MS31

Touchless-activation switch for automatic doors

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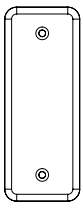
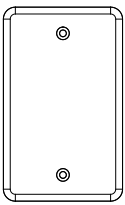
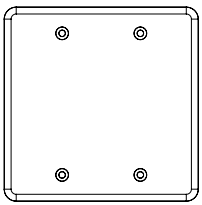
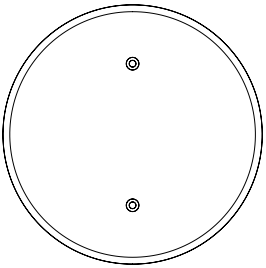

JAMB


SINGLE-GANG


DOUBLE-GANG


6" ROUND

MOUNTING BOX COMPATIBILITY

	JAMB	SINGLE-GANG	DOUBLE-GANG	6" ROUND
SURFACE-MOUNT	10BOXJAMBST	10BOX24SGSM 10ABOXSGSMS	10BOXDGSM 10BOX475SQSM* 10BOX45SQSM*	10BOX6RNDSM*
FLUSH-MOUNT	N/A	standard, single-gang electrical box**	standard, double-gang electrical box** 10BOX45SQFM*	standard, single-gang electrical box**

** must use adapter bracket*
*** not provided by BEA*

TECHNICAL SPECIFICATIONS

Technology:	microwave motion sensor
Radiated frequency:	24.125 GHz
Radiated power density:	< 5 mW/cm^2
Supply voltage: *to be operated from SELV-compatible power supplies only*	12 – 24 VAC ±10% 12 – 24 VDC +30% / -10%
Supply frequency:	50 – 60 Hz
Power consumption:	< 1.5W
Output relay contact rating (max. voltage): relay contact rating (max. current): Max. switching power:	relay with switch-over contact (voltage-free) 60 VDC / 125 VAC 1A (resistive) 30W DC / 60 VAC
Detection range:	4 – 24" (adjustable)
Detection mode:	motion (bidirectional)
Output hold time:	0.5 – 30 sec
Temperature range:	-4 – 131 °F (-20 – 55 °C)
Weight:	0.34 lbs
Material:	PC, PE
IP rating:	IP54
Certification:	Electromagnetic compatibility (EMC) according to 2004/108/EC FCC: G9B-210161 IC: 4680A-210161

Specifications are subject to change without prior notice.
All values measured in specific conditions.

PRECAUTIONS

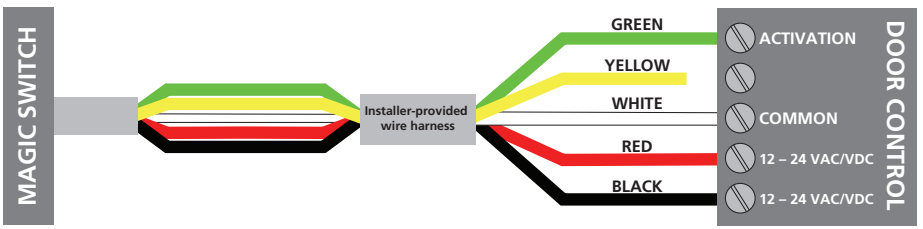
- ❑ Shut off all power going to header before attempting any wiring procedures.
- ❑ Maintain a clean and safe environment when working in public areas.
- ❑ Constantly be aware of pedestrian traffic around the door area.
- ❑ Always stop pedestrian traffic through the doorway when performing tests that may result in unexpected reactions by the door.
- ❑ *ESD (electrostatic discharge)*: Circuit boards are vulnerable to damage by electrostatic discharge. Before handling any board, ensure you dissipate your body's ESD charge.
- ❑ Always check placement of all wiring before powering up to ensure that moving door parts will not catch any wires and cause damage to equipment.
- ❑ Ensure compliance with all applicable safety standards (i.e. ANSI A156.10) upon completion of installation.
- ❑ DO NOT attempt any internal repair of the components. All repairs and/or component replacements must be performed by BEA, Inc. Unauthorized disassembly or repair:
  1. May jeopardize personal safety and may expose one to the risk of electrical shock.
  2. May adversely affect the safe and reliable performance of the product resulting in a voided warranty.

INSTALLATION TIPS

- ✓ When wiring multiple devices together to create a system configuration, it is best to ensure that each device works independently. This will reduce troubleshooting if a discrepancy occurs.
- ✓ Prior to installing any equipment in either new or existing circuits, verify correct line voltage and line stability. Always remember to shut off the power before performing circuit wiring.
- ✓ Do not place the sensor in the door's opening range, where the sensor may see door movement.
- ✓ Do not place moving objects in front of the sensor.
- ✓ Do not use harsh cleaning agents to clean polycarbonate materials. Harsh cleaning agents (e.g. ammonia) can cause damage to these materials. BEA recommends using clean, lukewarm water and a soft, lint-free cloth to clean sensor windows and other polycarbonate surfaces on our products.

