PHOENIX EX™

Motion Sensor with Explosion-Proof Housing and Tamper Alert

PHOENIX EX™: for normal to high mounting (11.5 - 23 ft)
PHOENIX EX™XL: for low mounting (6.5 - 11.5 ft)
PHOENIX EX™WIDE: for wide detection field

DESCRIPTION

1. Explosion-proof housing
2. Microwave sensor
3. Adjustable bracket

MICROWAVE SENSOR SPECIFICATIONS

Technology:	microwave doppler radar
Transmitter frequency:	24.150 GHz
Transmitter radiated power:	< 20 dBm EIRP
Transmitter power density:	< 5 mW/cm²
Anti-tamper:	tamper alert via ouput
Mounting height:	PHOENIX EX™: 11.5 – 23 ft; PHOENIX EX™XL: 6.5 – 11.5 ft; PHOENIX EX™WIDE: 11.5 – 21 ft
Detection zone:	PHOENIX EX™: 13 x 16 ft @ 16ft; PHOENIX EX™XL: 13 x 6.5 ft @ 8.2ft PHOENIX EX™WIDE: 30 x 11ft @ 21ft. (typical at 30° and field size 9)
Min. detection speed:	2 in/s*
Supply voltage:	12 – 24 VAC ±10%; 12 – 24 VDC +30% / -10%
Mains frequency:	50 – 60 Hz
Max. power consumption:	< 2W
Output**: max. voltage: max. current: max. power:	relay (free of potential change-over contact) End-of-line resistor(s) 42V AC/DC 1A (resistive) 30 W (DC) / 60 VA(AC) 1/8 Watt
Temperature range:	-22 – 140 °F
Housing certification:	(Adalet / Scott Fetzer Co., UL Listing # E81696) UL Class I, DIV 1 Group BCD; Class II, DIV 1 Group EFG; Class III; NEMA Type 4X; IP66; UL 1203; CSA C22.2 No.30&CSA C22.2 No.25 FM 3615; ATEX (FLAMEPROOF - DEMKO), Ex d IIC, IEC60529
Dimensions:	9 in (L) x 7.5 in (W) x 5.5 in (H)
Materials:	Copper-free aluminum (Housing); Powder-coated steel (Bracket)
Weight:	10 lbs
Cable length:	100 ft or 30 ft
Electrical Access:	¾" NPT pipe thread
Norm conformity:	R&TTE 1999/5/EC; EMC 2004/108/EC

Specifications are subject to change without prior notice. All values measured in specific conditions.
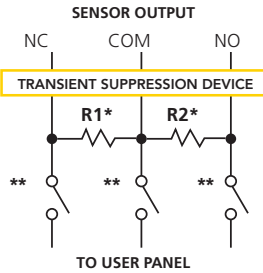
* Measured in optimal conditions
** Output ratings may vary depending on optional end-of-line resistor values

INSTALLATION TIPS

- The sensor must be firmly fastened in order not to vibrate.
- The sensor must not be placed directly behind a panel or any kind of material.
- The sensor must not have any object likely to move or vibrate in its sensing field.
- The sensor must not have any fluorescent lighting in its sensing field.
- The sensor housing cover is adjusted at factory; there is no need to adjust at installation location.

1 WIRING

SENSOR OUTPUT

RED	
BLACK	**12-24 VAC/VDC**
WHITE	**COM**
GREEN	**NO**
YELLOW	**NC**

NC　　COM　　NO

TRANSIENT SUPPRESSION DEVICE

R1*　　R2*

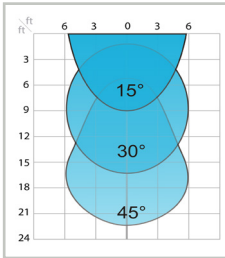** 　　 ** 　　 **

TO USER PANEL

* **Resistor 1** and **Resistor 2** are unpopulated by default. **Contact BEA if you require custom resistor values.**
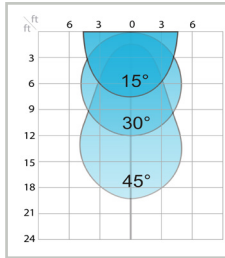
** **Tamper Switch** default location is NO. **Contact BEA if you require tamper switch location change.**
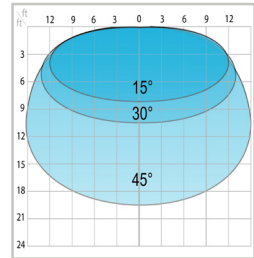
2 DETECTION FIELD DIMENSIONS

