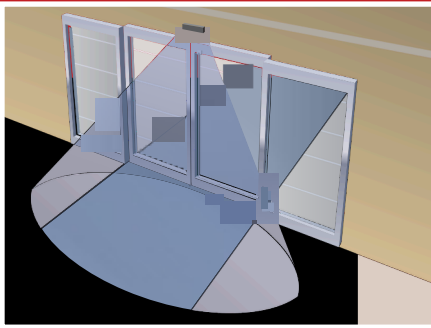
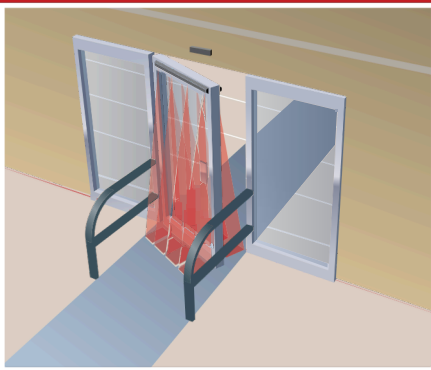


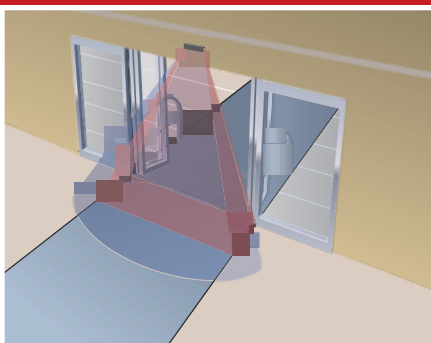
ABOUT SENSORS



Motion Sensor



Presence Sensor



Hybrid Sensor

Motion Sensing or Presence Sensing?

