

# CM-221M

## Touchless Exit Switch with Remote LED Triggering

### INSTALLATION INSTRUCTIONS

#### PARTS INCLUDED IN THE BOX

- (1) CM-221M Touchless Exit Switch with Manual Override pushbutton
- (1) Parts bag (Contents: (2) 6-32 X 1/2" oval head Phillips ss screws, (2) 6-32 X 1/2" snake eye s/s flat head screws, (1) Key for tamper proof screws (snake eye), (1) Jumper for factory external LED control)
- (1) User/Installation Manual
- (1) Faceplate Gasket



### 1. GENERAL DESCRIPTION

The CM-221M Hands-Free Switch uses active infra-red microburst sensor technology, designed for use in ADA compliant automatic door control applications and access control.

The CM-221M switches eliminate the spread of germs by avoiding physical contact, and provide greater convenience when moving through the premises. The switches are available with stainless steel faceplates, in narrow (jamb) or single gang.

All models are ROHS compliant with lead-free construction. Built-in remote LED switching allows for integration with third-party applications, such as guard and nurse station annunciators. Adjustable time delay from 0.5 to 20 seconds and an adjustable range from (2" to 8" / 5cm to 20cm).

### 2. SPECIFICATIONS

<b>Voltage</b>	12 to 24 VDC +/- 10%
<b>Current</b>	45 mA (peak)
<b>PIR Contact Rating</b>	1 Amp @ 30 VDC
<b>PIR Contacts</b>	Common/ N.O./ N.C.
<b>Temperature Range</b>	14F to 122F (-10 to 50 °C)
<b>Response Time</b>	10ms
<b>Pushbutton Contact Rating</b>	1 Amp, 30 VDC
<b>Pushbutton Contacts</b>	Common/N.O./N.C

**NOTE: Do NOT use AC Voltage for this unit. Please see section 8 for power requirements**

#### Dimensions

##### Narrow:

1 3/4" W x 4 1/2" H x 1 1/4" D  
(43 mm x 114 mm x 31 mm)

##### Single Gang:

2 3/4" W x 4 1/2" H x 1 1/4" D  
(70 mm x 114 mm x 31 mm)

### 3. FEATURES

- Built-in Red and Green LED indication. Factory default = Red (Standby), Green (Triggered)
- Red and Green LEDs can be controlled by sensor or externally
- Adjustable detecting distance: 2 to 8 Inches (5 cm to 20 cm)
- Adjustable Time Delay: 0.5 seconds to 20 seconds
- Toggle function selection available
- IP65 rating
- IR lens to provide stable and reliable operation

### 4. OPERATION AT A GLANCE

In a typical application, as you approach the CM-221, the LED will be red. When you wave your hand in front it will change the LED to green, and trigger its relay to change state and unlock your door, or trigger the door operator to open the door. The toggle feature can be used to trigger the door to remain in the unlocked position, until you wave your hand a second time to relock it.

## CM-221M TOUCHLESS EXIT SWITCH

### INSTALLATION INSTRUCTIONS

## 5. CONFIGURING THE CM-221M

### Range of Detection and Output Duration

Looking at the back of the CM-221M 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.

