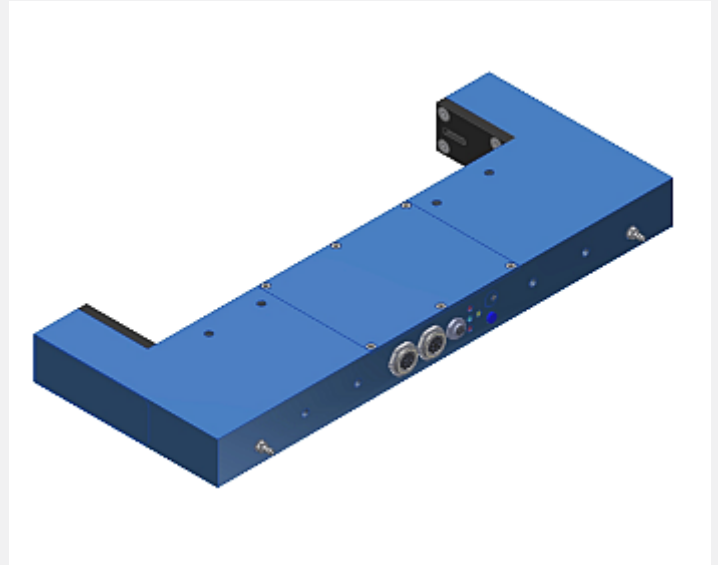


L-LAS Series

▶ L-LAS-TB-F-8x1-200/40-BL

- Line laser <math><0.4\text{ mW}</math>, wave length 670 nm, laser class 1
- Visible laser line, typ. 9.5 mm x 1.5 mm
- Measuring range typ. 8 mm
Resolution typ. 1 μm
- Transmitter/receiver distance 200 mm
- Integrated interference filter
- CCD line detector with 1024 pixel, 8192 subpixel (8-fold)
- External teach button and potentiometer for tolerance setting
- RS232 interface (USB or Ethernet adaptor available)
- 2 digital inputs, 3 digital outputs
- 1 analog output 0 ... +10V (optional 4 ... 20mA)
- Switching state indication by 4 LEDs (1x grn, 2x red, 1x yel)
- Blast air connectors at transmitter and receiver side



