

Electrified Locks, Relays and Timers

CX-WC16-PS-M1 Series Restroom Control

INSTALLATION INSTRUCTIONS



THIS PACKAGE INCLUDES:

- 1 - CM-331/43S-SGLR SUREWAVE Touchless Switch
1 - CM331/42SW-SGLR SUREWAVE Touchless Switch
1 - CM325/42SW SUREWAVE Touchless Switch
1 - RM-MDA Surface Contact
1 - CX-ED1799L-8 Electric Strike
- 1 - WC16 Multifunction Relay Cabinet
1 - Transformer
1 - WC16 Restroom Red Sign
1 - Occupied When Red Decal

1. GENERAL DESCRIPTION

The Restroom Control Kit allows access in and out of a Restroom, with the ability to secure the door and make patrons aware that the location is either occupied or vacant while using Camden’s hands-free SURE-WAVE touchless switches.

The CX-WC16-PS-M1 Series of Restroom Control Kits are controlled by Camden’s advanced relay logic controller part number CX-33. The CX-33 currently has 2 pre-set modes that will accommodate most Restroom applications, Mode 7 (normally unlocked) or Mode 8 (normally locked). The default Mode for the CX-WC16-PS-M1 is Mode 7 (normally unlocked). Each Restroom Control Kit will have the ability to physically open the door then allow the patron to lock the door once inside. When locked, the CX-33 will change the coloring of the inside & outside SURE-WAVE touchless switches (with the SGLR light ring option) from green to red, displaying that the Restroom is in use. When the inside WAVE TO OPEN switch is activated it will unlock the door, then physically open the door and change the color of the inside & outside WAVE TO OPEN touchless switches SGLR light ring back to green, displaying that the Restroom is now vacant. The locked Restroom can be unlocked by either activating the inside WAVE TO OPEN touchless switch, or by using the crash bar, paddle or turning the knob set to open the door. Either method will reset the SGLR light ring back to green.

The CX-WC16-PS-M1 Series of Restroom Control Kits kit uses Camden’s CM-331/42WS-SGLR as the outside WAVE TO OPEN, the CM-325/42WS as the inside WAVE TO OPEN and the CM-331/43S-SGLR as the WAVE TO LOCK. The SGLR circuit board is installed on the front of the outside WAVE TO OPEN and on the front of the inside WAVE TO LOCK touchless switches making them easily seen by patrons at a distance.

2. SPECIFICATIONS

Model	WC16 Relay Cabinet (CX-33)
Voltage	AC Input: 12V to 28V; DC Output: 12 or 24V
Current Supply	2 Amps
Battery Backup	Gel Type (not supplied)
LED Indicator	AC Input and DC Output
Temperature	Operating: 0° C to 49° C (32° F to 120° F) Storage: - 20° C to 70° C (- 4° F to 158° F)
Inputs	(4) Dry, (1) Wet 5V to 120V AC/DC, Non-Polarity Optically Isolated
Outputs	(3) Form ‘C’ (SPDT), 3 Amps @ 24V DC
Time Delay	Hold 1 Timer: 0 to 50 seconds Delay 1 Timer: 0 to 15 seconds Hold 2 Timer: 0 to 50 seconds Delay 2 Timer: 0 to 60 seconds Hold 3 Timer: 0 to 50 seconds Delay on Activate: 0 to 10 seconds
Dimensions	11-1/16” H x 7-7/8” W x 2-13/16” D (281mm x 200mm x 72mm)

Model	CM-331
No. of IR Sensors	2
Operating Voltage	12-24 Volts, AC/DC ± 10%
Current Draw	40 mA
Standard Operating Range	1”- 28” (25.4mm - 711.2mm) Factory Set to 12” (304mm)
Auto Range Operation	6”-40” (152.4mm – 1.016m) Hand 6”-72” (152.4mm – 1.820m) Body
Relay Contact Rating	3 Amps @ 30 V DC
Relay Operating Time	3 - 30 seconds
Active Output	9 - 12V
Output Type	Fail-Secure or Fail-Safe
Inputs	- ‘Request To Exit’ - External (Door Contact) Input
Optional LED Ring	On/Off, Red, Blue, Green
Current Draw	8mA Max.
Wireless Output	Tx-99 Plug-in 915mhz. Spread Spectrum Wireless Transmitter
Operating Modes	Motion Sensing Modes: - Momentary - Momentary with Alarm - Maintained (Latching) Relay Operation Modes: - Single Event - Toggle
Relay Output	Form ‘C’ (SPDT)

Model	CM-325
Operating Modes	Pulse (sense) / Toggle
Operating Voltage	12-24 Volts, AC/DC ± 12%
Current Draw	50 - 60 mA
Response Time	100 ms.
Activation Range	Minimum: 2” (51mm) Maximum: 18” (457mm) Factory Set to 6” (152mm)
Operating Temp	-4 to +153 °F (-20 to +85 °C)
Relay Output	Form ‘C’ (SPDT)
Relay Contact Rating	5 amps @ 30V DC
Output Type	Normal or Fail-Safe
Time Delay	1 to 5 Seconds
Connections	11” 22 AWG Leads
Technology	Infra-Red with Coded Modulated Carrier
Security	Automatic Self-changing ID
Electrical Life	100,000 Operations @ Rated Capacity 500,000 Operations @ ½ Rated Capacity
Faceplate Sizes	Jamb, 1-gang & 2-gang
Mounting	2 x #6-32 M5
Body Size	4” L x 1” W x 1-1/2” D (101mm x 25.4mm x 38.1mm)

Model	CX-ED1799L-8
Voltage	12/24V AC/DC
Current Draw	300mA@12V 150mA@24V DC
Static Strength	1,500 Lbs.
Dynamic Strength	70 Ft-Lbs.
Endurance	1,500,000 Cycles (Factory Tested) 250,000 Cycles (UL Verified)
Fire Rating	UL 10C/CAN4-S104 3 hrs. (Fail Secure Only)
Mode	Field Selectable Fail Safe/Fail Secure
Operation	AC-Buzz, DC-Silent
Duty	Continuous
Latch Bolt Monitor	SPST, 100mA @ 24V DC
Strike Monitor	SPST, 100mA @ 24V DC
Dimensions	4-7/8" H x 1-5/8"W x 1-21/32" D (124mm x 41mm x 42mm)

3. INSTALLATION

Operation at a Glance

When the outside WAVE TO OPEN touchless switch is activated it will trigger its N.O. relay contact to send a momentary closure to the CX-WC16-PS-M1 allowing the door to swing open.

