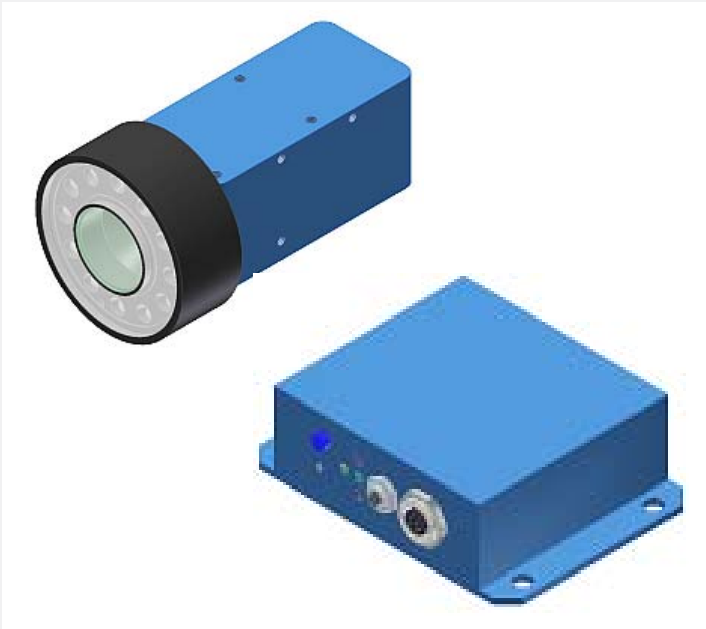
L-LAS Series

L-LAS-RL-30-FE
L-LAS-RL-CON1

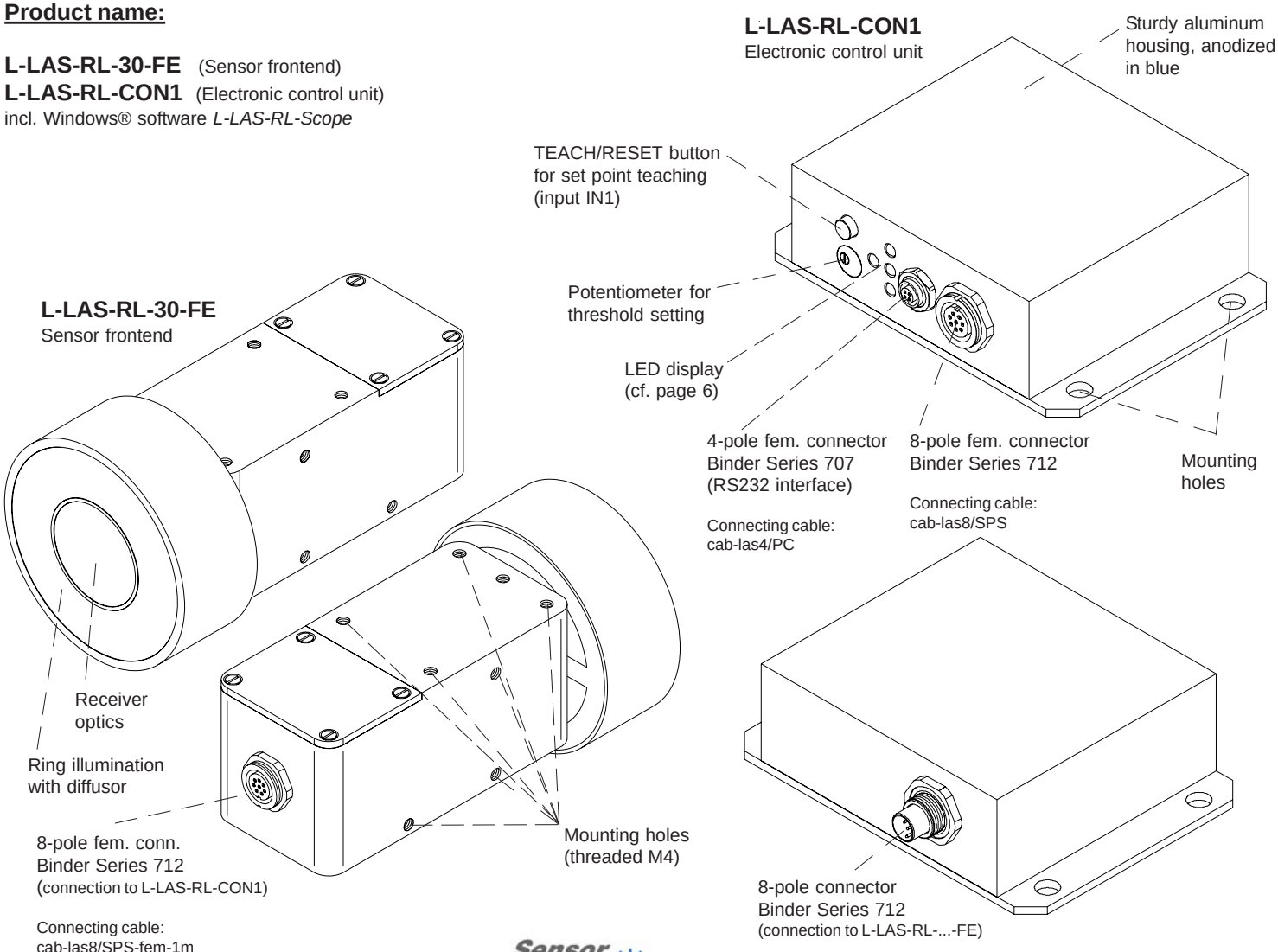


- Reference distance 120 mm
- Working distance 120 mm ± 5 mm
- Working range typ. 30 mm (± 15 mm)
- CCD line detector, 1024 Pixel, resolution typ. 0,5 mm
- Ring illumination with 12 white-light LED, diffuse
- External teach button and potentiometer for tolerance setting
- RS232 interface and Windows® user interface
- 2 digital inputs, 2 digital outputs
- 2 analog outputs (voltage 0...10V, current 4...20mA)
- Switching state indication via 4 LED (1x green, 2x red, 1x yellow)
- Optis cover made of scratch-resistant glass
- Detection of position or width of the measured object in reflex operation

Design

Product name:

L-LAS-RL-30-FE (Sensor frontend)
L-LAS-RL-CON1 (Electronic control unit)
incl. Windows® software *L-LAS-RL-Scope*

