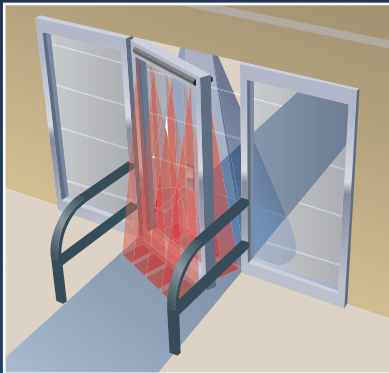
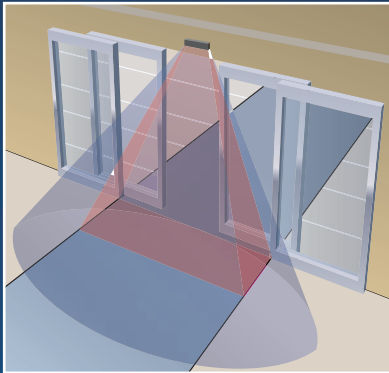


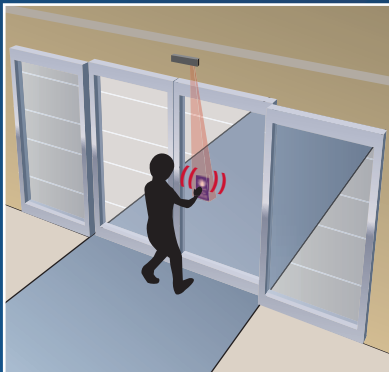
Motion Sensor



Presence Sensor



Hybrid Sensor



"Touchless" 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.

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 Acumotion A uses this technology.








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 Acusensor 1B, Acuvision and the infrared part of Acumotion A.

Distance Measuring Infrared Sensors work by focusing active pulsed infrared into a spot (or series of spots) using optical lenses. The NABCO ACUGARD 3 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. The Acuwave "touchless" sensor uses this technology.

AUTOMATIC DOOR SENSOR SELECTION CHART

NABCO ADVANCED SENSOR	RECOMMENDED APPLICATIONS	NOT RECOMMENDED	FEATURES	BENEFITS
<p>ACUVISION Motion/Presence Sensor with Threshold Detection</p> 	<p>Swing, Sliding or Folding Doors</p>		<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>ACUMOTION A Microwave/Infrared Sensor</p> 	<p>Sliding, Swing or Folding Doors</p> <p>Perfect for longer range detection and fast traffic conditions</p>	<p>Not for use as a presence sensor on Swing or Folding Doors</p>	<ol style="list-style-type: none"> Unique combination of microwave and infrared technology Deeper detection area Bi-directional setting Unidirectional 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"> Single hybrid sensor Accommodates varying speeds of pedestrian traffic Can be set to ignore pedestrians or objects moving away from the door Unidirectional feature ignores departing traffic allowing the door to close 50% sooner for energy savings Adjustments for installation on non-vertical surfaces Sensors can be mounted closely to each other without sensor interference Allows optimization of door performance Interfaces with GyroTech equipment and the equipment of other manufacturers
<p>ACUWAVE "Touchless" slide door sensor</p>  	<p>Sliding Door Systems</p>	<p>Not for use within the swing or fold patterns of a swing or fold door</p>	<ol style="list-style-type: none"> "Touchless" sensor requires a voluntary hand motion to activate Small 6" diameter detection area in stand-by mode Large presence detection after activation Rectangular sensing pattern Works with non-microprocessor controls 4-mode mutual interference channels Dual voltage capability 	<ol style="list-style-type: none"> Improves hygiene in hands-free environments like operating rooms, restrooms and clean rooms Eliminates unnecessary activation especially in high traffic areas Reverses door closing action if another pedestrian approaches Provides continuous presence sensing throughout the door cycle Superior coverage around door Can be used with older existing equipment Interfaces with Gyro Tech equipment and the equipment of other manufacturers
<p>ACUGARD Complete Swing Door Presence Sensing System</p> 	<p>Door-Mounted Swing Door Sensing System</p> <p>Perfect solution for grocery stores and hospitals</p>	<p>Not for use on Sliding or Folding Doors</p>	<ol style="list-style-type: none"> When used with the NABCO U series microprocessor control, the swing-side door-mounted sensors automatically adjust for walls or guide rails as the door opens Door mounted sensor Compatible with all manufacturer's controls Adjustable pattern depth Dual voltage capability 4-mode mutual interference prevention function System includes two Acugard 3 sensors and an Acumotion A for activation 	<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 Most complete advanced sensing system for swing doors
<p>ACUGARD 3 LE Low-Energy/ADA Swing Door Sensor</p> 	<p>Perfect solution for low-energy/ADA applications</p>	<p>Not for use on Sliding or Folding Doors</p>	<ol style="list-style-type: none"> Door mounted sensor Functions on all older manufacturers non-microprocessor-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
<p>ACUSENSOR 1B Sensor System</p> 	<p>Sliding, Swing or Folding Door Systems</p>		<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

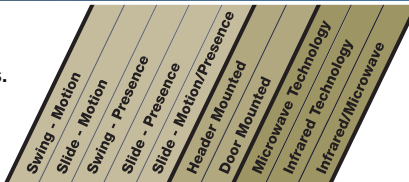
AUTOMATIC DOOR SENSOR CROSS REFERENCE CHART

NABCO/Gyro Tech Advanced Sensor Systems offer performance, energy-efficiency and compliance with all ANSI and BHMA standards.

