

# CX-WC17VR Series Restroom Kit

## INSTALLATION INSTRUCTIONS



### THIS PACKAGE INCLUDES:

#### Column™ Switches:

- 3 - CM-7536VR V2 Column™ Switch
- 12 - #14 x 1-1/2" Self Tapping Screws
- 12 - Anchors
- 12 - Concrete Anchors
- 12 - 1/4-20 x 1" S/S Pan HD PH Screws
- 6 - Wire Nuts
- 3 - Jumpers

#### CX-33 Logic Relay:

- 1 - CX-33 Relay
- 1 - 1-1/2" x 1-1/2" Velcro
- 1 - Resistor
- 1 - Surface Mounting Contact
- 1 - 7" x 5" WC Sign
- 1 - "Occupied When Red" Sign
- 1 - "Locked When Red" Sign
- 4 - Foam Tape

### 1. GENERAL DESCRIPTION

The all-new Camden CX-WC17VR Restroom Control Kit now comes with the built-in CM-221 Hands-Free Switch, which uses active infrared sensor technology and is designed to be used in ADA-compliant automatic door control applications and access control. The CM-221 switch eliminates the spread of germs by avoiding physical contact and provides greater convenience when moving through the premises. For smooth operation, the CM-221 has an adjustable time delay of 0.5 to 20 seconds and an adjustable range of 2" to 8" (5cm to 20cm).

The CX-WC17VR Restroom Control Kit is controlled by Camden's CX-33 advanced relay logic controller (designed to support virtually any automatic door application).

#### Operation at a Glance

The CX-WC17VR has two modes: Mode 7 and Mode 8. Mode 7 refers to the "Normally Unlocked" condition, when the exterior PUSH to OPEN Column™ Switch is pressed or waved, it triggers the door operator to open the door. Mode 8 refers to a "Normally Locked" condition, where entry to the restroom is accomplished by a Keyswitch, Keypad, Prox Reader, or other secure means. The exterior PUSH TO OPEN Column™ Switch is still utilized, but in this mode it is to be wired in series with the limited access device mentioned above.

Inside the restroom once the door closes, if the PUSH to LOCK Column™ Switch is pressed or waved, it keeps the door locked and disables the exterior PUSH to OPEN column switch. The LED light ring on the Column Switch turns red, indicating the restroom is occupied. The user can either press or wave PUSH to UNLOCK Column™ Switch as they exit the restroom. The LED light ring on the Column Switch turns green, indicating the restroom is now available to be used.

**Note:** While exiting, the user can also use the lever handle to open the door; in this case, the system will reset to its initial condition (mode 7 or mode 8), and the red light will turn green, allowing other users to use the restroom.

### 2. SPECIFICATIONS

Model	CM-7536VR V2
Voltage	12 to 24 VDC +/- 10%
Current	45 mA (peak)
Contact Rating	1 Amp @ 30 VDC
Contacts	Common/ N.O./ N.C.
Temperature Range	14F to 122F (-10 to 50 °C)
Response Time	10ms
Construction	Heavy duty extruded aluminum
Finish	Anodized clear, black, blue, dark bronze
Mounting	4 x #14 wood screws with anchors or 1/4"-20 S/S machine screws
Actuator Width	3" (76mm)
Dimensions (overall)	37-1/2" H x 5-7/8" W x 1-3/4" D (955mm x 150mm x 44mm)

Model	CX-33
Operating Voltage	12/24 Volts, AC/DC
Current Draw	105 mA standby, 320 mA max.
Operating Temperature	Operating: - 30° C to 85° C ( -22° F to 185° F)
Display	Blue multi-segment LED
Programming	MENU, UP & DOWN buttons
Inputs	(4) Dry, (1) Wet 4.5V to 120V AC/DC, Non-Polarity Optically Isolated, non-polarity sensitive)
Response Time	0.5 seconds
Relay Output	3 x Form 'C' (SPDT)
Relay Contact Rating	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	2" H x 6" W x 7/8" D (51mm x 152mm x 22mm)

### 3. CX-33 MOUNTING, WIRING & MODE SETTING

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

The CX-WC17VR Restroom Control Kit includes the CX-33 Advanced Logic Relay. A complete wiring diagram is included in this manual.

#### Mounting

The CX-33 should be mounted in a clean dry location out of direct contact with the elements. Ideal locations include inside a metal enclosure, operator header, or above a false ceiling. The Display & LEDs are visible through the clear plastic case, and cut-outs for programming buttons and terminal strips. Once wired and adjusted, the unit can be tucked into the operator header or secured using the supplied velcro or screws.

#### Wiring

Refer to the complete wiring diagrams included in this manual.

There are two terminal strips on the CX-33. The left strip is used for power to the CX-33, the PUSH TO OPEN and PUSH TO LOCK column switches, 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), LED illumination (Relay3), and to provide VDC power for the door strike.

Once all field devices are wired to the CX-WC17VR then AC power can be wired in.

**IMPORTANT: Confirm the electrical panels breaker you are going to be using is currently off. Do not wire the primary terminals of the transformer until the secondary terminals are connected first.**

#### Mode Selection

Mode selection depends on the user requirements;

- If the user wants the restroom unlocked during the idle state, use Mode 7 (Default).
- If the user wants the restroom locked during the idle state, use Mode 8. Additional contact block for Mode 8 - Fail Secure is not included; order Part Number 60-66C000.

**Note:** The default mode for the CX-WC17VR is Mode 7 (normally unlocked).

There are three LED displays on the CX-33 that allows you to see what mode you have selected when advancing through the modes. To change the mode, press the MENU button once and use the UP button to advance to the desired mode.

**Mode Editing**

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 on the CX-33. 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 the Table 3.1 on the following page.

**Factory Reset (Defaulting the CX-33)**

To return the CX-33 back to its factory default settings, you must remove the power, then hold down the MENU button while powering up the CX-33. Once started, you will see the firmware version listed, and 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. For proper functionality, fully test the operation of the CX-WC17VR.

Table 3.1 Adjusting the Settings in CX-33

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 when voltage applied or removed. N/O: voltage applied to activate; N/C: voltage removed to activate.	N/O OR N/C

**4. CM-7536VR V2 COLUMN™ SWITCH INSTALLATION**

Code Requirements: If installed according to these instructions the CM-7536VR V2 Column™ switch will meet the requirements of the California Building Code (Section 1117B.6, Date: 2009), and Section 3.8.3.3.17(b) of the Ontario Building Code.

