# How to install and set up the widescan laser sensor

## NOTICE

**Contact Rytec Technical support at 800-628-1909** if you have questions about these instructions.

**The meaning of signal words**

**Summary:** Technical content produced by Rytec includes safety information which must be read, understood and obeyed to reduce the risk of death, personal injury or equipment damage. This information is boxed to set it apart from other text. The boxed text identifies the nature of the hazard and appropriate steps to avoid it.

The safety alert symbol identifies a situation that can result in personal injury. The accompanying signal word indicates the likelihood and potential severity of the injury. The meaning of the signal words is as follows:

**⚠ CAUTION**

**Caution indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.**

***NOTICE***

Notice is used to address practices not related to physical injury but which, if not followed, could result in damage to the door or other property.

**⚠ CAUTION**

Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

## Installation and operation safety

- Do not look directly into the laser emitter or the visible red laser beams.
- The door control unit and the header cover profile must be correctly grounded.
- Only trained and qualified personnel are recommended to install and set up the sensor.
- Following installation,always test for proper operation before leaving the premises.
- The warranty is invalid if unauthorized repairs are made or attempted by unauthorized personnel.


The device contains IR and visible laser diodes.

IR laser: wavelength 905nm; max. output pulse power 75W
(Class 1 according to IEC 60825-1)

Visible laser: wavelength 650nm; max. output CW power 3mW
(Class 3R according to IEC 60825-1)

The visible laser beams are inactive during normal functioning.
The installer can activate the visible lasers if needed.

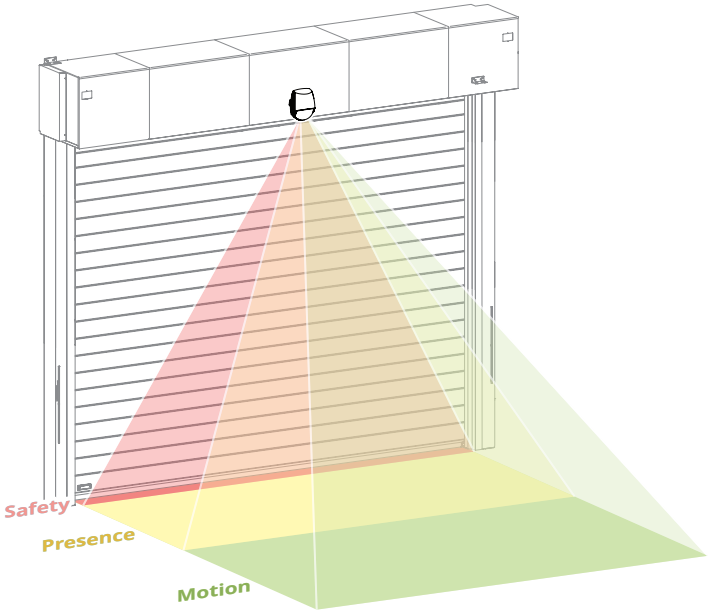
### BEA, INC. INSTALLATION/SERVICE COMPLIANCE EXPECTATIONS

- BEA, Inc., the sensor manufacturer, cannot be held responsible for incorrect installations or inappropriate adjustments of the sensor/device; therefore,
- BEA, Inc. does not guarantee any use of the sensor outside of its intended purpose.
- BEA, Inc. strongly recommends that installation and service technicians be 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 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 a safety information label (e.g. ANSI/DASMA 102, ANSI/DASMA 107). Verify that all appropriate industry signage and warning labels and placards are in place.

## How it works

The widescan laser combines three overlapping sensing functions:

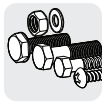
- **Motion-based activation of the door (green area)**, with adjustable sensitivity based on the size, speed, height or direction of objects within the detection field.
- **Presence sensing (yellow area)** to hold the door open while objects are in the detection field, with adjustable sensitivity based on the size of the objects and the potential to "learn to ignore" items that remain stationary.
- **Safety sensing (red area)** within the area immediately surrounding the door opening, to stop and reverse the door if it is closing if objects are in the detection field.




## Before you begin

**1** **Make sure** that you have all supplies and tools.

Supplies that you provide

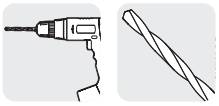


Mounting hardware for the mounting bracket

Tools you will need

#2 Phillips

Optional (for mounting bracket)

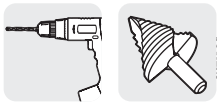


Power drill and 5/16" (M8) drill bit

Tools for wiring the controller

Precision screwdriver

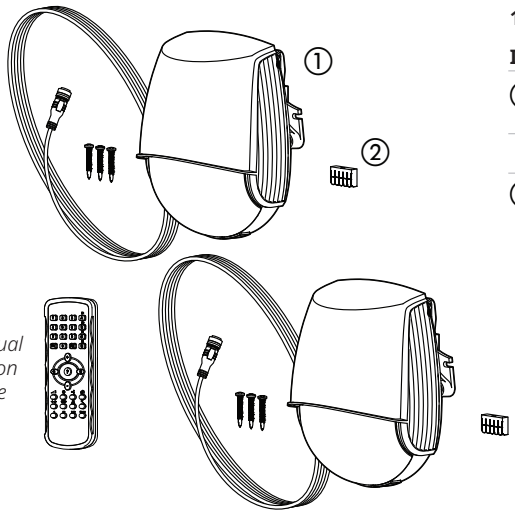
Wire tool



Power drill and step drill bit (if additional hole needed in control box)

## What's in the kit

**1**



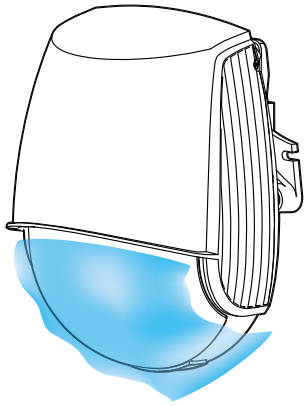

*Read the BEA owner's manual for information on how to use the remote control.*

**1210761-0 Widescan laser kit**

| ID | Part No. | Description | Qty. |
|---|---|---|---|
| ① | 1210761-0 | Wireless laser, Rytec profile<br>*includes 30' cable and mounting hardware* | 2 |
| | | Remote control | 1 |
| ② | 00112127 | 5-post jumer block | 2 |

