EN

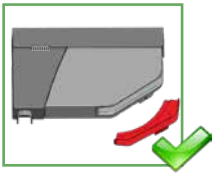
LZR®-FLATSCAN GO

SAFETY SENSOR
FOR AUTOMATIC SWING DOORS

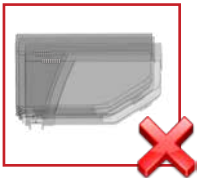
User Guide for software version 0204 and higher
(refer to tracking label on product)

EN 16005

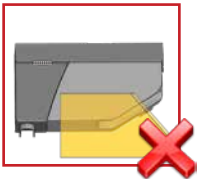
INSTALLATION TIPS



Remove the laser window protection before the teach-in and the commissioning of the sensor.



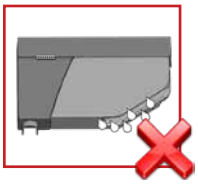
Avoid vibrations.



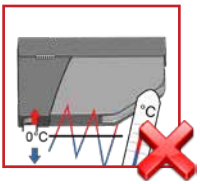
Do not cover the laser window.

Avoid moving objects and light sources in the detection field.

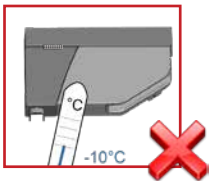
Avoid the presence of smoke and fog in the detection field.



Avoid condensation.

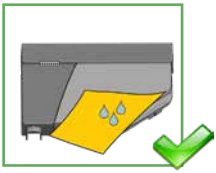


Avoid exposure to sudden and extreme temperature changes.



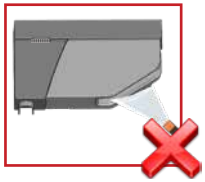
Keep the sensor permanently powered in environments where the temperature can descend below -10°C.

MAINTENANCE TIPS

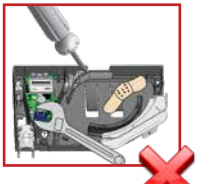


Clean the laser window with compressed air. If needed, wipe only with a soft, clean and damp microfibre cloth.

Do not use dry or dirty towels or aggressive products to clean the laser window.

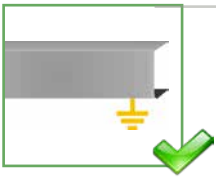


Avoid direct exposure to high pressure cleaning.



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

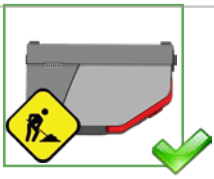
SAFETY TIPS



The door control unit and the door cover profile must be correctly earthed.

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

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



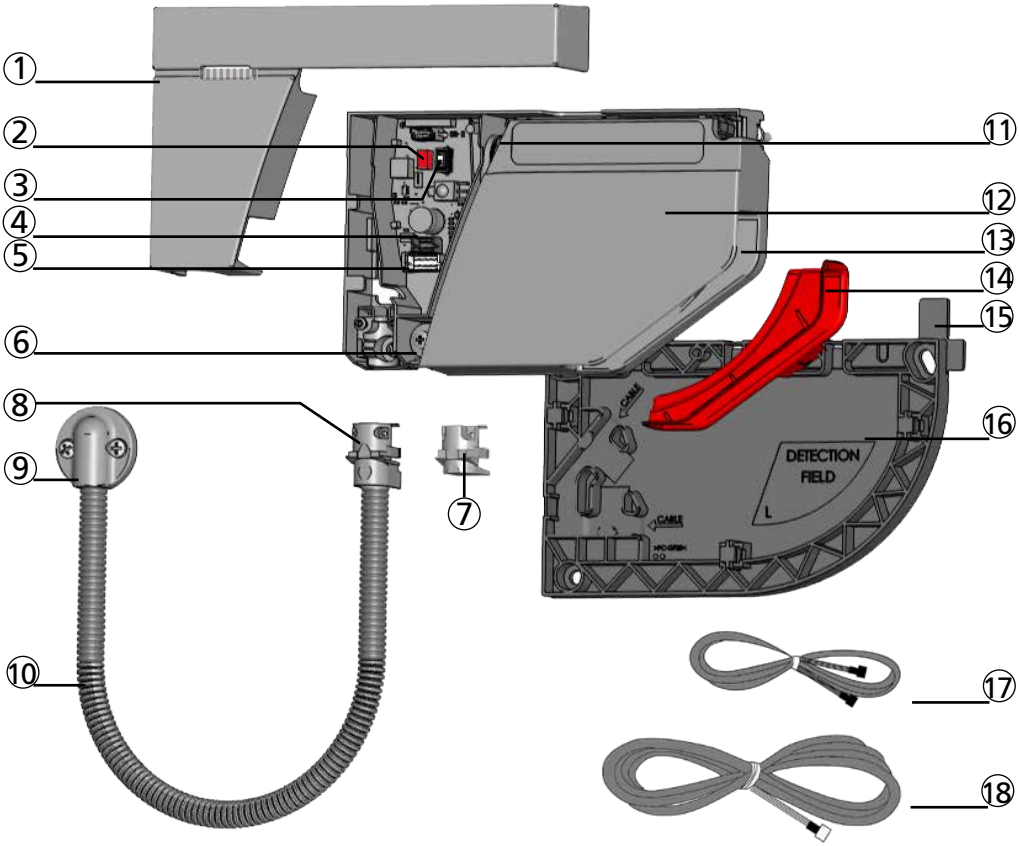
Do not remove the laser window protection when building works are still in progress on site.

