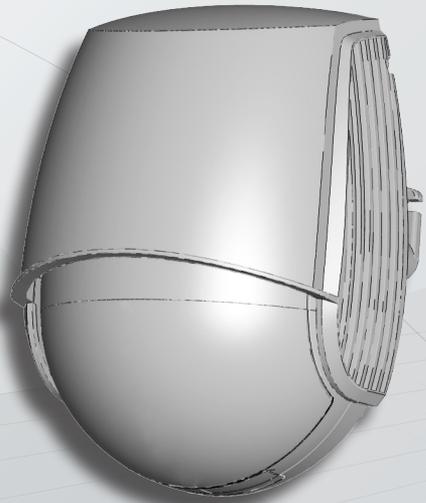




EN



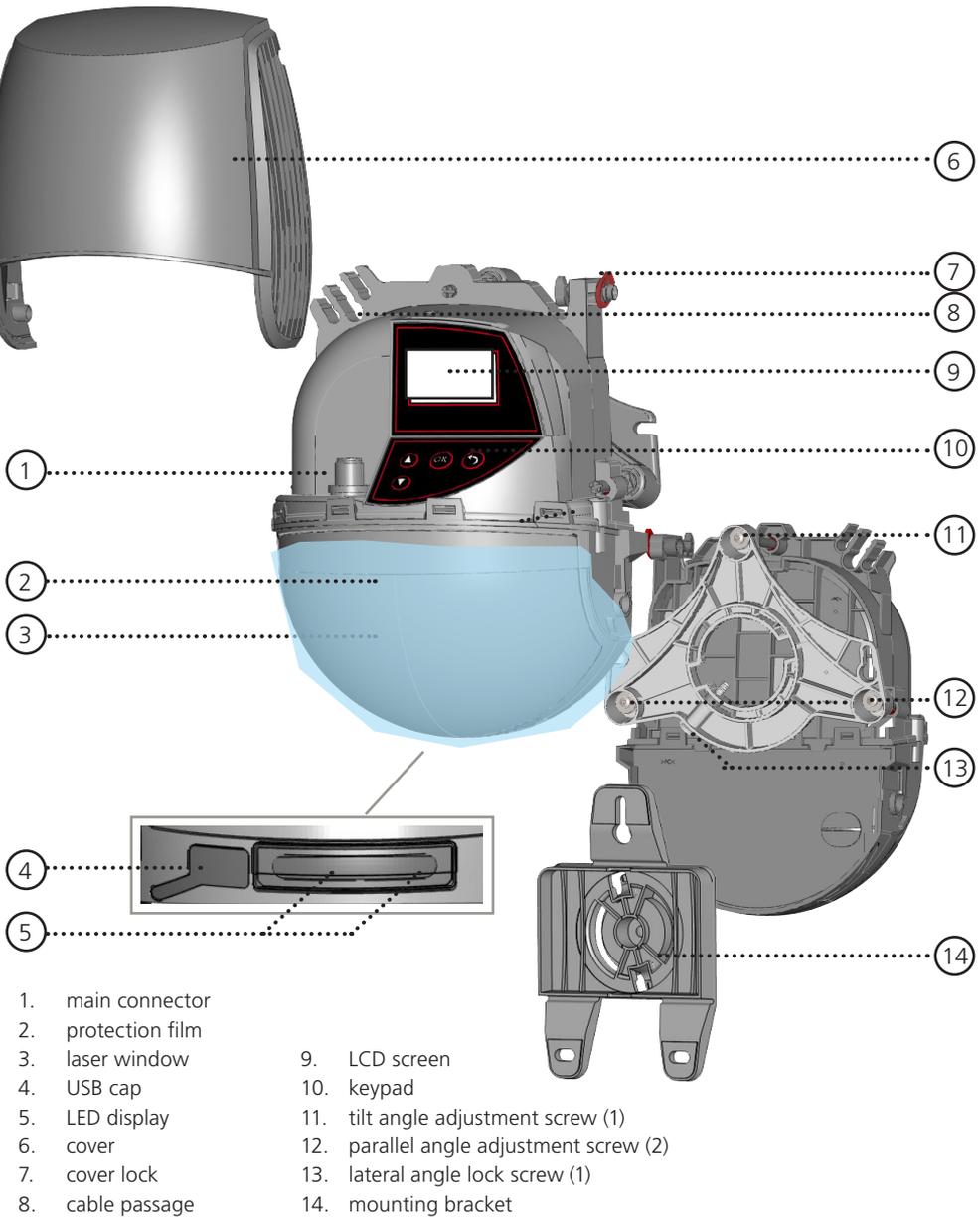
LZR[®]-WIDESCAN

MOTION, PRESENCE, AND SAFETY SENSOR
FOR INDUSTRIAL DOORS

(US VERSION)



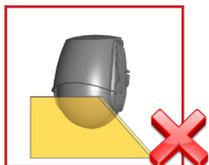
DESCRIPTION



INSTALLATION & MAINTENANCE TIPS



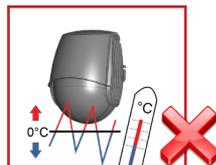
Avoid extreme vibrations.



