

Control System

WR-WAVE-KIT/FULL

Universal Barrier-Free Restroom Kit

INSTALLATION INSTRUCTIONS

THIS KIT INCLUDES:

1. Restroom Touchless Control:

- (1) Wave to Open Switch (Outside), (1) Wave to Open Switch (Inside),
- (1) Wave to Lock Switch (Inside), (1) Advanced Logic Controller,
- (1) Magnetic Door Contact, (1) Wave to Open/Lock Sign;

2. Restroom Emergency Assistance:

- (1) Audible & Visual Annunciators, (1) Emergency Instruction Sign,
- (1) Emergency Mushroom Push Button;



**IN THE EVENT OF AN EMERGENCY
PUSH EMERGENCY BUTTON
AND AUDIBLE AND VISUAL SIGNAL
WILL ACTIVATE**

1. GENERAL DESCRIPTION

This integrated restroom kit combines a touchless door control system with an emergency assistance call system to provide a safe, intuitive, and accessible restroom solution.

The touchless control system allows users to enter, lock, and exit the restroom without physical contact. Visual indicators on the door switches clearly display the occupancy status, improving privacy and reducing confusion. When the restroom is in use, the indicators change color to show that the space is occupied. When the user exits, the system automatically resets to vacant status.

In addition, the integrated emergency assistance system provides a simple and reliable method for users to request help. By pressing the emergency button inside the restroom, both audible and visual alarms are activated inside and outside the room, ensuring that assistance can be provided quickly.

This kit is designed for barrier-free and universal restroom applications, where safety, accessibility, and ease of use are critical.

2. SYSTEM COMPONENTS

The integrated kit includes two functional sections: the touchless door control system and the emergency assistance system.

Touchless Door Control Section

This portion of the system manages door access, occupancy indication, and privacy locking. It includes:

- Outside Wave-to-Open touchless switch
- Inside Wave-to-Open touchless switch
- Inside Wave-to-Lock touchless switch
- Advanced Logic controller
- Magnetic door contact

The logic controller coordinates all sensors and outputs, ensuring that the door and occupancy indicators operate correctly.

Emergency Assistance Section

The emergency call system allows a user to request help when needed. It includes:

- Emergency assistance push button (inside restroom)
- Inside annunciator with sounder
- Outside annunciator with sounder
- Emergency signage

When the emergency button is pressed, both annunciators activate simultaneously, providing a clear visual and audible signal.

3. SYSTEM OPERATION

3.1 Normal Restroom Operation

The system is designed to be intuitive for first-time users. From the outside, the user simply waves a hand in front of the Wave-to-Open sensor. This action triggers the controller, which unlocks the door and allows it to open. At this stage, the indicator light shows green, signaling that the restroom is vacant.

Once inside, the user can secure the door by waving a hand in front of the Wave-to-Lock sensor. This locks the door and changes the indicator lights on both sides of the door from green to red, showing that the restroom is occupied.

When the user is ready to exit, they may wave at the inside Wave-to-Open sensor or simply open the door manually. Either action unlocks the door and resets the system. The indicator lights return to green, signaling that the restroom is available again.

3.2 Emergency Assistance Operation

If a user requires assistance, they can press the emergency button located inside the restroom. This action closes the internal contact and activates both the inside and outside annunciators.

The system immediately provides:

- Audible alarm
- Visual assistance indicators

This ensures that staff or nearby occupants are alerted to the emergency condition. Once assistance has been provided, the system can be reset by pulling out the emergency button, which silences the alarms and returns the system to normal operation.

4. INSTALLATION OVERVIEW

The Advanced logic controller should be mounted in a **clean, dry, and protected** location. It must be installed away from moisture, direct weather exposure, or excessive heat. Power should **not be** applied to the system until all wiring connections are complete and verified.

The touchless switches and emergency devices should be mounted in standard double-gang electrical boxes at appropriate heights for accessibility. Proper alignment and flush mounting are important to ensure correct sensor operation and a professional appearance.

5. WIRING OVERVIEW

The controller features a **single-row terminal strip** with clearly labeled connections. Both input devices (sensors, door contacts) and output devices (electric strike, door operator, and indicator lights) are wired along the same terminal strip.

All restroom touchless switches operate on **12V DC**.

The inside emergency button includes a built-in annunciator and connects to the controller through a dedicated terminal. The outside annunciator is connected separately to its own terminal, ensuring clear wiring and easy installation.

The controller provides a **built-in 12V DC power** output for the inside emergency unit and outside annunciator, allowing direct connection without the need for an external power supply.

6. CONTROLLER MODE SELECTION

The controller supports up to 15 operating modes.

For the Universal Barrier-Free Restroom Control, the controller is **Mode 1 (default)**.

Additional modes are reserved for future applications and may not be available in the current release.

The mode can be selected using the UP and DOWN buttons located at the upper-left corner of the controller.

7. INDICATOR LOGIC

The system uses color indicators to communicate door status:

- Green: Restroom vacant / door unlocked
- Red: Restroom occupied / door locked
- Flashing with sound: Emergency assistance requested

This simple color logic ensures that users and staff can easily understand the system status at a glance.