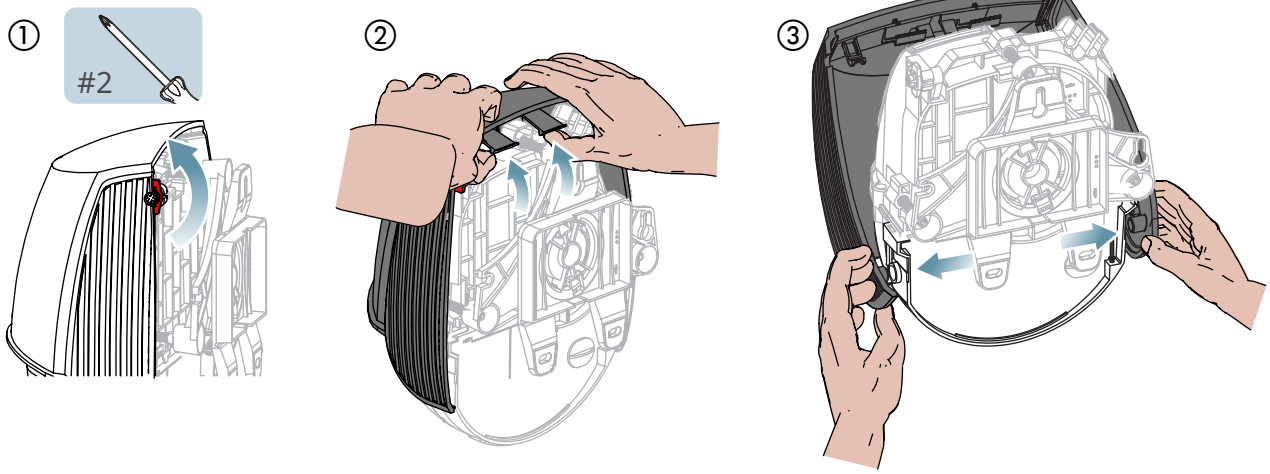
**IMPORTANT**

**DO NOT REMOVE** the protective film from the sensor until you are ready to power up and position the sensor (page 6).



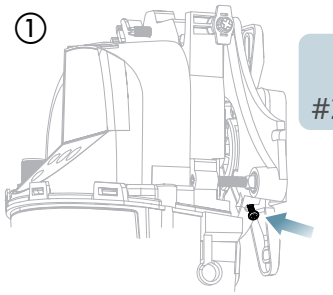
## How to install the sensor

**1** **Remove** the cover. **Make sure** the locking tab is in the unlocked vertical position ①, **flip up the two tabs** to release the cover ②, then **pull the cover away** from the hinge points ③.



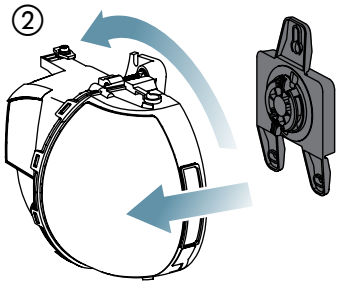

**2** **Install** the sensor. ***See next page for mounting specifications.***

①



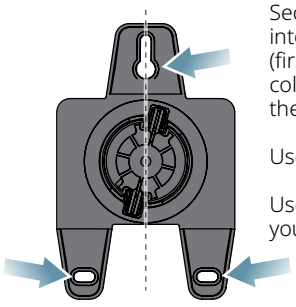

Make sure the angle lock screw is loosened so that the sensor turns freely.

②



Turn the sensor body 90° counterclockwise and remove it from the spieder bracket.

③ *OPTION A:*
*Install the spider bracket directly onto head assembly or side column.*



Secure the spider bracket into the head assembly (first choice) or the left side column (second choice) of the door.

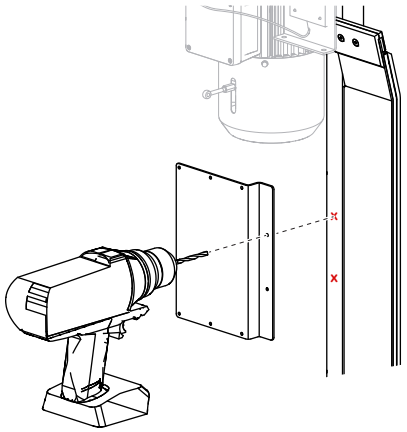
Use all three anchor points.

Use the included hardware or your own.

*bracket must be vertically straight*

④ Reinstall the sensor body onto the spider bracket

③ *OPTION B:*
*Install the spider bracket onto the mounting bracket (INTERNAL MOUNTING ONLY)*



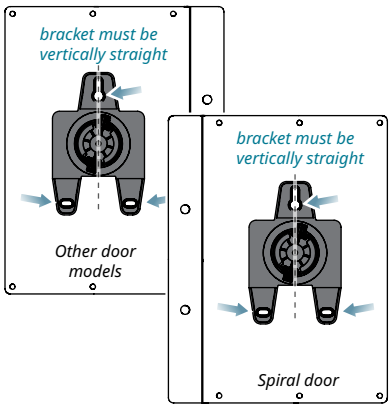
If you cannot mount securely to the head assembly or the side column, use the mounting bracket.

The bracket may also be used on Spiral doors so that the sensor does not obsturct the side column cover.

Field drill two holes (M8 or 5/16") through the bracket and into the side column.

**MAKE SURE all internal components of the door are clear.**

④




Secure the spider bracket into the center of the mounting bracket.

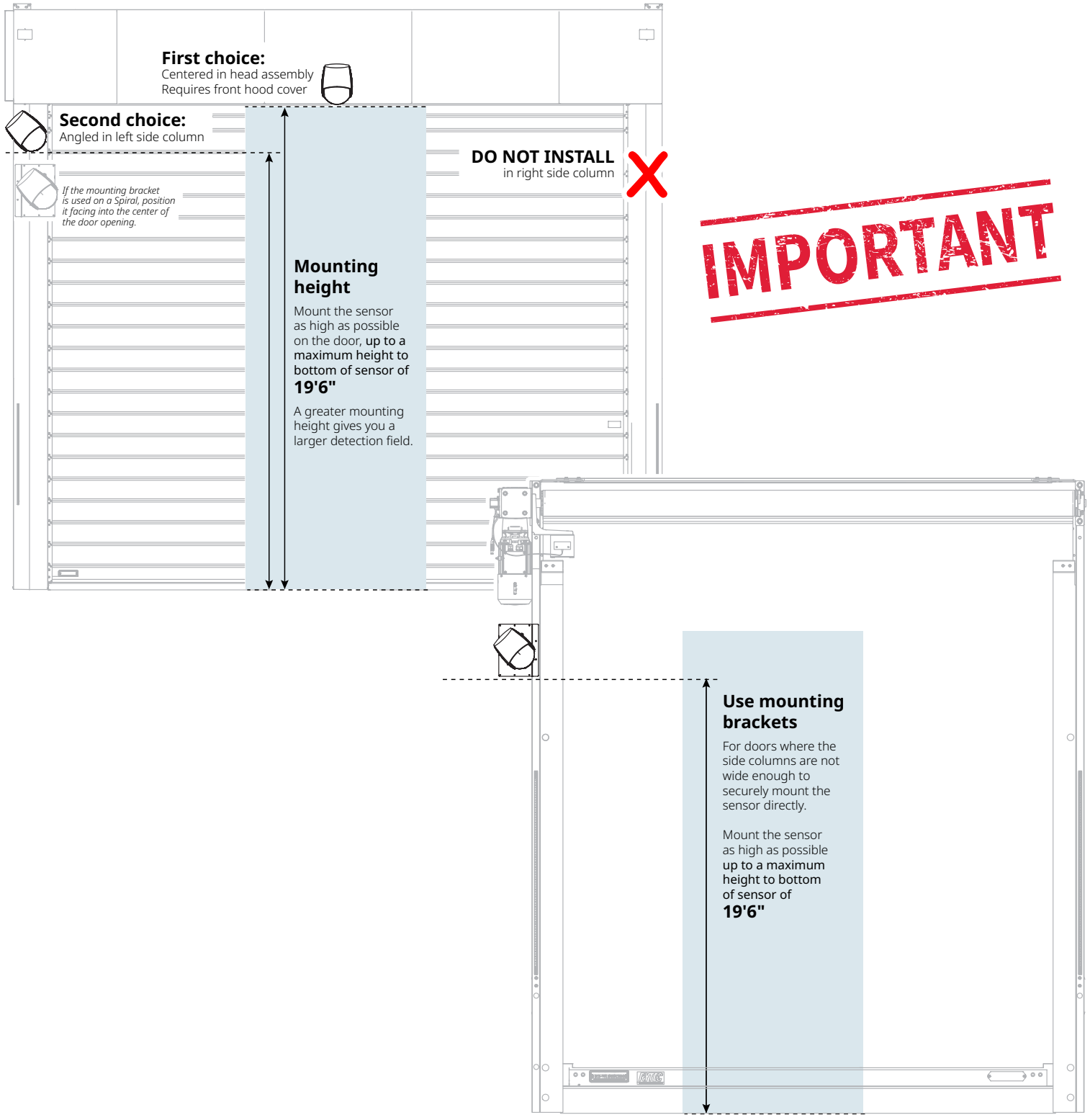
Use all three anchor points.

