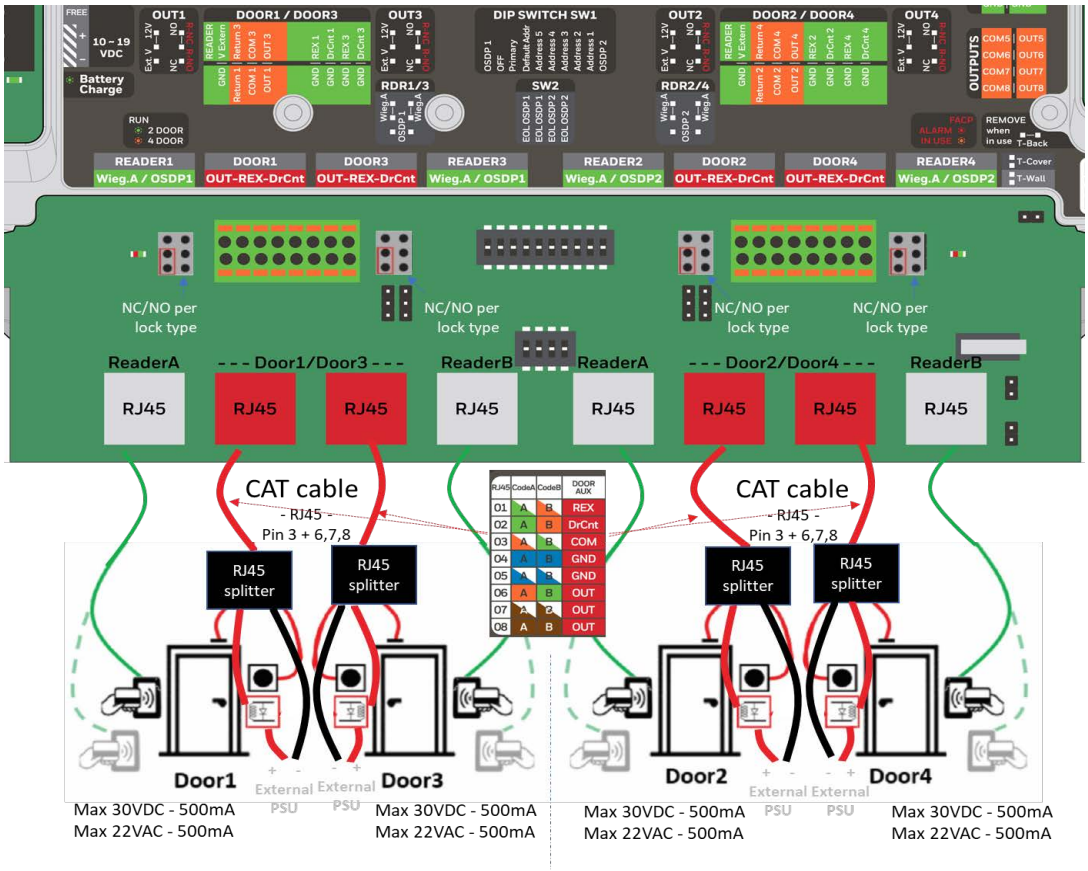
The below figure shows the connection and relevant jumper setting when external power source is used to the outputs in a 2-door panel.

Figure 3-26 the connection and relevant jumper setting when external power source is used to the outputs in a 2-door panel.



The below figure shows the connection and relevant jumper setting when external power source is used to the outputs in a 4-door panel

Figure 3-27 the connection and relevant jumper setting when external power source is used to the outputs in a 4-door panel



Wiring the MPA2S5 cables to a door

The MPA2C3 Metal enclosure kits include multiple MPA2S5 door connection cables, one for each door.

The MPA2S5 is designed to connect a CAT cable (via the RED RJ45 Terminal) easily to the internally (panel) powered door locking device, the door contact and the REX / Egress button.

Figure 3-28 Wiring the MPA2S5 cables to a door

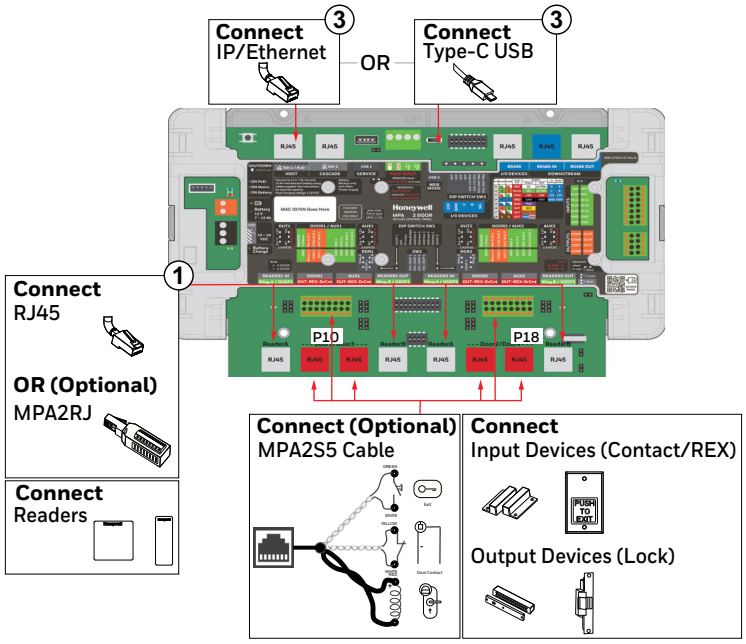
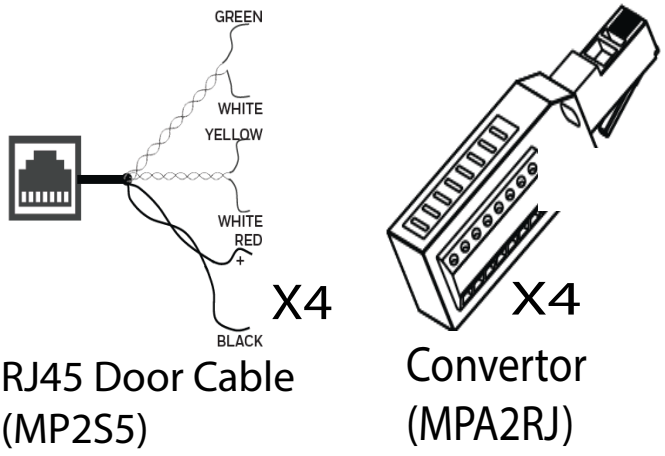


Figure 3-29 MPA2S5 Cable

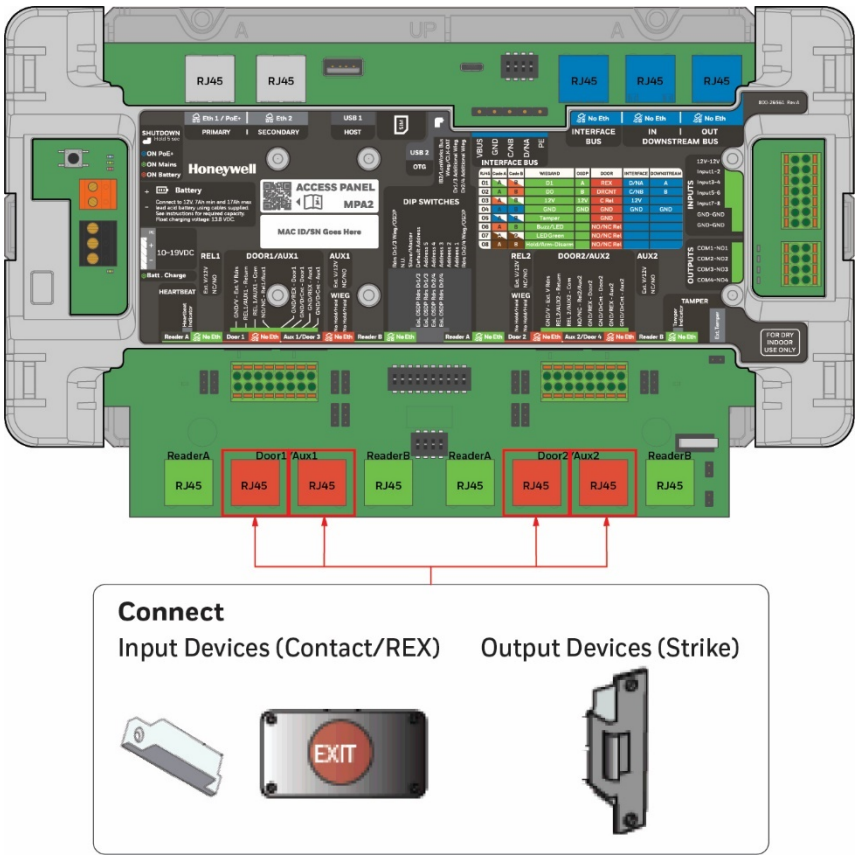


The MPA2S5 cable has built-in 2k2 Ohm EOL resistors for the door contact (for supervised input) and a suppressor diode for the locking device's peak power suppression. The egress button is considered unsupervised Normally open contact.

In this configuration the maximum locking device current is 500mA.

Note: *Do not use MPA2S5 when the door locking device is externally powered.*

Figure 3-30 The Locations of RJ45 Ports to Wire Input/Output Devices


RJ45
RJ45
RJ45
RJ45
RJ45
Honeywell
ACCESS PANEL
MPA2
MAC ID/SN Goes Here
DIP SWITCHES
INTERFACE BUS
IN
OUT
DOWNSTREAM BUS
INPUTS
OUTPUTS
TAMPER
10-19VDC
REL1
DOOR1/AUX1
AUX1
REL2
DOOR2/AUX2
AUX2
WIEG
HEARTBEAT
FOR DRY INDOOR USE ONLY
ReaderA
Door1 Aux1
ReaderB
ReaderA
Door2 Aux2
ReaderB
RJ45
RJ45
RJ45
RJ45
RJ45
RJ45
RJ45
RJ45
Connect
Input Devices (Contact/REX)
Output Devices (Strike)
EXIT

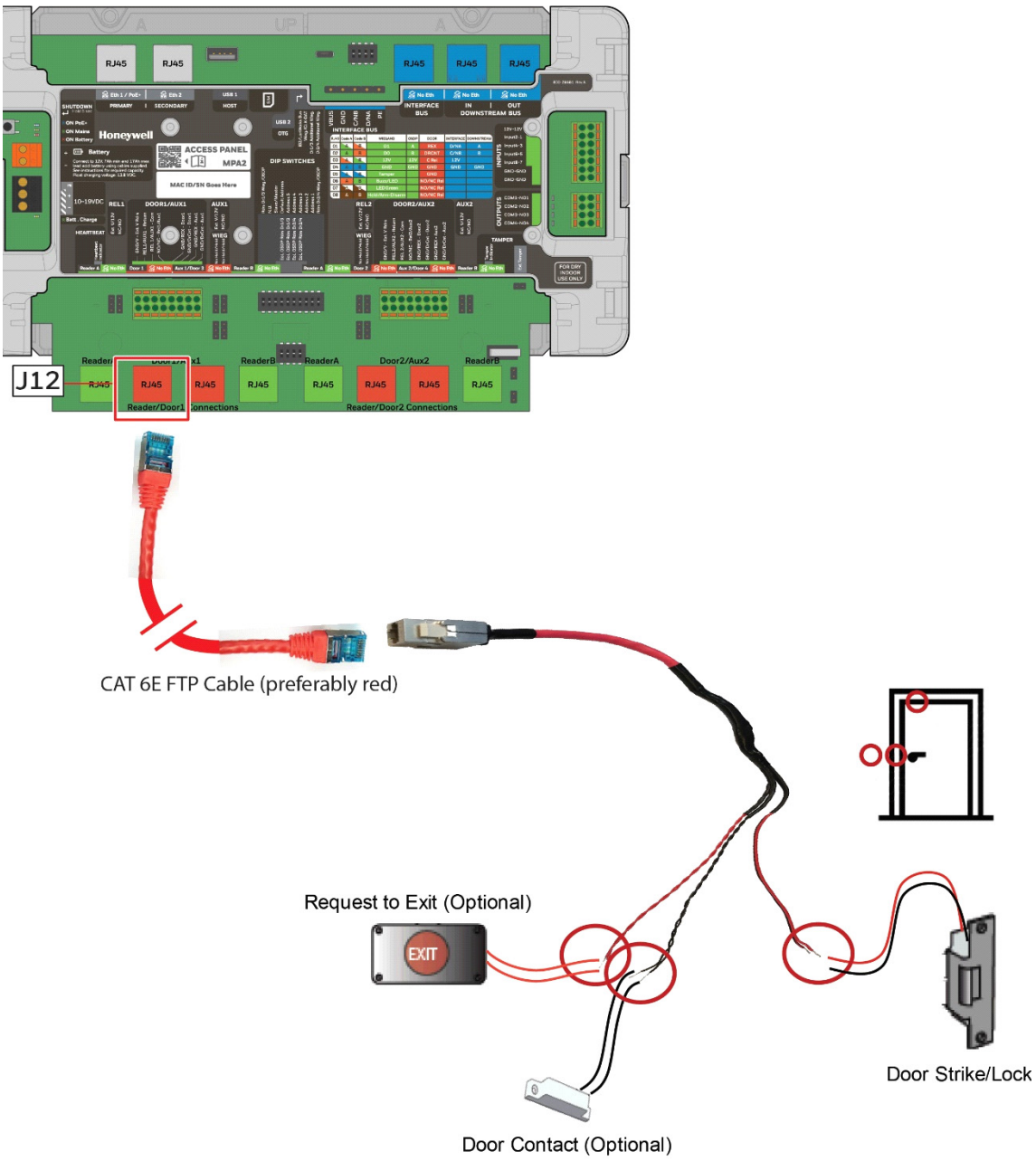
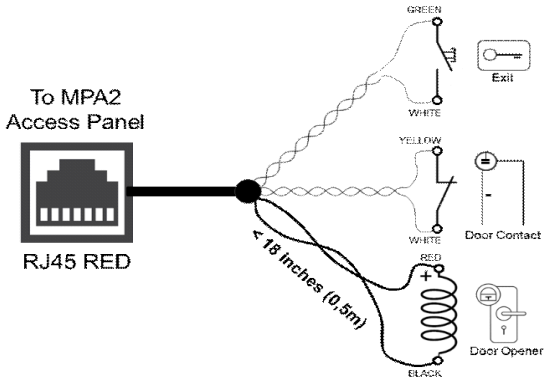

J12
Reader/Door1 Connections
Reader/Door2 Connections
CAT 6E FTP Cable (preferably red)
Request to Exit (Optional)
EXIT
Door Strike/Lock
Door Contact (Optional)

Figure 3-31 MPA2S5 Cable



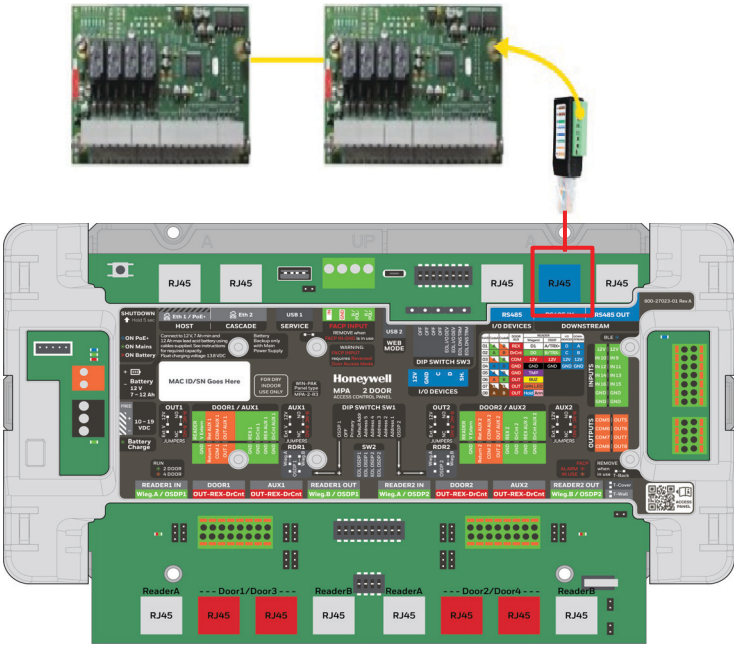
Wiring to the RS485 Busses.

Warning: Use a static strap whenever touching the panel to ensure protection from ESD (Electrostatic Discharge).

RS485 I/O Devices bus (NX4IN / NX4OUT)

The MPA2C3 has a dedicated RS-485 interface bus for Input and output devices (I/O Devices). A maximum of 2 NX4IN and/or 2 NX4OUT downstream I/O devices can be added to the bus (total of 2 downstream I/O devices).

Figure 3-32 Wiring the Interface Bus



The Interface bus is wired into the panel using standard RJ45 connection (Preferably use CAT 7 S/FTP cable) (J6) on the board. Use pin1&2 (D/NA/CNB) to connect the NX4 I/O boards. Make sure the NX4 I/O boards are powered with an external 24 VDC power supply.

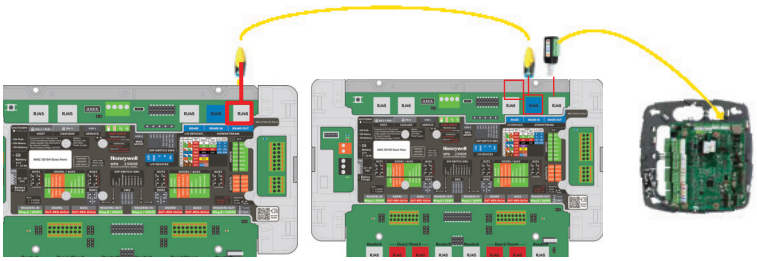
For additional information about the Downstream I/O, see "RS-485 Panel Downstream bus (IN/OUT)" on page 3-96.

RS-485 Panel Downstream bus (IN/OUT)

The access control panel has a RS-485 downstream bus for connecting downstream panels (MPA2C3 or NetAXS123). A maximum of 8 (1+7) MPA2 panels can be configured in the loop, or a maximum of 8 (1+7) MPA2 panels and NetAXS123/NetAXS4 panels can be configured in the loop. One MPA2C3 panel must be configured as the primary panel and the panel loop must be RS-485.

For Dipswitch SW1 configuration of primary and secondary panel see DIP Switch Settings. for further advanced software settings, see Chapter of the MPA2C3 user manual.

Figure 3-33 Downstream Panel Connections of RS-485 Bus



The RS-485 Downstream bus is wired from the RJ45 DOWNSTREAM RS485 OUT terminal to the blue RJ45 DOWNSTREAM RS485 IN terminal.(Preferably use CAT 6E/7 S/FTP cable). Use pin1&2 (TA/TB) to connect the downstream panels. Make sure the downstream panels are powered by their local power supply.

RS485 Bus Termination.

An RS485 bus must be terminated with a resistor at both ends of the RS-485 bus.

If the MPA2C3 panel is at the beginning or end of the Downstream RS485 bus, then the bus must be closed with 120 Ohm resistor. On Dipswitch SW3 both bit 7 and 8 (EOL DNSTRM) must be set to ON position to add the resistor to the RJ45 DOWNSTREAM RS485 IN and OUT communication wires.

External I/O Devices via RS-485

Note: *UL has not evaluated the compatibility I/O devices with the MPA2C3 panel.*

Note: *At the time of the launch of the MPA2C3, the NX4IN and NX4OUT modules were made obsolete. Use this section as reference for backward compatibility.*

In some applications, the number of system inputs or outputs exceeds the number that is standard on the panel. The solution is to add a combination of NX4IN and NX4OUT downstream I/O devices as external devices to the MPA2C3 enclosure, which are connected to the panel via a dedicated RS-485 interface bus. A maximum of 2 NX4IN and maximum of 2 NX4OUT for a total of 2 downstream I/O devices can be added to the downstream bus.

A NX4IN module has 32 supervised, 4-state inputs that are limited to 2.2K Ohms resistance. The NX4OUT has 2 supervised inputs and 16 SPDT relay outputs; each input is limited to 2.2K Ohms resistance. Refer to the individual installation manuals for I/O wiring details.

The interface bus is wired to the access panel by using standard CAT 6E/7 (S)/ FTP/UTP cable with RJ45 plug (J16) on the panel. The interface bus has a fixed baud rate and communicates to the downstream I/O devices using a polling technique.

Each downstream I/O device needs to have a unique address for proper communication. Each one also has some configuration jumpers that need to be positioned correctly. The following table lists the DIP switch and jumper settings for the NX4IN and NX4OUT downstream devices.

