CSI SPECIFICATION SECTION 8.

SECTION [08460]
SENSORS FOR AUTOMATIC DOORS

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the following types of automatic entrance/ exit door sensors:
   1. Exterior and interior, sliding, swing and folding door applications.
   2. Entrance and exit applications.

B. Related Sections:
   1. Division 16 Sections for electrical connections including conduit and wiring for automatic entrance door operators.
   2. Division 08.71.13 and 08.71.16 for door hardware connections for automatic doors.

C. REFERENCES

   1. Underwriters Laboratories (UL) UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems
   2. American National Standards Institute (ANSI) / Builders' Hardware Manufacturers Association (BHMA)
   3. ANSI/BHMA A156.10: American Standard for Power Operated Pedestrian Doors
   4. ANSI/BHMA A156.19: American Standard for Power Assist and Low Energy Power Operated Doors
   5. American Association of Automatic Door Manufacturers (AAADM)

1.02 DEFINITIONS

A. Activation Device: A motion sensor device that, when actuated, sends an electrical signal to the door operator to open the door, re-open or hold a door open.

B. Safety Device: A presence sensor device that prevents a door from opening or closing, as appropriate.

1.03 PERFORMANCE REQUIREMENTS

A. Provide an automatic entrance door sensor capable of providing motion detection activation and presence detection safety, along the door opening, via microwave (motion detection) K-band (24.125GHz) and active infrared technologies. The presence detection shall consist of two (2) curtains with a total of 48 infrared spots and shall be used for the purpose of pedestrian detection, along the door opening, on both sides of the door.

1. Infrared curtains shall have angle adjustment capability and shall be capable of reaching within 2 inches (51 mm) of the face of the sliding door. The infrared curtains shall not shut off at any door position. Infrared curtains shall have a self-adaptation time of 30 minimum seconds to infinity, enabling the sensor to learn permanently changed environments. Infrared sensor shall provide a 6'6" (1.98 m) wide (wide lens) infrared pattern when mounted at 7'2" (2.13 m) and a 3'3" (1 m) wide (narrow lens) pattern when mounted at 7'2". The depth of the infrared pattern shall be adjustable via remote control to one of the following: One (1) or two (2) infrared curtains or dynamic mode where one infrared curtain is always active and the second curtain is enabled only after motion detection.
2. Microwave activation portion of the sensor shall have bi-directional, uni-directional or motion tracking sensing capabilities and utilize a flat planar antenna to adjust the activation tilt angle. The sensor shall provide a maximum field of motion detection 13' (4 m) wide by up to 8'2'' (2.48 m) deep.
3. Sensor shall be fully adjustable by remote control. For one-way traffic applications, the sensor that is mounted at the side "not intended for use" shall have the ability to be adjusted for compliance with the secondary activation requirement.

B. Thermal Range Requirements: Provide sensor that can be used in all climates, allow for thermal range from minus 30 degrees to 131 degrees Fahrenheit.

C. Mounting Range Capabilities: Shall detect a 28 inch minimum high person, moving at a rate of 6 inches per second minimum toward the center of the door, within the detection areas described.

1. Mounting Height Standard: 5'9" to 8'2"
2. Mounting Height High: 8'2" to 13'

D. Safety Range: Detect presence to keep door(s) open while a pedestrian is in the path of closure. Shall detect a stationary 28 inch minimum high person within the detection areas described for a minimum of 30 seconds.

E. Presence/ Activation Zone:

1. Presence: Infrared Pattern: Wide Prism/ Lens: width 6'6" and approximate depth 13" when mounted at 7'2", Narrow Prism/ Lens: width 3'3" and approximate depth 13" when mounted at 7'2".
2. Activation/ Microwave Pattern: Wide Antenna: 13' wide x 6'6" deep, Narrow Antenna: 6'6" wide x 8'2" deep.