8. FINAL TESTING PROCEDURE

After installation is complete, the system should be tested thoroughly to confirm proper operation.

1. Apply power to the system.
2. Activate the outside Wave-to-Open switch.
 - Door should unlock and open.
3. Activate the inside Wave-to-Lock switch.
 - Door should lock.
 - Indicators should turn red.
4. Activate the inside Wave-to-Open switch.
 - Door should unlock.
 - Indicators should return to green.
5. Press the emergency assistance button.
 - Both annunciators should activate.
6. Reset the emergency button.
 - Alarms should stop.

If all steps operate correctly, the system is ready for use.

9. SAFETY AND COMPLIANCE NOTES

All components must be installed according to local electrical codes and the authority having jurisdiction. The electric strike must be installed in a manner that does not interfere with emergency exit hardware or panic devices.

10. WIRING TERMINAL



TERMINAL NO.	FUNCTION	OPERATION
1	PIN1 – POWER + PIN2 – POWER -	POWER INPUT: 12-30V AC/DC WIDE-RANGE, SELF-ADAPTIVE POWER INPUT WITH BUILT-IN PROTECTION CIRCUITRY.
	PIN3 – SIREN + PIN4 – SIREN -	12V DC ALARM OUTPUT FOR ANNUNCIATORS (WET CONTACT).
	PIN5 – LOCK+ PIN6 – LOCK-	DOOR LOCK OUTPUT. PROVIDES 12V DC/24V DC POWERED WET CONTACT OUTPUT. OUTPUT VOLTAGE IS DETERMINED BY THE DIP SWITCH SETTINGS.
2	PIN1 – NO PIN2 – COM PIN3 – NC	AUTOMATIC DOOR OPERATOR OUTPUT. (DRY CONTACT).
	PIN4 – NO PIN5 – COM PIN6 – NC	AUXILIARY DRY CONTACT OUTPUT. RESERVED FOR OTHER MODE USE.
3	PIN1 – DOOR SENSOR PIN2 – GND	DOOR CONTACT INPUT. DEFAULT (NC).
	PIN3 – EMERG + PIN4 – EMERG -	12VDC OUTPUT FOR INSIDE EMERGENCY LIGHT INDICATOR (WET CONTACT).
	PIN5 – EMERG INPUT PIN6 – EMERG GND	EMERGENCY BUTTON DRY CONTACT INPUT (NC).
4	PIN 1-6	INDOOR PUSH-TO-LOCK BUTTON INPUT.
5	PIN 1-6	INDOOR PUSH-TO-OPEN BUTTON INPUT.
6	PIN 1-6	OUTDOOR PUSH-TO-LOCK BUTTON INPUT.

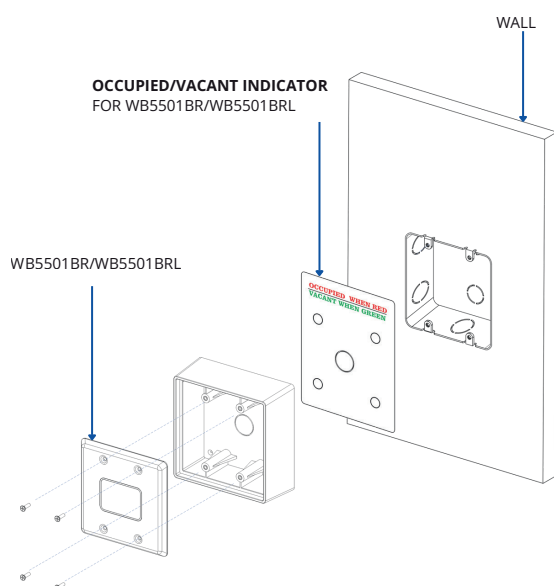
11. DOUBLE GANG WB5501BR / WB5501BRL / LIGHT-SIGN MOUNTING

1.
 - If using an in-wall box ensure the box is plumb and square, and flush with the wall surface.
 - If using a surface backbox, ensure it is secure & plumb.
 - If using a 4 x 4 box, ensure the box is plumb and square, and flush with the wall surface
2. Bring your 4 or 6-conductor wire through the back or side of the backbox and Occupied/Vacant Indicator leave approximately 6" tail for wiring connection.
Occupied/Vacant Indicator as required (only for the WB5501BR/WB5501BRL).
3. Make the electrical connections to the device according to the wiring section.
4. Using the dip switch located on the back of the switch, set the operating mode (MODE 2 RESTROOM).
5. Attach the faceplate to the backbox using the four screws provided. (Surface Mount)
Attach the faceplate to the In-wall box using the four screws provided. (Flush Mount)

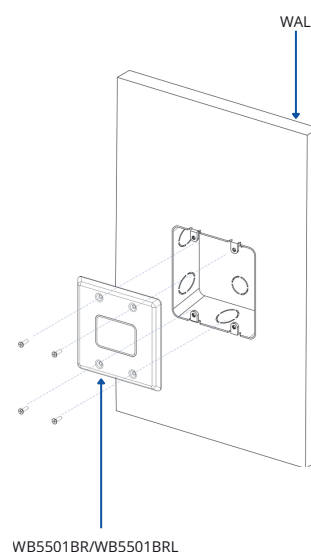
NOTE: Do not overtighten!

