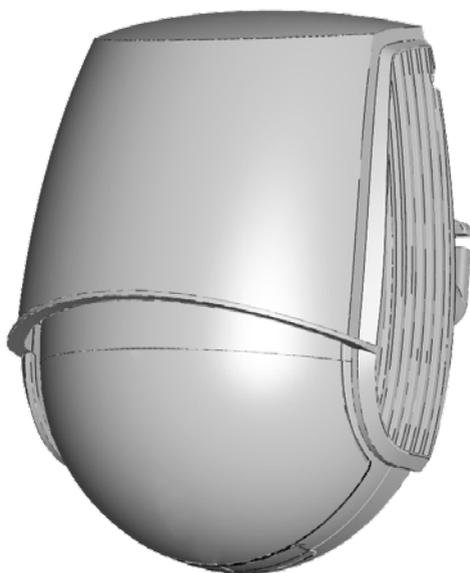


LZR[®]-WIDESCAN

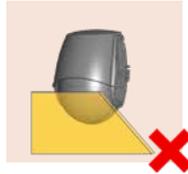
OPENING, PRESENCE
& SAFETY SENSOR
FOR INDUSTRIAL DOORS



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 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.

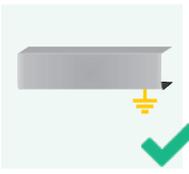


CAUTION!

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 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.

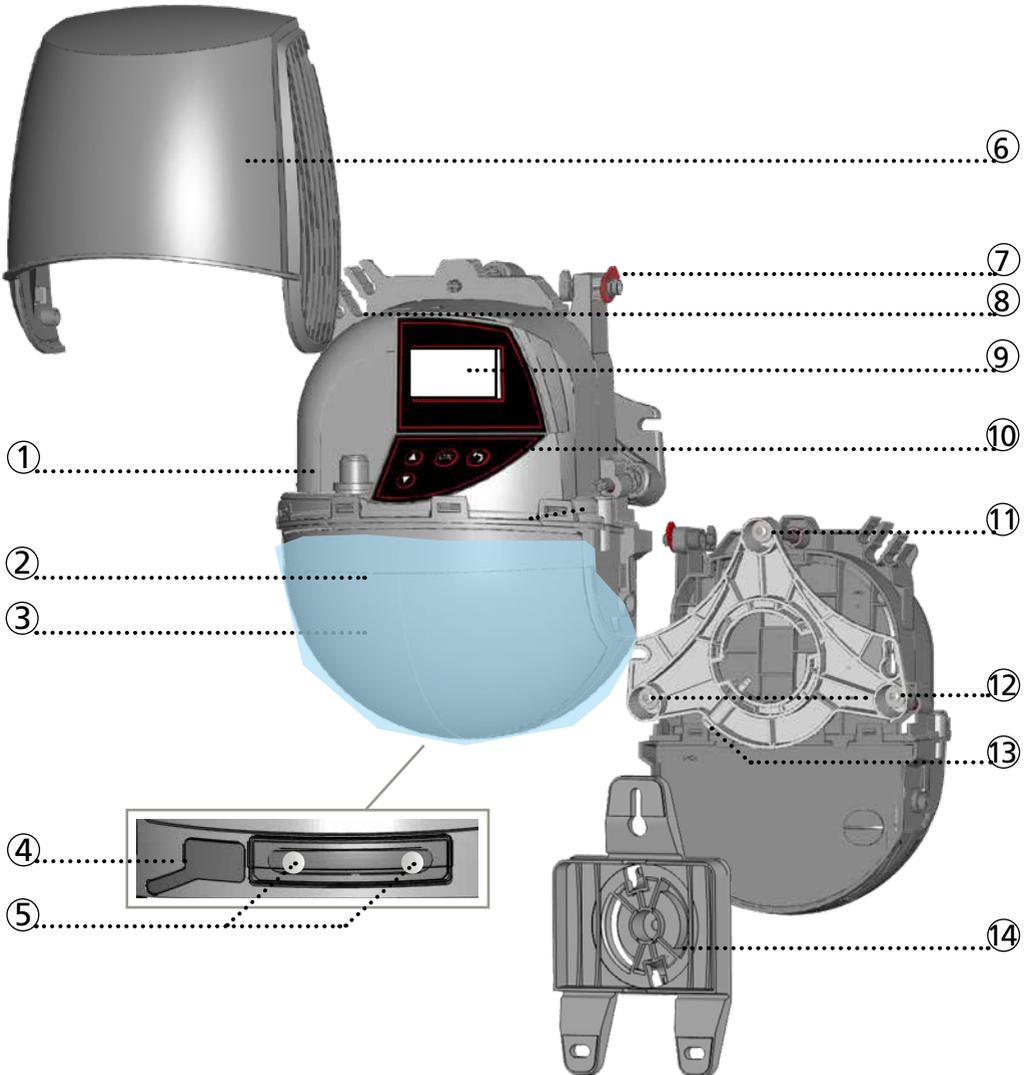


The warranty is invalid if unauthorized repairs are made or attempted by unauthorized personnel.



