L-LAS Series

L-LAS-TB-75-CL

- Line laser <0.4 mW, wave length 670 nm, laser class 1
- Visible laser line, light curtain 75 mm
- Measuring range typ. 73 mm
- Resolution typ. 8 µm
- Working distance up to 2000 mm
- Integrated interference filter
- CCD line detector with 1180 pixel, 9440 subpixel (8-fold)
- RS232 and Windows® user interface
- 2 digital inputs, 2 digital outputs
- Analog output 0 ...+10V, in case of -4/20 additionally 4 ... 20mA
- Switching state indication via 4 LEDs (2x red/grn, 2x yel/grn)
- Sturdy aluminium housing, for use in industry
- Scratch-resistant optics cover made of glass

Design

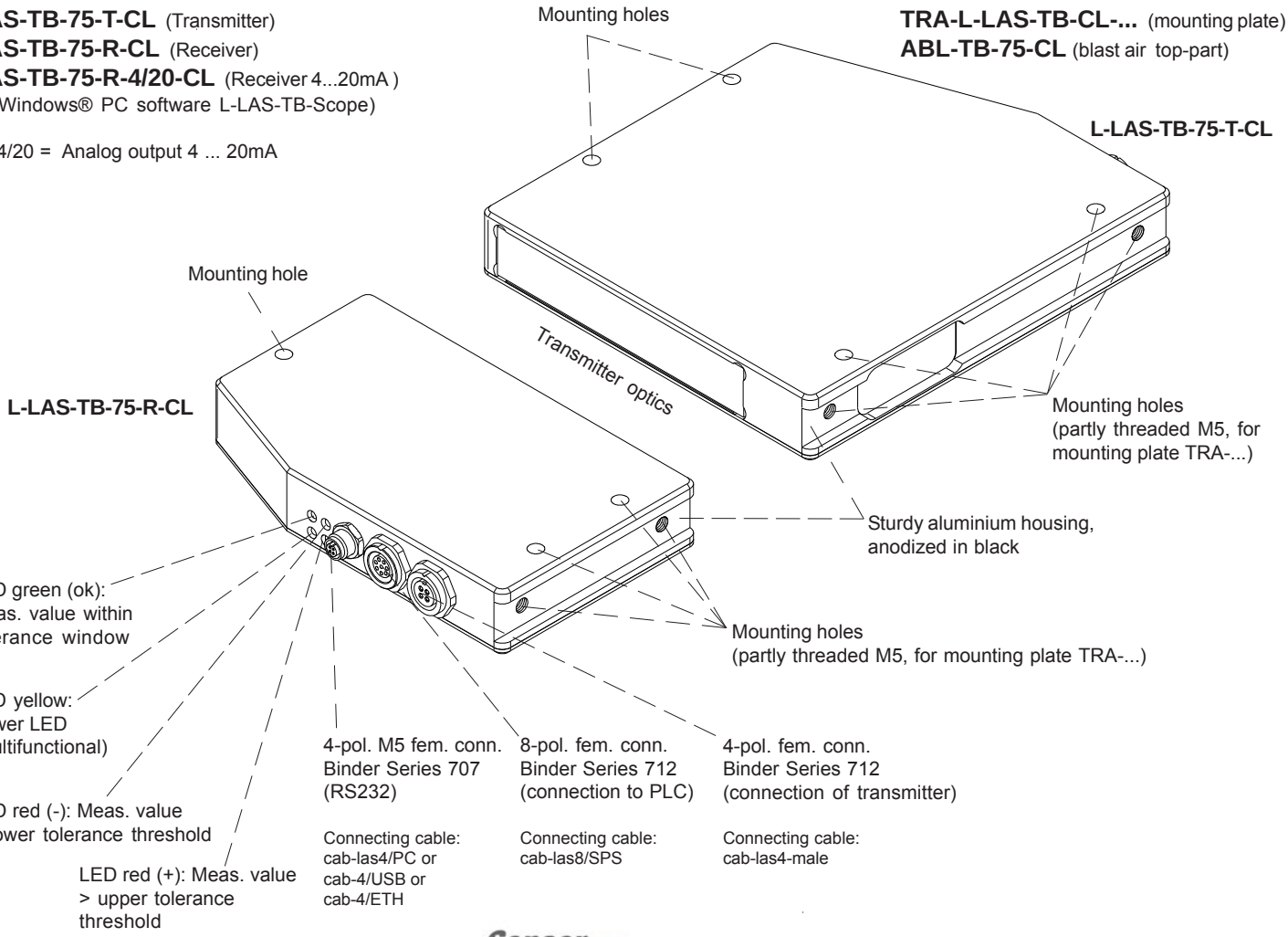
Product name:

L-LAS-TB-75-T-CL (Transmitter)
L-LAS-TB-75-R-CL (Receiver)
L-LAS-TB-75-R-4/20-CL (Receiver 4...20mA)
(incl. Windows® PC software L-LAS-TB-Scope)

4/20 = Analog output 4 ... 20mA

Accessories: (cf. pages 8/9)

TRA-L-LAS-TB-CL-... (mounting plate)
ABL-TB-75-CL (blast air top-part)

