INSTALLATION GUIDE

Laser Sensor Series LAS-T5

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

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 degree Celsius, 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 / Germany

We declare that the products to which the present declaration relates comply with the essential requirements of the given directive(s) and have been evaluated on the basis of the listed standard(s).

Classification	Laser Sensor
Series	LAS-T5
Directive(s)	2014/30/EU, 2011/65/EU
Standard(s)	EN 60947-5-2:2007+A1:2012, Abs/Sec. 8.6, EN 60947-5-7:2003, Abs/Sec. 8.6, EN 55011:2009+A1:2010 / EN 55022:2010 (Class B) IEC/EN 60825-1:2007, EN 50581:2012

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

Taufkirchen, 14.04.2016

Andreas Täger
Geschäftsführer

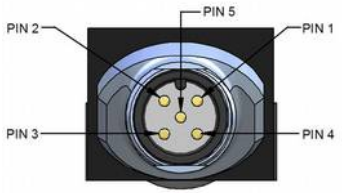
FIRST STEPS

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.

ELECTRICAL CONNECTION

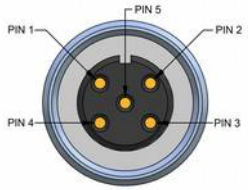
PIN	Function
1	V +
2	Signal
3	GND
4	n. c.
5	Teach-in



view on sensor

Cable with mating connector M12, 5 pole, IP67 (available as accessory)	
K5P2M-S-M12	2 m, straight connector, shielded
K5P5M-S-M12	5 m, straight connector, shielded
K5P10M-S-M12	10 m, straight connector, shielded
K5P2M-SW-M12	2 m, angular connector, shielded
K5P5M-SW-M12	5 m, angular connector, shielded
K5P10M-SW-M12	10 m, angular connector, shielded

PIN	cable colour
1	brow n
2	w hite
3	blue
4	black
5	grey



If external Teach-In option is not used, the Teach-In wire must be attached to GND.

The max. accuracy will be reached >15 minutes after power on.

Electromagnetic compatibility:

The sensor must be grounded correctly, a shielded cable is highly recommended.

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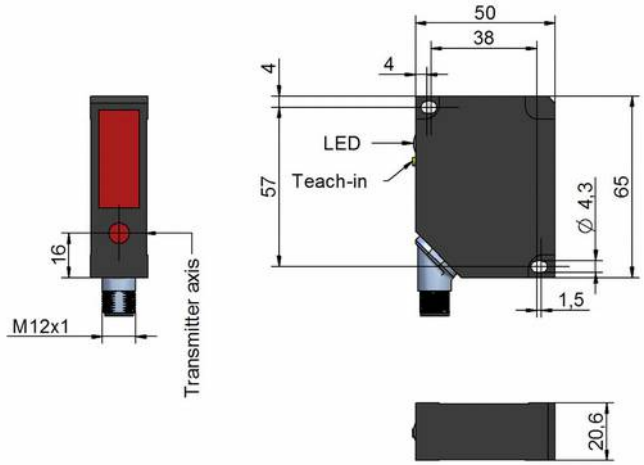
TECHNICAL DRAWING

LAS-T5



TEACHING THE SENSOR

Apart from this Installation Guide you will get a Teaching Guide delivered with every WayCon LAS laser sensor. There the teaching procedure is described in detail. Here a short introduction:

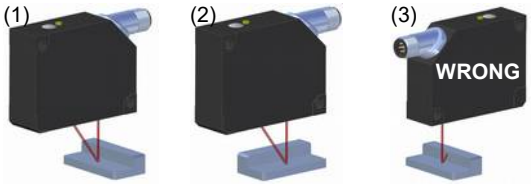
Every sensor is delivered with the factory set-up (max. measuring range). The teach-in feature was designed to choose a smaller range within the nominal measuring range for optimizing the resolution and linearity. Output current, voltage and alarm output adapt to the new range. Two positions must be taught.

- The first teach-in position aligns with 0 V, or 4 mA, the second position aligns with 10 V, or 20 mA
- These teach-in positions are always just at the border of the new range (inside the measuring range)
- The sensor may be taught more than 10.000 times in its lifetime
- The sensor can always be reset to the factory settings
- The sensor may be taught with the teach button or via the external teach input
- During the teach-in process, the red LED and the alarm output provides a feedback
- The red LED on the back side of the sensor and the alarm output indicate “run” mode if an object is within the measuring range.

MOUNTING AND OPERATING

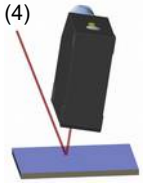
For triangulation sensors like the LAS, there is a simple rule, that the distance between sensor and target should be as small as possible. The smaller this range the better the linearity and accuracy of the sensor.

(1) (2) (3)



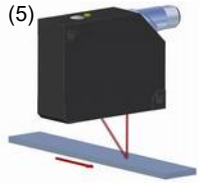
The receiver optics must be able to detect the light spot directly (figures 1 and 2). The light path must not be blocked, like shown in figure (3).

(4)



For highly polished or mirror-like objects it is important to keep the direct reflection away from the detector. In these cases, it is recommended to slightly tilt the sensor (figure 4).

(5)



Optimum results are obtained by transverse installation of the sensor with respect to the target movement (figure 5).

Error	Possible reason	Correction
The sensor does not measure	The teach-in wire is connected to + V.	Connect the teach-in wire to 0 V.
	The receiving beam is covered by an Object / edge / step.	Make sure that no object blocks the laser beam. Is the laser sot visible for the sensor?
	No receiving signal (transparent or highly reflective object).	See figure 4 (above). If possible use a diffuse reflecting surface (e.g. white paint).
The sensor has incorrect measuring values	Mutual optical interferences between two or more sensors.	Switch off close sensors that might influence the receiving unit of the sensor.
	Strong ambient light (e.g. direct sun light).	Prevent ambient light with a shield.
	Semi transparent, transparent, or highly reflective objects.	Make sure that the laser spot falls on a diffuse reflecting target.
The sensor does not reach the specified accuracy	Rough surface	A sensor with a laser line will work better.
	Colour edges	Mount the sensor the correct way.
	Resolution of A/D converter in the control unit / data logger.	Read the manual of the connected unit.

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