- The device cannot be used for purposes other than its intended use. All other uses cannot be guaranteed by the manufacturer of the sensor.
- The manufacturer of the door system is responsible for carrying out a risk assessment and installing the sensor and the door system in compliance with applicable national and international regulations and standards on door safety.
- The manufacturer of the sensor cannot be held responsible for incorrect installations or inappropriate adjustments of the sensor.

DESCRIPTION

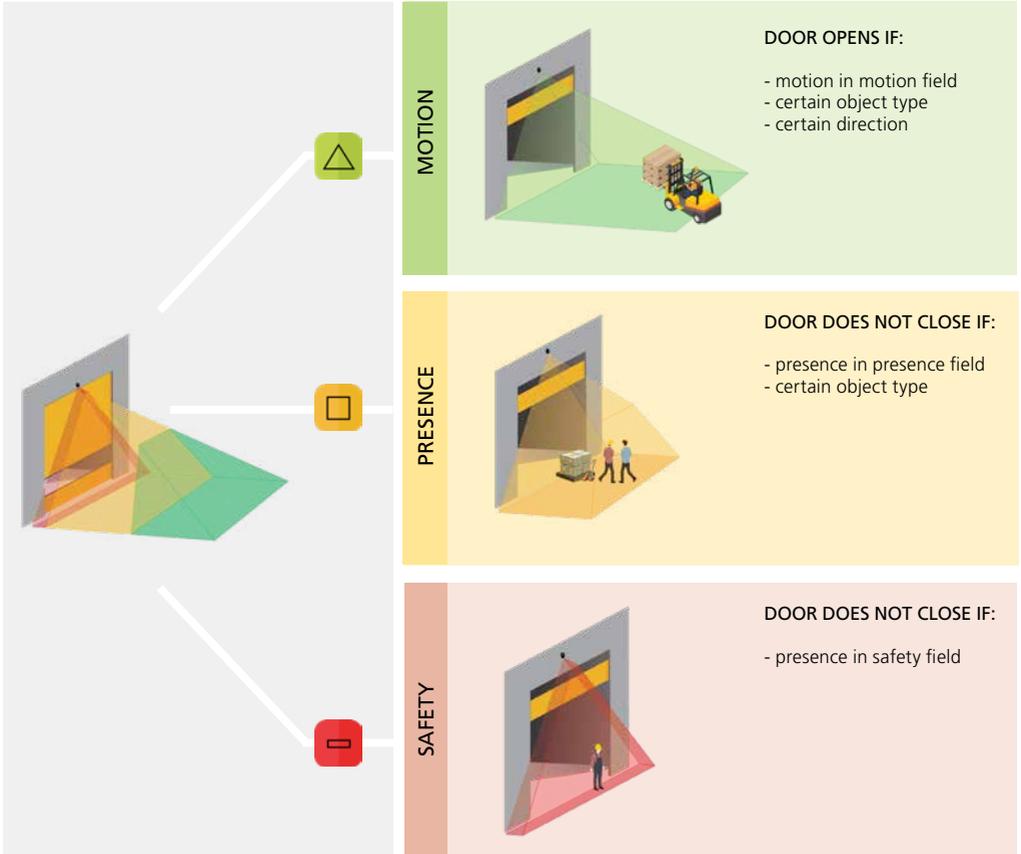


1. main connector
2. protection film
3. laser window
4. USB cap
5. LED-display
6. cover
7. cover lock

8. cable passage
9. LCD-screen
10. keypad
11. tilt angle adjustment screw (1)
12. parallel angle adjustment screw (2)
13. lateral angle lock screw (1)
14. mounting bracket