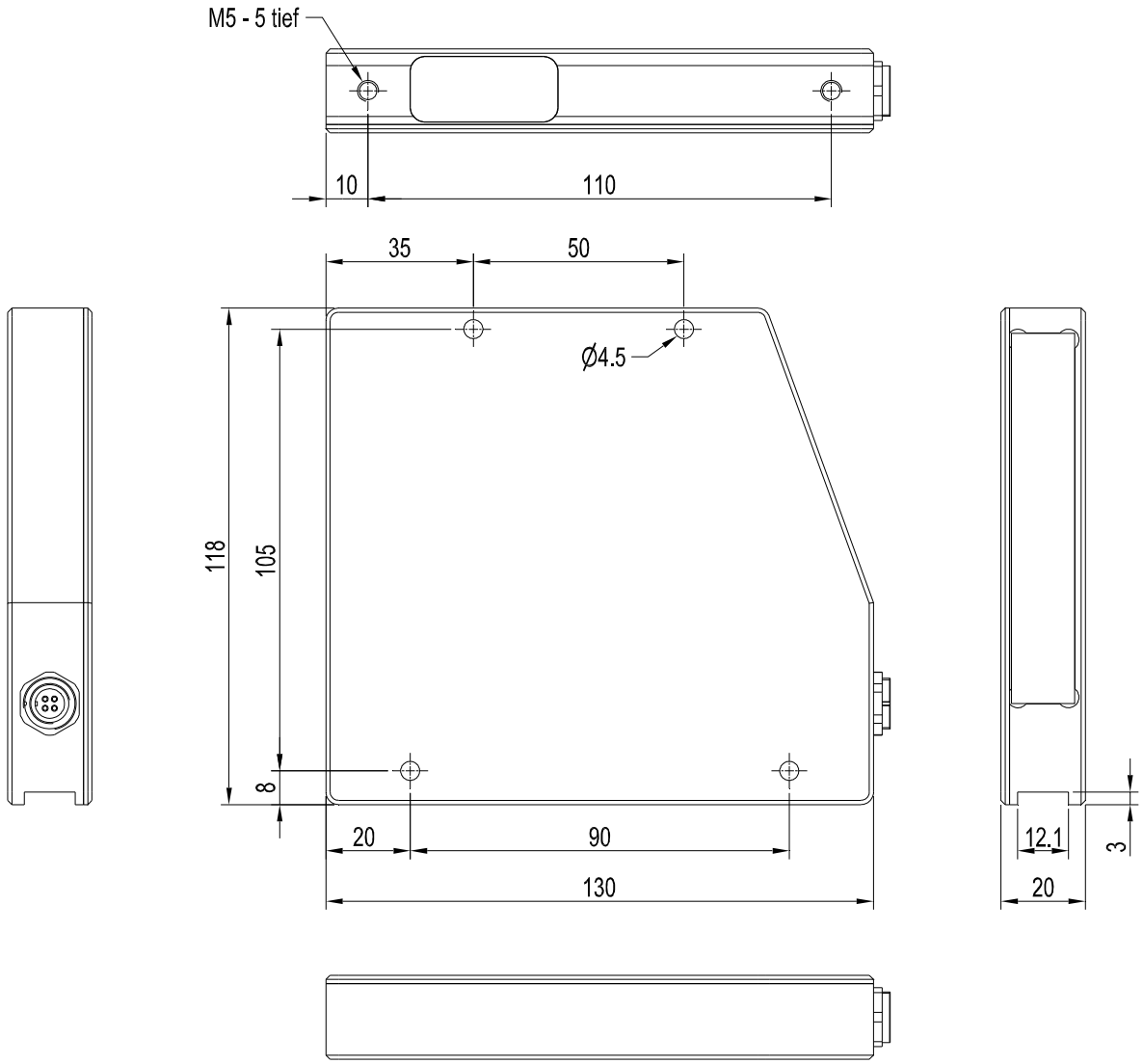


Technical Data

Model	L-LAS-TB-75-T-CL L-LAS-TB-75-R-CL	L-LAS-TB-75-T-CL L-LAS-TB-75-R-4/20-CL
Laser	Semiconductor laser, 670 nm, DC operation, < 0.4 mW max. opt. power, laser class 1 acc. to DIN EN 60825-1. The use of these laser sensors therefore requires no additional protective measures.	
Working distance	distance transmitter/receiver: up to 2000 mm	
Measuring range	typ. 73 mm	
Resolution	typ. 8 µm	
Reproducibility	typ. ± 8 µm	
Linearity	typ. 0,15% FSR (full scale range)	
Optical filter	Interference filter	
Analog output (1x or 2x)	1x voltage output (0 ... +10V)	1x current output (4 ... 20mA) 1x voltage output (0 ... +10V)
Digital outputs (2x) (OUT0, OUT1)	OUT0: (-) Measuring value < lower tolerance threshold OUT1: (+) Measuring value > upper tolerance threshold pnp bright-switching/npn dark-switching or pnp dark-switching/npn bright-switching, adjustable under Windows®, 100 mA, short-circuit proof	
Digital inputs (2x) (IN0, IN1)	IN0: Extern trigger, IN1: Teach/Reset (double function) input voltage +Ub/0V, with protective circuit	
Voltage supply	+24VDC (± 10%)	
Sensitivity setting	under Windows® via PC	
Laser power correction	adjustable under Windows® via PC	
Current consumption	typ. 200 mA	
Enclosure rating	electronics: IP54, optics: IP67	
Operating temperature range	-10°C ... +50°C	
Storage temperature range	-20°C ... +85°C	
Housing material	aluminum, anodized in black	
Housing dimensions	transmitter: LxWxH approx. 130 mm x 118 mm x 20 mm (without flange connectors) receiver: LxWxH approx. 70 mm x 118 mm x 20 mm (without flange connectors)	
Connectors receiver	8-pole circular female connector type Binder 712 (PLC/Power) 4-pole M5 circular female connector type Binder 707 (RS232/PC) 4-pole circular female connector type Binder 712 (connection to transmitter)	
Connector transmitter	4-pole circular female connector type Binder 712 (connection to receiver)	
LED display	LED red (+): measuring value > upper tolerance threshold LED green (ok): measuring value within tolerance window LED red (-): measuring value < lower tolerance threshold LED yellow: multifunctional	
EMC test acc. to	DIN EN 60947-5-2 CE	
Scan frequency	Normal Speed mode (high resolution): max. 600 Hz Double Speed mode (half resolution): max. 1.2 kHz can be switched under Windows®	
Max. switching current	100 mA, short-circuit proof	
Interface	RS232, parameterisable under Windows®	
Connecting cables	Connection to PC: cab-las4/PC or cab-4/USB or cab-4/ETH Connection to PC: cab-las8/SPS or cab-las8/SPS-w Connecting cable transmitter/receiver: cab-las4-male	
Output polarity	bright/dark switching, can be switched under Windows®	

