INSTALLATION GUIDE

Laser Sensor Series LAV

For further information please see the data sheet at
www.waycon.biz/products/laser-sensors/

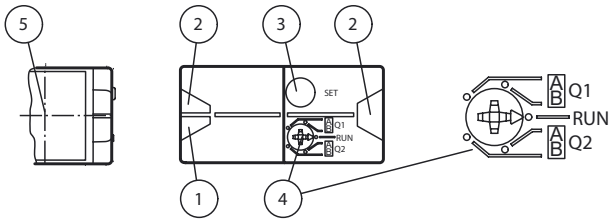
FIRST STEPS

WayCon Positionsmesstechnik GmbH would like to thank you for the trust you have placed in us and our products. This manual will make you familiar with the installation and operation of our laser sensors. Please read this manual carefully before initial operation!

Unpacking and checking:
Lift the device out of the box by grabbing the housing. Please pay attention not to touch the laser window. After unpacking the device, check it for any visible damage as a result of rough handling during the shipment. Check the delivery for completeness. If necessary consult the transportation company, or contact WayCon directly for further assistance.

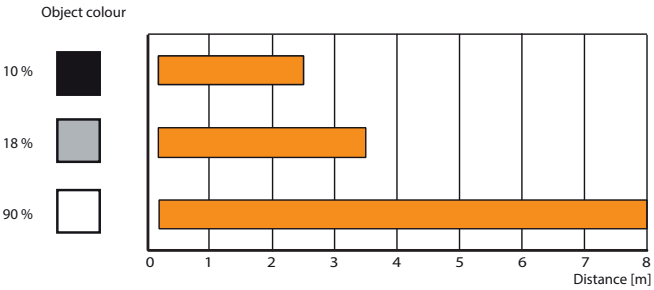
OPERATING ELEMENTS

1	Operating display	green
2	Signal display	yellow
3	Teach-In button	
4	Mode rotary switch	
5	Laser output	



MEASUREMENT RANGE

LAV-8-420-IO
Reference object: Kodak white (90%)



LAV-50-420-IO

Reference object: target board ZT-100 (accessory)
In case of a measurement without target board the measurement range will decrease depending on the objects colour and its distance to the laser sensor. We highly recommend to use the target board ZT-100 (accessory)

TEACH-IN

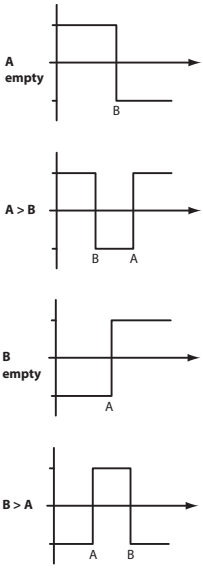
Switching output Q1:

You can use the rotary switch to select the relevant switching threshold A and/or B for teaching in for switching output Q1. The yellow LEDs indicate the current state of the selected output. To store a switching threshold (distance measured value), press and hold the „SET" button until the yellow and green LEDs flash in phase (approx. 2 s). Teach-In starts when the „SET" button is released.

Successful Teach-In is indicated by alternating flashing (2.5 Hz) of the yellow and green LEDs. An unsuccessful Teach-In is indicated by rapidly alternating flashing (8 Hz) of the yellow and green LEDs. After an unsuccessful Teach-In, the sensor continues to operate with the previous valid setting after the relevant visual fault signal is issued.

Different switching modes can be defined by teaching in the relevant distance measured values for the switching thresholds A and B: (see diagram on the right).

Every taught-in switching threshold can be retaught (overwritten) by pressing the SET button again. Pressing and holding the „SET" button for > 5 s completely deletes the taught-in value. The yellow and green LEDs go out simultaneously to indicate that this procedure has been completed.

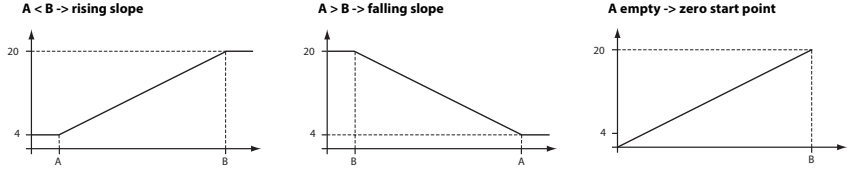


Analog output Q2:

Minimum and maximum values for the analog output Q2 are taught in the same way as those for the switching output:

The following values apply: A = 4 mA B = 20 mA

This provides the three different options for operation:



Reset to default settings:

Factory setting for switching output Q1:
Switching output inactive

Factory setting for analog output Q2:
A = 200 mm
B = 5000 mm
Value B cannot be deleted.