BASIC PRINCIPLES: FUNCTIONS & OBJECT

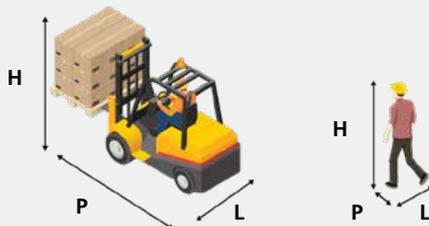
There are 3 main functions that create **3 overlapping detection fields** with certain detection characteristics each:



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

-  Motion +: detection of other object type than defined in 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: detection of a moving object which is above a defined height

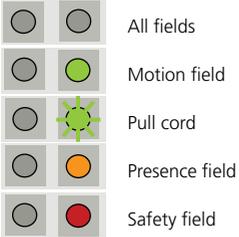
The sensor carries out a 3D-object analysis and detects depending on the following characteristics: height, width & depth.



LED-SIGNAL



SETTINGS



DETECTION



SYMBOLS



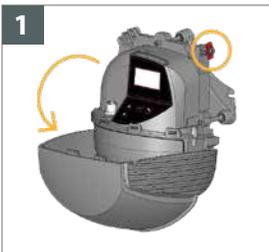
MAIN FUNCTIONS:



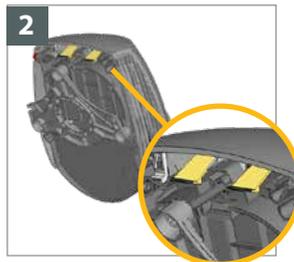
ADDITIONAL FUNCTIONS:



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.



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

HOW TO ADJUST THE SENSOR BY REMOTE CONTROL



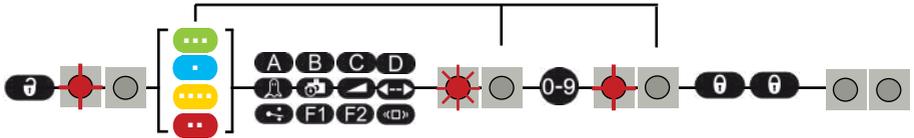
After unlocking, the red LED flashes and the sensor can be adjusted by remote control.



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.

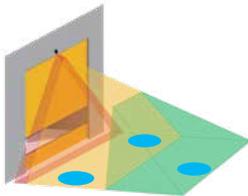


To end an adjustment session, always lock the sensor.



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

- MOTION
- PULL CORD
- PRESENCE
- SAFETY



	Activate red spots	
	Teach-in: install	
	Teach-in: pull cord	
	Presettings	
	Restoring to factory values	

HOW TO ADJUST THE SENSOR BY LCD



SHORT

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

2X

Activate red spots on floor.

LONG

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



Select to return to previous menu or display.



Scroll up or down the menu items or values.



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



Enter a **Password** if necessary.



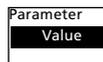
Select **More** to access advanced adjustments.



Select **Diagnostics** to go to the diagnostics menu



Displayed value = factory value



Displayed value = saved value

1a MOUNTING & WIRING



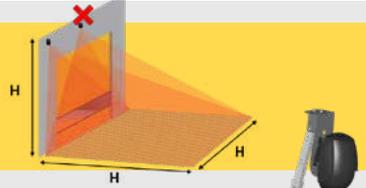
Mounting height: **as high as possible**

Max. 6 m for optimal safety detection.

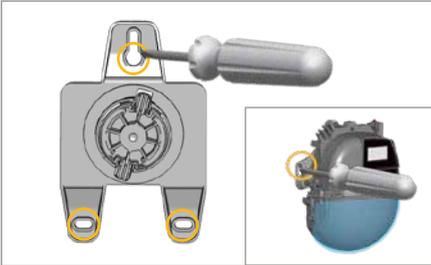
The size of the detection field depends on the mounting height.

Mounting position: **centre of door or left corner.**

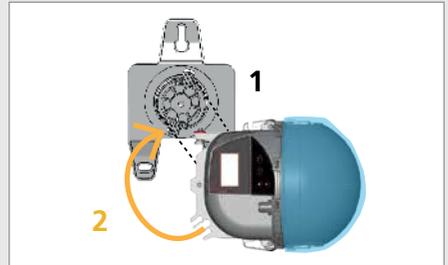
Mounting on the right side of the door should be avoided.