Table 3-11 Downstream I/O Devices DIP Switch and Jumper Settings

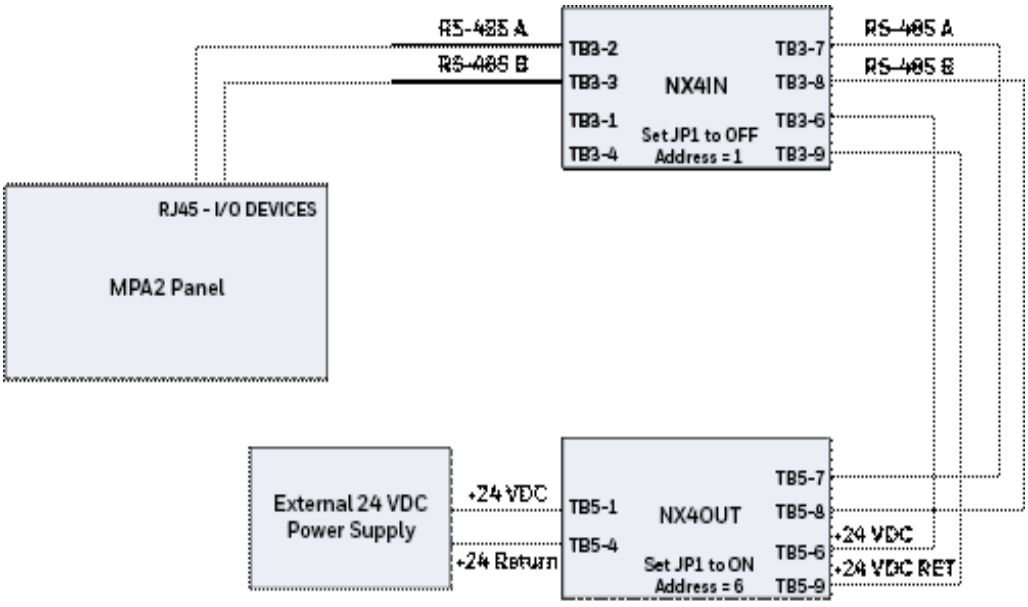
Module	Setting	Value
NX4IN	DIP switches	Address (switches 1-6) – 1 or 2
		Baud rate (switches 7 and 8) – 7 = OFF, 8 = ON
		OP Mode (switches 9 and 10) – 9 = OFF, 10 = OFF
	Jumper settings	JP1 – ON, positions 1 and 2 (if the module is the last module on the downstream bus), OFF positions 2 and 3 (if the module is not the last module on the downstream bus)
		JP2 – any setting
		JP3 – any setting
		JP4 – NORMAL (Positions 1 and 2)
NX4OUT	DIP switches	Address (switches 1-6) – 3 through 6

		Baud rate (switches 7 and 8) – 7 = OFF, 8 = ON
		OP Mode (switches 9 and 10) – 9 = OFF, 10 = OFF
	Jumper settings	JP1 – ON, positions 1and 2 (if the module is the last module on the downstream bus); OFF, positions 2 and 3 (if the module is not the last module on the downstream bus)
		JP2 – NORMAL, positions 1 and 2

Note: *If a NX4IN is not required in a system, start addressing the NX4OUT at DIP switch 3. When an NX4IN is configured with an address other than 1 or 2, the access control panel will not communicate with it. When an NX4OUT is configured with an address other than 3 through 6, the access control panel will not communicate with it.*

The access control panel is not intended to provide either module power or module output load power for downstream I/O. A separated 24 VDC supply should be used to provide power to all downstream modules and output loads.

Figure 3-34 Default Downstream I/O Configuration with Wiring



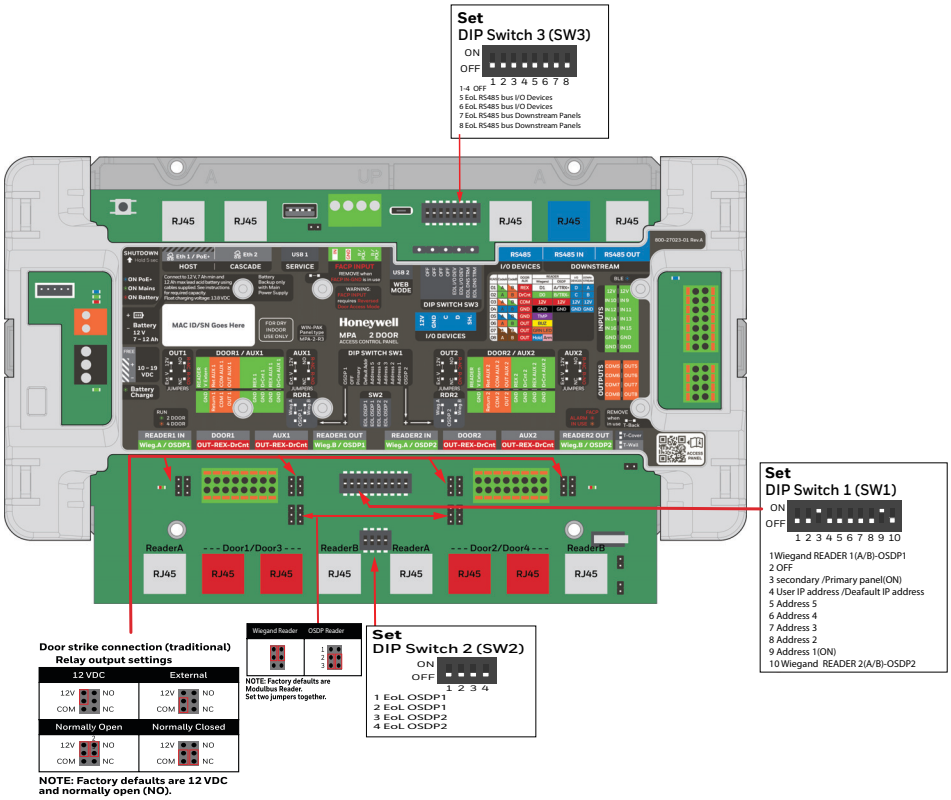
RS485 Bus Termination.

An RS485 bus must be terminated with a resistor at both ends of the RS-485 bus.

If the MPA2C3 panel is at the beginning or end of the I/O Devices RS485 bus, then the bus must be closed with 120 Ohm resistor. On Dipswitch SW3 both bit 5 and 6 (EOL I/O DEV) must be set to ON position to add the resistor to the RJ45 I/O DEVICES RS485 communication wires.

Setting DIP Switches and Jumpers

The access control panel involves 3 DIP Switches and 14 jumpers. The switches are used to configure the IP addresses, to configure the panel for different reader connections, to configure primary panel and so forth. The jumpers are used for Door output power source selection and relay contact type (2 per door), for reader wiegand/OSDP selectio"Wiegand Reader Wiring" on page 3-52 for FACP bypass (see".FACP Jumper" on page 3-106) and for Back tamper bypass ("T-Back Jumper" on page 3-106).



DIP Switch Settings

Use the following DIP switch configurations to set up your access control panel.

Table 3-12 DIP Switch 1 (SW1) Settings

S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Selection
OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	Factory Settings
OFF										Reader 1 and Reader 3 = Wiegand
ON										Reader 1 and Reader 3 = OSDP (OSDP 1)
	OFF									Future Use - set to OFF
		OFF								Downstream/Secondary Panel
		ON								Master/Primary Panel
			OFF							Uses the User Provided Ethernet IP Address
			ON							Uses the Default IP Address(192.168.1.150)
				OFF	OFF	OFF	OFF	ON		Address 1
				OFF	OFF	OFF	ON	OFF		Address 2
				OFF	OFF	OFF	ON	ON		Address 3
				OFF	OFF	ON	OFF	OFF		Address 4
				OFF	OFF	ON	OFF	ON		Address 5
				OFF	OFF	ON	ON	OFF		Address 6
				OFF	OFF	ON	ON	ON		Address 7
				OFF	ON	OFF	OFF	OFF		Address 8
				OFF	ON	OFF	OFF	ON		Address 9
				OFF	ON	OFF	ON	OFF		Address 10
				OFF	ON	OFF	ON	ON		Address 11
				OFF	ON	ON	OFF	OFF		Address 12
				OFF	ON	ON	OFF	ON		Address 13
				OFF	ON	ON	ON	OFF		Address 14
				OFF	ON	ON	ON	ON		Address 15
				ON	OFF	OFF	OFF	OFF		Address 16
				ON	OFF	OFF	OFF	ON		Address 17
				ON	OFF	OFF	ON	OFF		Address 18
				ON	OFF	OFF	ON	ON		Address 19
				ON	OFF	ON	OFF	OFF		Address 20
				ON	OFF	ON	OFF	ON		Address 21
				ON	OFF	ON	ON	OFF		Address 22
				ON	OFF	ON	ON	ON		Address 23
				ON	ON	OFF	OFF	OFF		Address 24
				ON	ON	OFF	OFF	ON		Address 25
				ON	ON	OFF	ON	OFF		Address 26
				ON	ON	OFF	ON	ON		Address 27
				ON	ON	ON	OFF	OFF		Address 28
				ON	ON	ON	OFF	ON		Address 29
				ON	ON	ON	ON	OFF		Address 30
				ON	ON	ON	ON	ON		Address 31*
									OFF	Reader 2 and Reader 4 = Wiegand
									ON	Reader 2 and Reader 4 = OSDP (OSDP 2)

DIP Switch SW1 bit 4 (Default Addr) does NOT require a panel reboot to take effect. This does not affect the USB IP address..

Note: *A Primary panel (SW1 bit 3 ON) cannot be set to address 31*

If the MPA2C3 panel will be configured in EVL mode, please consider the settings highlighted in chapter 2: Setting panel in EVL mode.

Note: *When you use the DIP switches to reset a panel to the factory default values, the Event History is lost and any customized databases are removed, and the panel is reset with the factory default database.*

Table 3-13 DIP Switch 2 (SW2) Settings

Bit1	Bit2	Bit3	Bit4	Section
OFF	OFF			No EOL resistor for OSDP 1 (Door 1 & 3)
ON	ON			EOL resistor for OSDP 1 (Door 1 & 3)
		OFF	OFF	No EOL resistor for OSDP 2 (Door 2 & 4)
		ON	ON	EOL resistor for OSDP 2 (Door 2 & 4)

The 4-door license is required for the 3-door or 4-door configuration.

Table 3-14 DIP Switch 3 (SW3) Settings

Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7	Bit 8	Selection
OFF	OFF	OFF	OFF					Future Use - always in OFF position
				OFF	OFF			NO EOL resistor for RS485 bus I/O Devices (default)
				ON	ON			EOL resistor for RS485 bus I/O Devices
						OFF	OFF	NO EOL resistor for RS485 bus Downstream panels (default)
						ON	ON	EOL resistor for RS485 bus Downstream panels

Resetting to the Factory Default

1. Make a note of the existing settings on DIP switches.
2. While the panel is powered up, turn all DIP switches to the OFF position.
3. Restart the panel, And the Heartbeat LED flickers fast.
4. Set the DIP switches back to their original positions.
5. Restart the panel. The Heartbeat LED should flash normal. The panel is now reset to the original factory default values.

Note: *Address 0 is not a valid setting.*

Jumper Settings

Door output jumpers

The MPA2C3 2-door panel provides 4 sets of jumpers for output relay 1 (OUT1), Output Relay 2 (OUT2), Output relay Aux1 (AUX1) and Output relay Aux 2 (AUX2).

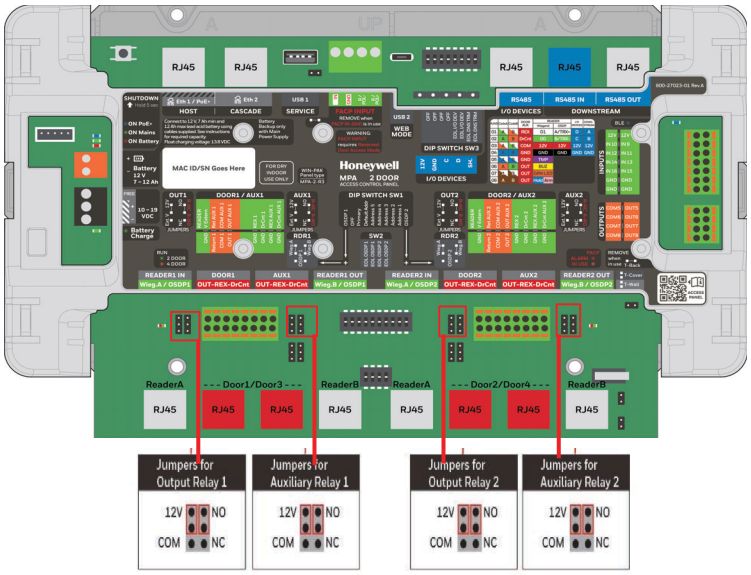
The MPA2C3 4-door panel provides 4 sets of jumpers for output relay 1 (OUT1), Output Relay 2 (OUT2), Output relay 3 (OUT3) and Output relay 4 (OUT4).

There is a total of eight 3-pin jumpers (two jumpers per relay) on the panel.

The setting of the jumpers is effective for both the push-in terminal block as well as the corresponding Red RJ45 Door Terminal.

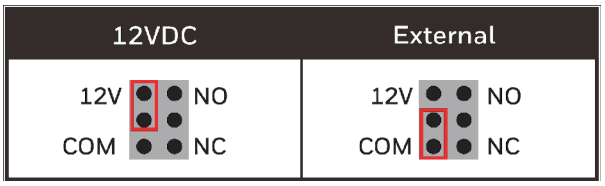
e.g. On a MPA2C3 2-door the power and relay contact type jumper setting for OUT1 is effective for both terminal block DOOR1 OUT1 as well as Red RJ45 Terminal DOOR1/OUT

Figure 3-35 The Locations of Jumpers



Each relay is associated with 2 jumpers. As shown below, a relay's left jumper configures the relay's load source (12 VDC or External), and the right relay jumper configures the relay contact type (Normally Closed or Normally Open).

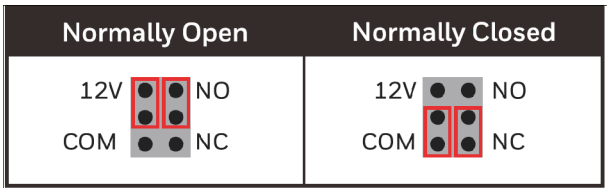
- Setting the jumpers to configure the power source:



Note: *The power source selected by the jumper settings configures the power source for the relay. It does not configure the power source for the panel.*

Caution: RJ45 door connections do not support external relay load source.

- Setting the jumpers to configure the relay contact type:



Reader mode selection jumpers

There are two sets of reader mode selection jumpers for Wiegand or OSDP mode.

In a MPA2C3 2-door panel, one set is for READER1 IN and READER1 OUT to select Wiegand A and Wiegand B or OSDP bus 1 (OSDP1). The other set is for READER2 IN and READER2 OUT to select Wiegand A and Wiegand B or OSDP bus 2 (OSDP2).

In a MPA2C3 4-door panel, one set is for READER1 and READER3 to select Wiegand A and Wiegand A or OSDP bus 1 (OSDP1). The other set is for READER2 and READER4 to select Wiegand A and Wiegand A or OSDP bus 2 (OSDP2).

Note: *Both jumpers must be positioned in synchronization.Please see chapter 3.6.3 System set up for Wiegand or OSDP readers.*

Note: *Both jumpers must be positioned in synchronization*

Note: *Please see chapter 3.6.3 System set up for Wiegand or OSDP readers*

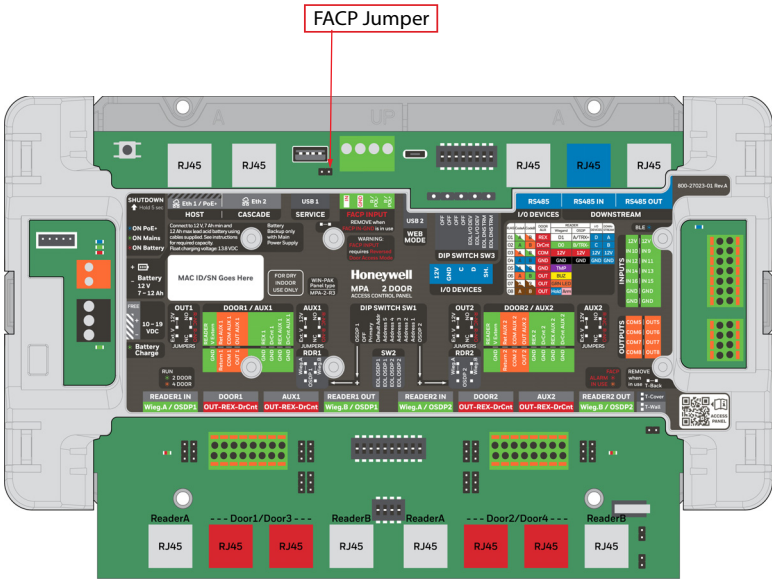
Note: *Both jumpers must be positioned in synchronization.Please see chapter 3.6.3 System set up for Wiegand or OSDP readers.*

.FACP Jumper

The FACP jumper head is by default set on the jumper pins to bypass the FACP input. Only when the FACP IN-GND input terminals are in use, then remove the jumper head from the FACP jumper.

Please see chapter 4 for more information

Figure 3-36 FACP jumper



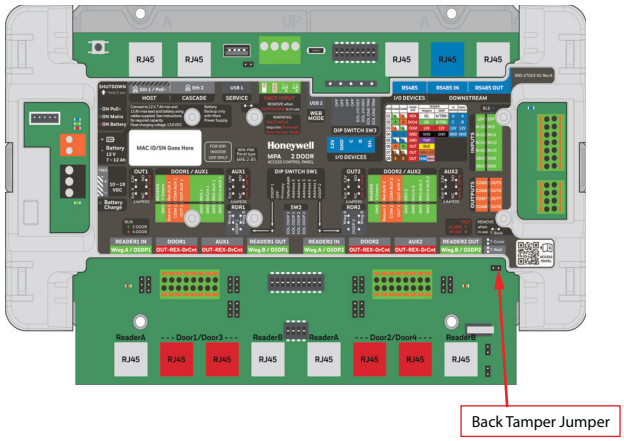
T-Back Jumper

The T-Back jumper head is by default set on the jumper pins to bypass the 2 Back tamper switched on the back of the MPA2C3 panel.

When the MPA2C3 is mounted in the metal cabinet the jumper head must be positioned on the jumper heads. When the MPA2C3 is mounted directly on the wall the T-Back jumper head can be removed to activate the off-wall tamper of that combined system.

It is also possible to connect over the T-Back jumper pins an external tamper switch to function as external off wall switch.

Figure 3-37 T-BACK jumper



Communications

USB Communications

The MPA2C3 include two USB Connections: USB1 / SERVICE and USB2 / WEB MODE.

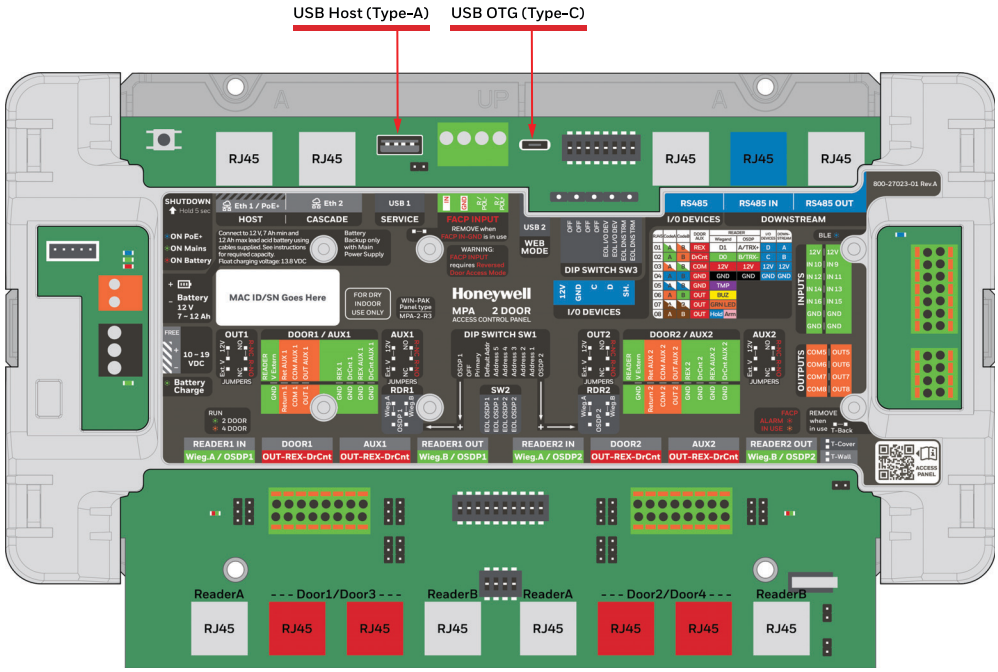
USB 1 is used for factory purposes only. Do not use this USB1 port.

USB2 / WEB MODE provides a USB-C port that connects to the web server in the panel.

Warning: Do not plug in unknown USB devices on either USB ports (for example, USB Killers) which can damage hardware components. This access control unit is not designed with a protective function for any deliberately damaged USB devices. Honeywell is not responsible for your losses caused by using deliberately damaged USB devices.

Note: *USB communication requires a Type-A to Type-C USB cable or a Type-C to Type-C USB cable.*

Figure 3-38 Connecting Type-C USB Cable



You will need to install a USB driver to support the connection. Follow these steps:

Warning: Do NOT connect the USB cable to the panel until AFTER the drivers are installed

1. Download the MPA2C3 USB driver from the link given in below table or scan the specific QR code to access. https://mywebtech.honeywell.com/Systems/Home

https://honeywelldiscovertraining.com/login/discover/default.asp

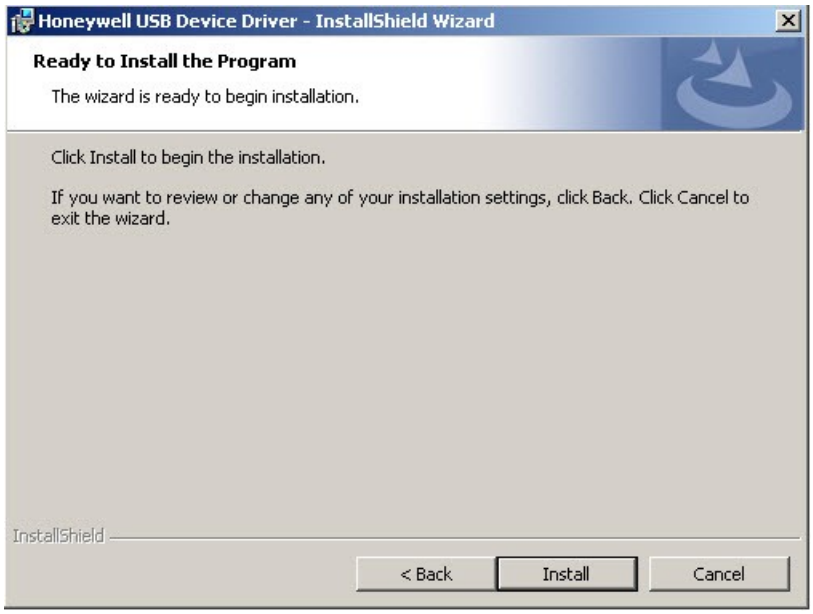
2. Click Install USB Drivers on the product menu to start the USB driver installation wizard.