- 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®-FLATSCAN GO is a safety sensor for automatic swing doors based on laser technology. It secures the moving door wing. To do so, a module must be installed in the upper corner of the door wing on both sides of the door.

Condition of use : The LZR®-FLATSCAN GO can be installed to a maximal height of 2.5m (measured from the floor to the upper edge of the sensor.)



1. cover
2. push button
3. DIP-switch
4. main-secondary connector
5. main connector
6. angle adjustment screw
7. plug
8. clamp
9. cap and screws (flexible kit)
10. flexible tube
11. lock screw
12. laser head
13. laser window
14. laser window protection
15. positioning aids
16. mounting base
17. main-secondary cable
18. power cable

LED-SIGNALS

Relay 1

Relay 2

Calculation in progress
Exit the zone and wait

LED flashes

LED flashes x times

LED flashes red-green

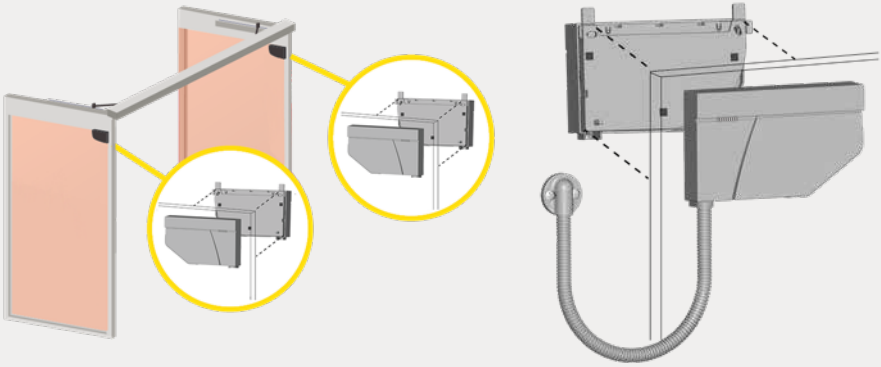
LED flashes slowly

LED flashes quickly

LED is off

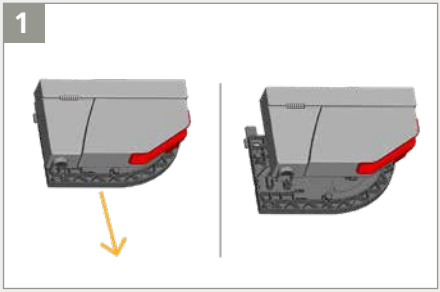
1 MOUNTING ON DOOR

For optimum safety, install 1 module on each door wing side and interconnect them via the main-secondary cable.



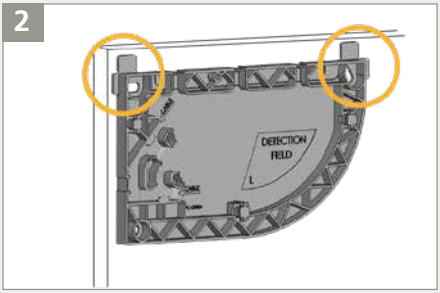
Keep a minimum distance of 15 cm between the FLATSCAN and radar sensors or use the *LZR®-FLATSCAN Protective cover* to avoid unwanted reactions of the door.

1



Slide the base off the sensor module.

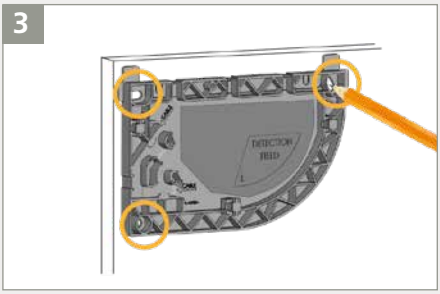
2



Take the base and put it on the door frame.
The positioning aids help you to align the base correctly.

