

# MCH Casement and Awning

## Wiring Instructions

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**ABSTRACT:** These instructions are intended for an electrician to properly wire low voltage power to the windows after they have been properly installed. If anything requires removal of installation screws or shims to run wire, please check with the general contractor to ensure that no critical installation components will be damaged.

**Relevant Products:**

- Modern Casement
- Modern Awning

**Usage Dates:** February 2024 to present.

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## Tools Needed

- Wire stripper
- 3/32" (2.5) flat bladed screwdriver
- Power drill
- 1/4" drill bit (long enough to drill through the window frame and into the rough opening)

## Pull Wire into the Window

### 1. Pull all necessary wire into the window frame.

There are several holes within the window frame that have been pre-drilled at the factory for running the 24Vdc power wire as well as the wire for an optional hard-wired wall switch (supplied by others). The electrician will need to drill a 1/4" hole from inside the window frame and out through one or more of those holes in order to get the wire to the control board. Drilling additional holes through the window frame should be avoided. See Figure 1.

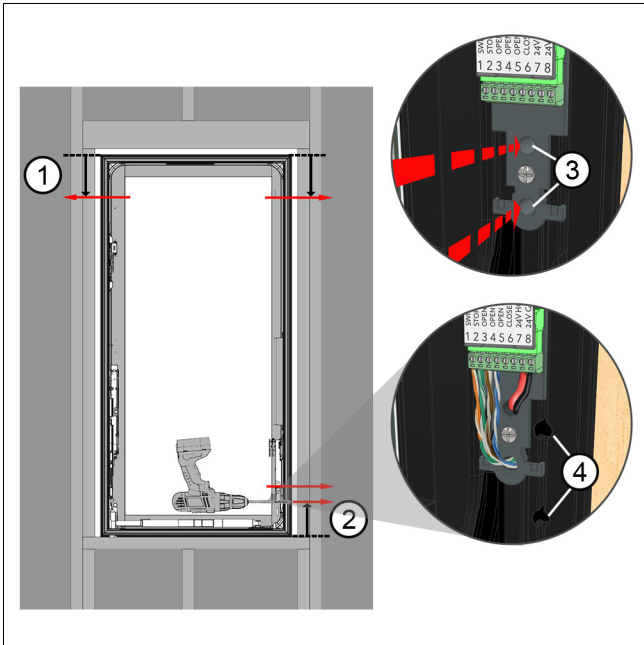


Figure 1 Casement: red arrows denote factory installation holes.

1	Installation holes 2.8" from the top of the frame
2	Installation holes 3.7" from the bottom of the frame
3	Predrilled holes for wiring
4	Predrilled holes for installation

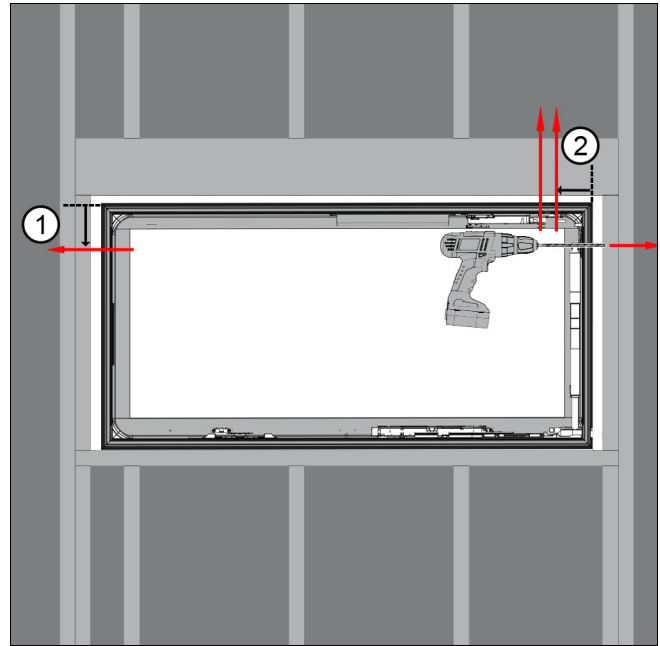


Figure 2 Awning: red arrows denote factory installation holes.

1	Installation holes 2.8" from the top of the frame
2	Installation holes 3.7" from the side of the frame

**NOTE:** Marvin suggests the use of 16/2 copper wire to power the windows. To operate optimally, the voltage at the window should be at least 21.5 volts.

## Wire the Power

1. There are 8 wiring terminals at the control board located on the hinge-side of the unit (hinge is on top for awnings). Terminals 7 and 8 are for 24Vdc hot and ground respectively. Terminals 1-6 are dry contacts intended for use with a wired switch or other automation hardware.