Figure 3-39 USB Driver InstallShield Wizard

3. Click Next to display the Ready to Install the Program screen.

: *If confirmation dialog boxes pop up before or during the installation, click the appropriate boxes to allow or approve the installation*

Figure 3-40 Ready to Install the Program



1. Click Install to initiate the installation.
2. When the installation is complete, the closing screen
3. appears:

Figure 3-41 InstallShield Wizard Completed

1. Click Finish.
2. Connect
3. the computer to the MPA2C3 controller with a Type-A to Type-C USB cable or a Type-C to Type-C USB cable.

4. Turn on the power to the MPA2C3 controller.

For login information, go to https://192.168.2.150.

RS-485 Communications

If a MPA2C3 panel is to be placed onto a pre-existing RS-485 dropline loop (NetAXS), it must be setup as the Primary panel. The interface allows the wiring of a multi-drop communication network of up to 4,000 feet (1200 in length. Only one host converter device per dropline is supported.

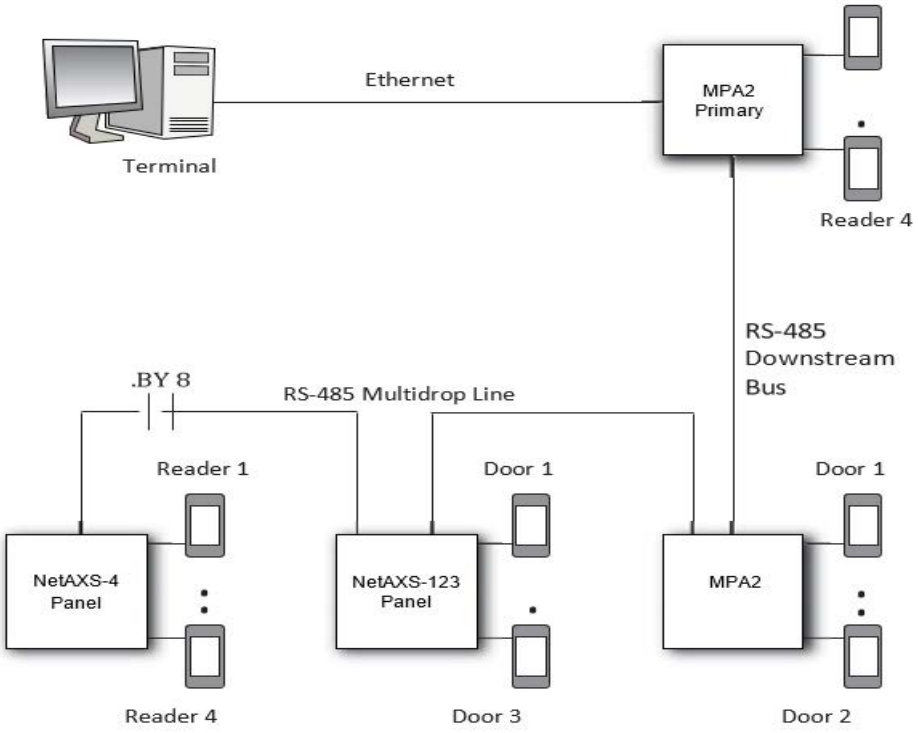
- MPA2C3 must be the Primary panel on an existing NetAXS loop. The MPA2C3 panel cannot be placed as a Secondary panel when the Primary is a NetAXS system.
- RS-485 communication has not been evaluated by UL or ULC.

Set DIP Switch SW1 Bit 3 (Primary)to ON to enable it to be a primary panel. Bit 3 in the OFF position configures the panel as a secondary panel; ON configures a primary panel. The panel must be power cycled for a new switch setting to be recognized. Bit 5-9 of DIP Switch 1 are used to select the panel's address on the network. For more information about DIP SW1 Settings, see .

N *For more information on end of line (EOL) termination, contact Honeywell technical support.*

Warning: If S-485 network has a MPA2C3 Secondary panel, no N1000-II, N1000-III, N1000-IV, or NS2 are allowed on the same network. If they are added to a network with a MPA2C3 primary panel, they will not be able to communicate with the host computer.

Figure 3-42 RS-485 Configuration via MPA2C3 Primary Panel



This configuration supports a total of 8 NetAXS-123 and/or MPA2C3 downstream panels per Multidrop line.

Each MPA2C3 panel has a port for an Ethernet TCP/IP interface. The Ethernet TCP/IP interface provides 10/100 MB Ethernet support for each panel.

Configuring FACP input functionality

FACP input functionality

The MPA2C3 has a dedicated fully hardware controlled FACP (Fire Alarm Control Panel) input, intended to unlock all doors when triggered with the highest priority, overriding any current access control setting.

When connected to a Fire system and there is a fire alarm, this function allows people to easily evacuate a premises and allows first responders to easily enter unlocked areas.

To make this function fully effective hardware AND software configuration need to be made on the MPA2C3.

Door Access Modes

By default the MPA2C3 is a normal access control panel, operating in Normal Door Access Mode. The operation and control of the outputs are for access control use. This mode sets the Door Relays (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)) in fail-secure operation.

Note: *Door outputs or relays (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)) apply to both Push in terminal blocks and all 4 red Door/AUX RJ45 terminals.*

Note: *AUX REL 5,6,7 and 8 are NOT affected hardware wise by the FACP input.*

In Normal Door Access Mode all Door Relays (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)) are de-energized when the door is supposed to be locked. To unlock a door the Door relay must be in energized state.

When additionally, the doors must be unlocked when e.g. a Fire Alarm occurs, then MPA2C3 panel must be in Reversed Door Access Mode. This mode sets the Door Relays (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)) in fail-safe operation. See further about the conditions and Door Output states in fail-safe operation.

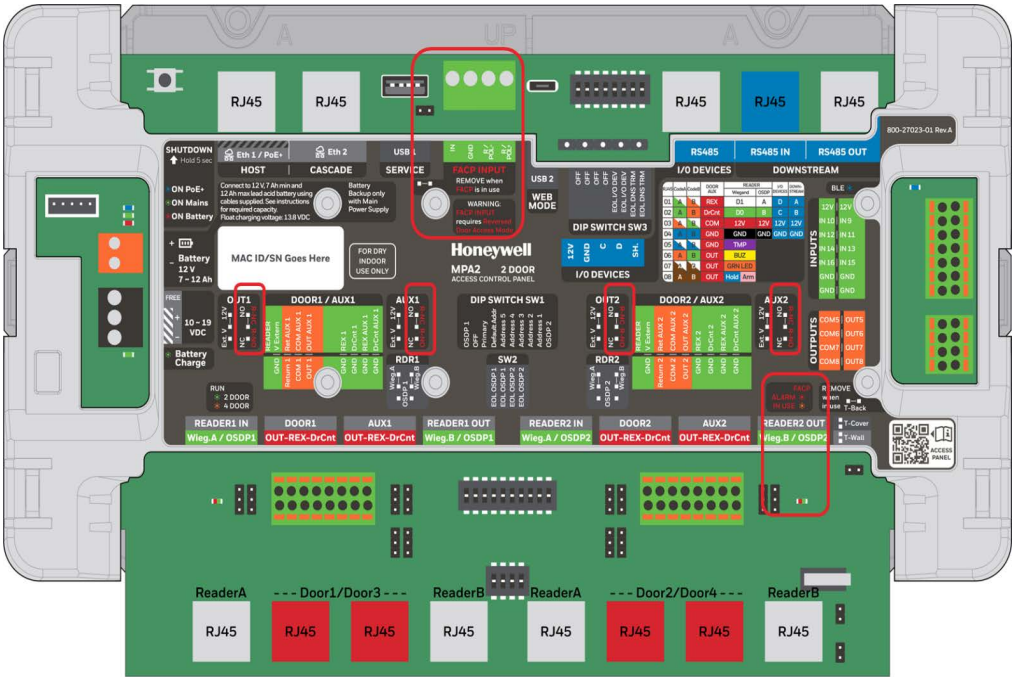
In Reversed Door Access Mode all Door Relays (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)) are energized when the doors are supposed to be locked. To unlock a door the Door Relay must be in de-energized state.

Door access mode indication

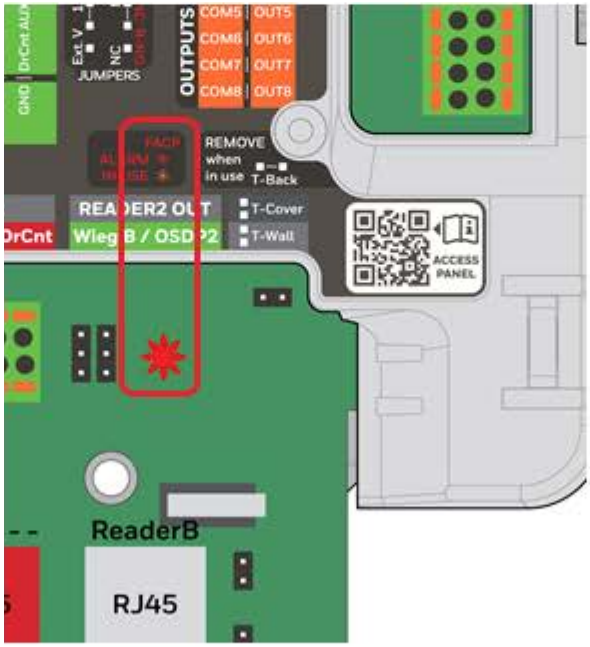
On the panel's information card Normal Door Access Mode functions are described in wording in WHITE. Where wording in RED is available at some functions (e.g. OUT / AUX R-NO/R-NC jumpers) AND Reversed Door Access Mode has been activated, then the wording in Red must be considered.

In the figure below, identify the wording in RED for Reversed Door Access Mode indicators.

Figure 3-43 he wording in RED for Reversed Door Access Mode indicators.



When Reversed Door Access Mode is activated, the amber FACP LED is ON, indicating that FACP Input can be connected.



Note: *The amber FACP LED (in use) will not turn on automatically when the FACP jumper has been removed.*

In the Web User Interface there are many references to Door Access Modes.

See in sections 4.3 and further for more information

Door Access Modes and Door lock behaviors

The below table describes the Door Status per Normal or Reversed Door Access Mode.

<table>
<tr><td colspan="2">MPA2C3</td><td>Fail-Secure Installation</td><td>FAIL-SAFE INSTALLATION</td></tr>
<tr><td colspan="2">Scenarios</td><td colspan="2">DOOR STATUS 1-4
OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2))</td></tr>
<tr><td>PANEL</td><td>DOOR ACCESS MODE</td><td>NORMAL</td><td>REVERSED</td></tr>
<tr><td colspan="2">NORMAL OPERATION</td><td colspan="2">LOCKED with functional operator control/ card swipes/ schedules</td></tr>
<tr><td rowspan="3">PRIORITY
POWER LOSS</td><td>Panel Power loss (12v Internal powered lock)</td><td rowspan="3">LOCKED,
non functional operator control/ card swipes/ door schedules</td><td rowspan="3">UNLOCKED,
non functional operator control/ card swipes/ door schedules</td></tr>
<tr><td>External PSU for locks Power loss</td></tr>
<tr><td>Panel Power loss with External PSU for locks operational</td></tr>
<tr><td rowspan="2">FACP</td><td>FACP input triggered (Fire alarm)</td></tr>
<tr><td>FACP input idle.</td><td colspan="2">LOCKED with functional operator control/ card swipes/ schedules</td></tr>
</table>

APPLICATION / USE CASE	**Fail-Secure Access Control w/ door strikes** - At power loss doors will lock, - For all doors not requiring evacuation mode	**Fail-Safe Access Control w/ mag locks**: - At power loss doors will unlock, - For inner doors, corridor doors, - Where escape route needed - First responders to easily enter

Other System Prerequisites	Use Power-to-lock Door locking devices, such as door strikes	Use Power-to-Unlock Door locking devices, such as magnetic locks

FACP input prerequisites

The MPA2C3 has a dedicated fully hardware controlled FACP (Fire Alarm Control Panel) input. When triggered the panel overrides immediately and simultaneously the 4 door outputs (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)) to a Fail-safe state (door unlocked state*). AUX REL 5,6,7 and 8 are NOT affected hardware wise by the FACP input. See the installation manual for FACP installation.

Note: *Individual doors cannot be selected to be fail-safe or fail-secure. All door outputs are affected.*

When the FACP input is activated:

All door outputs (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)) are in safe condition (safe = off = unlocked door* = free egress).

None of the door outputs (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)) can be controlled by card readers, egress buttons or access control software.

There is a notification in the Web UI that the FACP input has been activated. Host software will be notified.

To achieve the above functionality the panel needs to be set to the Reversed Door Access Mode. In Reversed Door Access Mode the Door Outputs (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)) are reversed.

In Reversed Door Access Mode all Door Relays (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)) are energized when the doors are supposed to be locked. To unlock a door the Door relay must be in de-energized state.

Always test the full end to end functionality of the FACP input and the effect to the doors (not only the outputs) after the installation has been completed.

FACP input not activated: Doors 1 to 2/4 function as access-controlled doors, using cards, egress or software/Web User Interface.

FACP input activated: Doors 1 to 2/4 are and stay in unlocked state, and controls are not possible using cards, egress or software/Web User Interface.

Note: *See the MPA2C3 installation manual how to connect the Fire panel output to the MPA2C3 in chapter 4.6 , and how to connect the outputs the to fail safe locking devices (power-to-lock), with the correct jumper settings of (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)).*

Note: *Jumper head on FACP jumper needs to be*

Note: *off when the FACP input is in use and to un-bypass the FACP input.*

Note: **Fail safe locking devices (power-to-lock) are devices that unlock when power (voltage) is interrupted to the locking device. This interruption can be done by opening a NC (Normally Closed) contact of a relay (door) output via the controls of the panel or when power to the panel or to the locking device is lost. Main examples for fail safe locking devices are magnetic locks.*

FACP input set up procedure – FAIL-SAFE INSTALLATION

The below procedure is to create a fail-safe installation. Any diversion from these steps will make the installation not fail-safe (unlock doors at power fail and at FACP input triggered).

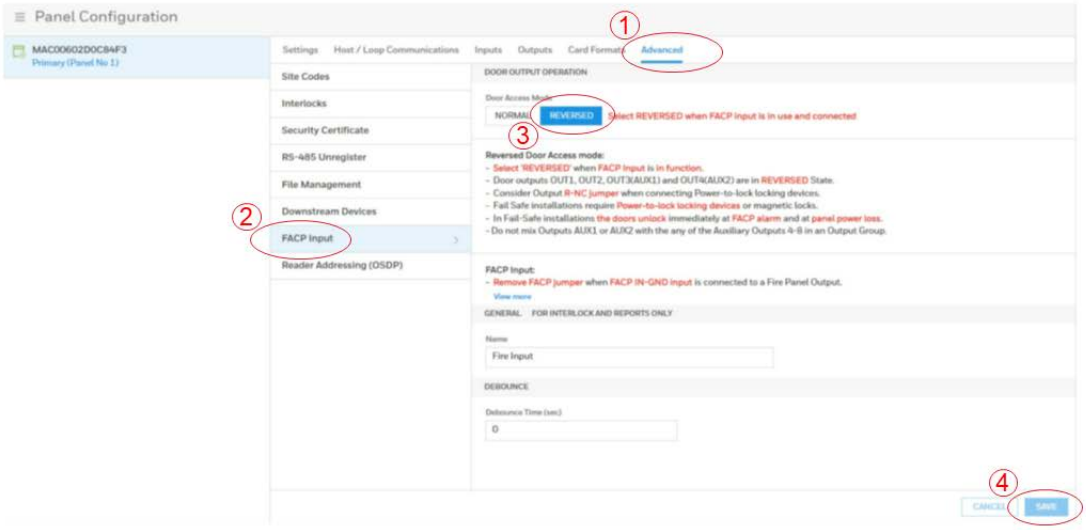
To make sure all door outputs are in a fail-safe mode, the panel needs to be in Reversed Door Access Mode. The are 5 steps to make the FACP input fully functional.

Set panel in Reversed Door Access Mode

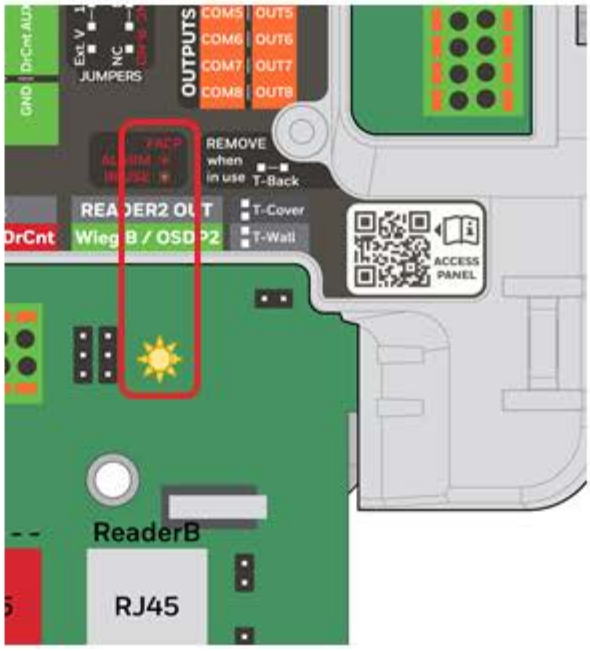
In Panel configuration/advanced/FACP Input:

Go to section DOOR OUTPUT OPERATION:

1. Select DOOR ACCESS MODE: REVERSED



2. Click Save
   On the panel the Amber FACP LED will be ON and all Door Relays will be energized state (if the door outputs are in idle locked mode).

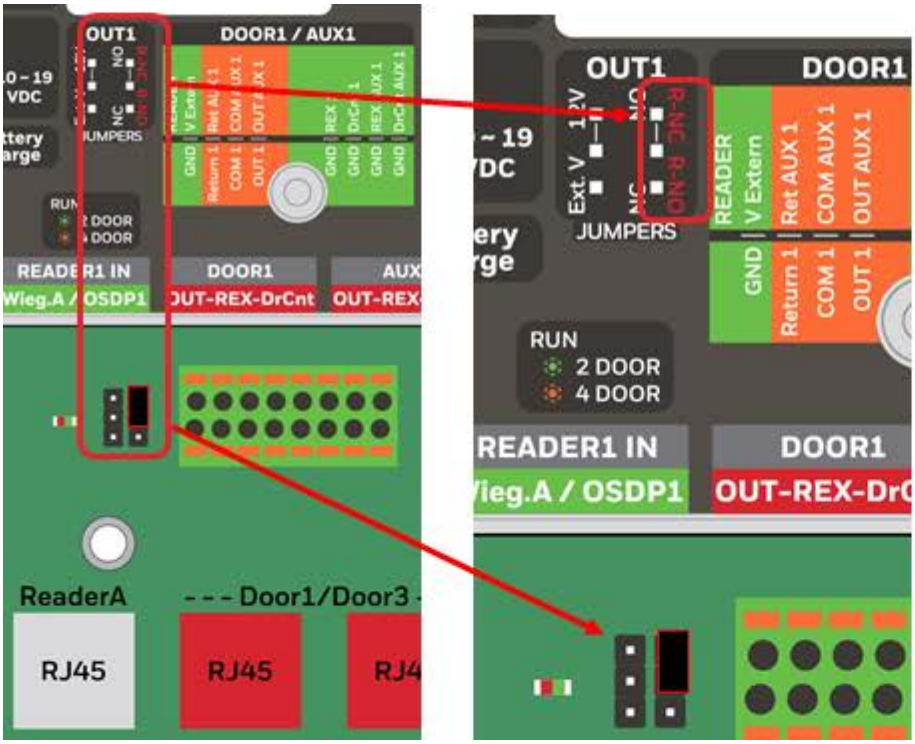


1. Reposition the OUT/AUX NO/NC jumper on all Outputs.

On the Panel, regard all (OUT1, OUT3 (AUX1), OUT2, OUT4 (AUX2)) relay outputs modes on the panel as reversed.

a. Set the Jumperhead to the Red R-NC (Normally Closed in Reversed Door Access Mode).

b. This is the correct setting to connect power-to-lock locking devices (such as magnetic locks) to the output.



Connect the locking device to the OUT and COM when using voltage free / external PSU (Jumperhead on OUT - Ext.V) for the locking device.