When the interior WAVE TO LOCK touchless switch is activated it will trigger its N.O. relay contact to send a momentary closure to the CX-WC16-PS-M1 to lock the Restroom and switch the SGLR light ring color from green to red. The inside WAVE TO OPEN. When activated will unlock the door, and the door will swing open.

The Restroom can also be unlocked by opening the door from the inside which will break the door contact circuit causing the CX-WC16-PS-M1 to reset and unlock the door. The SGLR light ring will switch back to green signalling the Restroom is now vacant.

Mounting

IMPORTANT: Do not apply power to the unit until you have fully read the instructions and have made the required adjustments.

The CX-WC16-PS-M1 cabinet should be mounted in a clean dry location out of direct contact with the elements.

Wiring the CX-WC16-PS-M1 Series Restroom Control Kit is as follows:

The CX-WC16-PS-M1 comes with the CX-33 pre-wired to a labeled set of two terminal strips. This will make the wiring of the WAVE TO OPEN/WAVE TO LOCK sensors easier since the wiring manual will no longer need to be directly referenced for termination points. A complete wiring diagram is adhered to the inside of the door to provide a layout of the wiring as a reference when wiring the field devices to the kit.

There are two terminal strips that mirror the locations on the CX-33. The left strip is used for power to the CX-33, the PUSH TO OPEN (WAVE TO OPEN) and PUSH TO LOCK (WAVE TO LOCK) sensors, the door position switch, and the Wet trigger. The right strip is for the outputs to drive the strike (Relay 1), door operator (Relay 2), SGLR light ring (Relay3), and to provide VDC power for the door strike.

All SURE-WAVE devices can be powered with 12/24 VAC/VDC.

Note: The SGLR option (light ring) must be installed before applying power to the sensor.

Wiring the Outside WAVE TO OPEN Sensor
(CM-331/42WS-SGLR)

Wire in power to the TB1 terminal block on the back lower left side (not polarity sensitive). On terminal block TB3, wire the common and normally open poles of the relay to Dry1 & Input on the CX-33. The Remote terminal (TB2) will be wired in parallel with the Remote terminal (TB2) of the Inside WAVE TO LOCK.

Then it's wired to Relay 3 (common & normally open) of the CX-33. Install the SGLR (light ring) circuit board on the front-face of the Outside WAVE TO OPEN sensor.

Confirm the DIP switch settings using the legend below. Adjust the range accordingly with POT1 and POT 2 for the desired activation time.

Wiring the Inside WAVE TO OPEN Sensor (CM-325/42WS)

Wire in power using the two red wires (not polarity sensitive). Next, connect the Blue wire (normally open) and the green wire (common) to Dry2 & Input on the CX-33.

The range and the activation time can be adjusted from the front-face of the sensor. The range adjustment is on the top and the activation time is located on the bottom.

Wiring the Inside WAVE TO LOCK Sensor (CM-331/43WS)

Wire in power to the TB1 terminal block on the back lower left side (not polarity sensitive).

On terminal block TB3, wire the common and normally open poles of the relay to Dry3 & Input on the CX-33.

The Remote terminal (TB2) will be wired in parallel with the Remote terminal (TB2) of the Outside WAVE TO OPEN. Then it's wired to Relay 3 (common & normally open) of the CX-33. Install the SGLR (light ring) circuit board on the front-face of the Inside WAVE TO LOCK sensor.

Confirm the DIP switch settings using the legend below. Adjust the range accordingly with POT1 and POT2 for the desired activation time.

Once all field devices are wired to the CX-WC16-PS-M1 then AC power can be wired in.

IMPORTANT: Do not apply power to the unit until you have fully read the instructions and have made the required adjustments.

The supplied CX-TRX-5024 transformer will have its secondary

terminals wired to the terminals on the top of the left terminal strip marked as "AC".

Next, wire the primary terminals to the AC feed to be used. Confirm your connections and apply power by turning on the electrical panels breaker.

Selecting a Mode

The CX-WC16-PS-M1 has two Restroom applications built in (Mode 7 & 8). **The default mode for the CX-WC16-PS-M1 is Mode 7 (normally unlocked).**

Determining which mode is correct for you will be based on whether the Restroom will be normally unlocked (Mode 7) or normally locked (Mode 8).

There are three LED displays that will allow you to see what mode you have selected when advancing through the modes.

To change the mode of the CX-WC16-PS-M1, simply press the MENU button once and use the UP button to advance to the desired mode.

Editing the Settings for a Mode

Camden builds in typical times for lock release and door operator activation and is ready to use without changing any parameters. If you need to change the timing or delay for an output, it can be done by pressing the "MENU" button within the mode you selected.

Once the option is selected you can use the "UP or DOWN" buttons to select the timing needed. The first option(H & 1 flashing) will be how long relay 1 will be activated for (0-50 seconds).

The second option (d & 1 flashing) will be how long to wait before activating relay 2 (0-15 seconds).

The third option (H & 2 flashing) will be how long relay 2 will be activated for (0-50 seconds).

The fourth option (d & 2 flashing) will be how long to wait before activating relay 3 (0-15 seconds).

The fifth option (H & 3 flashing) will be how long relay 3 will be activated for (0-50 seconds). See following chart.

Factory Reset (Defaulting the CX-33)

To return the CX-33 back to its factory default settings you will need to remove power, then hold down the “MENU” button while powering up the CX-33.

Once started you will see the firmware version listed then a number “1” will be displayed. Reconnect your power and press the “MENU” button once then use the “UP” or “DOWN” button to advance to the desired mode.

Fully test the operation of the CX-WC16-PS-M1 for proper functionality.

Display (M)	Description (Mode you are in)	Parameters (1-15)
H, then 1	Relay 1 Hold Time	0.0 to 50 seconds
d, then 1	Relay 2 Delay Time	0.0 to 15 seconds
H, then 2	Relay 2 Hold Time	0.0 to 50 seconds
d, then 2	Relay 3 Delay Time	Depends on Mode
H, then 3	Relay 3 Hold Time	0.0 to 50 seconds
d	Sets the display ON or OFF during operating mode	ON or OFF
A	Input delay on Activate. If other than 0.0 is selected, the input must be held in for the time period chosen before the CX-33 will activate.	0.0 to 10 seconds
1	Set Dry Input 1 to activate on normally open or normally closed contact.	N/O OR N/C
2	Set Dry Input 2 to activate on normally open or normally closed contact.	N/O OR N/C
3	Set Dry Input 3 to activate on normally open or normally closed contact.	N/O OR N/C
4	Set Dry Input 4 to activate on normally open or normally closed contact.	N/O OR N/C
5	Set Wet Input 5 to activate on normally open or normally closed contact.	N/O OR N/C

Mounting

The Sure-Wave™ may be mounted in single or double gang electrical boxes, and 4 x 4 boxes.

