Manuals+ — User Manuals Simplified.

BEA PHOENIX EX Motion Sensor Instruction Manual

Instruction Manual
PHOENIX EX™
Motion Sensor with Explosion-Proof Housing
and Tamper Alert

Contents

DESCRIPTION

1. Explosion-proof housing
2. Microwave sensor
3. Grounding lug
4. Cable port (¾" NPT pipe thread)
5. Adjustable bracket

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 (11.5 – 21 ft)

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:	1)product anti-tamper (magnetic switch within the cover, alerts when cover is un screwed) 2)application-based anti-tamper (tamper alert via end-of-line resistor)
Mounting height:	PHOENIX EX™: 11.5 — 23 ft; PHOENIX EXTmXL: 6.5 — 11.5 ft; PHOENIX EXTMWIDE: 11.5 — 21 ft
Detection zone:	PHOENIX EXTM: 13 x 16 ft 0 16ft; PHOENIX EXTMXL: 13 x 6.5 ft 0 8.2ft PHOENIX EXTMWIDE: 30 x 11ft 0 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) Optional 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 (PHOENIX EXT"100, PHOENIX EXTMXL100, PHOENIX EXTMWIDE) 30 ft (PHOENIX EXTM, PHOENIX EXTMXL)
Cable diameter:	1/4″ max
Electrical Access:	Y-I" NPT pipe thread
Norm conformity:	R&TTE 1999/5/EC; EMC 2004/108/EC

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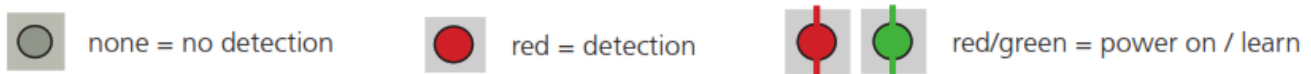
INSTALLATION TIPS

- 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 the factory; there is no need to adjust it at the installation location.
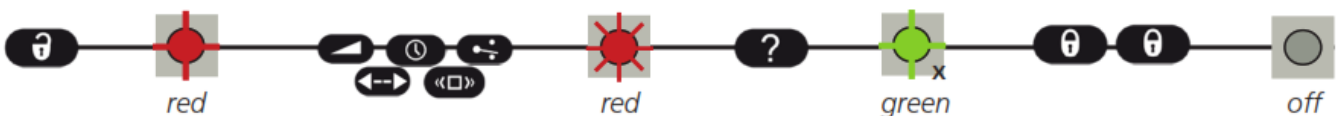
LED SIGNALS

ACTIVITY

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

COLOR INDICATIONS

	none = no detection		red = detection			red/green = power on / learn

HOW TO USE THE REMOTE CONTROL

ADJUSTING ONE OR MORE PARAMETERS

red — red — 0-9 — red — off

CHECKING A VALUE

red — red — ? — green — off

x = number of flashes = value of parameter

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

0-9 0-9 0-9 0-9

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.
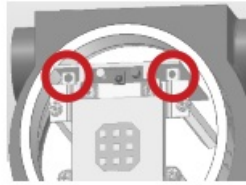
DELETING AN ACCESS CODE

0-9 0-9 0-9 0-9 — 0

DELETING AN UNKNOWN ACCESS CODE

Cycle power — 0 0 0 0

HOW TO USE THE PUSH BUTTONS

You must unscrew the explosion-proof cover to access the push buttons.
To do so, loosen the set screw and then unscrew the lid.

START/END AN ADJUSTMENT SESSION: press and hold either push button until the LED flashes or stops flashing
SCROLL THROUGH PARAMETERS: press the **right** push button
CHANGE VALUE OF CHOSEN PARAMETER: press the **left** push button
RESET TO FACTORY VALUES: press and hold **both** push buttons until both LEDs flash

MOUNTING

a) 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.
b) Rotate the sensor to the appropriate angle for the application. When the bracket rotates, it will click. Every click represents a 7.5° angle adjustment.
c) 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 them to the desired angle.