1 WIRING

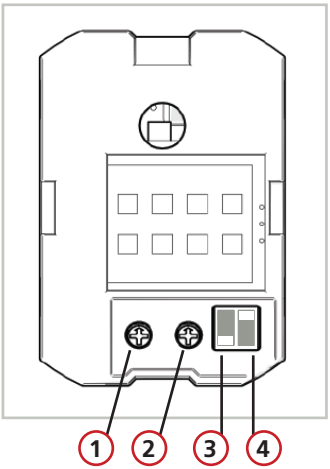
Wire the MAGIC SWITCH to the door control according to the diagram shown here.



NOTE: Use either green (N.O.) or yellow (N.C.) wire, not both. Refer to the door control manual to determine which must be used.

2 SET-UP

Four adjustments can be made to the sensor:



1. Sensitivity potentiometer: adjust detection field from 4 to 24 inches (rotate clockwise to increase)
   factory default: 4 inches (fully CCW)
2. Hold time potentiometer: adjust relay hold time from 0.5 to 30 seconds (rotate clockwise to increase)
   factory default: 0.5 sec (fully CCW)
3. Output Mode switch: determines Toggle mode or Timer mode
   - Toggle (switch up) = detection activates the relay and the relay holds until a second detection deactivates the relay (recommended for switch applications)
   - Timer (switch down, factory default) = detection activates the relay for 0.5 to 30 seconds; relay will hold as long as detection occurs
4. LED mode switch: determines if LED illuminates when in detection or when not in detection
   - switch up (factory default) = LED on when sensor is NOT in detection, LED off when in detection
   - switch down = LED on when sensor is is in detection, LED off when not in detection

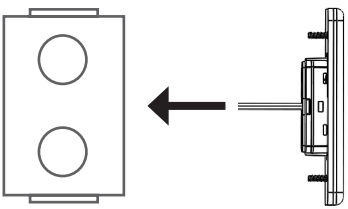
3 INSTALLATION

1. Install an electrical box.

   If using a metal eletrical box, ensure that the sensor does not come in contact with the box to avoid shorting the unit.

2. Clip the MAGIC SWITCH cube to the face plate.

3. Secure the face plate to the electrical box with the provided screws.



gang box (*metal/plastic*)

MAGIC SWITCH assembly

Depending on the door installation, the weather-resistant foam gasket may be used.

TROUBLESHOOTING

Door does not open when swiping hand in front of sensor	Bad or no power	Check power supply. If LED switches on or flashes, power connections are okay.
	Detection range too short	Adjust detection zone. Remove any metal plates in front of sensor.
	Incorrect wiring/connection	Check wiring and relay connection.
Sensor stays in detection	Environmental conditions influencing sensor	Remove moving objects from around sensor.
	Wrong output mode	Switch output mode to Timer.
Door remains open after detection/activation	Wrong output mode	Switch output mode to Timer.
	Incorrect wiring/connection	Check wiring and relay connection.

FCC APPROVAL

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada.
Operation is subject to the following two conditions:

*this device may not cause harmful interference, and
*this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

*Reorient or relocate the receiving antenna
*Increase the separation between the equipment and receiver
*Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
*Consult the dealer or an experienced radion/TV technician for help

WARNING: CHANGES OR MODIFICATIONS TO THIS EQUIPMENT NOT EXPRESSLY APPROVED BY BEA INC. MAY VOID THE FCC AUTHORIZATION TO OPERATE THIS EQUIPMENT.

BEA, INC. INSTALLATION/SERVICE COMPLIANCE EXPECTATIONS

BEA, Inc., the sensor manufacturer, cannot be held responsible for incorrect installations or incorrect adjustments of the sensor/device; therefore, BEA, Inc. does not guarantee any use of the sensor/device outside of its intended purpose.

BEA, Inc. strongly recommends that installation and service technicians be AAADM-certified for pedestrian doors, IDA-certified for doors/gates, and factory-trained for the type of door/gate system.

Installers and service personnel are responsible for executing a risk assessment following each installation/service performed, ensuring that the sensor/device system performance is compliant with local, national, and international regulations, codes, and standards.

Once installation or service work is complete, a safety inspection of the door/gate shall be performed per the door/gate manufacturer's recommendations and/or per AAADM/ANSI/DASMA guidelines (where applicable) for best industry practices. Safety inspections must be performed during each service call – examples of these safety inspections can be found on an AAADM safety information label (e.g. ANSI/DASMA 102, ANSI/DASMA 107, UL294, UL325, and International Building Code).

Verify that all appropriate industry signage, warning labels, and placards are in place.