CM-7536VR V2 complies with the National Building Code of Canada reference to CSA Regulation 5.2.9.3 (c) ii.

The CM-7536VR V2 Hands-Free Column™ switch is a VDC device only and will accept a range of VDC power from 12VDC to 24VDC (+/- 10%). Do not connect AC voltage to the CM-7536VR V2 Hands-Free Column™ Switch at any time.

**Installation Steps:**

1. Unpack the pre-assembled unit from the box. To mount the switch, it is required to disassemble a few components. Firstly, remove two Phillips screw holding the top End Cap in place. Once both screws are removed, take out the cap.
  2. Carefully pull out the actuator and place it aside to prevent any surface damage.
- (See Figure 4.2 and 4.3 for reference.)
3. Determine/mark the optimum height and mounting location from the finished floor to mount the column switch. The bottom of the Switch should be located between 3" to 8" (76mm to 203mm) off the finished floor as per site conditions or code requirements. See Figure 4.2 for mounting illustration.
  4. Center the touchless switch over the box for wire connection, while lining up the top edge with your mark (If installing through an in-wall electrical box), drill a Ø 0.25" hole for wire connection (If installing without an in-wall electrical box).
  5. Using a level tool, ensure the base unit is perfectly leveled and mark 4 mounting locations through the adjustable nylon inset screws onto the wall surface (if mounting on drywall, use a pencil, and if mounting on concrete wall, use a narrow sharp object for marking).
  6. Drill the wall at the four marked locations and insert the appropriate wall or concrete anchors provided for the #14 screws.
  7. If mounting the Column™ Switch on an aluminium post or framing section, drill and tap four holes for 1/4"-20 stainless steel machine screws (also provided).
  8. Connect all the wires coming from the CX-33 box to the CM-221 sensor.
  9. Secure the assembly with the provided mounting screw, and insert actuation bar which was removed in step 1, and finally secure it with End Cap.

**IMPORTANT:** When sliding the actuator bar down into the base assembly you must take care not to snag the springs or switches. You will need to depress the springs or switches slightly as you slowly slide bar past them.

