EN

LZR® - U910

LASER MEASUREMENT DEVICE WITH UNIDIRECTIONAL BUS COMMUNICATION

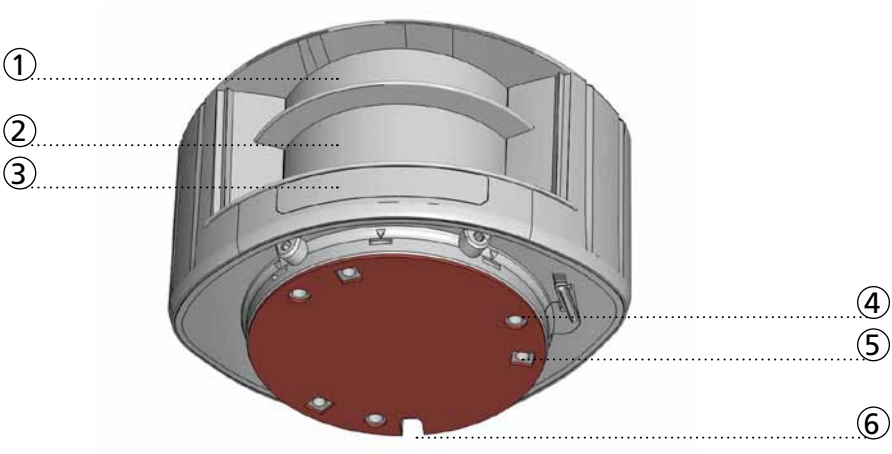
SENSORIO®
YOUR SENSING APPLICATIONS OUR SENSOR SOLUTIONS

User's Guide for product version 0500 and more

LASER MEASUREMENT DEVICE

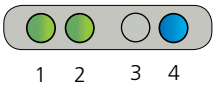
Other use of the device is outside the permitted purpose and can not be guaranteed by the manufacturer.
The manufacturer cannot be held responsible for incorrect installations or inappropriate adjustments of the device.

DESCRIPTION



1. laser sweep emission
2. laser sweep reception
3. LED-signal (4)
4. holes for M5 screws
5. holes for Ø UNC N°10 screws
6. cable conduit

LED-SIGNAL



1. LED 1
2. LED 2
3. Error LED
4. Power LED

LED 1

- LZR is switched ON and running

LED 2

- LZR is transmitting distance data
- LZR is idle and transmits heartbeat message

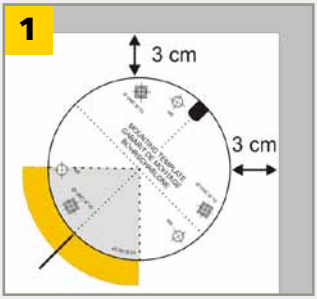
ERROR LED

- error
- no error

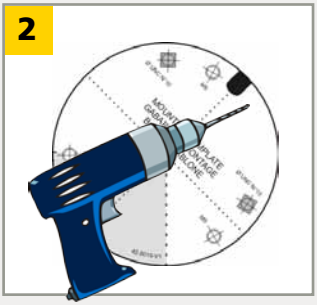
POWER LED

- power
- no power

1 MOUNTING

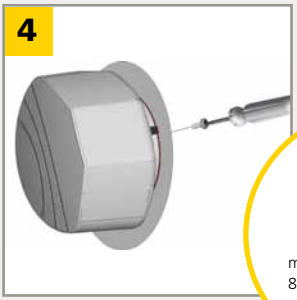


Use the adhesive mounting template to position the sensor correctly. The grey area indicates the measurement range.

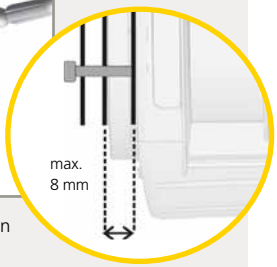


Drill 3 holes as indicated on the mounting template. Make a hole for the cable.

Pass the cable through the cable opening.



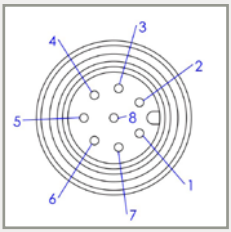
Use M5 or Ø UNC N°10 screws for fixing.



Position the sensor and fasten the screws firmly.

2 WIRING & CONNECTOR

Connector type: M12 male, 8 poles



PIN 1	PWR +	
PIN 2	PWR -	
PIN 3	GND	
PIN 4	RS485B	
PIN 5	RS485A	
PIN 6*	ISSD1 PIN1	
PIN 7*	ISSD1 PIN2	

* If the heartbeat mode[1] via pin connections 6 and 7 is not used, it is recommended to ground pin 6 and 7.

[1] For more information see application note LZR®-U910 Protocol or contact Sensorio.