Additional published information available upon request or visit our web site at www.nabcoentrances.com

▲ = Somewhat applicable ● = Applicable

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 P.O. Box 906 | Muskego, WI 53150
 Phone: 877-622-2694 | Fax: 888-679-3319

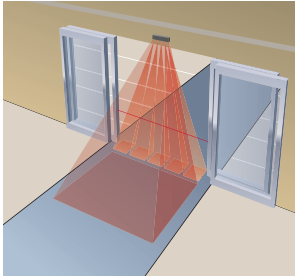


MANUFACTURER	MODEL	TYPE OF SENSOR										THE NABCO ADVANTAGE
NABCO	Acusensor 1B	●	●	▲	●	●	●	●	●	●	●	
	ACUGARD 3 / 3 LE			●					●		●	
	Acuwave	▲	●		●	●					●	
	Acumotion A	●	●			●		●			●	
	Acuvision	●	●	●	●	●	●	●	●	●	●	
BEA	Eagle (Besam Sentry Scan*/ Horton C1884*/ Dor-O-Matic 74600*)	●	●					●		●		ACUSENSOR 1B has the advantage because: 1. No external programming device required. 2. Less stock to carry - more versatile sensor 3. Can be used for motion or presence detection
	Body Guard (Besam Passport*/ Dor-O-Matic 77700*/ Horton C1829*)			●				●		●		ACUVISION has the advantage because: 1. Data lines not required 2. Can be used on approach or swing side of door 3. No external programming device required 4. Less stock to carry - more versatile sensor
	Super Scan (Horton C1878*/ Besam Passport Plus*/ Dor-O-Matic 87500*)			●				●		●		ACUGARD 3 has the advantage when used with U series microprocessor because: 1. It is fully programmable 2. Switch not required to cut off sensor in backcheck zone 3. Push button programming 4. Sensor learns guide rails and wall at full open 5. LED clearly visible without removing lens
	Crystal (Dor-O-Matic 78500*/ Horton C1545-T*)			●				●		●		ACUSENSOR 1B has the advantage because: 1. Deeper pattern than Crystal 2. Less stock to carry - more versatile sensor 3. Multipurpose as a presence sensor or sliding door sidelite sensor 4. No lenses to swap out
	Wizard (Dor-O-Matic 82147 DMP*)	●	●			●		●			●	ACUMOTION A has the advantage because: 1. Adjustments for non-vertical surfaces 2. Power is less than 160mA @ 12 VDC 3. No external programming device required 4. No lenses to swap out
BESAM	UltraView	●	●			●		●		●	ACUMOTION A has the advantage because: 1. Adjustments for non-vertical surfaces 2. Power is less than 160mA @ 12 VDC 3. No external programming device required 4. No lenses to swap out	
OPTEX	EZ-1/EZ-2	●	●			●		●		●	ACUSENSOR 1B has the advantage because: 1. More versatile – can be used for motion or presence detection	
	iSensor	●	●		●	●				●	ACUMOTION A has the advantage because: 1. Microwave motion detection for superior detection of metal objects such as shopping carts. 2. Dual outputs, one for microwave and one for infrared 3. Less current draw 250mA versus 160mA 4. Adjustments for non-vertical surfaces	
	OA-203C	●	●	▲	●	●				●	ACUSENSOR 1B has the advantage because: 1. Adjustments for non-vertical surfaces 2. Acusensor can be set for motion or presence detection 3. Eight degrees of Learn Time for maximum flexibility 4. No lenses to change out 5. No masking seals to apply 6. Lower current draw 7. Deeper pattern than OA-Presence	
	OA-202C	●	●	▲	●	●				●		
	OA-Presence			●				●		●		
MS SEDCO	D-38	●	●			●		●		●	ACUSENSOR 1B has the advantage because: 1. More versatile – can be used for motion or presence detection	
	DH97	●	●	▲	●	●				●	ACUSENSOR 1B has the advantage because: 1. Adjustments for non-vertical surfaces 2. Acusensor can be set for motion or presence detection 3. Eight degrees of Learn Time for maximum flexibility	
	DH100	●	●			●		●		●	ACUMOTION A has the advantage because: 1. Microwave motion detection for superior detection of metal objects such as shopping carts 2. Dual outputs, one for microwave and one for infrared 3. 4 degrees of output holding time versus fixed 4. Adjustments for non-vertical surfaces	
STANLEY	SU-050	●	●			●		●		●	ACUSENSOR 1B has the advantage because: 1. More versatile – can be used for motion or presence detection	
	Sentrex 3			●				●		●	ACUGARD 3 has the advantage because: 1. Mounts at top of door out of the way of shopping carts 2. Can be used on other manufacturers equipment 3. Status LED clearly visible without removing lens 4. Selectable Output Logic	
	Stan-Guard + Holding Beams			●				●		●	ACUSENSOR 1B has the advantage because: 1. Continuous full infrared curtain is active at all times, does not shut off while door is closing 2. Eight degrees of Learn Time for maximum flexibility 3. Versatile - Same sensor can be used on swing or folding doors therefore less stock to keep on service truck	