NOTE: The sealing gasket (included) is recommended for outdoor or wet locations.
If using with Automatic doors install in accordance with ANSI A156.10 / A156.19.
Select from one of the following mounting subsections:

SINGLE GANG ELECTRICAL BOX MOUNT - CM-331/4S-SGLR

1. a) If using an in-wall box ensure the box is plumb and square, and flush with the wall surface.
b) If using a surface box, ensure it is secure & plumb.
(See Figure 3.1 and 3.2)

2. Bring your 4 or 6-conductor wire through the back or side of the enclosure and leave approximately 6” tail for wiring connection.

3. Make the electrical connections to the device according to the wiring section.

4. Using the dip switch located on the end of the unit, set the
- operating mode.

5. Attach the unit to the enclosure using the two #6-32 screws provided.

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

7. Attach the faceplate to the unit using the two black #6-32 x 1/2” machine screws or tamperproof screws.
NOTE: Do not overtighten!

8. Apply the label as required.

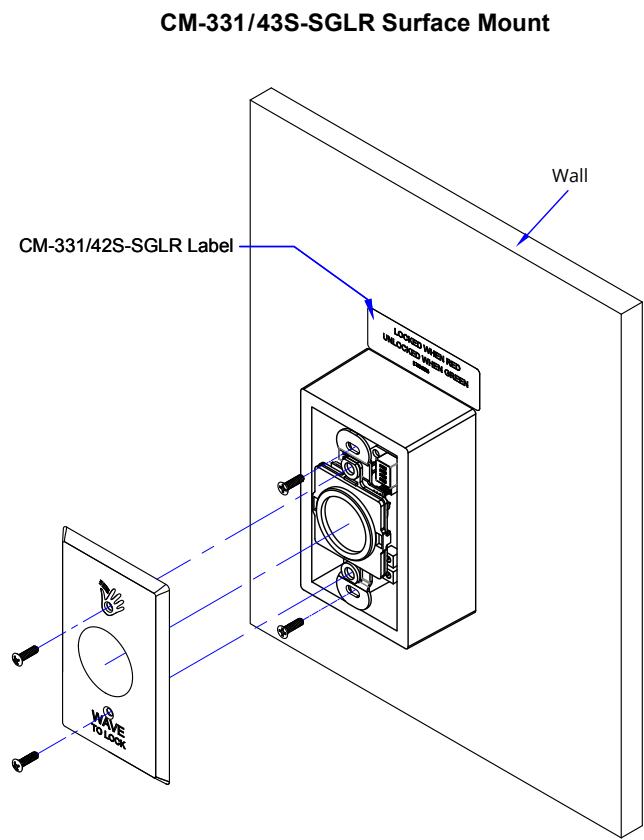


Figure 3.1 Single Gang Surface Mounting

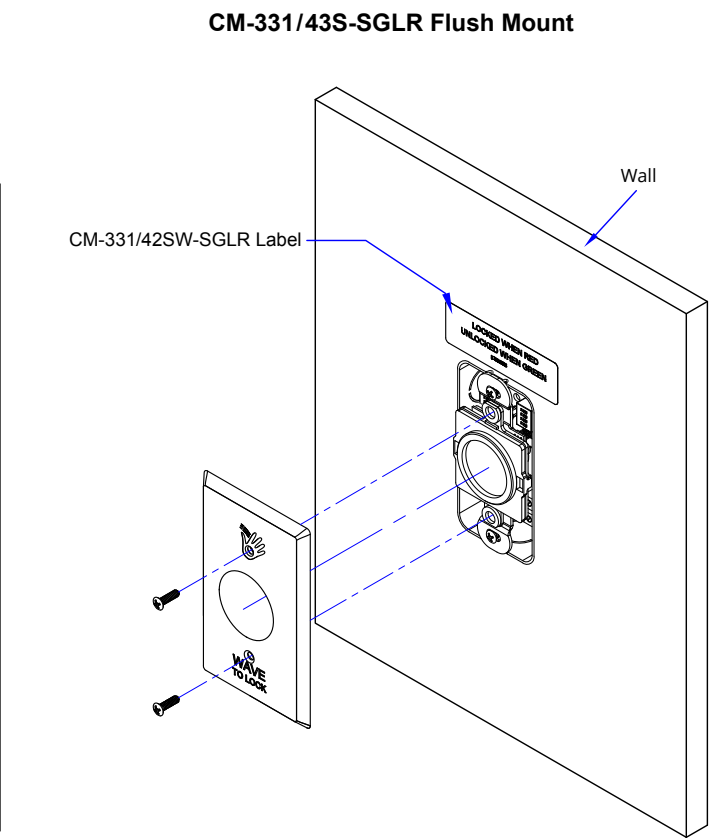


Figure 3.2 Single Gang Flush Mounting

DOUBLE GANG ELECTRICAL BOX MOUNT - CM-331/42SW-SGLR - CM-325/42SW

1. a) If using an in-wall box ensure the box is plumb and square, and flush with the wall surface.

b) If using a surface box, ensure it is secure & plumb.

c) If using a 4 x 4 box, ensure the box is plumb and square, and flush with the wall surface, then attach the metal adaptor plate (included in the packages) to the box using appropriate fasteners.

(See Figures 3.3 an 3.4)
2. Bring your 4 or 6-conductor wire through the back or side of the enclosure and leave approximately 6" tail for wiring connection.

3. Make the electrical connections to the device according to the wiring section.
4. Using the dip switch located on the end of the unit, set the operating mode.