Maximum angle
(+30° above horizon)

Minimum angle
(-90° below horizon)
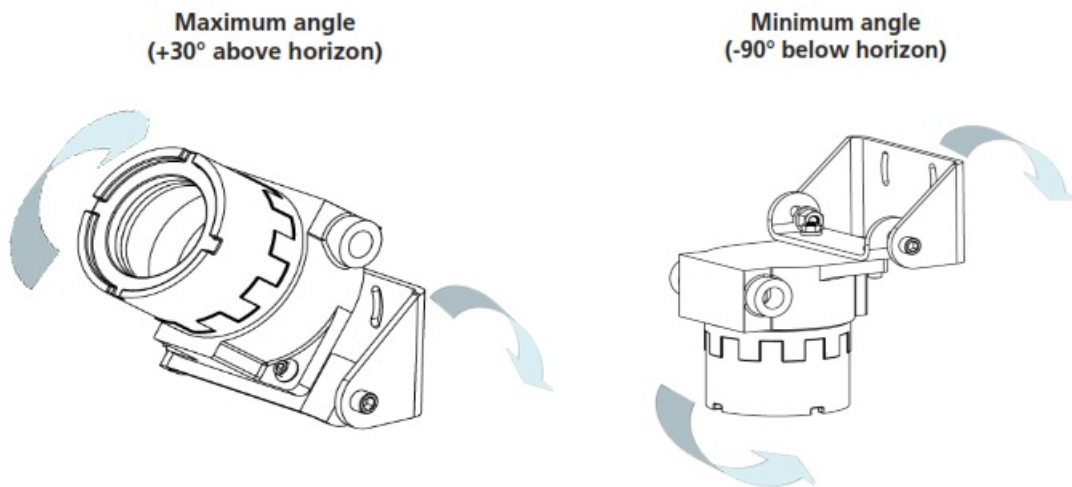
WIRING

Connect the wires to the controller/PCB (i.e. intrusion detection system).
If necessary, an optional grounding lug is provided to ground the equipment to minimize the risk of electrostatic charge. The equipment must be installed in such a manner that accidental discharge will not occur.

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

The grounding lug is not required for product functionality but may be required for the application and/or local, national, and international regulations, codes, and standards.

* The Tamper Switch is N.C. with a housing face plate cover attached. Removing the housing face plate causes the switch to open. System resistors may be applied at the Tamper Switch inside the housing or outside at a given location.
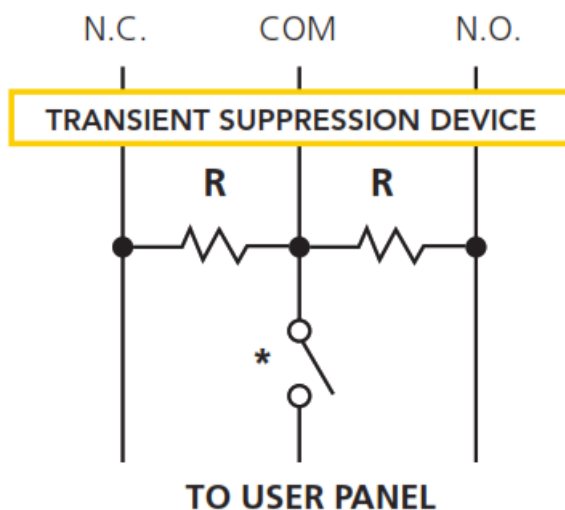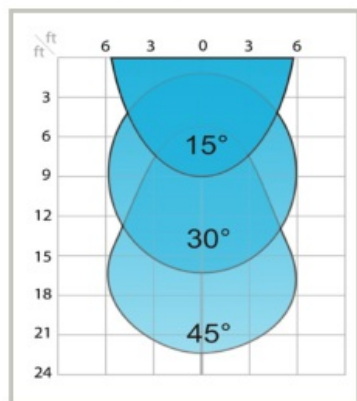

* **Tamper Switch** location is COM and will operate with N.O. or N.C. outputs.
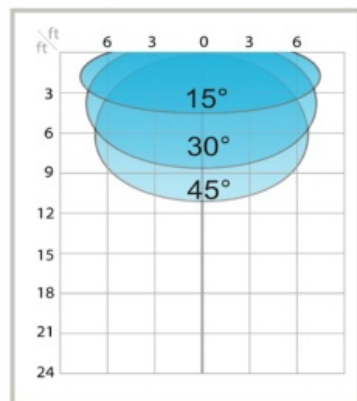
DETECTION FIELD DIMENSIONS