Use the included hardware or your own.

**NOTE: i**f you are using the mounting bracket on a Spiral door, reverse the bracket so it faces in towards the center of the door opening.

⑤ Reinstall the sensor body onto the spider bracket

# Mounting specifications



# Mounting recommendations

Evaluate the installation site, then mount the BEA widescan on the best location available:

① If a bollard is present, mount at center of top of bollard.

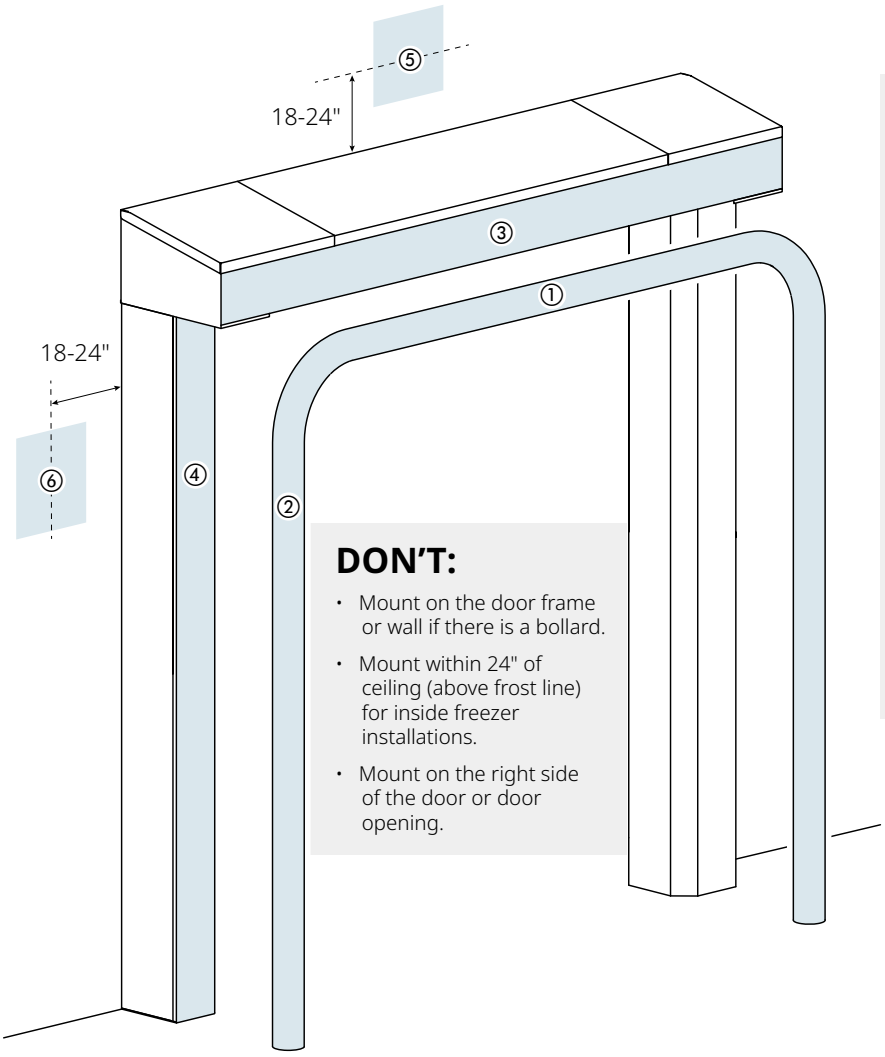
② If a bollard is present, mount on left side of bollard.

③ If the door has a metal front hood cover, mount at center of front hood cover.

④ If the door does not have a bollard or metal front hood cover, mount on left side column.

⑤ If the left side column cannot securely support unit or mounting bracket, mount on wall above center of door opening.

⑥ As a last choice, mount on wall to the left of door.



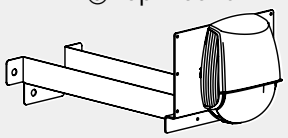

**DON'T:**

- Mount on the door frame or wall if there is a bollard.
- Mount within 24" of ceiling (above frost line) for inside freezer installations.
- Mount on the right side of the door or door opening.

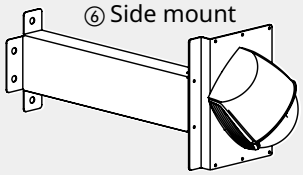
⑤, ⑥ For front (door side) wall mounts, order the large standoff bracket (P/N # 0703876) and install 18-24" from door frame.

For rear (non-door side) wall mounts, units may be mounted directly on wall or on the standoff bracket. Install 18-24" from door opening.

⑤ Top mount



⑥ Side mount



## How to set the controller parameters for the BEA Widescan

**NOTE:** If you don't know how to set a parameter, follow the steps in *How to set a controller parameter* at the end of this guide..

These parameters must be **checked** and, if necessary, **changed**.

| Parameter Number | Value for BEA Widescan |
|---|---|
| 50B | 0502 |
| 50C | 0502 |
| 5B9 | 9 |
| 5C9 | 9 |

## How to wire the sensor

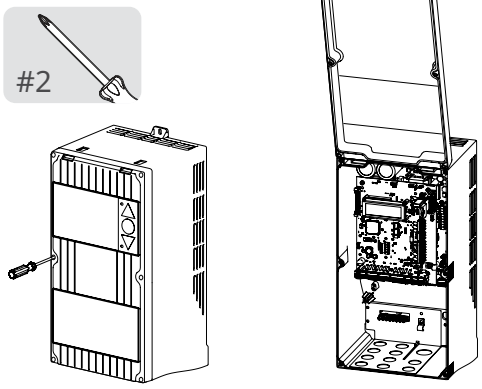
**⚠ WARNING**

**Set the disconnect switch to the OFF position** and perform a lockout/tagout of the high-voltage disconnect before installing wiring to the controller.
Do not set the disconnect switch to the ON position until the wiring installation is complete and the controller is fully earth grounded per instructions.

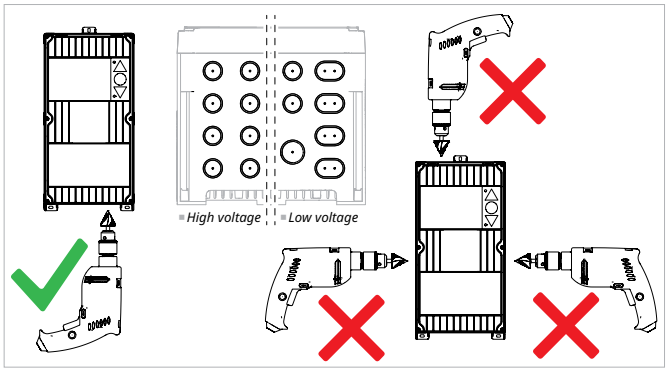

**Failure to comply could result in shock, burns or death.**

1 **Open** door to fully open position, **disconnect** power and **perform** lockout/tagout.

