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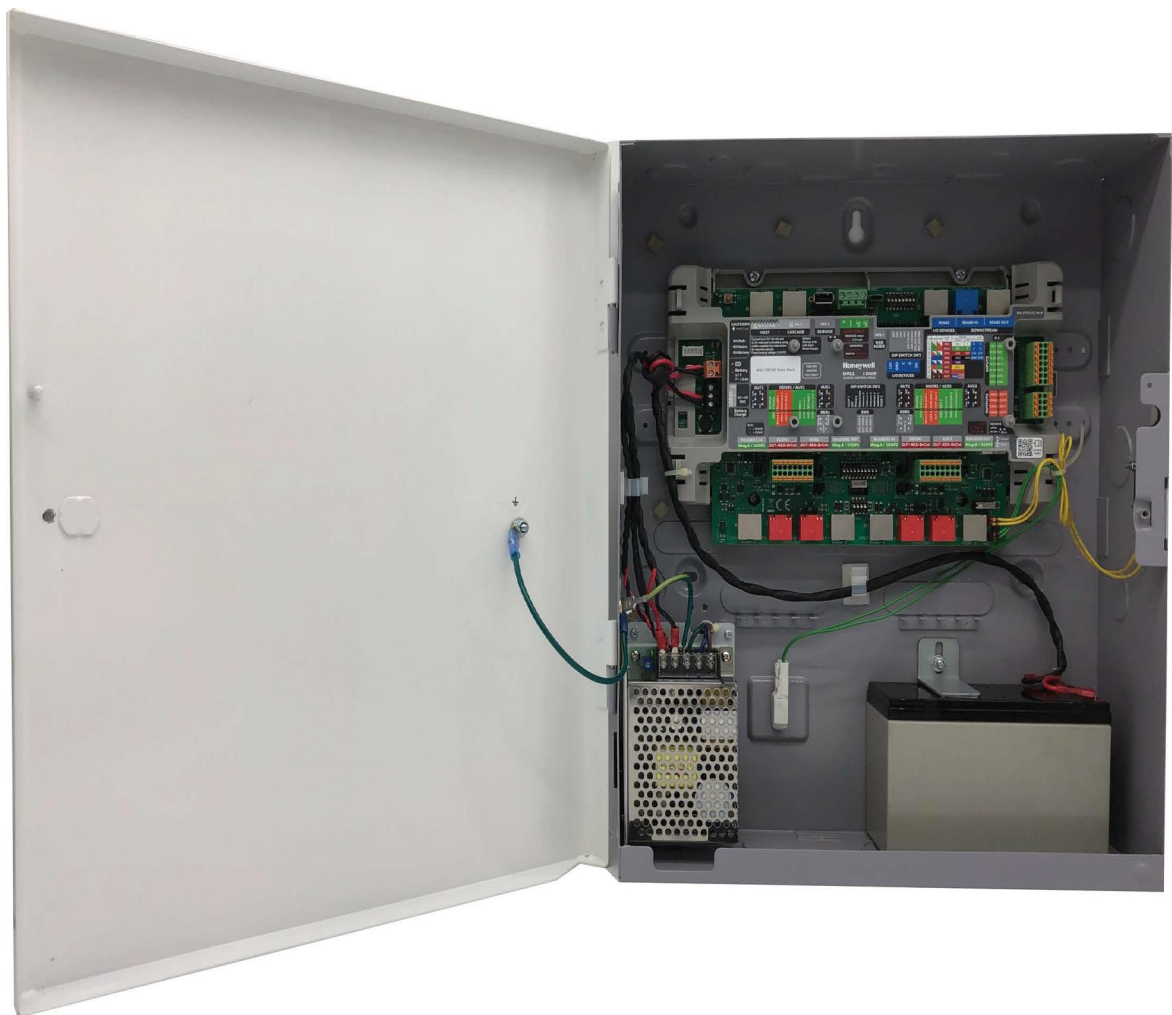
MPA2C3
Access Control Unit

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

Safety Symbol

The following symblos are used in this manual:

Read carefully more details, regarding charging and discharging of battery.
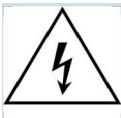
Shock Risk-Isolate before attempting access.

Protective Earth

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

1 INTRODUCTION

Introduction
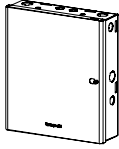
This document describes how to install theMPA2C3 access control unit, how to wire the access control panel to doors, readers, downstream devices, how to configure the system for different connection loops and so forth.
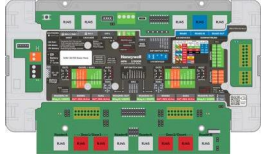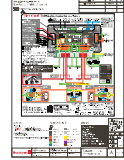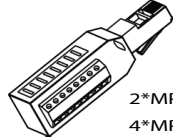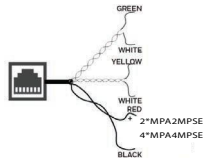
Note: *All figures shown in this manual are for illustration purpose only. Actual products may vary due to product enhancement.*

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.
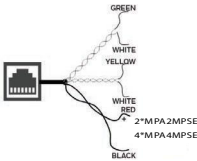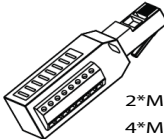
Table 1-1 MPA2MPSE/MPA4MPSE Packing List

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	
Optional Accessory	Convertor	2*MPA2MPSI 4*MPA4MPSI
	Door Connection Cable	

Note: Optional accessory is not included in the packing list.

Table 1-2 MPA2MPSU/MPA4MPSU Packing List

Metal Housing (MPA2ENCME)	Enclosure	
	Battery Cable	
	Battery Terminal	
	Cable Clamp	
Access Control Panel (MPA2C3) (MPA2C3-4)	M5 Screw	
	#6 Screw	
	#6 Anchor	
	Resistor (2K2 Ohm)	
	Quick Start Guide	
Additional Accessory	Battery (MPA2BAT7)	
	Power Cable (MPA2S5)	
	Convertor	

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 (See "" on page).

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 "" on page 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*

Note: *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. WIN-PAK® XE/SE/PE/CS supports 2-door systems, and MAXPRO® Cloud supports both 2-door and 4-door systems*

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 an 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+.