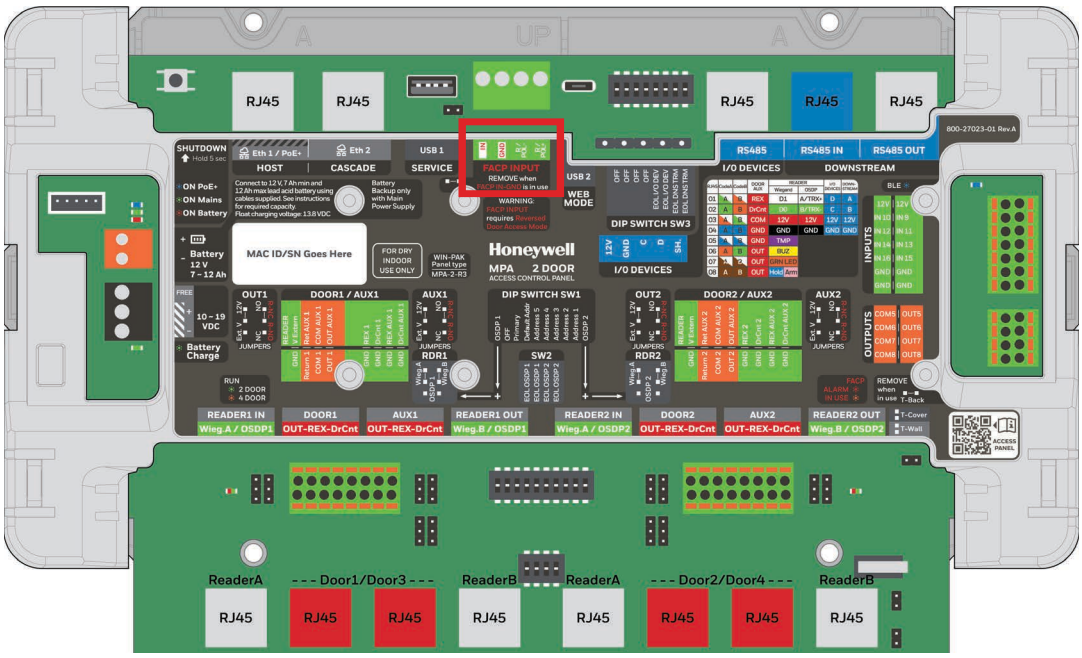
Connect the locking device to the OUT and Return when using internal Panel's power source (Jumperhead on OUT – 12V) for the locking device.

3. Remove the jumper head from the FACP jumper when FACP IN-GND is connected.

When the FACP IN and GND are connected to the Fire panel's output, then the jumper head has to be removed from the FACP jumper to unbypass the FACP IN-GND input.

When the R/POL+ - R/POL- are connected to the Fire panel's output (using reversed polarity technology) then the jumper head have to be left on.

Note: *The amber FACP LED (in use) will not turn on automatically when the FACP jumper has been removed.*

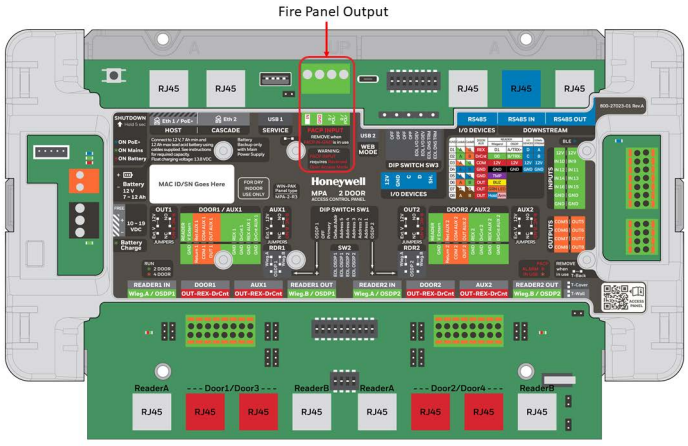


1. Connect the Fire Panel's output wiring to the FACP input

Connect the Fire Panel's output wiring to the FACP input

The Fire Panel's output must be connected to the FACP input removable screw terminal block

Figure 3-44 Fire Panel Output



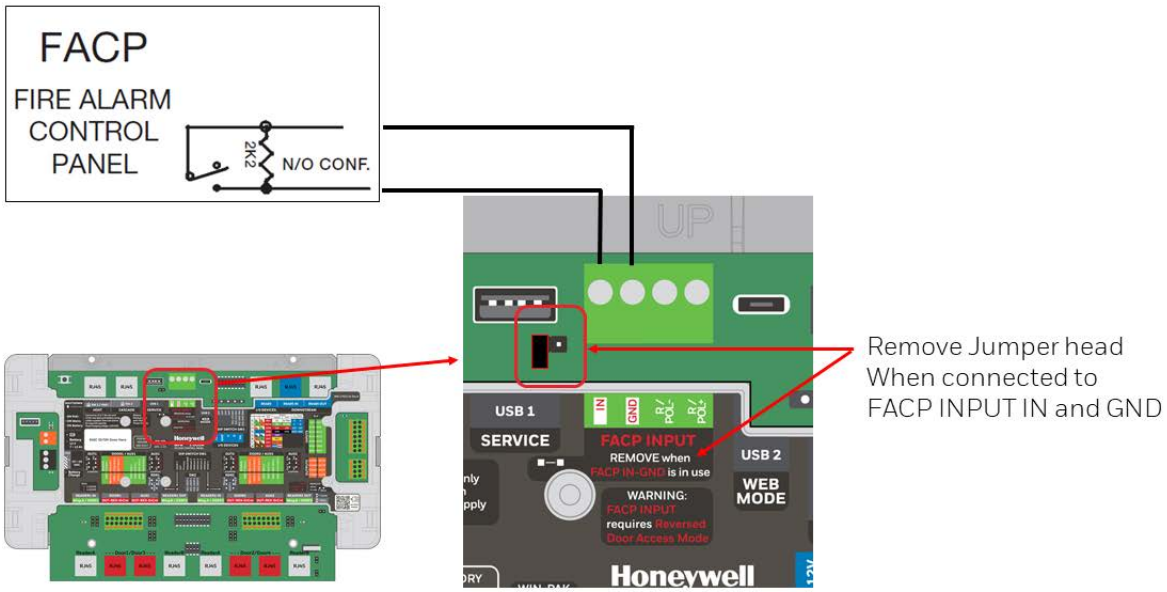
There are 2 ways to connect Fire Panel's output wiring to the FACP input.

1. Fire Panel's output is a normally open contact.
2. Fire Panel's output is a reversed polarity output.

Fire Panel's output is a normally open contact.

When the Fire Panel's output is a voltage free normally open contact the below connection must be made.

At the Fire control panel output a 2.2kOhm resistor must be mounted over the normally open output connections.



Note: *Remove the jumperhead from the FACP jumper to hardware activate the FACP input on the panel and unbypass the FACP input.*

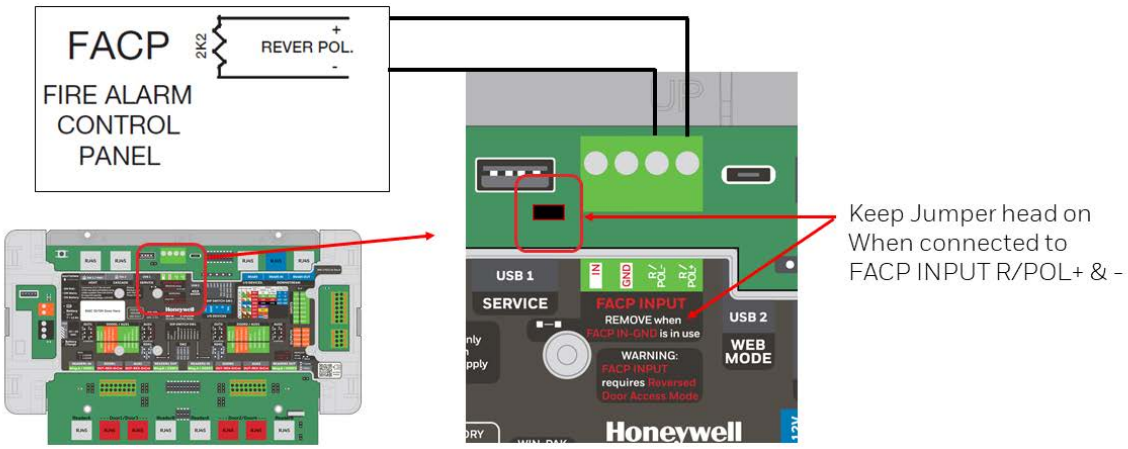
Fire Panel's output is a reversed polarity output.

When the Fire Panel's output is a reversed polarity output, the idle – non alarm state – that the + output is negative and the – output is positive.

When an alarm occurs at the fire panel, then the output polarity will be + positive and – negative.

The Fire Panel's output voltage range is 12 to 24 VDC

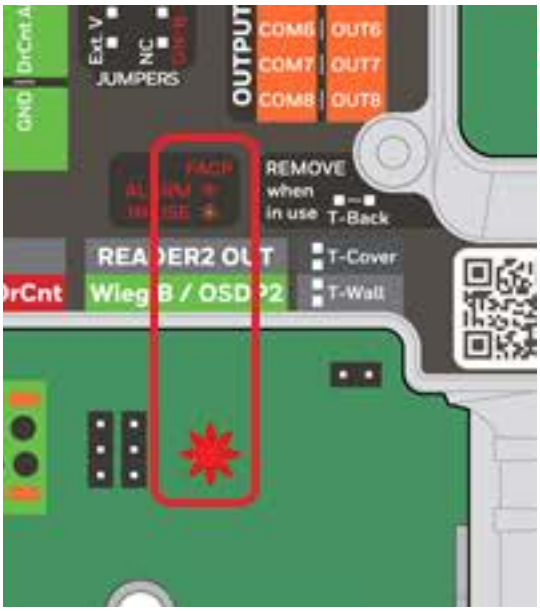
At the Fire control panel output a 2.2kOhm resistor must be mounted over the reversed polarity outputs.



FACP input activation in Alarm – Notifications

Notifications on the panel

When the connected Fire alarm control panel is in alarm and the Fire panel output has activated the FACP input on the panel, on the MPA2C3 panel the RED FACP LED (Alarm) is ON. (Only for service purposes)



CHAPTER

4 MOUNTING THE ENCLOSURE

Metal Enclosure Installation

Perform the following steps to install the panel in the Metal Enclosure:

Warning: Use a static strap whenever touching the panel to ensure protection from Electrostatic Discharge (ESD).

Atention! Danger – risk of electric shock!

Before installation, TURN OFF the external circuit breaker which supplies power to the system.

Before connecting the device to the power supply, verify that the output voltage is within specifications of the power supply.

Do not apply power to the system until after the installation has been completed.

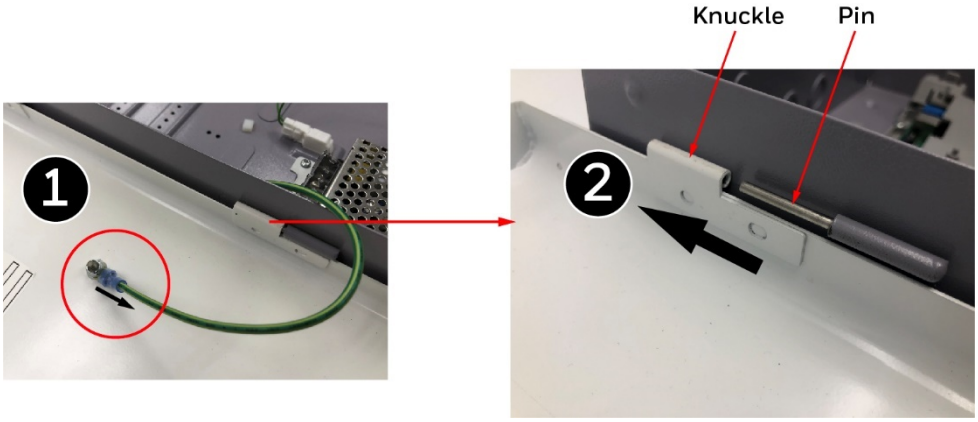
Personal injury or death could occur, and the equipment could be damaged beyond repair if this precaution is not observed!

Warning Label:

Installing the Metal Lid (Optional)

1. Remove the grounding wire from the lid.
2. Remove the lid along the direction of the arrow. (Optional)

Figure 3-1 Removing the Grounding Wire and Remove the Lid



1. Align the knuckle with the pin and attach the lid.
2. Reconnect the grounding wire.
3. Sticking the Enclosure Label.

Warning: The resistance of the connected grounding wire must be less than 0.1 Ohm.

Wiring the AC Power Cord

US Mains

For the MPA2MPSU, MPA4MPSU kits and MPA2ENCMU enclosure (with IEC/UL mains socket), to wire the AC power supply to the enclosure's power supply unit, proceed as follows:

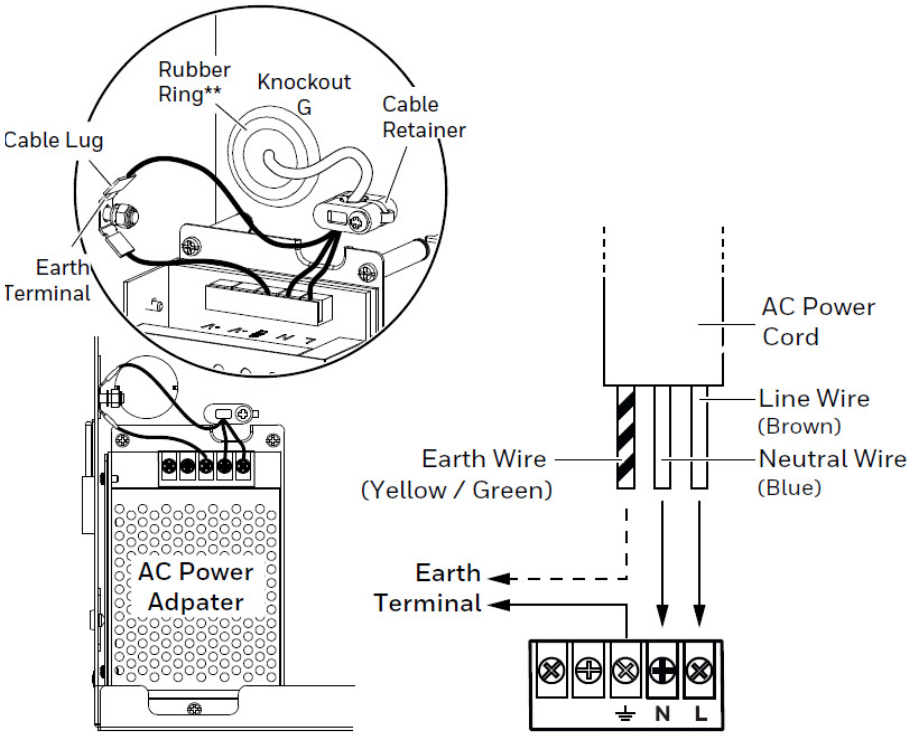
1. Connect the power cord that came with the package to the Mains socket.
2. Check if the LED at the top of the socket will light up as soon as the mains voltage is applied.

Caution: The AC power cord used must be a three-core type (with green/yellow earth insulation) of adequate current carrying capacity. Follow local laws and regulations regarding cable types and length. The green/yellow earth insulation wire of AC power cord must be connected with the earth ground.

EU Mains

For the MPA2MPSE, MPA4MPSE kits and MPA2ENCME enclosure (without IEC mains socket), to wire the AC power supply to the enclosure's power supply unit, proceed as follows:

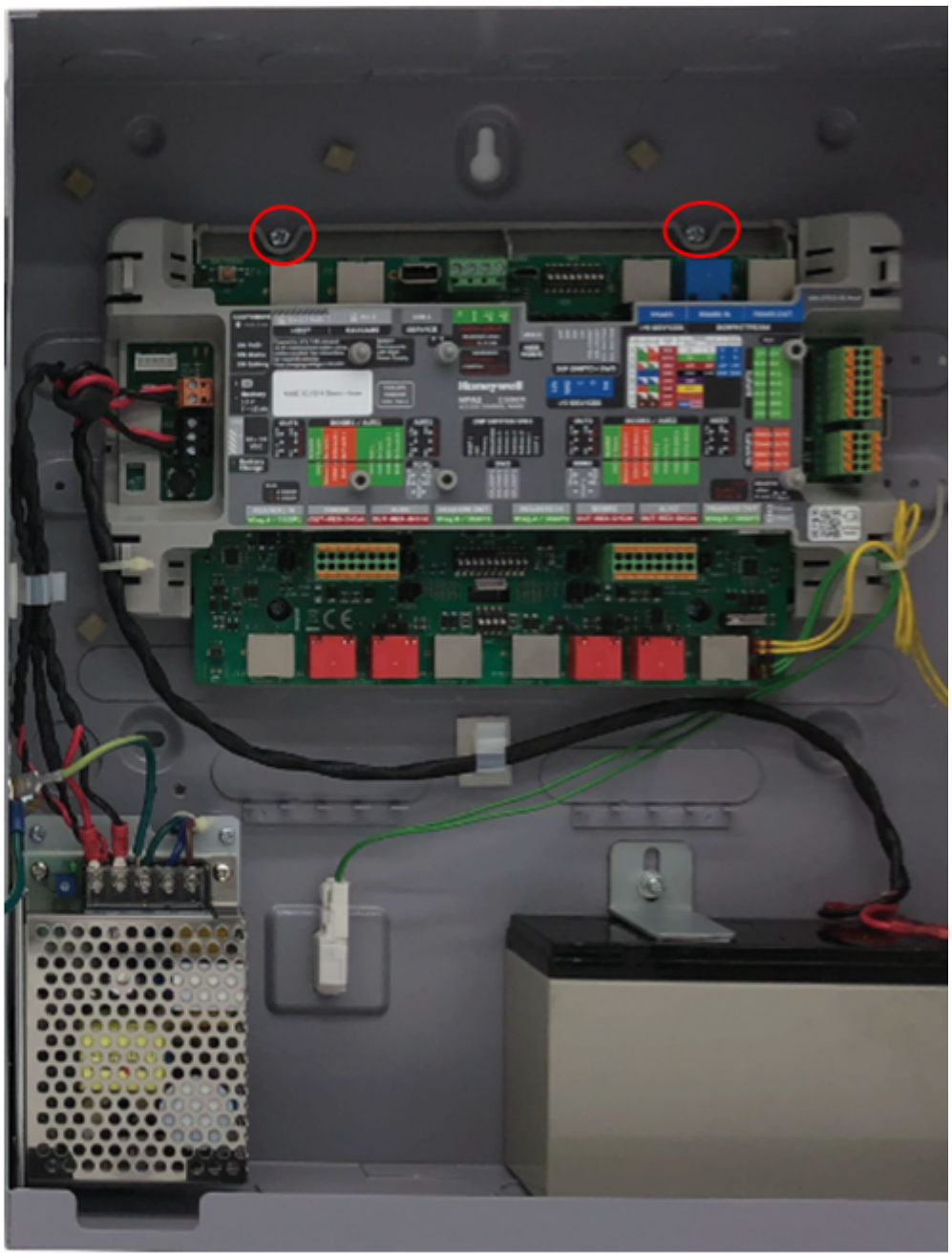
1. Attach the rubber ring to Knockout G to protect the AC power cord. The knock-out G is only for AC power cord.
2. Wire the AC power cord to the AC power adapter.
3. Crimp the cable lug to the incoming earth wire and then connect it to the earth terminal.



Warning: *Use a static strap whenever touching the panel to ensure protection from ESD (Electrostatic Discharge).*

1. Mount the panel into the metal housing and secure it with 4M5 screws.

Figure 3-2 Installing the Panel

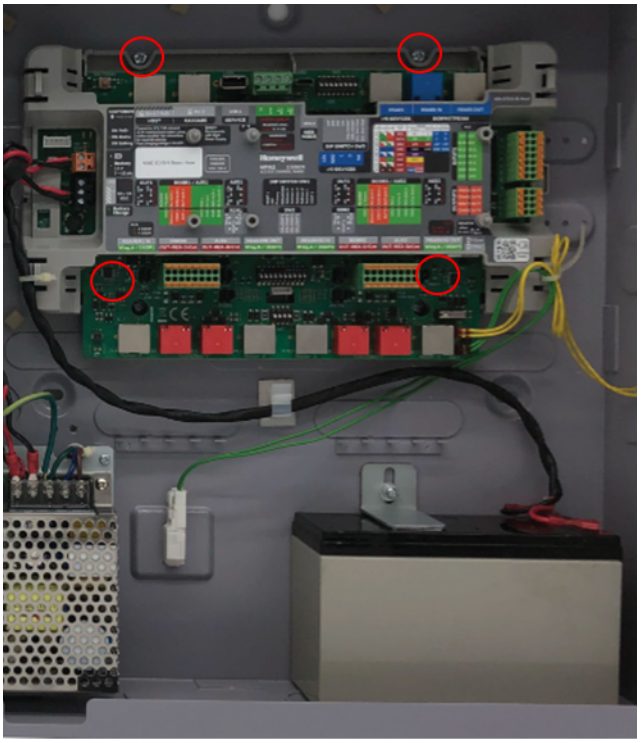


Mounting the Enclosure

Wiring the Panel – Metal Enclosure

1. Mount the panel into the metal housing and secure it with 4 M5 screws.
2. Metal housing and secure it with 4 M5 screws.

Figure 4-3 Installing the Panel



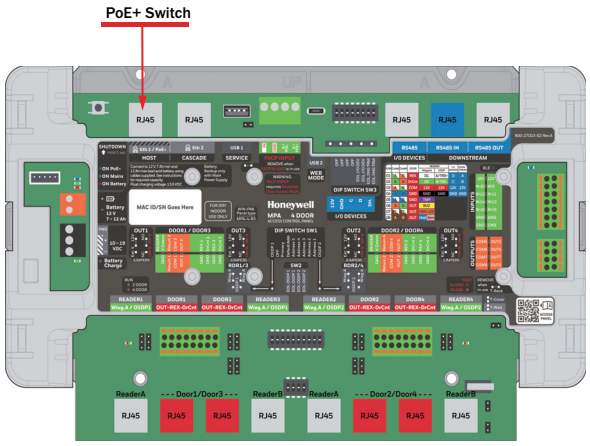
Wiring to Power Supply and Tamper Connector – Metal Enclosure

Warning: Use a static strap whenever touching the panel to ensure protection from ESD (Electrostatic Discharge).