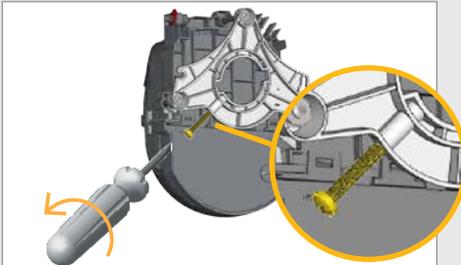
The UNIVERSAL MOUNTING BRACKET can be used if the environment requires it.



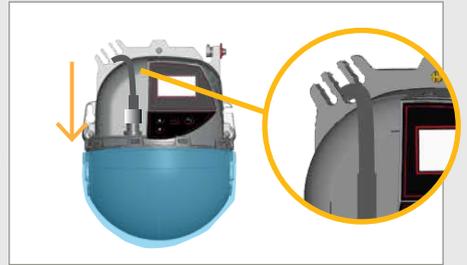
Screw the mounting bracket on the wall. You can also install the sensor directly without using the mounting bracket.



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.

		GN	POWER	
		BN		
OUT 1 *		WH	OPENING	
		YE		
OUT 2 *		PK	PRESENCE OR SAFETY	
		VT		
RELAY		YE-BK	OPTIONAL	
		WH-BK		
		BK		
		RD	TEST**	FACTORY VALUES
		BU		



Teach-in reminder



Push OK to return to detection display.

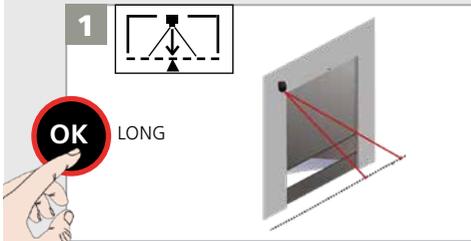
Connect the wires. The output functions can be configured if necessary, see p. 17.

* output status when sensor is powered during non-detection with factory values

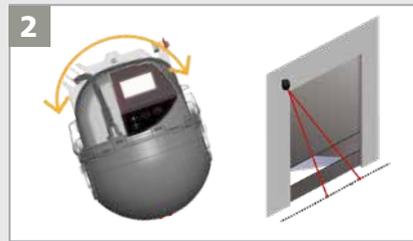
** only output 2 is tested

1b POSITIONING OF DETECTION FIELD

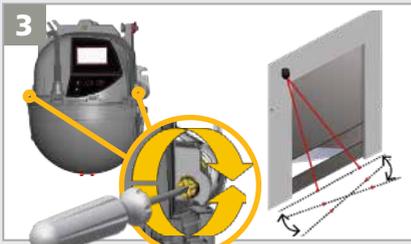
Remove the blue protection film from the laser window.



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



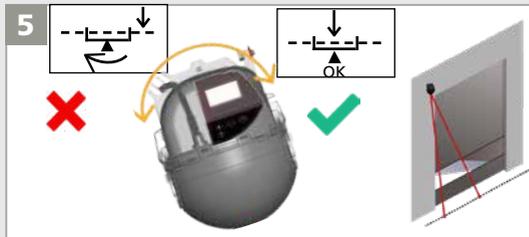
Rotate the sensor in order to align the centre of the red spots with the centre of the door.



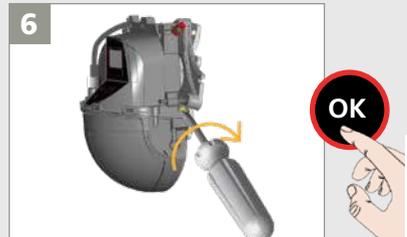
Make sure the curtain is **parallel** to the door by adjusting one or both screws on the side.



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

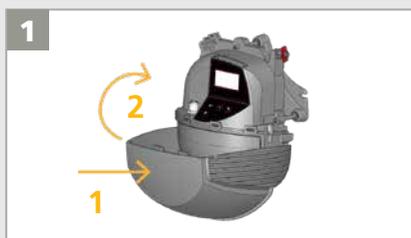


Rotate the sensor in order to align the centre of the detection field with the centre of the door using the LCD-screen. When the sensor is in the centre of the door, the position is OK.

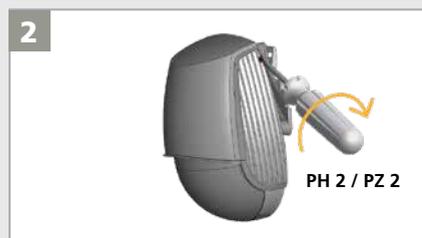


Carefully lock the sensor position by firmly fastening the angle lock screw. Make sure the red spots have not moved. Push OK to exit and deactivate the visible spots.