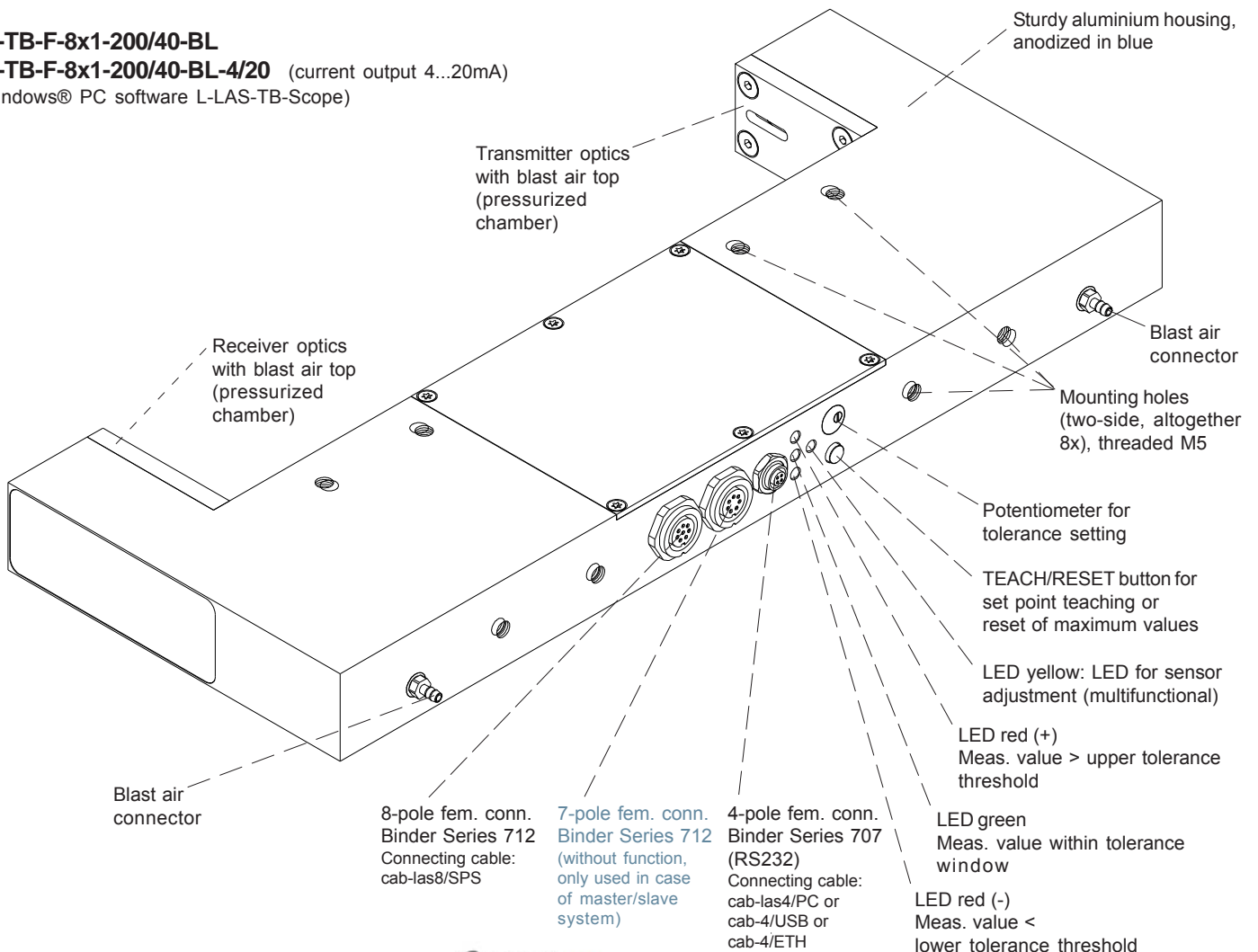
Design

Product name:

L-LAS-TB-F-8x1-200/40-BL

L-LAS-TB-F-8x1-200/40-BL-4/20 (current output 4...20mA)

(incl. Windows® PC software L-LAS-TB-Scope)