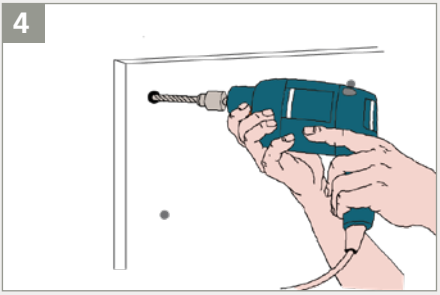
When mounting the base, make sure the sensor will not hinder the door movement.
If the sensor isn't correctly positioned, it could be crushed during the opening of the door.

3



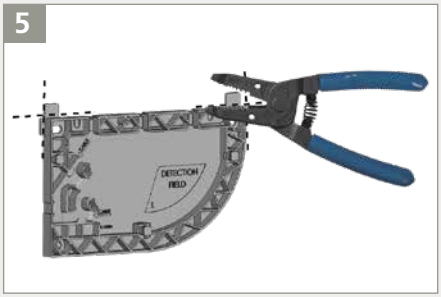
Using a pencil, mark the position of the holes to drill into the door frame. You can also use the inner surface of the base to fasten the screws.

4



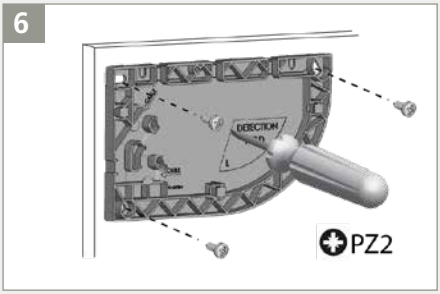
Remove the base and pre-drill the holes where marked.

5



Using a wire cutter, remove the positioning aids from the base.

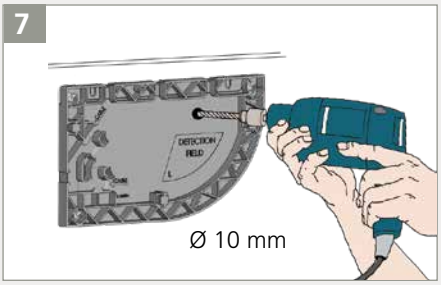
6



Fasten the 3 screws using a Pozidrive screwdriver. The base needs to be fixed firmly!

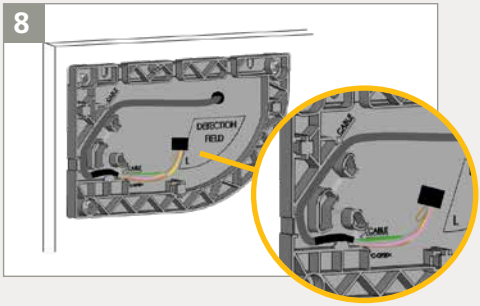
When installing the FLATSCAN on a fire door, use the *LZR®-FLATSCAN Fire Door Accessory* (FDA).

7



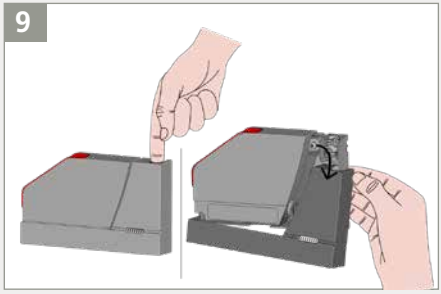
Drill through the 2 bases and the door using a 10 mm bit in order to pass the main-secondary cable. Soften the edges using a sheet of sandpaper.

8



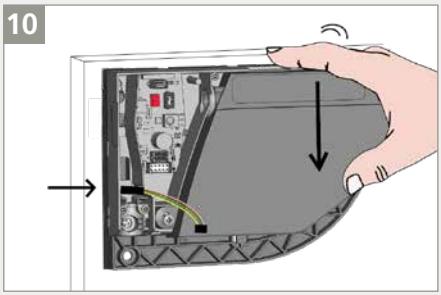
Take the main-secondary cable and pass it through the hole. Position the cable in the notch of the base and make sure it is firmly fixed.

9



Take the sensor and remove the cover: put your finger in the hole and pull firmly towards you in one movement.

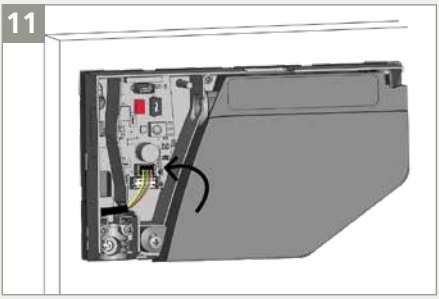
10



Pass the cable through the hole on the back of the sensor and fasten the sensor on the base by sliding it downwards.