TECHNICAL SPECIFICATIONS

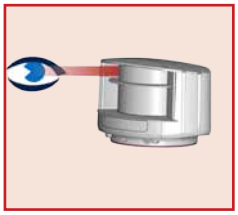
Technology:	laser scanner, time-of-flight measurement
Measurement range:	max 65 m 10 m @ 2% remission factor, 30 m @ 10% remission factor
Number of planes:	4
Number of points/plane:	274
Angular resolution:	0.3516 °
Angular coverage:	96 °
Rotating speed:	900 turns/min
Scanning frequency:	15 Hz
Remission factor:	> 2 %
Laser emission characteristics:	wavelength 905 nm; max. output pulse power 75 W (CLASS 1)
Supply voltage:	10-35 V DC @ sensor side
Power consumption:	< 5 W
Peak current at power-on:	1.8 A (max. 80 ms @ 35 V)
Serial communication:	see application note LZR®-U910 Protocol (available for download on our website)
Type	asynchronous
Interface	RS 485
Communication mode	simplex
Transmission speed	460800 bit/sec
Topology	point to point
Symbol coding	1 start bit, 1stop bit, no parity bit
File type	8 bits
Cable length:	+/- 150 mm
Connector:	M12 male, 8 poles
Input:	1 optocoupler (galvanic isolated - polarity free)
Max. contact voltage:	30 V DC (over-voltage protected)
Voltage threshold:	Log. H: >8 V DC; Log. L: <3 V DC
LED-signal:	2 bi-coloured LEDs: function status; 1 blue LED: power-on status; 1 orange LED: error status
Dimensions:	125 mm (D) x 93 mm (W) x 76 mm (H)
Material:	PC/ASA
Colour:	black
Protection degree:	IP65
Temperature range:	-30 °C to +60 °C if powered; -10 °C to +60 °C unpowered
Humidity:	0-95 % non-condensing
Vibrations:	< 2 G
Pollution on front screens:	max. 30 %; homogenous
Expected lifetime:	20 years
Norm conformity:	2006/95/EC: LVD; 2011/65/EU: RoHS 2; 2004/108/EC: EMC EN 60529:2001; IEC 60825-1:2007 Laser Class 1; EN 60950-1:2005 EN 61000-6-2:2005 EMC - Industrial level EN 61000-6-3:2006 EMC - Commercial level

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

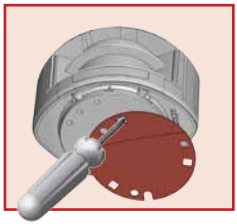
SAFETY

The device contains IR laser diodes.
IR laser: wavelength 905nm; max. output pulse power 75W
(Class 1 according to IEC 60825-1)

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



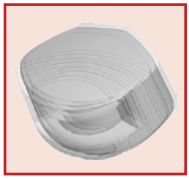
Do not look into the laser emitter.



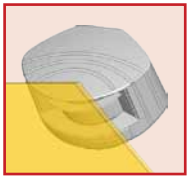
The warranty is void if unauthorized repairs are made or attempted by unauthorized personnel.

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

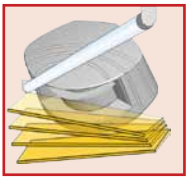
INSTALLATION AND MAINTENANCE



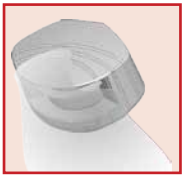
Avoid extreme vibrations.



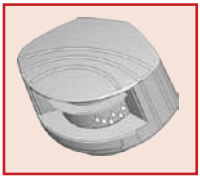
Do not cover the front screens.



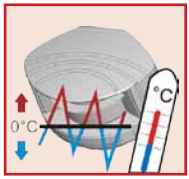
Avoid moving objects and light sources in the measurement field.



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



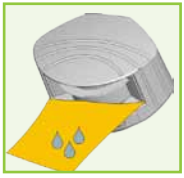
Avoid condensation.



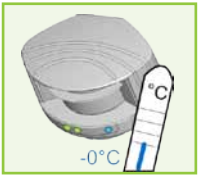
Avoid exposure to sudden and extreme temperature changes.

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 0°C.

TROUBLESHOOTING

	No blue LED	There is no power.	1 Check cable and connections.
		The polarity of the power supply is inverted.	1 Check the polarity of the power supply.
	The orange LED is on.	The power supply voltage is exceeding the acceptable limits.	1 Check the power supply voltage.
		The sensor exceeds its temperature limits.	1 Verify the outside temperature where the sensor is installed. Eventually protect the sensor from sunlight using a cover.
		Internal error	1 Wait a few seconds. If the LED remains ON, reset the power supply. If the LED turns on again, replace the sensor.
	LED 2 is permanently red.	Faulty wiring	1 Verify connections (pins 6 and 7).
	LED 2 flashes red.	Faulty wiring	1 Verify connections (pins 6 and 7).

NOTES

PLEASE KEEP FOR FURTHER USE
DESIGNED FOR COLOUR PRINTING

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BEA hereby declares that the LZR®-U910 is in conformity with the basic requirements and the other relevant provisions of the directives 2006/95/EC, 2011/65/EU and 2004/108/EC.
Angleur, June 2013 Pierre Gardier, authorized representative
The complete declaration of conformity is available on our website: www.sensorio.be

EC countries: according to the directive 2002/96/EC for Waste Electrical and Electronic Equipment (WEEE)