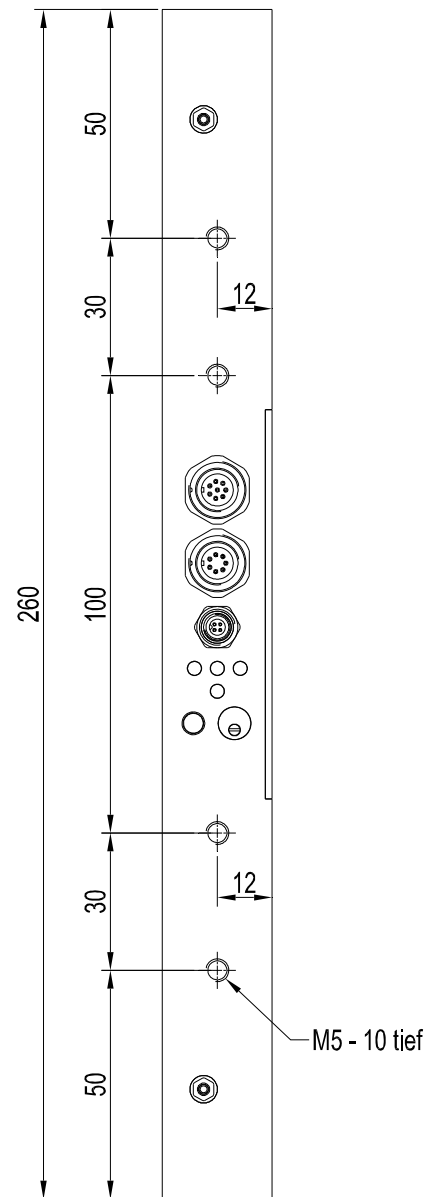
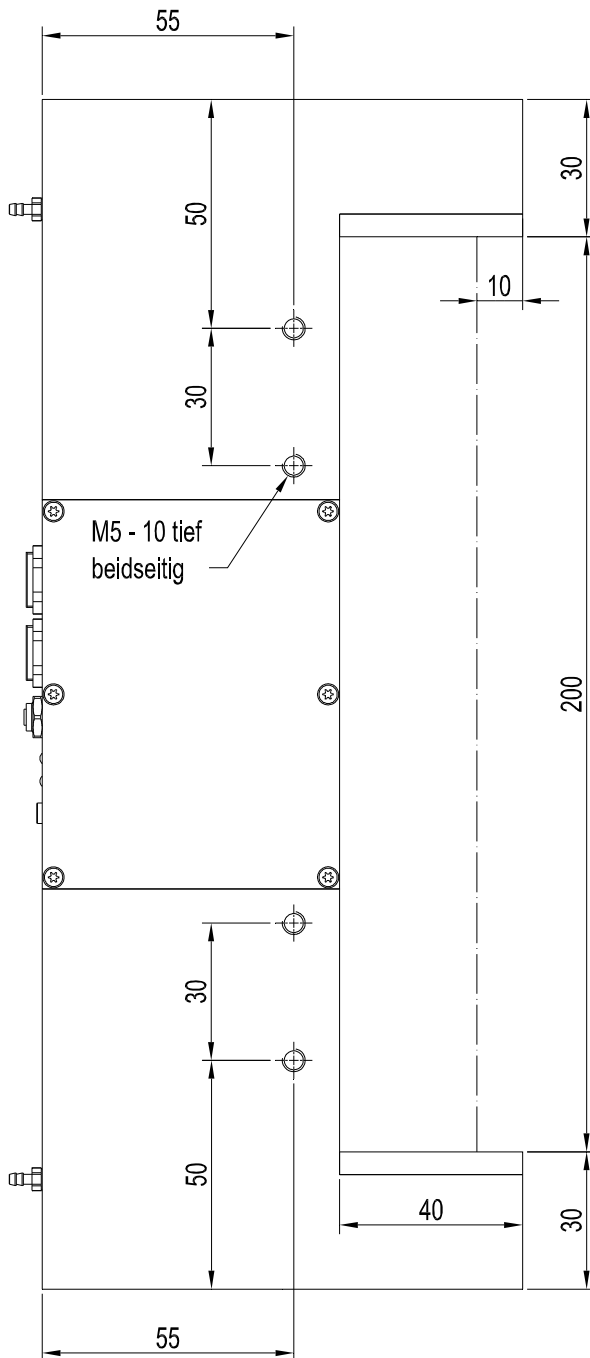
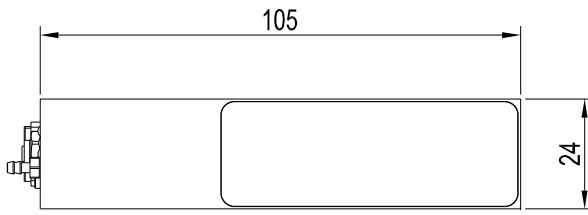
Sensor Instruments