5. Attach the unit to the enclosure using the two #6-32 screws provided.

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

7. Attach the faceplate to the unit using the two black #6-32 x 1/2" machine screws or tamperproof screws.
- NOTE: Do not overtighten!**

8. Apply the label as required (only for the CM-331/42SW-SGLR).

CM-331/42SW-SGLR & CM-325/42SW Flush Mount

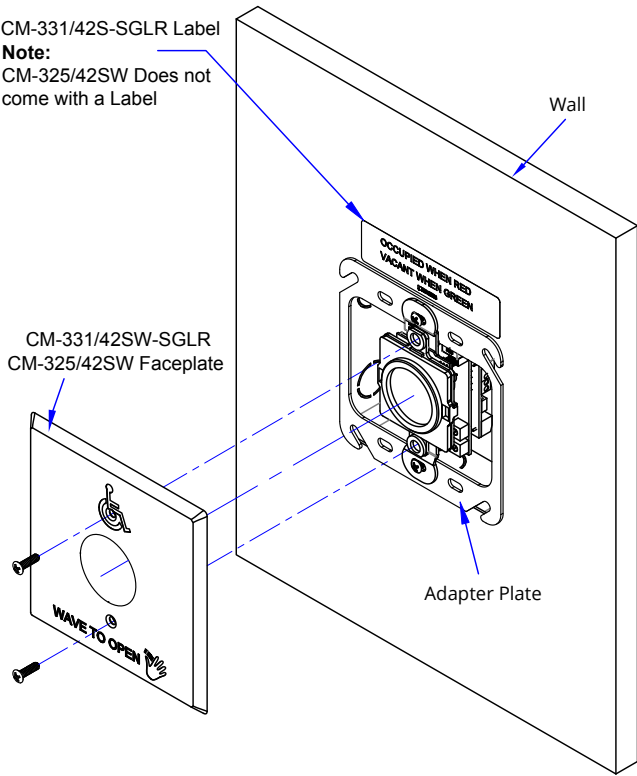


Figure 3.3 Double Gang Mounting

IN-WALL MOUNTING

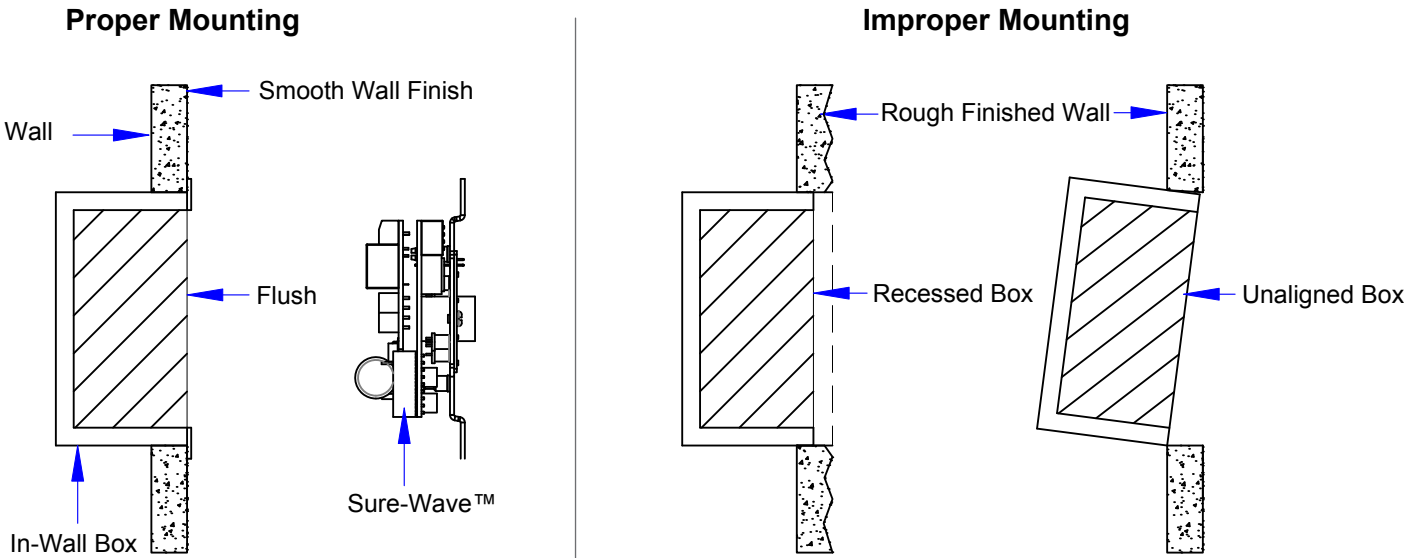


Figure 3.4 In-wall Mounting

SUREWAVE ASSEMBLY

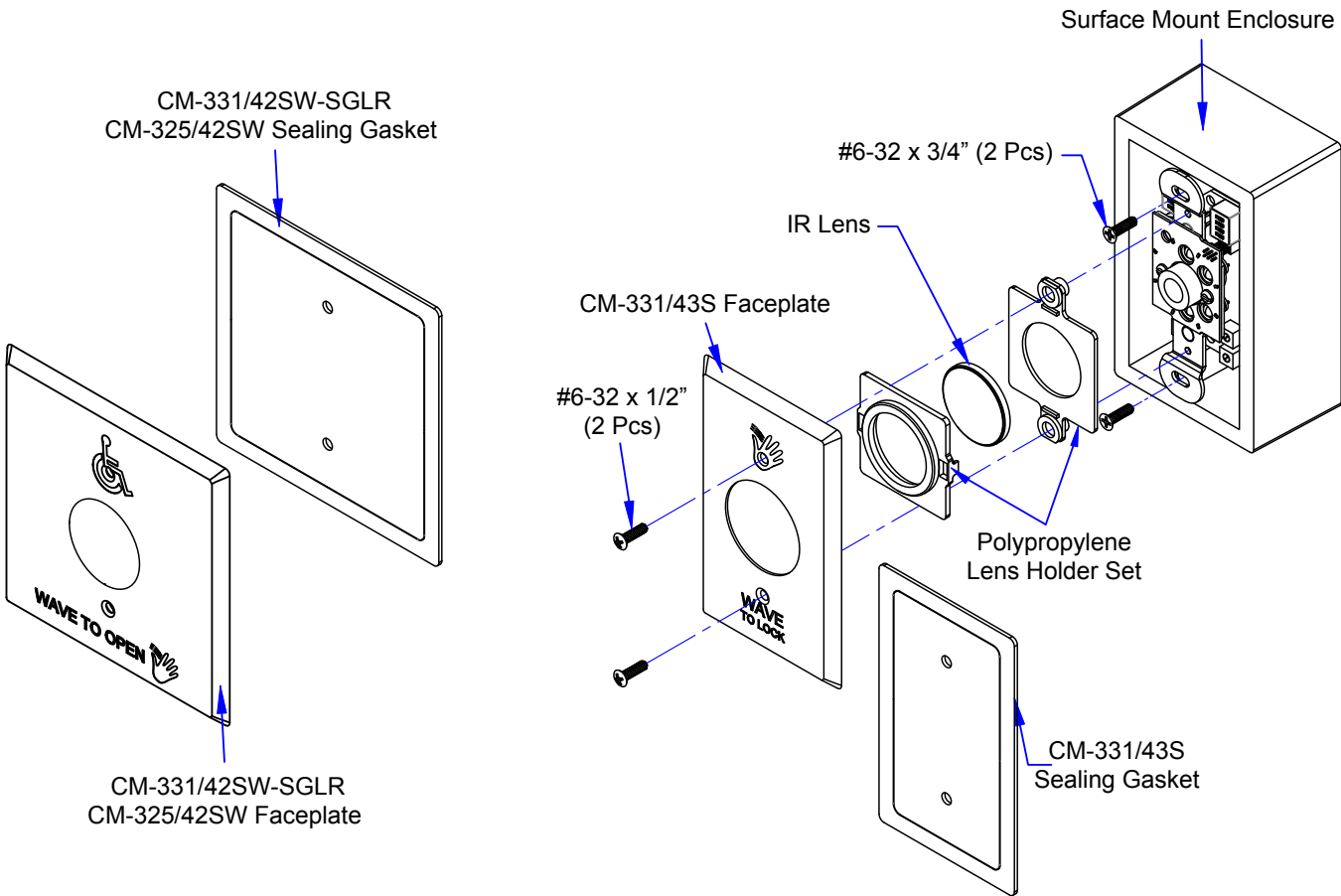


Figure 3.5 SureWave Installation

4. CX-ED1799L-8 ELECTRIC STRIKE INSTALLATION

Note:

- The products are intended to be installed in accordance with the installation wiring diagram, mechanical assembly drawings provided with each product, the local authority having jurisdiction (AHJ) and the electric code, NFPA 70. When installed in fail secure