

# A&E Specification for the Hand-E-Wave™ Touchless Switch

## Information for Specifiers:

**Overview:** Hand-E-Wave™ touchless switches are manufactured by Essex Electronics in Carpinteria, CA. and include mullion (jamb), (single gang) and (double gang) switch plate form factors. These sensors utilize 24Ghz Doppler radar technology to provide unmatched dependability in detecting a person's hand or other moving object within the detection zone. The zone is adjustable from 2" to 24". The output is selectable (timed or toggled) via a DPDT relay. This provides a hands free, touchless method to activate anything a mechanical switch is typically used to control. Some examples are automatic door actuators and request to exit (REX) buttons. Good candidates are any electrical device that requires a positive intent to activate but will not require physical contact. One obvious benefit is the elimination of physical transmission of bacteria, viruses, and other pathogens by human touch. In addition to the touch free operation an optional emergency override button is available. Another important unique physical feature is a very low profile and ruggedized design that is easy to clean and sanitize. More specifically, the faceplate is made of 1/8" stainless steel and the switch protrudes only 3/16" (0.19) when properly mounted.

**Applications:** The rugged, sealed, vandal resistant housing of the Hand-E-Wave delivers superior durability and ability to be vigorously sanitized typically needed in environments such as healthcare, education, and mass transit. Because of the very low profile of the stainless steel faceplate, the Hand-E-Wave meets anti ligature requirements making it especially useful in correctional facilities as well as mental health facilities. Environments where rolling carts are used such as equipment carts, hospital gurneys and rolling trash bins also benefit from the nearly flush mounting of the Hand-E-Wave sensor by reducing maintenance costs of accidental damage by the carts. The stainless steel faceplate with optional black or white powder coat finish provides a superior ability to be sanitized more thoroughly and safely than common switches or sensors. This is a big advantage anywhere employees have very dirty or very clean (sanitized) hands. Customized graphics are also offered.

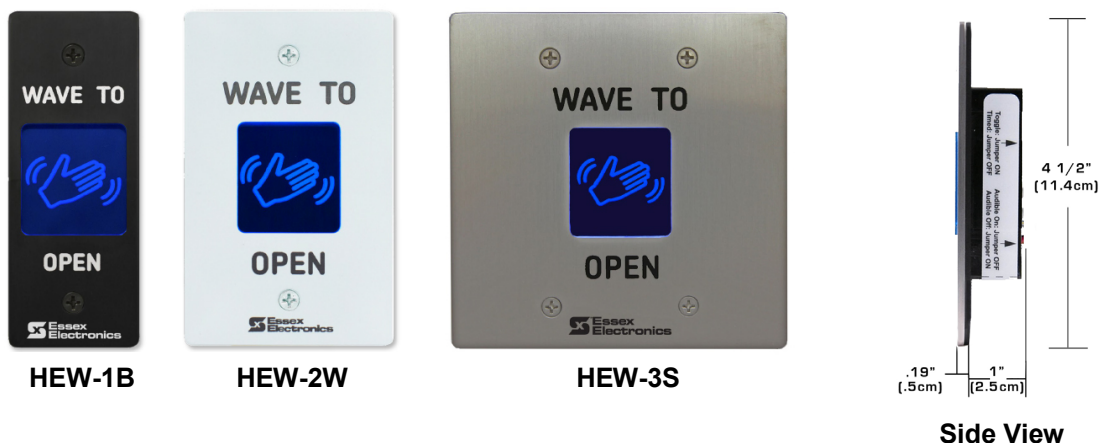
**Technology:** Hand-E-Wave uses very low power 24Ghz Doppler Radar to sense a person's hand. The RF emissions rating of the Hand-E-Wave is 0.5mw/cm<sup>2</sup>. In comparison, household appliances such as microwave ovens emit up to ten times more power at 5mw/cm<sup>2</sup>, cell phones emit up to 10mw/cm<sup>2</sup> and sunlight has 200 times more emissions at 100mw/cm<sup>2</sup>. The use of microwave radar far surpasses the technology used in hands free sinks and lavatories found in many public places. The Hand-E-Wave was designed to work in applications where it is important for users to be sensed immediately and on the first try. Inferior technology such a passive infrared is known for requiring repeated attempts before being noticed by the sensor. This is will not be the user experience with the Hand-E-Wave.

**Document Organization:** In keeping with the indexing standard provided by the Construction Specifications Institute (CSI) it is recommended the specification text (found on the next page of this document) be inserted into section 26 or 28 depending on the application.