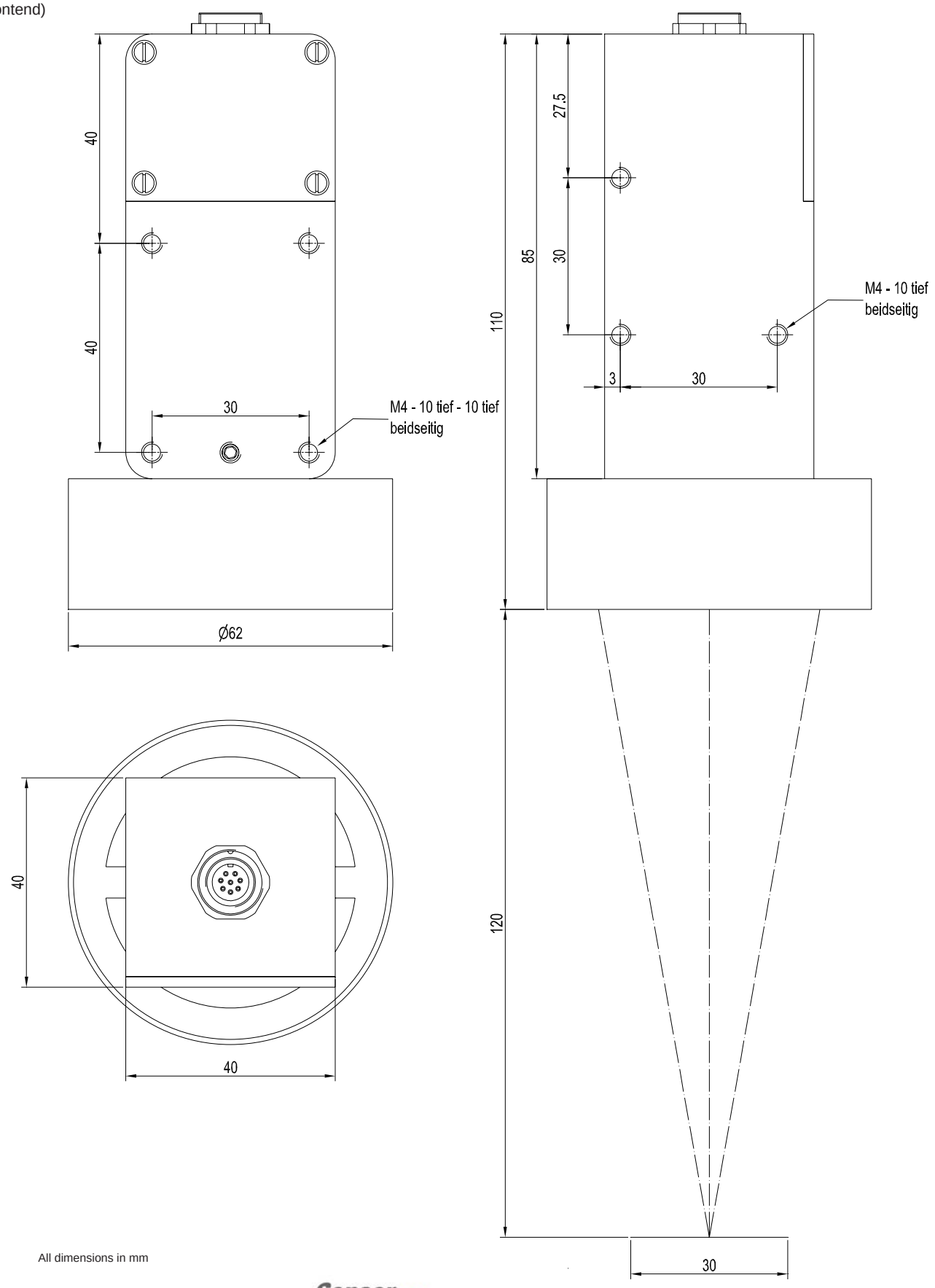


Technical Data

Model	L-LAS-RL-30-FE (frontend), L-LAS-RL-CON1 (electronic control unit)
Reference distance	120 mm
Working distance	120 mm ± 5 mm
Measuring range	typ. 30 mm (± 15 mm)
Resolution	typ. 0,5 mm
Illumination	Ring illumination consisting of 12x white-light LED(super bright), diffuse
Optical diffusor	Surface divergent lens
Analog outputs	Voltage: 0 ... +10 V (Pin 8, red), Current: 4 ... 20 mA (Pin 7, blue)
Digital outputs (OUT0, OUT1)	pnp bright-switching/npn dark-switching or pnp dark-switching/npn bright-switching, adjustable under Windows®, 100 mA, short-circuit-proof
Digital inputs (IN0, IN1)	Input voltage +Ub/0V, with protective circuit, IN0: External trigger IN1: Teach/Reset
Output polarity	Bright-/dark-switching, adjustable under Windows®
Voltage supply	+15 ... +30 VDC
Current consumption	typ. 250 mA
Enclosure rating	Electronics: IP54, Optik: IP67
Sensitivity setting	adjustable by means of tolerance potentiometer or under Windows® at PC
Teach button	Teach button at housing for set value teaching
Intensity correction	adjustable under Windows® auf PC
Operating temperature range	-10°C ... +60°C
Storage temperature range	-20°C ... +85°C
Housing material	Aluminum, anodized in blue