Motion Sensors utilize microwaves and 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. This feature allows motion detectors to ignore departing pedestrians on the egress side of the door. This results in energy savings by allowing the door to close 50% sooner. Motion sensors **cannot detect still objects** such as a person stopped in the opening or closing path of the door. **Presence Sensors** utilize active infrared and can **detect both moving and non-moving objects in the path of the door and signals the door accordingly**. The NABCO Acusensor M is a presence sensor. **Motion/Presence Hybrid Sensors** or Sensor Systems provide activation and energy saving capabilities of motion sensors with the pedestrian protection of presence sensors. NABCO Entrances has hybrid sensors that combine both technologies in a single unit 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 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 after the infrared base reference level and trigger activation. NABCO Sensors using this technology include **Acusensor M** 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
Acusensor M Motion/Presence Infrared Sensor with Threshold Detection 	Swing, Sliding or Folding Door Systems.	Use the Acuzone (below) if a sensor range of greater than x78 inches* is required. (*When sensor is mounted at a height of 87" and used with an optional angled spacer)	1. 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. 2. 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. 3. Dual-voltage capability.	1. Continuous presence throughout the opening and closing cycle of Sliding Doors. 2. Provides reactivation prevention for Sliding Doors. 3. Versatile sensor for all door applications. 4. Superior coverage around door. 5. Interfaces with NABCO equipment and the equipment of other manufacturers.
Acuzone T Motion/Presence Hybrid Sensor 	Sliding Door Systems. Perfect for longer-range detection and fast traffic conditions.	Not for use as a presence sensor on Swing or Folding Doors.	1. Unique combination of microwave and infrared technology. 2. Deeper detection area. 3. Bi-directional setting. 4. Uni-directional setting. 5. Separate microwave and infrared area adjustment. 6. 4-mode mutual interference prevention function. 7. Separate outputs for infrared and microwave. 8. Programmable setting for depth of coverage, width of coverage, sensitivity and memory. 9. Dual-voltage capability.	1. Accommodates varying speeds of pedestrian traffic. 2. Can be set to ignore pedestrians or objects moving away from the door, allowing the door to close 50% sooner for energy savings. 3. Sensors can be mounted closely to each other without sensor interference. 4. Interfaces with NABCO equipment and the equipment of other manufacturers. 5. Detects objects in the threshold, dramatically increasing safety level.
BEA ULTIMO Motion/Presence Infrared Sensor 	Sliding Door Systems.	Not for use on Swing or Folding Doors.	1. Infrared technology. 2. Wide and deeper detection area. 3. Built-in Supplemental sidelight safety. 4. Programmable settings for depth of coverage, width of coverage, sensitivity and memory. 5. Quick adjustment by easily set switches and shutters. 6. Dual-voltage capability.	1. Continuous presence throughout the opening and closing cycle of sliding doors. 2. Interfaces with NABCO equipment and the equipment of other manufacturers. 3. Detects objects in the threshold as well as sidelight, dramatically increasing safety level.
IXIO-DT1 Motion/Presence Hybrid Sensor 	Sliding Door Systems.		1. Ten microwave activation sensitivity setting and three infrared safety immunity setting. 2. Ability to distinguish between approaching and departing traffic. 3. Two 24-spot, high-density, infrared safety curtains providing precise presence detection. 4. Onboard LCD programming screen.	1. PPM mode for applications frequently used by persons with reduced mobility. 2. Four visible red alignment spots are projected on the ground to assist in precise IR curtain adjustment. 3. Fully monitored internally, capable of external monitoring.
Reaction 2 Motion-only Microwave Sensor 	Activation Sensor for Swing or Folding Doors.	If sensor is used on Sliding Doors, then doors must be equipped with 4 infrared holding beams per ANSI 156.10.	1. Microwave technology. 2. Deep detection area. 3. Bi-directional OR uni-directional setting. 4. Adjustable settings for pattern depth or width. 5. Adjustable setting for sensitivity. 6. Dual-voltage capability. 7. Can be surface-mounted on the door header or the ceiling. 8. Minute vertical adjustments allow fine tuning of detection area.	1. Deep detection provides quick, reliable openings. 2. Visually appealing compact design with LED. 3. Versatile design can be used for wide or narrow openings. 4. Can be used with all makes of automatic doors.
OA-Edge 2 Swing Door Presence Sensing System 	Door-mounted Swing Door Sensing System. Perfect solution for grocery stores and hospitals.	Not for use on Sliding or Folding Doors.	1. Door-mounted sensor. 2. Compatible with all manufacturers' controls. 3. Adjustable pattern depth. 4. Dual-voltage capability. 5. Mutual interference prevention function.	1. Continual-presence sensing throughout the door cycle. 2. Out of reach of shopping carts or hospital beds. 3. Conserves energy. 4. Helps bring existing or new swing door installations up to the new ANSI standard. 5. Optimizes door performance. 6. Interfaces with NABCO equipment and the equipment of other manufacturers. 7. External LED display allows user to easily determine detection with the cover on. 8. Automatic calibration.
OA-Edge 1 Low-Energy/ADA Swing Door Sensor 	Door-mounted Swing Door Sensing System. Perfect solution for low-energy/ADA applications.	Not for use on Sliding or Folding Doors.	1. Door-mounted sensor. 2. Functions on all older manufacturers' non-micro-processor-based controls. 3. Dual-voltage capability. 4. Enhances the performance of low-energy/ADA doors.	1. Out of reach of shopping carts or hospital beds. 2. Interfaces with equipment of most other manufacturers. 3. Added pedestrian protection for low-energy/ADA doors. 4. External LED display allows user to easily determine detection with the cover on. 5. Automatic calibration.
OA-Flex T Motion/Presence Infrared Sensor 	Swing, Sliding or Folding Door Systems.		1. Unique Blue Zone technology for crossover threshold safety. 2. Activation and safety in one housing for an aesthetically pleasing door package. 3. Monitors all its critical functions and notifies compatible controls when an error occurs. 4. Ensures a higher level of performance over the life of the sensor.	1. Combines activation and safety into one sensor. 2. Provides maximum safety around the threshold while simultaneously providing a large motion detection area for door activation. 3. When the area is safe the doors will start to close again. The BLUEZONE™ recognizes the door movement and will automatically shut off. 4. can be quickly adjusted for many different applications to modify the presence detection area.
ProSwing ELITE T Swing Door Presence Sensing System 	Door-mounted Swing Door Sensing System.	Not for use on Sliding or Folding Doors.	1. Detects moving or stationary people in the swing path of the door, staying active even when the door is in motion. 2. Provides a full detection pattern that covers the entire swing path of the doors in full open and full closed position, eliminating the need for an overhead safety sensor.	1. Large detection area which can detect beyond the normal area around the moving part of the door. 2. No overhead safety sensor is required, and built-in self-monitoring capability ensures a high level of performance over the life of the sensor. 3. Self-monitoring capability ensures a high level of performance over the life of the sensor.

