



This install guide covers the Echoflex Solutions Multi-Button Interface switch station, models and descriptions below.

**MBI-2\*x** - Two button - Multi-Button Interface switch station

**MBI-4\*x** - Four button - Multi-Button Interface switch station

**MBI-8\*x** - Eight button - Multi-Button Interface switch station

The character \* indicates frequency U= 902MHz, Y= 868 MHz. The character **x** is replaced with a color indicator ( W = White, G = Gray, C=Cream, B = Black).

## Product Overview

The switch stations communicate wirelessly with Echoflex lighting controllers to control the internal relay and/or output dimming level. Common switch stations applications include basic ON/OFF lighting or dimming.

A finger press upon the ON or OFF button transmits the switch event along with a tactile feel, an audible click and (for the ON button) a LED indication of the event.

Each pair of buttons can be linked to different controllers for multiple circuit control from one wall station.

The MBI also features Range Confirmation® which provides visual feedback of the strength of the signal received by the controller, thereby assisting in finding the optimal placement of the MBI.

The MBI uses 2 buttons for On/OFF operation. The ON button has a light bulb icon with “light rays” to indicate ON. The OFF button has a light bulb icon without rays, indicating OFF. The buttons provide both switching and dimming functionality. A quick press of the button provides switching, a press and hold will dim lights up (ON button) and down (OFF button) when linked to an Echoflex dimming controller. A double tap of an ON button when linked to a Echoflex dimming controller will dim the light to full ON (single tap ON will turn on the lights to the previously set level).

## Preparing to Install

Careful consideration should be made when locating the controllers and stations based on the construction materials in the space and possibility of tenant’s furniture disrupting the transmissions. The station should be installed in the same space as the controller device controlling the light fixtures or circuits.

The MBI switch stations can be damaged by screw guns over torquing the mounting screws. **Use hand tools when installing.**

The MBI switch stations need to be mounted to a firm surface. They can be flush mounted with the screws and wall anchors (not supplied). Alternately, the station can be mounted on a mud ring using the provided back support plate.

To mount over line voltage device boxes, please order our UL approved barrier - see accessories for order info.

## Installation

1. The MBI comes with a screw-less faceplate. It is designed to stay in place with no rattle and requires some force when mounting or removing. Remove the face plate with a flat blade screw driver, by prying the slot that is located on the center of the bottom edge of the faceplate.
2. The MBI can be mounted with wall anchors and #6 screws (not supplied). Determine where the station is to be located then hold the switch station to the surface of the drywall, (ensure the station is level and plumb). Mark the locations for the wall anchors using the screw holes as a template, then install the wall anchors. Screw the MBI to the wall anchors. If mounting to a mud ring, hold the MBI with the Back Support Plate behind it and screw both pieces in place.
3. **Faceplate Installation:** Place the faceplate over the station with the notch on the lower edge. The faceplate clicks into place while pressing against the plate face above and below the buttons. You should hear two loud clicks. *Alternate mounting: The MBI can be mounted to a mud ring or with a separate order item (Barrier kit), it can also be installed on wall outlets. (See Accessories section or data sheet for ordering information). Follow the Barrier kit (8188K100X-X) installation instructions.*
4. Test the operation of the station. The buttons should return to the neutral position after release. An audible click is expected, and the green LED will flash on each button press to indicate the RPS telegram was transmitted and the last measured battery voltage is good.

## Linking a Station to an Echoflex Controller

The linking process requires the controller or receiver to be mounted, powered and within range of the station to be linked. Each receiver can support up to 20-30 switch stations, depending on receiver model.

1. Activate LEARN or LINK mode at the receiver, if necessary refer to the manufacturers documentation.
2. For each pair of ON/OFF buttons, press the ON button three times in quick succession.
3. Deactivate LEARN mode at the receiver. Test operation of the station by switching **ON** and **OFF**.

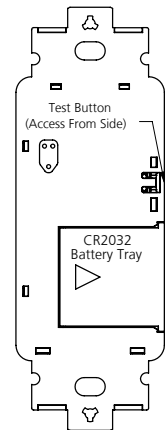
## Replacing the Battery

The battery is accessible on the back of the MBI.

