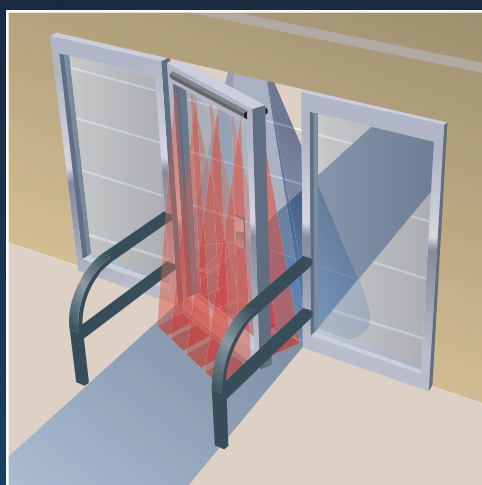
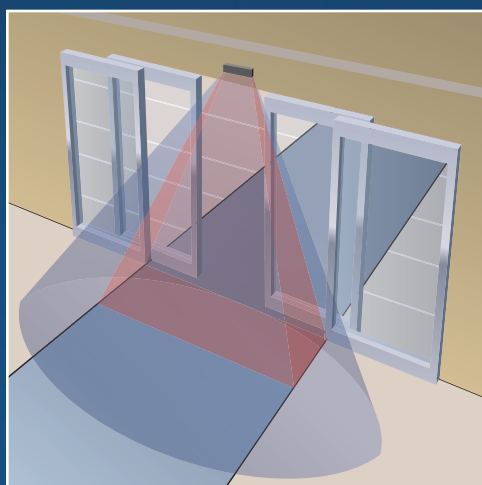


Motion Sensor



Presence Sensor



Hybrid Sensor

Motion Sensing or Presence Sensing?

Motion Sensors are used to **activate the door** when it detects a moving object, such as a pedestrian or a shopping cart. Motion sensors can typically distinguish between objects moving toward the door or away from the door. Motion sensors **cannot detect still objects** such as a person stopped in the opening or closing path of the door.

Presence Sensors detect both moving and non-moving objects in the path of the door and **signal the door accordingly**. NABCO Entrances utilizes infrared technology in its presence sensors.

Motion/Presence Hybrid Sensors or Sensor Systems provide the activation capabilities of motion sensors with the pedestrian protection of presence sensors. NABCO Entrances has sensors and systems that combine both technologies in a single unit or as a system of sensing units to give you the best product for your application and budget. The NABCO Acuzone is a hybrid sensor.

How Microwave Technology Works

Microwave Sensors utilize the Doppler Effect principle. The sensor emits a very high frequency microwave signal. The high frequency enables the sensor to better detect slower moving objects. When the wave encounters a moving object, it bounces back and its frequency is changed proportionately to the speed of the object. This change in frequency triggers the sensor. The reaction uses this technology. The Optex Reaction uses this technology, as does the microwave part of the Acuzone sensor.







How Infrared Technology Works

In general, infrared sensors work by emitting an invisible pulsed light signal. The receiver then looks for the reflected signal back and reacts to changes in the reflection of the signal that indicates a presence in its detection area. There are two types of infrared technology: Diffused and Distance Measuring Infrared.

Diffused Infrared Sensors work by flooding pulsed infrared light over a specific area below the sensor down to floor level. It then uses the reflected infrared as its base of reference. Foreign objects entering the detection area alter the infrared base reference level and trigger activation. NABCO Sensors using this technology are Acusensor3, Acuvision and the infrared part of Acuzone.

Distance Measuring Infrared Sensors work by focusing active pulsed infrared into a spot (or series of spots) using optical lenses. The OA-Edge is a **Distance Measuring Sensor**. Using infrared emitting LEDs, it directs a series of infrared beams to points in space within the vicinity of the door. When an object enters one of the beam areas, the beam is bounced off the target and reflected back to a position sensitive infrared receiver. This is an excellent sensor for mounting on swing doors since it is not dependent on the floor as the infrared base of reference.