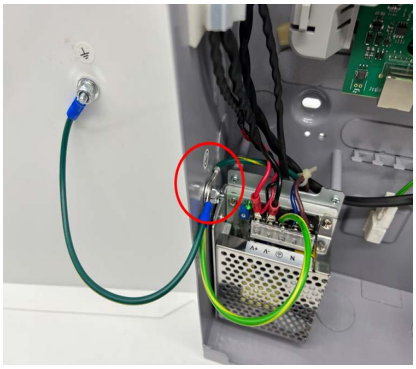
Warning: Do not apply power at this time.

1. Connect the Ethernet cable as shown below to power the system via PoE+. Or follow step 2 and step 3 to power the system via power supply.

1. Connecting the Ethernet Cable for PoE+



When the system is powered ON via PoE+ supply, ensure the Metal Enclosure is well connected to Earth Ground, please see the picture below.



Warning: Make sure the PoE switch or PoE injector is compliant with UL294.

Warning: Do not apply power at this time. Ensure the PoE switch is not powered.

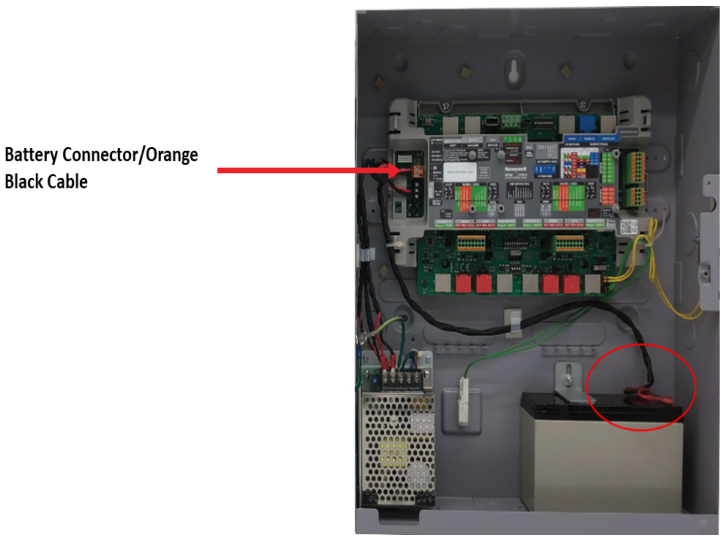
1. Connect prepared low voltage power supply cable (red, black, green/yellow) to the PSU terminals (V+, V-). Ensure to secure the power cable by the cable clamp.

Figure 4-4 Connecting the Power Supply Cable

Warning: Do not apply power at this time. Ensure the power cable is disconnected from the external power source before following this step. The battery cable is included in the accessory bag.

1. Wire the battery cable. A 7 Ah lead acid battery is included.

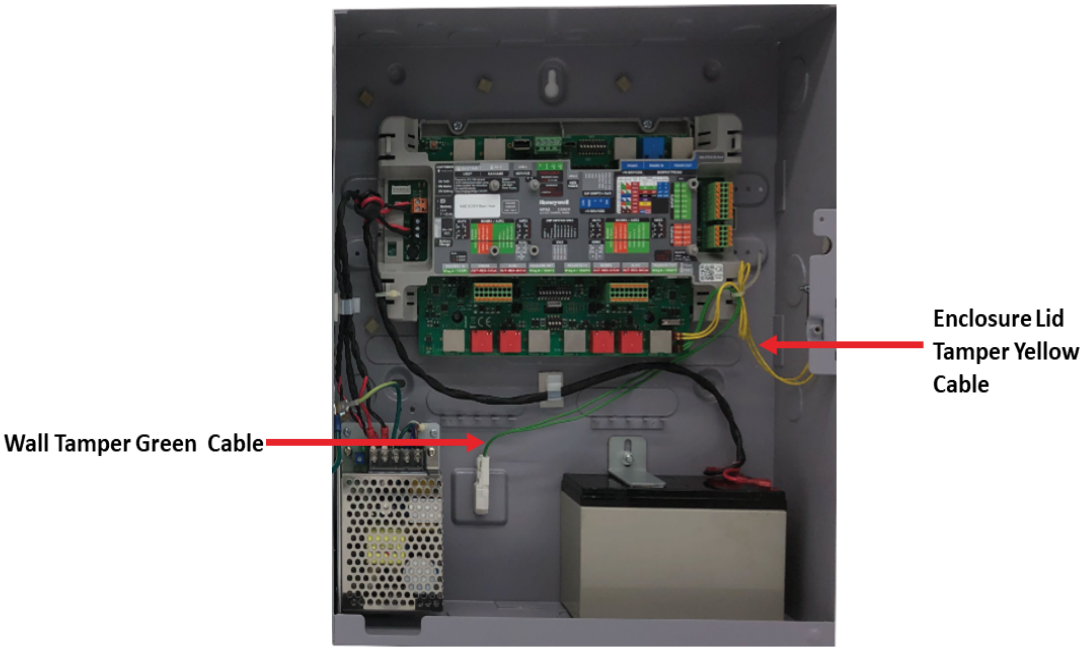
Figure 4-5 Connecting the Battery Cable – 7 Ah Battery



Note: *Do not connect a backup battery when using PoE+*

1. Plug in the prepared tamper connectors.

Figure 4-6 Connecting the off-wall Tamper and Enclosure Lid Tamper Cables



CHAPTER

5 SYSTEM CONFIGURATION

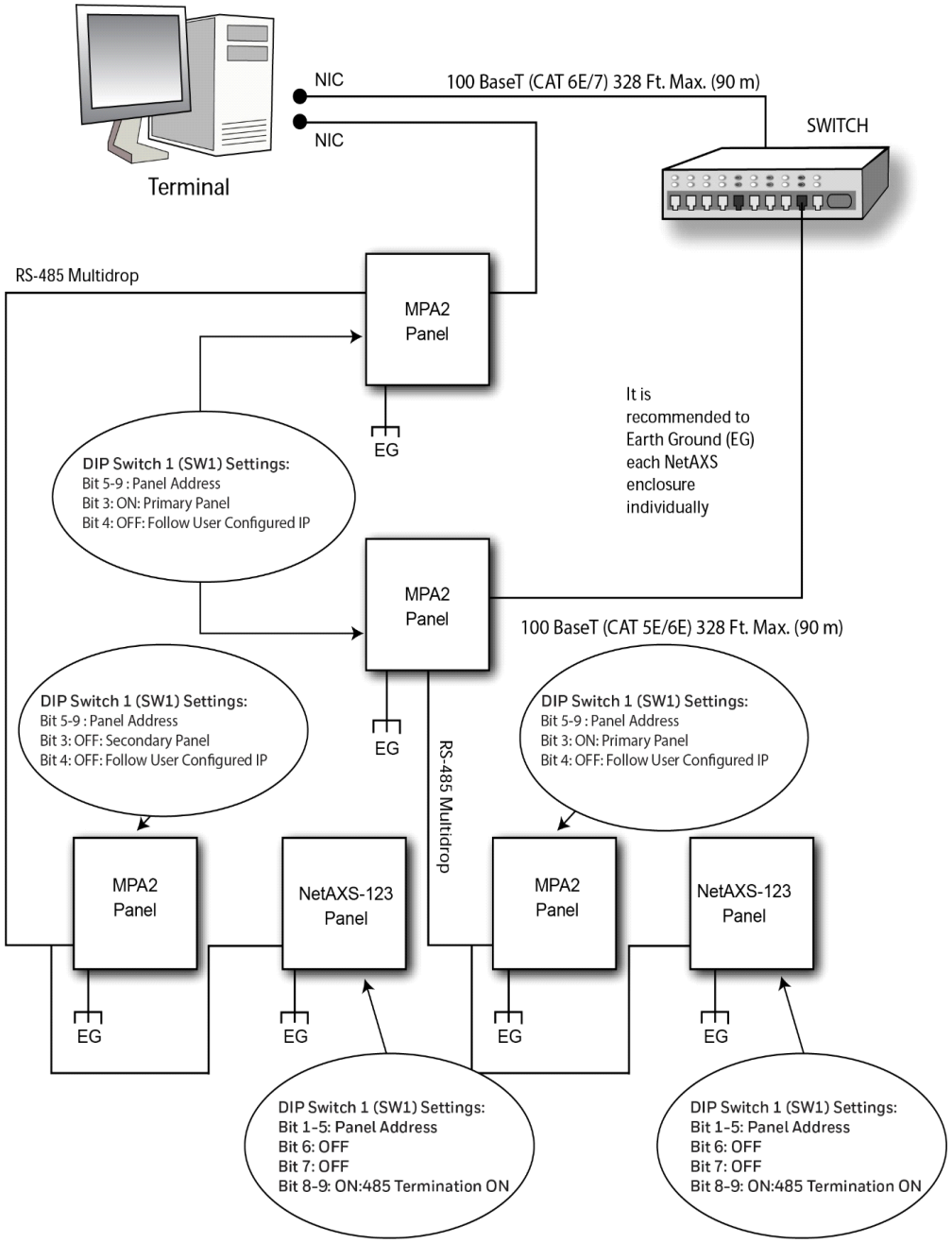
System Configuration

This section provides wiring diagrams for each of the MPA2C3 system configurations.

Ethernet – Network Dedicated to Access Control

Note: *Router must provide DHCP service.*

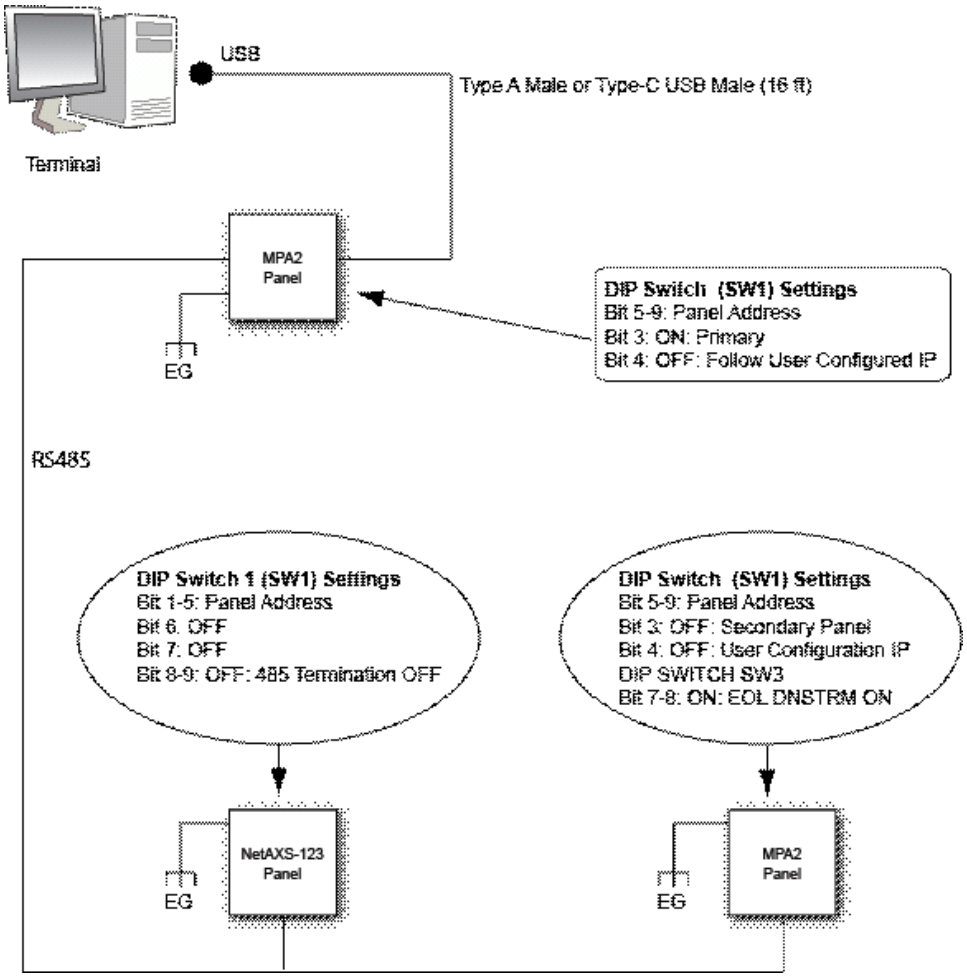
Figure 4-1 Ethernet – Network Dedicated to Access Control



Note: *You should ground each MPA2C3 Standard Metal Enclosure panel individually with an Earth Ground.*

USB Connection

Figure 4-2 MPA2C3 USB Connection



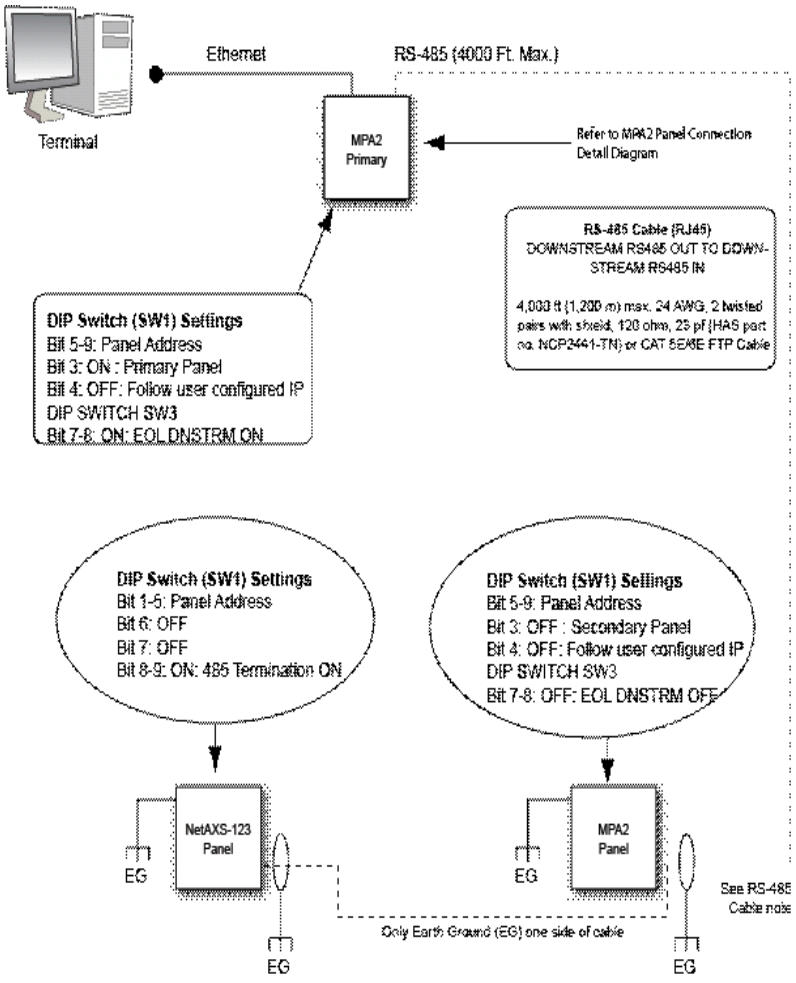
Note: *You should ground each MPA2C3 Standard Metal Enclosure panel individually with an Earth Ground.*

Note: *The USB connection is intended to be used for system maintenance and troubleshooting*

RS-485 Loop Connection via MPA2C3

This loop connection supports a total of 8 MPA2C3 panels (MPA2C3not included Primary) for each drop line.

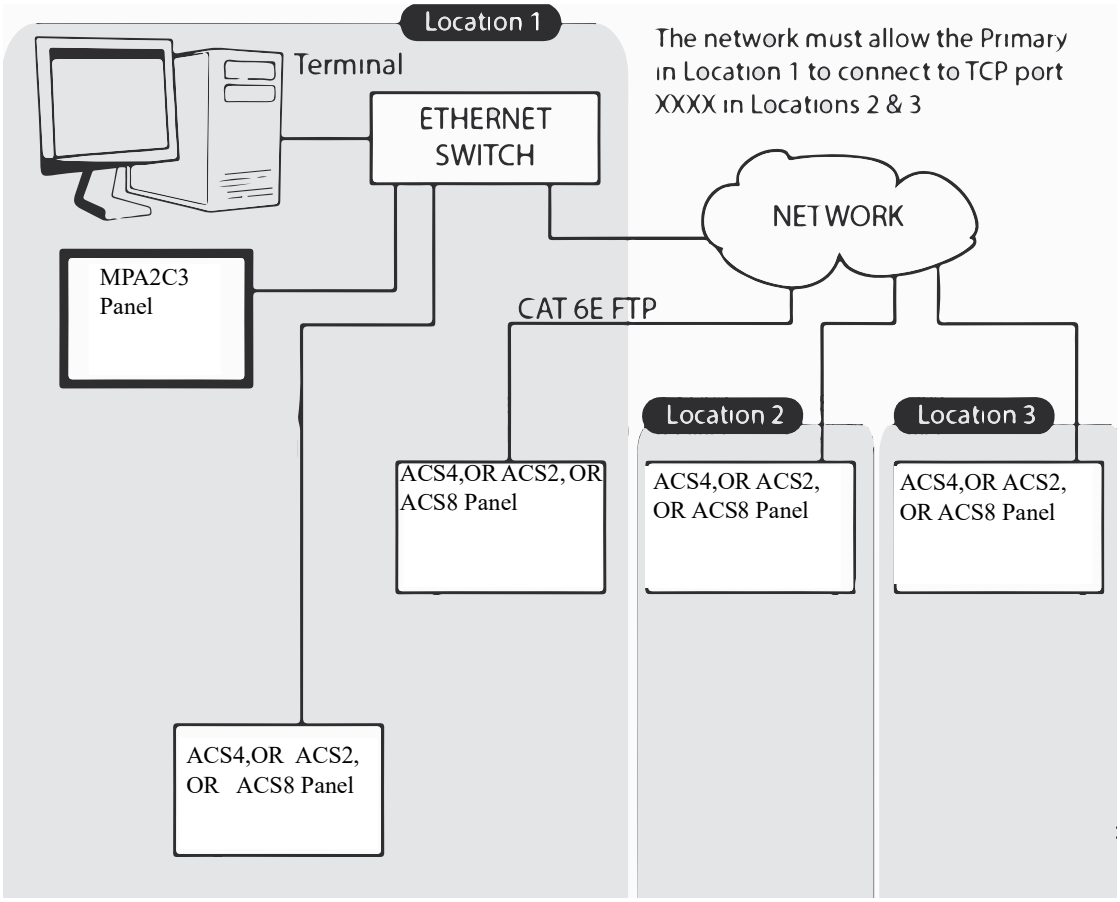
Figure 4-3 RS-485 Loop Connection via MPA2C3



Note: *You should ground each standard metal enclosure panel individually with an Earth Ground*

Ethernet Virtual Loop with All Panels on Common IP Subnet

Figure 4-4 Ethernet Virtual Loop (EVL) with All Panels on Common IP Subnet



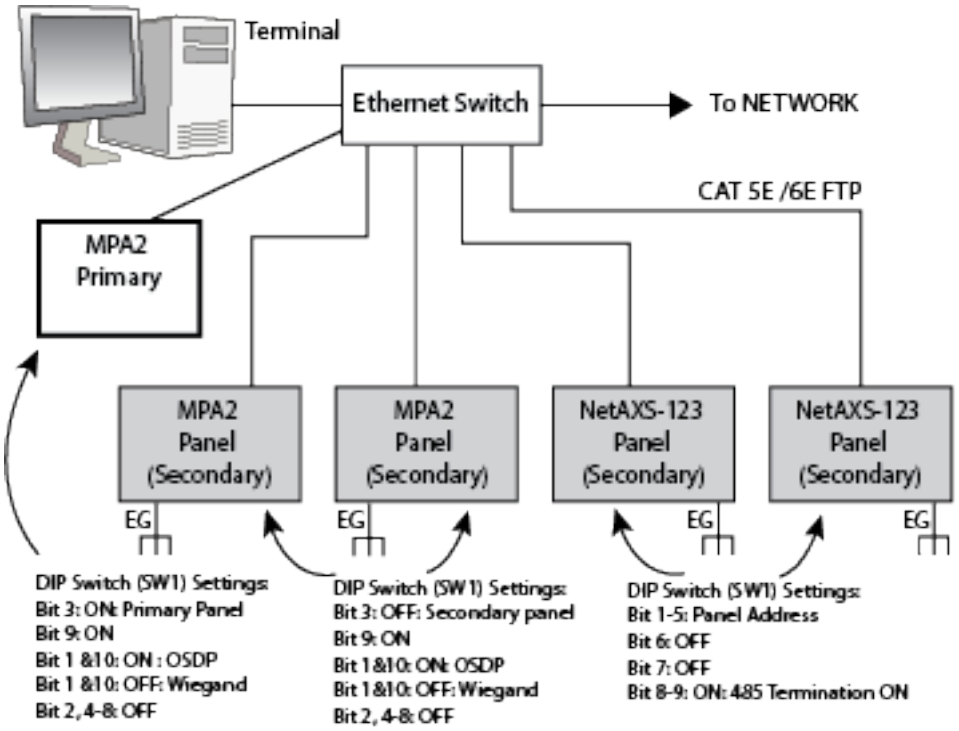
Note: *The network must provide DHCP server (or use dedicated Network configuration with a router, as shown in next section).*

Note: *The Network must provide firewall protection from unauthorized access.*

Note: *EVL connected MPA2 downstream panel communication has not been evaluated by UL.*