PHOENIX EX™
Mounting height: **16 ft**

15°
30°
45°

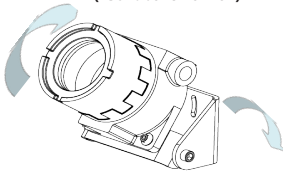**PHOENIX EX™XL**
Mounting height: **11.5 ft**

15°
30°
45°

PHOENIX EX™WIDE
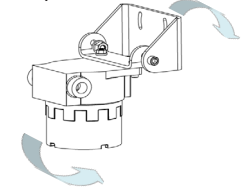Mounting height: **8 ft**

15°
30°
45°

3 MOUNTING ADJUSTMENT

Maximum angle (+30° above horizon)

Minimum angle (-90° below horizon)

- Bolt the bracket securely to the wall or other rigid surface.
- Make sure that the two ⁵⁄₁₆ - 18 Allen head bolts are loose so that the sensor can rotate freely.
- Rotate the sensor to the appropriate angle for the application. When the bracket rotates, it will click. Every click represents a 7 ½" angle adjustment.
- Lock the angle adjustment by tightening the two ⁵⁄₁₆ - 18 Allen head bolts.
- Horizontal angle adjustments can be made by loosening the mounting bolts on the base and twisting to the desired angle.

LED SIGNALS

LED flashes quickly	LED flashes	LED flashes slowly	LED flashes x times	LED is off

NORMAL MODE		
⬤	no LED	no detection
⬤	red	detection
⬤ ⬤	red & green blinking slowly	power on / learn

POSSIBLE SETTINGS BY REMOTE CONTROL

ADJUSTING ONE OR MORE PARAMETERS

red — red — 0-9 — red — off

CHECKING A VALUE

red — red — 0-9 — green (x) — off

x = number of flashes = value of parameter

		0	1	2	3	4	5	6	7	8	9	
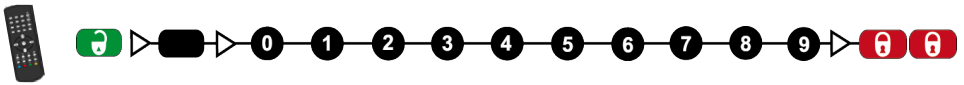
FIELD SIZE		XXS	XS	S	>	>	>	>	L	XL	XXL
HOLD-OPEN TIME		0.5 s	1 s	2 s	3 s	4 s	5 s	6 s	7 s	8 s	9 s
OUTPUT CONFIGURATION			A	P		A = active output; relay energizes upon detection P = passive output; relay de-energizes upon detection					
DETECTION MODE			bi	uni	uni AWAY	bi = two-way detection uni = one-way detection towards sensor uni AWAY = one-way detection away from sensor					
DETECTION FILTER			1	2	3	4	5	6			

FACTORY VALUES   RESETTING TO FACTORY VALUES: → → 9

DETECTION FILTER (REJECTION MODE)

Choose the correct detection filter for your application with the remote control.

«□» 1-6

Detection of all targets (pedestrians and parallel traffic are detected)	Detection only of vehicles moving* (pedestrians and parallel traffic are not detected + disturbances are filtered)
1 = no specific filter	Value recommendations according to angle and height:
2 = filter against disturbances (recommended in case of vibrations, rain etc.)	

	23 ft – 11.5 ft	8 ft
-75°	3	3
-60°	4	4
-45°	5	4

Always check if the chosen value is optimal for the application. The object size and nature can influence the detection.