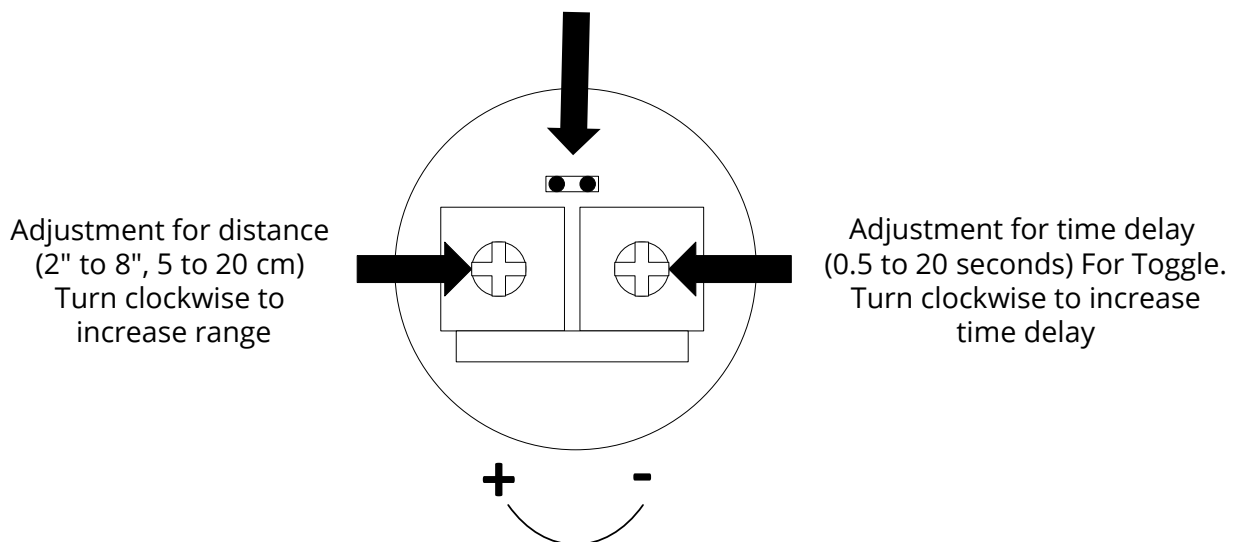
### Remote LED Switching

The CM-221M 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.

#### 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.

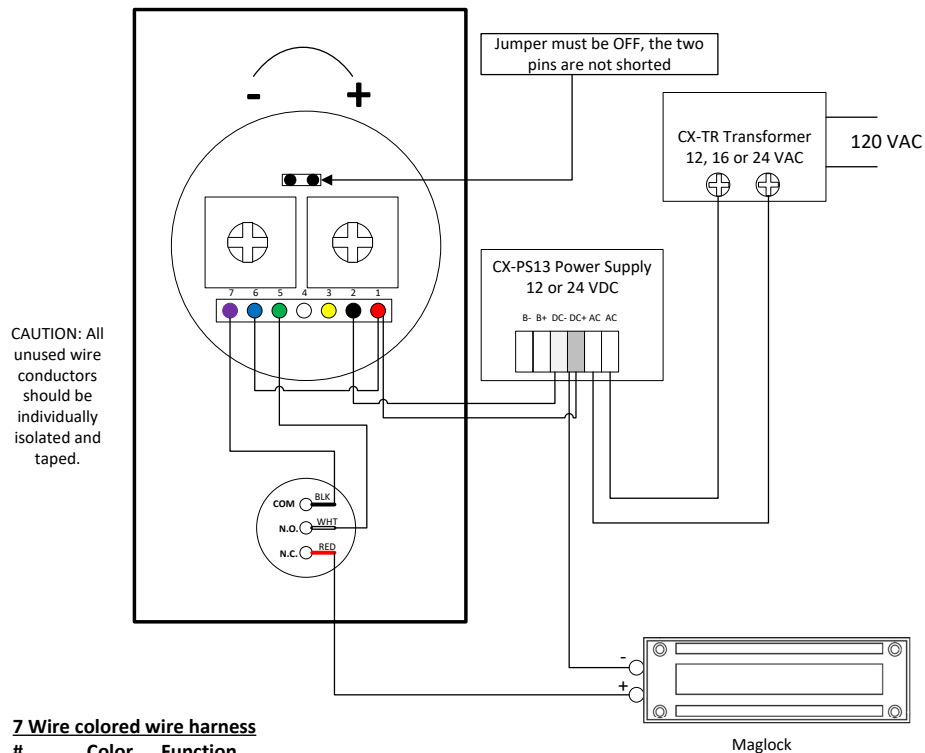


## 6. WIRING THE CM-221

### 1. Connection to a Maglock

Connect the ground (-) of the maglock to the ground (-) of the VDC power supply. Next connect the (+) of the maglock to the (N.C.) of the manual pushbutton. Connect the common (com) of the manual pushbutton to the PIR sensor purple wire (normally closed.) Jumper the PIR sensor blue (common) and red (power +) wires and then connect them to the (+) positive terminal of the DC power supply. Wire the PIR sensor black (-) wire to the negative (-) terminal of the DC power supply.