Do not cover the sensor.



Avoid moving objects and light sources in the detection field.



Avoid exposure to sudden and extreme temperature changes.



Keep the protection film during the mounting of the sensor. Remove it before launching a teach-in.



It is recommended to clean the optical parts at least once a year or more if required due to environmental conditions.



Do not use aggressive products to clean the optical parts.



Avoid direct exposure to high-pressure cleaning.

SAFETY

CLASS 1 LASER PRODUCT
CAUTION! CLASS 3R LASER
RADIATION ACCESSIBLE
DURING INSTALLATION.
AVOID DIRECT EYE EXPOSURE!

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.

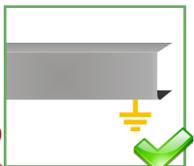


CAUTION!

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



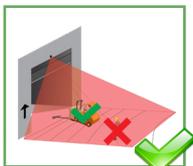
Do not look directly into the laser emitter or the visible red laser beams.



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.



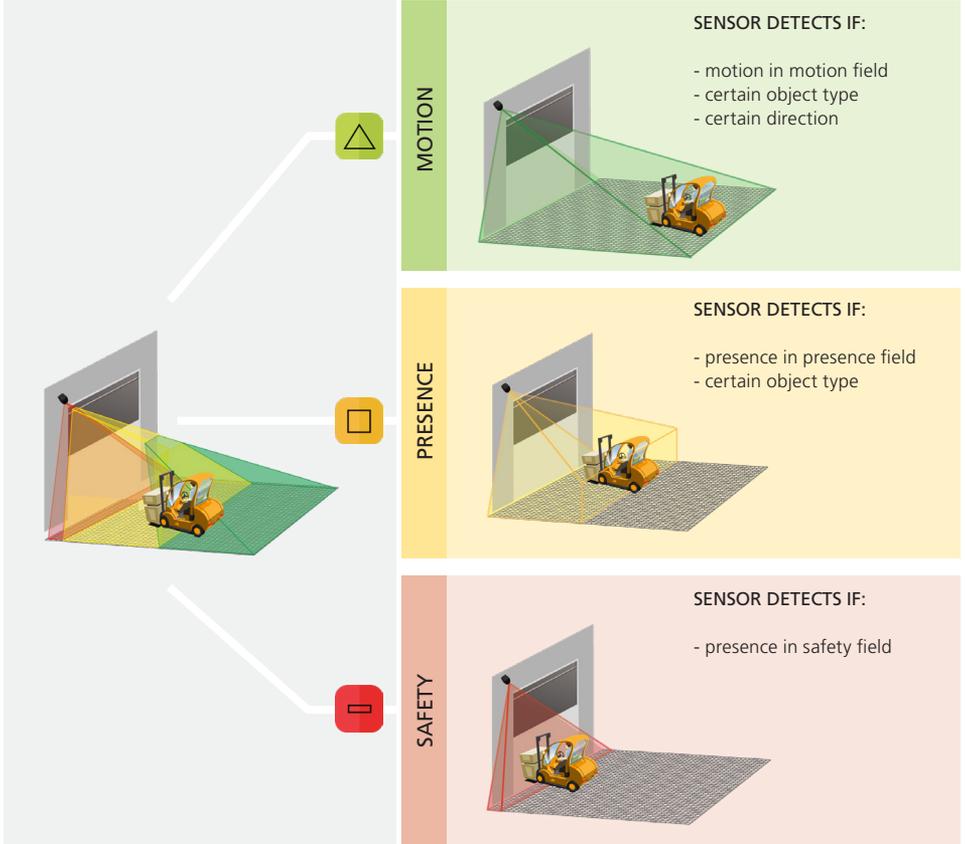
Following installation, always test for proper operation before leaving the premises.



The warranty is invalid if unauthorized repairs are made or attempted by unauthorized personnel.

BASIC PRINCIPLES: FUNCTIONS & OBJECT

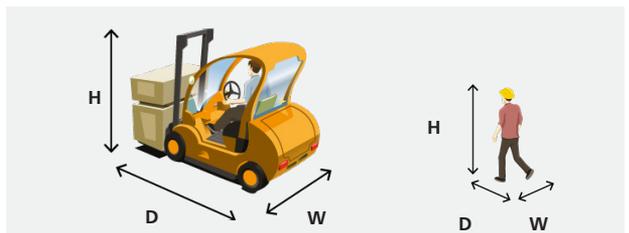
There are 3 main functions that create **3 overlapping detection fields**, each with certain detection characteristics:



There are 4 additional opening functions. All detection functions can be combined to trigger a specific output.

-  **Motion +:** detection of other moving object type in motion field
-  **Pull-cord:** detection of object in learned, pull-cord zone
-  **Speed:** detection of object with a minimum speed
-  **Height:** detection of object with a minimum height

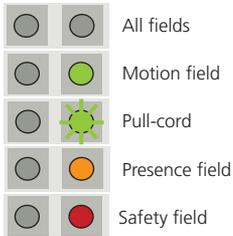
The sensor carries out a 3D object analysis and detects depending on height, width, depth, direction, and speed.