Housing dimensions (without flange connectors)	Electronic control unit L-LAS-RL-CON1: LxWxH approx. 90 mm x 65 mm x 25 mm Sensor frontend L-LAS-RL-30-FE: LxWxH approx. 110 mm x 40 mm x 40 mm (Ø 62 mm)
Connector type of L-LAS-RL-CON1	Electronic control unit: 8-pole circular connector type Binder Series 712 (PLC/Power), 4-pole circular connector type Binder Series 707 (PC/RS232), 8-pole circular connector Binder Series 712 (connection to frontend)
Connector type of L-LAS-RL-30-FE	Sensor frontend: 8-pole circular female connector Binder Series 712 (connection to electronic control unit)
LED display	LED red (+) : Measuring value > upper tolerance threshold LED green : Measuring value within tolerance window LED red (-) : Measuring value < lower tolerance threshold LED yellow:: Voltage indication / visualization teach process
EMC test acc. to	DIN EN 60947-5-2 CE
Scan frequency	max. 200 Hz
Max. switching current	Digital outputs OUT0, OUT1: 100 mA, short-circuit-proof
Interface	RS232, parameterisable under Windows®
Connecting cables	Connection of L-LAS-RL-CON1 to PC: cab-las4/PC or cab-las4/PC-w Connection of L-LAS-RL-CON1 to PLC: cab-las8/SPS or cab-las8/SPS-w Connection of L-LAS-RL-CON1 to L-LAS-RL-30-FE: cab-las8/SPS-fem-1m