CM-221M Touchless Switch with manual pushbutton wired to maglock



#### 7 Wire colored wire harness

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

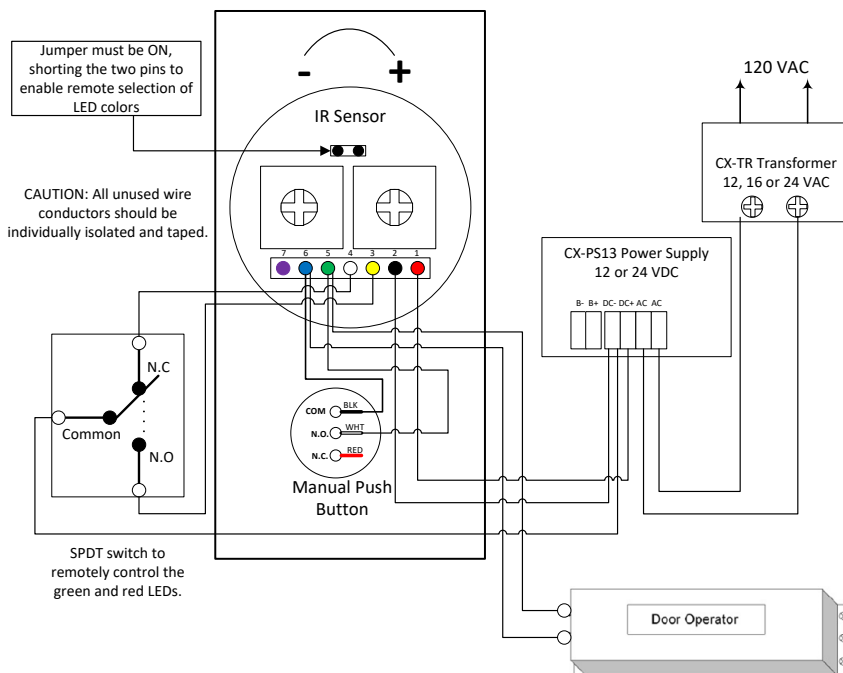
#### 3 Wire colored wire harness

#	Color	Function
1	Red	Common
2	Black	Normally Open
3	White	Normally Closed

# CM-221M TOUCHLESS EXIT SWITCH WITH REMOTE LED TRIGGERING INSTALLATION INSTRUCTIONS

## 2. Connection to a Door Operator

CM-221M Touchless Switch wired to door operator. (Remote LED control)



### 7 Wire IR sensor colored wires

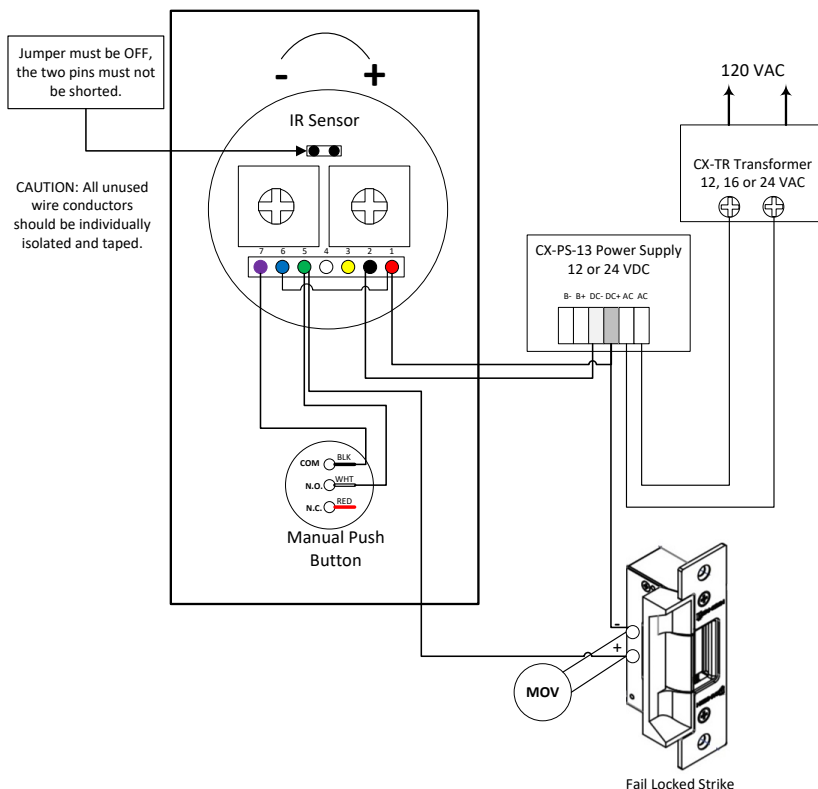
#	Color	Function
1	Red	12 to 24 VDC
2	Black	0 VDC (Ground)
3	Yellow	Green LED controlled by external mode.
4	White	Red LED, controlled by external mode.
5	Green	Relay: Normally Open
6	Blue	Relay: Common
7	Purple	Relay: Normally Closed