The "zero start point" operating mode can be obtained by deleting value A

- Set the rotary switch to the "RUN" position
- Press and hold the "SET" button until the yellow and green LEDs stop flashing in phase (approx. 10 s)
- When the green LED lights up continuously, the procedure is complete

Note!

The difference in the taught-in distance measured values for switching thresholds A and B must be greater than 20 mm.

If the difference in the taught-in measured values is the same as/or smaller than the set switching hysteresis, the sensor will visually signal an unsuccessful Teach-In. The last distance measured value that was taught in will not be adopted by the sensor.

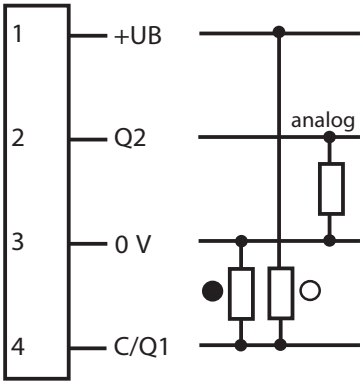
Select a new distance measured value for switching threshold A or B with a greater difference between the switching thresholds. Teach in this distance measured value on the sensor again.

Switching threshold A can be deleted or set to a value of zero. (E.g., when setting the "zero start point" curve). However, switching threshold B can neither be deleted nor set to a value of zero.

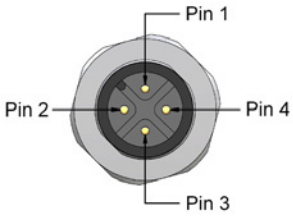
ERROR MESSAGES

- Short circuit: In the event of a short circuit at the sensor output, the green LED flashes with a frequency of approx. 4 Hz.
- Teach error: In the event of a teach error, the yellow and green LEDs flash alternately with a frequency of approx. 8 Hz.

ELECTRICAL CONNECTION



○ = Light on
● = Dark on



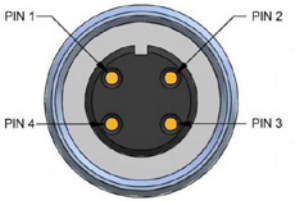
Q1: Switching output (push-pull)
Setting the switching threshold A and B
Light on: switches to 0 V
Dark on: switches to +UB

Q2: Analog output 4...20 mA
Setting the minimum and maximum values A and B

C: Data line IO-Link

Connection cables (accessory):

Cable with connector M12, 4 poles, shielded	
K4P2M-S-M12	2 m, connector straight, IP67
K4P5M-S-M12	5 m, connector straight, IP67
K4P10M-S-M12	10 m, connector straight, IP67
K4P2M-SW-M12	2 m, connector angular, IP67
K4P5M-SW-M12	5 m, connector angular, IP67
K4P10M-SW-M12	10 m, connector angular, IP67



PIN	cable colour
1	BN
2	WH
3	BU
4	BK

LASER NOTICE LASER CLASS 2

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Caution: Do not look into the beam!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Attach the device so that the warning is clearly visible and readable.
- Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

MAINTENANCE

The window of a laser sensor should be clean, in order to get the best possible measurement results. Dust, dirt or drops of liquid can impair the measurement result and in the worst case cause a wrong measurement result.
The following cleaning methods are suitable:
1) dry cleaning using a soft brush.
2) with a dry, soft, antistatic cloth.
3) wet cleaning with clear water, about 30 °C, if necessary add a bit of mild soap.
Please do not use glass cleaner!

DECLARATION OF EC-CONFORMITY

WayCon Positionsmesstechnik GmbH
Mehlbeerenstrasse 4
82024 Taufkirchen / Deutschland

This is to certify that the products

Classification	Laser Sensor
Series	LAV

fulfill the current request of the following EC-directives:
EMC-directive 2014/30/EU

The declaration of conformity loses its validity if the product is misused or modified without proper authorisation.

Taufkirchen,14.04.2016

Andreas Täger
CEO