Specifications

Acusensor M

Acusensor M	(P/N A-01306)
Sensing System	Active reflective infrared
Power Source	12 to 24 VAC or DC
Power Consumption	150mA Max. (at 12VDC), 80mA Max. (at 24VDC), 3VA Max. (at 24VAC)
Output Contacts	30 VAC/50VDC, 0.1A MAX (Resistance Load) Semiconductor Relay, N.O or N.C contacts
Mounting Height	78" to 118"
Detection Area	(Mounted at 87" height) Max 114" Width x Max 71" Depth (78" with optional angle spacer)
Standstill Learn Time	15 sec, 30 sec, 60 sec, 300 sec
Output Holding Time	0.5 sec
Operating Temp	-4 to 140 (-20 to +60C)

Acuzone T

Acuzone T	(P/N V-00746)
Sensing System	Active infrared reflection
Power Source	12 to 24VAC or 12 to 30VDC
Power Consumption	< 2.5W DC or < 4 VA for AC
Output Contacts	Form A relay, 50V 0.3A Max. (Resistance load)
Mounting Height	6'7" to 9'10"
Detection Area	Mounted at 87" height) Max 16'9" Width x Max 8'1" Depth
Standstill Learn Time	Infrared detection through the threshold area for extra safety
Output Holding Time	30 sec, 60 sec, 180 sec, 600 sec 0.5 to 1.5sec. -31 to 131
Operating Temp	(-35 to +55C)

IXIO-DT1

Sensing System	(P/N V-00057)
Power Source	Active reflective infrared and Doppler Microwave (Motion & Presence)
Power Consumption	12 to 24VAC or 12 to 30VDC
Output Contacts	< 2.5W
Mounting Height	Active Infrared: Solid-state-relay, 42VDC, 400mA Maxx
Detection Area	Microwave Doppler: Electro-mechanical-relay, 30VDC 1A Max
Standstill Learn Time	78" to 138" (6.5ft to 11.5ft)
Output Holding Time	(Mounted at 87" height) Max 6'7" Width x Max 9'10" Depth (at 45 degree)
Operating Temp	30 sec
	Active Infrared: 0.3 to 1 sec
	Microwave Doppler: 0.5 to 9 sec
	-13 to 131 (-25 to +55C)

BEA ULTIMO

Sensing System	(P/N V-00998)
Power Source	Active reflective infrared and Doppler Microwave (Motion & Presence)
Power Consumption	12 to 24VAC or 12 to 30VDC
Output Contacts	< 3.2W
Mounting Height	Active Infrared: Solid-state-relay, 42VDC, 400mA Max
Detection Area	Microwave Doppler: Electro-mechanical-relay, 30VDC 1A
Standstill Learn Time	Max 78" to 138" (6.6ft to 11.6ft)
Output Holding Time	(Mounted at 87" height) Max 6'7" Width x Max 9'10" Depth (at 45 degree)
Operating Temp	30 sec Active Infrared: 0.3 to 1 sec
	Microwave Doppler: 0.5 to 9 sec
	-13 to 131 (-25 to +55C)