Automatic Door Sensor Selection Chart

	RECOMMENDED APPLICATIONS	NOT RECOMMENDED	FEATURES	BENEFITS
<p>Acuvision Motion/Presence Sensor with Threshold Detection</p> 	Swing, Sliding or Folding Door Systems.		<ol style="list-style-type: none"> When used as a presence sensor on a sliding door, it scans backward into the threshold to detect objects on the far side of the opening between the leading edge of the panels until the door is closed. When used as an activation sensor on a swing door, the infrared learning technology memorizes the door activation cycle and differentiates between the moving door and other present objects. Dual-voltage capability 	<ol style="list-style-type: none"> Continuous presence throughout the opening and closing cycle of Sliding Doors. Provides reactivation prevention for Sliding Doors. Versatile sensor for all door applications. Superior coverage around door. Interfaces with GyroTech equipment and the equipment of other manufacturers.
<p>Acuzone Microwave/Infrared Sensor</p> 	Swing, Sliding or Folding Door Systems. Perfect for longer-range detection and fast traffic conditions.	Not for use as a presence sensor on Swing or Folding Doors.	<ol style="list-style-type: none"> Unique combination of microwave and infrared technology. Deeper detection area. Bi-directional setting. Uni-directional setting. Separate microwave and infrared area adjustments. 4-mode mutual interference prevention function. Separate outputs for infrared and microwave. Programmable settings for depth of coverage, width of coverage, sensitivity and memory. Dual-voltage capability. 	<ol style="list-style-type: none"> Accommodates varying speeds of pedestrian traffic. Can be set to ignore pedestrians or objects moving away from the door, allowing the door to close 50% sooner for energy savings. Sensors can be mounted closely to each other without sensor interference. Interfaces with GyroTech equipment and the equipment of other manufacturers. Detects objects in the threshold, dramatically increasing safety level.
<p>Reaction 2 Sensor</p> 	Activation Sensor for Swing or Folding Doors.	Not for use on Sliding Doors.	<ol style="list-style-type: none"> Microwave technology. Deep detection area. Bi-directional OR uni-directional setting. Adjustable settings for pattern depth or width. Adjustable settings for sensitivity. Dual-voltage capability. Can be surface-mounted on the door header or the ceiling. Minute vertical adjustments allow fine tuning of detection area. 	<ol style="list-style-type: none"> Deep detection provides quick, reliable openings. Visually appealing compact design with LED. Versatile design can be used for wide or narrow openings. Can be used with all makes of automatic doors.
<p>OA-Edge 2 Swing Door Presence Sensing System</p> 	Door-Mounted Swing Door Sensing System. Perfect solution for grocery stores and hospitals.	Not for use on Sliding or Folding Doors.	<ol style="list-style-type: none"> Door-mounted sensor. Compatible with all manufacturers' controls. Adjustable pattern depth. Dual-voltage capability. Mutual interference prevention function. 	<ol style="list-style-type: none"> Continual-presence sensing throughout the door cycle. Out of reach of shopping carts or hospital beds. Conserves energy. Helps bring existing or new swing door installations up to the new ANSI standard. Optimizes door performance. Interfaces with GyroTech equipment and the equipment of other manufacturers. External LED display allows user to easily determine detection with the cover on. Automatic calibration.
<p>OA-Edge 1 Low-Energy/ADA Swing Door Sensor</p> 	Door-Mounted Swing Door Sensing System. Perfect solution for low-energy/ADA applications.	Not for use on Sliding or Folding Doors.	<ol style="list-style-type: none"> Door-mounted sensor. Functions on all older manufacturers' non-micro-processor-based controls. Dual-voltage capacity. Enhances the performance of low-energy/ADA doors. 	<ol style="list-style-type: none"> Out of reach of shopping carts or hospital beds. Interfaces with equipment of most other manufacturers. Added pedestrian protection for low-energy/ADA doors. External LED display allows user to easily determine detection with the cover on. Automatic calibration.
<p>Acusensor 3 Sensor System</p> 	Swing, Sliding or Folding Door Systems.		<ol style="list-style-type: none"> Grid-like rectangular pattern. Variable Learn Time from 0 seconds (strictly motion) to Infinity (strictly presence). Multiple width and depth adjustments. Also compatible with older, non-processor-based controls. Adjustable pattern depth. Dual-voltage capability. 4-mode mutual interference prevention function. 	<ol style="list-style-type: none"> Superior detection across front of door. More versatile – can be used as motion-only or presence-only sensor. Detection pattern adjustable to meet specific applications. Allows upgrades to existing systems. Optimizes door performance. Interfaces with GyroTech equipment and the equipment of other manufacturers.