2




3 If necessary, **drill** a hole in the control box for the Audible Alert System cable.

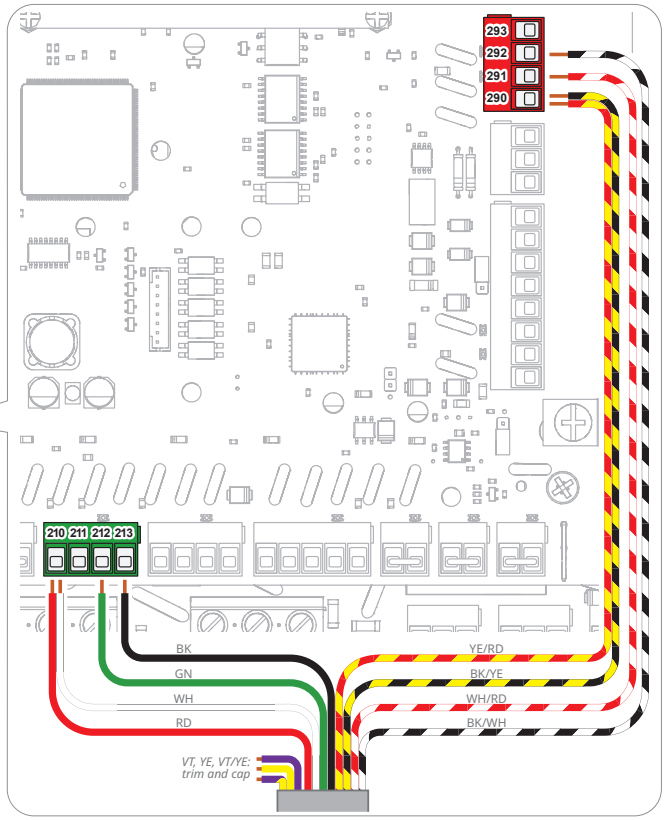



**NOTICE**

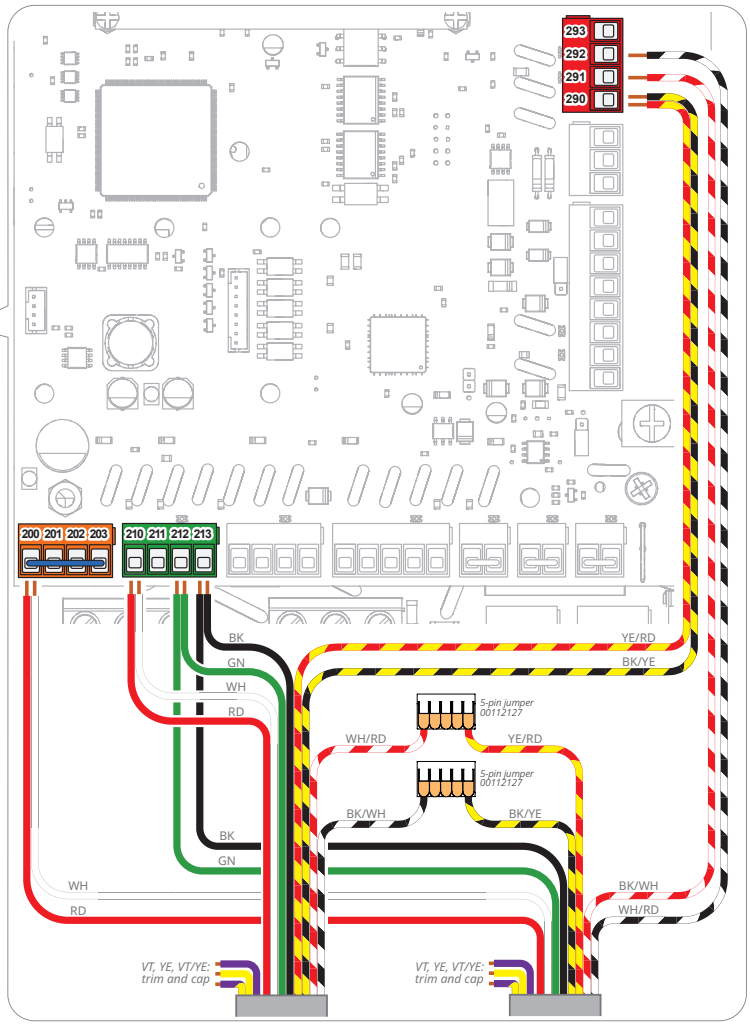
- **The cable must enter through the bottom of the control box.** Drilling through the top or side of the control box voids the warranty for the door.
- Low voltage cables must enter **through the right side** of the box bottom.
- **Holes must be drilled.** The indentations on the controller bottom are not knockouts.

## 4 **Connect** the wiring to the controller.

Single sensor on one side of door




Dual sensors on one side of door



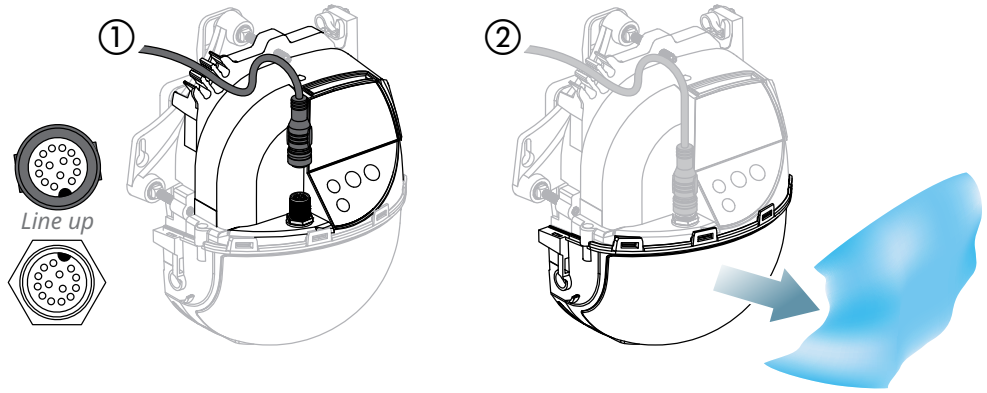

## NOTICE

- **Maximum torque** for all controller screws is **2.5 in-lb.**
- All wiring 18 AWG. Wire colors may vary for your door.
- Install terminal blocks and jumpers as appropriate for your installation. Blocks and jumpers may be installed inside the control box.

## How to position the sensor

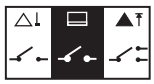
**1** **Plug in** the cable ①. This will turn on the sensor.