Ethernet Virtual Loop – Network Dedicated to Access Control

Figure 4-5 Ethernet Virtual Loop – Network Dedicated to Access Control



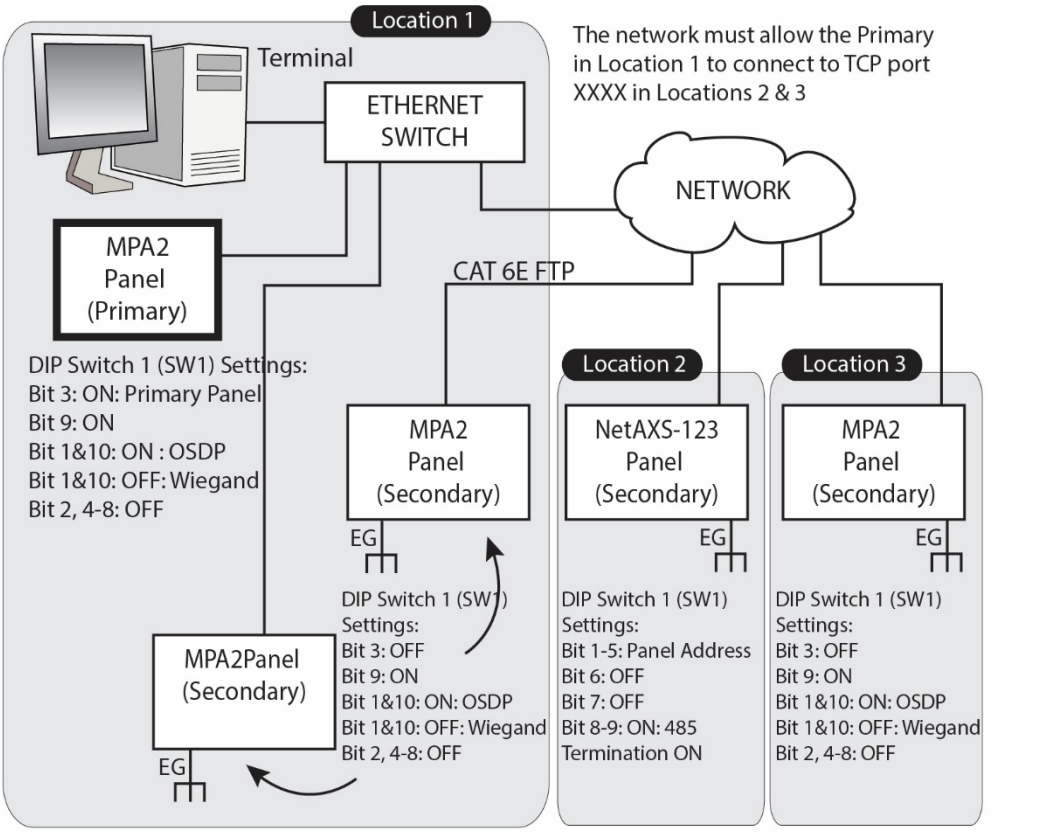
Ethernet Connection with EVL Loop on Dedicated Network

Note: *Router must provide DHCP service.*

Note: *The Router has not been evaluated by UL.*

Ethernet Connection with Ethernet Virtual Loop – Multiple Locations

Figure 4-6 Ethernet Connection with Ethernet Virtual Loop – Multiple Locations



Ethernet Connection with EVL Loop Multiple Locations

Note:

- Network must provide DHCP server (or use dedicated Network configuration with a router shown in next section).
- Recommend that Network provide firewall protection from unauthorized access.
- If the locations are in different Geographic time zones, it is recommended that each time zone
- should be served by its own “Ethernet Virtual Loop”. The reason is that all controllers on the same Ethernet Virtual loop must be set to the same Geographic time zone.
- The
- network must allow the primary panel in Location 1 to connect to TCP port #9876 in Locations 2 and 3.

- Controllers that are on a different subnetwork than the
- primary (which is likely the case for loops across multiple locations) will NOT be automatically discovered by the Primary controller. In this case, it is recommended that you request an IP address reservation from your network provider or administrator. This address will be needed when the user sets up the primary controller. There is a “Manual Registration” button on the EVL registration screen for this purpose.
- The Ethernet Switch has not been evaluated by UL.

CHAPTER

6 HARDWARE SPECIFICATIONS

The specifications in this section apply to panels of both the standard metal enclosure and compact plastic enclosure.

Feature list MPA2C3 2-door panel

MPA2 Technical Data

Technical data MPA2MPSE OR MPA2MPSU	
Operating voltage range and frequency	100-240V AC, 50/60 Hz
Power Supply current consumption	1.1 A
Power Supply output voltage	13.8 V
Power Supply output current	3.3A
Power Supply output ripple	max 138 mV peak to peak
Protection class per EN 60529	IP42
Operating temperature range	-10°C ~ +45°C (including battery)
Storage temperature range	-40°C ~ +85°C
Relative humidity	5% ~ 96% RHNC
Weight with MPA2C3	5.8 kg
Dimensions	410(h) x 360(w) x 120(d) mm

Technical data MPA2C3
Operating power from 13.8VDC Power Supply Unit)

Rated operating voltage	+ and - 10 ~ 19 VDC	13.8VDC
Operating voltage range		13.8V±10%
Operating Current range		5A
Input Power		50W
Max ripple voltage		max 1.0 V peak to peak
Current consumption with Ethernet without external loads		200mA @ 13.8VDC 260mA @ 13.8VDC (FACP in use)
Max current output to all peripherals combined when powered by Mains	All 12V internal outputs and busses	3A
Battery (Only with 13.8VDC Power Supply Unit)		
Battery type	+ and - Battery 12V 7Ah ~ 12Ah	12V Lead-Acid Batteries in acc. with IEC 60896-21 / 60896-22
Battery capacity		7Ah ~ 12Ah
Number of connectable Batteries		1
Max Battery load current		512mA
Battery shutdown voltage		10.5V
Operating power from Power over Ethernet (PoE+)		
Rated operating voltage	Eth1 PoE+ / HOST @ RJ45	42.5-57V
Operating voltage range		according to IEEE 802.3at
Available Power		25.5W
Current consumption with Ethernet without external loads		300mA @ 11.5VDC 375mA @ 11.5VDC (FACP in use)
Max current output to all peripherals combined when powered by PoE+	All 12V internal outputs and busses	1800mA @ 11.5VDC
Panel Power consumption		
Each EOL resistor for monitored input will extend current consumption by	DrCnt Door 1-2, Rex Door 1-2, Aux Inputs IN 9-16	1mA per monitored input
Each relay activation will extend current consumption by	OUT 1-2, AUX1-2 Aux Outputs 5-8	15mA per relay
Maximum current consumption for RS485/ OSDP bus current	OSDP1, OSDP2	500mA per bus
Maximum current consumption for RS485 bus current	RS485 Bus I/O Devices, RS485 Downstream	500mA per bus
Supported doors		
Supported number of doors	DOOR1, DOOR2	WIEGAND: 2 doors/ 2 readers per door
		2 doors/ 2 readers per door
* External power supply must be added to the reader(s) / RS485-OSDP when bus current consumption exceeds maximum specification		
Reader interfaces		

Reader Support	Reader 1-Wieg.A, 1-Wieg.B/ OSDP1, Reader 2-Wieg.A, 2-Wieg.B/ OSDP2	4 WIEGAND readers: 2 doors/ IN AND OUT readers per door
		4 OSDP readers: 2 doors/ IN AND OUT readers per door*
Output Voltage Range at RJ45 reader interfaces when 12V internally powered	Reader 1 - Wieg.A / OSDP1, Reader 1 - Wieg.B / OSDP1	10VDC ~ 14VDC
Maximum current output at RJ45 reader interfaces when 12V internally powered		500mA combined for both Wiegand readers
		500mA for all OSDP readers*
Output Voltage Range at RJ45 reader interfaces when 12V internally powered	Reader 2 - Wieg.A / OSDP2, Reader 2 - Wieg.B / OSDP2	10VDC ~ 14VDC
Maximum current output at RJ45 reader interfaces when 12V internally powered		500mA combined for both Wiegand readers
		500mA for all OSDP readers*
Voltage Range at RJ45 reader interfaces when external voltage is applied at Door 1: V - Ext.V Readers @ push in terminal block	Reader 1 - Wieg.A / OSDP1, Reader 1 - Wieg.B / OSDP1	14VDC ~ 24 VDC
Max output current at RJ45 reader interfaces when external voltage is applied at Door 1: V - Ext.V Readers @ push in terminal block		1000mA combined for both Wiegand readers
		1000mA for all OSDP readers*
Voltage Range at RJ45 reader interfaces when external voltage is applied at Door 2: V - Ext.V Readers @ push in terminal block	Reader 2 - Wieg.A / OSDP2, Reader 2 - Wieg.B / OSDP2	14VDC ~ 24 VDC
Max output current at RJ45 reader interfaces when external voltage is applied at Door 2: V - Ext.V Readers @ push in terminal block		1000mA combined for both Wiegand readers
		1000mA for all OSDP readers*
Outputs		
Output Contact type	OUT 1-2, AUX1-2	Selectable per jumper OUT 1-2, AUX1-2: NO (Normally Open) or NC (Normally Closed)
	Aux Outputs 5-8	NO (Normally Open)
Relay contact max switching voltage and current (dry contact)	OUT 1-2, AUX1-2 @ RJ45	500mA @ 30VDC, 500mA @ 22VAC
	OUT 1-2, AUX1-2 @ push in terminal block**, Aux Outputs 5-8	3A @ 30VDC, 1A @ 22VAC
Max output Voltage at Door1/AUX1 output when OUT1, AUX1 jumper onboard "12V" is used (wet contact)	OUT 1 @ RJ45 or OUT 1 @ push in terminal block**, AUX 1 @ RJ45 or AUX 1 @ push in terminal block**	10VDC ~ 14VDC

Max output current at Door1/AUX1 output when OUT1, AUX1 jumper onboard "12V" is used (wet contact)	OUT 1 @ RJ45 **, AUX 1 @ RJ45 **	500mA per RJ45, limited to 750mA @ 12VDC combined over both door output contacts
	OUT 1 @ push in terminal block**, AUX 1 @ push in terminal block**	750mA @ 12VDC combined over both door output contacts
Max output Voltage at Door2/AUX2 output when OUT2, AUX2 jumper onboard "12V" is used (wet contact)	OUT 2 @ RJ45 or OUT 2 @ push in terminal block**, AUX 2 @ RJ45 or AUX 2 @ push in terminal block**	10VDC ~ 14VDC
Max output current at Door2/AUX2 output when OUT2, AUX2 jumper onboard "12V" is used (wet contact)	OUT 2 @ RJ45 **, AUX 2 @ RJ45 **	500mA per RJ45, limited to 750mA @ 12VDC combined over both door output contacts
	OUT 2 @ push in terminal block**, AUX 2 @ push in terminal block**	750mA @ 12VDC combined over both door output contacts
Relay contact min switching voltage and current	OUT 1-2, AUX1-2, Aux Outputs 5-8	1mA @ 5VDC
** Connect either RJ45 or push in terminal block; do not connect same Door output on both RJ45 and push in terminal block.		
Inputs		
Supervised Input range	DrCnt Door 1-2, DrCnt AUX1-2 Aux Inputs IN 9-16	2k2Ohm +-10% default, 1k, 4k7, 10k Ohm selectable.(supervised selectable)
Digital input	Rex Door 1-2, Rex AUX1-2	Short circuit to GND default (Unsupervised / digital selectable)
Output Voltage Range at Input interface (12V)	DrCnt Door 1-2, DrCnt AUX1-2	10VDC ~ 14VDC
Max output current at input interfaces (12V)	Rex Door 1-2, Rex AUX1-2 Aux Inputs IN 9-16	500mA
RS485 BUS interfaces		
Voltage range at RS485 busses	RS485 BUS I/O devices @ RJ45, RS485 BUS I/O devices @ screw terminal block, RS485 BUS Downstream @ RJ45	10VDC ~ 14VDC
Max output current at RS485 bus I/O devices	RS485 BUS I/O devices @ screw terminal block	500mA in total for RS485 Modulbus combined over RJ45 and screw terminal block RJ45, limited to 500mA
	RS485 BUS I/O devices @ RJ45	
Max output current at RS485 bus Downstream	RS485 BUS Downstream @ RJ45	500mA in total for RS485 Modulbus combined over both RJ45

Feature list MPA2C3 4-door panel

Hardware specifications for MPA2C3 4-door panel are listed in the below table technical data MPA4MPSE OR MPA4MPSU are the same as listed for MPA2MPSE or MPA2MPSU.

Technical data MPA2C3-4		
Operating power from 13.8VDC Power Supply Unit)		
Rated operating voltage	+ and - 10 ~ 19 VDC	13.8VDC
Operating voltage range		10VDC ~ 19VDC
Max ripple voltage		max 1.0 V peak to peak
Current consumption with Ethernet without external loads		200mA @ 13.8VDC 260mA @ 13.8VDC (FACP in use)
Max current output to all peripherals combined when powered by Mains	All 12V internal outputs and busses	3A
Battery (Only with 13.8VDC Power Supply Unit)		
Battery type	+ and - Battery 12V 7Ah ~ 12Ah	12V Lead-Acid Batteries in acc. with IEC 60896-21 / 60896-22
Battery capacity		7Ah ~ 12Ah
Number of connectable Batteries		1
Max Battery load current		512mA
Battery shutdown voltage		10.5V
Operating power from Power over Ethernet (PoE+)		
Rated operating voltage	Eth1 PoE+ / HOST @ RJ45	42.5-57V
Operating voltage range		according to IEEE 802.3at
Available Power		25.5W
Current consumption with Ethernet without external loads		300mA @ 11.5VDC 375mA @ 11.5VDC (FACP in use)
Max current output to all peripherals combined when powered by PoE+	All 12V internal outputs and busses	1800mA @ 11.5VDC
Panel Power consumption		
Each EOL resistor for monitored input will extend current consumption by	DrCnt Door 1-4, Rex Door 1-4, Aux Inputs IN 9-16	1mA per monitored input
Each relay activation will extend current consumption by	OUT 1-4, Aux Outputs 5-8	15mA per relay
Maximum current consumption for RS485/OSDP bus current	OSDP1, OSDP2	500mA per bus

Maximum current consumption for RS485 bus current	RS485 Bus I/O Devices, RS485 Downstream	500mA per bus
Supported doors		
Supported number of doors	DOOR1, DOOR2, DOOR3, DOOR4	WIEGAND: 4 doors/ 1 IN reader per door
		OSDP: 4 doors/ 2 readers per door*
* External power supply must be added to the reader(s) / RS485-OSDP when bus current consumption exceeds maximum specification		
Reader interfaces		
Reader Support	Reader 1/3-Wieg.A / OSDP1, Reader 2/4-Wieg.A / OSDP2	4 IN WIEGAND readers per door
		8 OSDP readers: 4 doors/ IN AND OUT readers per door*
Output Voltage Range at RJ45 reader interfaces when 12V internally powered	Reader 1 - Wieg.A / OSDP1, Reader 3 - Wieg.A / OSDP1	10VDC ~ 14VDC
Maximum current output at RJ45 reader interfaces when 12V internally powered		500mA combined for both Wiegand readers
		500mA for all OSDP readers*
Output Voltage Range at RJ45 reader interfaces when 12V internally powered	Reader 2 - Wieg.A / OSDP2, Reader 4 - Wieg.A / OSDP2	10VDC ~ 14VDC
Maximum current output at RJ45 reader interfaces when 12V internally powered		500mA combined for both Wiegand readers
		500mA for all OSDP readers*
Voltage Range at RJ45 reader interfaces when external voltage is applied at Door 1/3: V - Ext.V Readers @ push in terminal block	Reader 1 - Wieg.A / OSDP1, Reader 3 - Wieg.A / OSDP1	14VDC ~ 24 VDC +/-10%
Max output current at RJ45 reader interfaces when external voltage is applied at Door 1/3: V - Ext.V Readers @ push in terminal block		1000mA combined for both Wiegand readers
		1000mA for all OSDP readers*
Voltage Range at RJ45 reader interfaces when external voltage is applied at Door 2/4: V - Ext.V Readers @ push in terminal block	Reader 2 - Wieg.A / OSDP2, Reader 4 - Wieg.A / OSDP2	14VDC ~ 24 VDC +/-10%
Max output current at RJ45 reader interfaces when external voltage is applied at Door 2/4: V - Ext.V Readers @ push in terminal block		1000mA combined for both Wiegand readers
		1000mA for all OSDP readers*
Outputs		

Output Contact type	OUT 1-4	Selectable per jumper OUT1-4: NO (Normally Open) or NC (Normally Closed)
	Aux Outputs 5-8	NO (Normally Open)
Relay contact max switching voltage and current (dry contact)	OUT 1-4 @ RJ45	500mA @ 30VDC, 500mA @ 22VAC
	OUT 1-4 @ push in terminal block**, Aux Outputs 5-8	3A @ 30VDC, 1A @ 22VAC
Max output Voltage at Door 1/3 output when OUT1, OUT3 jumper onboard "12V" is used (wet contact)	OUT 1 @ RJ45 or OUT 1 @ push in terminal block**, OUT 3 @ RJ45 or OUT 3 @ push in terminal block**	10VDC ~ 14VDC
Max output current at Door 1/3 output when OUT1, OUT3 jumper onboard "12V" is used (wet contact)	OUT 1 @ RJ45 **, OUT 3 @ RJ45 **	500mA per RJ45, limited to 750mA @ 12VDC combined over both door output contacts
	OUT 1 @ push in terminal block**, OUT 3 @ push in terminal block**	750mA @ 12VDC combined over both door output contacts
Max output Voltage at Door 2/4 output when OUT2, OUT4 jumper onboard "12V" is used (wet contact)	OUT 2 @ RJ45 or OUT 2 @ push in terminal block**, OUT 4 @ RJ45 or OUT 4 @ push in terminal block**	10VDC ~ 14VDC
Max output current at Door 2/4 output when OUT2, OUT4 jumper onboard "12V" is used (wet contact)	OUT 2 @ RJ45 **, OUT 4 @ RJ45 **	500mA per RJ45, limited to 750mA @ 12VDC combined over both door output contacts
	OUT 2 @ push in terminal block**, OUT 4 @ push in terminal block**	750mA @ 12VDC combined over both door output contacts
Relay contact min switching voltage and current	OUT 1-4, Aux Outputs 5-8	1mA @ 5VDC
** Connect either RJ45 or push in terminal block; do not connect same Door output on both RJ45 and push in terminal block.		
Inputs		
Supervised Input range	DrCnt Door 1-4, Aux Inputs IN 9-16	2k2Ohm +-10% default, 1k, 4k7, 10k Ohm selectable. (supervised selectable)
Digital input	Rex Door 1-4	Short circuit to GND default (Unsupervised / digital selectable)

Output Voltage Range at Input interface (12V)	DrCnt Door 1-4, Rex Door 1-4, Aux Inputs IN 9-16	10VDC ~ 14VDC
Max output current at input interfaces (12V)		500mA
RS485 BUS interfaces		
Voltage range at RS485 busses	RS485 BUS I/O devices @ RJ45, RS485 BUS I/O devices @ screw terminal block, RS485 BUS Downstream @ RJ45	10VDC ~ 14VDC
Max output current at RS485 bus I/O devices	RS485 BUS I/O devices @ screw terminal block	500mA in total for RS485 Modulbus combined over RJ45 and screw terminal block RJ45, limited to 500mA
	RS485 BUS I/O devices @ RJ45	
Max output current at RS485 bus Downstream	RS485 BUS Downstream @ RJ45	500mA in total for RS485 Modulbus combined over both RJ45

Maximum Output Loading of Power Supply

Use the following guidelines unless you are using Power over Ethernet (PoE+). A maximum current capacity of 3000 mA @ 12±2 VDC is available for all external devices combined when the unit is powered by PSU.

- Maximum current for reader port is 500 mA per door (= 2 Reader Connections).
- Maximum current for relay outputs at self-wetted contact is 750 mA per door (= 2 Relay connections).
- Door
- 1: Rel1/RelAUX1 (for MPA2C3-4, RelAUX1 = Door 3)
- Door
- 2: Rel2/RelAUX2 (for MPA2C3-4, RelAUX2 = Door 4)
- Maximum charge current for the battery wired in series is 128 mA.
- External power is limited to 500 mA/12±2 VDC per AUX Output (2X).
- RS-485
- Interface bus power is limited to 500 mA/12±2 VDC.

Note: *You can find the power consumption amounts of devices by referring to the products' documentation or by using a current meter.*

Example:

Device Element	Current
Door A Reader maximum current	300 mA
Door B Reader maximum current	300 mA
Door A strike or magnetic lock current	500 mA
Door B strike or magnetic lock current	500 mA
Buzzer or sounder current	20 mA
Request to exit switch	30 mA
RS-485 devices	250 mA
Total current for all external devices in this example	1900 mA < 3000 mA

PoE+ Power Limitations

If the panel is powered by PoE+ (Power over Ethernet), you must comply with these specifications for proper operation:

- An MPA2C3 panel powered by PoE+ is 802.3at compliant, providing a maximum of PSE 30W of input power and maximum of 25.5 W of output power to the panel. This input power is split between on-board power consumption and external load consumption. A maximum current capacity of 1600 mA @ 12±2 VDC is available for all external devices combined.

Note: *Two readers per door panel can be supported if the total current is within the external load capacity stated above.*

Note: *You can find the devices' power consumption amounts by referring to the products' documentation or by using a current meter.*

Example:

Device Element	Current
Panel Power Consumption	250 mA
Door strike or magnetic lock current	600 mA
Reader A maximum current	100 mA
Reader B maximum current	100 mA
Buzzer or sounder current	20 mA
Door position switch	20 mA
Request to exit switch	30 mA
Total current for this example	1120 mA

If the total current consumption of your external devices exceeds the 1600 mA maximum current, use one of the following system configurations:

- Power the panel with an external power supply.
- Power some or all the external devices with an external power supply to lower the total external current powered by the panel below 1600 mA.