1c CLOSING THE SENSOR



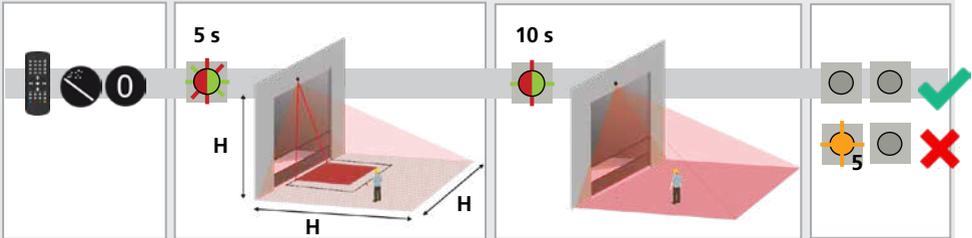
1. Slightly spread the cover and clip it **horizontally**.
2. Close the cover.



Lock the cover by turning the lock screw clockwise.

2 TEACH-IN: INSTALL

- 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 angle has been changed.
- Make sure the blue protection film is removed and the sensor is closed!



Launch a teach-in 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 OK. If not see troubleshooting.

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. 10).

STANDARD



- 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

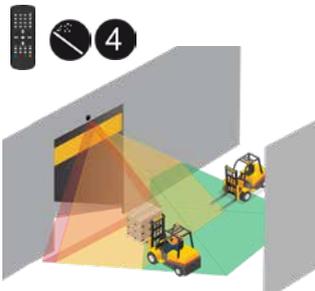
- field width: max, field stop: 0.4 m
(infinite detection for objects > 25 cm)

OUT1 - motion or pull cord

OUT2 - presence or safety

REL - presence + height

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**

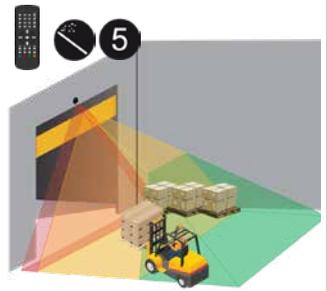
- field width: max, field stop: 0.4 m
(infinite detection for objects > 25 cm)

OUT1 - motion or pull cord or **safety**

OUT2 - presence or safety

REL - **speed trigger**

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: 0.4 m
(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											
	Presettings	standard corridor corner											
	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											
	Red spots	Activates the red spots on the floor. The spots stay active during 15 minutes or can be switched off the same way.											
		MOTION											
	Field width	000 - 999	000 - 999	000 - 999 cm		999 cm		999 cm = max field size, but depending on teach-in and mounting height					<p>DOOR</p> <p>B</p> <p>C</p> <p>D</p>
	Field depth (stop)	000 - 999	000 - 999	000 - 999 cm		999 cm							
	Field start	000 - 999	000 - 999	000 - 999 cm		000 cm							
	Object type	vehicle XL: detects large vehicles; rejects bicycles & small forklifts vehicle: detects all types of vehicles; rejects pedestrains any: detects all objects are detected						vehicle XL	vehicle	any			
	Direction	bi	uni CTR			uni INV		uni CTR+	uni			CTR: cross traffic rejection INV: inverted	
	Immunity	1	2	3	4								
		PULL CORD											
	Teach-in	# 1	# 2	# 3								<p>pedestrian: detects pedestrians only vehicle XL: detects large vehicles; rejects bicycles & small forklifts vehicle: detects all types of vehicles; rejects pedestrains any: detects all objects</p>	
	Object type	pedestrian								vehicle XL	vehicle		any
	Min. presence time	0 s	1 s	2 s	3 s	4 s	5 s	6 s	7 s	8 s	stop		
		PRESENCE											
	Field width	000 - 999	000 - 999	000 - 999 cm		999 cm		999 cm = max field size, but depending on teach-in and mounting height					<p>DOOR</p> <p>B</p> <p>C</p> <p>D</p>
	Field depth (stop)	000 - 999	000 - 999	000 - 999 cm		300 cm							
	Field start	000 - 999	000 - 999	000 - 999 cm		000 cm							
	Object type	vehicle XL: detects large vehicles; rejects bicycles & small forklifts vehicle: detects all types of vehicles; rejects pedestrains any: detects all objects are detected						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			
		SAFETY											
	Field width	000 - 999	000 - 999	000 - 999 cm		999 cm		999 cm = max field size, but depending on teach-in and mounting height					<p>DOOR</p> <p>B</p> <p>C</p> <p>D</p>
	Field depth (stop)	000 - 999	000 - 999	000 - 999 cm		040 cm							
	Immunity	1	2	3	4		5						