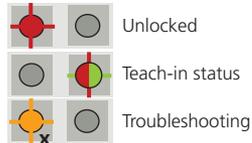
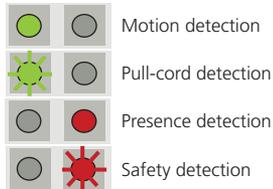
LED SIGNALS & SYMBOLS



SETTINGS



DETECTION



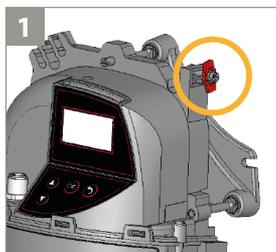
Main functions:



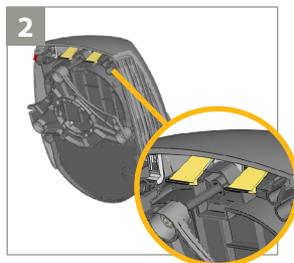
Additional opening functions:



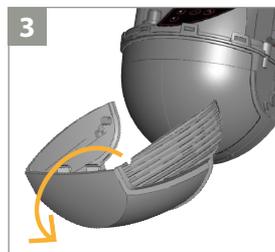
OPENING THE SENSOR



Before opening the sensor, make sure the cover is **not locked** (red cover lock).

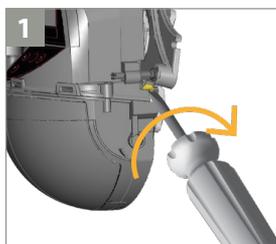


Pull the two legs on top in order to open the cover.

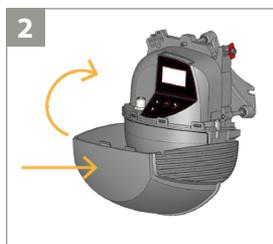


Remove the cover completely before installing the sensor.

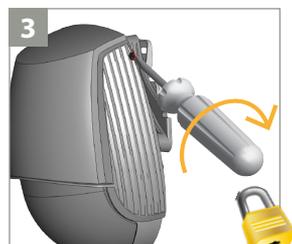
CLOSING THE SENSOR



Lock the sensor position by firmly fastening the angle lock screw.



Reclip the sensor cover **horizontally** and close it as indicated.

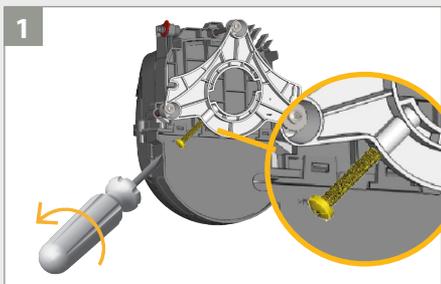
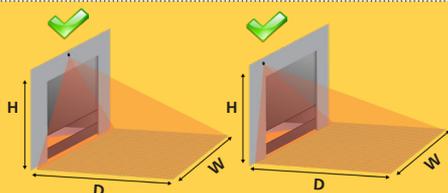


Lock the cover by turning the lock screw clockwise.

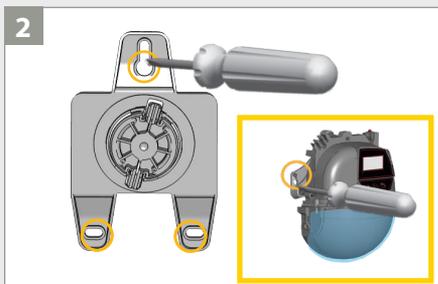
1 MOUNTING & WIRING

! Mounting height: **as high as possible (max. 19'6")**.
The size of the detection field depends on the mounting height.

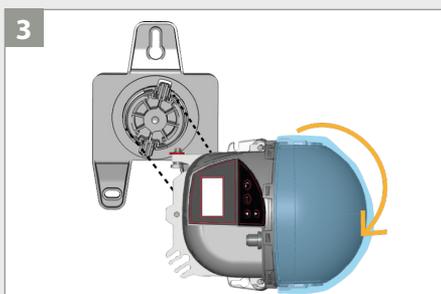
Mounting position: **center of door or left corner**.
Mounting on the right side of the door should be avoided.



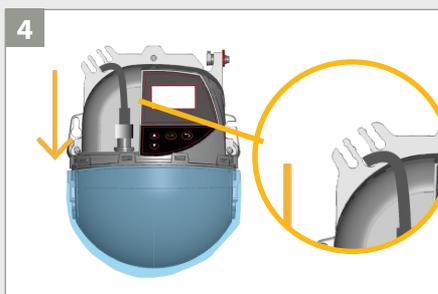
Verify that the angle lock screw is positioned as indicated. Unscrew slightly if necessary.