Dimensions

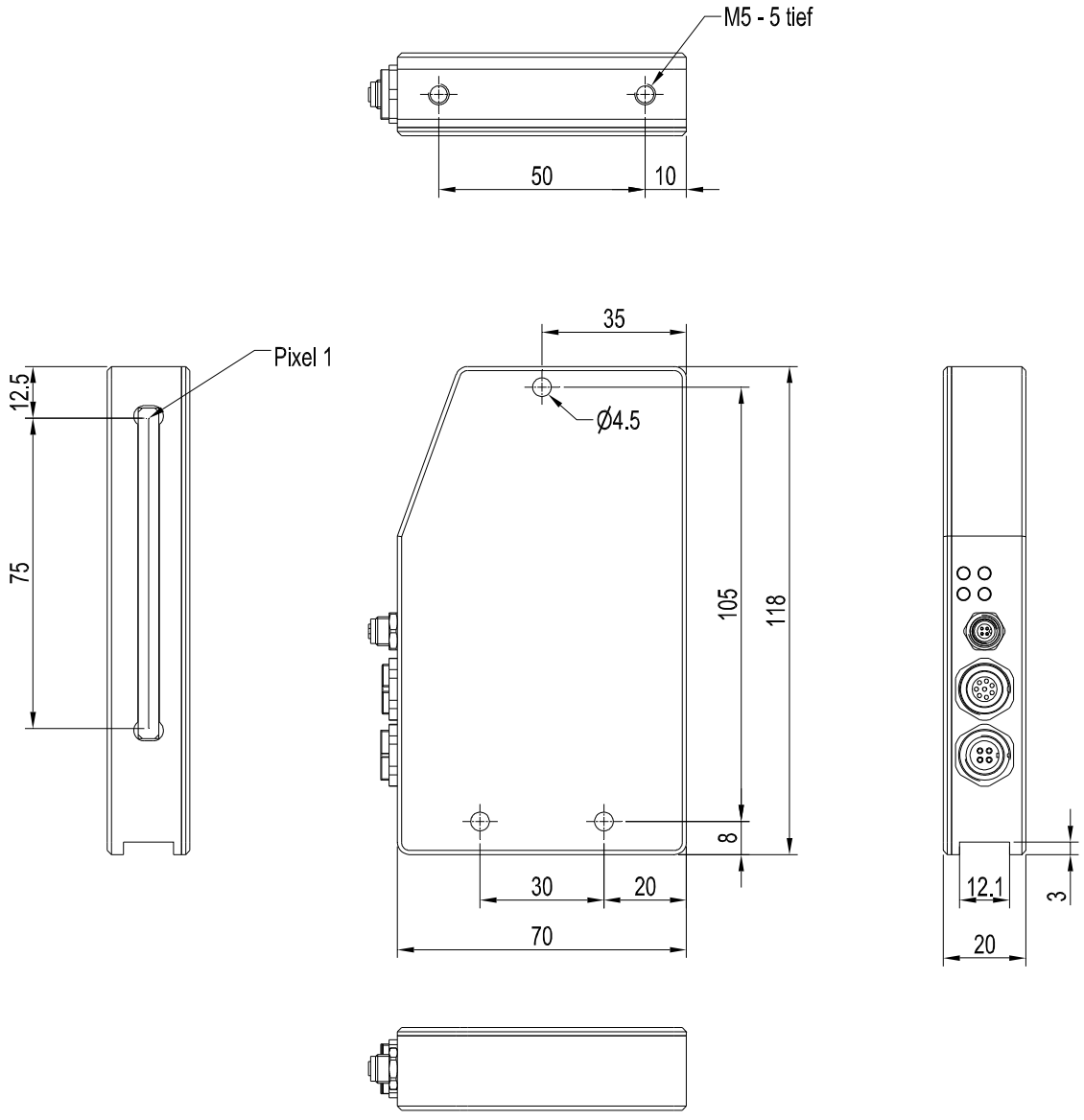
L-LAS-TB-75-T-CL
(Transmitter)



