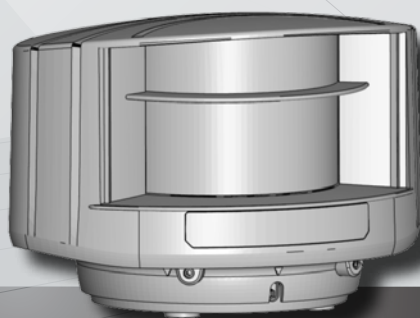


LZR

EN



# LZR<sup>®</sup>-I100/ -I110

LASER SCANNERS FOR INDUSTRIAL DOORS

I100: max. detection range of 9.9 m x 9.9 m

I110: max. detection range of 5.0 m x 5.0 m



OPEN UP NEW HORIZONS

**Safety Commissioning Guide**

## SAFETY



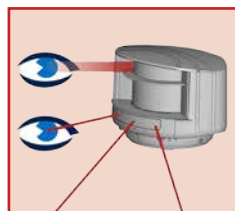
The device contains IR and visible laser diodes.  
IR laser: wavelength 905nm; max. output pulse power 75W (Class 1 according to IEC 60825-1)  
Visible laser: wavelength 650nm; max. output CW power 3mW (Class 3R according to IEC 60825-1)

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

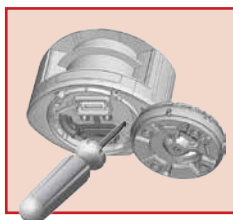


### CAUTION!

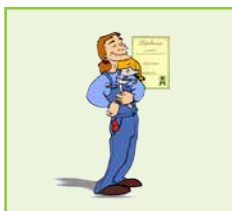
Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



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



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



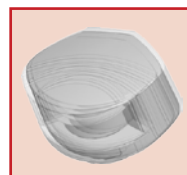
Only trained and qualified personnel may install and adjust the sensor.



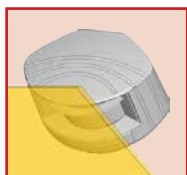
Test the good functioning of the installation before leaving the premises.

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 and if applicable, the machinery directive 2006/42/EC. Other use of the device is outside the permitted purpose and can not be guaranteed by the manufacturer. The manufacturer cannot be held responsible for incorrect installations or inappropriate adjustments of the sensor.

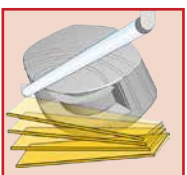
## INSTALLATION AND MAINTENANCE



Avoid extreme vibrations.



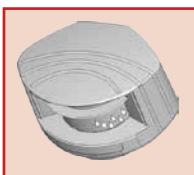
Do not cover the front screens.



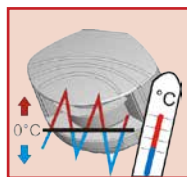
Avoid moving objects and light sources in the detection field.



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



Avoid condensation.



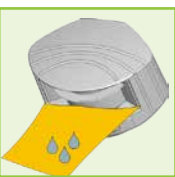
Avoid exposure to sudden and extreme temperature changes.



Avoid direct exposure to high pressure cleaning.



Do not use aggressive products to clean the front screens.

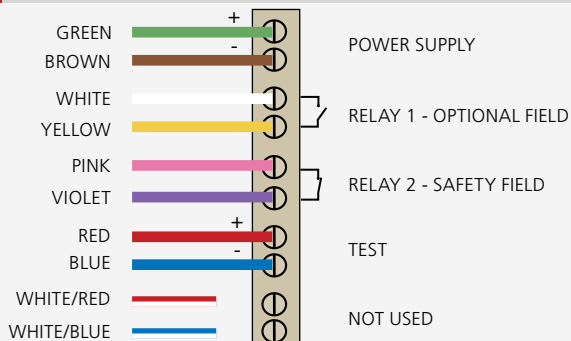


Wipe the front screens regularly with a clean and damp cloth.



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

## 1 WIRING



Use the Power Supply Module (24V DC, 0.75 A) if needed.



The sensor tests both relays.



Door control without test: connect red and blue wires to power supply (no polarity)



## 2 POSITIONING



Unlock the sensor and activate the visible laser beams in order to position the curtains parallel to the door.

The visible laser beams stay activated for 15 minutes or can be turned off by the same sequence.