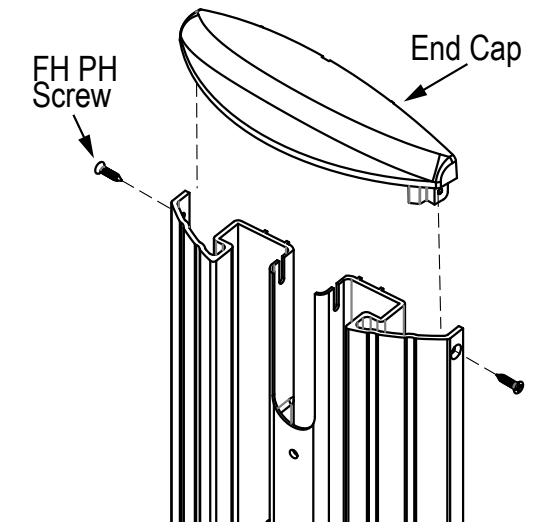


Figure 4.1 End Cap and Actuation Bar Removal

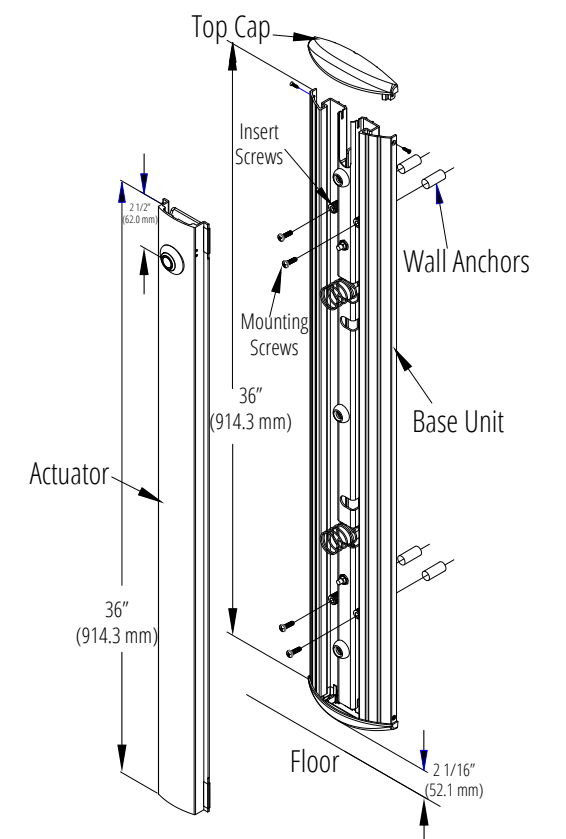


Figure 4.2 Mounting of Base Unit

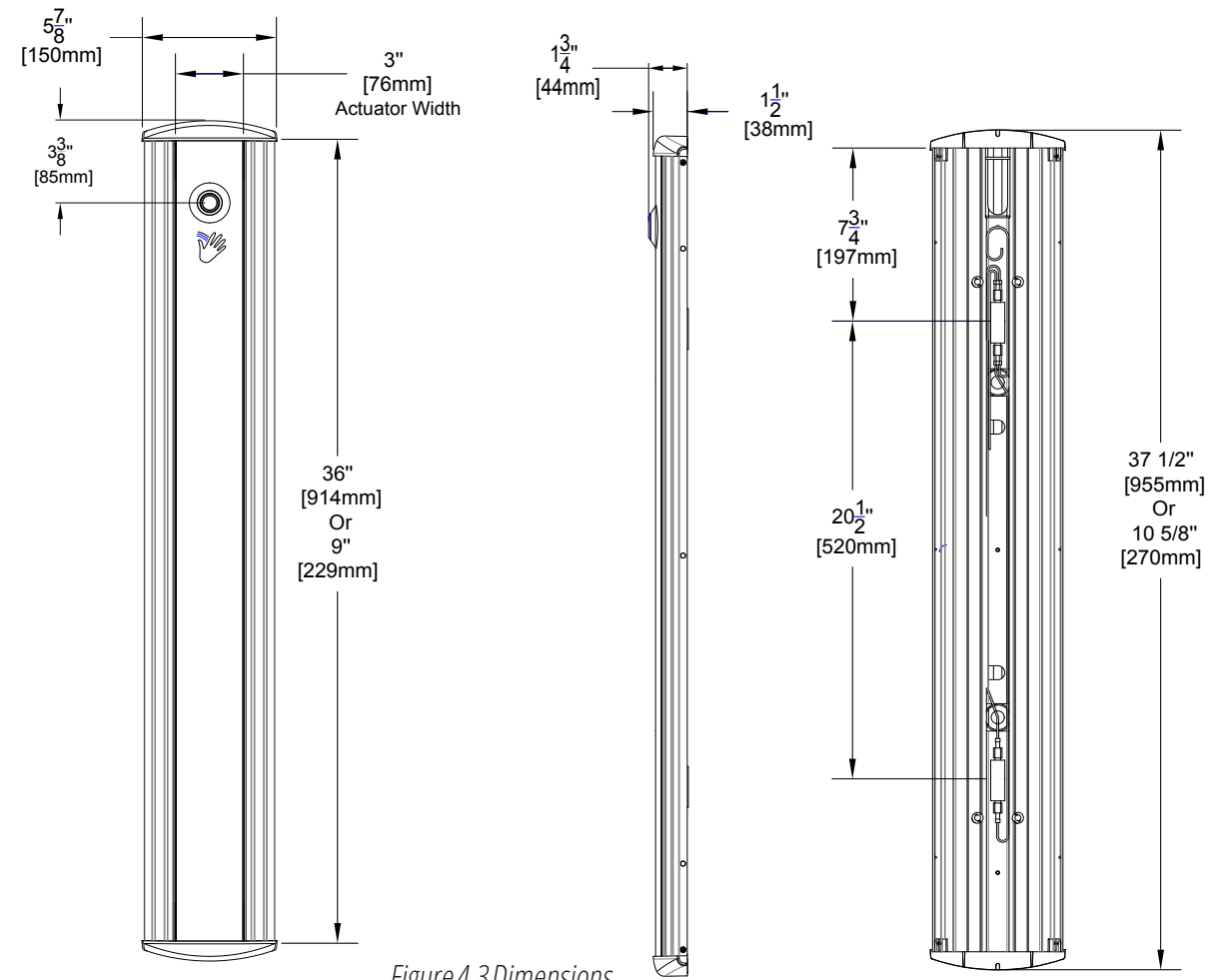


Figure 4.3 Dimensions

**Note:** While placing actuation bar back, make sure that hanger sits perfectly into the slot.

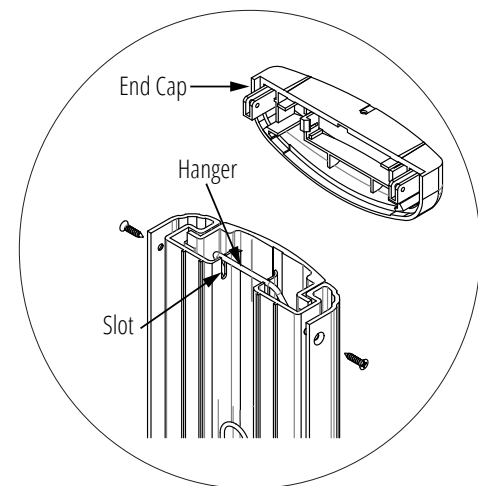
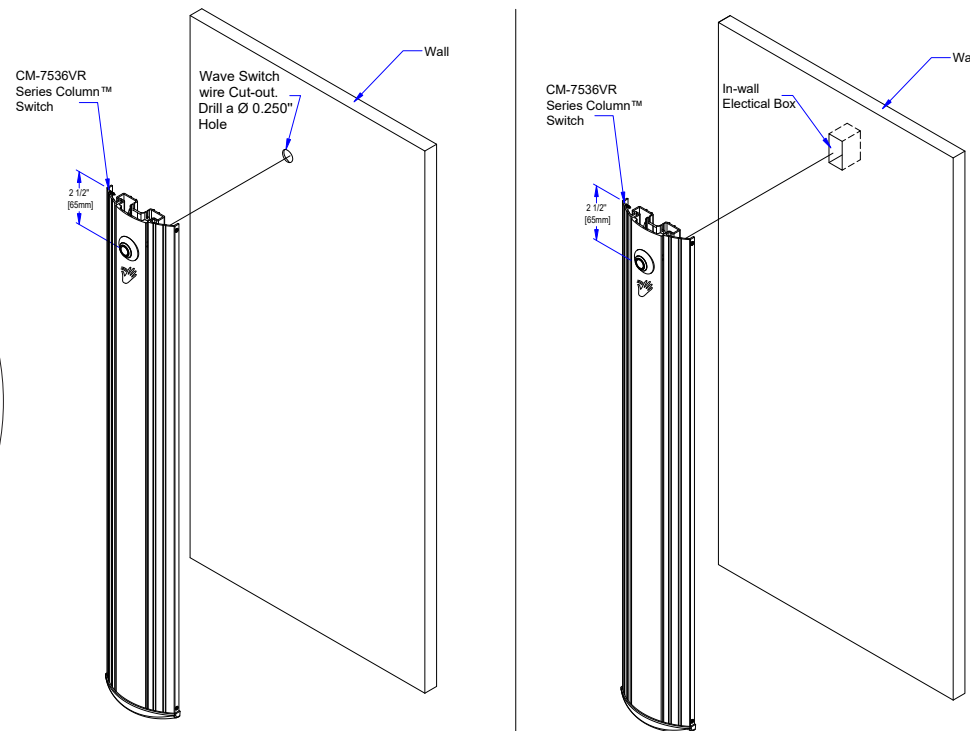


Figure 4.4 Wire Hanger/ End Cap



Mounting without in-wall electrical box

Mounting with in-wall electrical box

Figure 4.5 Wall Mounting Options

## 5. CONFIGURING THE CM-7536VR

### Range of Detection and Output Duration (Figure 5.1)

Looking at the back of the CM-7536VR V2 with the Mode pins located at the top, you will see two adjustment potentiometers. The one on the left can be turned clockwise to set the range of detection (2" to 8" / 5cm to 20cm), and the one on the right will set the duration of the output (0.5 to 20 seconds).

If the output needs to be triggered and maintained in that state until triggered once more, then the Toggle feature can be used by turning the output duration adjustment potentiometer to the fully clockwise position.