MPA2ENCME / MPA2ENCMU

Figure 1-1   MPA2ENCME/MPA2ENCMU Access Control Overview

Multiple Knock-out Holes

Multiple Tie-down Points
Simple Panel Door Removal
for Easy Wall Mounting
and Cabling

All-in Smart Control Panel
(MPA2C3)

Enclosure Lid Tamper

Panel Door Grounding Point

Off Wall Tamper

Simple Panel Door Removal
for Easy Wall Mounting
and Cabling

Main Socket USA/ UL Version only

Multiple Knock-out Holes

10-19 VDC / 50 W
Primary Power Supply

12 VDC Backup Battery

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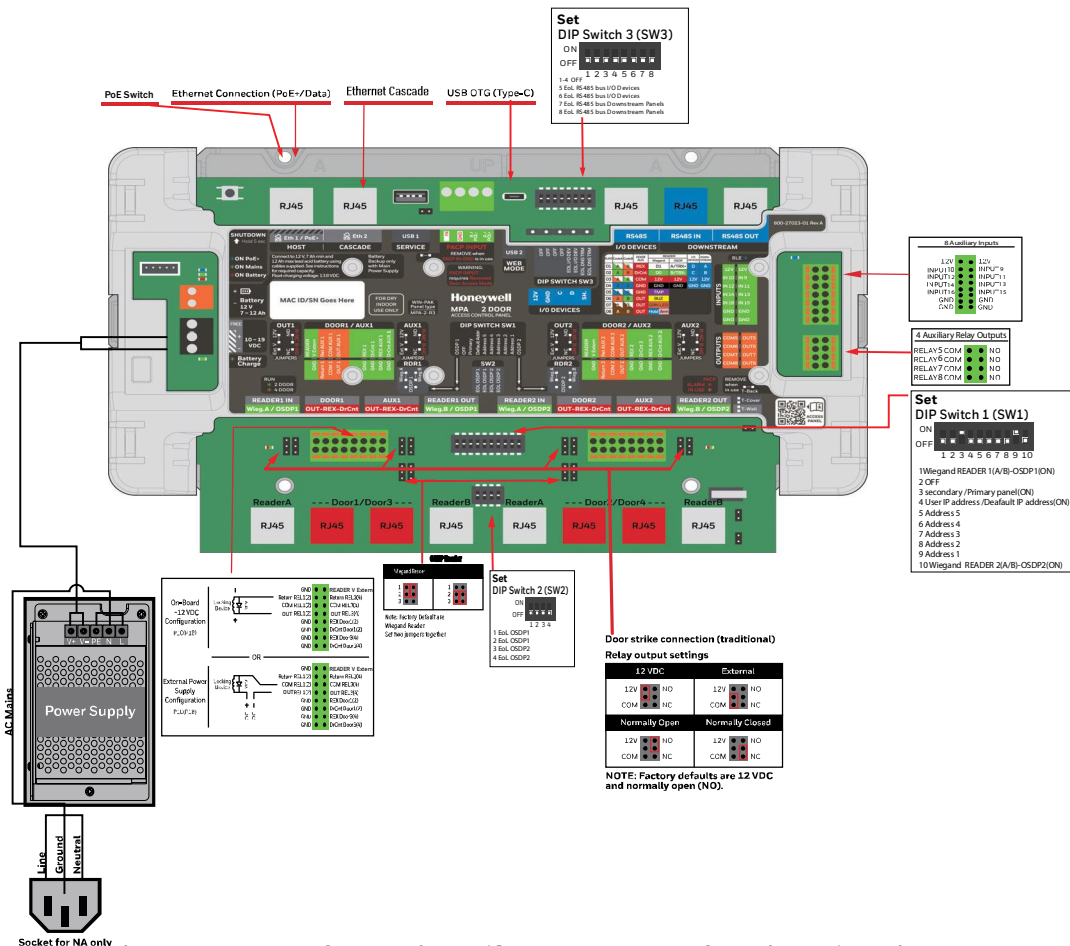
Warning: Do not plug in unknown USB devices (for example, USB Killers) which can damage hardware components. This access control unit is not designed with a protective function for any deliberately damaged USB devices. Honeywell is not responsible for your losses caused by using deliberately damaged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

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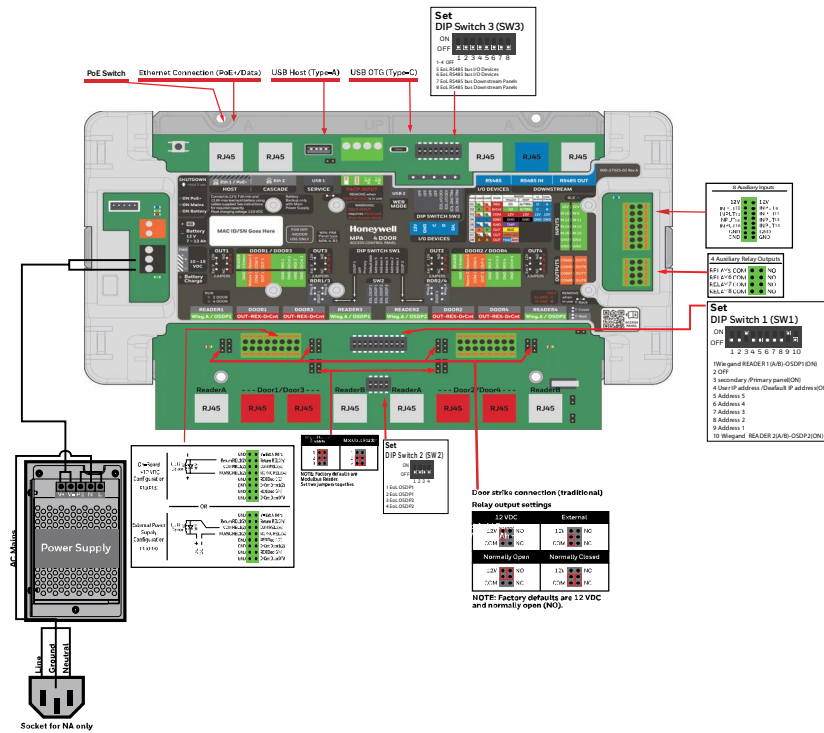
Note: *Maintain at least a 0.25 inch (0.65 cm) distance between the non-power limited wiring (100-240 VAC, 50/60Hz input wiring, power line filter wiring, and battery backup/charger wiring) and all other wiring, which is power-limited Class 2 wiring.*

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.

- Heartbeat LED indicates whether the panel is powered up successfully or not.

- Shutdown Button is used to shut down the panel.