Dimensions

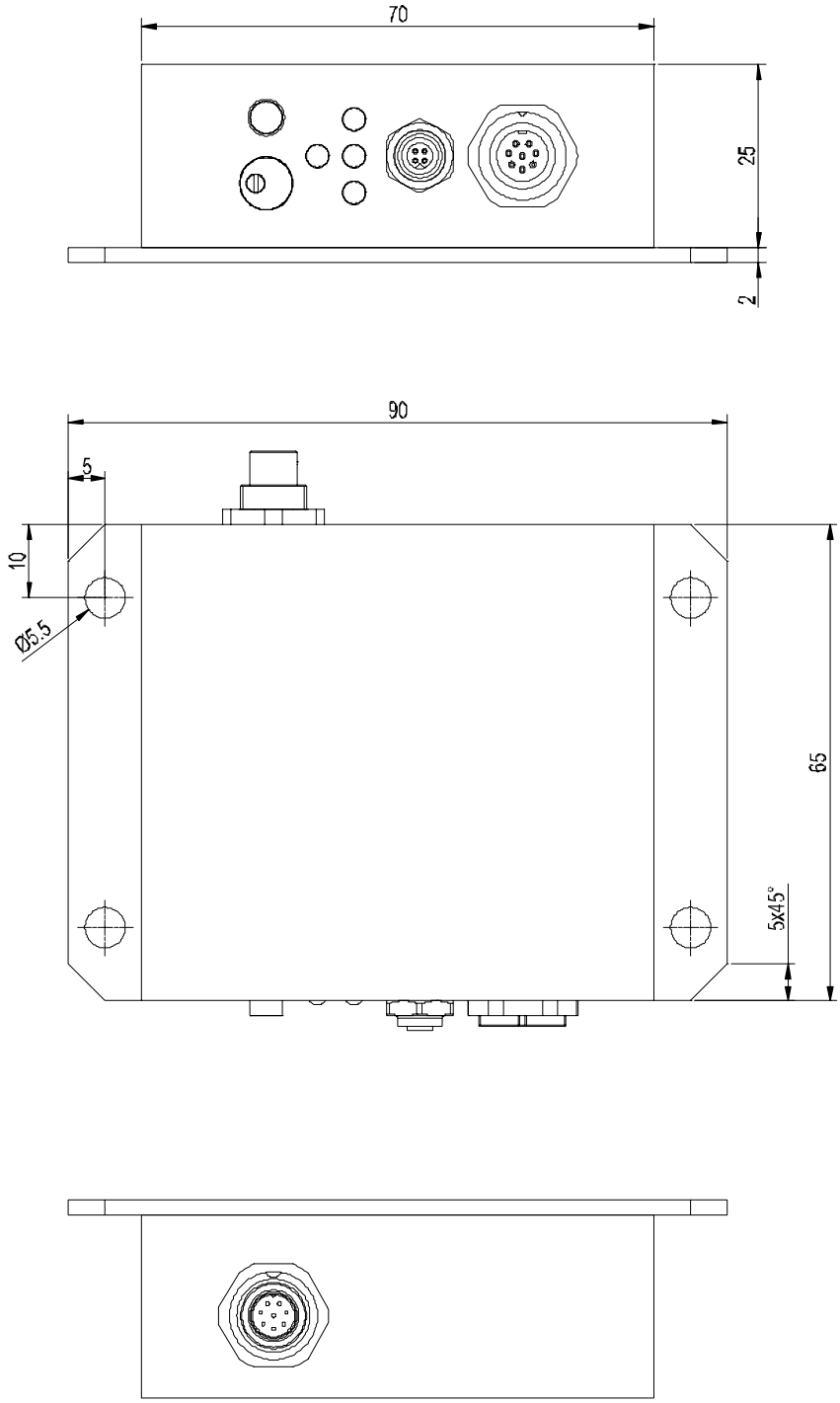
L-LAS-RL-30-FE
(Sensor frontend)