* The vehicle detection filter increases the response time of the sensor.

POSSIBLE SETTINGS BY PUSH BUTTONS

TO START OR END AN ADJUSTMENT SESSION, press and hold either push button until the LED flashes or stops flashing.

TO SCROLL THROUGH THE PARAMETERS, press the right push button.

TO CHANGE THE VALUE OF THE CHOSEN PARAMETER, press the left push button.

		Parameter number	Value (factory values)	
1	FIELD SIZE	●	○ ○ ○ ○ ○ ○ ○	(7)
2	HOLD-OPEN TIME	● ●	▢	(0)
3	OUTPUT CONFIGURATION	● ● ●	○	(1)
4	DETECTION MODE	● ● ● ●	○ ○	(2)
5	DETECTION FILTER	● ● ● ● ●	○	(1)

TO RESET TO FACTORY VALUES, press and hold both push buttons until both LEDs flash.

ACCESS CODE

The access code (1 to 4 digits) is recommended to set sensors installed close to each other.

SAVING AN ACCESS CODE: 🔓 ▷ 🔒 ▷ 0-9 0-9 0-9 0-9 ▷ 🔒 🔒

DELETING AN ACCESS CODE: 🔓 0-9 0-9 0-9 0-9 ▷ 🔒 ▷ 0 ▷ 🔒 🔒

Once you have saved an access code, you always need to enter this code to unlock the sensor.
If you forget the access code, **cycle the power**. For the first minute, you can access the sensor without an access code.

TROUBLESHOOTING

⬤	Sensor appears unresponsice	Sensor power is off.	Check wiring and power supply.
◐	Discrepancy between sensor state and sensor output	Improper output configuration on sensor.	Change the output configuration setting on each sensor connected to the door operator.
●	The sensor cycles in and out of detection	The sensor is disturbed by vibration, a moving object, or electrical noise from nearby environment.	Ensure sensor is fixed properly.
			Ensure detection mode is unidirectional.
			Increase tilt angle.
			Increase detection filter value.
			Reduce field size.
●	Door opens for no discernable reason	It rains and the sensor detects the motion of the rain drops.	Ensure detection mode is unidirectional.
			Increase detection filter value.
		In highly reflective environments, the sensor detects objects outside of its detection field.	Change the antenna angle.
			Reduce field size.
			Increase detection filter value.
✷	LED flashes quickly after unlocking	Sensor needs access code to unlock.	Enter correct access code.
			If you forgot the code, cycle the power to access the sensor without access code. Change or delete the access code.
	Sensor does not respond to the remote control	Batteries in the remote control are weak or installed improperly.	Check batteries and change if necessary.

BEA INSTALLATION/SERVICE COMPLIANCE EXPECTATIONS

BEA, the sensor manufacturer, cannot be held responsible for incorrect installations or inappropriate adjustments of the sensor/device; therefore, BEA does not guarantee any use of the sensor outside of its intended purpose.

BEA strongly recommends that installation and service technicians be AAADM-certified for pedestrian doors, IDA-certified for doors/gates, and factory-trained for the type of door/gate system.

Installers and service personnel are responsible for executing a risk assessment following each installation/service performed, ensuring that the sensor system installation is compliant with local, national, and international regulations, codes, and standards.

Once installation or service work is complete, a safety inspection of the door/gate shall be performed per the door/gate manufacturer recommendations and/or per AAADM/ANSI/DASMA guidelines (where applicable) for best industry practices. Safety inspections must be performed during each service call – examples of these safety inspections can be found on an AAADM safety information label (e.g. ANSI/DASMA 102, ANSI/DASMA 107, UL 325).

Verify that all appropriate industry signage and warning labels are in place.

AAADM **ANSI** **DASMA.** **DHI** **IDA**

BEA

Tech Support: 1-800-407-4545 | Customer Service: 1-800-523-2462
General Tech Questions: Tech_Services@beainc.com | Tech Docs: www.BEAinc.com