Technical Data

| Model | L-LAS-TB-F-8x1-200/40-BL | L-LAS-TB-F-8x1-200/40-BL-4/20 |
|------------------------------------|---|-------------------------------|
| Laser | Semi conductor laser, 670 nm, DC operation, <0.4 mW max. optical power, laser class 1 acc. to DIN EN 60825-1. The use of these laser transmitters therefore requires no additional protective measures. | |
| Transmitter/receiver distance | 200 mm (= fork width) | |
| Measuring range | typ. 8 mm | |
| Resolution | typ. 1 µm | |
| Reproducibility | typ. ± 1 µm | |
| Linearity | typ. 0.1% FSR (full scale range) | |
| Optical filter | Interference filter | |
| Analog output | Voltage output 0 ... +10V | Current output 4 ... 20mA |
| Digital outputs (OUT0, OUT1, OUT2) | pnp bright-switching (pnp n.c.)/npn dark-switching (npn n.o.) or pnp dark-switching (pnp n.o.)/npn bright-switching (npn n.c.), adjustable under Windows®, 100 mA, short-circuit-proof | |
| Digital inputs (IN0, IN1) | IN0: External trigger IN1: Teach/Reset (double function) Input voltage +Ub/0V, with protective circuit | |
| Voltage supply | +24VDC (± 10%) | |
| Sensitivity setting | adjustable via potentiometer TOL or 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 | Aluminium, anodized in blue | |
| Housing dimensions | LxWxH approx. 260 mm x 105 mm x 24 mm (without flange connectors) | |
| Connector type | 8-pole circular female connector type Binder 712 (PLC/Power) 4-pole circular female connector type Binder 707 (PC/RS232) | |
| Teach button | Teach button on the housing for norm value teaching | |
| LED display | LED red (+) : Measured value > upper tolerance threshold LED green : Measured value within tolerance window LED red (-) : Measured value < lower tolerance threshold LED yellow: LED for sensor adjustment (multifunctional) | |
| EMC test acc. to | DIN EN 60947-5-2 CE | |
| Scan frequency | max. 200 Hz | |
| Max. switching current | 100 mA, short-circuit proof | |
| Interface | RS232, parameterisable under Windows® | |
| Connecting cable | Connection to PC: cab-las4/PC or cab-4/USB or cab-4/ETH Connection to PLC: cab-las8/SPS or cab-las8/SPS-w | |
| Output polarity | Bright/dark-switching, can be changed under Windows® | |
| Blast air connectors | at transmitter and receiver side | |

Dimensions



All dimensions in mm



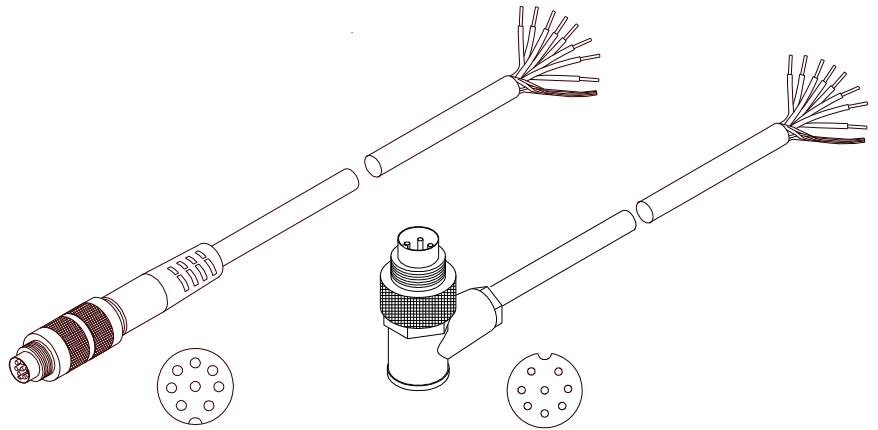
Connector Assignment

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 | OUT2 (OK) |
| 8 | red | ANA (0 ... +10V) |
| in case of version -4/20: | | |
| ANA (4 ... 20mA) | | |



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

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

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

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)