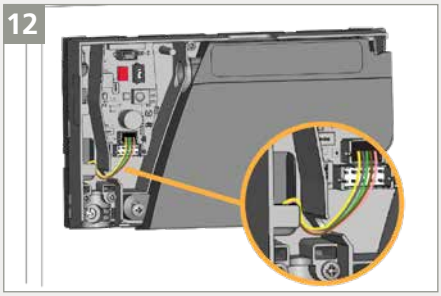
Mount the sensor securely.

11



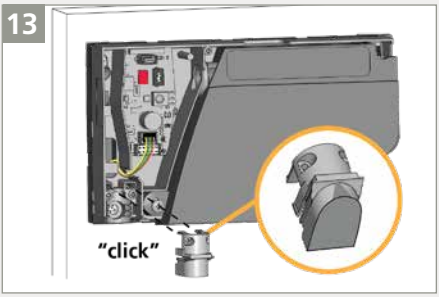
Connect the black plug to the black connector.

12



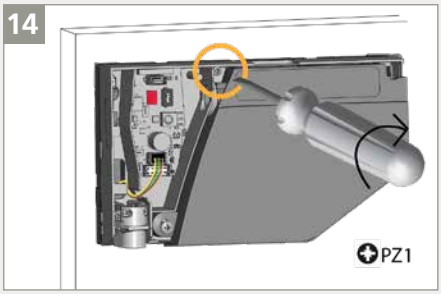
Make sure that all wires are safely tucked within the notch to avoid crushing them with the cover.

13



Close the sensor which will not be connected to the door controller using a plug.

14

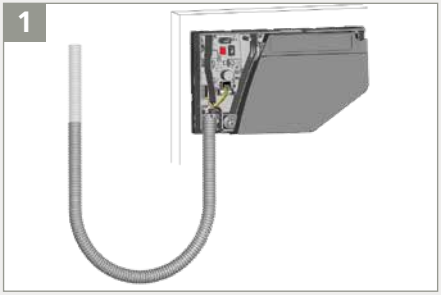


Fasten the lock screw **firmly**.

Sensor connected to other module = SECONDARY module

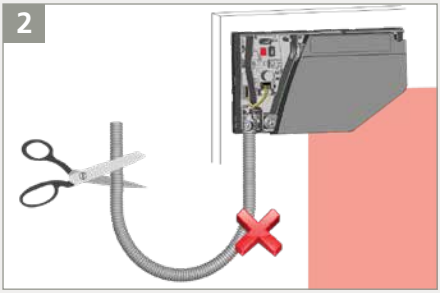
2 WIRING TO DOOR CONTROLLER

1



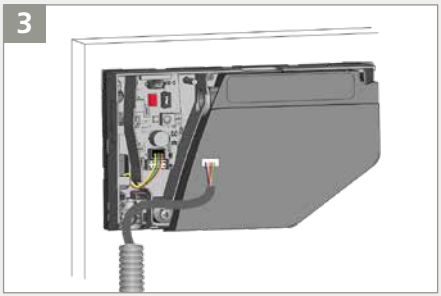
Take the flexible tube and determine how long it should be in order to reach the door controller.

2



Cut the surplus to avoid undesired detections caused by the flexible tube.

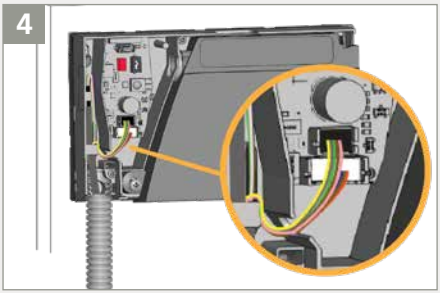
3



Pass the power cable through the flexible tube.
Connect the white plug to the white connector.

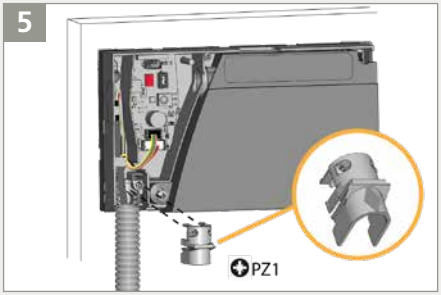
Sensor connected to door controller = MAIN module

4



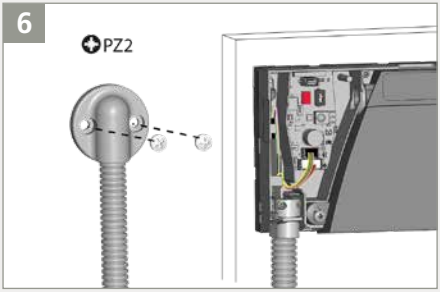
Make a loop with the wires of the power cable and pass them through the notch as indicated.
Use the other part of the cable to block the wires.

