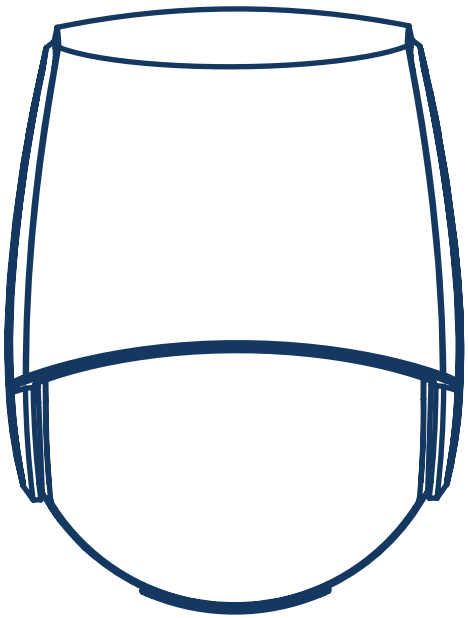
LZR®-WIDESCAN

OPENING, PRESENCE & SAFETY* SENSOR FOR INDUSTRIAL DOORS

EN

Download the LZR WIDESCAN installation app!



Bluetooth®

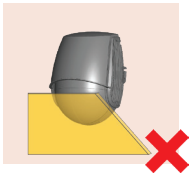
User's Guide for software version SW 0400 and higher
(refer to tracking label on product)

* please refer to page 4

A **Halma** company

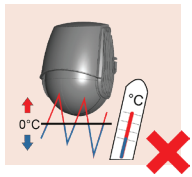
INSTALLATION & MAINTENANCE TIPS

Avoid extreme vibrations.

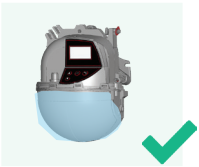


Do not cover the laser window screens.

Avoid moving objects in the detection field.



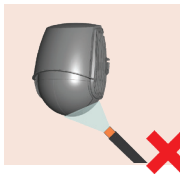
Avoid exposure to sudden and extreme temperature changes.



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

Wipe the laser window with a soft, clean and damp microfibre cloth. We recommend using optical lens cleaner.

Do not use aggressive products or dry towels to clean the optical parts.

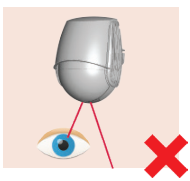


Avoid direct exposure to high pressure cleaning.

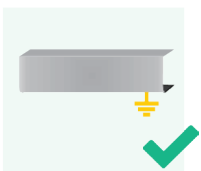
SAFETY PRECAUTIONS

The device emits invisible (IR) and visible laser radiations. The visible laser beams can be activated during the installation process to adjust precisely the position of the detection field.
The visible laser beams are inactive during normal functioning.
Do not stare directly into the visible laser beams.

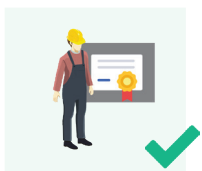
CAUTION!
Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



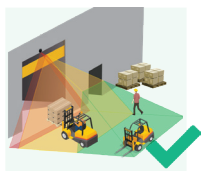
Do not stare directly into the visible laser beams.



The metal base on which the sensor is mounted, must be correctly earthed.



Only trained and qualified personnel may install and setup the sensor.



Always test the good functioning of the installation before leaving the premises.

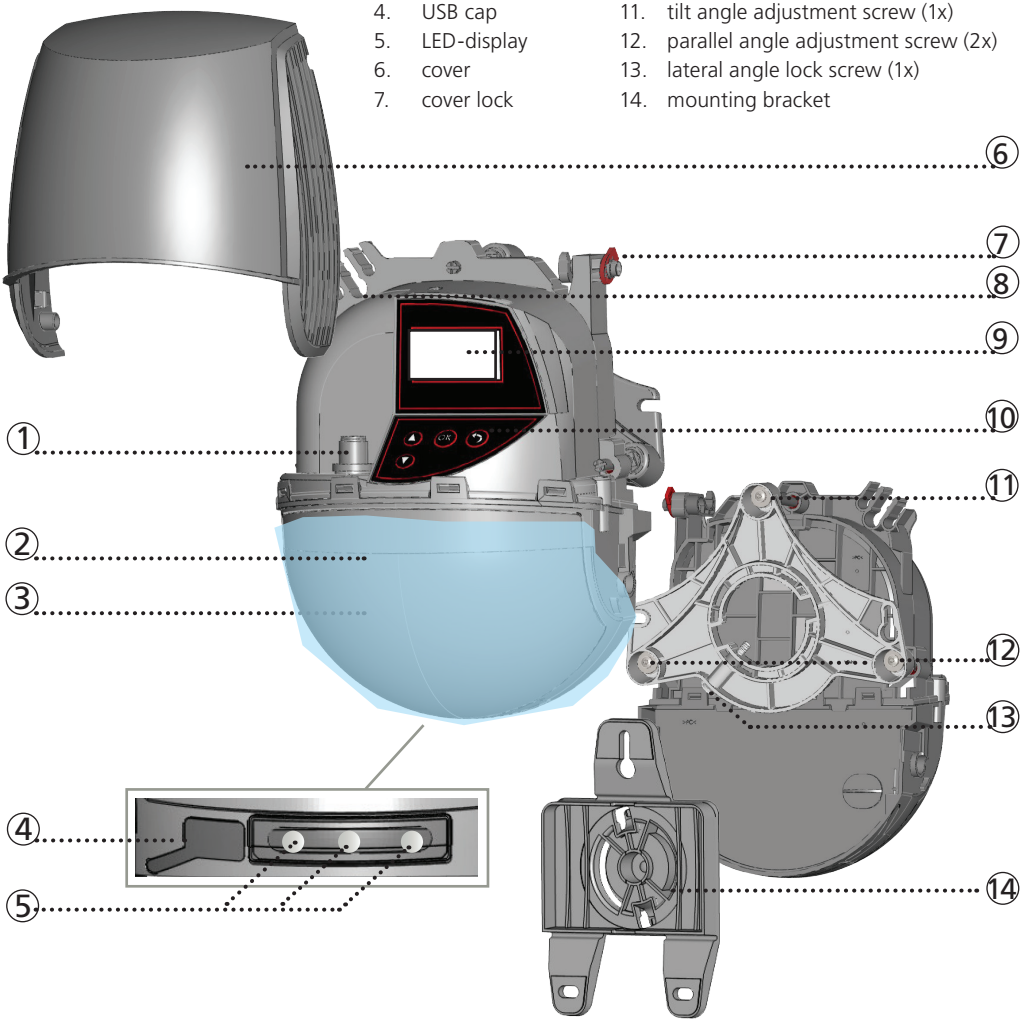
The warranty is invalid if unauthorized repairs are made or attempted by unauthorized personnel.