6. Apply power and adjust range via the potentiometers on the front of the unit.

WB5501BR/WB5501BRL SURFACE MOUNTING



WB5501BR/WB5501BRL FLUSH MOUNT

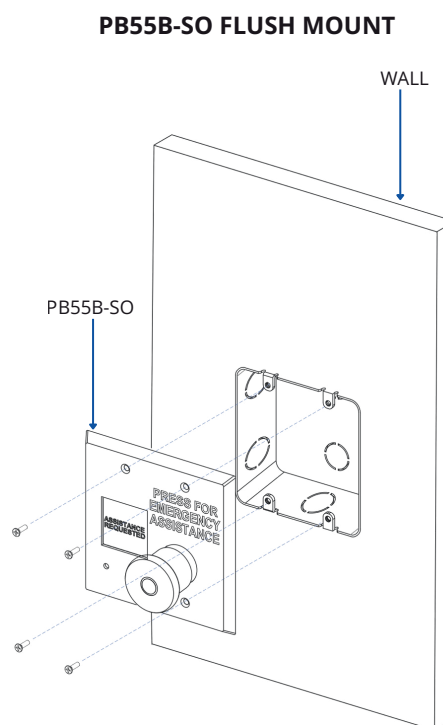
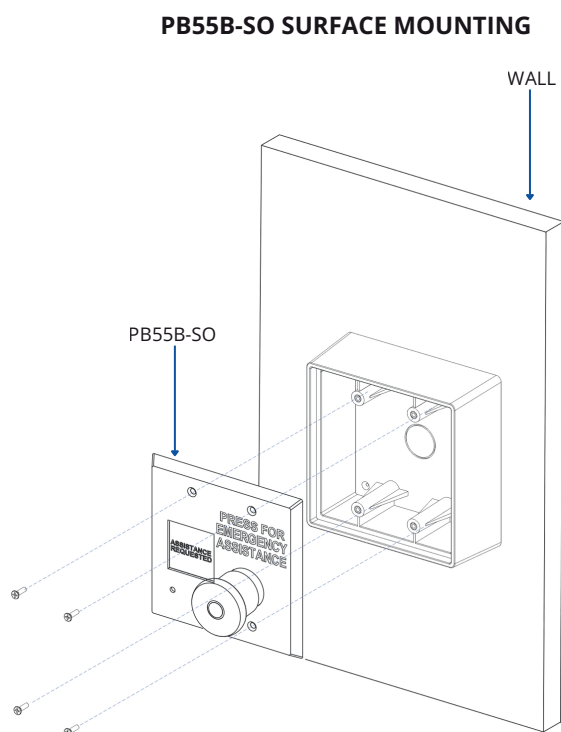


12. DOUBLE GANG PB55B-SO MOUNTING

1.
 - If using an in-wall box ensure the box is plumb and square, and flush with the wall surface.
 - If using a surface box, ensure it is secure & plumb.
 - If using a 4 x 4 box, ensure the box is plumb and square, and flush with the wall surface.
2. Bring your 4 or 6-conductor wire through the back or side of the backbox for wiring connection.
3. Make the electrical connections to the device according to the wiring section.
4. Attach the faceplate to the backbox using the four screws provided. (Surface Mount)
Attach the faceplate to the In-wall box using the four screws provided. (Flush Mount)

NOTE: Do not overtighten!