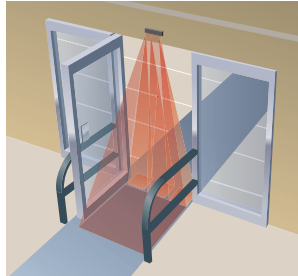
* Indicates Privatel Label

Sensor Detection Patterns

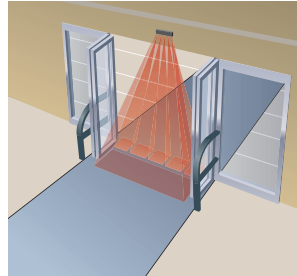
ACUVISION – Motion/Presence Sensor with Threshold Detection



Sliding Door Application



Swing Door Application



Folding Door Application

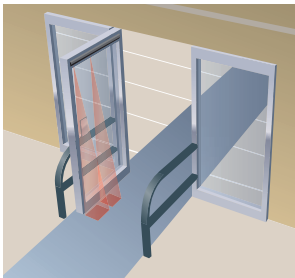
**ACUWAVE “Touchless”
Slide Door Sensor**

NEW

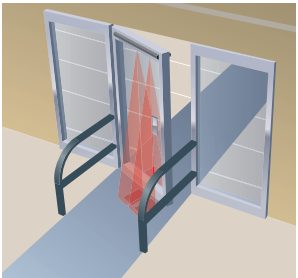


Sliding Door Application-
Standby Mode

**ACUGARD 3 LE – Swing Door Presence Sensor
for Low Energy/ADA Applications**

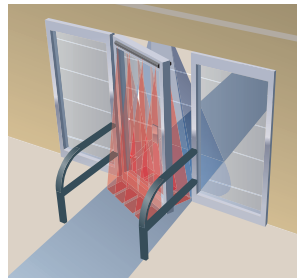


ACUGARD 3 LE on
Approach Side

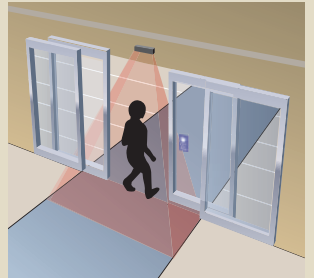


ACUGARD 3 LE on Swing Side

**ACUGARD COMPLETE
Swing Door Presence
Sensing System**

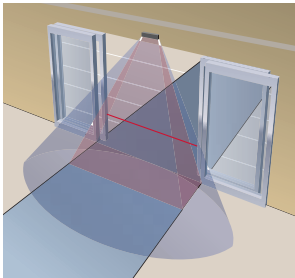


Standard Swing Door
Application

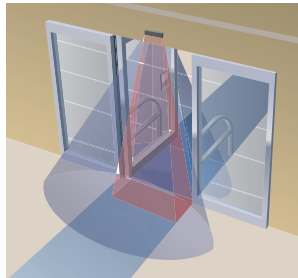


Activated Mode (Showing full
presence detection)

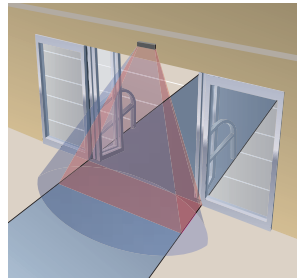
ACUMOTION A – Microwave/Infrared Sensor



Sliding Door Application



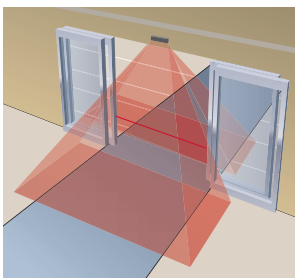
Swing Door Application



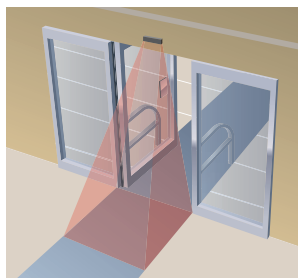
Folding Door Application

Microwave patterns
shown in blue, infrared
patterns shown in red.

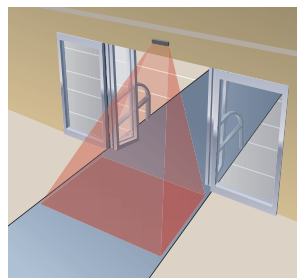
ACUSENSOR 1B – Infrared Sensor



Sliding Door Application



Swing Door Application



Folding Door Application