### Remote LED Switching

The CM-7536VR V2 can also have its LED states controlled remotely. This is done by installing the supplied jumper from the parts bag onto the two pins on the back of the unit. Once installed the green and red LED's can be triggered to change by bringing either one low (to ground). The yellow wire controls the green LED, whereas, the white wire controls the red LED. They can be individually turned on or off, or they can be wired to a SPDT contact to turn red on and green off, or vice versa.

**Note:** Refer to the complete wiring diagrams included in this Instructions Manual.

**MODE PINS:**  
OPEN (Default position)= Internal mode where the LED colours will be controlled by the IR sensor.  
SHORTED = External mode where the LED colours will be controlled by Yellow and White wires.

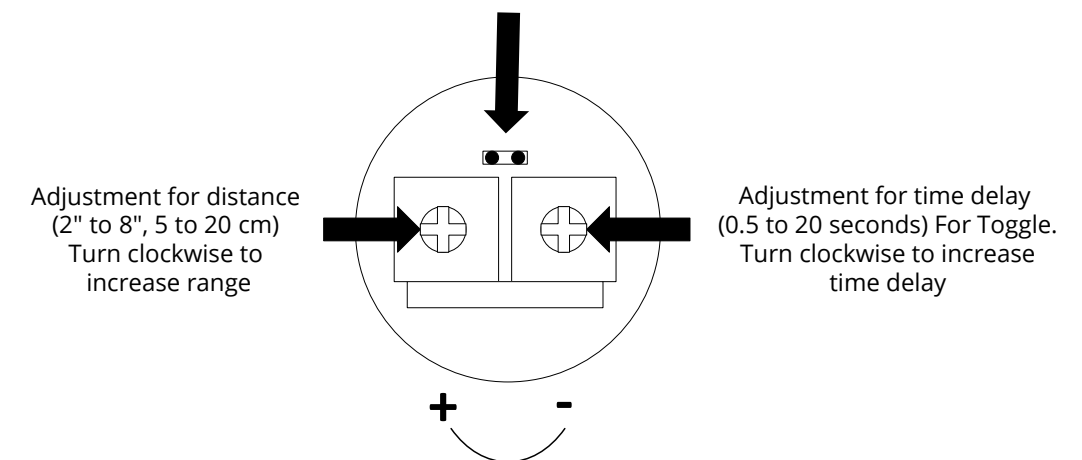


Figure 5.1 Configuration

## 6. CM-221 to CX-33 CONNECTIONS

### IMPORTANT:

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

The CX-WC17VR Restroom Control Kit includes the CX-33 Advanced Logic Relay. A complete wiring diagram is included in this manual.

**IMPORTANT:** We highly recommend the use of a regulated power supply when powering equipment in certain modes such as the barrier-free washroom application where the strike power may be maintained from a few minutes to many hours. We offer a low-cost board-only regulated power supply - CX-PS13, which will supply clean, filtered & regulated 12 or 24VDC power for CX-33. Next, wire the primary terminals to the AC feed to be used. Confirm your connections and apply power by turning on the electrical panel breaker.

**ORDERING INFORMATION FOR PART REPLACEMENT**

ITEM	PART NUMBER	DESCRIPTION
1	60-31A083	Touchless Sensor Switch With External LED Control
2	CX-33	Advanced Logic Control Relay
3	CX-MDA	Magnetic Door Contact
4	CX-ED2079	Grade 2 Universal Electric Strike
5	CM-7536VR/4	36" Column "Push To Open" Switch
6	CM-7536VR/8B	36" Column "Push To Lock" Switch

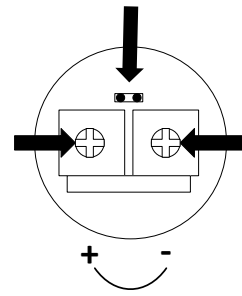
Notes :

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- 26.

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

**CM-7536VR/4 & CM-7536VR/8B TOUCHLESS SENSOR SETTINGS**

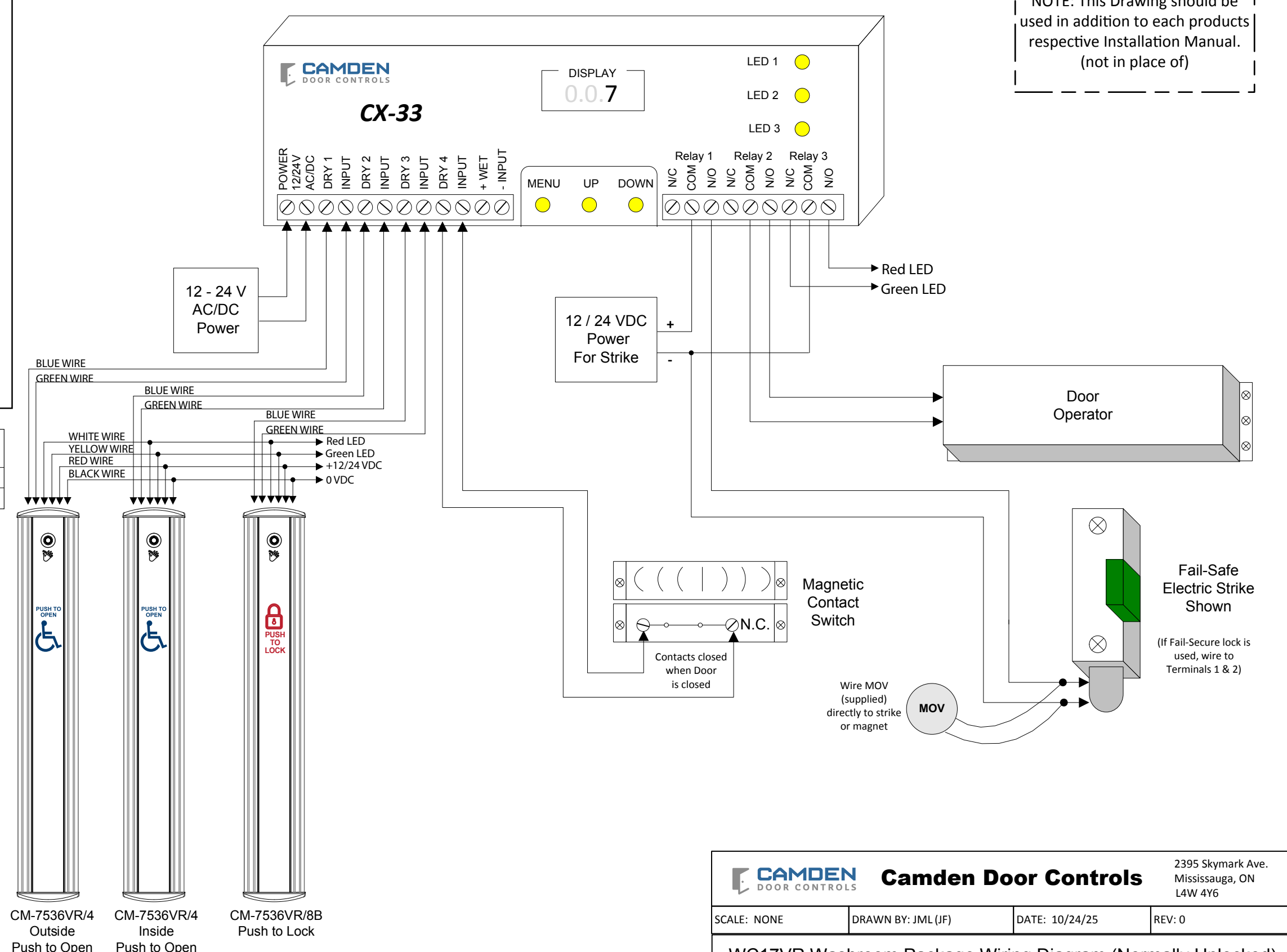
MODE PINS:  
OPEN (Default position)= Internal mode where the LED colours will be controlled by the IR sensor.  
SHORTED = External mode where the LED colours will be controlled by Yellow and White wires.