1

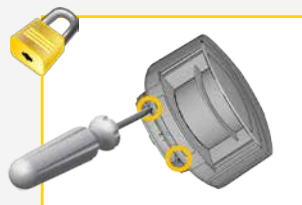


Adjust the **lateral position** of the detection field.

2



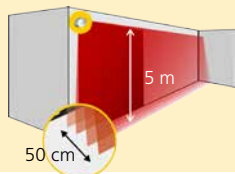
Adjust the **tilt angle** of the detection field with the hex key.



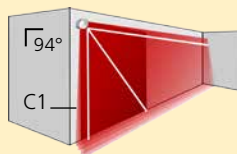
**Lock the position** of the mounting bracket to avoid malfunctioning in case of extreme vibrations.



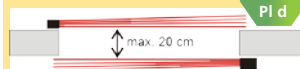
The distances between the curtains depend on the mounting height and side.



The visible laser beams indicate approximately the position of curtain C1.



The distance between the inner curtains of the 2 sensors must be max. 20 cm to ensure safety according to EN ISO 13849-1:2008 CAT 2, Pl «d».



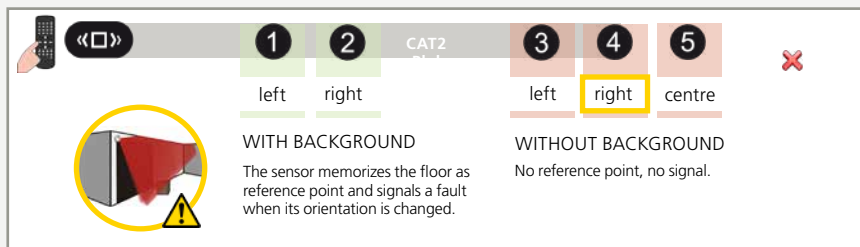
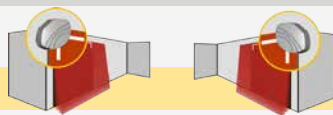
CAT2  
Pl d

### 3 MOUNTING SIDE

Check and select the corresponding mounting side if necessary.



Stay outside of the detection field to avoid disturbances.



A teach-in is launched, the sensor learns its environment and automatically determines the detection field(s). Both RED LEDs flash slowly and the 3 visible laser beams automatically light up during 30 seconds.



After setting the mounting side, the safety and the optional field have the same dimensions.

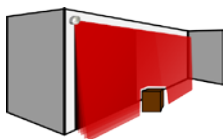
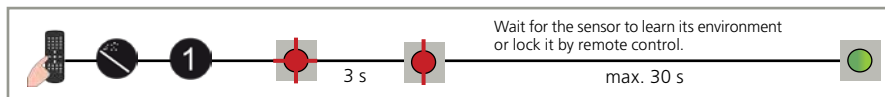
## 4.1 SAFETY FIELD CONFIGURATION (RELAY 2)

### SAFETY FIELD TEACH-IN

Launch a teach-in after changing the sensor position or when new objects are added to or changed in the detection zone.



During teach-in, the detection field should be free of snow buildups, heavy rain, snowfall, fog or other moving objects.

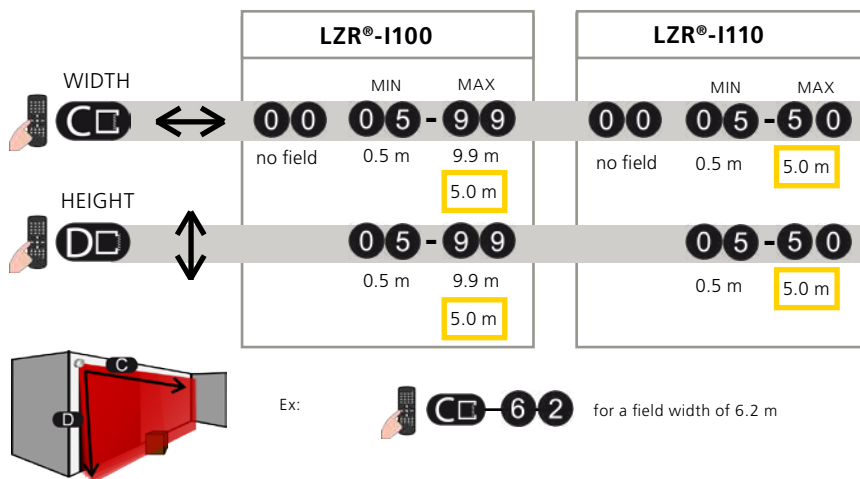


During teach-in, the sensor learns its surroundings and adapts the detection field shape to these. Objects in the detection field will be cut out.