**Remove** the protective film ②.

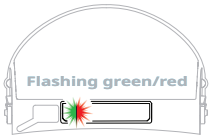



### When you see this:

*Display screen*



*LEDs at bottom of sensor*




### Do this:

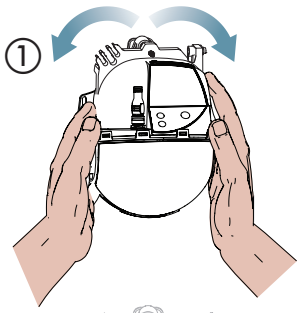
**2** OK 5 sec

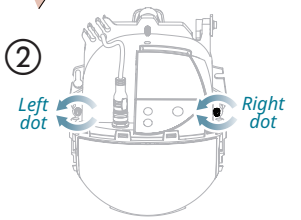
**3**

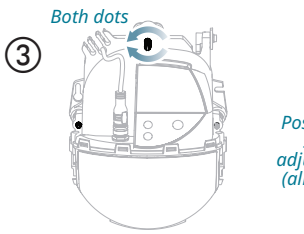
① **Turn the sensor** so that the two blinking red dots are centered in the door opening.

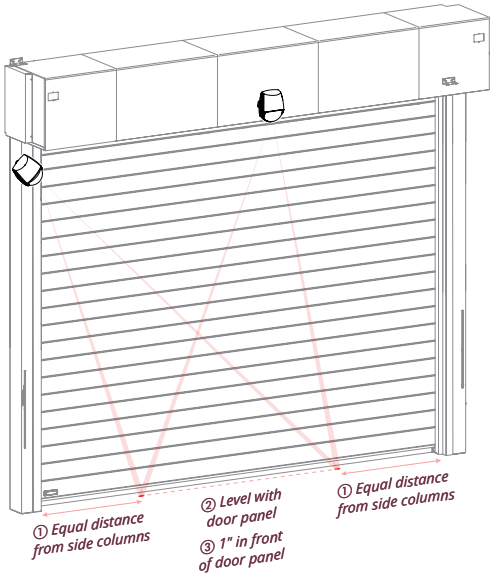
② **Adjust the two side positioning screws** until the dots are level with the door panel.

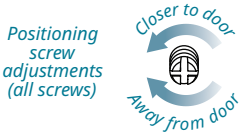
② **Adjust the top positioning screw** until the dots are 1" (one inch) in front of the door panel.



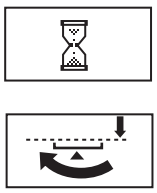





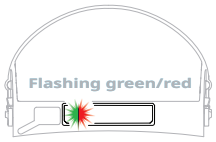

*To enter the final position*

**When you see this:**

*Display screen*

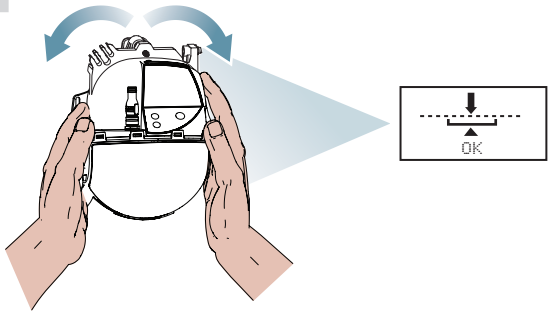


*LEDs at bottom of sensor*




**Do this:**

**4** **Turn the sensor** until the OK screen displays.

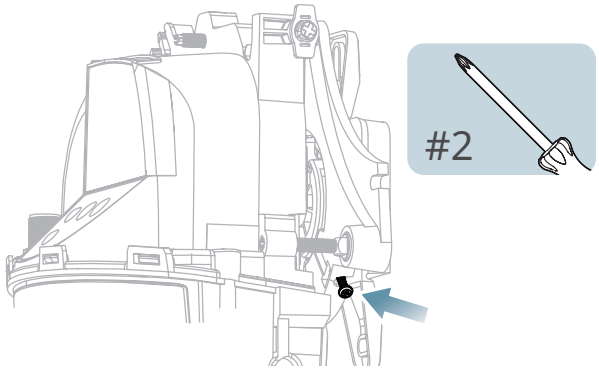



IMPORTANT

1. **For best results,** make sure the arrow aligns with the center triangle in the OK screen.
2. Allow the sensor to settle into place **for five seconds** after turning it before checking the screen.
3. The two red blinking dots **will no longer be centered** when you are done. This is the normal result of this step.


*To enter the final position*

**5** **Tighten** the angle lock screw to secure the sensor in place.

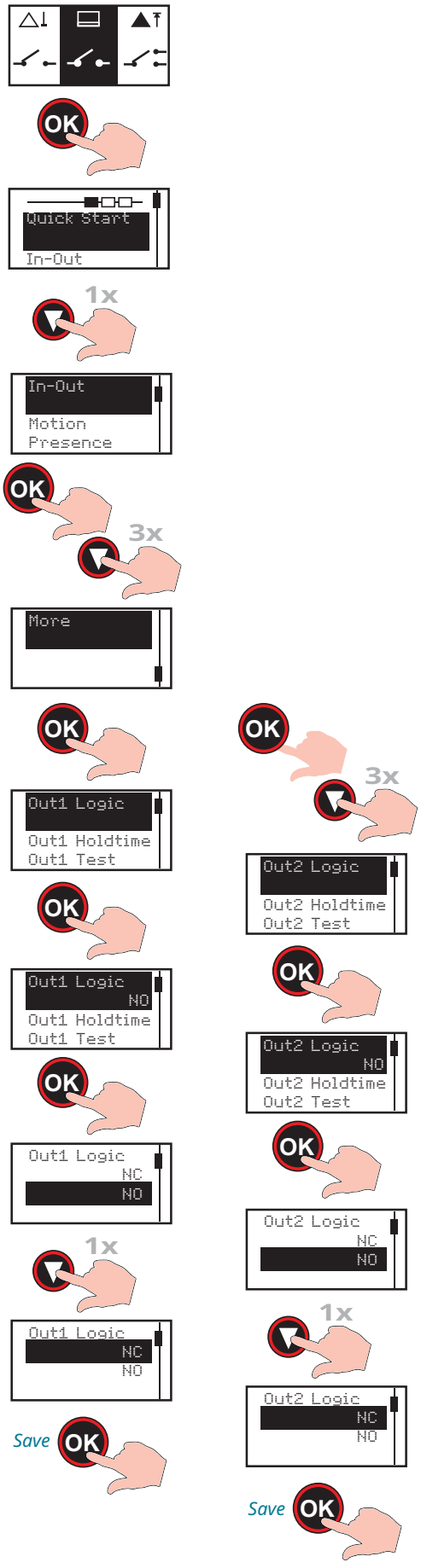


## How to set defaults for Outputs 1 and 2

**IMPORTANT**

Do this before running the teach-in for the door, or he door will not close when the teach-in is complete.

**Follow the steps shown here** to change the settings.

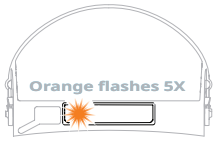
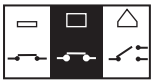
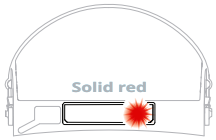
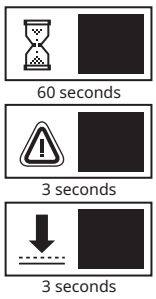
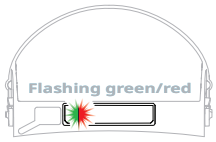


## How to run a teach-in of the sensor

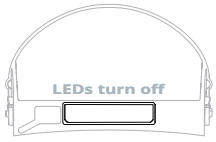
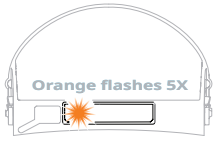
During a teach-in, the sensor scans and "learns" the three detection zones for the area in front of the door: motion, presence and safety. The sensor must run a successful (zero error) teach-in to begin normal operation.