- The sensor cannot be used for purposes other than its intended use.
- The manufacturer of the door system incorporating the sensor is responsible for compliance of the system to applicable national and international regulations and safety standards.
- The installer must read, understand and follow the instructions given in this manual. Improper installation can result in improper sensor operation.
- The manufacturer of the sensor cannot be held responsible for injury or damage resulting from incorrect use, installation or inappropriate adjustment of the sensor.

DESCRIPTION

The LZR®-Widescan is an industrial door sensor with opening and presence features.

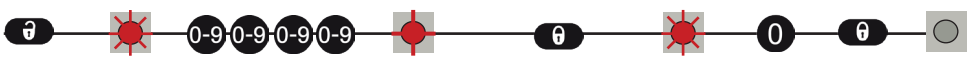
1. main connector
2. protection film
3. laser window
4. USB cap
5. LED-display
6. cover
7. cover lock
8. cable passage
9. LCD-screen
10. keypad
11. tilt angle adjustment screw (1x)
12. parallel angle adjustment screw (2x)
13. lateral angle lock screw (1x)
14. mounting bracket



HOW TO USE THE REMOTE CONTROL

To save an access code via the remote control :

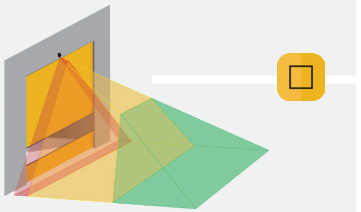
To delete an access code via the remote control :



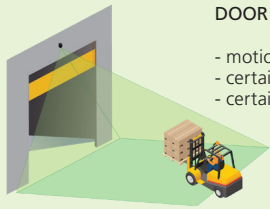
Enter the existing code

BASIC PRINCIPLES: FUNCTIONS & OBJECT

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



MOTION



DOOR OPENS IF:

- motion in motion field
- certain object type
- certain direction

PRESENCE

DOOR DOES NOT CLOSE IF:

- presence in presence field
- certain object type

SAFETY *

DOOR DOES NOT CLOSE IF:

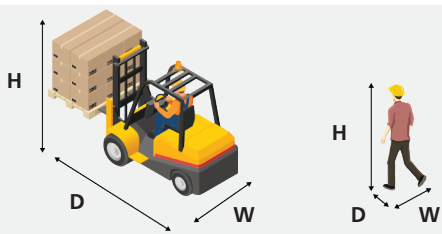
- presence in safety field

* The detection characteristics in this field increase the comfort of door users and the protection of equipment. These characteristics allow for additional safety but the sensor is not a sensitive protective equipment providing protection of persons according to safety standards. For a full featured safety solution, please look at other option(s) in BEA's catalogue or contact BEA.

There are 4 additional functions. All detection functions can be combined to trigger a specific output (see output functions on page 16).

- Motion +: assignation of an other moving object type for the motion field
- Virtual pull cord: detection of an object standing still in a learned pull cord zone
- Speed: detection of an object moving below a defined speed
- Height: presence detection of an object exceeding a defined height

The sensor carries out a 3D-object analysis and detects depending on the following characteristics: height, width & depth.



LED-SIGNAL

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

SETTINGS in IR Remote Session

All fields
Motion field
Pull cord
Presence field
Safety field

DETECTION

Motion detection
Pull cord detection
Presence detection
Safety detection

GENERAL

Remote control session
Teach-in status
Troubleshooting
No smartphone connected
Smartphone connected

SYMBOLS

Factory value | Important! | Good to know

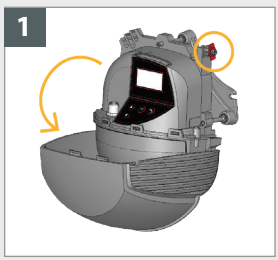
MAIN FUNCTIONS: Motion, Presence, Safety

ADDITIONAL FUNCTIONS: Motion +, Pullcord, Speed, Height

OPENING & CLOSING THE SENSOR

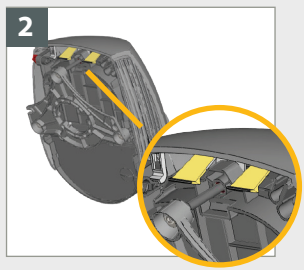
OPENING THE SENSOR

1



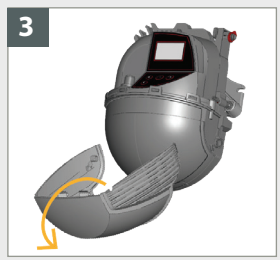
Before opening the sensor, make sure the cover is **not locked** (red cover lock).

2



To open the top cover, pull both flags while tilting the cover away from its initial position.