Reaction 2

Reaction 2 Sensing System	(P/N V-00173)
Power Source	Doppler Microwave (Motion only)
Power Consumption	12 to 24VAC or 12 to 30VDC
Output Contacts	< 2.0W DC or < 2 VA for AC
Mounting Height	Form C relay, 50V 0.3A Max. (Resistance load) N.O. and N.C. contacts
Detection Area	79" to 137" (Mounted at 85" height)
Output Holding Time	Wide lens 13' 2" Wide 6'7" Deep Narrow lens 6'6" Wide 8'2" Deep
Operating Temp	2 sec, 4 sec
	-4 to 131 (-20 to + 55C)

OA-Edge 1 and 2

OA Edge 1 & 2 Sensing System	(P/N OA Edge 1 V-00224, OA Edge 2 V-00163)
Power Source	Active reflective infrared triangulation (Motion & Presence)
Power Consumption	12 to 24VAC or 12 to 30VDC
Output Contacts	OA Edge 1 < 1.3W DC or < 2 VA for AC
Mounting Height	OA Edge 2 < 1.7W DC or < 2.3 VA for AC
Detection Area	Form C relay, 42V 0.3 A Max. (Resistive load) N.O. and N.C. contacts
Output Holding Time	59" to 118"
Operating Temp	(Mounted at 85") Wide lens 13' 2" Wide 6'7" Deep Narrow Lens 6'6" Wide 8'2" Deep
	0.5 sec
	-4 to 131 (-20 to +55C)

OA-Flex T

OA-Flex T Sensing System	(P/N H-OA-FLEX T)
Power Source	Active reflective infrared triangulation (Motion & Presence)
Power Consumption	12 to 24VAC or 12 to 30VDC
Output Contacts	< 2.0W DC or < 5 VA for AC
Mounting Height	Form A relay, 50V 0.3 A Max. (Resistive load) N.O. and N.C. contacts
Detection Area	6'7" to 8'2"
Output Holding Time	(Mounted at 85") Wide lens 13' 2" Wide 6'7" Deep Narrow Lens 6'6" Wide 8'2" Deep
Operating Temp	0.5 sec
	-31 to 131 (-35 to +55C)

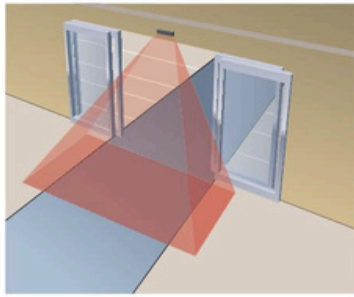
ProSwing Elite

OA-Flex T Sensing System	(P/N H-PROSWINGELITE)
Power Source	Active reflective infrared triangulation (Motion & Presence)
Power Consumption	12 to 24VAC or 12 to 30VDC
Output Contacts	< 2.0W DC or < 5 VA for AC
Mounting Height	Form A relay, 50V 0.3 A Max. (Resistive load) N.O. and N.C. contacts
Detection Area	6'7" to 8'2"
Output Holding Time	(Mounted at 85") Wide lens 13' 2" Wide 6'7" Deep Narrow Lens 6'6" Wide 8'2" Deep
Operating Temp	0.5 sec
	-4 to 131 (-20 to +55C)

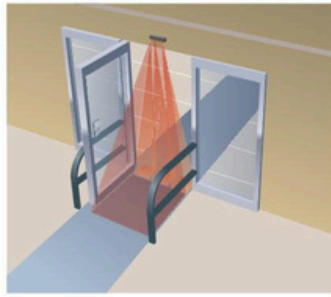
Sensor Detection Patterns

Acusensor M – Infrared Sensor

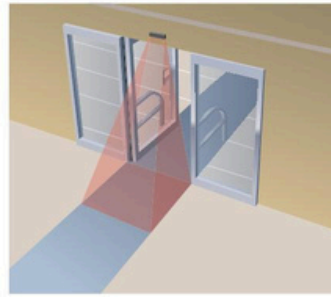
*Microwave pattern shown in blue; infrared pattern shown in red