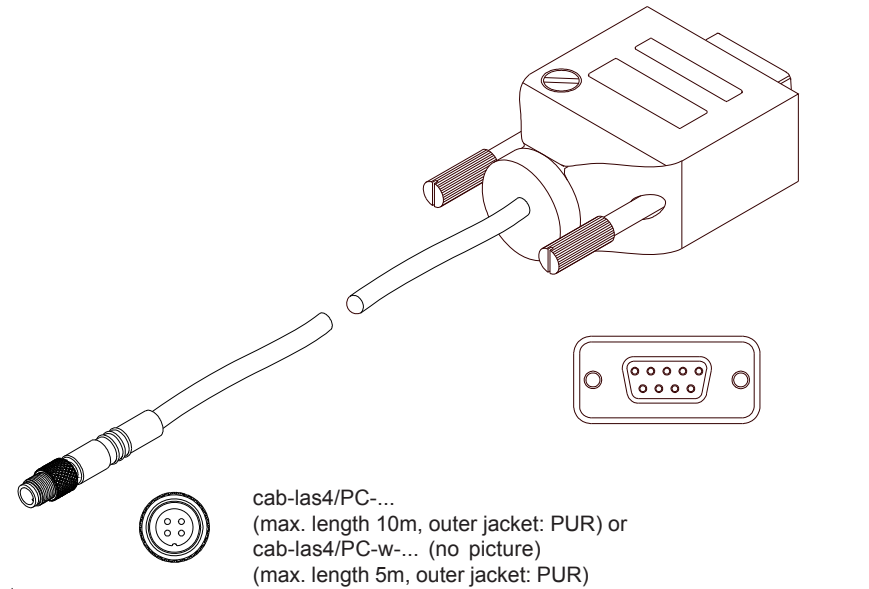
alternative:

Connection to local network via Ethernet bus:

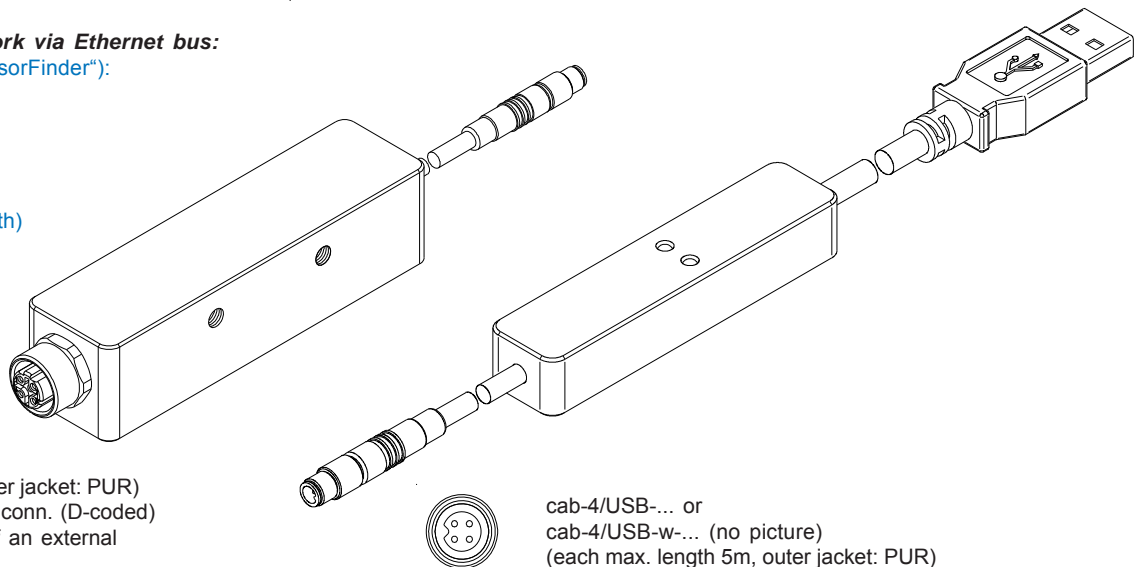
Adapter (incl. software „SensorFinder“):
cab-4/ETH-500
(standard length 0.5m)

Optional:

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



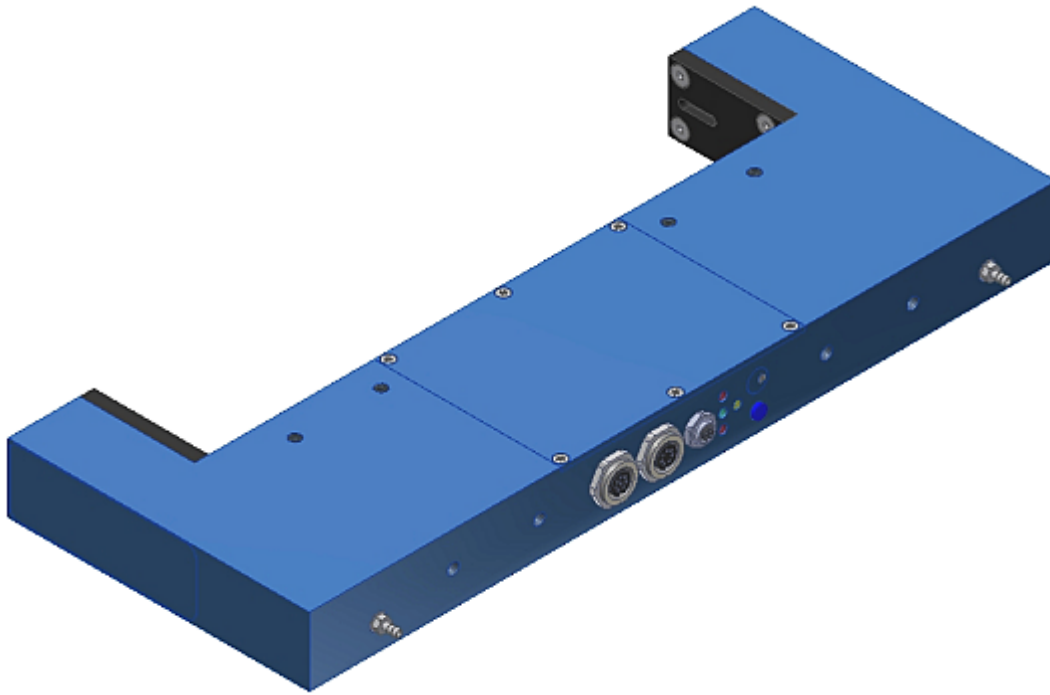
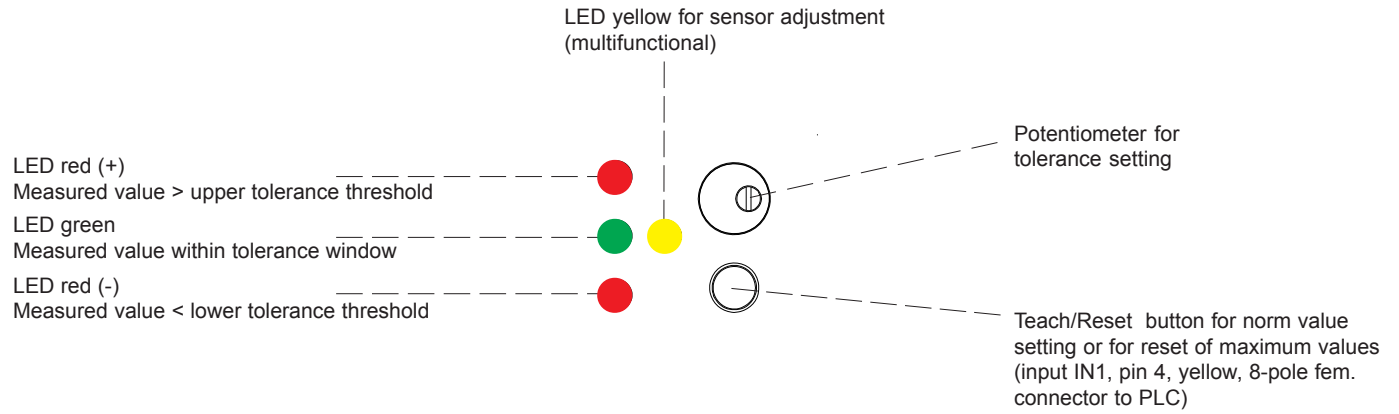
cab-las4/PC-...
(max. length 10m, outer jacket: PUR) or
cab-las4/PC-w-... (no picture)
(max. length 5m, outer jacket: PUR)



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)





The laser line sensors of L-LAS-TB series comply with laser class 1 according to EN 60825-1. Under reasonably foreseeable conditions a class 1 laser is safe. The reasonably foreseeable conditions are kept during specified normal 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 an information label „CLASS 1 LASER PRODUCT“.