OVERVIEW OF REMOTE CONTROL SETTINGS (OPTIONAL)

	0	1	2	3	4	5	6	7	8	9	
Out 1 Function	no change	motion	mot or pull	mot/pull/safe	mot/pull/pres	pull cord	motion+	motion+ & height	motion+ & speed		
Out 2 Function	no change	presence	safety	pres/safety	presence & height						OUT1
Relay Function	no change	motion	pull cord	presence	safety	motion+	height	speed	pres & height		OUT2
	Entering 0 keeps the value unchanged.										REL
Out 1 Logic*	no change			NO	NC	freq 100 Hz**					
Out 2 Logic*	no change			NO	NC						
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	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	

Always enter 3 digits for output parameters:

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

See p. 16-17 for more info on output functions.

FACTORY VALUES

* output status during non-detection
** during non-detection

Without selecting a colour key, you adjust the width of all 3 detection fields (motion, presence & safety) at the same time.

Heating function via LCD: Quick Start > More > Heating
Choose **AUTO** to continuously remove condensation on the laser window (higher power consumption).

QR-code via LCD: Diagnostics > QR-code
To quickly send an overview of all selected values, scan the QR-code on the LCD-screen using your smartphone scanner app. If needed use the flashlight to improve contrast. A string of digits will be visible on your phone. Send this string via email to our technical support team.

MOTION



FIELD WIDTH **C** **0 0 0** - **9 9 9**

000 cm - 999 cm
(no field)

FIELD DEPTH **D** **0 0 0** - **9 9 9**

000 cm - 999 cm

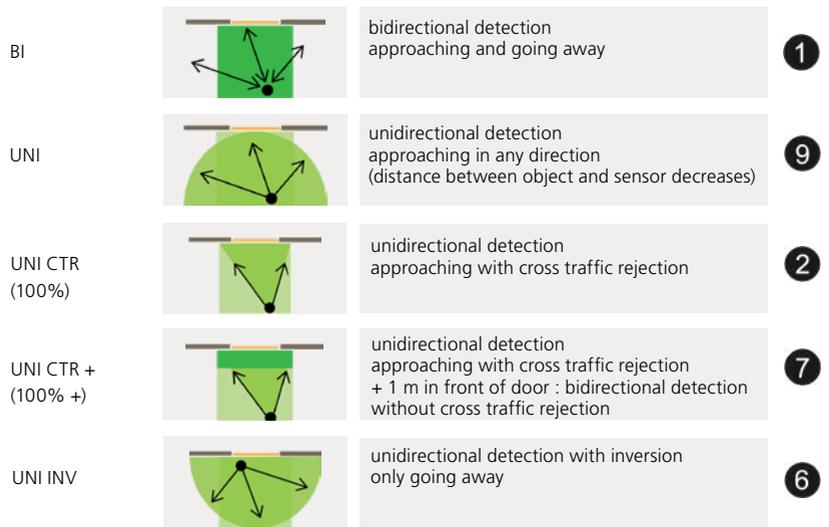
OBJECT TYPE **7** **8** **9**

vehicle XL vehicle any

vehicle XL: detects large vehicles; rejects bicycles & small forklifts
 vehicle: detects all types of vehicles; rejects pedestriains
 any: detects all objects are detected

DIRECTION **1** **2** **6** **7** **9**

bi uni CTR uni INV uni CTR+ uni



PRESENCE



FIELD WIDTH \longleftrightarrow ... **C** 0 0 0 - 9 9 9

000 cm (no field) - 999 cm

FIELD DEPTH \updownarrow ... **D** 0 0 0 - 9 9 9

000 cm - 999 cm

300 cm

OBJECT TYPE ... **7** **8** **9**

vehicle XL

vehicle

any

vehicle XL: detects large vehicles; rejects bicycles & small forklifts
vehicle: detects all types of vehicles; rejects pedestrians
any: detects all objects are detected