5



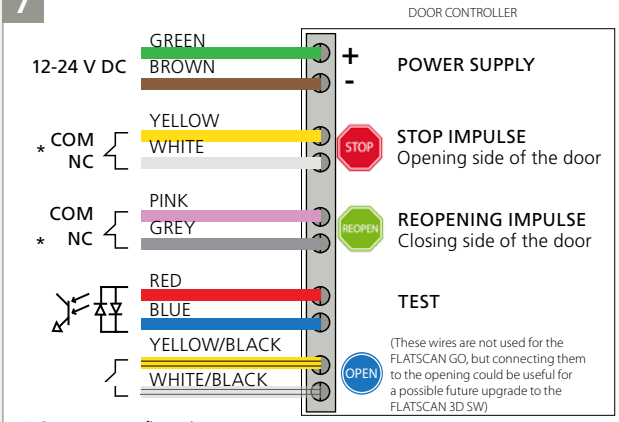
Take the clamp to fix the flexible tube to the sensor.
Fasten the 2 screws firmly in order to avoid pulling out the cable.

6

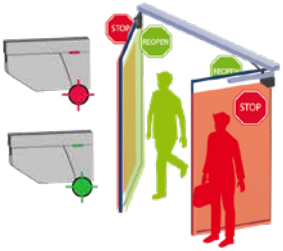


Tighten the other side of the flexible tube using the cable cap and pass through the rest of the power cable towards the door controller.

7



* See output configuration.



Cut the power cable to the right length, strip the 10 wires and connect all wires as indicated.
The polarity of the power supply is important.
For compliance with EN 16005, the door controller test output must be connected and able to test the sensor.

3 DIP-SWITCH 1

Make sure the setting of DIP 1 is correct on all modules according to the door side.

ON

RELAY 1: STOP-impulse on the opening side of the door

OFF

RELAY 2: REOPENING-impulse on the closing side of the door

> 3 sec.

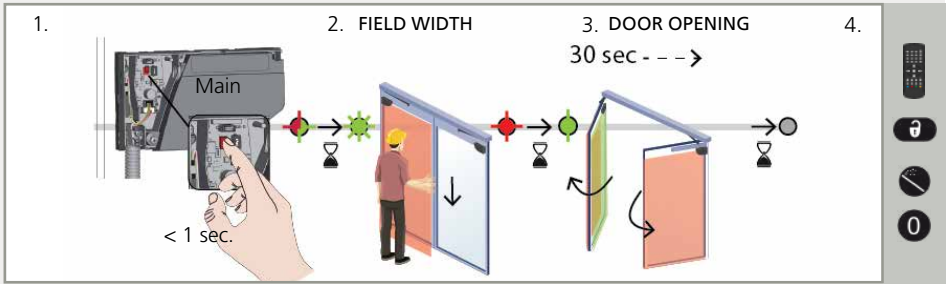
After changing the DIP-switch, the orange LED flashes. A LONG push on the push button confirms the settings. Afterwards, a number of green flashes (x) indicates the number of connected modules.

4 TEACH-IN

Before launching a teach-in, make sure that:
- **glass surfaces near the door are covered**
- the door controller is set up first
- the door is closed (use the service mode if needed, see page 9)
- the door controller is connected to both relay outputs and is fully reacting to them
- the main-secondary cable is connected between the modules
- the detection field is free of snow buildups, heavy rain, snowfall, fog or other objects or people
- the laser window protection is removed.

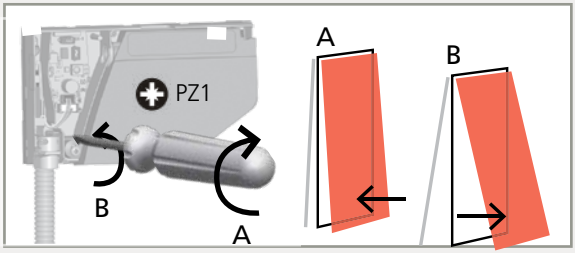
1. To launch a teach-in, **press the push button** of the main* module briefly. The LED starts to flash red-green quickly. When installing the sensor on a double swing door, repeat this on the second main module.
2. Wait until all main sensors flash green. Position yourself in front of the door and stretch out your arm in front of you. **Make an up and down movement** at closing edge level in order to mark the limit of the detection zones. The LED flashes red while calculating the width of the door wings.
3. Wait until all main sensors flash green again. Make sure you are outside of the detection field and **activate a door opening**. When the door opens, all main sensors continue flashing green (30 sec.). When the LED is off, the teach-in in completed.