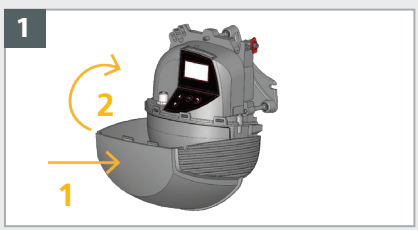
3



If needed, remove the cover completely before installing the sensor.

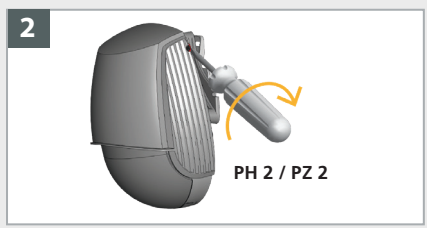
CLOSING THE SENSOR

1



1. Slightly spread the cover and clip it **horizontally**.
2. Close the cover.

2



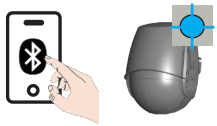
Lock the cover by turning the lock screw clockwise.

HOW TO ADJUST THE SENSOR BY MOBILE APP

1. Download the LZR WIDESCAN installation app.

2. Activate Bluetooth (BLE)

At power ON or after a power cycle (ON->OFF->ON), the BLE is activated for 30 min and the BLE LED is flashing blue.



Make sure that the bluetooth is activated on your smartphone and that the BLE LED is flashing blue.

Open the Widescan mobile app and connect to the sensor. Once paired, the BLE LED becomes solid blue.

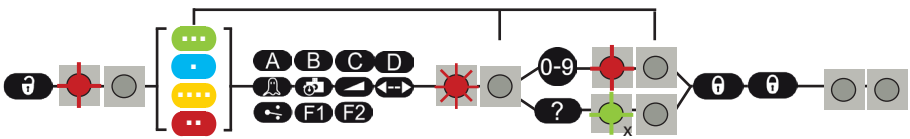
There are different ways to activate BLE please refer to the addendum in the box or call BEA technical support.

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, **cut and restore the power supply**. During 1 minute, you can access the sensor without any code.

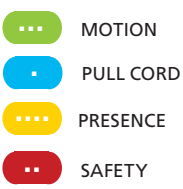
To end an adjustment session, always lock the sensor.

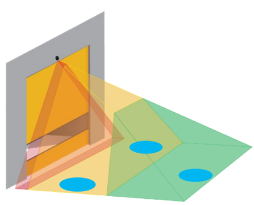


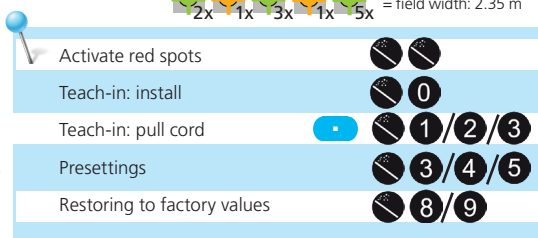
If necessary, select first the corresponding detection field before pushing on the parameter and changing the value. The second LED indicates the detection field.

x = number of flashes = value of the parameter

= field width: 2.35 m



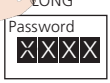




HOW TO ADJUST THE SENSOR BY LCD

Activate red spots on floor.

Launch CENTRE TOOL for correct positioning of detection field (see p. 8).

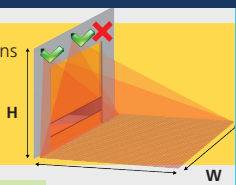


Enter a **Password** if necessary.
«Specific» menu password: 1234

1a MOUNTING & WIRING

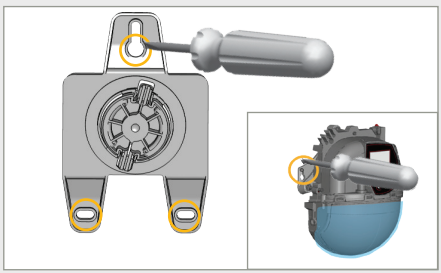
Mounting height: as high as possible in acc. to the limitations in the Technical specifications
The size of the detection field depends on the mounting height.

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

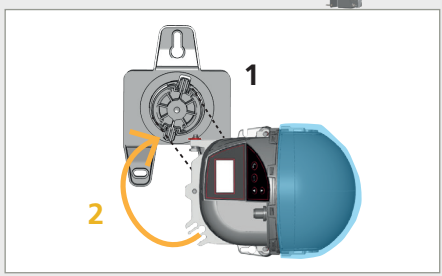


Mount the sensor securely. Cabling must be installed according to good practice to prevent mechanical damage.

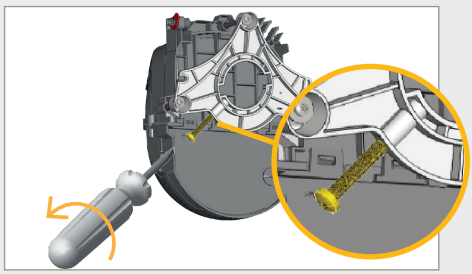
The UNIVERSAL MOUNTING BRACKET can be used if the environment requires it.



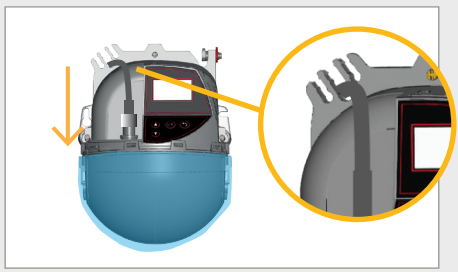
Screw the mounting bracket on the wall. You can also install the sensor directly without using the mounting bracket.