5. Apply power and adjust range via the potentiometers on the front of the unit.

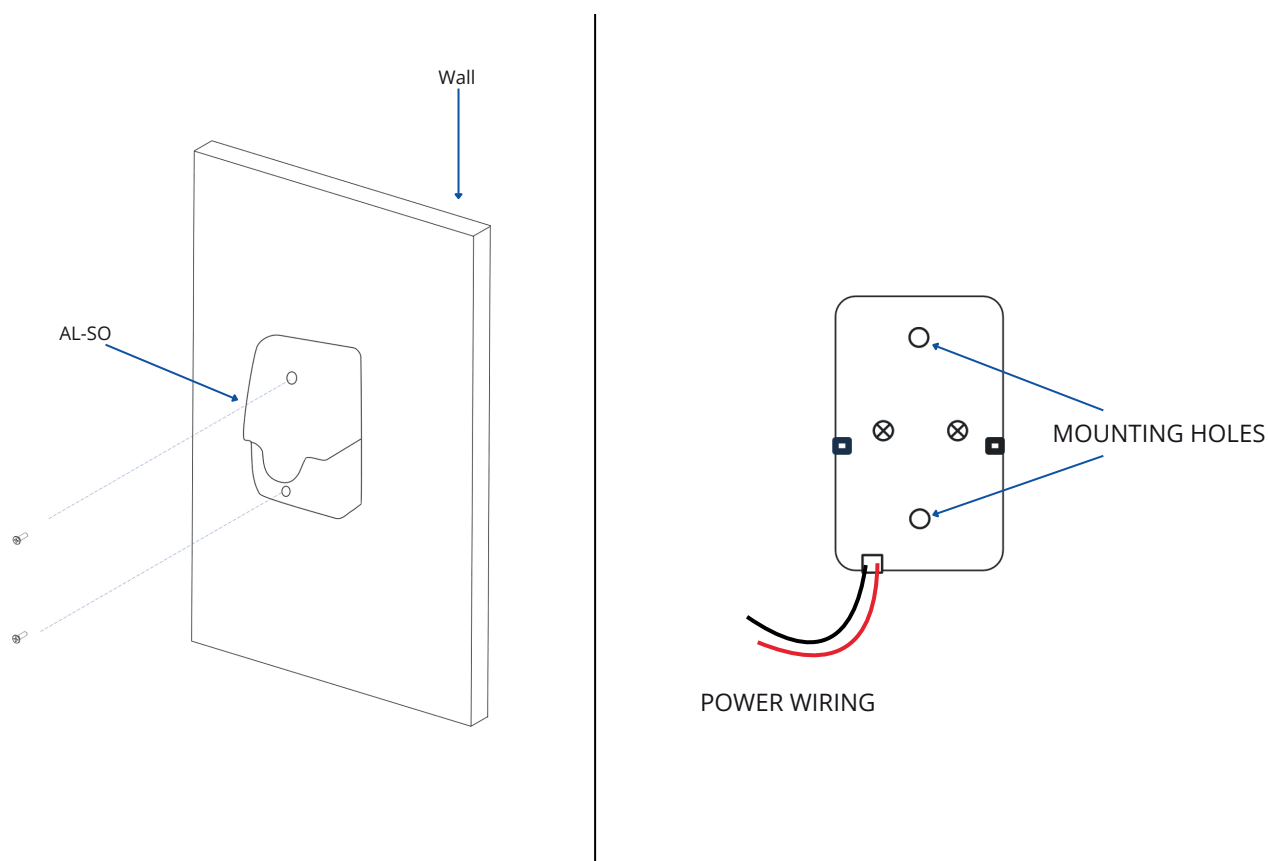


13. AUDIBLE & VISUAL ANNUNCIATORS AL-SO MOUNTING

1. Consider the type of mounting and where to run the wires. The two power connector from the lower part of the device back but also with a notch at the bottom to allow for hidden or exposed wiring.
2. Run two wires from MDC24 Controller Siren + & - (12VDC) to the Annunicator installation location. Wet contact
3. For surface mounting, mark and drill the mounting holes and holes for the wiring if needed.
4. Use the included mounting screws (and plastic wall anchors if needed) to mount the device taking care not to crimp the wires.

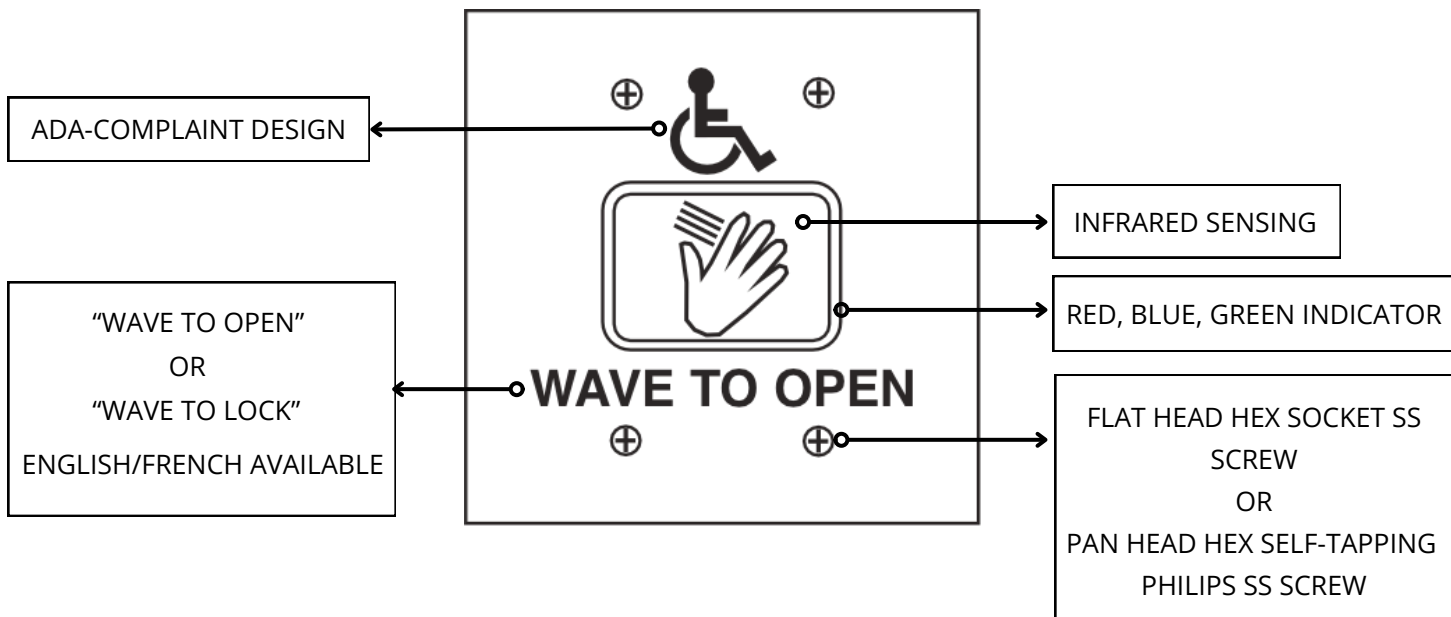
NOTE: The Audible & Visual Annunciators mounting holes are spaced so that it can also be mounted to a standard single-gang back box.