**To ensure** a successful teach-in:

- **Make sure** the teach-in detection area in front of the door is clear of all objects and people. The detection area is as wide as the door opening and extends 1.2 x the mounting height of the sensor.
- **Make sure** nothing enters the detection area during the teach-in.
- **Cover all breaks** in the floor, such as significant cracks, drainage trenches or drain covers, with cardboard. These surface breaks will not affect detection once the teach-in is complete.

| When you see this: | | Do this: |
|---|---|---|
| *Display screen* | *LEDs at bottom of sensor* | |
|  |  | 1  |
|  |  | 2  |
|  | | 3  |
|  | | 4  |
|  | | 5  |
|  |  | 6 **The sensor** runs through a 60-second delay, then a 3-second countdown, then begins the teach-in.<br>**Make sure** the teach-in detection area is clear and everyone in the area has been informed not to enter the detection area. |

### Results

| When you see this: | | Do this: |
|---|---|---|
| *Display screen* | *LEDs at bottom of sensor* | |
|  |  | **The teach-in was successful.** Go to *How to change the stop distance* or *How to check the detection area*. |
|  |  | **The teach-in was not successful.** See the BEA widescreen owner's manual for a complete list of error codes and troubleshooting steps.<br>In most cases, **recheck** the detection area for obstructions and run the teach-in again. |

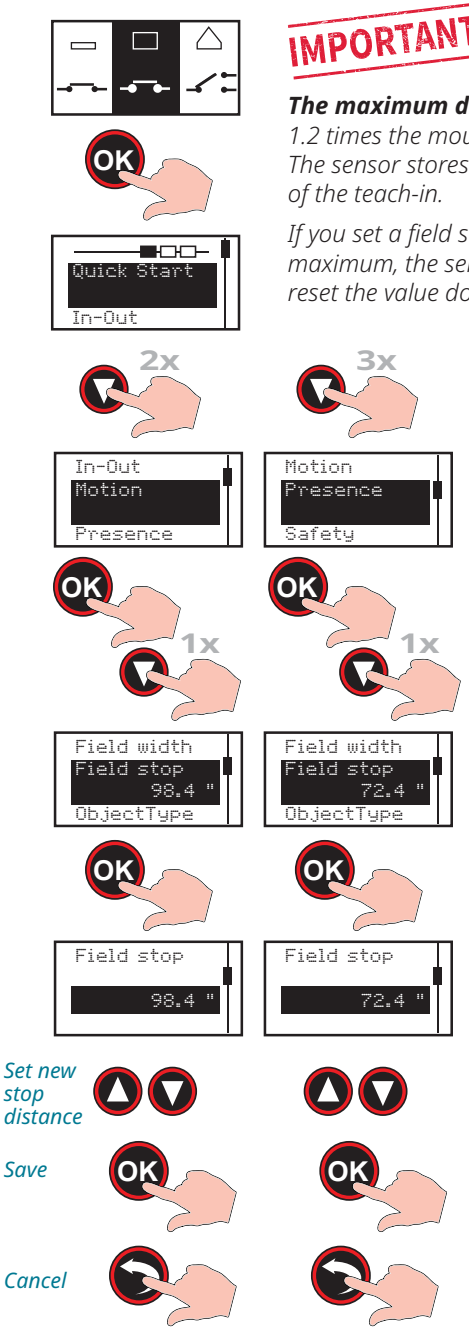
## How to set defaults for auto dealerships

The factory defaults are optimal for most installations. For these doors, Output 1 and 2 are the only settings you change.

**Installations in auto dealerships** have custom recommended settings for interior and exterior sensors.
**These are shown on the next two pages.**

You may also need to change the stop distance (length of detection field) to meet the needs of a specific installation.

**Follow the steps shown here** to do this.




IMPORTANT

***The maximum distance*** *for all field stops is 1.2 times the mounting height of the sensor. The sensor stores this value as part of the teach-in.*

*If you set a field stop to a value above the maximum, the sensor will automatically reset the value down to the maximum.*

## Default settings for auto dealerships - exterior sensor

### Main Menu

- Quick start
- In-Out
- Motion
- Presence
- Safety
- Others

***Note:*** *this icon indicates factory default value.*

### Motion

| | |
|---|---|
| Field Width | ***Match door width*** |
| Field Stop | *Set to* ***"114.1"*** |
| Object Type | *Set to* ***"Vehicle"*** |
| More | |

#### More

| | |
|---|---|
| Immunity | *Set to* ***"2"*** |
| Field Start | *Set to* ***"0"*** |
| Direction | *Set to* ***"Uni 100+"*** |

### Presence

| | |
|---|---|
| Field Width | ***Match door width*** |
| Field Stop | *Set to* ***"69.9"*** |
| Object Type | *Set to* ***"Any"*** |
| More | |

#### More

| | |
|---|---|
| Immunity | *Set to* ***"2"*** |
| Field Start | *Set to* ***"69.9"*** |
| Pres Time | *Set to* ***"5"*** |

### In-Out

- Out1 Funct
- Out2 Funct
- Relay Funct
- More

#### More

| | |
|---|---|
| Out1 Logic | *Set to* ***"NC"*** |
| Out1 Holdtime | *Set to* ***"1 s"*** |
| Out1 Test | |
| Out2 Logic | *Set to* ***"NC"*** |
| Out2 Holdtime | *Set to* ***"1 s"*** |
| Out2 Test | |
| Relay Logic | *Set to* ***"NO"*** |
| Relay Holdtime | *Set to* ***"1 s"*** |
| Relay Test | |

### Safety

| | |
|---|---|
| Field Width | ***Match door width*** |
| Field Stop | *Set to* ***"19.6"*** |
| More | |

#### More

| | |
|---|---|
| Immunity | *Set to* ***"2"*** |
| Pres Time | *Set to* ***"Infinite"*** |
| UncovZone | *Set to* ***"5.9"*** |

**⚠ WARNING**

**Field Stop for Safety should be set to 19.6"** in all installations.

**Contact Rytec technical support at 800-628-1909 before using any other setting.**

## Default settings for auto dealerships - interior sensor

### Main Menu

- Quick start
- In-Out
- Motion
- Presence
- Safety
- Others

***Note:*** *this icon indicates factory default value.*

***Note:*** *after the defaults for Presence are set, any object that remains within the detection field will be "learned" after 5 minutes, and will then not prevent the door from closing if it is detected.*

### Motion

| | |
|---|---|
| Field Width | Set to ***"35.3"*** |
| Field Stop | Set to ***"86.6"*** |
| Object Type | Set to ***"Vehicle"*** |
| More | |

#### More

| | |
|---|---|
| Immunity | Set to ***"4"*** |
| Field Start | Set to ***"0"*** |
| Direction | Set to ***"Uni 100+"*** |

### Presence

| | |
|---|---|
| Field Width | ***Match door width*** |
| Field Stop | Set to ***"43.3"*** |
| Object Type | Set to ***"Any"*** |
| More | |

#### More

| | |
|---|---|
| Immunity | Set to ***"2"*** |
| Field Start | Set to ***"69.9"*** |
| Pres Time | Set to ***"5"*** |