### 3 Wire Pushbutton colored wires

#	Color	Function
1	Red	Common
2	Black	Normally Open
3	White	Normally Closed

## 3. Connection to an External Strike

CM-221M Touchless Switch wired to door strike



### 7 Wire IR sensor colored 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 LED, controlled by external mode.
5	Green	Relay: Normally Open
6	Blue	Relay: Common
7	Purple	Relay: Normally Closed

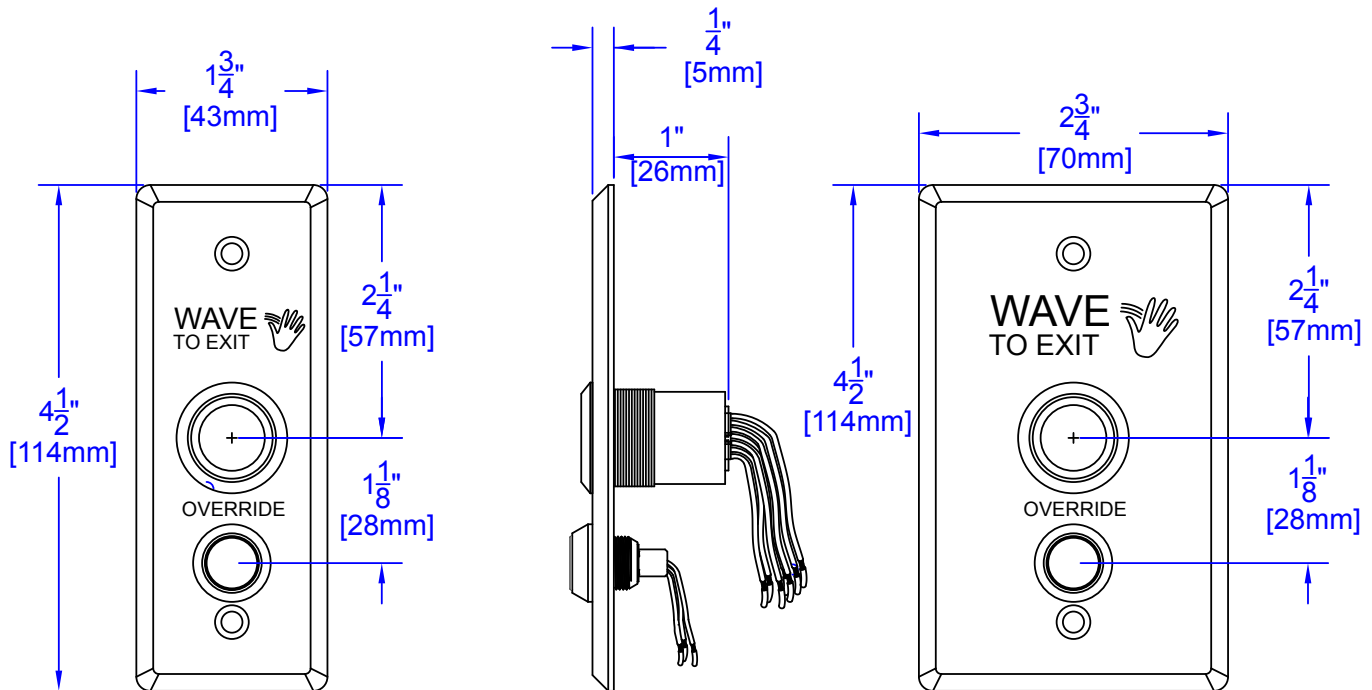
### 3 Wire Pushbutton colored wires

#	Color	Function
1	Red	Common
2	Black	Normally Open
3	White	Normally Closed

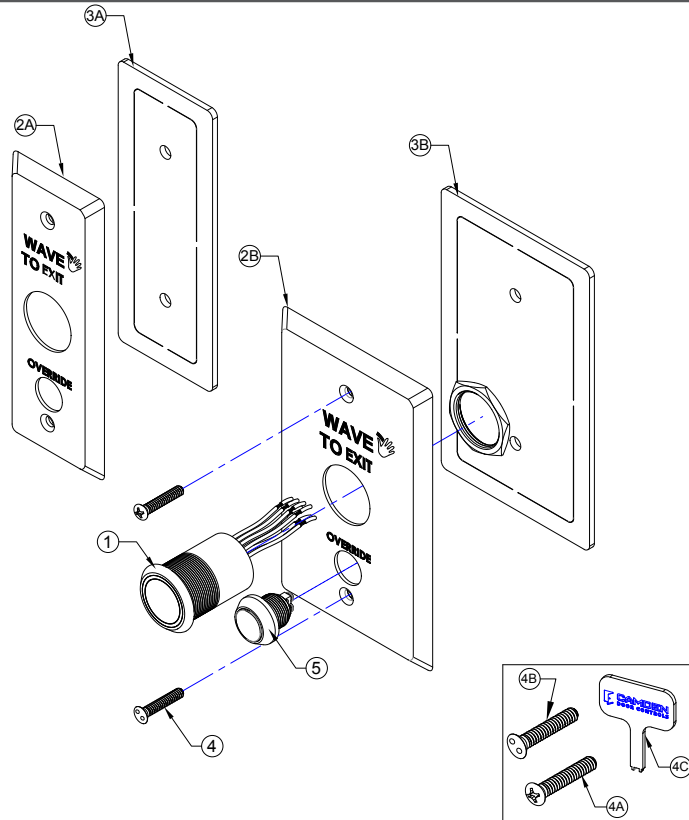
## 7. POWER

The CM-221M 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-221M at any time.*

**Note:** A linear output VDC power supply is strongly recommended. If using power from other than Camden's CX-PS13 filtered regulated power supply, you must measure the provided power before applying power to the CM-221M. Voltages of more than 10% over the specified acceptable range or using a power supply with large amounts of AC voltage on it (**unfiltered unregulated power such as a transformer and a rectifier**) may damage the CM-221M and void the warranty.



**CM-221M TOUCHLESS EXIT SWITCH**  
**INSTALLATION INSTRUCTIONS**



**ORDERING INFORMATION FOR REPLACEMENT PARTS**

ITEM NUMBER	PART NUMBER		DESCRIPTION