AL-SO AUDIBLE & VISUAL ANNUNCIATORS MOUNTING

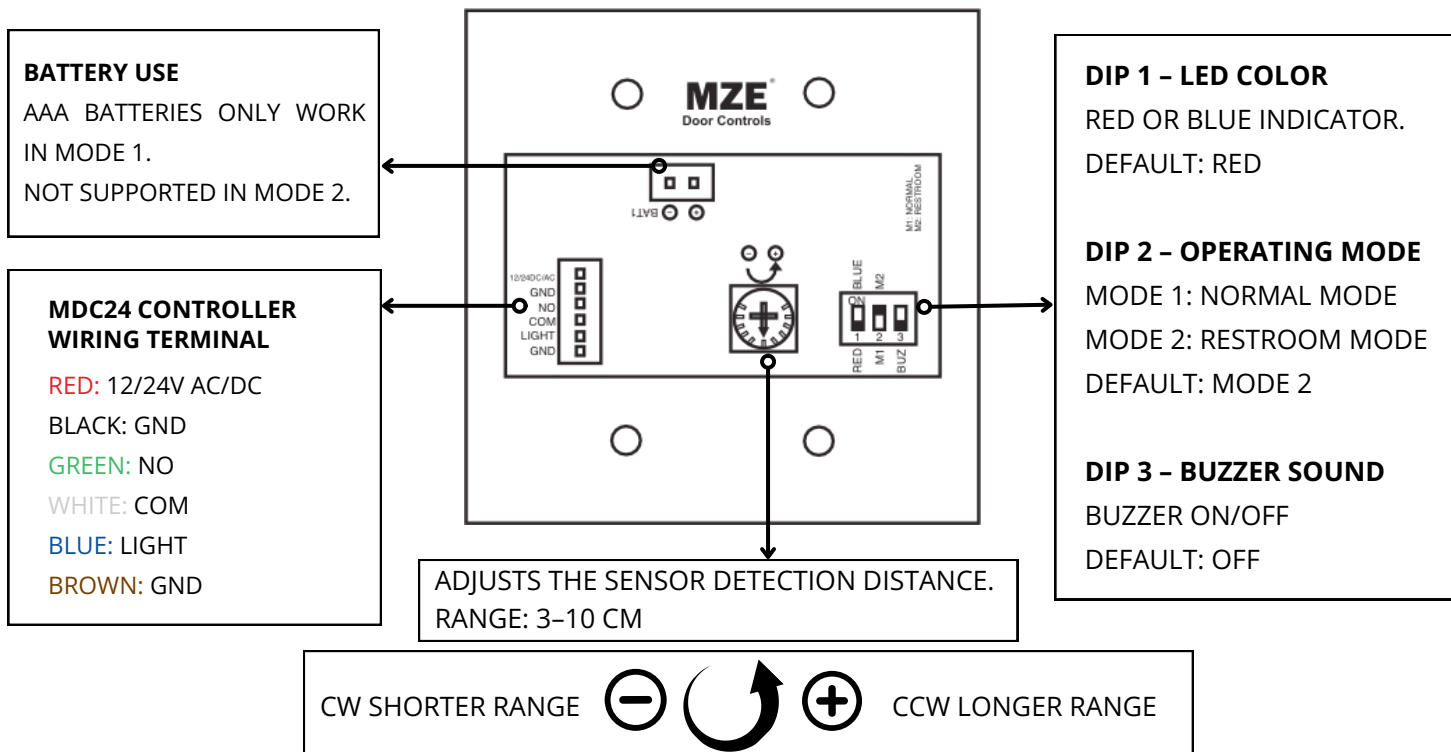


14. WB5501BR/WB5501BRL ADJUSTMENT

FRONT



BACK



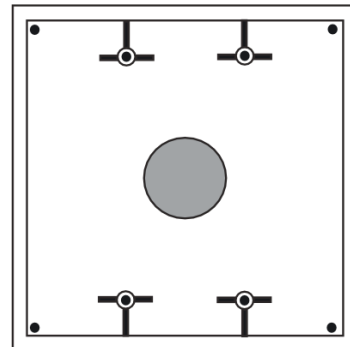
DIMENSIONS



(214x57x34 mm)



(114x114x25 mm)



(129.5x129.5x51.5 mm)