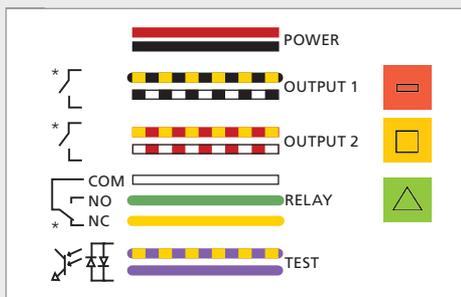
Remove the mounting bracket from the sensor and secure it to the wall. You can also install the sensor directly without using the mounting bracket.



Position the sensor horizontally (as shown) and secure the sensor to the mounting bracket.



Plug in the connector and pass the cable (PN 20.5399) through the cable passage without making a loop.



*output status powered during non-detection with factory values

Connect the wires accordingly.
The output functions can be configured if necessary (see page 10).

Teach-in reminder

Push OK to return to detection display.

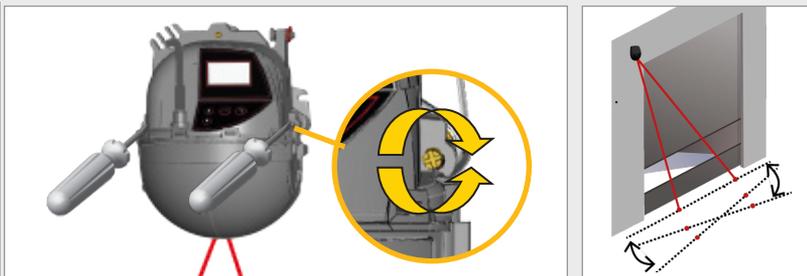
2 POSITIONING OF DETECTION FIELD

Remove the blue protection film from the laser window.



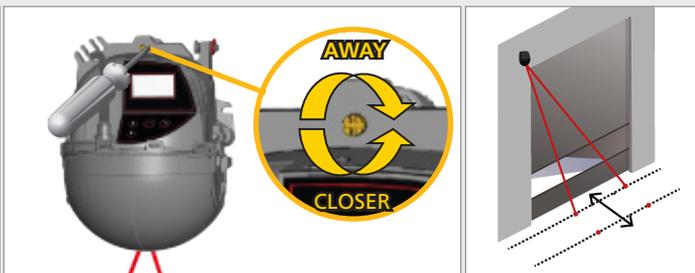
Activate the 2 visible laser spots by pressing **OK** twice or pressing on the remote control.

PARALLEL ANGLE



Make sure the curtain is parallel to the door by adjusting one or both screws on the side.

TILT ANGLE



Position the curtain closer to or farther away from the door by turning the screw at the top.

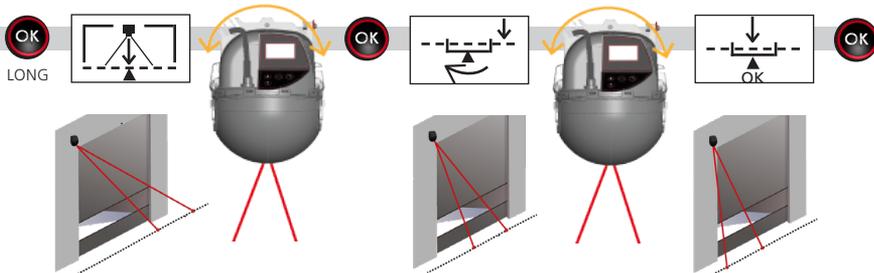


When the safety function is required, the red spots should be as close to the door as possible.

Negative angles reduce the depth of the detection fields.

LATERAL ANGLE

Launch the **POSITION WIZARD** to position the detection field correctly in front of the door.



1. Push and hold **OK** to launch the **POSITION WIZARD**.
2. Rotate the sensor in order to align the center of the red spots with the center of the door. Push **OK**.
3. Rotate the sensor until the LCD screen validates the position. Push **OK** to exit.

Lock the sensor position by tightening the angle lock screw (see page 4).

HOW TO ADJUST THE SENSOR BY REMOTE CONTROL



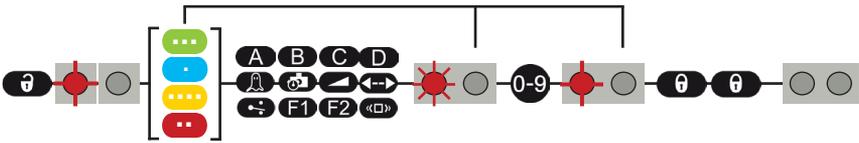
After unlocking, the red LED flashes and the sensor can be adjusted by remote control.



If the red LED flashes quickly after unlocking, enter an access code from 1 to 4 digits. If you do not know the access code, **cycle power**.

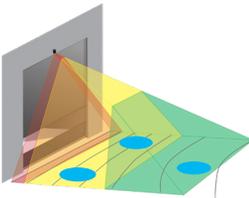


To end an adjustment session, always lock the sensor.



If necessary, select the corresponding detection field before selecting the parameter and changing the value. The second LED indicates the detection field.