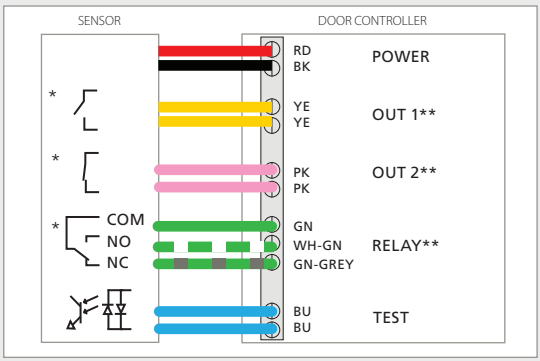
Position the sensor on the mounting bracket and turn as shown to click into place.



Unscrew the angle lock screw if necessary.



Plug the connector and pass the cable through the cable passage without making a loop.



Connect the wires.
* Depending on OUTPUT CONFIGURATION settings.
**The output logic and functions can be configured if necessary, see p. 16.

1b POSITIONING OF DETECTION FIELD

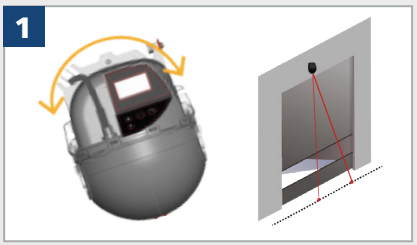
First of all, remove the blue protection film from the laser window.

Follow the steps below depending on how the sensor is mounted on the door :
A. if the sensor is mounted in the center of the door
B. if the sensor is mounted on the left or right side of the door *

***Note that right side mounting could alter the performance of the motion detection.**

A. IF THE SENSOR IS MOUNTED IN THE CENTER OF THE DOOR

PARALLEL ANGLE

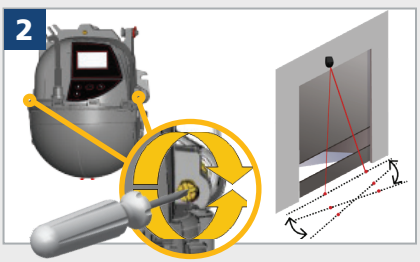


Rotate the sensor in order to align the centre of the red spots with the centre of the door.

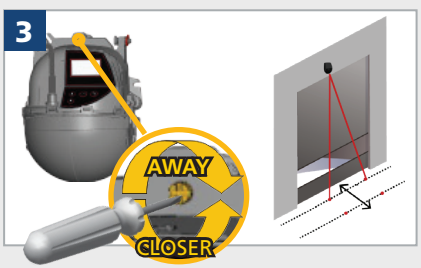
To activate red spots :

- Press 2x OK (product keypad)
- Press 2x (IR remote control)
- Mobile app.

TILT ANGLE

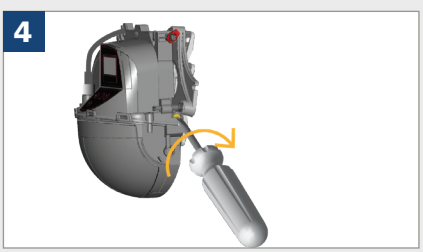


Make sure the curtain is **parallel** to the door by adjusting one or both screws on the side.



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

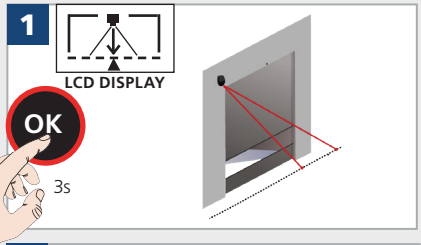
LOCK THE SENSOR



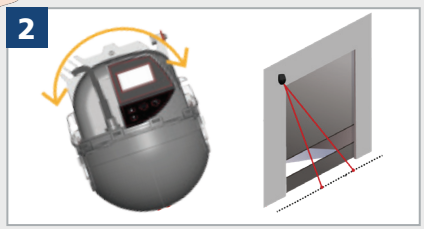
Carefully lock the sensor position by firmly fastening the angle lock screw. Make sure the red spots have not moved.

B. IF THE SENSOR IS MOUNTED ON THE LEFT (OR RIGHT) SIDE

PARALLEL ANGLE

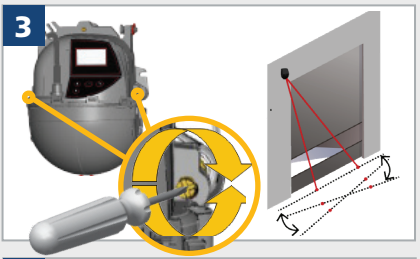


Push long on OK to enter the CENTRE-TOOL and activate the visible spots.

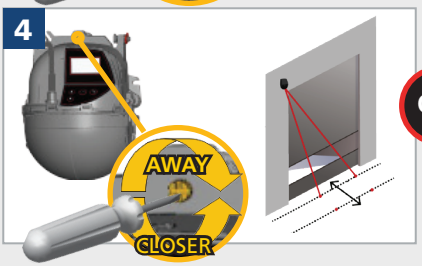


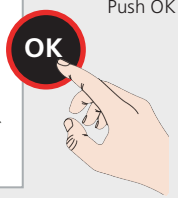
Rotate the sensor in order to align the centre of the red spots with the centre of the door.

TILT ANGLE



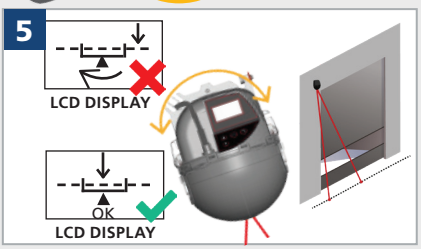
Make sure the curtain is **parallel** to the door by adjusting one or both screws on the side.





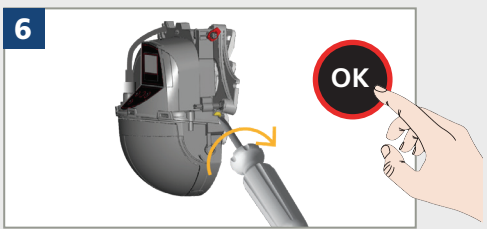
Position the curtain **closer to or further away** from the door by turning the screw at the top.
Push OK to confirm.