Figure 2-3   LEDs and Button
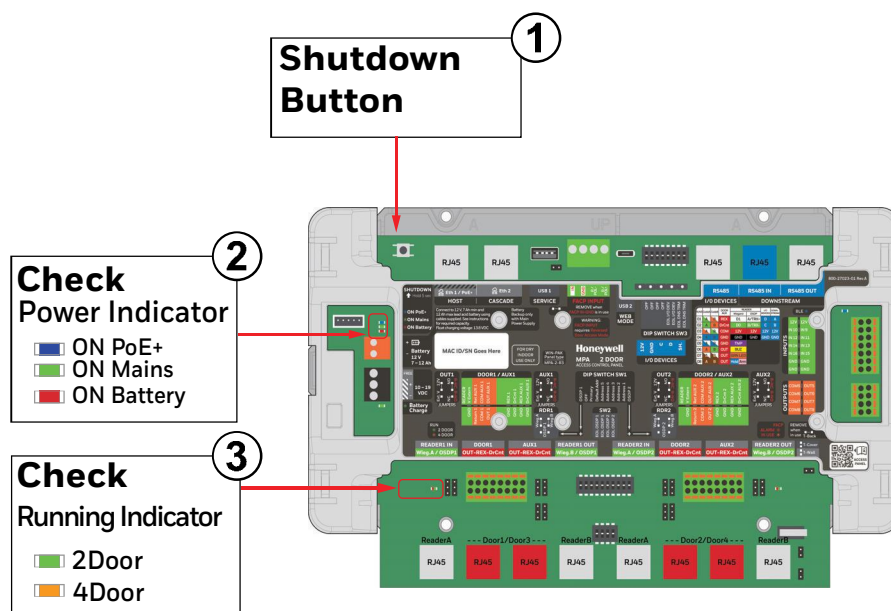
Table 2-1   LED and Button Information

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.
Heartbeat 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.

LEDs	Color/Status	Descriptions
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. The compact plastic enclosure is only powered by PoE+.

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
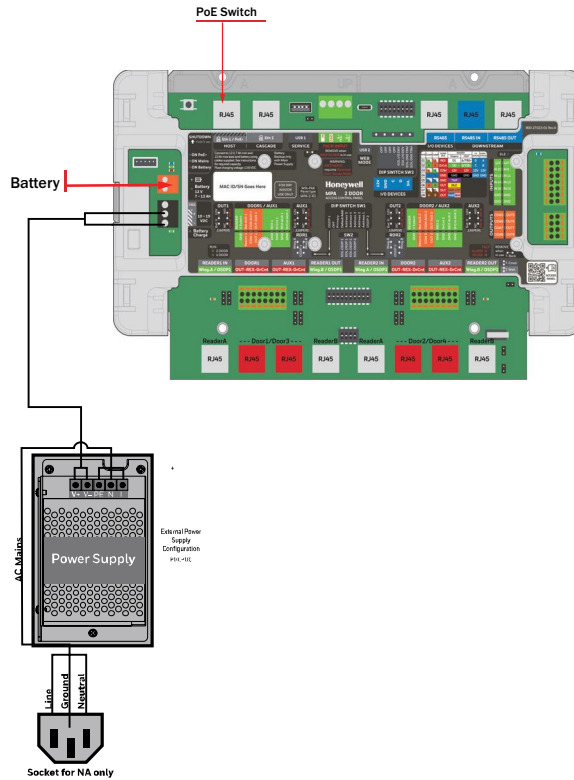
Supervised and Non-Supervised Input Wiring

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-super-vised inputs.

Figure 2-5   Typical Supervised and Non- Supervised Input Wiring Diagram
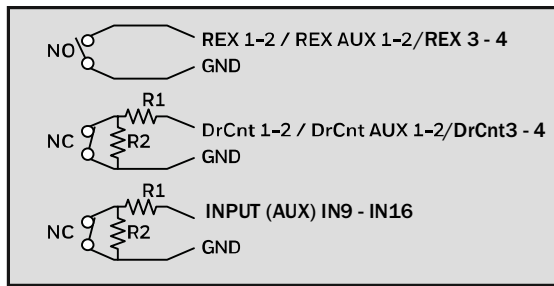
Standard 2.2K ohm resistors will be used. MPA2S5 cable involves built-in 2K2 EOL (End of Line) resistors for door contact.

Note that 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 ohms 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		OS
# DOORS	DIRECTION		2 DOOR PANEL	4 DOOR PANEL	2 DO OSDP
1 Door	IN	(Relay 1) OUT1, DrCnt1, REX1	READER1 IN	READER 1	1
	IN, OUT	(Relay 1) OUT1, DrCnt1	READER1 IN, OUT	-	1,2
2 Door	IN	(Relay 1-2) OUT1-2, DrCnt1-2, REX1-2	READER1-2 IN	READER 1-2	1
	IN, OUT	(Relay 1-2) OUT1-2, DrCnt1-2	READER1-2 IN, OUT	-	1,2
		(Relay 1-3) OUT1-3, DrCnt1-3			

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.

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*
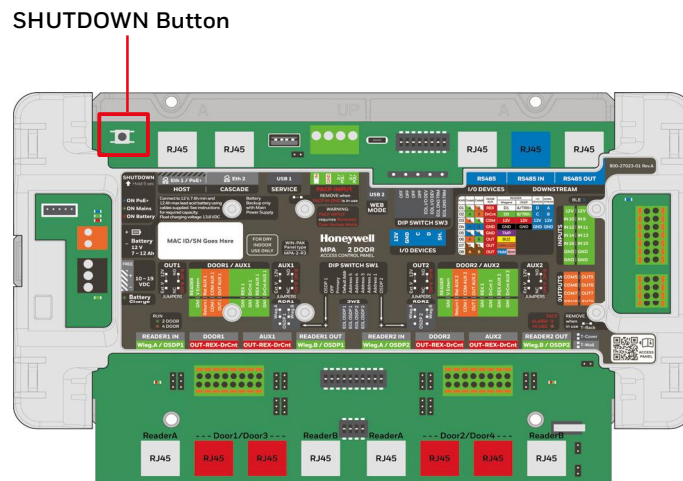
The SHUTDOWN button allows you to shut down the control panel securely. This ensures that the system can save all necessary data and status in the flash memory. Shutting down the panel disables the inputs/outputs, turns OFF the peripheral bus, AUX outputs and the PTCs. However, it cannot remove power 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 ON - license is correct and application is running

- Yellow ON - application is checking the license file

- Yellow Blinking - license file is incorrect or Bit3 of SW3 (factory Reset) is "ON"