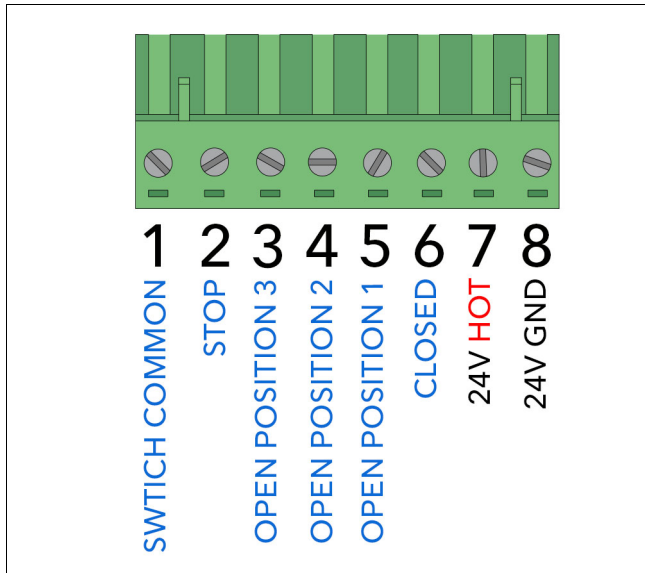


Figure 3

Terminal	Description
1	Common wire for optional wired switch
2	Stops window sash at current position
3	Position 3- defaults to 45 degree opening
4	Position 2- defaults to 20 degree opening
5	Position 1- defaults to 10 degree opening
6	Closes and locks the window
7	24V DC Hot (1 Amp)
8	24V DC Ground

2. Once power is on the unit, the lock motors will calibrate and move to a home position. The window can then be tested by pressing the “up” button on the small switch located near the control board. Pressing the “up” button will unlock and open the window. Pressing the “down” button will close and re-lock the window.

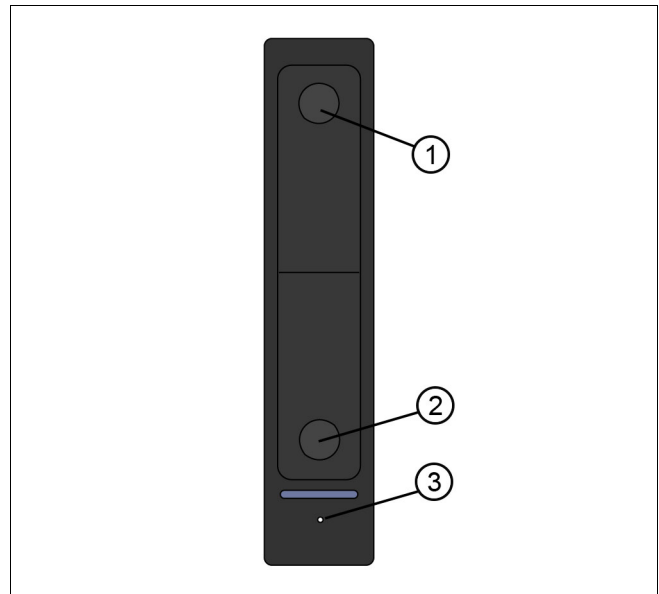


Figure 4

1	Up Button, press once to open
2	Down Button, press once to close and lock
3	Diagnostic LED (See table below for details)

Diagnostic LED	
Off = Normal	
Alternating green/red = Calibrating motors	
Blinks red 3x = Obstruction detected	
Solid red = Power from supercaps	
Blinks white = Sash is moving	
Blinks blue = Moisture detected	
Alternating blue/white = pairing mode	

## Wire an Optional Switch

1. Wired switches control the window by connecting one of terminals 2-6 with the switch common on terminal 1 of the window controller. Any momentary switch rated for at least 3 volts and 25mA can be used. The window controller does not provide power to illuminate any switch LEDs.

**NOTE:** The “common” terminal of a switch is connected to terminal 1 of the window. When a button is pressed, one of the connections between terminals 2-6 and terminal 1 is made, and the window takes action.

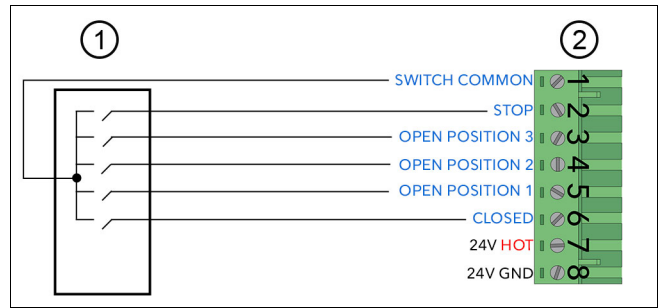


Figure 5

1	Wall switch
2	Window Terminals

## Switch Wiring Examples

**1. 4 Button Switch Example:** This switch connects one of its 1-4 terminals to its “SC” terminal when the associated button is pressed. This will result in a switch that will control the window to 3 different open positions when pressing one of the top 3 buttons or closed and locked when pressing the bottom button.