mode, the local authority shall be consulted with the regards to the use of possible panic hardware to allow emergency exit from the secure area.
- The electric door strike shall be installed in such a way and in such a location so as to not impair the operation of an emergency exit device or panic hardware mounted on the door.

INSTALLATION

- Check that the door jamb has a cutout that fits the strike assembly. If not, refer to figure 4.2 for guidance.
- Follow the instructions in section 7 to connect the wires.
- Use the 12-24 x 1/2" machine screws provided to mount the strike onto the door jamb.
- Test the fit of the electric strike in the mortise. If necessary, adjust it until it fits properly.

ANSI FRAME

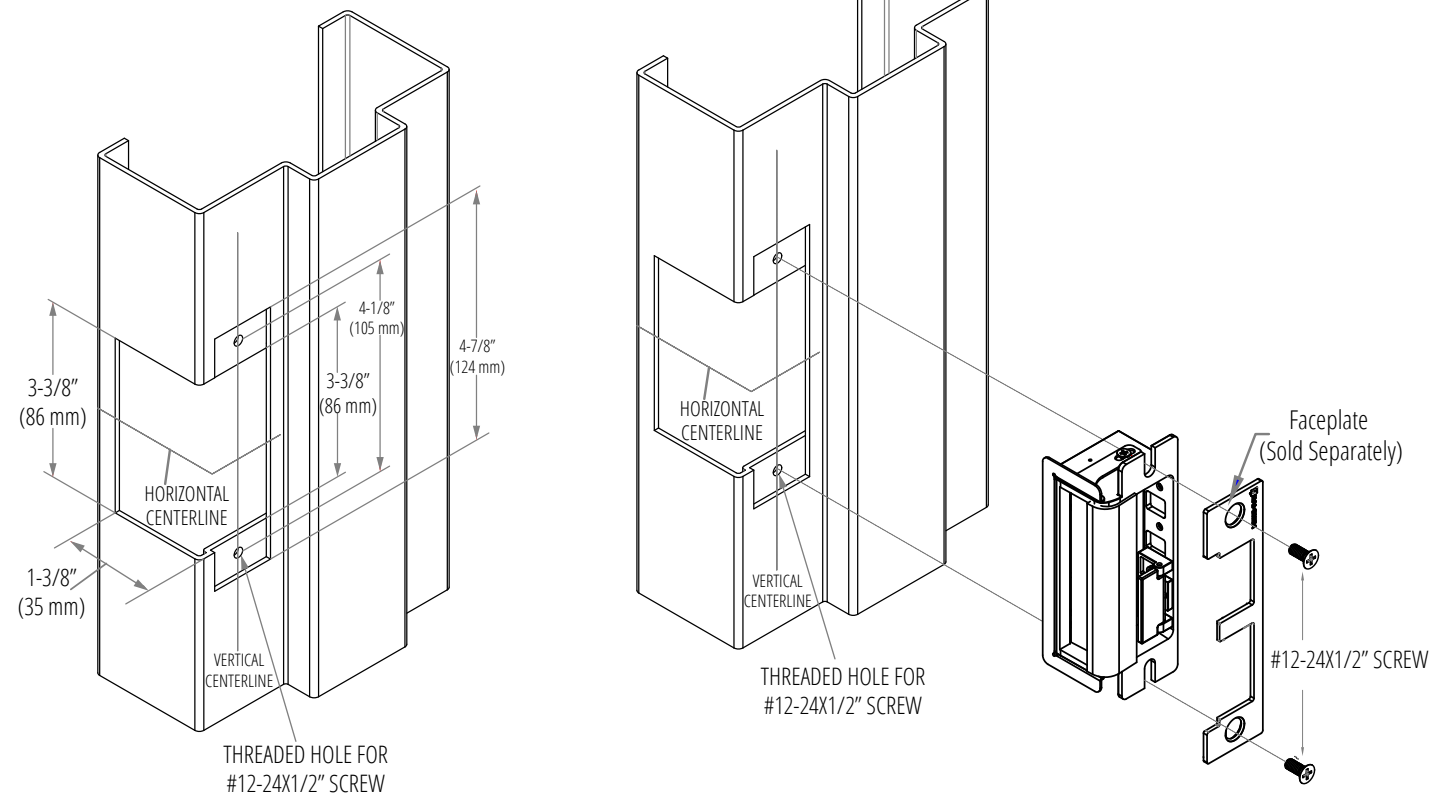


Figure 4.2 Cutout Dimensios

LATCH BOLT INSTALLATION

Note: Figures show typical installation. The dead bolt bracket, can be mounted in alternate locations depending on RH or LH installation.