All dimensions in mm

Dimensions

L-LAS-RL-CON1
(Electronic control unit)



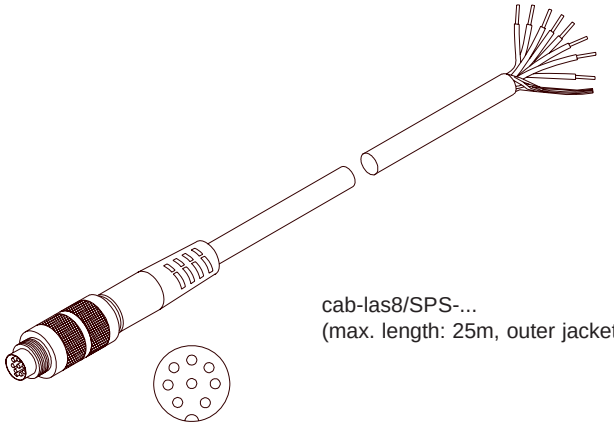
All dimensions in mm

Connector Assignment

Connection of L-LAS-RL-CON1 to PLC: 8-pole female connector Binder Series 712

Pin:	Color:	Assignment:
1	white	GND (0V)
2	brown	+15...+30VDC
3	green	IN0 (EXT TRIGGER)
4	yellow	IN1 (TEACH/RESET)
5	grey	OUT0 (< TOL)
6	pink	OUT1 (> TOL)
7	blue	I-OUT (4...20mA)
8	red	ANA (0 ... +10V)

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

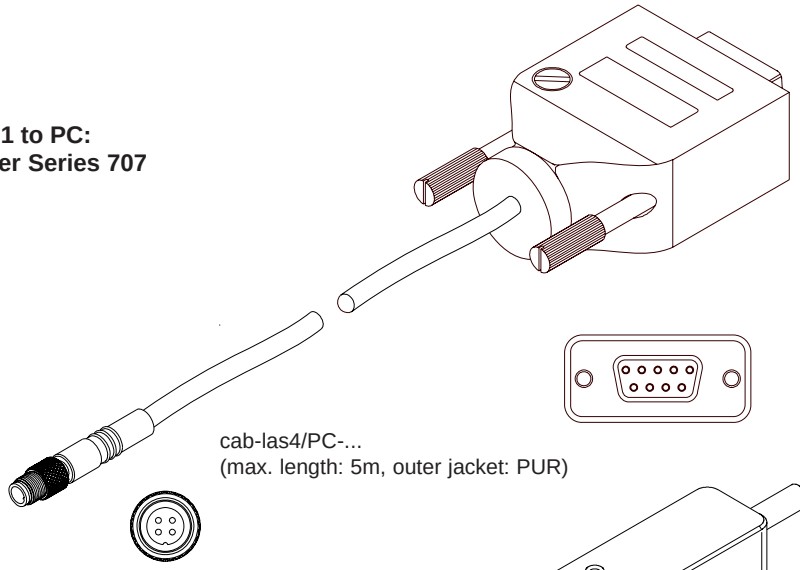


cab-las8/SPS-...
(max. length: 25m, outer jacket: PUR)

Connection of L-LAS-RL-CON1 to PC: 4-pole female connector Binder Series 707

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

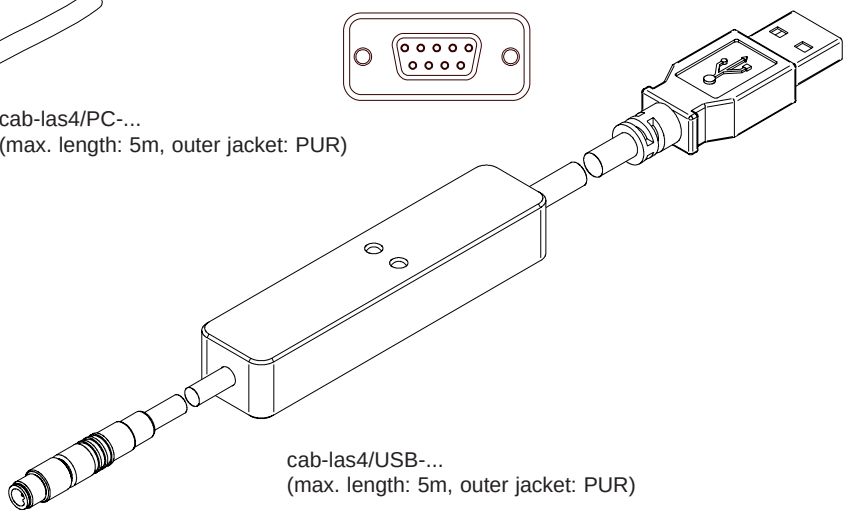
Connecting cable:
cab-las4/PC-... or
cab-las4/PC-w-... (angle type 90°)
(standard length 2m)