SAFETY



FIELD WIDTH \longleftrightarrow .. **C** 0 0 0 - 9 9 9

000 cm (no field) - 999 cm

FIELD DEPTH \updownarrow .. **D** 0 0 0 - 9 9 9

000 cm - 999 cm

040 cm

minimal position = vertical axis of sensor

VIRTUAL PULL CORD

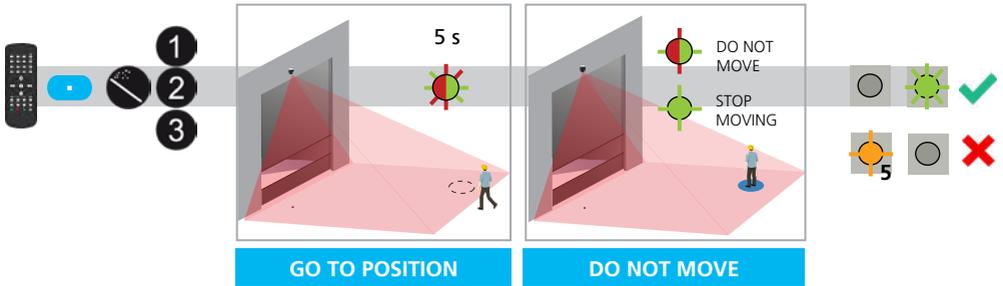


The door only opens when an object is detected in the virtual pull cord zone during at least 2 seconds (factory value).

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:



Launch a pull cord teach-in by remote control. You can create 3 different pull cords.

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.

If the LED slowly flashes green, stop moving or change your position and stop moving. When 2 people are standing in the scanned zone, the pull cord will be created closest to the sensor.

The teach-in process is finalized. The LED quickly flashes green or is out.

If flashing orange see troubleshooting.

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

OBJECT TYPE

1 pedestrian
 7 vehicle XL
 8 vehicle
 9 any

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

MIN. PRESENCE TIME

0
 1
 2
 3
 4
 5
 6
 7
 8
 9 stop

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

To delete the virtual pull cord zone, simply relaunch a pull cord teach-in (step 1) without standing in the scanning zone. After 1 minute the sensor flashes 5x orange. Push unlock + lock to exit the adjustment mode:

HEIGHT TRIGGER

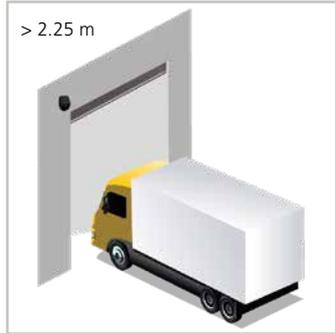


All objects higher than 2.25 m will activate the selected output.

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)

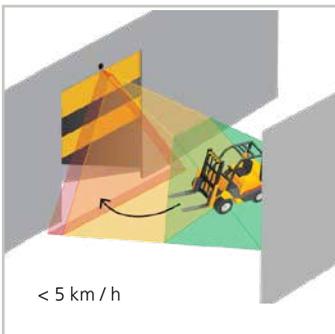
You can adjust the minimum height limit via LCD: Others > Height min. (1.75 - 4 m)

SPEED TRIGGER

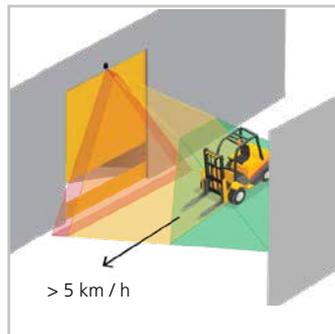


All objects moving slower than 5 km/h will activate the selected output.

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)

OUTPUT FUNCTIONS

There are 7 detection functions, 3 main functions and 4 additional opening functions:

	Motion	detection of moving object in motion field - door opens	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Presence	detection of object in presence field - door does not close	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Safety	detection of everything in safety field - door does not close	<input type="checkbox"/>	
	Motion +	detection of other object type* than defined in motion field - door opens	<input type="checkbox"/>	<input type="checkbox"/>
	Ppull cord	detection of an object standing still in a learned pull cord zone - door opens		<input type="checkbox"/>
	Speed	detection of an object moving below a defined speed (< 5 km/h) - door opens	<input type="checkbox"/>	<input type="checkbox"/>
	Height	detection of a moving object which is above a defined height (> 2.25 m) - door opens	<input type="checkbox"/>	<input type="checkbox"/>

*You can adjust the object type + via LCD: Others > Object type +

These functions can be combined and assigned to the 3 available outputs (see next page)

To adjust the output functions by remote control, always enter 3 digits, 1 for each output:

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

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

Examples:

F1 OUT 1 OUT 2 RELAY

5 2 0
pull cord safety no change

1 0 7
motion no change speed

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		

OUT 2 PROTECTION FUNCTIONS

	1	Presence		
	2	Safety		
	3	Presence or safety		
	4	Presence and height		

RELAY ADDITIONAL FUNCTIONS (OPTIONAL)

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

FACTORY VALUES

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.	1 Verify power supply > Diagnostics - LCD.
		E2: TEMP	The internal temperature is too low or too high.	1 Verify the sensor temperature > Diagnostics - LCD. 2 Protect the sensor from direct exposure to heat or cold.
E5	 		The sensor requests a teach-in.	1 Launch teach-in after angle adjustment. All presence/safety-outputs are activated.
		E5: FLATNESS	Faulty teach-in.	1 Make sure the teach-in zone is empty and even. 2 Launch install teach-in:  3 If zone is clear on the left, select:  If zone is clear on the right, select: 
		E5: TILT	Faulty teach-in because of tilt angle.	1 Adjust tilt angle (max. 15° > Diagnostics - LCD). 2 Launch install teach-in.
		E5: AZIMUTH	Faulty teach-in because of lateral angle.	1 Adjust lateral angle (max. 45° > Diagnostics - LCD). 2 Launch install teach-in.
		E5: HEIGHT	Faulty teach-in because of mounting height.	1 Adjust mounting height (max. 6 m, min. 2 m) 2 Launch install teach-in.
		E5: TIME-OUT	Faulty teach-in because of movement in the detection field.	1 Launch install teach-in. Make sure there is no motion detection during at least 5 seconds when the LED starts flashing red-green. 2 Slightly change your position and relaunch install teach-in.
		E5: MASKING	Obstacle high up in front of the door (traffic mirror).	1 Reduce the number of curtains by LCD (Quick start > More > Nb curtains). 2 Ignore warning :  
E6		E6: FQ OUT	Faulty sensor output 1.	 Replace sensor.
E8		E8: ...	Faulty detection engine.	1 If temperature is lower than -20°C, wait until the heating process is completed. 2 If not, replace sensor.
		ORANGE LED is on.	The sensor encounters a memory problem.	 Replace sensor.
		The LED and the LCD-display are off.		1 Check wiring. 2 Check pinning and connection on sensor side.
		The door does not react.	The service mode is activated.	1 Exit the service mode (see p. 10)
		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
Max. detection field	Width: 1 x mounting height; Depth: 1 x mounting height (adjustable and depending on user settings)
Thickness of first curtain	2 cm / m (mounting height)
Typ. mounting height	2 m to 10 m (max. 6 m for optimal safety detection)
Min. reflectivity factor	> 2 % (of floor and object) (measured at max. 6 m in safety field)
Typ. min. object size	15 cm @ 6 m (depending on mounting height and position in detection field)
Emission characteristics	IR LASER: Wavelength 905 nm; max. output pulse power 25 W; Class 1 Visible LASER: Wavelength 650 nm; max. output CW power 3 mW; Class 3R
Supply voltage	12 V - 24 V AC +/-10% ; 12 V - 30 V DC +/-10% @ sensor terminal
Power consumption	heating off: < 2.5 W heating auto: typ. < 10 W, max. 15 W
Response time	Typ. 80 ms; max. 800 ms
Output	2 solid-state relays (galvanic isolation - polarity free) 30 V AC/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) 42 V AC (max. switching voltage) - 500 mA (max. switching current)
Test input	30 V DC (max. switching voltage) - low < 1 V, high > 10 V (voltage threshold)
LED-signals	2 tri-coloured LED: Output status/ remote control response / error signals
Dimensions	200 mm (H) x 150 mm (W) x 100 mm (D) (approx.)
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
Temperature range	-30 °C to +60 °C
Vibrations	< 2 G
Conformity	EN 61000-6-2; EN 61000-6-3; EN 60950-1; EN 60825-1; EN 12978; EN 50581

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



BEA hereby declares that the LZR®-WIDESCAN is in conformity with the basic requirements and the other relevant provisions of the directives EMC 2014/30/EU, LVD 2014/35/EU and RoHS2 2011/65/EU.
Angleur, July 2018 Pierre Gardier, authorized representative and responsible for technical documentation



The complete declaration of conformity is available on our website.

Only for EC countries: According to the European Guideline 2012/19/EU for Waste Electrical and Electronic Equipment (WEEE)