LATERAL ANGLE



Look at the CENTER-TOOL on the LCD display. Rotate the sensor until both arrows on the LCD screen are aligned.
The visible spots must now be off-center for the detection field to cover the whole door symmetrically !

LOCK THE SENSOR

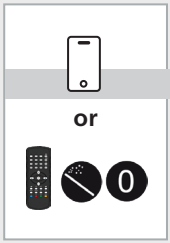


Carefully lock the sensor position by firmly fastening the angle lock screw. Make sure the red spots have not moved.
Push OK to exit and deactivate the visible spots.

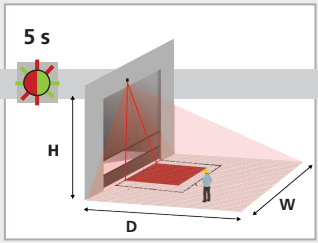
2a TEACH-IN: INSTALL

Mandatory teach-in is used for the sensor to learn its position in space.
Teach-in can be launched by smartphone or by remote control.

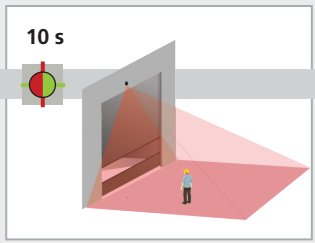
- Make sure the blue protection film is removed and the sensor is closed!
- Make sure the laser window is free from dust and/or water drops.
- The teach-in zone (square in front of the 2 visible spots) must be empty and even. If not, see troubleshooting.
- This teach-in must be launched each time a sensor's position/orientation has been changed.



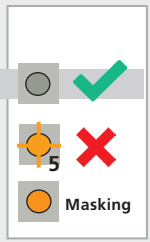
Launch a teach-in by smartphone or by remote control



The teach-in starts after 5 seconds. The teach-in zone must be empty and even!



Wait while position, angle and height are learned and the background is analysed.



The teach-in is finished. If not ok, see the following note.

Teach-in left and right (Advanced)

Left
Right

If standard teach-in cannot be performed because the centered area is not cleared, left or right teach-in can be launched if one of those area is cleared.

2b TEACH-IN: BACKGROUND

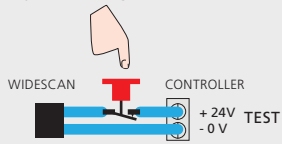
Background teach-in can be launched :

Background teach-in takes a new reference to make sure it fits a new environment in case the conditions have changed.

by using LCD

Quick start -> Teach-in -> Background

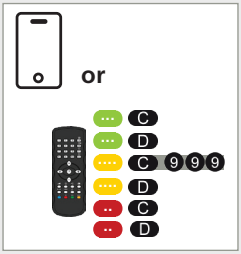
by activating test input



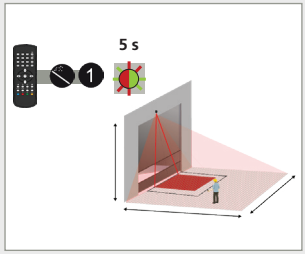
TIP: Add a push button in serie with the test line (24VDC). Pushing this button during 3 sec (cuts supply of input) launches a background teaching.

2c TEACH-IN: WALK

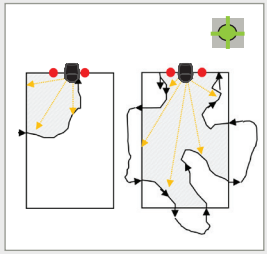
The Walk teach-in is used to re-shape all or a dedicated detection field.



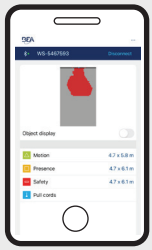
For maximum of efficiency to the walk teach-in, it is recommended to maximize the detection fields using the app or remote control.



Launch with remote control or LCD. The teach-in starts after 5 seconds once performed on the remote control (60s if LCD). Ideally and when possible, start outside the scanning area.



Some examples of walk teach-in. TIPS : Start the walk teach-in when the LED is flashing green. Walk slowly. Never start or walk too close from door center. Finish tracing outside the scanning area.

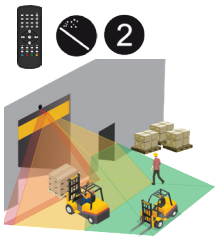


If possible check that the re-shaped field is correctly done by using the mobile app viewer.

3 PRESETTINGS

Choose one of the following presettings. They adjust a number of parameters automatically according to your application. If necessary, you can also adjust a parameter independently via remote control (see p. 12).
(**Bold** = differs from factory settings)

1 STADARD



- open space
- traffic from and to all directions
- storage right and/or left

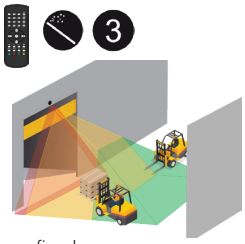
△ field width: max, field stop: max
object type: **vehicle**
direction: **uni CTR +**

□ field width: max, field stop: 3 m
object type: **vehicle**
max presence time: 30 min

▭ field width: max, field stop: 0.4 m (infinite detection for objects > 25 cm)

OUT1	motion or pull cord
OUT2	presence or safety
REL	presence + height

2 CORRIDOR



- confined space
- traffic from and to all directions
- no storage

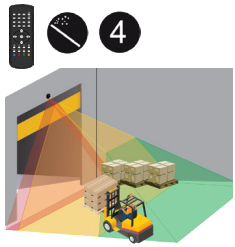
△ field width: max, field stop: max
object type: **vehicle**
direction: uni CTR

□ field width: max, field stop: **2 m**
object type: **vehicle**
max presence time: **infinite**

▭ field width: max, field stop: 0.4 m (infinite detection for objects > 25 cm)