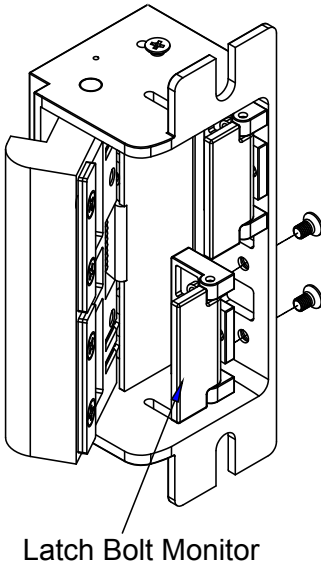
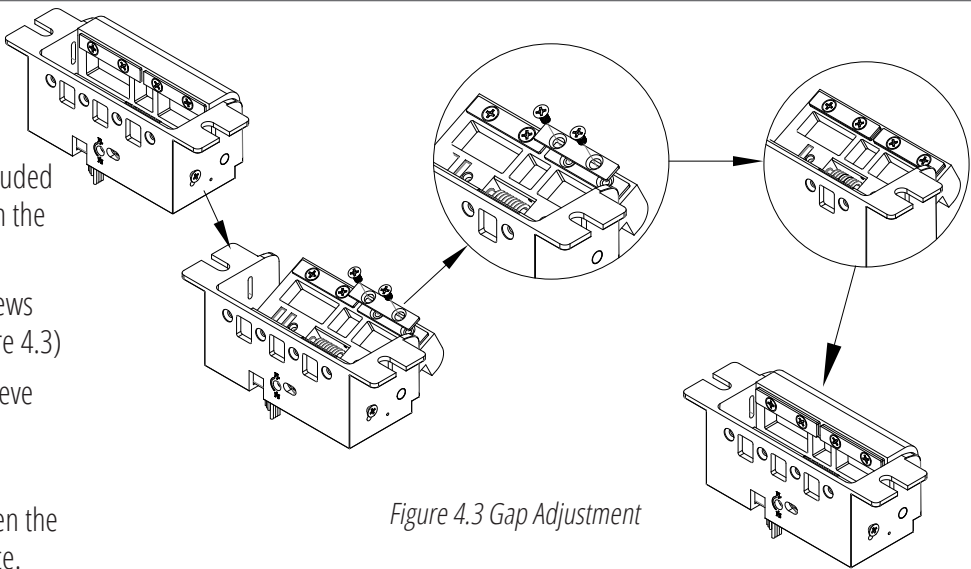


Figure 4.1 CX-ED1799L Latch Bolt Installation

GAP ADJUSTMENT BETWEEN KEEPER AND LATCH

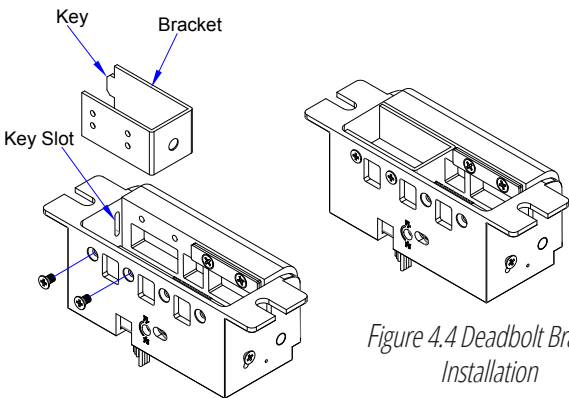
The strike comes with four keeper shims included in the package for adjusting the gap between the keeper and latch. To modify the gap,

- First loosen and remove the two set screws that secure the keeper shims. (see Figure 4.3)
- Add or remove shims as needed to achieve the desired gap between the latch and keeper.
- Once the gap is adjusted, securely tighten the two set screws to keep the shims in place.



DEADBOLT BRACKET INSTALLATION

- Place the deadbolt bracket inside the strike opening. (see Figure 4.4)
- Align the key on the bracket to fit the key slot on the strike. Ensure the bracket lock to the strike body.
- With the screw holes aligned, take the supplied # 4-40 x 3/16" Screws, and tighten the bracket in place.



CONNECTION

POWER	
12VDC	24VDC
Red/Black: +12V	Red: +24
Blue/Green: Ground	Green: Ground

A varistor is provided to protect/prevent strike from spikes. Connect varistor between input wires. (See Figure 4.5)

Note: For UL 294 / UL 1034 compliance, the door strikes are to be powered via a UL 294/ UL 603 class 2 power limited output from a control panel and or power supply. Furthermore, when powered by AC/DC the units shall use a UL regulated UL 294/ UL 603 power limited class 2 output rated 12/24V with AC on indicator.

Latch Bolt Monitor

This SPST monitor provides position status for the lockset latch bolt. When the latch is engaged, this monitor will provide a contact closure between the COM (white) and NO (purple) wires.

Strike Monitor Operation

The Strike Monitor provides status information for the operation of the strike. When the strike is activated this Form C monitor changes state.

Door Contact

The provided concealed door contact provides the ability to monitor the status of the door in conjunction with the latch bolt monitor. The door contact can be monitored separately or can be connected in series with