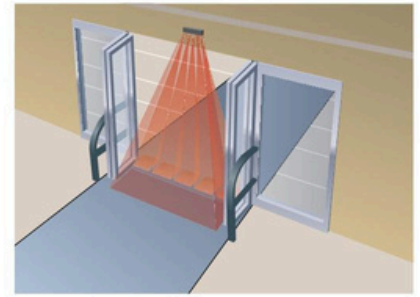
Sliding Door Application



*Swing Door Application
– on Swing Side*

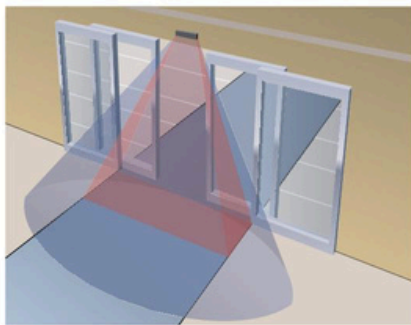


*Swing Door Application
– on Approach Side*



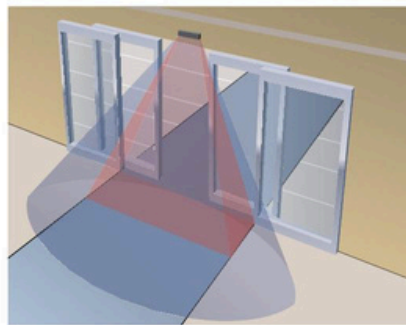
Folding Door Application

ULTIMO – Microwave/Infrared Sensor



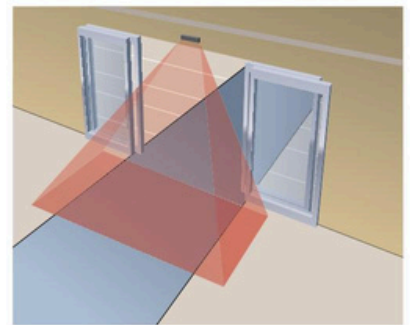
Sliding Door Application

IXIO-DT1 – Microwave/Infrared Sensor



Sliding Door Application

Acuzone T – Infrared Sensor

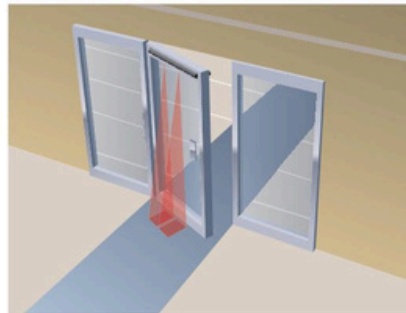


Sliding Door Application

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

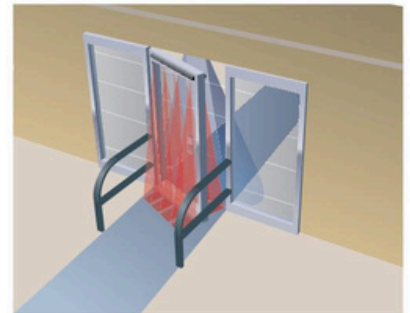


OA-Edge 1 – on Approach Side



OA-Edge 1 – on Swing Side

OA-Edge 2 – Swing Door Presence Sensing System



Standard Swing Door Application

NABCO Service and Specifications

Along with the NABCO factory branches, NABCO has the largest independently owned network of automatic door distributors in North America. Their friendly, qualified installers and technicians always strive to exceed your expectations from install to after-sales service. NABCO's factory branches and independent distributors provide AAADM-certified technicians to ensure your doors meet all ANSI A156.10 standards.

Complete three-part specifications and CAD drawings are available on the NABCO website.



Member of the **Nabtesco** Group

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