### Faceplate Removal:

1. Push against the carrier frame around the buttons using two or three fingers on one hand.
2. Using your other hand, take a small flat head screwdriver, place the head under the faceplate in the notch on the lower edge of the faceplate.
3. Using this hand as leverage against the wall, pull out aggressively against the faceplate, away from the wall. **NOTE:** Do not leverage the screwdriver handle against the wall as this may cause damage to the wall.
4. The faceplate will spring free captured by your fingers holding the carrier against the wall. Unscrew the MBI from its mounting location. The battery cover slides off as indicated by the arrow. Before inserting the new battery, press the ON button for 10 seconds to discharge any stored energy in the station. Replace the battery with a CR2032 coin cell. The positive side faces the slide out battery cover.

When a battery is inserted a successful station start up is indicated by a light chase sequence: green -> yellow -> red repeated three times. Remount the MBI and snap the faceplate on (as described in installation section - Faceplate Installation).



**Note:**

When a button is pressed and a single Red LED blinks, it is an indication that the RPS telegram was transmitted but the battery voltage is low (less than 2.2V).

When the Red LED blinks 3 times on a button press the RPS telegram was not transmitted and the battery is critically low (less than 2.0 V)

A stuck button will cause a repeating red blink roughly every 5 seconds

## Test Modes

1. To access tests, remove the faceplate and press the button on the side of the unit using a fingernail, pen or small tool.
2. Press and hold the side button until all LEDs blink (about 5 seconds)
3. Tap the button to scroll through the selections. (see table below)
4. To select an item, press and hold the button until all the LEDs blink (about 5 seconds)

Test mode times out after 180 seconds.

Test Menu	
Single red blink	REBOOT device
Single yellow blink	Range Confirmation
Single green blink	Reserved for future use
Single green + red blink	DEBUG: Test button pad
Single green + yellow blink	DEBUG: Transmit CM APP Version

## Reboot

When rebooted, a successful switch start up is indicated by a light chase sequence: green -> yellow -> red repeated three times.

A weak battery will cause a repeating red blink roughly every half second. A stuck button will cause a repeating red blink roughly every 5 seconds

## Range Confirmation

Provides visual feedback of the MBI's signal strength received by a linked Echoflex controller.

**Note:**

- *Disable all repeaters in range*
- *The station should only be linked to one controller when running the test*

1. To enter Range Confirmation Test press and hold the side button until all LEDs blink (about 5 seconds)
2. Tap the button to scroll through the selections. When the yellow LED is blinking, press and hold the side button until all the LEDs blink (about 5 seconds)

All three LED's will blink on and off quickly for a second followed by a pause, then repeats. When the sensor receives a range confirmation telegram from the linked controller, the sensor displays the signal strength status for 2 seconds, see table below.

LED - blinking	Signal Strength	Status
Green	-41 to -70 dBm	Best
Yellow	-70 to -80 dBm	Good
Red	-80 to -95 dBm	Not ideal, try moving sensor closer
None	No linked controllers detected. Move sensor closer or add telegram repeating	

The test will repeat every 10 seconds and run for a duration of 180 seconds.

## Reserved for future use

This test mode does nothing, returns to normal operation if selected.

## DEBUG: Test Button Pad

This test mode blinks the LEDs when button presses are detected. No transmissions occur during transmissions. Button test mode will timeout after 180s and reboot the unit. (Button activity does not reset the timeout counter.)

## DEBUG: Transmit TCM APP Version

A single SIGNAL telegram (RORG 0xD with message identifier byte (MID) set to 0x07) is transmitted with the APP version of the TCM515U.

## Error Codes

On power up (battery newly inserted) a weak battery will cause the red LED to blink ~ every half second.

When a low battery state has been detected during normal operation, the battery status is blinked about once per minute (64 s). A single red blink indicates the last measured battery voltage is between 2.0V and 2.2 V. A triple red blink indicates the battery voltage is critically low (less than 2.0V).

A stuck button will cause the red LED to blink ~ every 5 seconds.

## Equipment Profiles

EEP: F6-02-02      Light Control - ON, OFF, Dimming

## Accessories

PTM365BP1\* - Single gang barrier plate for switches

PTM365BP2\* - Dual gang barrier plate for switches

\* Available in White or Gray

## FCC Part 15.231 - Remote Control Transmitters

Devices equipped with 902 MHz radio:

Contains FCC ID: SZV-TCM515U

Contains IC: 5713A-TCM515U



The enclosed device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (i.) this device may not cause harmful interference and (ii.) this device must accept any interference received, including interference that may cause undesired operation.

## IC RSS-210

## Barrier Plate Kit Certification

UL Standard 514D

CSA Standard C22.2 # 42-1-13



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