- MOTION
- PULL-CORD
- PRESENCE
- SAFETY



Activate red spots on floor		
Teach-in: install		0
Teach-in: pull-cord		1 / 2 / 3
Presettings		3 / 4 / 5
Restoring		8 / 9

HOW TO ADJUST THE SENSOR BY LCD



Enter the LCD menu.
Select a folder, parameter, or value.
Confirm a value and exit edit mode.

Return to previous menu or display.

Activate red spots on floor.

Scroll up or down.

Launch POSITION WIZARD.

Select your **Language** before entering the first LCD menu.
Within the first 30 seconds of power-on of the sensor or later in the diagnostics menu.

Enter a **Password** if necessary.

Access advanced adjustments.

Go to the **Diagnostics** menu.

Displayed value = Factory value

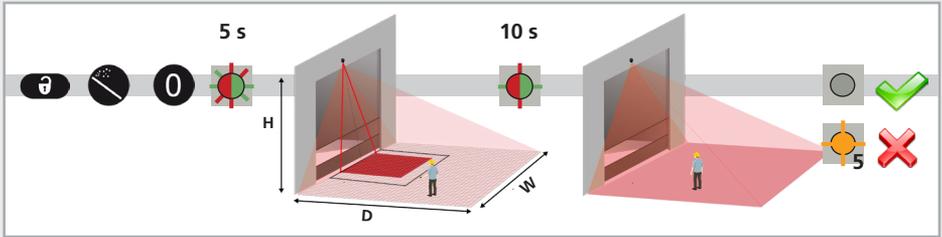
Displayed value = Saved value

3 PROGRAMMING THE SENSOR

TEACH-IN: INSTALL



- The teach-in zone (i.e. square in front of the 2 visible spots) must be completely clear.
- This teach-in must be launched each time a sensor has been changed.
- Make sure the blue protection film and cover are removed!



1. Launch a teach-in by remote control. It starts after 5 seconds.
2. Wait while the position, angle, and height are learned and the background is analyzed.
3. The teach-in ends successfully. If not, refer to Troubleshooting on page 15.

PRESETTINGS

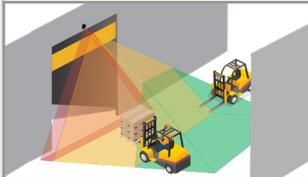
Choose one of the following presettings. They adjust parameters automatically according to your application. If necessary, you can also adjust a parameter independently via remote control (see page 10).

STANDARD



- next to pedestrian door
- exterior, large space
- traffic from and to all directions
- storage right and/or left

CORRIDOR



- interior, confined space
- traffic from and to all directions
- no storage near door

CORNER



- interior or exterior
- no parallel traffic
- storage on one side of door

SETTINGS



- width: **max**, depth: **max**
- object type: **vehicle**
- direction: **uni 100%**



- width: **max**, depth: **6'6"**
- object type: **vehicle**
- max presence time: **30 min**



- width: **max**, depth: **1'3"**
- max presence time: **infinite**
- uncovered zone: **5 3/4"**



- Motion / Pull-Cord



- Safety



- Motion+ and Height Trigger

SETTINGS



- width: **max**, depth: **max**
- object type: **vehicle**
- direction: **uni 100%**



- width: **max**, depth: **6'6"**
- object type: **vehicle**
- max presence time: **infinite**



- width: **max**, depth: **1'3"**
- max presence time: **10 min**
- uncovered zone: **5 3/4"**



- Motion / Pull-Cord / Safety



- Safety



- Motion+ and Speed Trigger

SETTINGS



- width: **max**, depth: **max**
- object type: **vehicle**
- direction: **uni**



- width: **max**, depth: **6'6"**
- object type: **vehicle**
- max presence time: **30 min**



- width: **max**, depth: **1'3"**
- max presence time: **10 min**
- uncovered zone: **5 3/4"**



- Motion / Pull-Cord / Presence



- Safety



- Motion+ and Height Trigger

OPTIONAL REMOTE CONTROL SETTINGS

	0	1	2	3	4	5	6	7	8	9
Teach-in	install									
Presettings			standard	corridor	corner	cold storage				
Service Mode	The service mode deactivates the presence and safety detection during 15 minutes and can be useful during an installation, a mechanical teach-in of the door or maintenance work. Exit the service mode by using the same sequence.									
Factory Reset	full: complete reset of all values partial: reset of all values except IN/OUT								full	partial
Red Spots	Pressing "magic wand" twice activates the 2 laser spots, enabling angle adjustments and sensor positioning.									
MOTION										
C Width		000 (min) – 240 (max)		factory default: 240						
D Depth		000 (min) – 287 (max)		factory default: 287						
Object type	vehicle: only vehicles are detected (all types) any: vehicles and pedestrians are detected				vehicle depth	vehicle	any			
Immunity		1	2	3	4	5				
B Door zone OFF		000 (min) – 287 (max)		factory default: 000						
PULL CORD										
Teach-in		# 1	# 2	# 3						
Object type							vehicle depth	vehicle	any	
Min. pres. time	0 s	1 s	2 s	3 s	4 s	5 s	6 s	7 s	8 s	stop
PRESENCE										
C Width		000 (min) – 240 (max)		factory default: 240						
D Depth		000 (min) – 287 (max)		factory default: 080						
Object type	vehicle: only vehicles are detected (all types) any: vehicles and pedestrians are detected				vehicle depth	vehicle	any			
Max. presence time		30 s	1 min	2 min	5 min	10 min	30 min	60 min	120 min	infinite
Immunity		1	2	3	4	5				
B Door zone OFF		000 (min) – 287 (max)		factory default: 000						
SAFETY										
C Width		000 (min) – 240 (max)		factory default: 240						
D Depth		000 (min) – 287 (max)		factory default: 016						
Max presence (for objects < 1'6")		30 s	1 min	2 min	5 min	10 min	30 min	60 min	120 min	infinite
Immunity		1	2	3	4	5	Depending on mounting height, angles, and other installation factors, some immunities might exclude conformity with EN 12445.			
F2 Uncovered Zone		2"	4"	6"	8"	An object < 6" is not detected. An object > 6" is detected during 10 min (adjustable). An object > 1'6" is detected infinitely (not adjustable).				