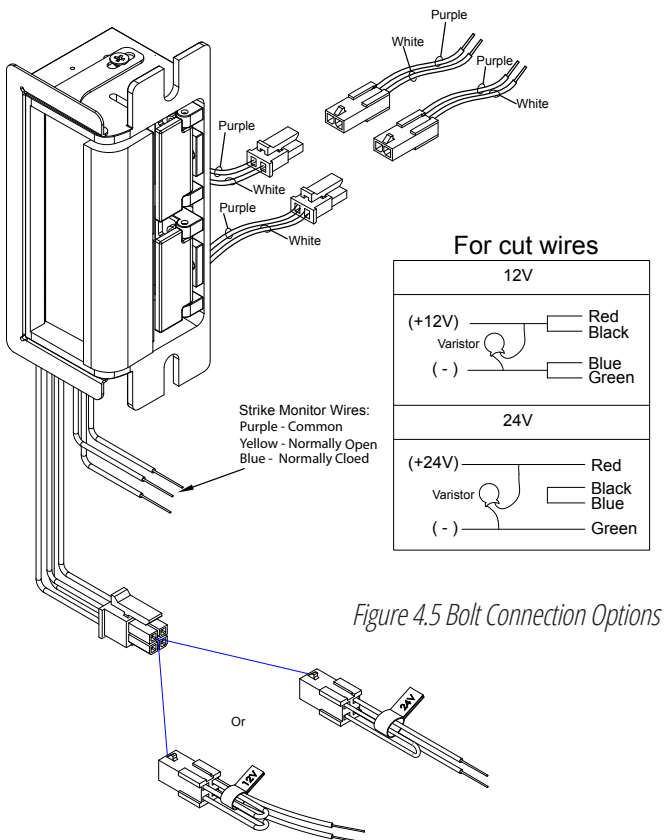


Figure 4.5 Bolt Connection Options

the latch bolt monitor. The door contact operates with the same logic as the latch bolt monitors. It provides an OPEN connection when the door is open and a CLOSED connection when the door is closed.

5. CX-ED1799L-8 OPERATION

The strike is designed to operate in fail-secure mode by default. However, if needed, it can be changed to fail-safe mode by adjusting the mode screw as follows (See Figure 5.1):

- 1. Loosen the set screw.
- 2. Turn the mode screw counterclockwise (CCW) to enable fail-safe mode or clockwise (CW) to enable fail-secure mode.
- 3. Tighten the set screw.

Note: Refer to the CX-ED1799L Instructions Manual for more information.

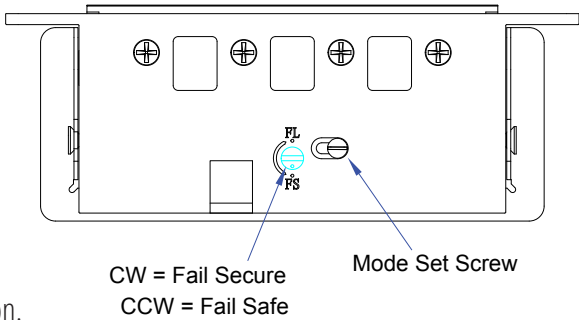


Figure 5.1 Strike Operation

6. ORDERING INFORMATION FOR REPLACEMENT PARTS

Item	Part Number	Description
1	60-31A008	1. Line Powered Surewave, 1 Relay for CM-331/43S-SGLR & CM-331/42SW-SGLR
	60-31A006	Touchless IR Sensor Short Range for CM-325/42SW
2	60-40E035	Advanced Logic Control Relay and 2 Amp Power Supply in pre-wired metal cabinet
3	CX-MDA	Magnetic Door Contact
4	60-81C024	English Self-Adhesive Vinyl Sign "WAIT FOR DOOR TO CLOSE"
CM-331/43S-SGLR		Single Gang SureWave Label
5	60-81C010	Decal Print English Label "LOCKED WHEN RED/UNLOCKED WHEN GREEN"
6	60-81C010F	Decal Print French Label "PORTE BARRÉE/PORTE DÉBARRÉE"
7	60-81C010FE	Decal Print English & French Sign "WAIT FOR DOOR TO CLOSE"
8	60-81C011	Decal Print English Sign "OCCUPIED WHEN RED VACANT WHEN GREEN"
		Single Gang SureWave Enclosure
9	CM-34BL	Single Gang Black ABS Box, Surface Mount 2-7/8" W x 4-5/8"H x 1-3/4"D (73mm x 117mm x 44mm)
10	CM-34AL	Single Gang Aluminum Box, Surface mount 2-7/8"W x 4-5/8"H x 2"D (73mm x 117mm x 51mm)
11	CM-34D	Single Gang, Extra Deep heavy-duty grey polymer 2-3/4"W x 4-1/2"H x 3"D (70mm x 114mm x 76mm)
CM-331/42SW-SGLR		Double Gang SureWave Label
12	60-81C012	Decal Print English Label "OCCUPIED WHEN RED/VACANT WHEN GREEN"
13	60-81C012F	Decal Print French Label "PORTE BARRÉE/PORTE DÉBARRÉE"
14	60-81C012FE	Decal Print English & French Label "OCCUPÉ QUAND ROUGE LIBRE QUAND VERT" & "OCCUPIED WHEN RED VACANT WHEN GREEN"

Notes :

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Questions? Call us toll-free at 1-877-226-3369 or technical support 905-366-3377 (ext. 505)