#	Color	Function
1	Red	12 to 24 VDC
2	Black	0 VDC (Ground)
3	Yellow	Green LED controlled by external mode.
4	White	Red/Blue LED, controlled by external mode.
5	Green	Relay: Normally Open
6	Blue	Relay: Common
7	Purple	Relay: Normally Closed

**ATTENTION:**  
CONNECT GREEN (NORMALLY OPEN) AND BLUE (COMMON) TO THE BLACK WIRES FROM THE SWITCHES IN THE CM-7536VR.

- Notes**
1. CX-33 can be set to Mode 7 (Normally Unlocked) or Mode 8 (Normally Locked).
  2. Mode 7 = Set Strike to Fail Safe.
  3. Mode 8 = Set Strike to Fail Secure.



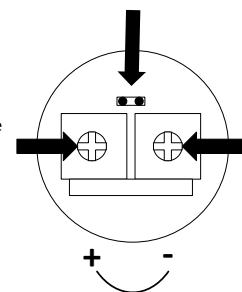
NOTE: This Drawing should be used in addition to each products respective Installation Manual. (not in place of)

CM-7536VR/4 Outside Push to Open  
CM-7536VR/4 Inside Push to Open  
CM-7536VR/8B Push to Lock

		2395 Skymark Ave. Mississauga, ON L4W 4Y6	
SCALE: NONE	DRAWN BY: JML (JF)	DATE: 10/24/25	REV: 0
<b>WC17VR Washroom Package Wiring Diagram (Normally Unlocked)</b>			
DRAWING No:	DRG-CX-WC17VR-7	FILENAME:	WC17VR_Wiring Diagram.ai

**CM-7536VR/4 & CM-7536VR/8B TOUCHLESS SENSOR SETTINGS**

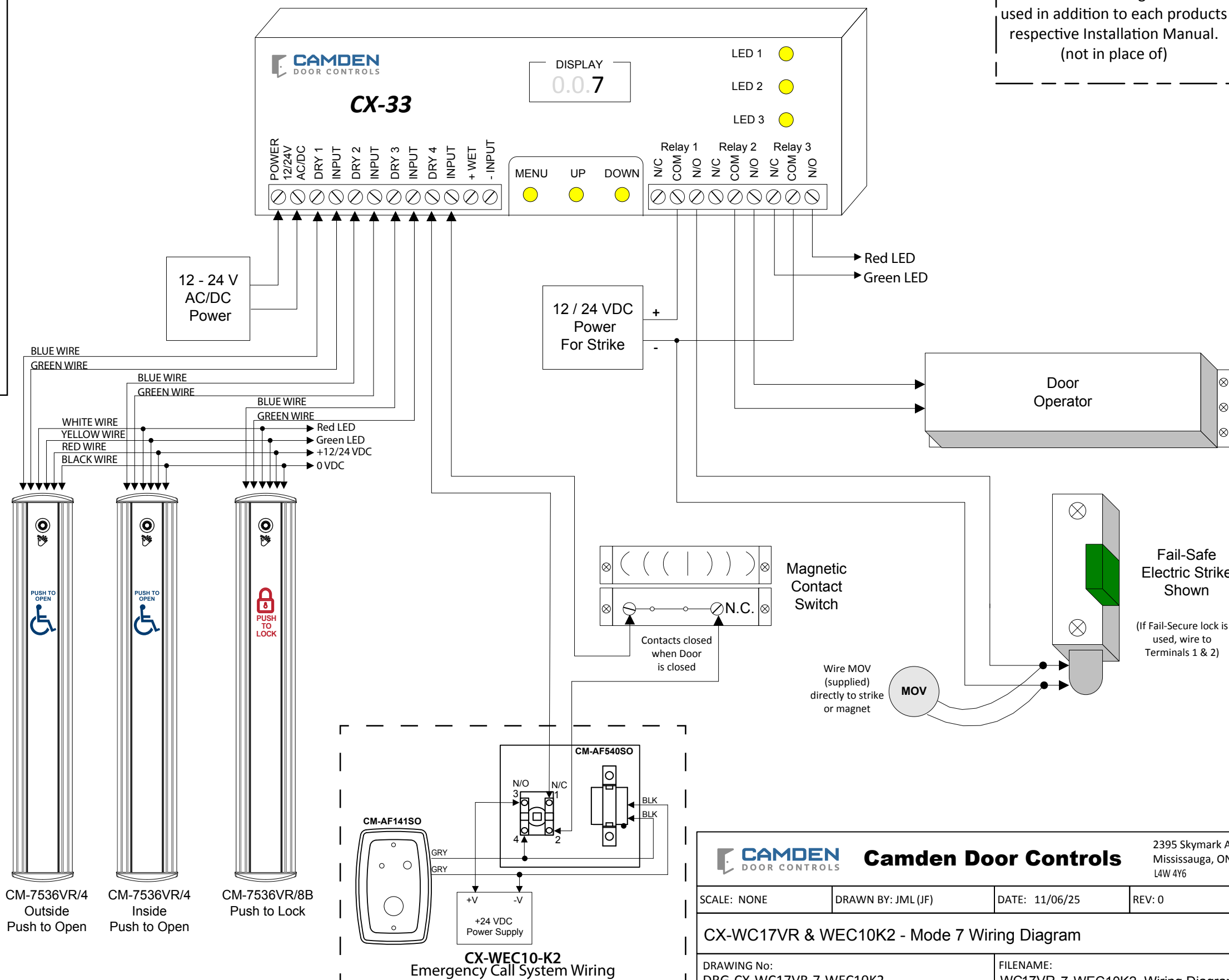
MODE PINS:  
OPEN (Default position)= Internal mode where the LED colours will be controlled by the IR sensor.  
SHORTED = External mode where the LED colours will be controlled by Yellow and White wires.