Specifications

Acuvision

Acuvision	(P/N 14 10823 01)
Sensing System	Active reflective infrared system (Motion & Presence)
Power Source	12 to 24 VAC or DC
Power Consumption	80mA Max. (at 12 VDC), 3 VA Max. (at 24 VAC)
Output Contacts	Output 1 30VAC/50VDC 0.1A Max. (Resistance load) [Semiconductor Relay] N.O. contacts only Output 2 30VAC/50VDC 0.1A Max. (Resistance load) [Semiconductor Relay] N.O. contacts only
Mounting Height	Max. 118" (9' 10") above detection area
Detection Area	(When mounted at a height of 118") 118" Width x 78" Depth Max
Standstill Learn Time	0 sec (Motion), 2 sec, 5 sec, 15 sec, 30sec, 90 sec, 300 sec and Forever detection
Output Holding Time	0.5 seconds/2.0s/4.5s/8.0s
Operating Temp	-4 to 131 (-20 to +55C)

Acuzone

Acuzone	(P/N 14 14404)
Sensing System	Active reflective infrared and Doppler Microwave (Motion & Presence)
Power Source	12 to 24 VAC or 12 to 30 VDC
Power Consumption	< 2.5 W DC or < 4 VA for AC
Output Contacts	Activation output Form C relay, 50 V 0.3 A Max. (Resistive load) N.O. and N.C. contacts
Safety Output	Form C relay, 50 V 0.3 A Max. (Resistive load) N.O. and N.C. contacts
Mounting Height	Max. 138" (11' 6") above detection area
Detection Area	(Mounted at 86") Infrared 9' 1" Wide 26" Deep Microwave Wide lens 13' Wide 6' 6" Deep Narrow lens 6' 6" Wide 8' 1" Deep
Standstill Learn Time	30 sec, 60 sec, 180 sec, 600 sec
Output Holding Time	< 0.5 sec
Operating Temp	-31 to 131 (-35 to +55C)

Reaction 2

Reaction 2	(P/N 14 12893)
Sensing System	Doppler Microwave (Motion only)
Power Source	12 to 24 VAC or 12 to 30 VDC
Power Consumption	< 1.5 W DC or < 2 VA for AC
Output Contacts	Form C relay, 50 V 0.3 A Max. (Resistive load) N.O. and N.C. contacts
Mounting Height	Max. 137" (11' 5") above detection area
Detection Area	(Mounted at 85") Wide lens 13' 2" Wide 6' 7" Deep Narrow lens 6' 6" Wide 8' 2" Deep
Output Holding Time	2 sec, 4 sec
Operating Temp	-4 to 131 (-20 to +55C)

OA-Edge 1 and 2

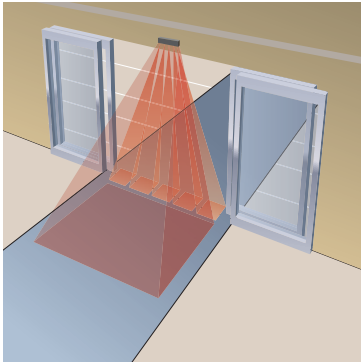
OA Edge 1 & 2	(P/N OA Edge1 24 14365 60, OA Edge2 24 14365 70)
Sensing System	Active reflective infrared triangulation (Motion & Presence)
Power Source	12 to 24 VAC or 12 to 30 VDC
Power Consumption	OA Edge 1 < 1.3 W DC or < 2 VA for AC OA Edge 2 < 1.7 W DC or < 2.3 VA for AC
Output Contacts	Form C relay, 42 V 0.3 A Max. (Resistive load) N.O. and N.C. contacts
Mounting Height	Max. 118" (9' 10") above detection area
Detection Area	(Mounted at 85") Wide lens 13' 2" Wide 6' 7" Deep Narrow lens 6' 6" Wide 8' 2" Deep
Output Holding Time	0.5 sec
Operating Temp	-4 to 131 (-20 to +55C)

Acusensor 3

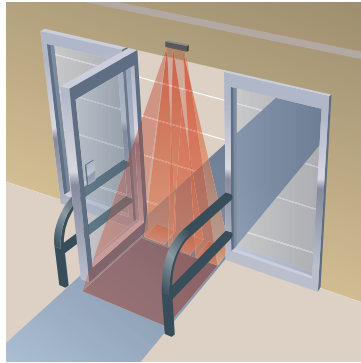
Acusensor 3	(P/N 14 8902 3)
Sensing System	Active reflective infrared system (Motion & Presence)
Power Source	12 to 24V AC or DC Class 2
Power Consumption	<2.5VA @24VAC, <100mA @12VDC
Output Contacts	Form A relay, 50V 0.1A Max. (Resistive load) N.O. contacts only
Mounting Height	Max. 118" (9' 10") above detection area
Detection Area	(When mounted at the height of 118") Max. depth: 74.8" Max. width: 130.7"
Standstill Learn Time	2 sec, 10 sec, 30sec, and 90sec
Output Holding Time	0.5 seconds
Operating Temp	-4 to 131 (-20 to +55C)