OUT1	motion or pull cord or **safety**
OUT2	presence or safety
REL	**speed trigger**

3 CORNER



- corner
- no parallel traffic
- storage right and/or left

△ field width: max, field stop: max
object type: **vehicle**
direction: **uni**

□ field width: max, field stop: 3 m
object type: **vehicle**
max presence time: 30 min

▭ field width: max, field stop: 0.4m (infinite detection for objects > 25 cm)

OUT1	motion or pull cord or **presence**
OUT2	presence or safety
REL	presence + height

OVERVIEW OF REMOTE CONTROL SETTINGS (OPTIONAL)

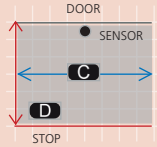
	0	1	2	3	4	5	6	7	8	9
Teach-in	install	walk teach-in								
Presettings			STD	corridor	corner					
Service Mode	The service mode deactivates the 3 outputs during 15 minutes while keeping external monitoring functional. Exit the service mode by using the same sequence.									
Factory Reset			**full**: complete reset of all values **partial**: reset of all values except IN/OUT						full	partial
Red spots	Activates the red spots on the floor. The spots stay active during 15 minutes or can be switched off the same way.									

SAFETY

Teach-in	walk teach-in								
C Field width	000 - 999 cm					999 cm			
D Field depth (stop)	000 - 999 cm					040 cm			
Immunity	1	2	3	4	5				
F2 Uncovered zone	5 cm	10 cm	15 cm	25 cm	35 cm	50 cm	75 cm	100 cm	125 cm

The max. reachable dimensions will automatically adapt acc. to mounting conditions

The «5 cm» value must only be used in a super clean environnement



PULL CORD

Teach-in	# 1	# 2	# 3						
Object type	pedes-trian					vehicle (WH)	vehicle	any	
Min. presence time	0 s	1 s	2 s	3 s	4 s	5 s	6 s	7 s	8 s	stop
Max. presence time	30 s	1 min	2 min	5 min	10 min	30 min	60 min	120 min	infinite	

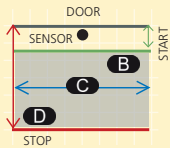
pedestrian: detects pedestrians only
vehicle XL: detects large vehicles; rejects bicycles & narrow forklifts
vehicle: detects all types of vehicles; rejects pedestrians
any: detects all objects

PRESENCE

Teach-in	walk teach-in								
C Field width	000 - 999 cm					999 cm			
D Field stop	000 - 999 cm					300 cm			
B Field start	000 - 999 cm					000 cm			
Object type	**vehicle XL :** detects large vehicles; rejects bicycles & narrow forklifts **vehicle**: detects all types of vehicles; rejects pedestrians **any**: detects all objects							vehicle XL	vehicle	any
Immunity	1	2	3	4	5					
Max presence time	30 s	1 min	2 min	5 min	10 min	30 min	60 min	120 min	infinite	

The max. reachable dimensions will automatically adapt acc. to mounting conditions

000 cm = red spots' position



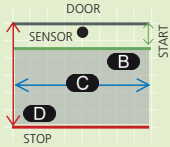
MOTION

Teach-in	walk teach-in								
C Field width	000 - 999 cm					999 cm			
D Field stop	000 - 999 cm					999 cm			
B Field start	000 - 999 cm					000 cm			
Object type	**vehicle XL:** detects large vehicles; rejects bicycles & narrow forklifts **vehicle**: detects all types of vehicles; rejects pedestrians **any**: detects all objects							vehicle XL	vehicle	any
Direction		bi	uni CTR				away	uni CTR+		uni
Immunity		1	2	3	4					

The max. reachable dimensions will automatically adapt acc. to mounting conditions

000 cm = red spots' position

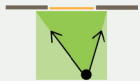
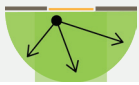
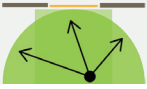
CTR: cross traffic rejection



MOTION (ADVANCED SETTINGS)

DIRECTION ...

1	2	6	7	9
bi	uni CTR	uni INV	uni CTR+	uni

1	BI		bidirectional detection approaching and going away
2	UNI CTR (100%)		unidirectional detection approaching with cross traffic rejection
6	AWAY		unidirectional detection with inversion only going away
7	UNI CTR + (100% +)		unidirectional detection approaching with cross traffic rejection + 1 m in front of door : bidirectional detection without cross traffic rejection
9	UNI		unidirectional detection approaching in any direction (distance between object and sensor decreases)

OVERVIEW OF REMOTE CONTROL SETTINGS (OPTIONAL)

	0	1	2	3	4	5	6	7	8	9
F1 Out 1 Function	no change	motion	mot or pull	mot or pull or safe	mot or pull or pres	pull cord	motion+	motion+ & height	motion+ & speed	
F1 Out 2 Function	no change	presence	safety	pres or safety	presence & height					
F1 Relay Function	no change	motion	pull cord	presence	safety	motion+	height	speed	pres & height	pres or safety
Out 1 Logic*	no change			NO	NC	freq 100 Hz**				
Out 2 Logic*	no change			NO	NC	PWM	PWM : Pulse Width Modulation			
Relay Logic*	no change	passive	active							
Out 1 Holdtime	100 ms	1 s	3 s	5 s	10 s	30 s	1 min	5 min	10 min	counting
Out 2 Holdtime	100 ms	1 s	3 s	5 s	10 s	30 s	1 min	5 min	10 min	counting
Relay Holdtime	100 ms	1 s	3 s	5 s	10 s	30 s	1 min	5 min	10 min	counting

Entering 0 keeps the value unchanged.

OUT1	OUT2	REL
F1	1	0	6
	4	0	1
	1	1	3

Always enter 3 digits for output parameters:

- 1st digit refers to output 1
- 2nd to output 2
- 3rd to the relay

See p. 16 for more info on output functions.