All dimensions in mm

Dimensions

L-LAS-TB-75-R-CL or
L-LAS-TB-75-R-4/20-CL
(Receiver)



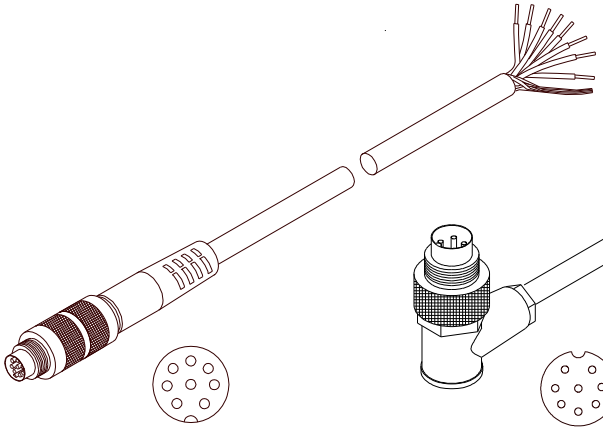
All dimensions in mm

Connector Assignment

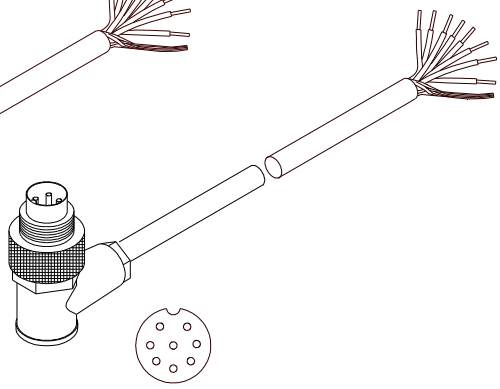
Connection to PLC:
8-pole fem. connector Binder Series 712

Pin:	Color:	Assignment:
1	white	GND (0V)
2	brown	+24VDC (± 10%)
3	green	IN0 (EXT TRIGGER)
4	yellow	IN1 (TEACH / RESET)
5	grey	OUT0 (-)
6	pink	OUT1 (+)
7	blue	GND (0V)
		or with type -4/20:
		ANA (current 4 ... 20mA)
8	red	ANA (voltage 0 ... +10V)

Connecting cable:
cab-las8/SPS-(length) or
cab-las8/SPS-w-(length) (angle type 90°)
(standard length 2m)



cab-las8/SPS-...
(max. length 25m, outer jacket: PUR)



cab-las8/SPS-w-...
(max. length 25m, outer jacket: PUR)

Connection to PC:
4-pole fem. connector Binder Series 707

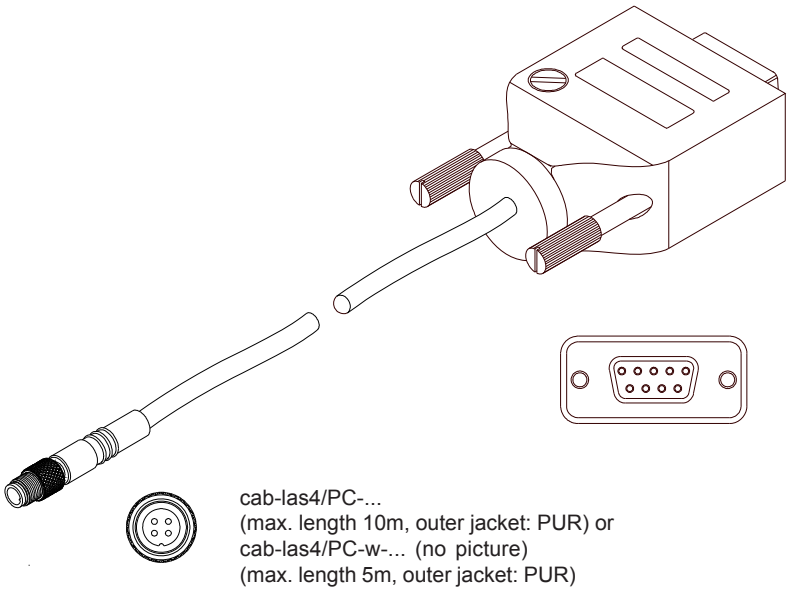
Pin:	Assignment:
1	+24VDC (+Ub, OUT)
2	GND (0V)
3	RxD
4	TxD

Connection via RS232 interface at the PC:
Connecting cable:
cab-las4/PC-(length)
cab-las4/PC-w-(length) (angle type 90°)
(standard length 2m)

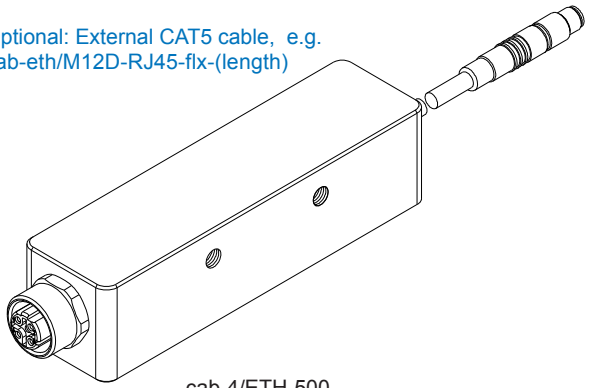
alternative:
Connection via USB interface at the PC:
Connecting cable (incl. driver software):
cab-4/USB-(length)
cab-4/USB-w-(length) (angle type 90°)
(standard length 2m)

alternative:
Connection to local network via Ethernet bus:
Adapter (incl. software „SensorFinder“):
cab-4/ETH-500
(standard length 0.5m)