#	Color	Function
1	Red	12 to 24 VDC
2	Black	0 VDC (Ground)
3	Yellow	Green LED controlled by external mode.
4	White	Red/Blue LED, controlled by external mode.
5	Green	Relay: Normally Open
6	Blue	Relay: Common
7	Purple	Relay: Normally Closed

**ATTENTION:**  
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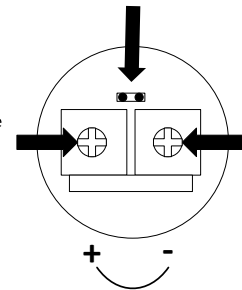
- Notes**
1. CX-33 can be set to Mode 7 (Normally Unlocked) or Mode 8 (Normally Locked).
  2. Mode 7 = Set Strike to Fail Safe.
  3. Mode 8 = Set Strike to Fail Secure.



		2395 Skymark Ave. Mississauga, ON L4W 4Y6	
SCALE: NONE	DRAWN BY: JML (JF)	DATE: 11/06/25	REV: 0
<b>CX-WC17VR &amp; WEC10K2 - Mode 7 Wiring Diagram</b>			
DRAWING No: DRG-CX-WC17VR-7-WEC10K2		FILENAME: WC17VR-7-WEC10K2_Wiring Diagram.ai	

**MODE PINS:**  
OPEN (Default position)=  
Internal mode where the LED  
colours will be controlled by  
the IR sensor.  
SHORTED = External mode  
where the LED colours will be  
controlled by Yellow and  
White wires.

**CM-7536VR/4 & CM-7536VR/8B  
TOUCHLESS SENSOR SETTINGS**



Adjustment for distance  
(2" to 8", 5 to 20 cm)  
Turn clockwise to  
increase range

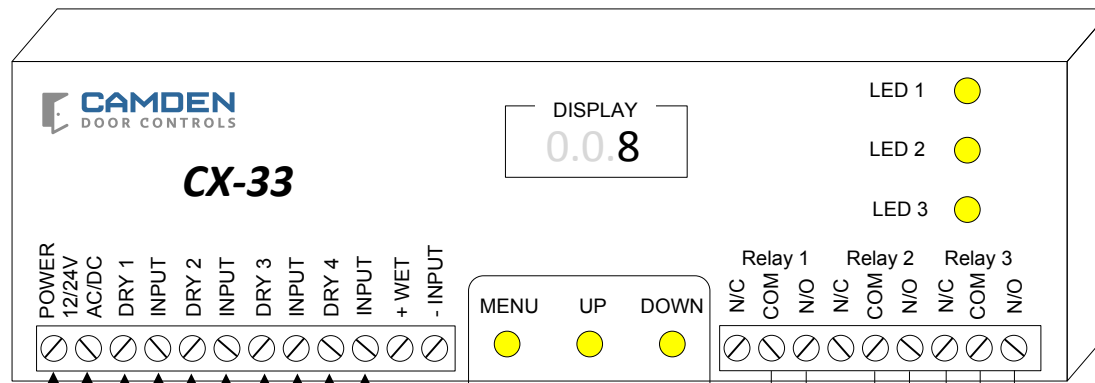
Adjustment for time  
(0.5 to 20 seconds)  
Turn clockwise to increase  
time delay

#	Color	Function
1	Red	12 to 24 VDC
2	Black	0 VDC (Ground)
3	Yellow	Green LED controlled by external mode.
4	White	Red/Blue LED, controlled by external mode.
5	Green	Relay: Normally Open
6	Blue	Relay: Common
7	Purple	Relay: Normally Closed