## 4.2 SAFETY FIELD CONFIGURATION (RELAY 2)

### FIELD DIMENSIONS

After the teach-in, the field dimensions can be reduced by remote control.



The field is by default limited to 5 x 5 m. You can adapt the dimensions by remote control, but they can never be bigger than the shape which was defined by the teach-in.



FACTORY VALUES



7

## TROUBLESHOOTING

|  |  |   |   |
|--|--|---|---|
|    | No blue LED  | There is no power.  | <b>1</b> Check cable and connexion.   |
|  |  | The polarity of the power supply is inverted.   | <b>1</b> Check the polarity of the power supply.  |
|  |  | All LEDs have been deactivated by remote control.   | <b>1</b> Activate the LEDs by remote control.   |
|    | Only the blue LED is on.                                   | The test input is not connected.  | <b>1</b> Check wiring.<br>The RED and BLUE cable have to be connected to the test input or the power supply.  |
|  |  | The detection field is too small or deactivated.  | <b>1</b> Check the size of the fields.<br><b>2</b> Launch a teach-in.   |
|    | The detection LED remains green.                           | The object size is too small.   | <b>1</b> Decrease the min. object size.   |
|  |  | Someone or something is in the detection field.   | <b>1</b> Step out of the field and/or remove the any object(s) from the field.  |
|    | The detection LED remains red.                             | The field is touching the floor, the wall or the door, which leads to detection.                            | <b>1</b> Activate the 3 red beams and check if the position of the sensor is correct.<br>If not, adjust the hex screws.<br><b>2</b> Verify the field size.<br><b>3</b> Launch a teach-in.       |
|  |  | No background (reference point) is found.   | <b>1</b> Check the position of the sensor.<br><b>2</b> Check the mounting side setting.<br>If there is no background, set the mounting side to value 3 to 5.<br><b>3</b> Launch a new teach-in. |
|  |  | The sensor is masked.   | <b>1</b> Verify and clean the front screens with a damp cloth.  |
| <br> | The orange LED is flashing and the detection LEDs are red. | The power supply voltage is exceeding the acceptable limits.  | <b>1</b> Check the power supply voltage.  |
|  |  | The sensor exceeds its temperature limits.  | <b>1</b> Verify the outside temperature where the sensor is installed. Eventually protect the sensor from sunlight using a cover.   |
|  |  | Internal error  | <b>1</b> Wait a few seconds.<br>If the LED remains ON, reset the power supply.<br>If the LED turns on again, replace the sensor.  |
|    | The orange LED is on.                                      | 30 minutes after last use of the remote control, the sensor locks the access to the remote control session. | <b>1</b> Cut and restore power supply.<br>The remote control session is accessible again during 30 minutes.   |
|  |  | The batteries in the remote control are not installed properly or dead.                                     | <b>1</b> Verify or replace the batteries.   |
|  |  | The remote control is badly pointed.  | <b>1</b> Point the remote control towards the sensor, but with a slight angle. The RC should not be pointed in a right angle in front of the sensor.  |
|  |  | A reflective object is in close proximity to the sensor.  | <b>1</b> Avoid highly reflective material in proximity to the sensor.   |
|    | The sensor does not respond to the remote control.         | You have to enter an access code or the wrong code was entered.   | <b>1</b> Cut and restore power supply.<br>No code is required to unlock during the first minute after powering.   |
|  |  |   |   |
|    | The sensor does not unlock.                                |   |   |
|  |  |   |   |



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BEA hereby declares that the LZR®-I100/-I110 is in conformity with the basic requirements and the other relevant provisions of the directives 2006/95/EC, 2002/95/EC, 2004/108/EC and 2006/42/EC.

Notified Body for EC inspection: 0044 - TÜV NORD CERT GmbH, Langemarckstr. 20, 45141 D-Essen

EC-type examination certificate number: 44 205 11 392410-002

Angleur, May 2011

Jean-Pierre Valkenberg, Authorized representative and responsible for technical documentation

The complete declaration of conformity is available on our website: [www.bea-industrial.be](http://www.bea-industrial.be)



For EC countries: according to the directive 2012/19/EU for Waste Electrical and Electronic Equipment (WEEE)