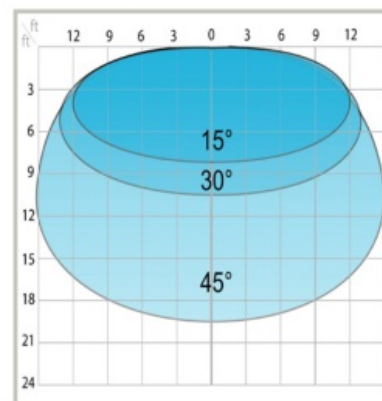**PHOENIX EX™**
Mounting height: **16 ft**

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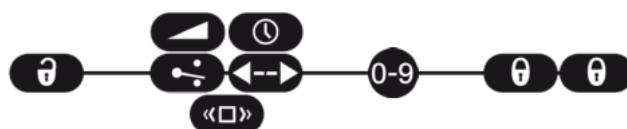Mounting height: **8 ft**

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

SETTINGS

To make adjustments to the sensor, press

	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 (see pg. 6)		1	2	3	4	5	6			

RESETTING TO FACTORY VALUES: 🔓 ▷ ● ▷ 9

☐ FACTORY VALUES

POSSIBLE SETTINGS BY PUSH BUTTONS

	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)

«☐»

1-6 Choose the correct detection filter (rejection mode) for your application with the remote control or push buttons.

Detection of all targets
(pedestrians and parallel traffic are detected)
1 = no specific filter
2 = filter against disturbances (recommended in case of vibrations, rain, etc.)

Detection only of vehicles moving*
(pedestrians and parallel traffic are not detected + disturbances are filtered)
Value recommendations according to angle and height:

	23 – 11.5 ft	8 ft
-75°	3	3
-60°	4	4
-45°	5	4
45°	6	5

Always check if the chosen value is optimal for the application.
The object's size and nature can influence the detection.
* The vehicle detection filter increases the response time of the sensor.

TROUBLESHOOTING

○	The door remains closed. The LED is off.	The sensor power is off.	Check wiring and power supply.
○ ●	The door does not react as expected.	Improper output configuration on the sensor.	Check the output configuration setting on each sensor connected to the door operator.
●	The door opens and closes constantly.	The sensor is disturbed by door motion or vibrations caused by door motion.	Ensure the sensor is secured properly. Ensure detection mode is unidirectional. Increase tilt angle. Increase detection filter value. Reduce field size.
●	The door opens for no apparent reason.	It rains and the sensor detects raindrops or vibrations.	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.
	A vehicle detection filter is used, but pedestrians are still detected.	Chosen value is not optimal for the given application.	Increase detection filter value. Decrease sensor angle. Increase mounting height. Ensure detection mode is unidirectional.
☀	LED flashes quickly after unlocking.	The sensor needs an access code to unlock.	Enter the correct access code. If you forgot the code, cycle the power to access the sensor without the access code. Change or delete the access code.
	The sensor does not respond to the remote control.	Batteries in the remote control are weak or installed improperly.	Check batteries and change if necessary.

Can't find your answer? Visit **www.BEAsensors.com** or scan the QR code for Frequently Asked Questions!

BEA, INC. INSTALLATION/SERVICE COMPLIANCE EXPECTATIONS

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

BEA, Inc. strongly recommends that installation and service technicians be AAADM-certified ed for pedestrian doors, IDA-certified ed 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/device system performance 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's 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, UL294, UL325, and International Building Code).

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

AAADM	ANSI	DASMA

Visit the website for available languages of this document. http://esp.to/wxb8y5
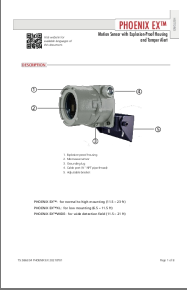
Documents / Resources

BEA PHOENIX EX Motion Sensor [pdf] Instruction Manual
PHOENIX EX, Motion Sensor, PHOENIX EX Motion Sensor