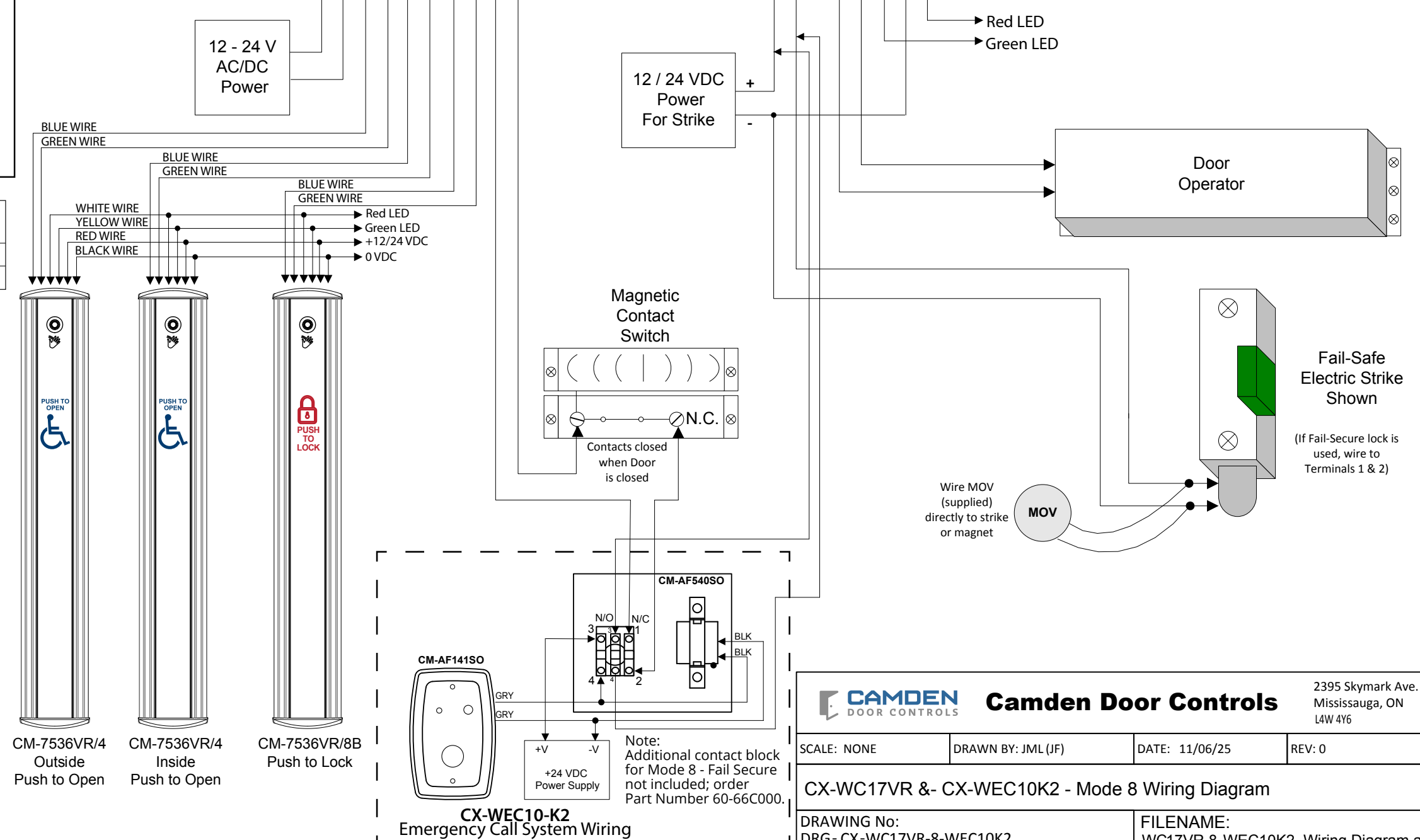
**ATTENTION:**  
CONNECT GREEN (NORMALLY OPEN) AND BLUE (COMMON)  
TO THE BLACK WIRES FROM THE SWITCHES IN THE CM-7536VR.

**Notes**

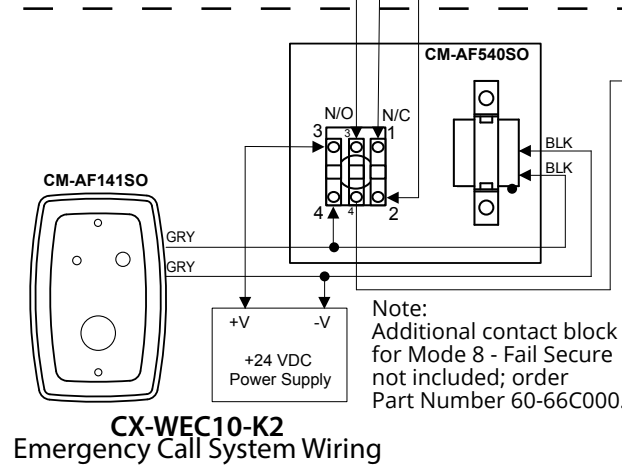
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NOTE: This Drawing should be used in addition to each products respective Installation Manual. (not in place of)



CM-7536VR/4 Outside Push to Open  
CM-7536VR/4 Inside Push to Open  
CM-7536VR/8B Push to Lock



		2395 Skymark Ave. Mississauga, ON L4W 4Y6	
SCALE: NONE	DRAWN BY: JML (JF)	DATE: 11/06/25	REV: 0
<b>CX-WC17VR &amp;- CX-WEC10K2 - Mode 8 Wiring Diagram</b>			
DRAWING No: DRG- CX-WC17VR-8-WEC10K2		FILENAME: WC17VR-8-WEC10K2_Wiring Diagram.ai	

- CX-WC17VR & CX-WEC10K2 EQUIPMENT PACKAGE:**
- 1 CX-33 - MULTI-FUNCTION RELAY
  - 2 CM-7536VR/4 - 36" COLUMN "WHEELCHAIR" SYMBOL AND "PUSH TO OPEN" GRAPHICS WITH MOUNTED VALUEWAVE™ HANDS FREE SWITCH AND SIGN
  - 3 CM-7536VR/8B - 36" COLUMN "LOCK" SYMBOL AND "PUSH TO LOCK" GRAPHICS SWITCH WITH MOUNTED VALUEWAVE™ HANDS FREE SWITCH AND SIGN
  - 4 CX-MDA - MAGNETIC DOOR CONTACT
- CX-WEC10K2 EQUIPMENT PACKAGE:**
- 5 CM-AF540SO - 'PRESS FOR EMERGENCY ASSISTANCE' SWITCH AND ANNUNCIATOR, 'PUSH PULL' OPERATION
  - 6 CM-AF141SO - 'ASSISTANCE REQUESTED' SINGLE GANG LED DOME LIGHT
  - 7 CM-SE21A - EMERGENCY ASSISTANCE SIGN
- ADDITIONAL PARTS REQUIRED BUT NOT INCLUDED WITH THE CX-WC17VR & CX-WEC10K2**
- 8 CX-ED2079 - GRADE2 UNIVERSAL ELECTRIC STRIKE
  - 9 DOOR OPERATOR - SUPPLIED BY OTHERS
  - 10 CX-PS13 - 12/24 VDC LINEAR POWER SUPPLY
  - 11 CX-TRX-4024 - 40VA, 24 VAC TRANSFORMER