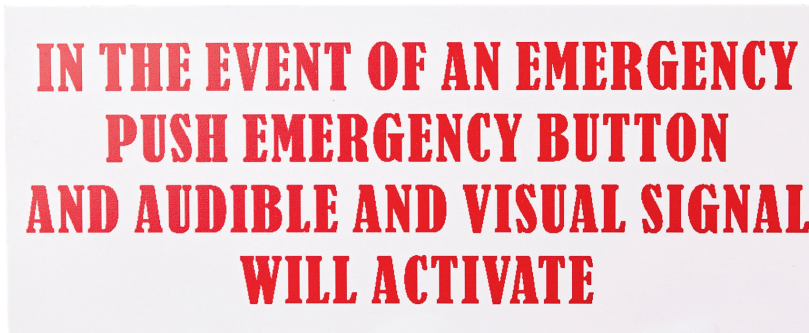
(144x114x45 mm)



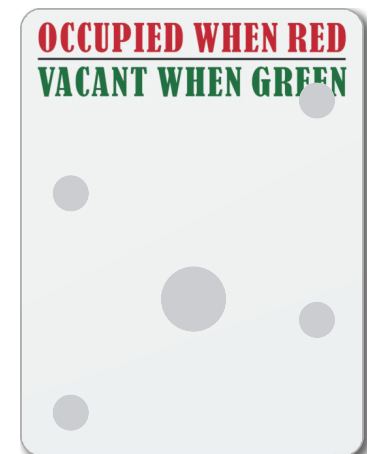
(73x127x44 mm)



(180x130 mm)

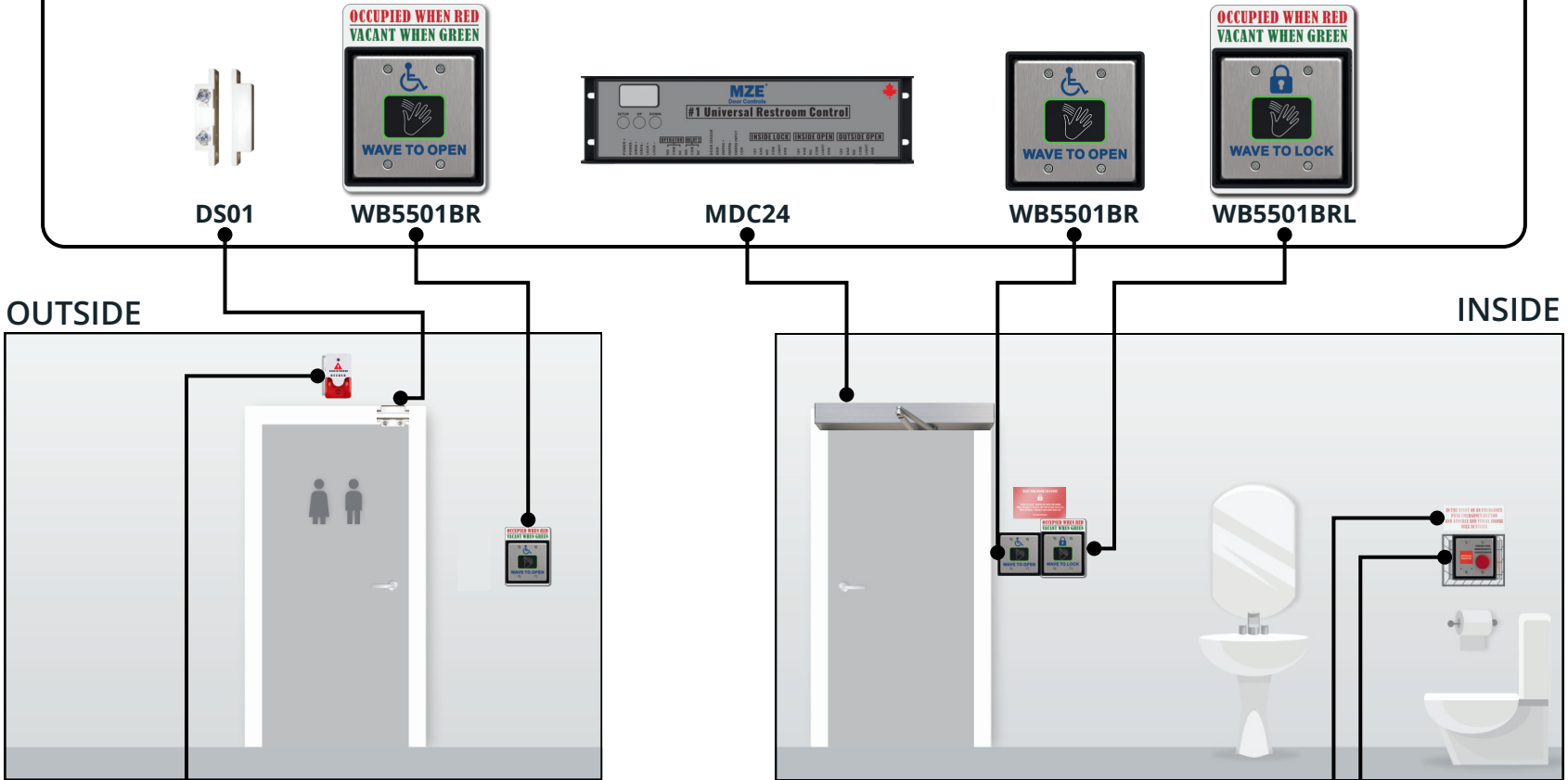


(270x150 mm)