The maximum power available in the 802.3 at standard is 25.5W. This limit is generally at 42.5 – 57 VDC, and it is measured at the output of the power injector or PoE switch. Line losses cause a decrease in the power available at the panel when you use longer Ethernet cable. You can minimize these line losses by using either of the following methods:

- Connecting the MPA2C3 panel to the power injector (Midspan) or PoE+ switch with the shortest possible Ethernet cable length.
- Midspan power supply, also known as a PoE+ power injector, is an additional PoE+ power. Class 4 can only be used by IEEE 802.3at (Type 2) devices, requiring valid Class 2 and Mark 2 currents for the power up stages.

Battery Supply

The MPA2C3 Enclosure panel provides room for 12 VDC, 7Ah / 12 VDC, 12Ah sealed lead acid battery. If PSU and battery are both connected, the panel will use PSU as primary power and a battery as a secondary power. MPA2C3 power management circuit will manage the battery charging. When PSU goes down, the panel will continue to work on Battery. When the battery goes down, the panel shuts down.

- In that case, you can connect the cable to Ethernet 1 RJ45 port to reboot the system through PoE+.
- The battery recommended by Honeywell is 12 VDC,7 Ah (MPN:MPA2BAT7). The other battery purchased by customer should meet the local regulations.

Cables

Use industry-standard cables that meet the following specifications:

Table 6-1 Reader Cables

Cable Specifications				
Connected device	Connection to panel	Description	Wire diameter	Maximum distance
Readers	RJ45 READER terminal	8 wire shielded cable (Wiegand) 4 wire twisted pair shielded cable suitable for RS485 (OSDP) CAT5E / CAT6 / CAT7 S/FTP or F/UTP	AWG 18-26	See Recommendations
Alarm sensors, door sensors, REX/ egress buttons	Alarm Inputs Push in Terminal block	2 wire shielded cable	AWG 22-24	up to 1000 ft (300m)
	RJ45 DOOR Terminal	CAT5E / CAT6 / CAT7 S/FTP or F/UTP	AWG 18-26	See Recommendations
Door Locking devices	Relay / AUX Outputs Push in Terminal block	2 wire shielded cable	AWG 18-26	See Recommendations
	RJ45 DOOR Terminal	CAT5E / CAT6 / CAT7 S/FTP or F/UTP	AWG 18-26	See Recommendations

Recommended cable distances for readers and peripheral devices.

As readers can be connected only via the RJ45 terminals, the intention is to use CAT cable. Via the MPA2RJ - RJ45 to terminal block convertor - other types of cable can be used as well. The most common and most economic available cable currently is CAT 5E. We recommend that CAT5E F/UTP cable is used.

Note: *Use only CAT x cable with 100% copper wires. We do not recommend cable with CCA (Copper Cladded Aluminum) wires or CCS (Copper Cladded Steel) wires as this decreases the maximum cable length to readers and locks significantly.*

Note: *When using the red RJ45 terminal connectors for door peripherals (locking device, door contact and REX button) it is likely that the same cable will be used. The tests have been performed with a 200mA lock.*

The below tables with recommendations demonstrate verified cable lengths under the following conditions:

1. Cable used for testing CAT5E F/UTP

   a. 4x2xAWG24

   - Other Gauges / wire diameters have not been tested.
   - Do not use AWG26 cables
   - Cable with AWG<24 may specify longer cable lengths but have not been verified.

   b. 100% Copper solid wires

   - CCA (Copper Cladded Aluminum) and CCS (Copper Cladded Steel) type CAT cable will shorten the maximum length.
   - Tests with CCA and CCS type wires have not been performed.

3. Readers tested:

   a. Honeywell luminAXS 4700 (OSDP) factory default configuration
   b. Honeywell luminAXS 4716 (OSDP) factory default configuration
   c. HID Signo 40K (Standard) (OSDP setting) further factory default configuration
   d. Any change from factory default configuration will affect the cable length, which has not been tested or verified.

4. Lock tested:

   a. 200mA lock, power-to-lock type lock (Fail safe) ; this is only a tested suggestion and not a specification. Operating voltage for the lock is 10.5VDC – 13VDC.
   b. Note: every type of lock has its own operating voltage range specifications, which affects the maximum cable length.

5. Panel is powered by mains power supply with 12V/7Ah battery back-up.

   a. The maximum length is specified with ONLY BATTERY POWERED panel.
   b. Cable length specified at battery minimum voltage is 0.4V lower than the fully charged
   c. This means for a panel (in Normal Door Access Mode) with a 200mA power-to-lock locking device and a reader:

   - Approx. 4 hours battery powered with 1 door / single reader
   - Approx. 3 hours battery powered with 2 doors / single reader
   - Approx. 2 hours battery powered with 4 doors / single reader.

Note: *For certified CAT 5E network a maximum cable length of 90m (295ft) is specified.*

Note: *Reader specifications such as voltage range affect cable length specification. Any reader not specified below need to be tested on functionality with desired cable length before installing in a site.*

The Following scenarios are given below:

- Single door with 2 readers or 2 doors with one reader each, valid for both Wiegand and OSDP reader configurations
- 2 doors with 2 readers each, valid only for OSDP reader configurations.

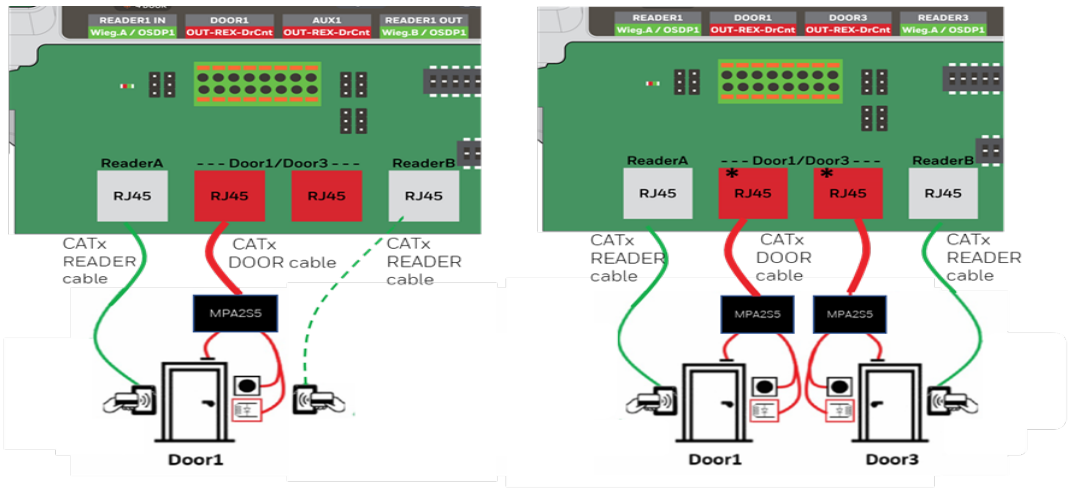
As the examples are demonstrated for DOOR1 (READER IN / READER OUT) or DOOR1 / DOOR3, please note that the same results also apply for DOOR2 (READER IN / READER OUT) or DOOR2 / DOOR4

Dimensions are either in Feet or in Meters

Recommended cable lengths in Feet

Scenario 1: ONE Honeywell OmniSmart / HID SIGNO reader per RJ45 Reader terminal

- Single door with 2 readers or 2 doors with one reader each, valid for both Wiegand and OSDP reader configurations
- Reader type: Honeywel OmniSmart or HID SIGNO reader



OmniSmart / HID SIGNO reader, standard configuration

Panel Power source

Worst case: battery power is applied

Mains + Battery	Length ft	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*	
	AWG26	115	100			Calculated
	AWG24	180	155	85	60	Verfied
	AWG23	230	195	105	80	Calculated
	AWG22	285	250	130	100	Calculated
	AWG20	455	395	210	160	Calculated
	AWG18	725	625	335	250	Calculated

PoE+ powered

PoE+ No Battery	Length ft	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*
	AWG26	155	145		
	AWG24	245	235	125	95
	AWG23	310	295	155	120
	AWG22	390	370	200	150
	AWG20	620	590	315	235
	AWG18	990	940	500	375

Recommended OSDP cable length per cable type
minimal 2x2 twisted pair, 100% copper wires

Note: limited to 750mA* combined over DOOR1+DOOR3
limited to 500mA combined over READER1+READER3

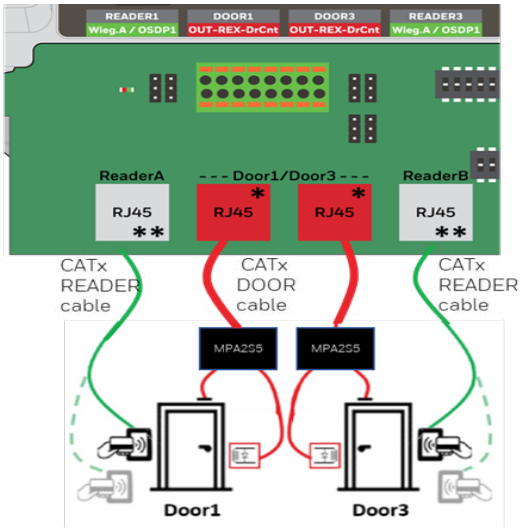
Note 1 : When using CAT x cable, certified CAT x networks have 90m (295ft) maximum length
Note 2 : AWG20 and AWG18 cables require MPA2RJ
Note 3 : OSDP RS485 cables require 120 Ohm cable termination at the ends of the full OSDP bus.
See manual for further instructions

Note 4: Wiegand readers are limited to 495ft cable length where reader cable length is exceeding 495ft

Note 5: Cable length determined based in UL requirements: reader voltage range at 12VDC -15% / +10%

Scenario 2: TWO Honeywell OmniSmart / HID SIGNO reader per RJ45 Reader terminal

- 2 doors with 2 readers each, valid only for OSDP reader configurations
- Reader type: Honeywel OmniSmart or HID SIGNO reader



Two OmniSmart / HID SIGNO OSDP readers, standard configuration - in Y-formation

Panel Power source

Worst case: battery power is applied

Mains + Battery	Length ft	Reader ⓐ Standard config	Locking Device ⓐ 200mA	375mA*	500mA*	
	AWG26	40	100			Calculated
	AWG24	**65**	**155**	**85**	**60**	**Calculated**
	AWG23	85	195	105	80	Calculated
	AWG22	**105**	**250**	**130**	**100**	**Calculated**
	AWG20	165	395	210	160	Calculated
	AWG18	**265**	**625**	**335**	**250**	**Calculated**

PoE+ powered

PoE+ No Battery	Length ft	Reader ⓐ Standard config	Locking Device ⓐ 200mA	375mA*	500mA*
	AWG26	115	145		
	AWG24	**180**	**235**	**125**	**95**
	AWG23	230	295	155	120
	AWG22	**285**	**370**	**200**	**150**
	AWG20	455	590	315	235
	AWG18	**725**	**940**	**500**	**375**

Recommended OSDP cable length per cable type

minimal 2x2 twisted pair, 100% copper wires

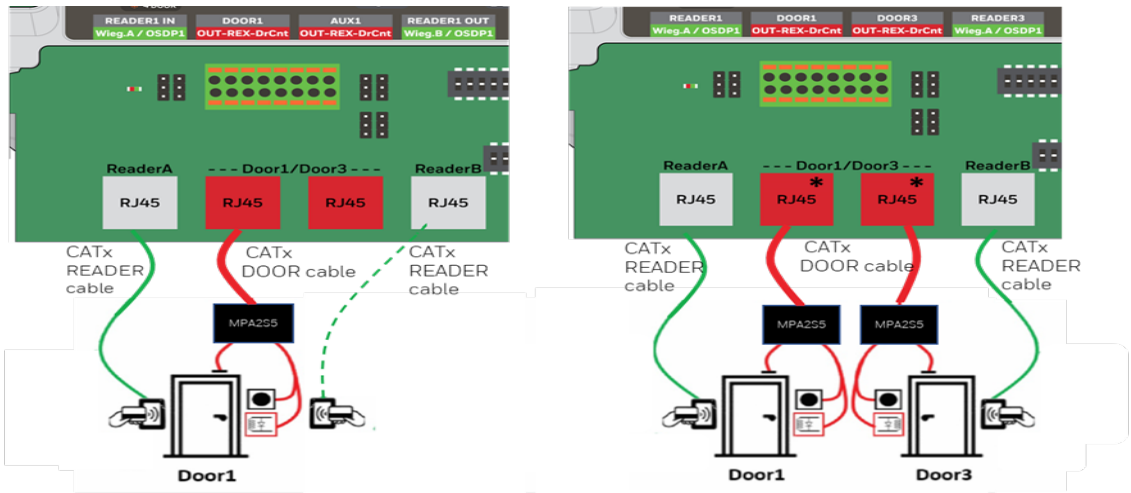
Note: limited to 750mA* combined over DOOR1+DOOR3
limited to 500mA combined over READER1+READER3**
requires external PSU for reader power supply (1000mA combined)

Note 1 : When using CAT x cable, certified CAT x networks have 90m (295ft) maximum length
Note 2 : AWG20 and AWG18 cables require MPA2RJ
Note 3 : OSDP RS485 cables require 120 Ohm cable termination at the ends of the full OSDP bus.
See manual for further instructions

Note 4: Cable length determined based in UL requirements: reader voltage range at 12VDC -15% / +10%

Scenario 3: ONE Honeywell luminAXS reader per RJ45 Reader terminal

- Single door with 2 readers or 2 doors with one reader each, valid for both Wiegand and OSDP reader configurations
- Reader type: luminAXS reader



LuminAXS reader, standard configuration

Panel Power source

Worst case: battery power is applied

Mains + Battery	Length ft	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*	
	AWG26	205	100			Calculated
	AWG24	330	155	85	60	Verified
	AWG23	415	195	105	80	Calculated
	AWG22	520	250	130	100	Calculated
	AWG20	830	395	210	160	Calculated
	AWG18	1320	625	335	250	Calculated

PoE+ powered

PoE+ No Battery	Length ft	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*
	AWG26	310	145		
	AWG24	490	235	125	95
	AWG23	620	295	155	120
	AWG22	785	370	200	150
	AWG20	1245	590	315	235
	AWG18	1980	940	500	375

Recommended OSDP cable length per cable type
minimal 2x2 twisted pair, 100% copper wires

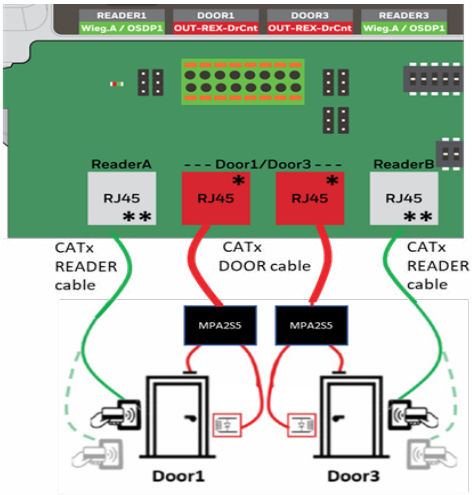
Note: limited to 750mA* combined over DOOR1+DOOR3
limited to 500mA combined over READER1+READER3

Note 1 : When using CAT x cable, certified CAT x networks have 90m (295ft) maximum length
Note 2 : AWG20 and AWG18 cables require MPA2RJ
Note 3 : OSDP RS485 cables require 120 Ohm cable termination at the ends of the full OSDP bus.
See manual for further instructions

Note 4: Wiegand readers are limited to 495ft cable length where reader cable length is exceeding 495ft

Scenario 4: TWO Honeywell luminAXS readers per RJ45 Reader terminal

- 2 doors with 2 readers each, valid only for OSDP reader configurations
- Reader type:
- luminAXS OSDP reader



Two LuminAXS OSDP readers, standard configuration - in Y-formation

Panel Power source

Worst case: battery power is applied

Mains + Battery	Length ft	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*	
	AWG26	115	100			Calculated
	AWG24	180	155	85	60	Verified
	AWG23	230	195	105	80	Calculated
	AWG22	285	250	130	100	Calculated
	AWG20	455	395	210	160	Calculated
	AWG18	725	625	335	250	Calculated

PoE+ powered

PoE+ No Battery	Length ft	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*
	AWG26	185	145		
	AWG24	295	235	125	95
	AWG23	370	295	155	120
	AWG22	470	370	200	150
	AWG20	745	590	315	235
	AWG18	1185	940	500	375

Recommended OSDP cable length per cable type
minimal 2x2 twisted pair, 100% copper wires

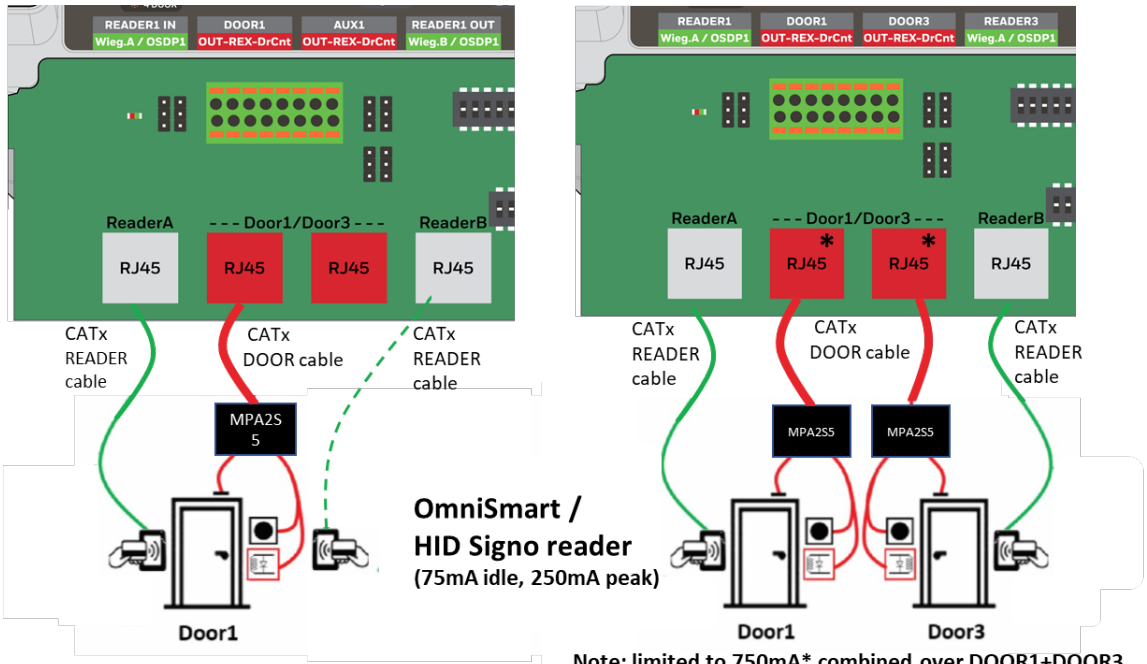
Note: limited to 750mA* combined over DOOR1+DOOR3
limited to 500mA combined over READER1+READER3**
requires external PSU for reader power supply (1000mA combined)

Note 1 : When using CAT x cable, certified CAT x networks have 90m (295ft) maximum length
Note 2 : AWG20 and AWG18 cables require MPA2RJ
Note 3 : OSDP RS485 cables require 120 Ohm cable termination at the ends of the full OSDP bus.
See manual for further instructions

Recommended cable lengths in Meters

Scenario 1: ONE Honeywell OmniSmart / HID SIGNO reader per RJ45 Reader terminal

- Single door with 2 readers or 2 doors with one reader each, valid for both Wiegand and OSDP reader configurations
- Reader type: Honeywel OmniSmart or HID SIGNO reader



Power source

Worst Case Battery power is applied

Note: limited to 750mA* combined over DOOR1+DOOR3
limited to 500mA combined over READER1+READER3

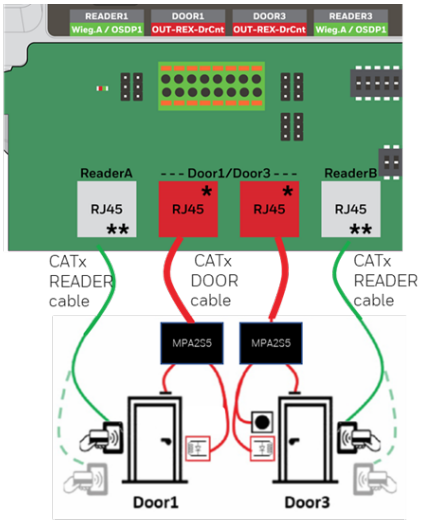
	Length Meter	Reader @ 250mA Pk	Locking Device @ 200mA	375mA*	500mA*
Mains + Battery	AWG26	15	10		
	AWG24	**20**	**15**	**5**	**5**
	AWG23	25	20	10	5
	AWG22	**35**	**25**	**15**	**10**
	AWG20	55	40	20	15
	AWG18	**90**	**70**	**35**	**25**

	Length Meter	Reader @ 250mA Pk	Locking Device @ 200mA	375mA*	500mA*
PoE+	AWG26	15	15		
	AWG24	**30**	**30**	**15**	**10**
	AWG23	35	35	20	15
	AWG22	**45**	**45**	**25**	**20**
	AWG20	75	75	40	30
	AWG18	**120**	**120**	**65**	**45**

For AWG18 and AWG20, use MPA2RJ to connect to the panel

Scenario 2: TWO Honeywell OmniSmart / HID SIGNO reader per RJ45 Reader terminal

- 2 doors with 2 readers each, valid only for OSDP reader configurations
- Reader type: Honeywel OmniSmart or HID SIGNO reader