OPTIONAL REMOTE CONTROL SETTINGS (cont.)

When programming each of the parameters listed below (function, logic, holdtime), you must always enter 3 digits for the given parameter (output 1, output 2, relay).

- 1st digit = Output 1
- 2nd digit = Output 2
- 3rd digit = Relay

If you do not want to change the setting of an output, select 0.

FOR EXAMPLE, if you want the outputs to be Motion (Output 1), Pull-Cord (Output 2), and Safety (relay), you must push the following buttons in the following order:

F1 – **1** **5** **4**

First, assign the outputs.

	0	1	2	3	4	5	6	7	8	9
F1 Out 1 Function*	no change	motion	motion or pull-cord	presence	safety	pull-cord	motion + speed	motion + height	motion pull-cord safety	motion pull-cord presence
F1 Out 2 Function*	no change	motion	motion or pull-cord	presence	safety	pull-cord	motion + speed	presence + height	motion pull-cord safety	motion pull-cord presence
F1 Relay Function*	no change	motion	motion or pull-cord	presence	safety	pull-cord	motion + speed	motion + height	motion pull-cord safety	motion pull-cord presence

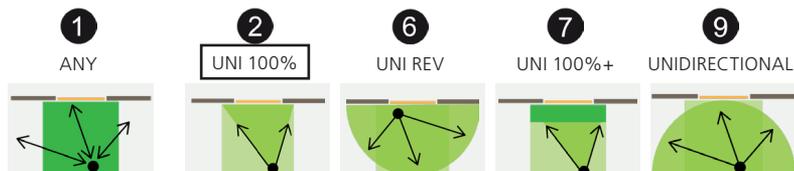
Next, determine the desired states and hold times for each output chosen above.

Out 1 Logic**				NO	NC					
Out 2 Logic**				NO	NC					
Relay Logic**		passive	active							
Out 1 Holdtime	100 ms	1 s	3 s	5 s	10 s	30 s	1 min	5 min	10 min	20 min
Out 2 Holdtime	100 ms	1 s	3 s	5 s	10 s	30 s	1 min	5 min	10 min	20 min
Relay Holdtime	100 ms	1 s	3 s	5 s	10 s	30 s	1 min	5 min	10 min	20 min

** Output status during non-detection.

MOTION

Direction



DEFAULT

1	ANY	detection in any direction
2	UNI 100% (default)	unidirectional detection (approaching within the width of the max. field)
6	UNI REV	unidirectional detection reverse (going away)
7	UNI 100% +	unidirectional detection (approaching within the width of max. field + 1 m of bidirectional detection in front of door)
9	UNIDIRECTIONAL	unidirectional detection (approaching in any direction; distance between object and sensor decreases)

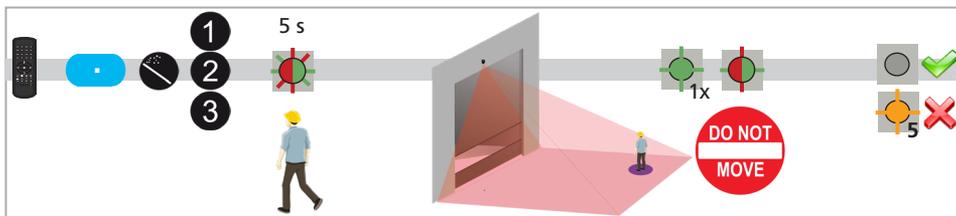
OPTIONAL LCD CONTROL SETTINGS

The heating function is also available via LCD. This cannot be accessed/programmed via remote control.

See the menu path below to access heating values:

MAIN → QUICK START → >MORE → OFF (default)
ECO
AUTO

TEACH-IN: PULL-CORD



1. Launch a "Pull-Cord" teach-in by remote control. You can create up to three different pull-cords.
2. Go to the position where you want to activate the door by a virtual pull-cord. Do not move.
3. The learning process starts. The sensor confirms that a person has been seen. Do not move until the LED stops flashing!

If the sensor flashes orange, see TROUBLESHOOTING.