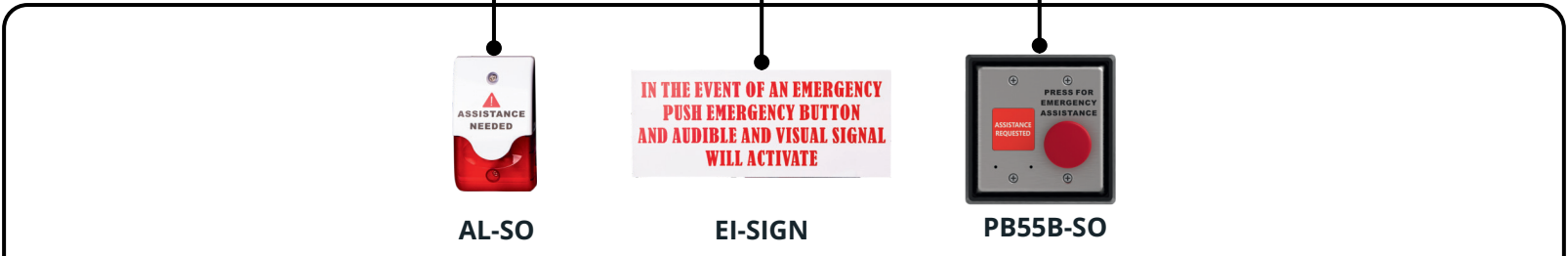


(128x167 mm)