* A teach-in on the main configures both the main and the secondary. A teach-in on the secondary only configures the secondary. In case the main and secondary modules are not aligned, first launch a teach-in on the main and then on the secondary.



5 TESTING AND ADJUSTING

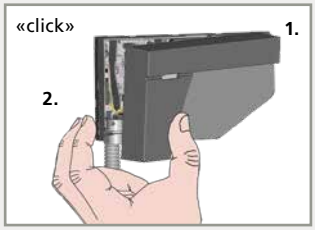
Check the correct positioning of the safety fields by placing an object in the detection field.



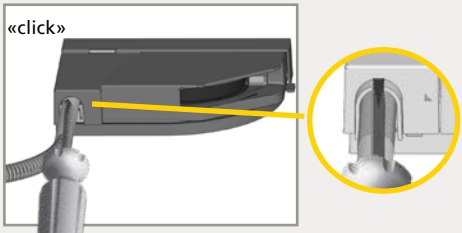
If necessary, adjust the tilt angle of the laser curtain by turning the tilt angle adjustment screw (from 2° to 10°).

⚠ After changing the angle, the sensor position or the environment, always launch a teach-in and test the correct positioning of the detection fields.

6 FINAL STEPS

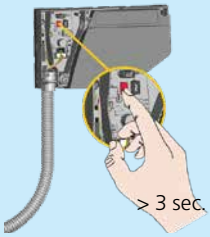


Close the cover starting on the narrow side (1). Do not hesitate to push.



To open the sensor again, position a screwdriver in the notch and pull upwards until the cover comes loose.

SERVICE MODE



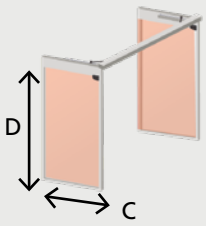
The service mode deactivates the safety detection during 15 minutes and can be useful during an installation, a mechanical teach-in of the door or maintenance work.

To enter the service mode, push on the button for at least 3 seconds.
When the sensor is in service mode, the LED is off.
To exit the service mode, push again for at least 3 seconds.

The service mode is deactivated automatically when launching a teach-in.

REMOTE CONTROL SETTINGS (OPTIONAL)

DIMENSIONS
DOOR WING SAFETY



CD ↔ 000 001 – 250

no field	001	-	250	cm

DD ↕ 000 001 – 250

no field	001	-	250	cm

A teach-in overwrites these values automatically.

OUTPUT CONFIGURATION

	1	2	3	4
STOP R1	NO	NC	NC	NO
REOPEN R2	NC	NO	NC	NO

	NO	NC
NO POWER	⟋	⟍
NO DETECTION	⟋	—
DETECTION	—	⟍

NO = normally open
NC = normally closed

IMMUNITY FILTER

1	2	3	4	5	6	7	8	9
low	>	>	>	>	>	>	>	high

Increase to filter out external disturbances.
The reaction time increases significantly between value 5 and 9.

UNCOVERED ZONE

F2	1	2	3	4	5	6	7	8	9	
	2	4	6	8	10	12	14	16	18	cm*

Increase in case of snow, dead leaves, etc.
* measured in specific conditions and dependant on application and installation.

ANTIMASKING & BACKGROUND

«□»	0	1	2	3
ANTIMASKING	OFF	OFF	ON	ON
BACKGROUND	OFF	ON	OFF	ON

Antimasking: protective function which detects an unwanted object nearby the laser window masking the vision field.
Background: reference point in the detection field of the sensor.
If no background is present, switch to off.

GENERAL

0	8	9
teach-in	full reset	partial reset
See page 8	Factory reset of all values	Factory reset of all values exept field dimensions and output configurations

FACTORY VALUE

HOW TO USE THE 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, you need to 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 introducing any access code.

To end an adjustment session, always lock the sensor.

It is recommended to use a different access code for each module in order to avoid changing settings on both modules at the same time.

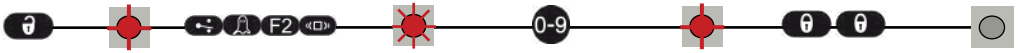
SAVING AN ACCESS CODE

The access code is recommended for sensors installed close to each other.