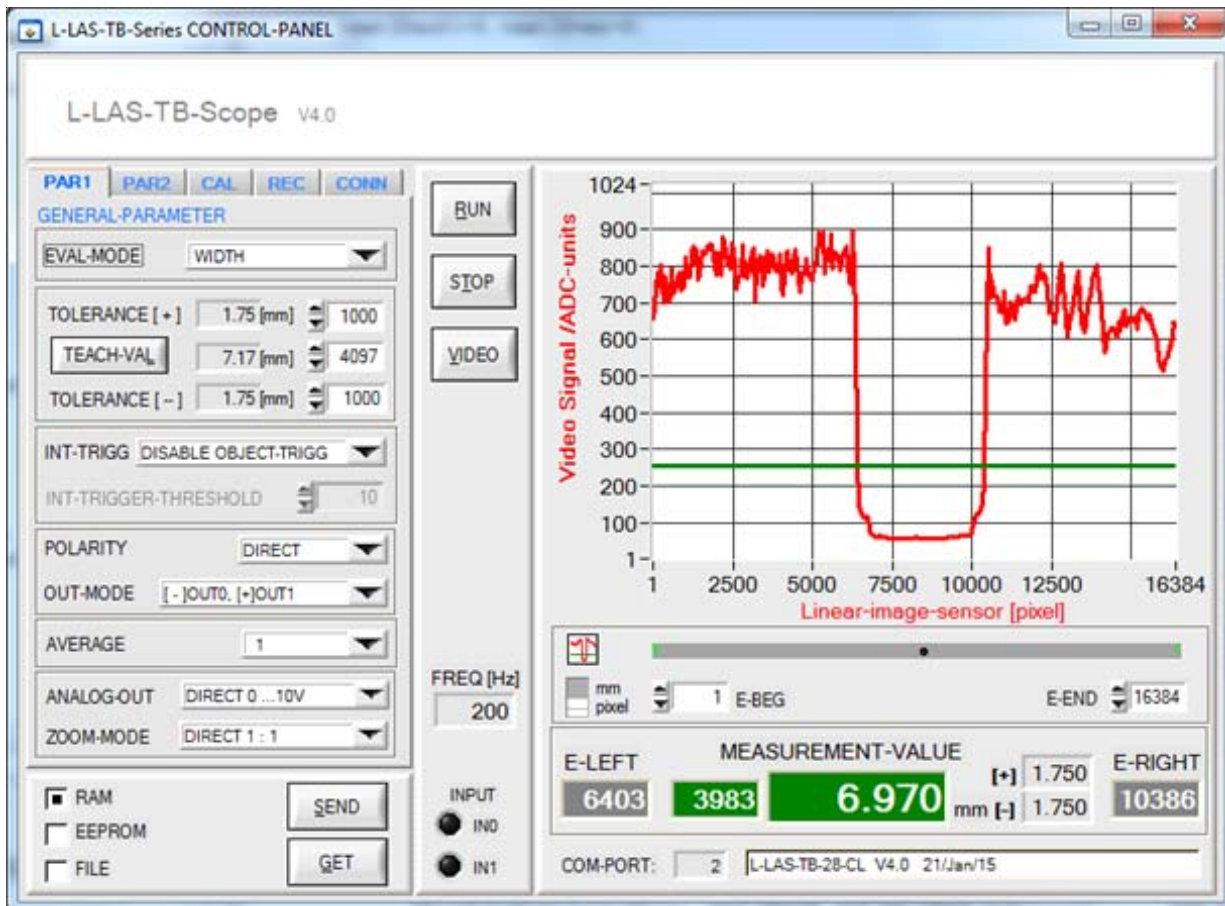
Parameterization

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 (or with the USB interface cable cab-4/USB or the Ethernet adapter cable cab-4/ETH). 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

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.