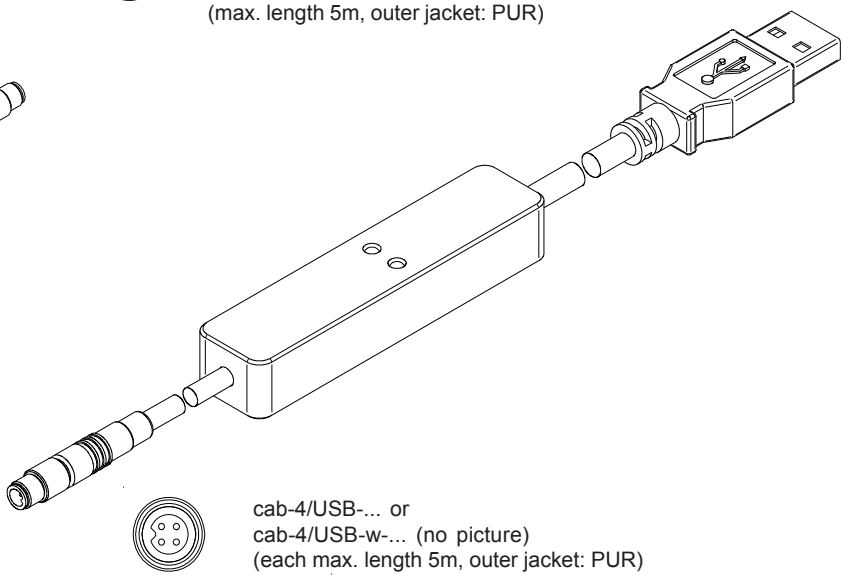
Optional: External CAT5 cable, e.g.
cab-eth/M12D-RJ45-flx-(length)



cab-las4/PC-...
(max. length 10m, outer jacket: PUR) or
cab-las4/PC-w-... (no picture)
(max. length 5m, outer jacket: PUR)



cab-4/ETH-500
(length 0.5m, outer jacket: PUR)
4-pole M12 fem. conn. (D-coded)
for connection of an external
CAT5 cable, e.g.
cab-eth/M12D-RJ45-flx-(length)



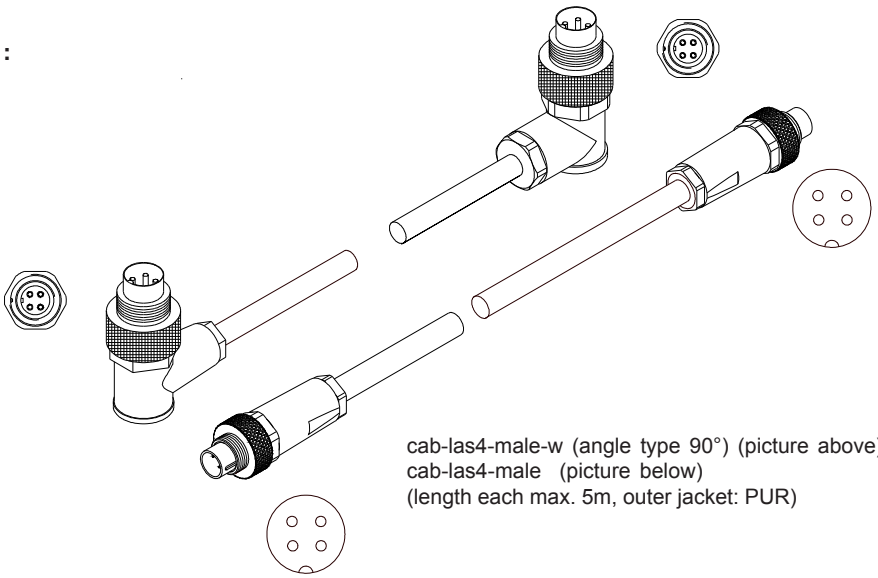
cab-4/USB-... or
cab-4/USB-w-... (no picture)
(each max. length 5m, outer jacket: PUR)

Connector Assignment

Connection L-LAS-TB-...-T-CL with L-LAS-TB-...-R-CL (or L-LAS-TB-...-R-4/20-CL) : 4-pole female connector Binder Series 712

Pin:	Assignment:
1	+5VDC
2	0V (GND)
3	I-CONTROL (0V ... +5V)
4	not connected

Connecting cable:
cab-las4-male-(length)
cab-las4-male-w-(length) (angle type 90°)
(standard length 2m)



cab-las4-male-w (angle type 90°) (picture above) or
cab-las4-male (picture below)
(length each max. 5m, outer jacket: PUR)