When two people are standing in the field, the pull-cord will be created closest to the sensor.

4. The teach-in ends successfully. If not, refer to the TROUBLESHOOTING section on page 15.

NOTE: You can choose an object type and its minimum presence time using the remote control - see page 10.



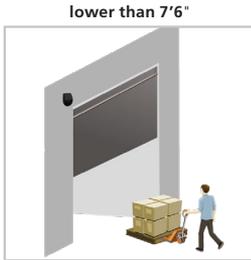
To delete the virtual "Pull-Cord" zone, simply relaunch a "Pull-Cord" teach-in without standing in the scanning zone. After 1 minute, the sensor flashes 5x orange. Push UNLOCK + LOCK ( ) to exit the adjustment mode.

HEIGHT TRIGGER

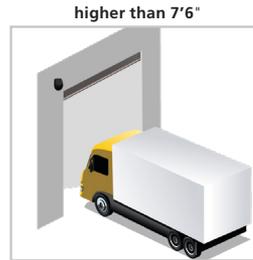
By default, all objects higher than the selected value will activate the Height Trigger. This function can also be used to partially open the door depending on the height of the object.

The Height Trigger function can be used for a door control which has a partial-open input.

- Assign Output 1, Output 2, or Relay to **Motion + Height**.
- Connect to the Full-Open input on the door control.
- Set the motion field to any object and assign the motion to an output.
- Connect to the Partial-Open input of the door control.



The door opens partially.
(motion detection)



The door opens completely.
(presence detection)

The factory default for this parameter is 7'6", but additional parameters are available by accessing the «Height Limit» parameter in the «OTHERS» menu, via LCD only – customization of this parameter is unavailable via remote control. Follow the LCD menu path to make changes:

MAIN ➔ OTHERS ➔ HEIGHT LIMIT ➔ 68.9, 78.7, **88.6**, 98.4, 108.3, 118.1, 127.9, 137.3, 157.5
(factory default is bold/underlined)

NOTE: Each of these available parameters is **higher than** XX inches. I.e. If the parameter 108.4 is chosen, the sensor will detect objects with a MINIMUM height of 108.4 inches.

SPEED TRIGGER

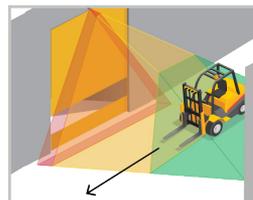
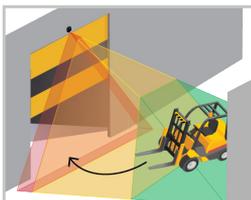
By default, all objects that move slower than the selected value will activate the output.

This function helps to trigger the door open in the case of late / slow-moving objects in close proximity to the door, and is included in the Corridor presetting.

The factory default for this parameter is less than 3 mph, but additional parameters are available by accessing the «Speed Limit» parameter in the «OTHERS» menu, via LCD only – customization of this parameter is unavailable via remote control. Follow the LCD menu path to make changes:

MAIN ➔ OTHERS ➔ SPEED LIMIT ➔ **3.1**, 6.2, 9.3, 12.4, 15.5, 18.6, 21.7, 24.8, 28, 31,
(factory default is bold/underlined)

NOTE: Each of these available parameters is **slower than** XX mph. I.e. If the parameter 15.5 is chosen, the sensor will detect objects moving at speeds SLOWER than 15.5 mph.



TEACH-IN: WALK

You can also reshape one or more detection fields by walking around the requested field (steps 1 – 3). It is possible to cut into the existing field from the border or to extract a field within the detection field (step 4).



Make sure the field is larger than desired.
The existing field size can be reduced and adapted, but cannot exceed the configured size.

1 LAUNCH A WALK TEACH-IN

Choose the desired field(s) by LCD or remote control:

	LEFT LED	
Quick Start > TeachIn > Walk All: Motion, Presence, and Safety field		
Quick Start > TeachIn > Walk Motion: Motion field only		
Quick Start > TeachIn > Walk Presence: Presence field only		
Quick Start > TeachIn > Walk Safety: Safety field only		

2 GO TO STARTING POINT

60 SEC / 5 SEC

Step away from the detection field and remove any objects (ladder, tools etc).

Go to the starting position of your detection field (see 1st picture below).

The delay after which the teach-in is launched is 60 seconds by LCD (adjustable to 30 or 120 sec via Quick Start > More > TeachInDelay). **The delay by remote control is 5 seconds.**



3 DO NOT MOVE

The sensor learns its background as long as the LED flashes red-green.



4 START WALKING

When LED flashes green, hold one arm in the air and slowly start walking the trace of the desired field shape. Then, stop and wait until LED stops flashing.



CUT-OUT				START outside of the max. detection field.
				STOP outside of the max. detection field.
EXTRACT				START anywhere in the max. detection field.
				STOP close to the starting point.

Max field
 Walk field

The teach-in was either successful or not (see TROUBLESHOOTING).



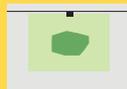
ADD TRACE / INVERT FIELD:

Using the remote control, you can add a trace of the field shape to all fields or one in particular (1, above).