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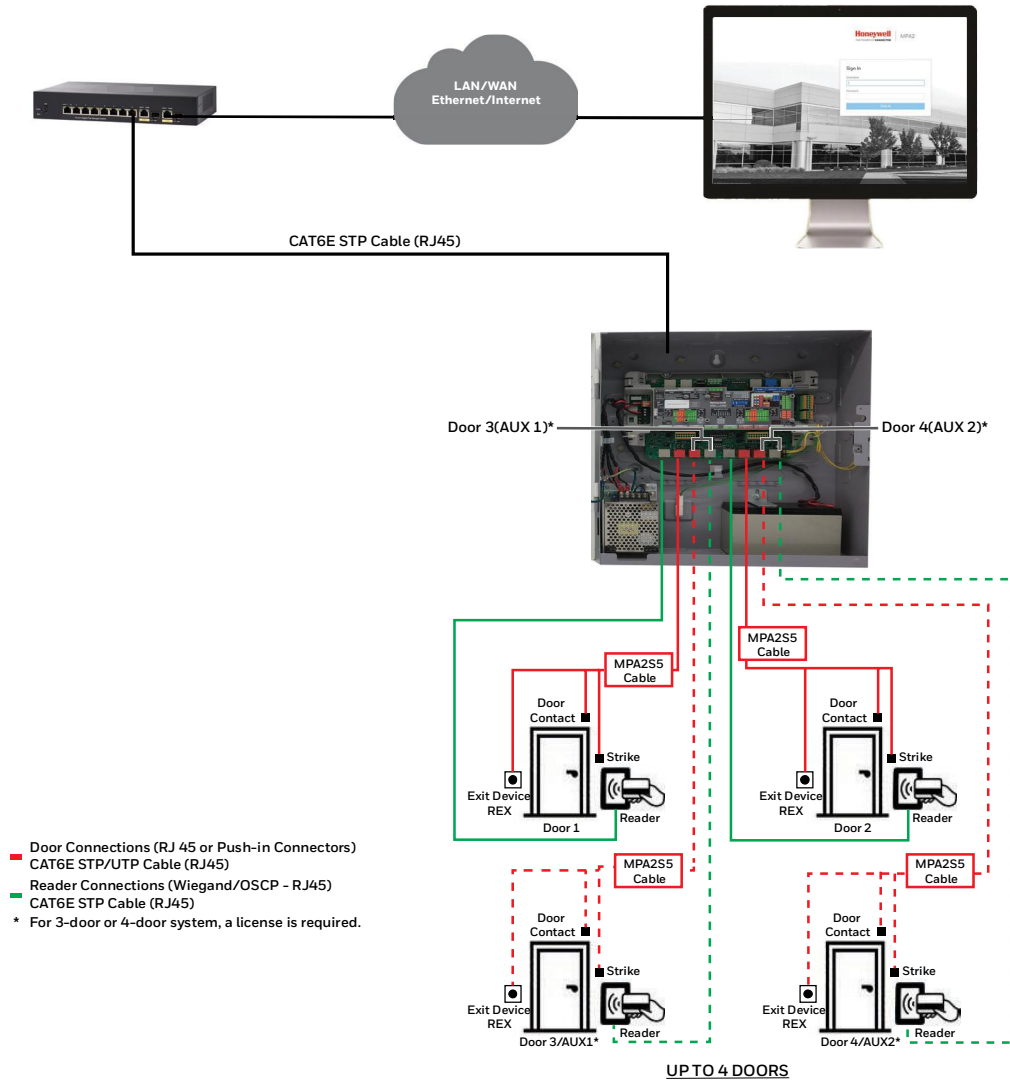
The following table shows the the input/output options for 2-door or 4-door (Licensed) panels.

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" on page 52.

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+
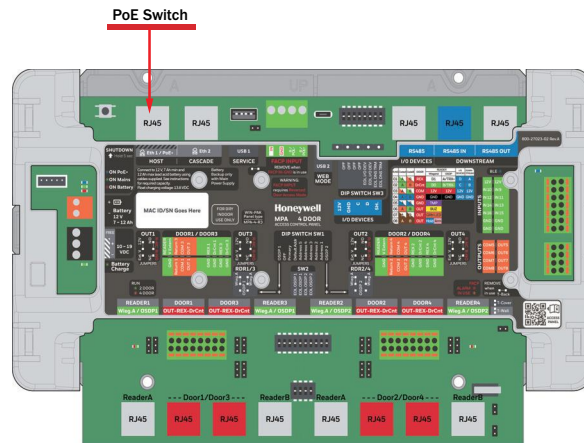
Wiring to Power Supply and Tamper Connector – Standard Metal Enclosure

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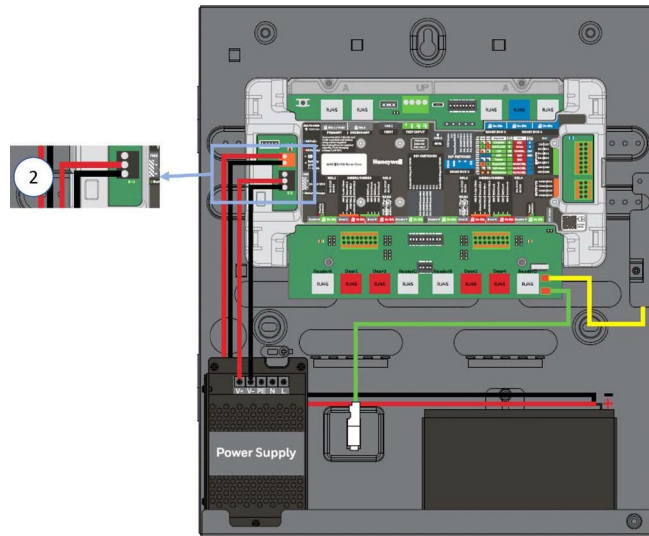
Warning: Do not apply power at this time. Ensure the power cable is disconnected from the external power source before following this step. The battery cable is included in the accessory bag.

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

Figure 3-5   Connecting the Battery Cable – 7 Ah Battery
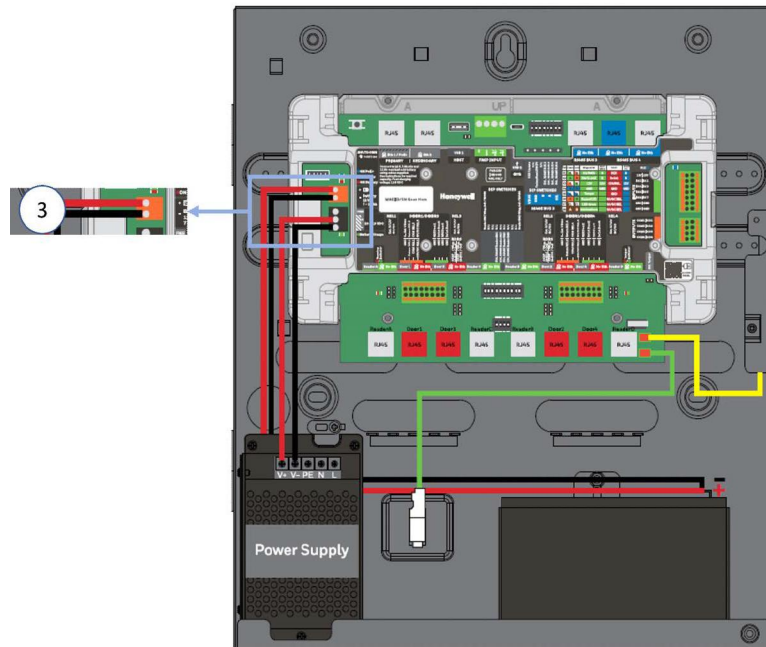
Note: *To avoid short circut, use isolated tools for installing battery and battery cable.*