DELETING AN ACCESS CODE

Enter the existing code

ADJUSTING ONE OR MORE PARAMETERS

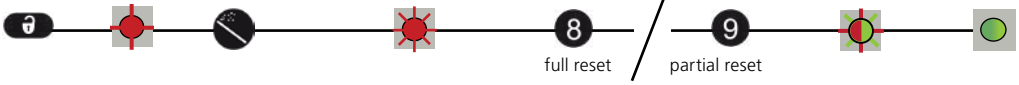


CHECKING A VALUE

x = number of flashes = value of the parameter

= field width: 2.35 m

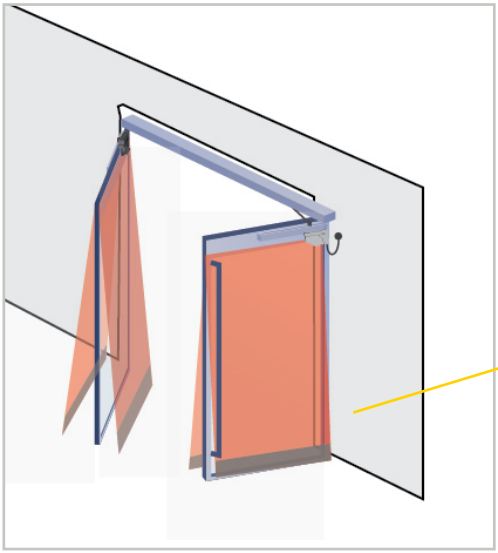
RESTORING TO FACTORY VALUES

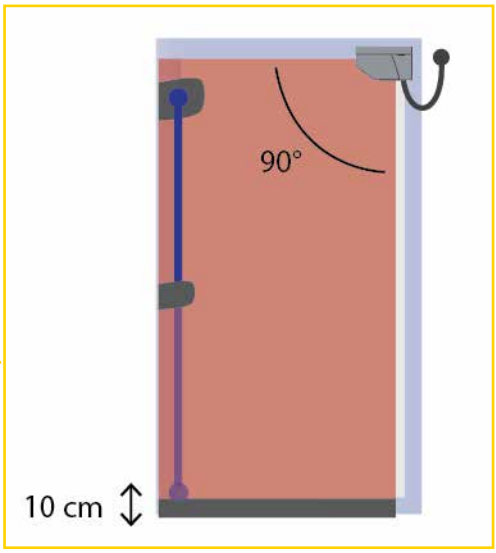


full reset

partial reset

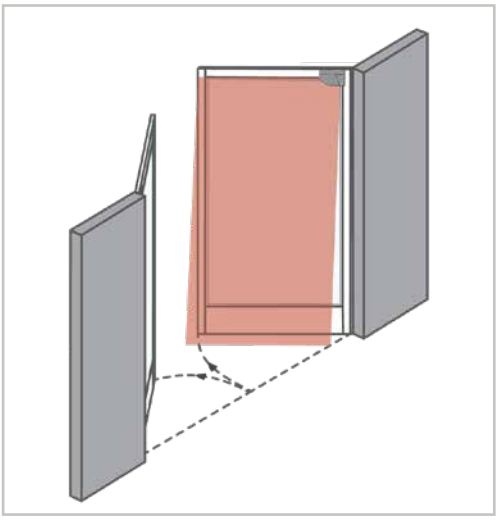
DETECTION FIELDS

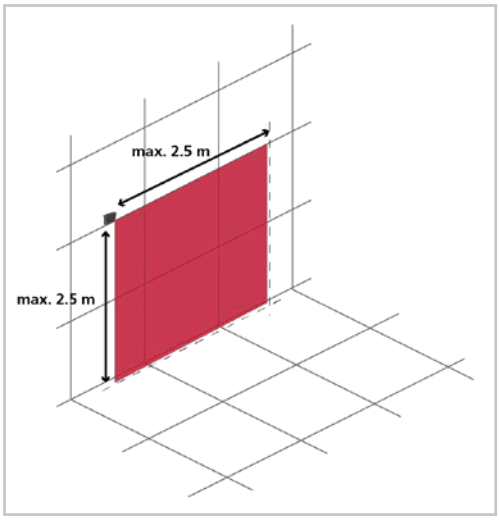




DOOR WING SAFETY

UNCOVERED ZONE
Adjustable by remote control
factory value: 10 cm





TROUBLESHOOTING

In case of unwanted reactions of the door, verify whether the problem is caused by the sensor, the door controller or a radar sensor in proximity. To do so, activate the service mode (no safety) and launch a door cycle.
If the door cycle is completed successfully, check the sensor. If not, verify the door controller, the wiring or a radar sensor.

Keep a minimum distance of 15 cm between the FLATSCAN and radar sensors or use the *LZR®-FLATSCAN Protective cover* to avoid unwanted reactions of the door.

If there is a wall close to the door hinge in the installation environment, you should consider that installing a LZR-FLATSCAN SW instead of a LZR-FLATSCAN GO might be a better solution as the LZR-FLATSCAN SW offers a dynamic teach-in of its direct environment.