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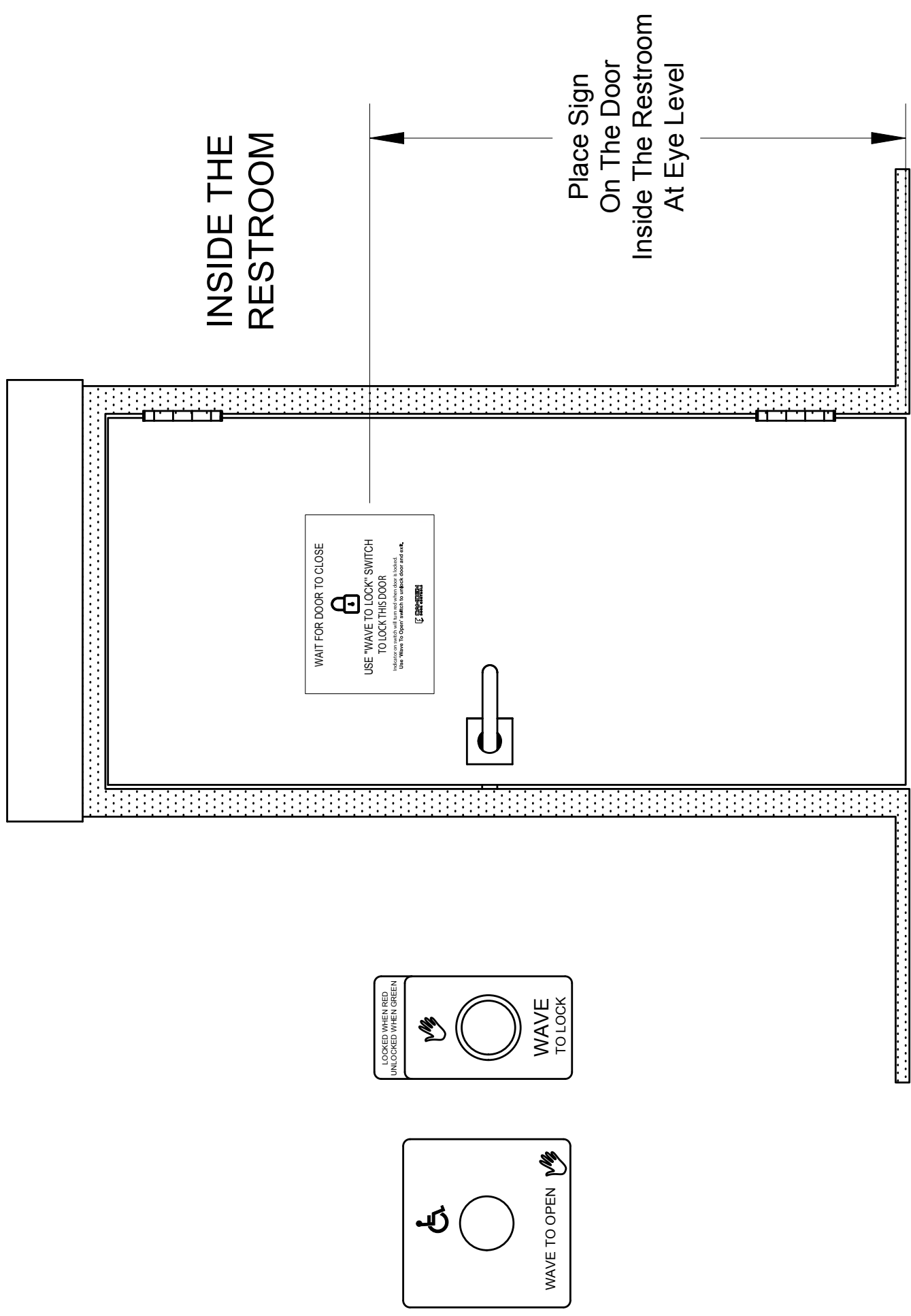
Call: 1.877.226.3369 / 905.366.3377
Visit: www.camdencontrols.com



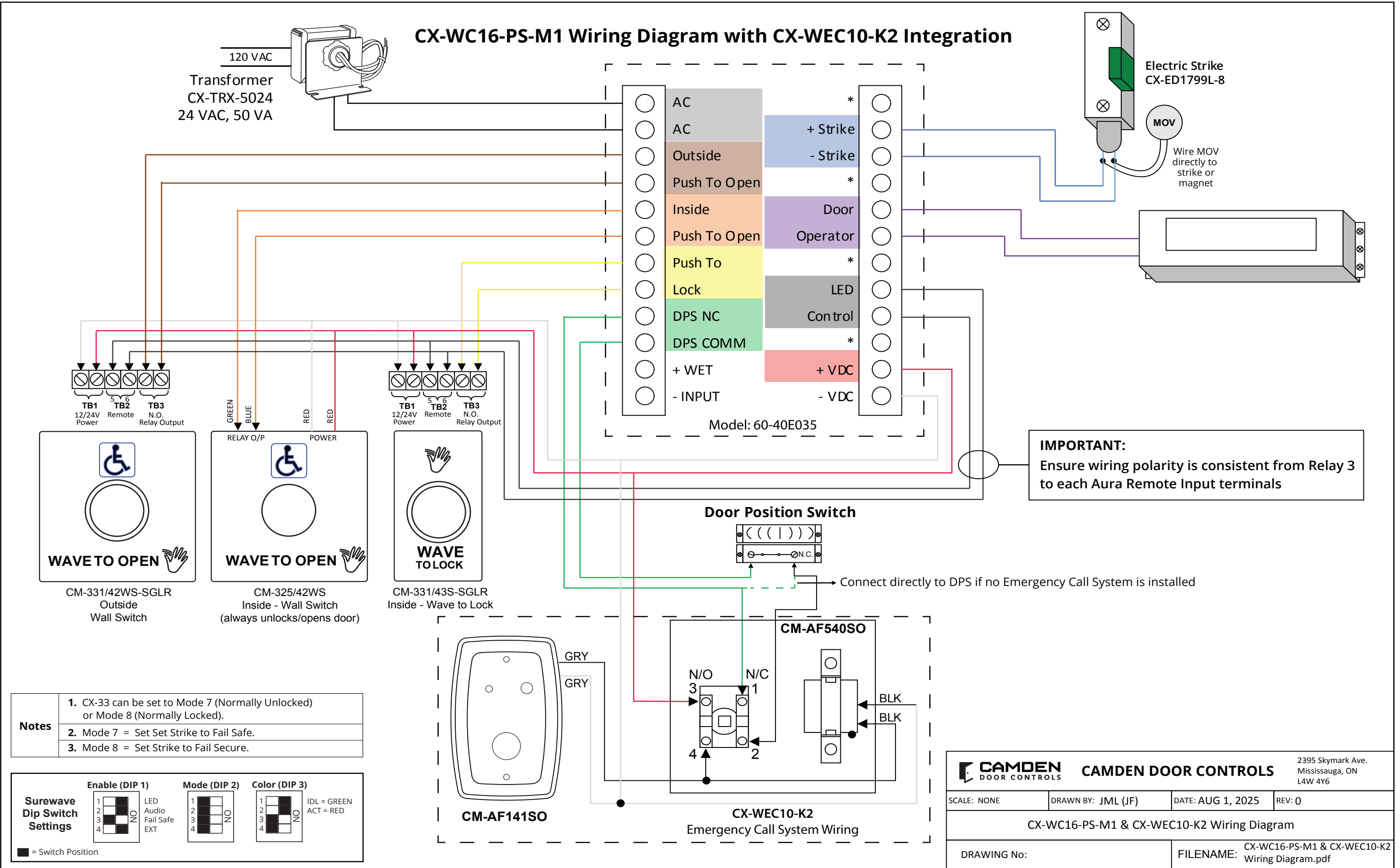
Certified ISO 9001: 2015

File: CX-WC16-PS-M1_Restroom_
Control_Manual.indd
Rev.: August 28, 2025
Part No.: 40-82B239M1

RESTROOM SIGNAGE



CX-WC16-PS-M1 Wiring Diagram with CX-WEC10-K2 Integration



CABINET BASE