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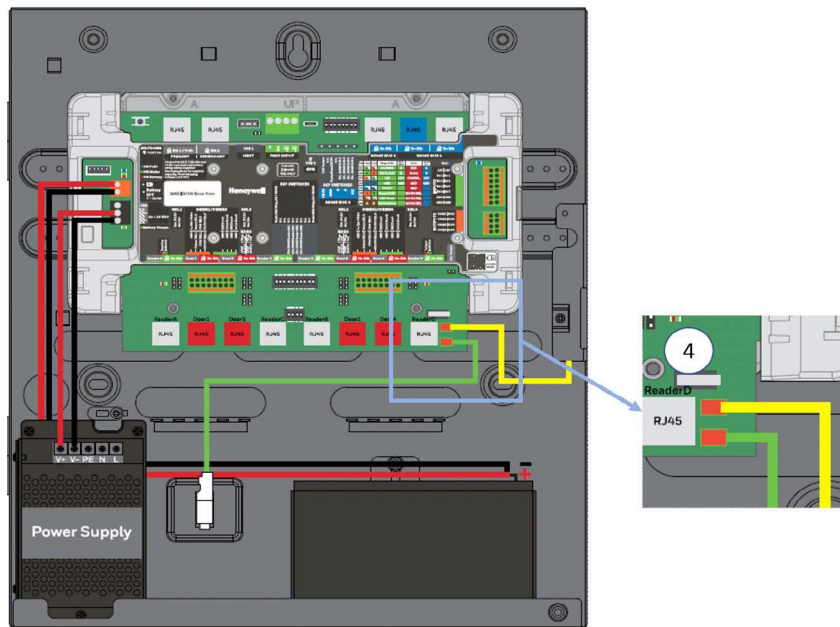
Installingthe battery bracket on top of the battery, as shown in the below picture.

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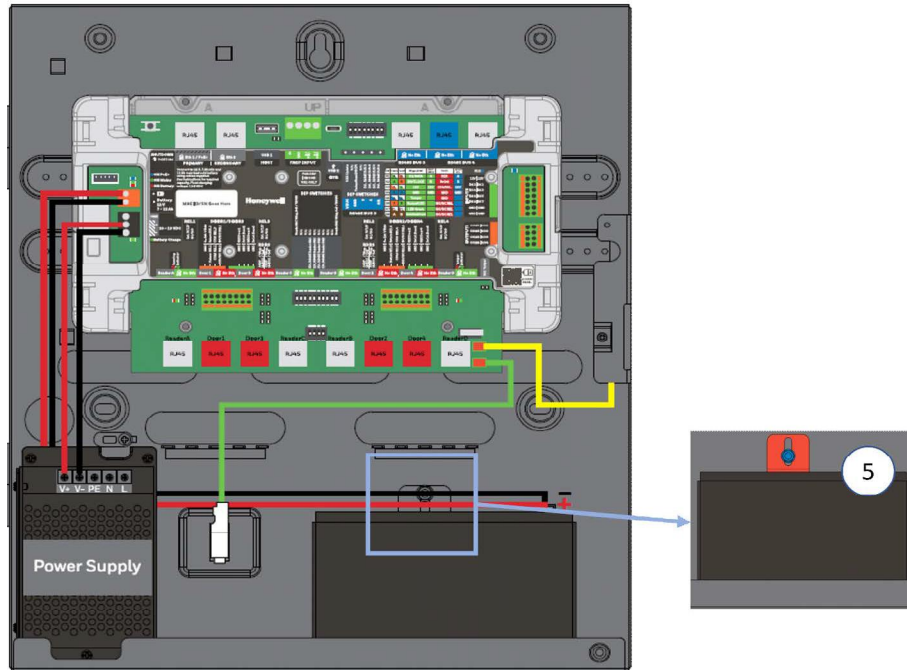
Installing Battery Terminals

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
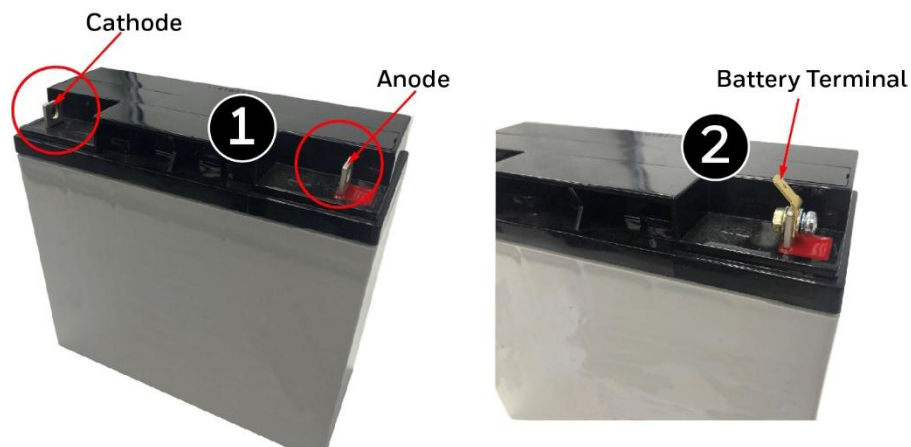
3. Connect the battery cable to the newly installed battery terminals.

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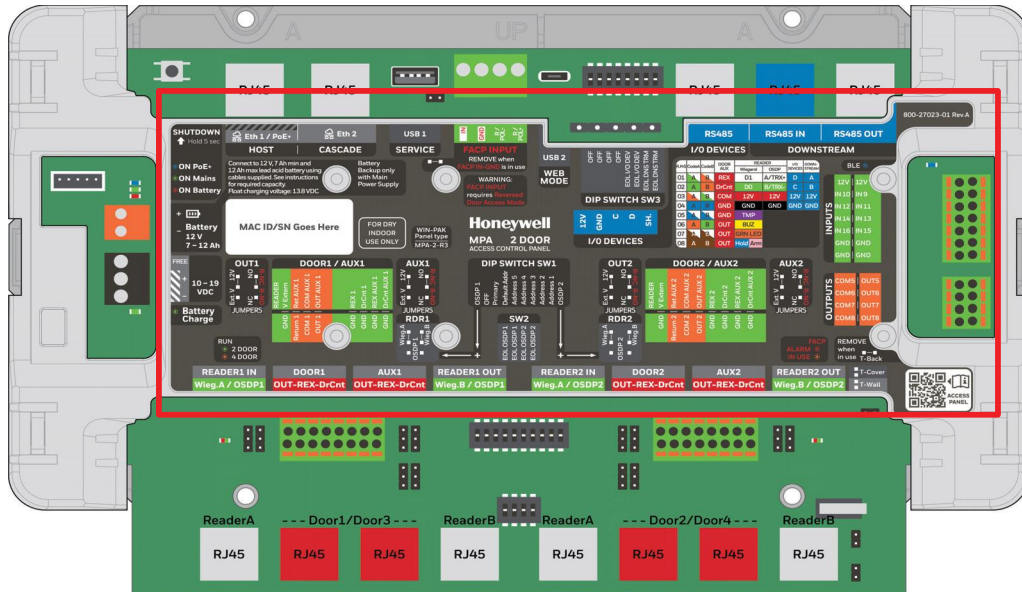
The information card represents the reader, door, inputs, and outputs connections, power and battery input, Ethernet and USB connections, RS485 bus information, LED, DIP Switch and Jumper locations and functions.