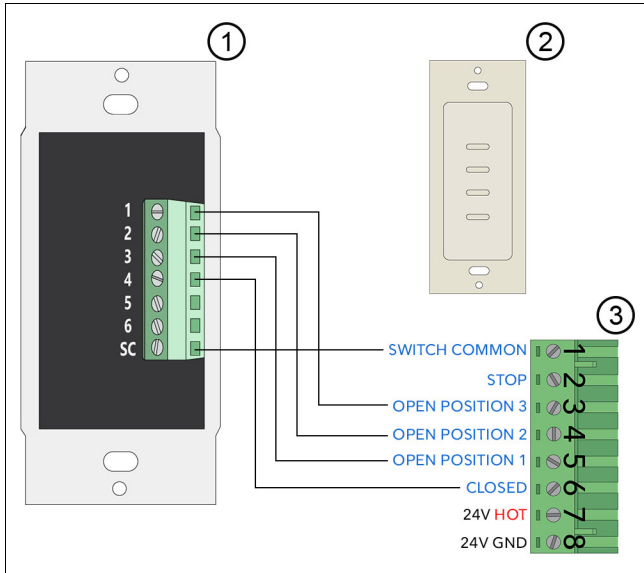


Figure 6

1	Low Voltage Switch Terminals (back)
2	Low Voltage Switch (front)
3	Window Terminals

**2. 3 Button Switch Example:** This switch connects one of its 1, 2 or 4 terminals to its “SC” terminal when the associated button is pressed. This will result in a switch that will control the window to an open position when pressing the top button, stop the window when pressing the middle button or close and lock when pressing the bottom button.

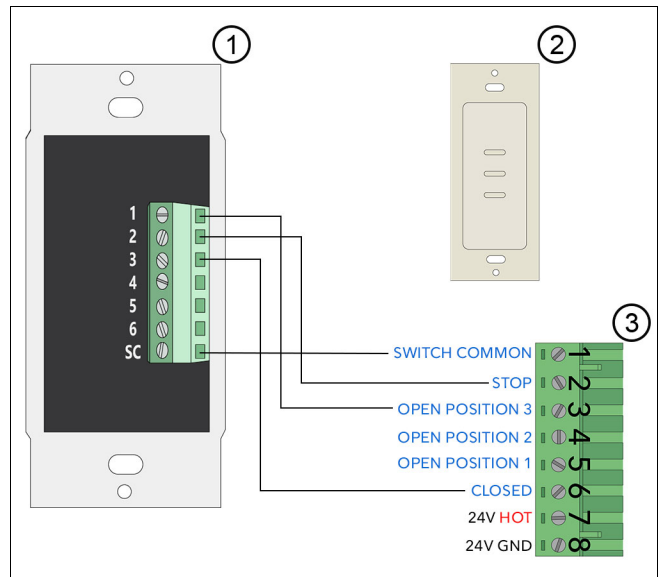


Figure 7

1	Low Voltage Switch Terminals (back)
2	Low Voltage Switch (front)
3	Window Terminals

## Wiring Multiple Windows to a Single Switch

1. This example shows three windows being wired to a single switch with 3 dry contact push buttons. Wired as shown, each of the top two buttons on the switch will open the windows to a different open position and the bottom button will close and lock the windows. There is no limit to how many windows could be wired this way, but wire gauge will have an impact after about 1000 feet if the recommended Cat5e is used for the switch wire. The wiring shown is daisy chained from the terminals of one window to the next. This will result in the switch making the same contact closure for all windows simultaneously. Alternatively, a home run could be made to each window giving the flexibility to easily rewire the windows into different configurations at the switch in the future.

**NOTE:** If the windows wired to a single switch are of various sizes or types, the position to which they open will be slightly different due to various pivot points of the hardware.