Two OmniSmart / HID SIGNO OSDP readers, standard configuration - in Y-formation

Panel Power source

Worst case: battery power is applied

Mains + Battery	Length Meter	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*	
	AWG26	15	30			Calculated
	AWG24	20	50	25	20	Calculated
	AWG23	25	60	30	25	Calculated
	AWG22	30	75	40	30	Calculated
	AWG20	50	120	65	50	Calculated
	AWG18	80	190	100	75	Calculated

PoE+ powered

PoE+ No Battery	Length Meter	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*
	AWG26	35	45		
	AWG24	55	70	40	30
	AWG23	70	90	50	35
	AWG22	85	115	60	45
	AWG20	140	180	95	70
	AWG18	220	285	155	115

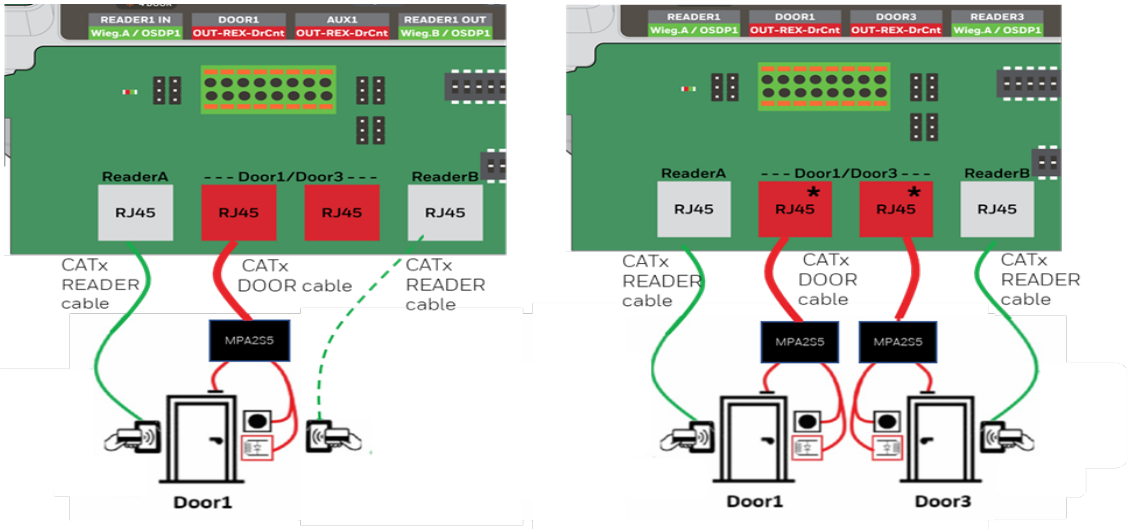
Recommended OSDP cable length per cable type
minimal 2x2 twisted pair, 100% copper wires

Note: limited to 750mA* combined over DOOR1+DOOR3
limited to 500mA combined over READER1+READER3**
requires external PSU for reader power supply (1000mA combined)

Note 1 : When using CAT x cable, certified CAT x networks have 90m (295ft) maximum length
Note 2 : AWG20 and AWG18 cables require MPA2RJ
Note 3 : OSDP RS485 cables require 120 Ohm cable termination at the ends of the full OSDP bus.
See manual for further instructions
Note 4: Cable length determined based in UL requirements: reader voltage range at 12VDC -15% / +10%

Scenario 3: ONE Honeywell luminAXS reader per RJ45 Reader terminal

- Single door with 2 readers or 2 doors with one reader each, valid for both Wiegand and OSDP reader configurations
- Reader type: luminAXS reader



LuminAXS reader, standard configuration

Panel Power source

Worst case: battery power is applied

	Length Meter	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*	
Mains + Battery	AWG26	65	30			Calculated
	AWG24	100	50	25	20	Verified
	AWG23	125	60	30	25	Calculated
	AWG22	160	75	40	30	Calculated
	AWG20	255	120	65	50	Calculated
	AWG18	400	190	100	75	Calculated

PoE+ powered

	Length Meter	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*
PoE+ No Battery	AWG26	95	45		
	AWG24	150	70	40	30
	AWG23	190	90	50	35
	AWG22	240	115	60	45
	AWG20	380	180	95	70
	AWG18	605	285	155	115

Recommended OSDP cable length per cable type
minimal 2x2 twisted pair, 100% copper wires

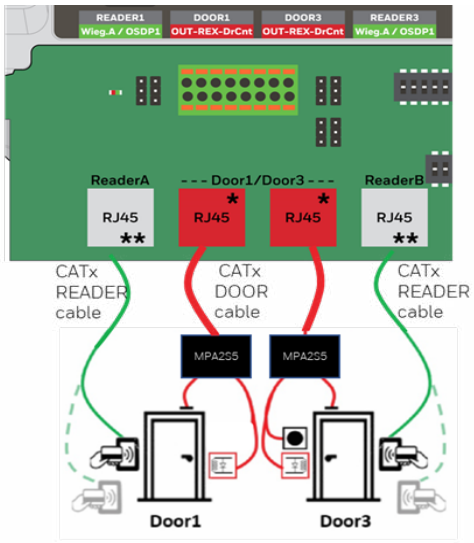
Note: limited to 750mA* combined over DOOR1+DOOR3
limited to 500mA combined over READER1+READER3

Note 1 : When using CAT x cable, certified CAT x networks have 90m (295ft) maximum length
Note 2 : AWG20 and AWG18 cables require MPA2RJ
Note 3 : OSDP RS485 cables require 120 Ohm cable termination at the ends of the full OSDP bus.
See manual for further instructions

Note 4: Wiegand readers are limited to 150m cable length where reader cable length is exceeding 150m

Scenario 4: TWO Honeywell luminAXS readers per RJ45 Reader terminal

- 2 doors with 2 readers each, valid only for OSDP reader configurations
- Reader type: l
- LuminAXS OSDP reader



Two LuminAXS OSDP readers, standard configuration - in Y-formation

Panel Power source

Worst case: battery power is applied

Mains + Battery	Length Meter	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*	
	AWG26	35	30			Calculated
	AWG24	55	50	25	20	Verified
	AWG23	70	60	30	25	Calculated
	AWG22	85	75	40	30	Calculated
	AWG20	140	120	65	50	Calculated
	AWG18	220	190	100	75	Calculated

PoE+ powered

PoE+ No Battery	Length Meter	Reader @ Standard config	Locking Device @ 200mA	375mA*	500mA*
	AWG26	55	45		
	AWG24	90	70	40	30
	AWG23	115	90	50	35
	AWG22	145	115	60	45
	AWG20	230	180	95	70
	AWG18	360	285	155	115

Recommended OSDP cable length per cable type
minimal 2x2 twisted pair, 100% copper wires

Note: limited to 750mA* combined over DOOR1+DOOR3
limited to 500mA combined over READER1+READER3**
requires external PSU for reader power supply (1000mA combined)

Note 1 : When using CAT x cable, certified CAT x networks have 90m (295ft) maximum length
Note 2 : AWG20 and AWG18 cables require MPA2RJ
Note 3 : OSDP RS485 cables require 120 Ohm cable termination at the ends of the full OSDP bus.
See manual for further instructions

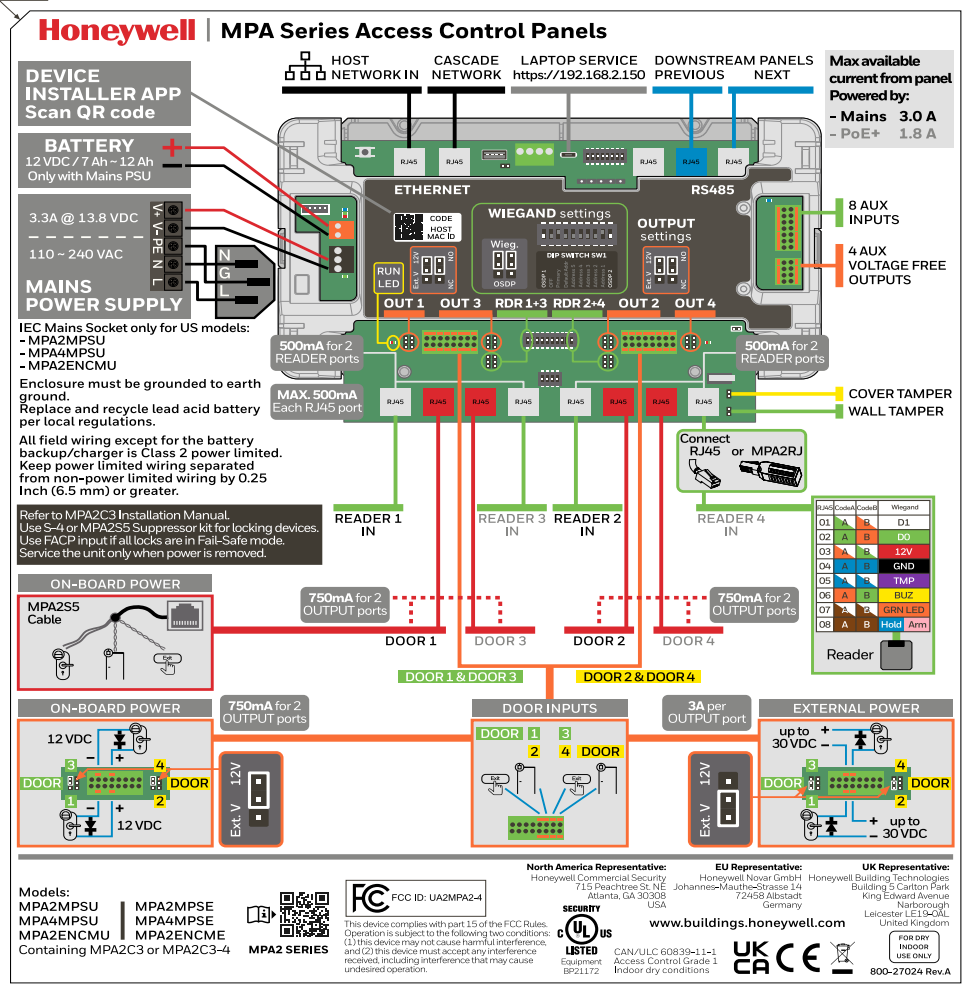
Enclosure Label and Symbols EU:EMC/CE

FALCON NXS - MPA1.4
Door Label for Metal Enclosure

https://hwll.co/MPA2C3

C5

REVISION	DATE	REV
FIRST RELEASE	2022.9	A



NOTES

1. MATERIAL:
   Non Removable Label Per 000-00628
   .002 IN (0.05 mm) THICK WHITE VINYL OR MYLAR
   WITH PRESSURE SENSITIVE ADHESIVE, MEET UL STANDARD.
2. LABEL SIZE: 270 X 245 mm
   RELEASE PAPER SIZE: 275 X 250 mm
3. PART TO BE RoHS COMPLIANT PER ES746, LATEST REVISION.

SPOT COLORS

- White
- PMS Black 7C
- PMS Black 7C 90%
- PMS Cool Gray 11C
- PMS 1645C
- PMS 1795C
- PMS 360C
- PMS 7461C
- PMS Cool Gray 9C
- PMS Cool Gray 9C 50%
- PMS Cool Gray 9C 25%
- PMS 803C
- PMS Red 0331C
- PMS 527C
- PMS 731C

FONTS

Honeywell Sans
BOOK 2.5 - H1.8
BOLD 2.5 - H1.8
BOLD 3.5 - H2.5
MEDIUM 4 - H3.0
EXTROBOLD 3 - H2.2
EXTROBOLD 4 - H3.0
EXTROBOLD 5 - H3.6
EXTROBOLD 6 - H4.3

TOLERANCES (UNLESS OTHERWISE SPECIFIED)

0-99.99mm .X= ± .25 .XX= ± .13	ANGULAR ± .5
100-179.99mm .X= ± .50 .XX= ± .25	1:1 SCALE
180mm & OVER .X= ± .75 .XX= ± .50	

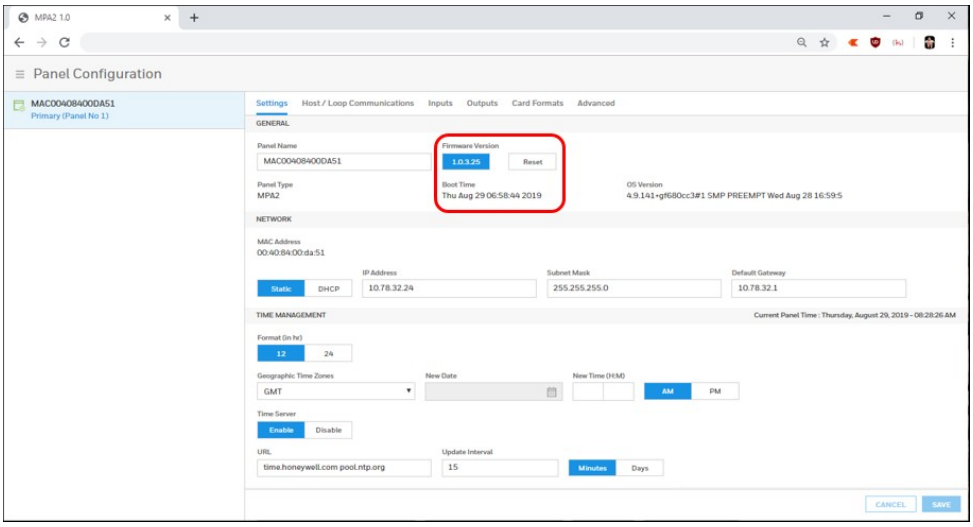
Honeywell	PROJECT: FALCON MPA1.4	DESIGNER / DRAWN BY: ME - KONG, VALLEY	CMF: See notes	NOTES: Label, Enclosure Falcon MPA1.4	REV: A	PAGE: 1 of 1
	PART #: 800-27024	LAST EDITED DATE: See table	FILE NAME			

Symbols	Description
CE	CE marking is a certification mark that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA). The CE marking is the manufacturer's declaration that the product meets the requirements of the applicable EC directives
UK CA	The UKCA (UK Conformity Assessed) marking is a new UK product marking that is used for goods being placed on the market in Great Britain (England, Wales, and Scotland). It covers most goods which previously required the CE marking.
	DIRECTIVE 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on waste electrical and electronic equipment (WEEE), Art.14, 2-5) This symbol on our product shows a crossed-out "wheelie-bin" as required by law regarding the Waste of Electrical and Electronic Equipment (WEEE) disposal. This indicates your responsibility to contribute in saving the environment by proper disposal of this Waste i.e. Do not dispose of this product with your other wastes. To know the right disposal mechanism please check the applicable law.

CHAPTER

7 FIRMWARE SPECIFICATION

Panel Settings



Note: *Due to Cyber Security, firmware upgrade /downgrade will be restricted to just one firmware version. In case of urgency (Rollback), firmware downgrade will be allowed for a grace period of 30 days only*.*

Firmware Upgrades

Panel Requirements

MPA2C3 panels must first be upgraded to the latest release firmware version Refer to the release notes for more information.

Note: *The secondary (downstream) EVL panels should be upgraded first and then the primary (Primary) panel(s).*

Note: *For detailed upgrade instructions, refer to th MPA2C3 User Manual.*

4-door License

A 4-door license is required for 3-door or 4-door access control unit. To obtain 4-door access control system, you need to buy the specific license. Once the license file is applied on the panel then user can use the 4-door controller. Please contact Honeywell Customer Support team for 4-door license.

Basic Standalone Operation

Card Read / Door Lock Operation

1. Present a card to a reader.
2. The reader sends the card number to a reader input on the panel.
3. The panel searches its database and:

- If it is a valid card, activate the door relay associated with the particular reader input. The card is valid when it is in the card database on the panel and the current time and date conforms to the time zone associated with the card.
- If it is not a valid card, the door relay remains locked.

Door Egress (REX) / Door Lock / Door Status Operation

1. Activate the door egress input (REX).
2. The panel activates the door relay associated with the particular door egress input for a default pulse time of 10 seconds.

If the door status goes from close to open to close again during the 10 second door open period, the door relay will be immediately de-activated.

CHAPTER

8 MAINTENANCE

Perform the following maintenance on the MPA2C3 enclosure:

a. Change the backup battery every two to two-and-a-half years.

Note: *The power supply contains no serviceable parts. There is no replaceable fuse inside the power supply.*

CHAPTER

9 TROUBLESHOOTING

Table 9-1 Troubleshooting Problems and Solutions

Problem	Solution
The panel powers up, but it does not respond to any communication, cards reads, or input activation.	Ensure that the Address DIP switches are set the correct values. Turn off the power (including battery), change the settings, and re-apply the power.
No communications exist with the Ethernet port.	Only a panel set to be a Primary (Set Bit 3 of DIP switch 1 to ON) will have communications on the Ethernet port. If you need to use that port to access the panel, turn off the power (including the battery), change the switch setting, and reapply the power. ***Note:*** *That if the panel is normally not a Primary on a Multidrop communication bus, then the Host RS-485 connection J7/8 should also be disconnected while Bit 3 of DIP switch 1 is ON. After completion of the Ethernet session, turn off the power (including the battery), change the switch setting, reconnect the Host RS-485 terminal block, and re-apply the power.*

The panel address is unknown	Option 1: Set the MPA2C3 panel's DIP switch 4 to ON. This will default the IP address to 192.168.1.150. Option 2: Connect to the panel through the USB port using a Type-A USB to Type-C USB cable and the USB driver. The default USB Ethernet IP address is: 192.168.2.150.

CHAPTER

10 APPENDIX

This appendix calls out Underwriter's Laboratory product listing considerations for product deployment. These statements refer to:

Model	Description
MPA2C3	2 door Access Control Panel
MPA2C3-4	4 door Access Control Panel
MPA2MPSU	2 door Access Control Panel Kit
MPA4MPSU	4 door Access Control Panel Kit
MPA2ENCMU	Access Control assemblies, Metal enclosure with PSU

These products were tested to **CAN/ULC 60839-11-1:2022, ALARM AND ELECTRONIC SECURITY SYSTEMS - PART 11-1: ELECTRONIC ACCESS CONTROL SYSTEMS - SYSTEM AND COMPONENTS REQUIREMENTS (IEC60839-11-1:2013, MOD)**, Edition 2, Issue Date 05/31/2022 and **UL 294, STANDARD FOR ACCESS CONTROL SYSTEM UNITS**, Edition 7, Revision Date 10/08/2018 Standards.

Tested readers configurations include HID Signo 20(OSDP & Wiegand) manufactured by HID, OmniProx OP30 (Wiegand), Omni Smart 20K (OSDP & Wiegand) and OmniProx OP10 (Wiegand), all manufactured by Honeywell.

The UL testing operating temperature range is -10°C ~ +49°C under Variable Ambient Test. And the UL testing relative humidity is 93% at 32°C under Humidity Test.

Output Voltage for ReaderA/Door1: 10.34 Vdc to 12Vdc.

The Optional features detailed in ULC 60839-11-1:2022 Second Edition May 31, 2022 were not verified by UL.

The total max load to the system of adding additional battery lo ad will be around 3.3A.

Note: ***These products have undergone ULC 60839-11-1 test with*** *Grade* ***I*** *and Indoor use.*

When main power supply mode (with one 12V/7AH battery), these products have undergone UL 294 test with level:

Attack Class I

Line Security Level I

Endurance Level IV

Standby Power Level IV

Note: *UL testing was conducted with battery Model CA1270, manufactured by CASIL SEMICONDUCTOR LTD.*

When PoE mode (with out backup battery), these products have under gone UL 295test with level:

Attack Class I

Line Security Level I

Endurance Level IV

Standby Power Level I

Note: *UL testing at PoE mode was conducted with the product powered from a UL 62368-1 Listed Model T8124 High PoE-60W injector, manufactured by AXIS. Customers should use UL 294 or UL 62368-1 listed PoE injector when products are powered by PoE.*

Main setting configuration under UL testing

Primary input

Device Under Test	Rated Voltage (V)	AC/DC	Hz	Rated Current	A/mA
MPA4MPSU (power supply)	100	AC	50	1.1	A
	100	AC	60	1.1	A
	120	AC	50	1.1	A
	120	AC	60	1.1	A
	240	AC	50	1.1	A
	240	AC	60	1.1	A
MPA4MPSU (POE)	57	DC	0	0.6	A
MPA2C3/MPA2C3-4 (module)	13.8	DC	0	3.3	A

Secondary Input

Device Under Test	Rated Voltage (V)
MPA4MPSU (battery supply)	12VDC

Powered Output

Device Under Test	Circuit	Rated Voltage (V)	Rated Current	A/mA
MPA4MPSU	(J11+J14) readers 1+3	12Vdc	750	mA
MPA4MPSU	(J12) door 1	12Vdc	500	mA
MPA4MPSU	(J15+J18) readers 2+4	12Vdc	750	mA
MPA4MPSU	(J16) door 2	12Vdc	500	mA

Note: *Total 3A load to 12V rail under AC in mode; 1.6A load to 12V rail under POE+ mode.*

Device Under Test	Rated Current	Total Current
Reader 1	500mA	750mA
Reader 2	500mA	
Reader 3	500mA	750mA
Reader 4	500mA	
door 1	500mA	750mA
door 2	500mA	
door 3	500mA	750mA
door 4	500mA	

Dry contact Output

Device Under Test	Circuit	Rated Voltage (V)	Rated Current	A/mA
MPA4MPSU	(J12) door 1 Relay (K1)	30Vdc	3	A
	(J16) door 2 Relay (K3)	30Vdc	3	A

Note: *OUT 1-2, AUX1-2 @ push in terminal block**, Aux Outputs 5-8.*

Honeywell | THE FUTURE IS WHAT WE MAKE IT

Document: 800-27039 Installation Guide 12/2022

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www.honeywell.com/security/de