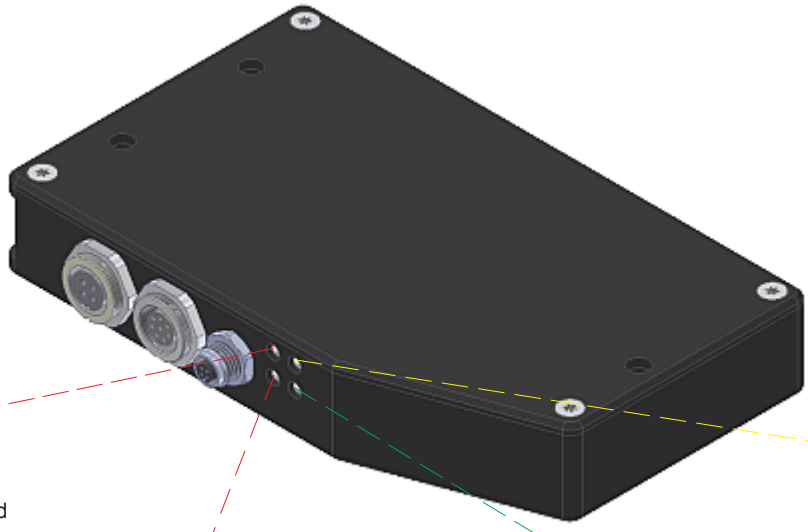
LED Display

L-LAS-TB-75-R-CL:
(Receiver)

LED display:

(+) **Power**

(-) **(ok)**



LED red (+):
Measuring value
> upper tolerance threshold
(OUT1)

LED yellow:
Power LED
(multifunctional)

LED red (-):
Measuring value
< lower tolerance threshold
(OUT0)

LED green (ok):
Measuring value within
tolerance window

Laser Warning

The laser transmitter of L-LAS-TB Series comply with laser class 1 according to EN 60825-1. The accessible laser radiation is harmless under reasonably foreseeable conditions. The reasonably foreseeable conditions are kept during correct operation. The use of these laser transmitters therefore requires no additional protective measures.

The laser line sensors of L-LAS-TB Series are supplied with a laser warning label type „CLASS 1 LASER PRODUCT“.

CLASS 1 Laser Product

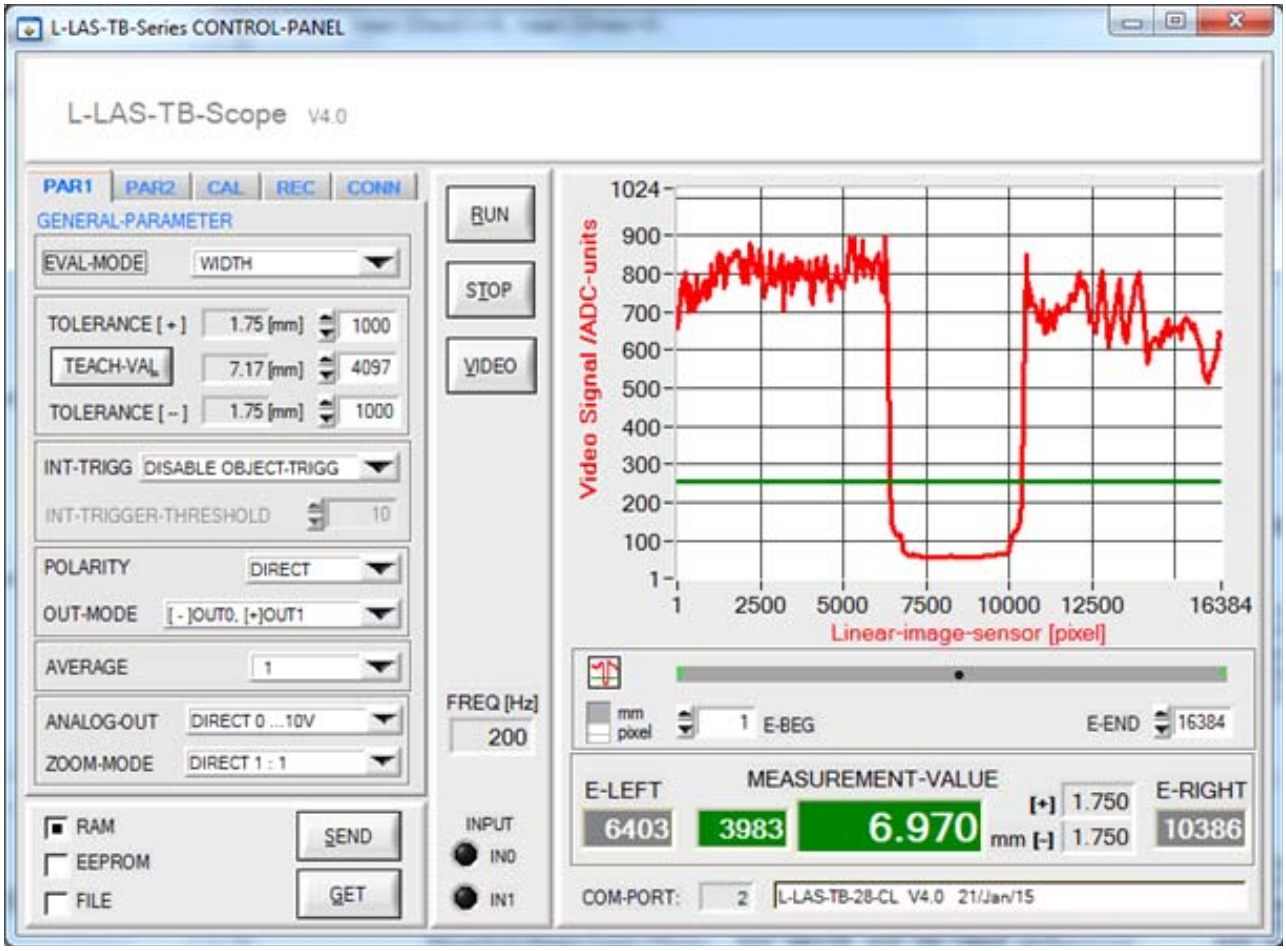
DIN EN 60825-1: 2008-05

Parameterization

Windows® software L-LAS-TB-Scope:

The L-LAS-TB sensor can be easily parameterised with the Windows® user interface.
For this purpose the sensor is connected to the PC with the serial interface cable cab-las4/PC.
When parameterisation is finished, the PC can be disconnected again.

Windows® user interface:



With the help of the L-LAS-TB-Scope software the following settings can be made at the sensor:

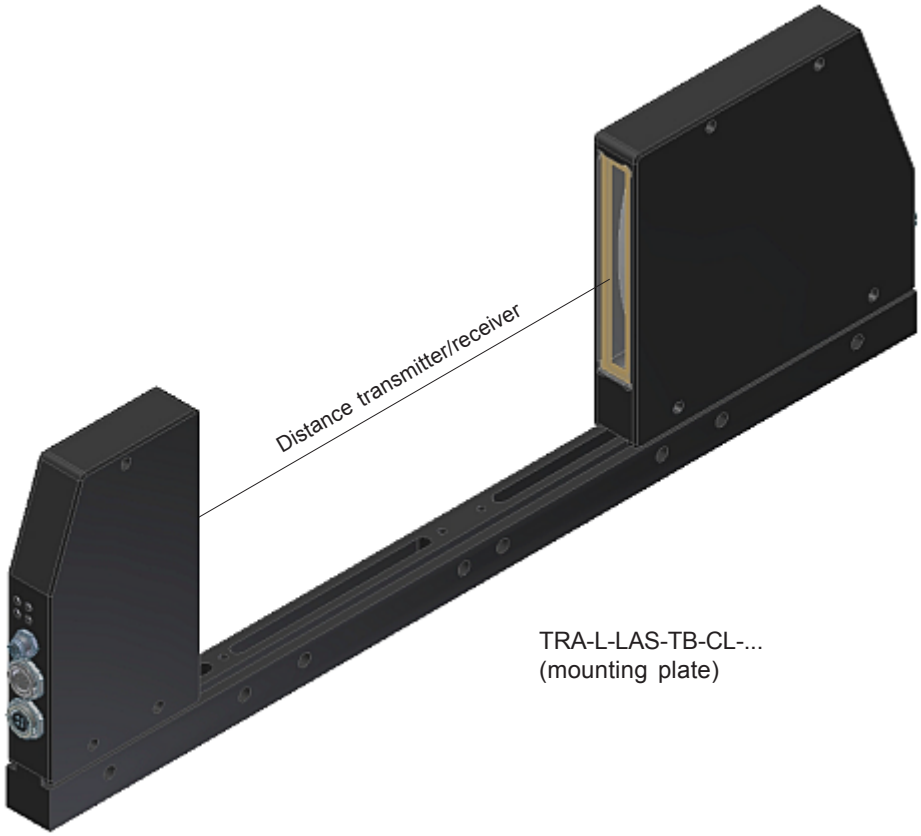
- Setting of laser power and type of automatic power correction
- Polarity of digital outputs
- Different evaluation modes
- Start of the teach process by software button
- Setting of tolerance ranges for monitoring the measured value
- Selection of scan frequency

Furthermore, various numerical and graphical measured quantities can be visualized with the L-LAS-TB-Scope software. For example, the raw data of the CCD line sensor can be displayed graphically and numerically.

Accessories

Mounting plate for L-LAS-TB-75-T-CL and L-LAS-TB-75-R-CL (respectively L-LAS-TB-75-R-4/20-CL):
(please order separately)

TRA-L-LAS-TB-CL-400 (total length 400 mm, max. transmitter/receiver distance cf. chart below)
TRA-L-LAS-TB-CL-600 (total length 600 mm, max. transmitter/receiver distance cf. chart below)
TRA-L-LAS-TB-CL-800 (total length 800 mm, max. transmitter/receiver distance cf. chart below)
(Aluminium housing, anodized in black)



TRA-L-LAS-TB-CL-...
(mounting plate)