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 Reades
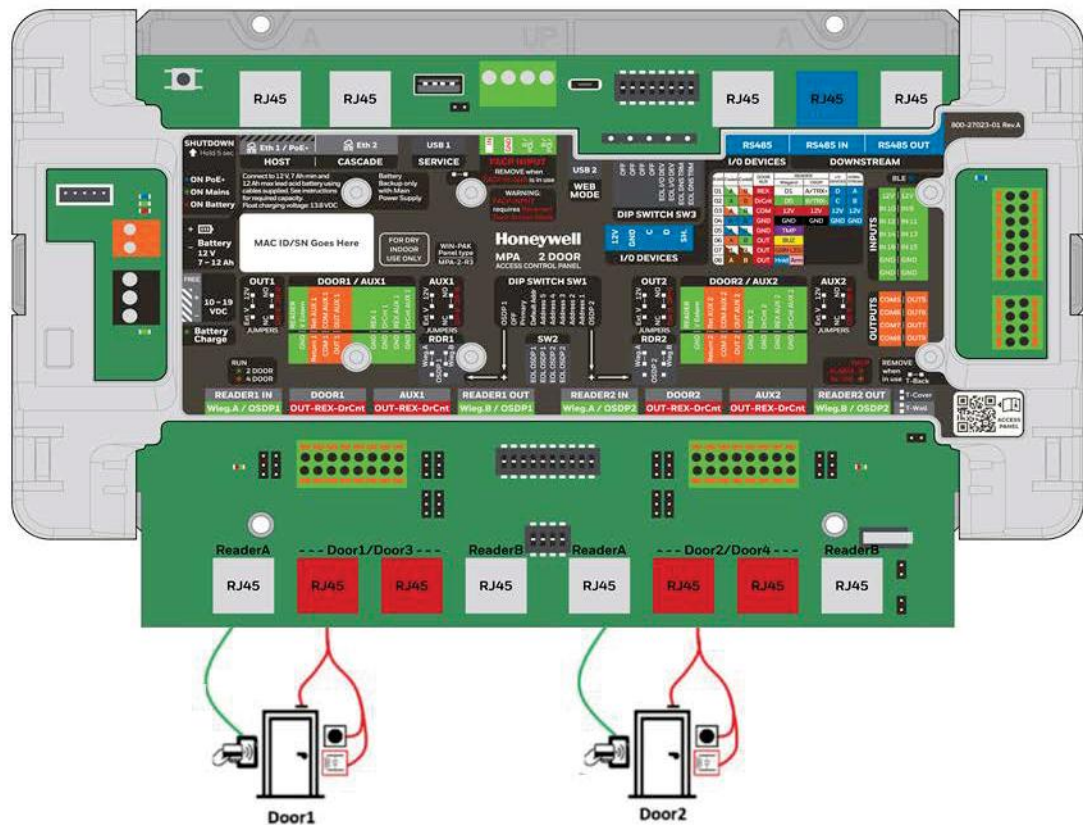
Figure 3-10 Door with 2 Readers
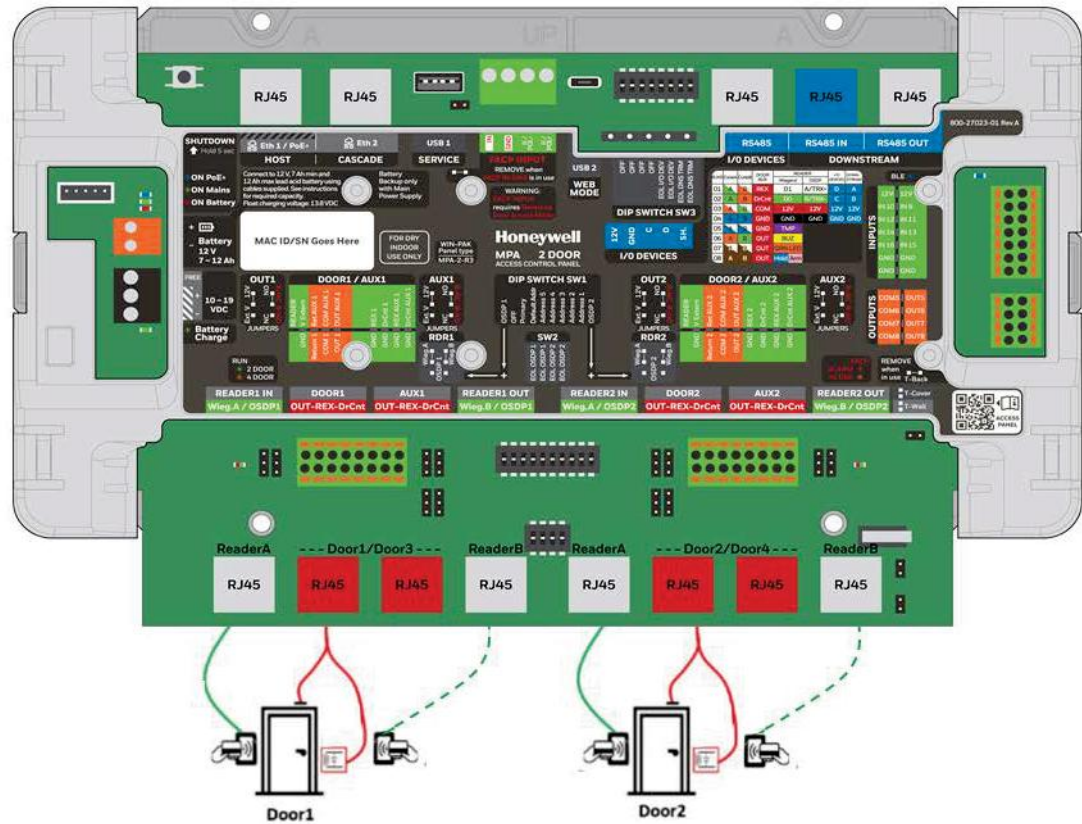
System set up for Wiegand or OSDP readers