F. Infrared Automatic Learn time: Factory setting for "learn mode" to be compliant per ANSI 156.10 minimum learn time of 30 seconds. Auto learn modes capable to be adjustable to infinity.

G. Adjustability: Vertical adjustments of unit by remote programmer and/ or manual installation. Physical parameter settings: motion detection sensitivity, microwave immunity, infrared immunity, relay output configurations, safety output redirection, external monitoring, relay hold time, number of infrared curtains, secondary activation sensitivity, auto learn time, lock code capability and set-up.

1. Activation portion: Adjust the vertical angle from 0 degrees to 45 degrees.
2. Presence portion: Select narrow or wide (default) prism/ lens and adjust the infrared tilt angle from -4° to +4°.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is an AAADM certified inspector and employed by a company who regularly engages in the installation and service of pedestrian automatic doors as its primary business and holds a certification from the manufacturer.

B. Manufacturer Qualifications: A qualified manufacturer with a manufacturing facility that specializes in automatic door sensor devices.

1. Product must be compliant to applicable ANSI Standards 156.10 or 156.19 when inspected by an AAADM certified inspector.

1.05 COORDINATION

A. Electrical System: Coordinate layout and installation of sensors systems to automatic entrance door assemblies with connections to power supplies and other electrical component systems as supplied by others.

1.06 WARRANTY

A. Automatic Entrance Door Sensors shall be free of defects in material and workmanship for a period of one (1) year from the date of substantial completion.

B. During the warranty period the Owner shall engage a factory-trained automatic door installer/ service personnel who holds a valid AAADM certificate: technician to perform necessary adjustments, service and affect repairs during warranty period.

PART 2 - PRODUCTS

2.01 AUTOMATIC ENTRANCE DOOR SENSOR

A. Acceptable Manufacturer: BEA Inc, 100 Enterprise Drive, Pittsburgh, PA 15275, 412-249-4100. www.beasensors.com. No substitutes accepted.

2.02 PRODUCT

A. Product shall be: BEA 10WIZARDG3, dual technology sensors. Dimensions: 10-3/8 inches (263 mm) wide by 2-3/16 inches (56 mm) tall by 1-7/8 inches (48 mm) deep.

B. Optional accessories: BEA 10WCA Ceiling Adaptor, 10URC universal rain cover, 10WRC Clear rain cover, 10WMB mounting bracket for flat/ horizontal surfaces, 10WQD48 quick disconnect harness, 70.0222 G3 lens 3’3” pattern width, 70.0223 G3 lens 6’6” pattern width.

C. Mounting Height:

1. Standard: 5’9” to 8’2”
2. High: 8’2” to 13’

D. Finish: Black ABS housing. May be painted non-metallic only: White, Silver (clear), Dark Bronze Anodized, Custom Color TBD (painted any non-metallic color)

PART 3 - EXECUTION

3.01.1 INSPECTION

A. Examine conditions for compliance with requirements for installation tolerances.

3.02 INSTALLATION

A. Do not install damaged components.

3.02.1 Factory installed and on-site installed units.

A. Install surface-mounted and concealed units above header using concealed fasteners to greatest extent possible.

B. Shall be installed and certified by a certified AAADM inspector.

C. Door Operators: Connect door operators to electrical power distribution system as specified in Division 16 Sections.

3.02.2 FIELD QUALITY CONTROL

A. An AAADM certified inspector shall test and inspect each automatic entrance door to determine compliance of installed systems with applicable ANSI standards.

3.02.3 ADJUSTING

A. Adjust door operators, controls, and hardware for smooth and safe operation, for weather-tight closure, and complying with requirements in ANSI/BHMA A156.10 and other applicable ANSI/BHMA standards.

3.03 WARRANTY

A. One year warranty shall be issued from time of installation followed by an AAADM certified inspection for compliance with ANSI 156.10. Ensure to place appropriate AAADM labels and completed inspection stickers in the appropriate place for the type of door system selected.