Counting : 400 ms

FACTORY VALUES

* output status when in non detection

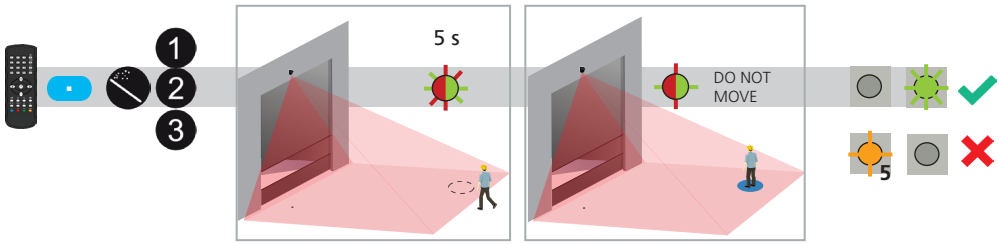
** during non-detection

VIRTUAL PULL CORD

The door only opens when an object is detected in one of the three virtual pull cord zones during the chosen min. presence time (factory value : 2 seconds).

In order to use this function:
- the sensor must know its environment: teach-in install is OK.
- the corresponding wires must be connected to the door activation input (out 1 by default)
- the output or relay function must be set to motion or pull cord (factory value) or pull cord.

To create a virtual pullcord:



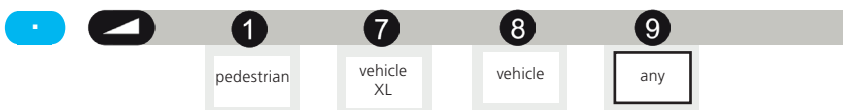
	GO TO POSITION	DO NOT MOVE	
Launch a pull cord teach-in by remote control. You can create 3 different pull cords in the scanned area.	Go to the position where you want to activate the door by a virtual pull cord. The LED quickly flashes red-green during 5 seconds.	The learning process starts, please do not move. The LED slowly flashes red-green.	The teach-in process is finalized. The LED quickly flashes green or is out. If flashing orange see troubleshooting.

⚠ Make sure there is nothing in the scanned area !

If the LED flashes green, stop moving.

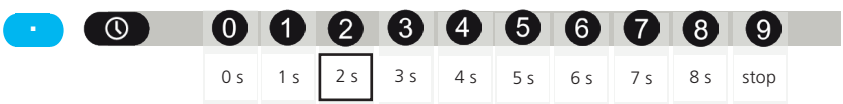
By remote control you can choose the object type and its minimum presence time to activate the door:

OBJECT TYPE



pedestrian: detects pedestrians only
vehicle XL: detects large vehicles; rejects bicycles & narrow forklifts
vehicle: detects all types of vehicles; rejects pedestrians
any: detects all objects

MIN. PRESENCE TIME*
* before activation should stand at least min presence time selected (default 2s).



0 s: immediate activation
stop: only a complete stop of the object activates the door

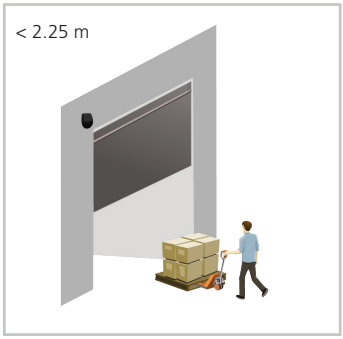
The maximum presence time for the pull cord function is the same as the one defined for the presence function.

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:

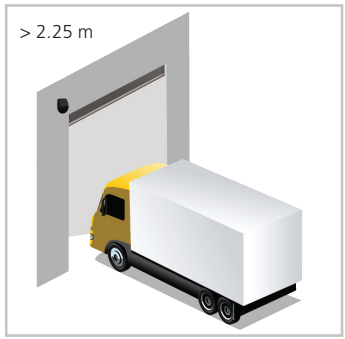
HEIGHT TRIGGER

All objects higher than 2.25 m will activate the selected output.

This option is typically used to open the door completely or partially depending on the height of the object.
The wiring and logic of the output configuration are related to the door controller.



The door opens partially
(motion detection - out 1)



The door opens completely
(height detection - relay)

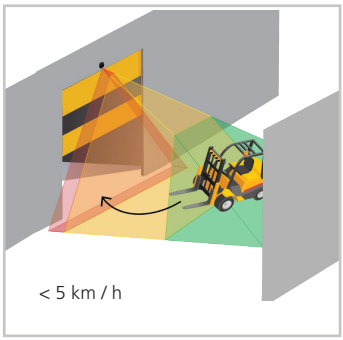
You can adjust the minimum height limit via LCD: Others > Height min. (1.75 - 4 m).

The maximum presence time for the height function is the same as the one defined for the presence function.

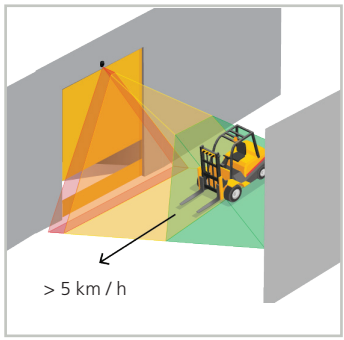
SPEED TRIGGER

All objects moving slower than 5 km/h will activate the selected output.

This option is typically used in confined areas with no frontal traffic and is included in the presetting «corridor».



The door opens.



The door stays closed.

You can adjust the maximum speed limit via LCD: Others > Speed max. (5 - 50km/h).