1.	60-31A083		TOUCHLESS SENSOR SWITCH WITH EXTERNAL LED CONTROL
2.	A	60-49B040-xxx	NARROW STAINLESS-STEEL FACEPLATE
	B	60-49H009L-xxx	SINGLE GANG STAINLESS-STEEL FACEPLATE
3.	A	60-59H000	GASKET FOR NARROW GANG TOUCHLESS SWITCH
	B	60-59H001	GASKET FOR SINGLE GANG TOUCHLESS SWITCH

**PARTS KIT**

ITEM NUMBER	PART NUMBER	DESCRIPTION
4	60-34B093	(A) 6-32 X 1/2" OVAL HD PHILLIPS SS SCREW
		(B) 6-32 X 1/2" SNAKE EYE SCREW
		(C) KEY FOR TAMPER SNAKE EYE SCREW
5	60-68D05768D057	METAL PUSHBUTTON

**COMPATIBLE MOUNTING BOXES OPTION**

ITEM NUMBER	PART NUMBER	DESCRIPTION
	FOR SINGLE GANG	
	CM-34AL	SURFACE BOX, STANDARD DEPTH, THREADED CONDUIT ENTRY. HEAVY DUTY CAST ALUMINUM 2 3/4"W x 4 1/2"H x 1 3/4"D (70mm x 114mm x 45mm)
	CM-34BL	ONE 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)
	CM-66	FLUSH BOX & DRESS PLATE, STANDARD DEPTH BOX WITH 7" x 7" (178mm x 178mm) DRESS PLATE HEAVY GAUGE STAINLESS STEEL
	FOR MULLION	
	CM-23D	SURFACE BOX WITH EXTRA DEPTH, FLAME, AND IMPACT RESISTANT BLACK POLYMER (ABS) 1 3/4" W X 4 1/2"H X 1 3/4"D (46MM X 117MM X 43MM)