Acuvision – Motion/Presence Sensor with Threshold Detection

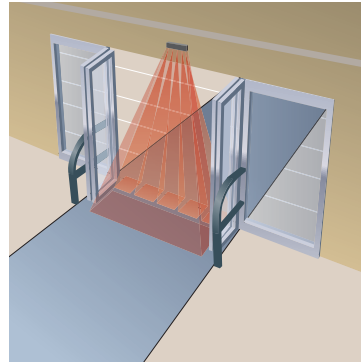
**Microwave patterns shown in blue; infrared patterns shown in red.*



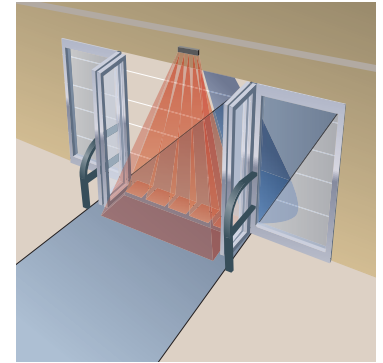
Sliding Door Application



Swing Door Application

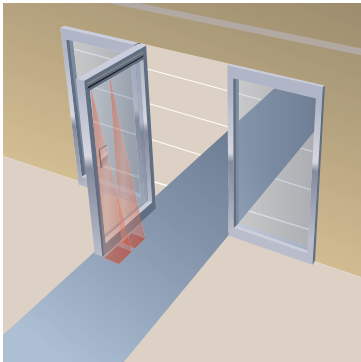


Folding Door Application

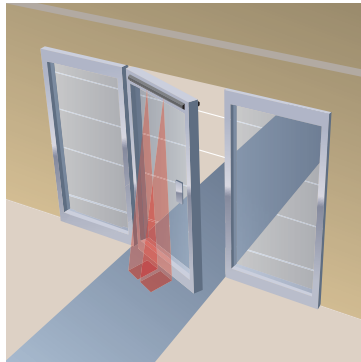


*Reaction (pattern shown in blue)
– Microwave Activation Sensor
for Swing and Folding Doors*

OA-Edge 1 – Swing Door Presence Sensor for Low Energy/ADA Applications

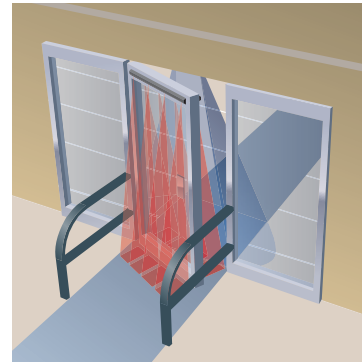


OA-Edge 1 on Approach Side



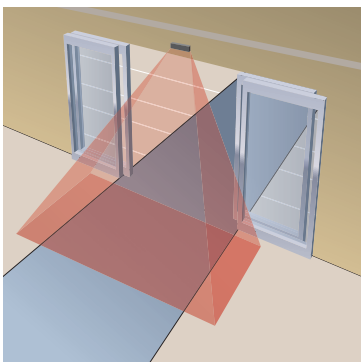
OA-Edge 1 on Swing Side

OA-Edge 2 – Swing Door Presence Sensing System

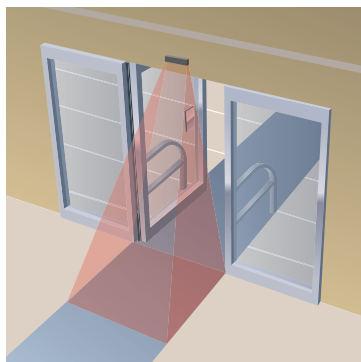


Standard Swing Door Application

Acusensor 3 – Motion/Infrared Sensor

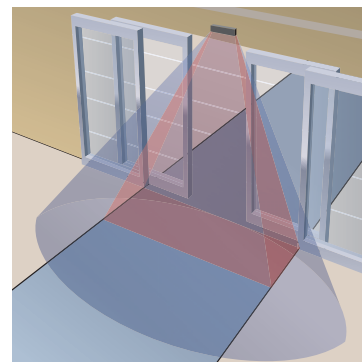


Sliding Door Application



Swing Door Application

Acuzone – Microwave/Infrared Sensor



Sliding Door Application