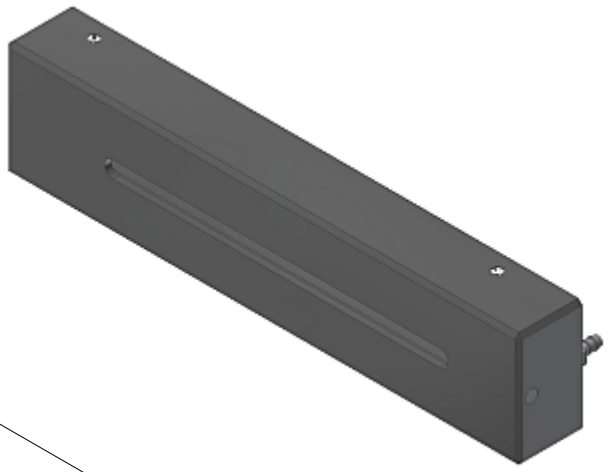
Max. distance T/R in case of use of mounting plate:	**TRA-L-LAS-TB-CL-400**	**TRA-L-LAS-TB-CL-600**	**TRA-L-LAS-TB-CL-800**
L-LAS-TB-28-T-CL **L-LAS-TB-28-R-CL**	max. distance T/R: 222 mm	max. distance T/R: 422 mm	max. distance T/R: 622 mm
L-LAS-TB-50-T-CL **L-LAS-TB-50-R-CL**	max. distance T/R: 205 mm	max. distance T/R: 405 mm	max. distance T/R: 605 mm
L-LAS-TB-75-T-CL **L-LAS-TB-75-R-CL**	max. distance T/R: 200 mm	max. distance T/R: 400 mm	max. distance T/R: 600 mm
L-LAS-TB-100-T-CL **L-LAS-TB-100-R-CL**	max. distance T/R: 160 mm	max. distance T/R: 360 mm	max. distance T/R: 560 mm

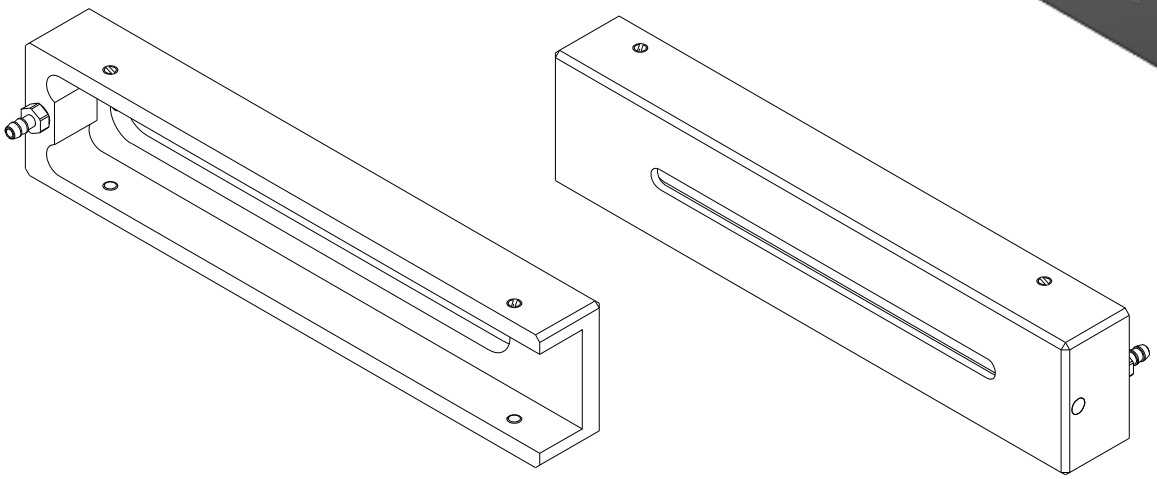
Accessories

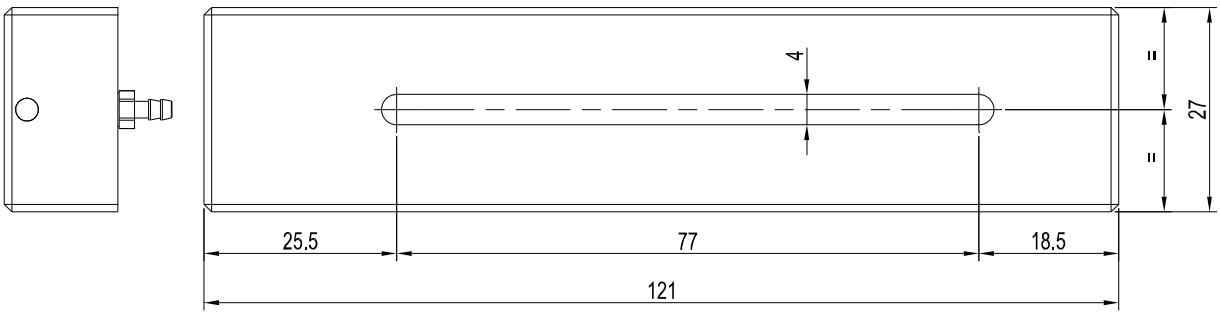
Blast air top part:

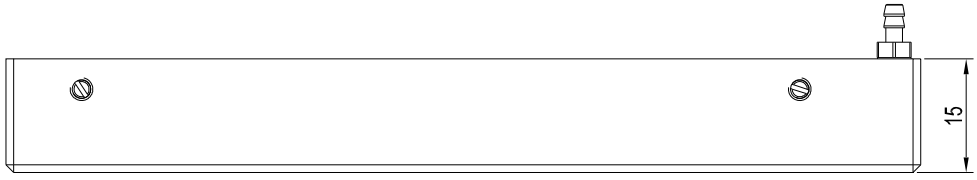
ABL-TB-75-CL
(Plastic housing, black, please order separately for each transmitter and receiver)

suitable for:
L-LAS-TB-75-T-CL and
L-LAS-TB-75-R-CL (or L-LAS-TB-75-R-4/20-CL)









All dimensions in mm