### In-Out

- Out1 Funct
- Out2 Funct
- Relay Funct
- More

#### More

| | |
|---|---|
| Out1 Logic | Set to ***"NC"*** |
| Out1 Holdtime | Set to ***"1 s"*** |
| Out1 Test | |
| Out2 Logic | Set to ***"NC"*** |
| Out2 Holdtime | Set to ***"1 s"*** |
| Out2 Test | |
| Relay Logic | Set to ***"NO"*** |
| Relay Holdtime | Set to ***"1 s"*** |
| Relay Test | |

### Safety

| | |
|---|---|
| Field Width | ***Match door width*** |
| Field Stop | Set to ***"19.6"*** |
| More | |

#### More

| | |
|---|---|
| Immunity | Set to ***"2"*** |
| Pres Time | Set to ***"Infinite"*** |
| UncovZone | Set to ***"5.9"*** |

**⚠ WARNING**

**Field Stop for Safety should be set to 19.6"** in all installations.

**Contact Rytec technical support at 800-628-1909 before using any other setting.**

## How to check the detection fields

**Walk around** the area in front of the door opening.

**Watch** the LEDs on the bottom of the sensor and the response of the door to verify when you are in the motion, presence and safety detection fields.

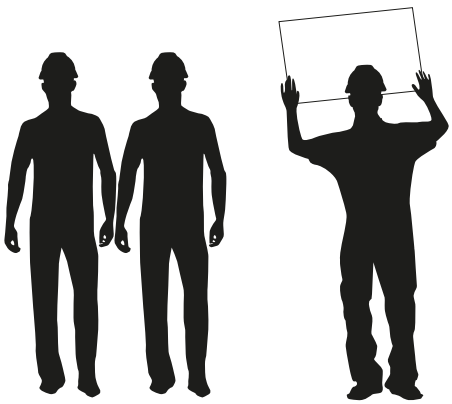
**If the fields do not line up correctly,** reposition the sensor or change the field stop.

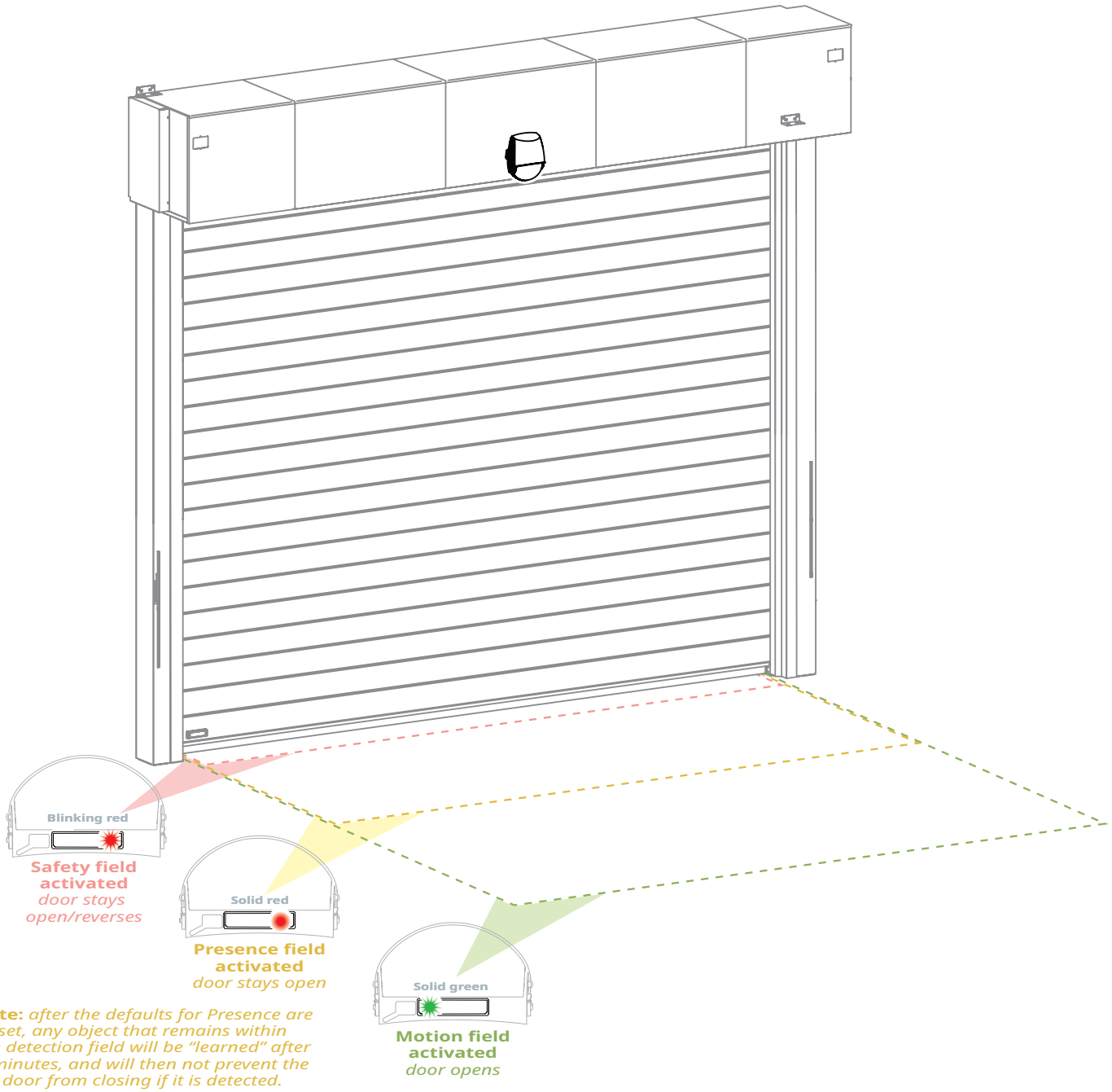
**IMPORTANT**

**If ObjectType for Motion** has been set to Vehicle, a means a single human in the detection field will not activate the sensor.

**During the detection field check,** have two people walk side by side, or have one person hold a 2' x 2' piece of cardboard or plywood over their head.

A single human should activate the sensor for **Safety** and **Presence.**

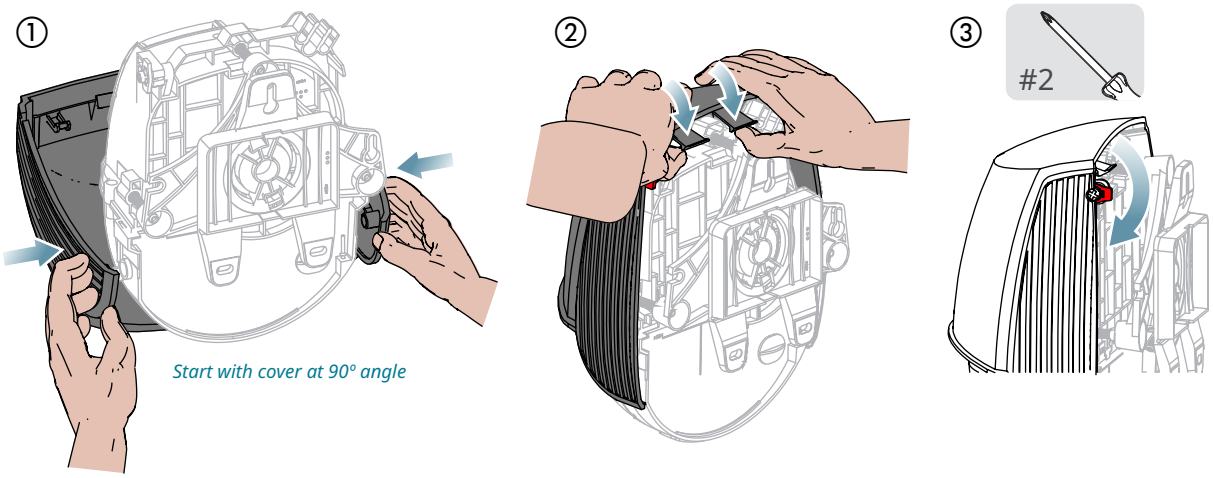





**Note:** *after the defaults for Presence are set, any object that remains within the detection field will be "learned" after 5 minutes, and will then not prevent the door from closing if it is detected.*