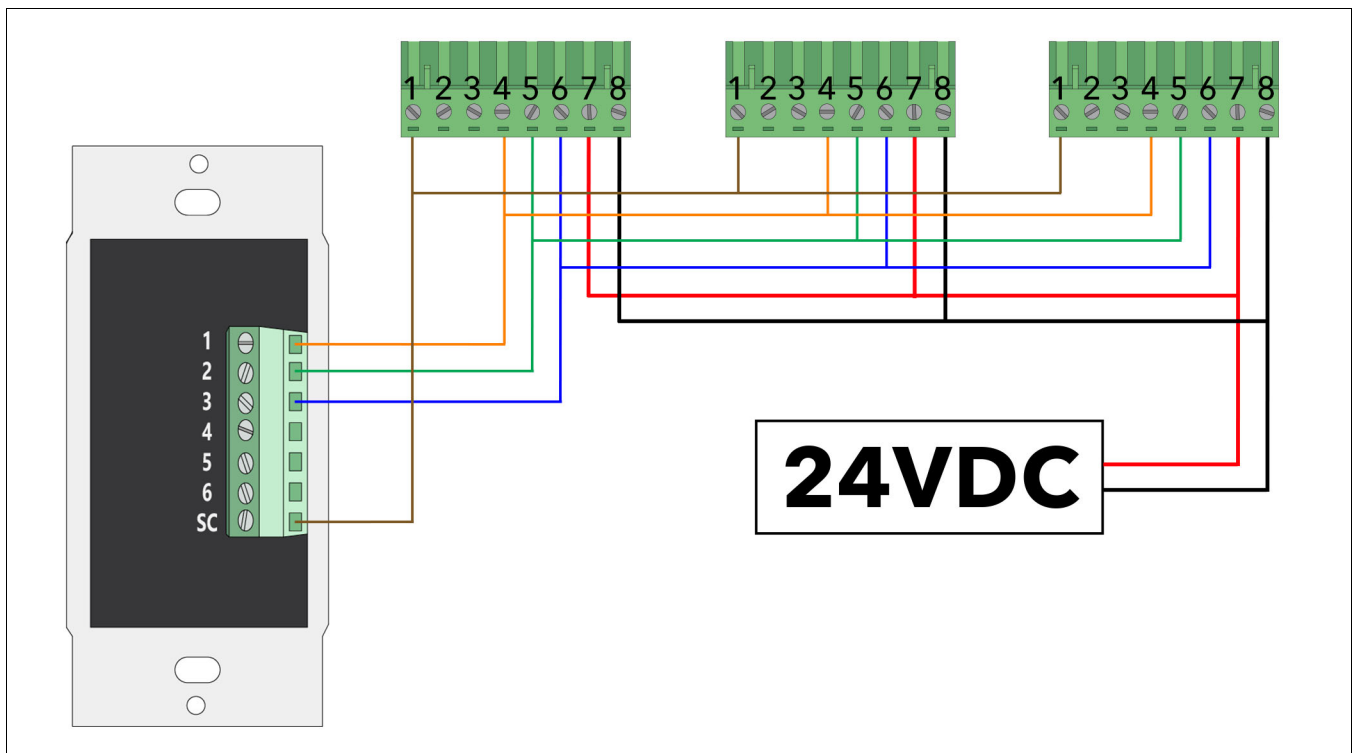


Figure 8

Switch Wiring Terminals	
Terminal	Description
1	Top Button
2	Middle Button
3	Bottom Button
4	Unused
5	Unused
6	Unused
SC	Switch common (all buttons short the wire coming into its terminal to SC)

Window Terminal Designations	
Terminal	Description
1	Common wire for optional wired switch
2	Unused
3	Unused
4	Position 2- defaults to 20 degree opening
5	Position 1- defaults to 10 degree opening
6	Closed- closes and locks the window
7	+24V DC Hot (2 Amps)
8	24V DC Ground

## Marvin Power Supply

### ATTENTION

Each window requires 1 Amp of 24Vdc power not exceed 26.5V. It is not required to use the power supply sold by Marvin.

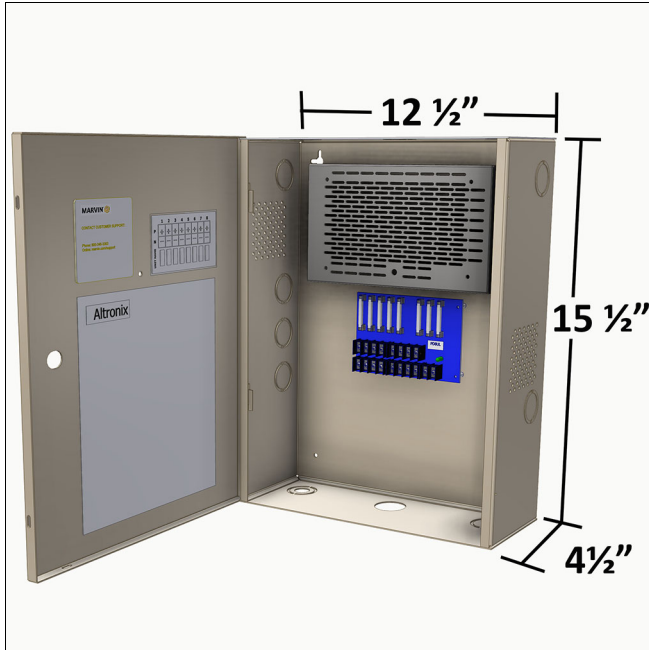


Figure 9 Wall mounted for indoor use. 1 1/8" and 1 3/8" combo knockouts. Provides 8 fused 24Vdc circuits. Product weight 9.5 lbs. Part Number: 02066143