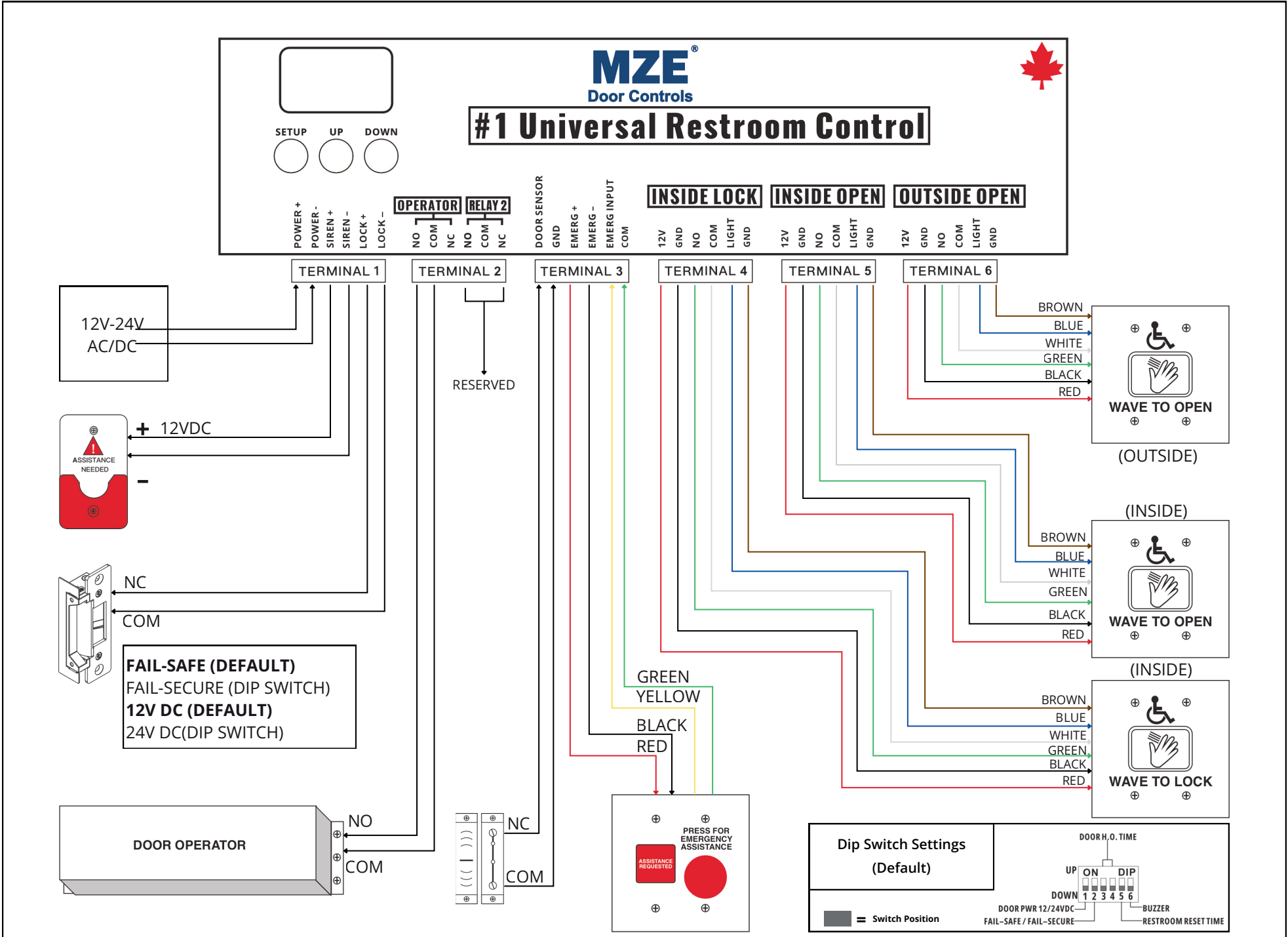
Restroom Touchless Control



Restroom Emergency Assistance

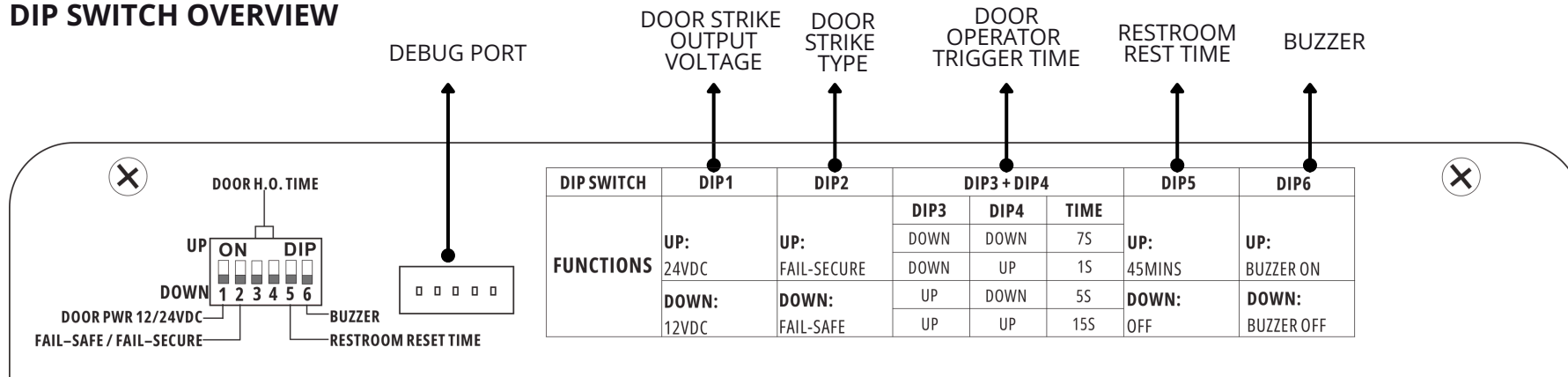


MZE RESTROOM KIT WIRING DIAGRAM - WR-WAVE-KIT/FULL



For detailed DIP switch settings, please refer to the "DIP Switch Functions" section.

DIP SWITCH OVERVIEW



DIP SWITCH SETTINGS

NO.	FUNCTION	OVERVIEW	OPERATION
DIP 1	DOOR PWR 12/24VDC	SELECTS THE OUTPUT VOLTAGE FOR THE DOOR LOCK.	ADJUSTABLE: DC12V(DEFAULT) / DC24V. THE CONTROLLER INCLUDES AN INTERNAL VOLTAGE REGULATION CIRCUIT. REGARDLESS OF WHETHER THE INPUT VOLTAGE IS AC OR DC12-24V, THE LOCK OUTPUT VOLTAGE CAN BE SET TO DC12V OR DC24V.
DIP 2	FAIL-SAFE / FAIL-SECURE	DEFINES THE OPERATING MODE OF THE ELECTRIC STRIKE.	FAIL-SAFE (DEFAULT): LOCKED WHEN POWERED, UNLOCKED WHEN POWER IS REMOVED. FAIL-SECURE: UNLOCKED WHEN POWERED, LOCKED WHEN POWER IS REMOVED.
DIP 3-4	DOOR H.O. TIME	RELAY OUTPUT ACTIVATION TIME (MOMENTARY TRIGGER).	SELECTABLE DURATIONS: • 1 SECOND • 5 SECONDS • 7 SECONDS (DEFAULT) • 15 SECONDS
DIP 5	RESTROOM RESET TIME	MAXIMUM LOCKED DURATION BEFORE AUTOMATIC RESET.	TIMER MODE: WHEN THE INTERIOR LOCK SWITCH IS ACTIVATED, THE DOOR WILL LOCK AND REMAIN SECURED FOR A MAXIMUM OF 45 MINUTES. THE SYSTEM WILL AUTOMATICALLY UNLOCK AFTER THE TIMEOUT TO PREVENT ACCIDENTAL LOCK-IN OR AN UNATTENDED LOCKED CONDITION. LOCK MODE (DEFAULT): WHEN THE INTERIOR LOCK SWITCH IS ACTIVATED, THE DOOR WILL REMAIN LOCKED UNTIL THE INTERIOR UNLOCK SWITCH IS ACTIVATED OR THE DOOR IS OPENED FROM THE INSIDE.
DIP 6	BUZZER	ENABLES OR DISABLES THE AUDIBLE BUZZER DURING ACTIVATION.	ON: A SHORT CONFIRMATION BEEP SOUNDS WHENEVER ANY CONTROL SWITCH IS ACTIVATED. OFF: NO BUZZER BEEP (RECOMMENDED FOR QUIET ENVIRONMENTS). DEFAULT: OFF(DEFAULT)