The MPA2C3 Access Control Panel supports two types of readers: Wiegand Readers and OSDP Readers. 4 RJ45 terminals are designed to wire readers. The information card on the panel identifies these terminals as eg READER1 IN or READER4 .
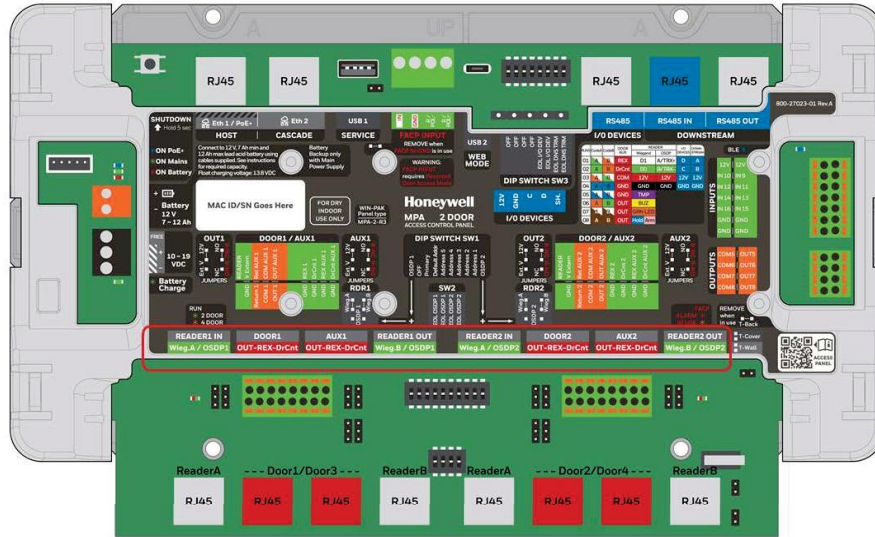
In a 2-door MPA2C3 controller, each door supports one or two readers (entry (IN) and exit (OUT) readers) with Wiegand output format.

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 configured MPA2C3-4 panel, then you must use OSDP readers

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
	READER 1 IN Wieg.A / OSDP 1	Door1 IN reader
Wiegand	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 Address	Reader Function
OSDP	READER		
	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	OSDP Reader		
(4 door)			
Reader mode	RJ45 Connector	Reader Address	Reader Function
	READER		
OSDP	READER 1	1	Door1 IN reader
	Wieg.A / **OSDP 1**	2	Door1 OUT reader
	READER 2	1	Door2 IN reader
	Wieg.A / **OSDP 2**	2	Door2 OUT reader
	READER 3	3	Door3 IN reader
	Wieg.A / **OSDP 1**	4	Door3 OUT reader
	READER 4	3	Door4 IN reader
	Wieg.A / **OSDP 2**	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 3.6.3 section OSDP Bus Termination

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 3.6.3 section OSDP Bus Termination

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.
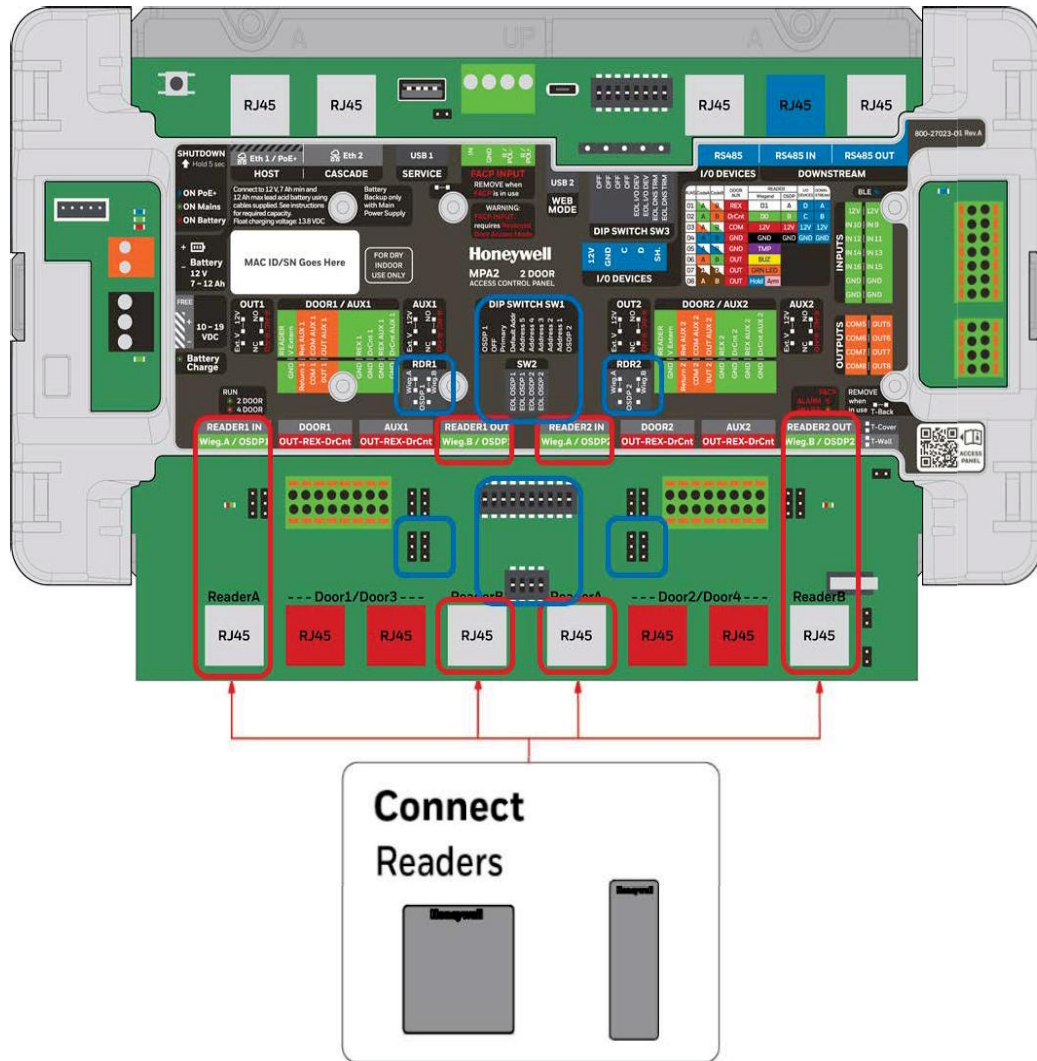
**Connect
Readers**

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

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
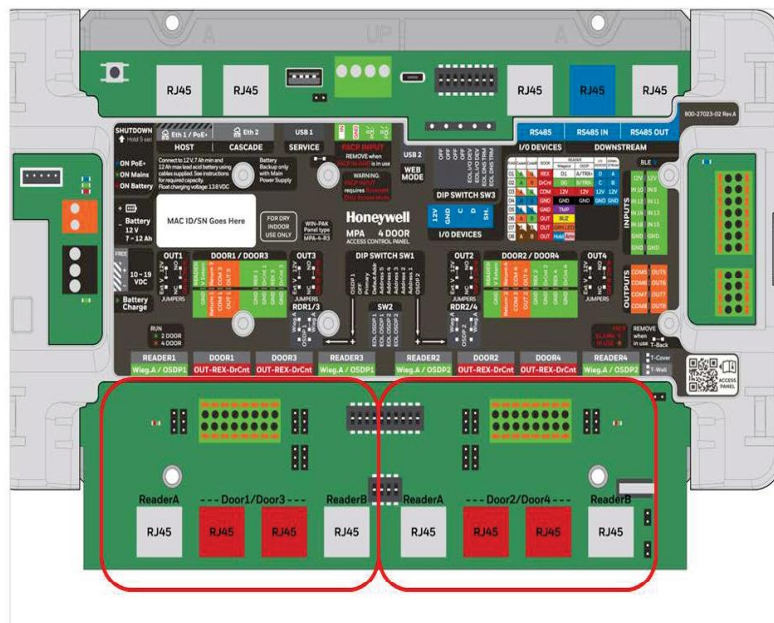
Wiegand mode panel setting

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 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 chapter xxx)
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.