The RED or GREEN LED is ON sporadically or permanently and the door does not react as expected.	Bad teach-in.		Launch a new teach-in (closed door).
	Unwanted detections (due to environment or external conditions).	1	Make sure the flexible cable does not cause detections.
		2	Verify if the laser window is dirty and clean it with compressed air. Then wipe it carefully with a damp and clean microfibre cloth if necessary. (attention: the surface of the laser window is delicate).
		3	Launch a new teach-in (closed door).

The sensor does not react at power-on.	Inverted power supply.		Check wiring (green +, brown -).
	Faulty cable.		Replace cable.
	Faulty sensor.		Replace sensor.
The sensor does not react when powered.	Test error.		Check voltage between red and blue wires.
			Press the push button during at least 3 seconds to exit the service mode.

The remote control does not react.	The sensor is protected by a password.		Enter the right password. If you forgot the code, cut and restore the power supply to access the sensor without entering a password during 1 minute.

	The ORANGE LED is on permanently.	The sensor encounters a memory problem.		Send the sensor back for a technical check-up.
	The ORANGE LED flashes quickly.	DIP-switch setting awaiting confirmation.		Corfirm the DIP-switch setting: long push on the push button.
1	The ORANGE LED flashes 1 x every 3 seconds.	The sensor signals an internal fault.		Cut and restore power supply. LED flashes again, replace sensor.
2	The ORANGE LED flashes 2 x every 3 seconds.	Power supply is out of limit.	1	Check power supply (voltage, capacity).
			2	Reduce the cable length or change cable.
		Internal temperature is too high.		Protect the sensor from any heat source (sun, hot air...)
3	The ORANGE LED flashes 3 x every 3 seconds.	Communication error between modules	1	Check wiring between main and secondary modules.
			2	Check wiring between interface card and laser head.
			3	Verify if both connected modules are LZR-FLATSCAN GO sensors.
			4	Press the push button during 3 seconds if the Main-Secondary cable is permanently removed, or if the sensor was previously connected to another swing door sensor.
4	The ORANGE LED flashes 4 x every 3 seconds.	The sensor does not see its background.		Deactivate background using the remote control.
		Something close to the sensor is masking part of the detection field.	1	Make sure the laser window is not scratched. If it is, replace sensor.
			2	Remove all masking elements (insects, spider web, flexible tube, window protection).
			3	Verify if the laser window is dirty and clean it with compressed air. Then wipe it carefully with a damp and clean microfibre cloth if necessary (attention: the surface of the laser window is delicate)
			4	Switch antimasking setting to off (attention: no conformity to EN 16005).
		The sensor is installed too high.		Check the installation height of the sensor (the maximal installation height is 2.5m, measured from the floor to the upper edge of the sensor).
5	The ORANGE LED flashes 5 x every 3 seconds.	Teach-in error.	1	Check whether all teach-in requirements are fulfilled (see page 8) and launch a new teach-in (closed door).
			2	Adjust the tilt angle of the laser curtain and launch a new teach-in (closed door).
			3	Adjust the field dimensions by remote control. Push and activate a door opening (step 3 of teach-in).

TECHNICAL SPECIFICATIONS

Technology	LASER scanner, time-of-flight measurement
Detection mode	Presence
Max. detection range	max. 2,50 m (height) and 2,50 m (width) with reflectivity of 2%
Field of view	90°
Angular resolution	1.3°
Typ. min. object size	≤ 10 cm
Testbody	700 mm × 300 mm × 200 mm (testbody CA according to EN 16005)
Optical characteristics (IEC/EN 60825-1:2014)	IR LASER: wavelength 905 nm; output power < 0.1 mW; Class 1
Supply voltage*	12 - 24 V DC ± 15 %
Power consumption	≤ 2 W
Response time	max. 50 ms
Output* Max. switching voltage Max. switching current	2 electronic relays (galvanic isolation - polarity free) 30V AC / 42V DC 100 mA
LED-signals	1 bi-coloured LED: detection/output status
Dimensions	146 mm (L) × 85 mm (H) × 32 mm (D) (mounting base + 7 mm)
Material - Colour	PC/ASA - Black
Tilt angles	+2° to +10° (without mounting base)
Protection degree	IP54 (IEC/EN 60529)
Temperature range	-30°C to +60°C if powered
Humidity	0-95 % non-condensing
Vibrations	< 2 G
Safety standards	EN 12978; EN ISO 13849-1 Pl "d"/ CAT2; EN 16005 (testbody CA); EN 61508 SIL2

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

* External electrical sources must be within specified voltages, max 15W and ensure double insulation from primary voltages.

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BEA hereby declares that this product is in conformity with European Directives :
2014/30/EU (EMC), 2006/42/EC (Machinery) and 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.

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