FACTORY VALUES

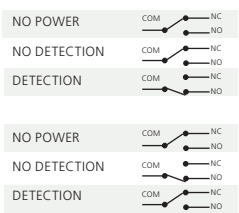
OUT 1 — DOOR ACTIVATION FUNCTIONS

1	Motion
2	Motion or pull cord
3	Motion or pull cord or safety
4	Motion or pull cord or presence
5	Pull cord
6	Motion +
7	Motion + and height
8	Motion + and speed
9	Presence and motion +

OUT 2 — PROTECTION FUNCTIONS

1	Presence
2	Safety
3	Presence or safety
4	Presence and height
5	Presence and motion +

RELAY — ADDITIONAL FUNCTIONS (OPTIONAL)



1	Motion
2	Pull cord
3	Presence
4	Safety
5	Motion +
6	Height
7	Speed
8	Presence and height
9	Presence or safety

Example : F1

OUT 1	OUT 2	RELAY
5 pull cord	2 safety	0 no change
1 motion	0 no change	7 speed

FACTORY VALUES

E1 1	E1: CPU-XXX	The sensor encounters an internal problem.	!	Replace sensor.
E2 2	E2: XXX PWR	The internal power supply is faulty.	!	Replace sensor.
	E2: IN SUPPLY	The power supply is too low or too high.	1	Verify power supply > Diagnostics - LCD.
	E2: TEMP	The internal temperature is too low or too high.	1 2	Verify the sensor temperature > Diagnostics - LCD. Protect the sensor from direct exposure to heat or cold.
E4 4	E4: FRONT MASKING door remains open for 5 min. at each opening	The sensor might be blinded	1 2	Clean the front face Remove masking object
E5 5		The sensor requests a teach-in.	1 2	Launch teach-in after angle adjustment. All presence/safety-outputs are activated.
	E5: FLATNESS	Faulty teach-in.	1 2 3	Make sure the teach-in zone is empty and even. Launch install teach-in: 0 If zone is clear on the left, select: F1 If zone is clear on the right, select: F2
	E5: TILT	Faulty teach-in because of tilt angle.	1 2	Adjust tilt angle (max. 15° > Diagnostics - LCD). Launch install teach-in.
	E5: AZIMUTH	Faulty teach-in because of lateral angle.	1 2	Adjust lateral angle (max. 45° > Diagnostics - LCD) Launch install teach-in.
	E5: HEIGHT	Faulty teach-in because of mounting height.	1 2	Adjust mounting height (max. 6 m, min. 2 m) Launch install teach-in.
	E5: TIME-OUT	Faulty teach-in because of movement in the detection field.	1 2	Launch install teach-in. Make sure there is no motion detection during at least 5 seconds when the LED starts flashing red-green. Slightly change your position and relaunch install teach-in.
	E5: TEACH-IN REMINDER		1	Push OK (LCD) to return to detection display.
E6 6	E6: FQ OUT	Faulty sensor output 1.	!	Replace sensor.
E8 8	E8: ERROR NAME	Critical error	!	The sensor must be repaired.
	E8: MOTOR		1 2 3	If the temperature is negative, set heating to "AUTO". Restart the sensor. Auto Warmup will start for right startup.
	ORANGE LED is on.	The sensor encounters a memory problem	!	Replace sensor.
	ORANGE LED is on during 3 sec. (masking)	Sensor placed in a corner and perpendicular to a wall	1	Tilt the sensor to shift the detection field
		Masking: obstacle high up in front of the door	2	Reduce the number of curtains by LCD (Quick start > More > Nb curtains).
	The LED and the LCD-display are off.		1	Check wiring. Check pinning and connection on sensor side.
	The door does not react.	The service mode is activated.	1	Exit the service mode (see p. 12)
	The product does not react to the remote control.	The sensor is protected by a password.	1	Enter the right password. If you forgot the code, cut and restore the power supply to access the sensor without entering a password during 1min.
	The motion detection starts too late.	The sensor has a big negative angle.	1	Reduce the angle of the sensor.

TECHNICAL SPECIFICATIONS

Technology	LASER scanner, time-of-flight measurement (7 laser curtains)
Detection mode	Motion, presence, height and speed
Detection field	Width: 1 x mounting height; Depth: 1 x mounting height (minimum)
Thickness of first curtain	0.5 cm / m (mounting height)
Mounting height	2 m to 10 m
Min. reflectivity factor	> 2 % (of floor and object) (measured at max. 6 m in safety field)
Min. object size	70 cm x 30 cm x 20 cm
Optical characteristics IEC/EN 60825-1	IR LASER: Wavelength 905 nm; output power <0.1 mW; Class 1 Visible LASER: Wavelength 635 nm; output power <1 mW; Class 2
Bluetooth® communication	Operating bandwidth: 2402 MHz – 2480 MHz Maximum transmitted power: 12 dBm
Supply voltage*	12V AC (-10%) - 24V AC (+10%) (50-60Hz) ; 12V DC (-10%) - 30V DC @sensor terminal (Supply current should be max 1.5A)
Power consumption	heating off: < 2.5 W heating auto: typ. < 10 W, max. 15 W
Response time	Typ. 230 ms; max. 800 ms (depending on immunity settings)
Output*	2 solid-state relays (galvanic isolation - polarity free) 24V AC / 30V DC (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) 30V AC / 42V DC (max. switching voltage) - 500 mA (max. switching current)
Test input*	30V DC (max. switching voltage) - low > 1V, high > 10V (voltage threshold)
LED-signals	3 coloured LEDs
Dimensions	159 mm (H) x 208 mm (W) x 127 mm (D)
Material / Colour	PC/ASA / Black
Rotation angles on bracket	45° to the right, 15° to the left (lockable)
Tilt angles on bracket	-10° to +5°
Protection degree	IP65 (IEC / EN 60529)
Temperature range	-30 °C to +60 °C

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

*External electrical sources must ensure double insulation from primary voltages.

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BEA hereby declares that this product is in compliance with European Directives : 2014/53/EU (RED), 2011/65/EU (RoHS).
The complete declaration of conformity is available on our website.

This product should be disposed of separately from unsorted municipal waste.