You can invert each detection field (i.e. make the inactive side of the walked trace active) via LCD (Motion/Presence/Safety > More > Field inversion) or remote control (see page 10). See image to right for inversion of the field pictured above (bottom right). This feature is **only available after a walk teach-in**; standard setting will not allow for field inversion.

Always verify the field dimensions via the Field Display option on the LCD screen (Diagnostics > FieldDisplay).

To delete a trace, simply relaunch a walk teach-in and clear the respective detection zone for 15 seconds.



TROUBLESHOOTING

E1		E1: CPU-XXX	The sensor encounters an internal problem	Replace sensor.
E2		E2: XXX PWR	The internal power supply is faulty	Replace sensor
		E2: IN SUPPLY	The power supply is too low or too high	Verify power supply (Diagnostics > LCD).
		E2: TEMP	The internal temperature is too low or too high	Verify the sensor temperature (Diagnostics > LCD). Protect the sensor from direct exposure to heat or cold.
E5			The sensor requests a teach-in	Launch teach-in after angle adjustment. All presence/safety outputs are activated.
		E5: FLATNESS	Faulty teach-in	Make sure that the teach-in zone is clear of objects and then launch install teach-in.
		E5: TILT	Faulty teach-in due to tilt angle	Adjust tilt angle (max. 15° > Diagnostics > LCD). Launch install teach-in.
		E5: AZIMUTH	Faulty teach-in due to lateral angle	Adjust lateral angle (max. 45° > Diagnostics > LCD). Launch install teach-in.
		E5: HEIGHT	Faulty teach-in due to mounting height	Adjust mounting height (max. 19'6", min. 6'6"). Launch install teach-in.
		E5: TIME-OUT	Faulty teach-in	Relaunch install teach-in. Make sure that there is no motion detection during at least 5 seconds when LED starts flashing red/green. Slightly change your position and relaunch an install teach-in.
		E6		E6: FQ OUT
E8		E8: ...	Faulty detection engine	If internal temperature is lower than 68 °F, wait until the heating process is completed. If temperature is higher than -4 °F, replace the sensor.
			ORANGLE LED is on	The sensor encounters a memory problem
		LED and LCD display are off	Incorrect wiring	Check wiring. Check for damaged pins or sensor harness.
		Door does not react	Service mode is activated	Exit service mode (see page 10).
			Product does not react to remote control	Sensor is password-protected
Motion detection starts too late	Negative angle is too large		Reduce angle of the sensor.	

TECHNICAL SPECIFICATIONS

Technology	LASER scanner, time-of-flight measurement (7 laser curtains)		
Detection mode	Motion and presence		
Max. detection field	Width: 1 x mounting height Depth: 1.2 x mounting height	<i>adjustable, depending on user settings</i>	
Thickness of first curtain	¾ inch per 3 feet of mounting height		
Typ. mounting height	6'6" – 19'6"		
Min. reflectivity factor	> 2 % (of floor and object) (measured at max. 19'6" in safety field)		
Typ. min. object size	6" @ 19'6" (in proportion to object distance)		
Testbody	27 ½" x 11 ¾" x 7 ¾"		
Emission characteristics	<u>IR LASER</u> : Wavelength 905 nm, max. output pulse power 25 W, Class 1 <u>Visible LASER</u> : Wavelength 650 nm, max. output CW power 3 mW, Class 3R		
Supply voltage	12 – 24 VAC ±10%	12 – 30 VDC ±10% @ sensor terminal	
Power consumption	< 2.5 W (heating: off)	< 15 W (heating: eco or auto)	
Response time	Typ. 100 ms (max. 500 ms)		
Output	2 solid-state relays (galvanic isolation, polarity free) 30 VDC (max. switching voltage) – 100 mA (max. switching current) - in switching mode: NO/NC - in frequency mode: pulsed signal (f= 100 Hz ±10%) 1 electro-mechanic relay (galvanic isolation, polarity free) 42 VAC (max. switching voltage) – 500 mA (max. switching current)		
Input	30 VDC (max. switching voltage) low < 1 V high > 10 V (voltage threshold)		
LED signals	2 tri-colored LED: Output status / remote control response / error signals		
Dimensions	7 ¾" (H) x 6" (W) x 4" (D) (approx.)		
Material / Color	PC/ASA / Black		
Rotation angles on bracket	45° to the right, 15° to the left (lockable)		
Tilt angles on bracket	-10 – 5°		
Protection degree	NEMA 4 / IP65		
Temperature range	-22 – 140 °F		
Vibrations	< 2 G		
Norm conformity	EN 61000-6-2 EN 61000-6-3 EN 60950-1	EN 60825-1 EN ISO 13849-1 PI "d"/ CAT2 EN 62061 SIL 2	EN 61496-1 ESPE Type 2 EN 12978 EN 50581

Specifications are subject to change without prior notice. All values measured in specific conditions.

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).

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



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 General Tech Questions: Tech_Services@beainc.com | Tech Docs: www.BEAinc.com