<<Figure abc: Show screenshot selection 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. <<Figure def: Show screenshot assigning Reader function / address>>
4. Select the preferred function and assign it to the detected reader, the reader will show online state.
5. <<Figure ghi: Show screenshot assigned Reader is on line >>
6. Leave the Connected reader with new address in.

7. 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.

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 3-4 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

4. the steps in "6.x.2 Address assignment procedure for OSDP readers "

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 3-5 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	(OSDP 1)	
			ON : EOL		
	Bit 10: ON	Bit 3&4:	RS485 Termination		Enable 2-3
	(OSDP2)	(EOL OSDP2)	OFF: NO EOL		(OSDP 2)
			ON : EOL		

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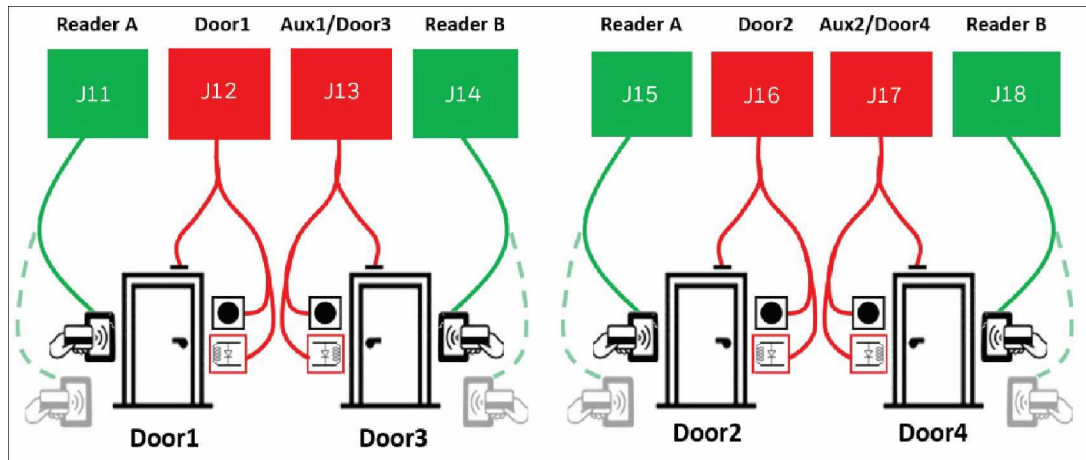
The RJ45 reader terminals are used for both Wiegand or OSDP readers. On the information card is a description for the wiring to the RJ45 PINs and wire functions.

RJ45	CodeA	CodeB	DOOR AUX	READER Wiegand	READER OSDP	I/O DEVICES	DOWN-STREAM
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.
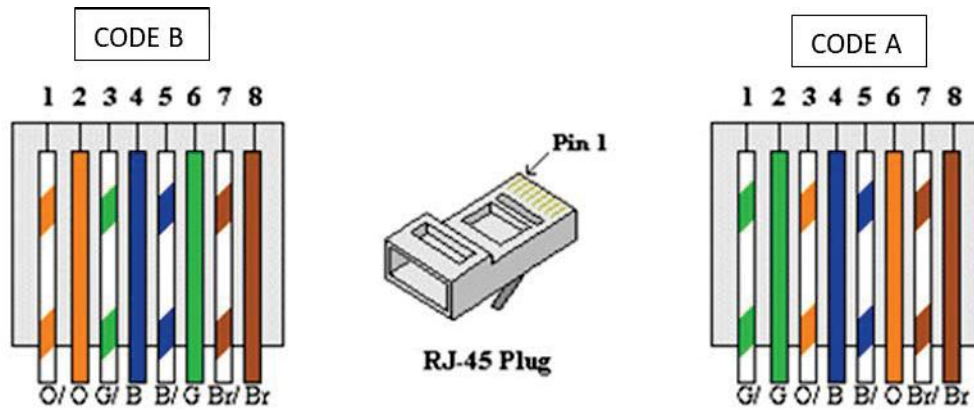
Use the correct RJ45 connector type for the correct type and size of the wires, when using CAT cable.

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

In reader

Out reader

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 higher than 14 VDC (e.g. 24 VDC) (up to 30VDC).

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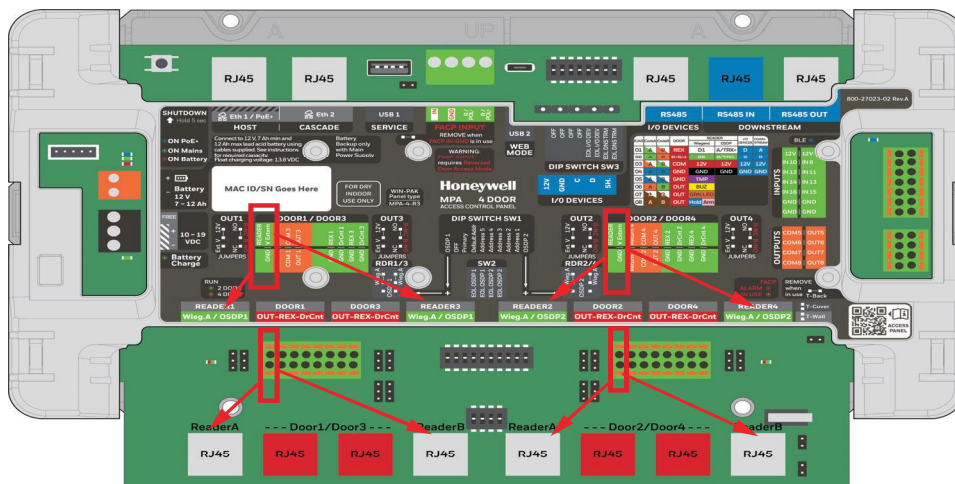
Warning: Before wiring the reader, see the below table on power limitations

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 3-6 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