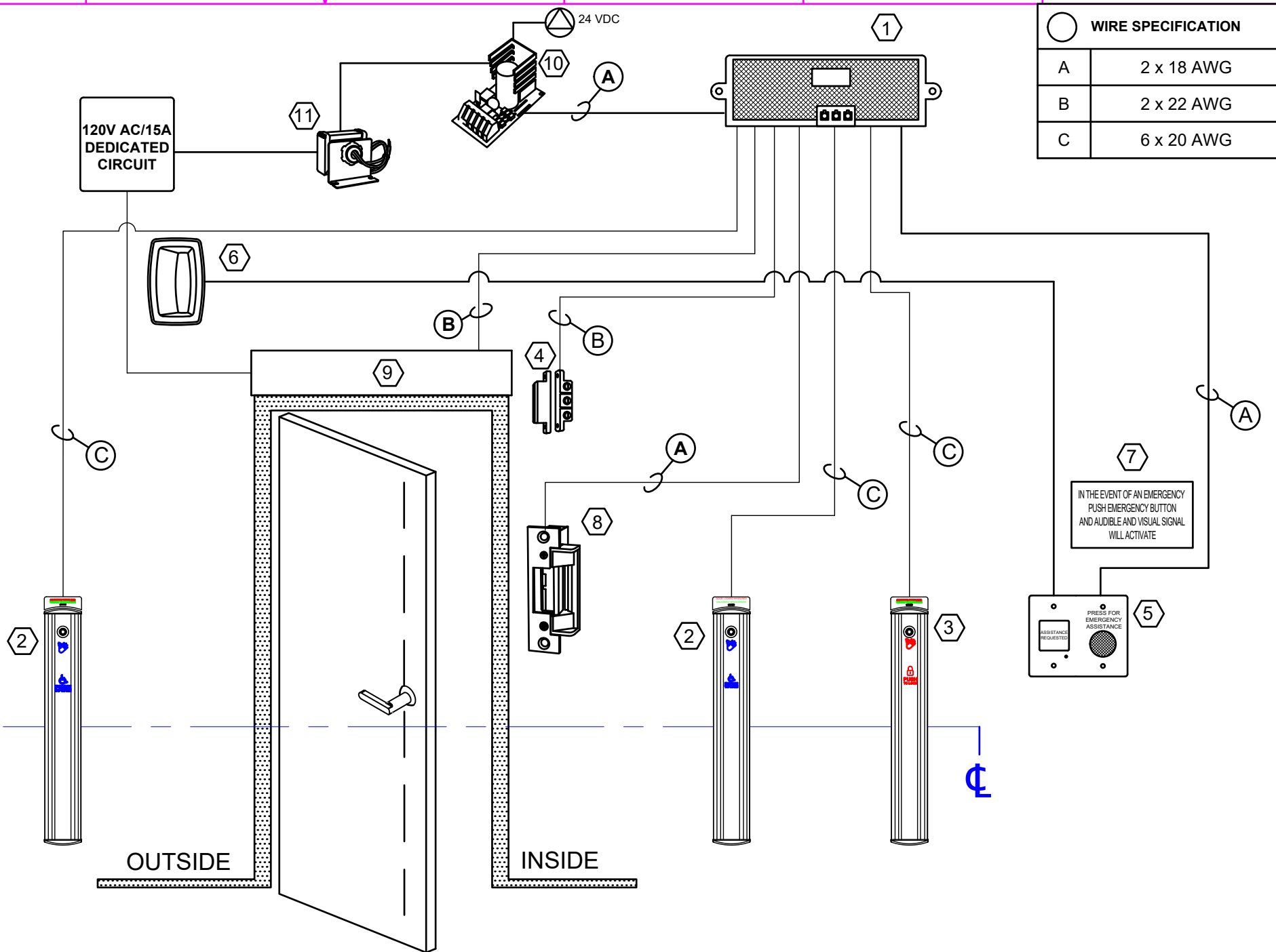
**SYSTEM OPERATION**

**CX-WC17VR OPERATION:**

- A. THE DOOR IS NORMALLY CLOSED AND UNLOCKED.
- B. OPERATING THE EXTERIOR ACTIVE SWITCH OPENS THE DOOR.
- C. ONCE INSIDE AND THE DOOR IS CLOSED, PRESSING THE COLUMN SWITCH WITH THE 'LOCK' SYMBOL AND 'PUSH TO LOCK' LOCKS THE DOOR, THE LIGHT RING AROUND THE VALUEWAVE™ HANDS FREE SWITCH TURNS FROM GREEN TO RED.
- D. PRESSING THE INTERIOR 'WHEELCHAIR' SYMBOL AND 'PUSH TO OPEN' COLUMN SWITCH UNLOCKS THE DOOR, DEACTIVATES AND RESETS THE SYSTEM
- E. IF THE DOOR IS OPENED MANUALLY TO EXIT THE RESTROOM, THE OVERHEAD MAGNETIC CONTACT SWITCH RESETS THE SYSTEM.

**EMERGENCY CALL SYSTEM OPERATION:**

- F. THE 'PRESS FOR EMERGENCY ASSISTANCE' MUSHROOM PUSH BUTTON IS ACTIVATED BY THE OCCUPANT.
- G. THIS ENERGIZES THE LED ANNUNCIATOR AND SOUNDER WITHIN THE WASHROOM, AND THE DOME LIGHT WITH SOUNDER OUTSIDE THE WASHROOM.
- H. BOTH ANNUNCIATORS WILL BE ENERGIZED UNTIL THE LATCHING MUSHROOM PUSH BUTTON SWITCH IS PULLED OUT.



WIRE SPECIFICATION	
A	2 x 18 AWG
B	2 x 22 AWG
C	6 x 20 AWG

- NOTE:**
1. The Activation Column Switches (Items 2 and 3) should not be closer than 200mm and not more than 1500mm beyond the door swing where the door opens into the washroom. The mounting height should be no more than 200mm above the finished floor.
  2. Emergency Call (Item 5) to be mounted within 600mm from the front of the toilet edge, and the optimal mounting height to be 450mm above the finished floor.
  3. Wires Must Be Stranded, Multi-Colour.

<b>CAMDEN DOOR CONTROLS</b>		2395 Skymark Ave. Mississauga, ON Canada Tel: (905) 366-3377 www.camdencontrols.com		L4W 4Y6
DRAWN	NAME	DATE	TITLE:	
CHECKED	A.OLISA	NOV-25	WASHROOM BARRIER FREE DOOR CONTROL NORMALLY UNLOCKED CX-WC17VR & CX-WEC10K2	
ENG APPR.			SIZE	DWG. NO.
MFG APPR.			B	CX-WC17VR & CX-WEC10K2.DWG
QA			REV	
COMMENTS:			SCALE: N/A	SHEET 1 OF 1