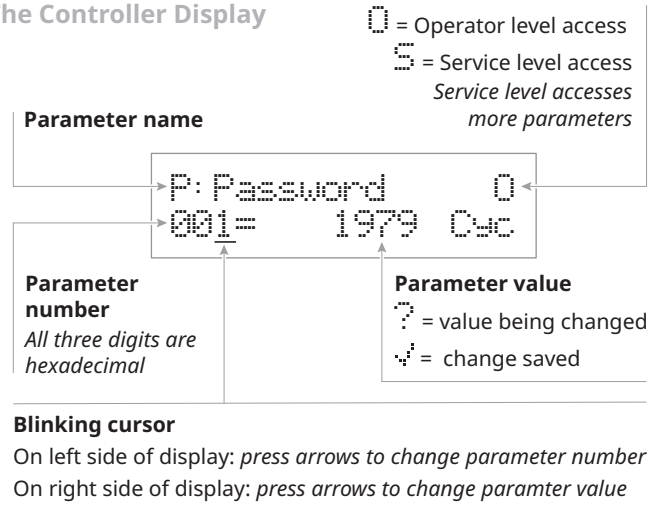
## How to complete the installation

**1** **Reinstall and lock** the cover. **Line up the hinge tabs** ① and reattach the cover, then **swing the cover up** until the two tabs click into place ②. **Turn** the locking tab to the locked horizontal position ③,

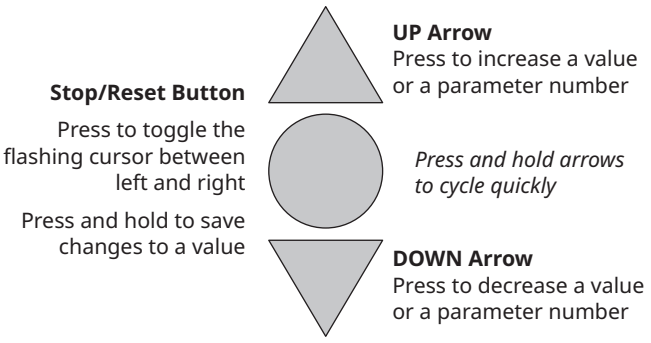


## How to set a controller parameter

### The Controller Display




### The Controller Controls



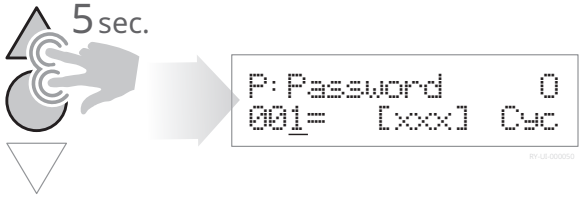

**NOTE:** The System 4 display uses hexadecimal numbers to number parameters and for some values.
The display uses the ten numeric characters (0-9), plus six letters (A-F), which represent the values from 11 through 16.
In some cases it will be necessary to press the UP arrow sixteen times to change a value from 0000 to 0010.

**Icon key**


## How to set the controller to Parameter mode and access Service level parameters

*Do This* *Result*

1 — 5 sec.




You are in Parameter mode.
You can now change parameters.

2 — 2x


The Password parameter (999) screen displays.

*Do This* *Result*

3


The flashing cursor moves to the right (value) side of the display.

4 — 16x


Set the Service password value to 10.

*Do This* *Result*

**5** 5 sec.


The Service password is saved

- **You must press and hold** the Stop/Reset button for five (5) seconds to save the change.

*Do This* *Result*

**6**

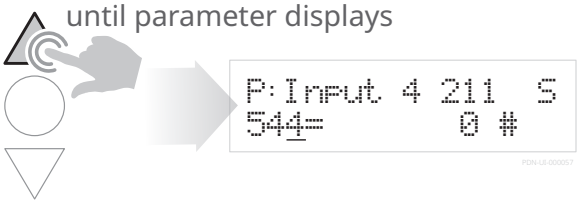

The flashing cursor moves back to the left (parameter number) side.

You can now move to a parameter.

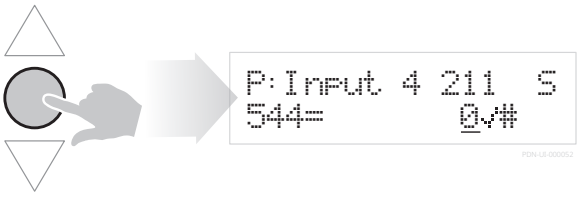
## How to navigate to a parameter and change the value

*Do This* *Result*

**1** until parameter displays

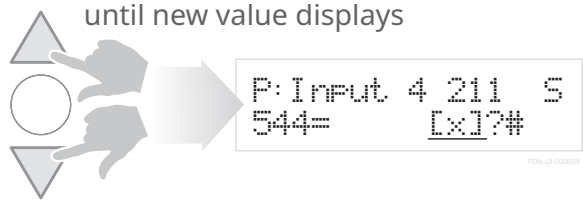



**2**

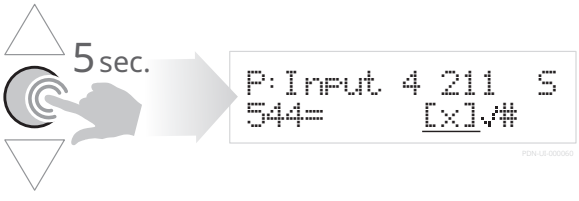



The flashing cursor moves to the right (value) side of the display.

**3** until new value displays




**4** 5 sec.

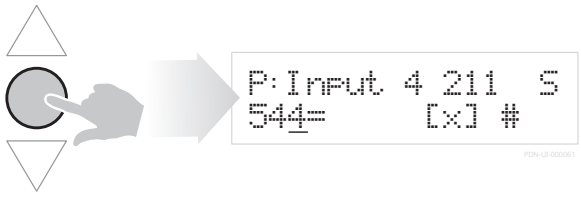



The new value is saved

- **You must press and hold** the Stop/Reset button for five (5) seconds to save the change.

*Do This* *Result*

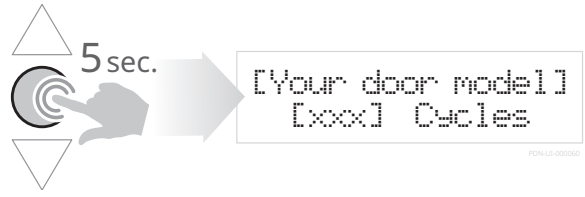
**5**




The flashing cursor moves back to the left (parameter number) side.

You can now move to the next parameter, or return to run mode.

**6** 5 sec.




Return to run mode.