## Additional Resources:

[Hand-E-Wave General Information](#)

[Hand-E-Wave Video Library](#)



## (DIV 28 or 26) Touchless Hand Switch Sensor

### PART 1 GENERAL

#### 1.01 Summary

- A. Bid specification for touchless wall mounted switch sensors with ruggedized faceplates.
- B. Related Sections
  - 1. 08 71 13 Power Door Operators
  - 2. 08 74 00 Non-Integrated Access Control Hardware
  - 3. 28 15 15 Electrified Locking Devices and Accessories
  - 4. 26 05 19 Low-Voltage Electrical Power Conductors and Cables

#### 1.02 Manufacturer Requirements

- A. The touchless switch must be Made in America. Products manufactured and/or assembled outside of the United States of America will not be accepted.
- B. The manufacturer must have a minimum of 10 years history in electronics manufacturing.

#### 1.03 Submittals

- A. Manufacturer data sheets and manuals for each model to be supplied.
- B. All substitutions and/or alternate products must be pre-approved prior to bidding. Substitutions made at the time of bidding will not be considered.

#### 1.04 Warranty

- A. An 18-month warranty against defects in materials and workmanship shall be included.

END OF SECTION

### PART 2 PRODUCTS

#### 2.01 Manufacturer

Essex Electronics  
1130 Mark Avenue  
Carpinteria, CA 93013  
(805) 684-7601  
[essex@keyless.com](mailto:essex@keyless.com)

#### 2.02 Models

- A. HEW with Stainless faceplate include: HEW-1S (Narrow/Jamb), HEW-2S (US Single Gang), HEW-3S (US Double Gang)
- B. HEW with Black powder coat faceplate includes: HEW-1B (Narrow/Jamb), HEW-2B (US Single Gang), HEW-3B (US Double Gang)
- C. HEW with White powder coat faceplate includes: HEW-1W (Narrow/Jamb), HEW-2W (US Single Gang), HEW-3W (US Double Gang)
- D. HEW with stainless faceplate and Manual Override include: HEWMO-1(Narrow/Jamb), HEWMO-2 (US Single Gang), HEWMO-3 (US Double Gang)
- E. Grey Surface Mount Back Box Models: BAK BOX SGE (Single Gang), BAK BOX DGE (Double Gang)
- F. TWM: Two Wire Module for retrofit installations replacing two wire mechanical switches.

## 2.03 FEATURES

The hands free switch sensors shall have the following characteristics and abilities:

- A. Technology: Utilize low power bidirectional Doppler radar rated at no more than 0.5mw/cm<sup>2</sup> at a frequency of 24Ghz. Sensors utilizing passive infrared (PIR) or capacitive technology will not be accepted.
- B. Sensing Range: Offer field adjustable detection zone with a sensing range of 2" to 24".
- C. Output Interface: Provide a selectable output for timed delay or toggle operation via a double pole double throw relay (DPDT). The output ratings must be no less than 2A 30VDC Resistive, ½A 125VAC, and the time delay range must be at least 1 to 30 seconds.
- D. Mounting: The electronics for the switch sensors must fit behind the faceplate within the mounting back box. Three widths are available: a narrow mullion (1-3/4"), standard single gang (2-3/4") and double gang (4-1/2"). In all cases the height is 4-1/2".
- E. Environmental:
  - 1. Rating of IP 65 is required noting the optional manual override button reduces this rating to IP64. Devices with lesser ratings will not be accepted.
  - 2. Temperature range of -40°F to +180°F (-40°C to +82°C), 100% Humidity.
- F. Power Requirements: Low voltage (12 to 24VAC/DC) with power draws not exceeding 300mw in standby, 600mw while output relay is energized. (Please note the need for a low voltage supply power is required by others.)
- G. Protective Faceplate: Made of stainless steel and protrude no more than 3/16" from the mounting surface.
- H. Custom Printing: The capability to provide a customized logo and printing on the reader faceplate is required.

END OF SECTION

## PART 3 EXECUTION

### 3.01 INSTALLERS

- A. Contractor personnel shall comply with all applicable state and local licensing requirements.

### 3.02 PREPARATION

- A. The Contractor shall verify wire runs and wire sizes for location and code compliance for use with the installed equipment.

### 3.03 INSTALLATION

- A. The Contractor shall follow all Manufacturer-published guidance on proper installation and configuration of the switch sensors.
- B. The Contractor shall test the system in conditions simulating the final installed

END OF SECTION