cab-las4/PC-...
(max. length: 5m, outer jacket: PUR)

alternativ:
Connection to PC via USB interface:

Connecting cable:
cab-las4/USB-0,5m
cab-las4/USB-1m
cab-las4/USB-2m
(incl. driver software)

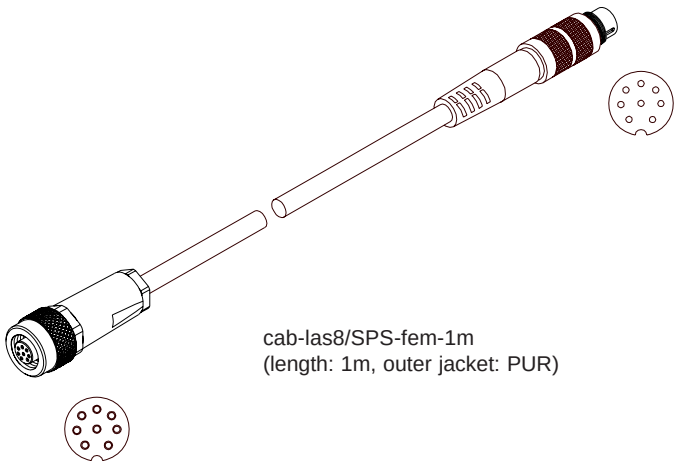


cab-las4/USB-...
(max. length: 5m, outer jacket: PUR)

Connection of L-LAS-RL-CON1 to L-LAS-RL-30-FE: 8-pole female connector Binder Series 712

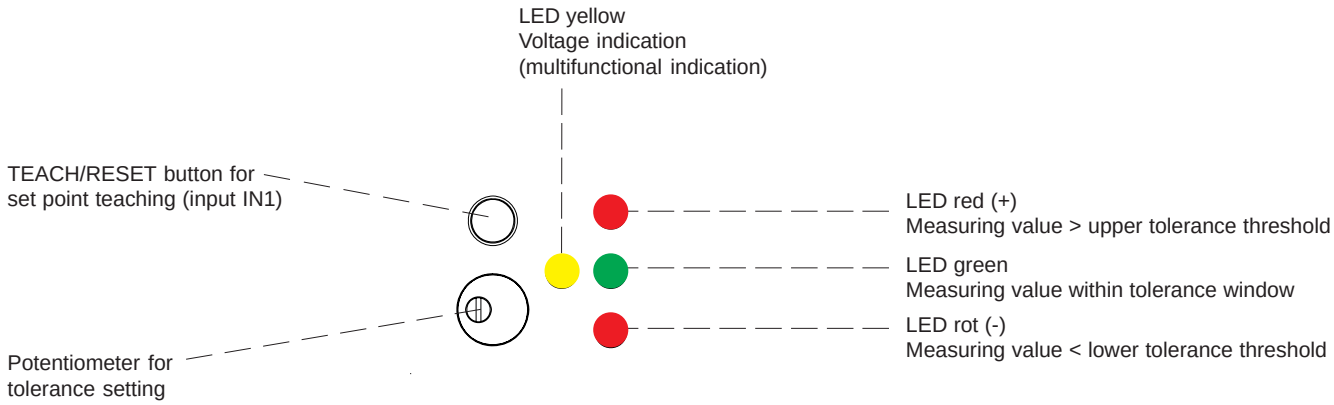
Pin:	Assignment:
1	GND (0V)
2	+18VDC
3	LED0_K
4	LED1_K
5	START
6	CLOCK
7	GAIN
8	VIDEO (0...+5V)

Connecting cable:
cab-las8/SPS-fem-1m
(standard length 1m)



cab-las8/SPS-fem-1m
(length: 1m, outer jacket: PUR)

LED Display

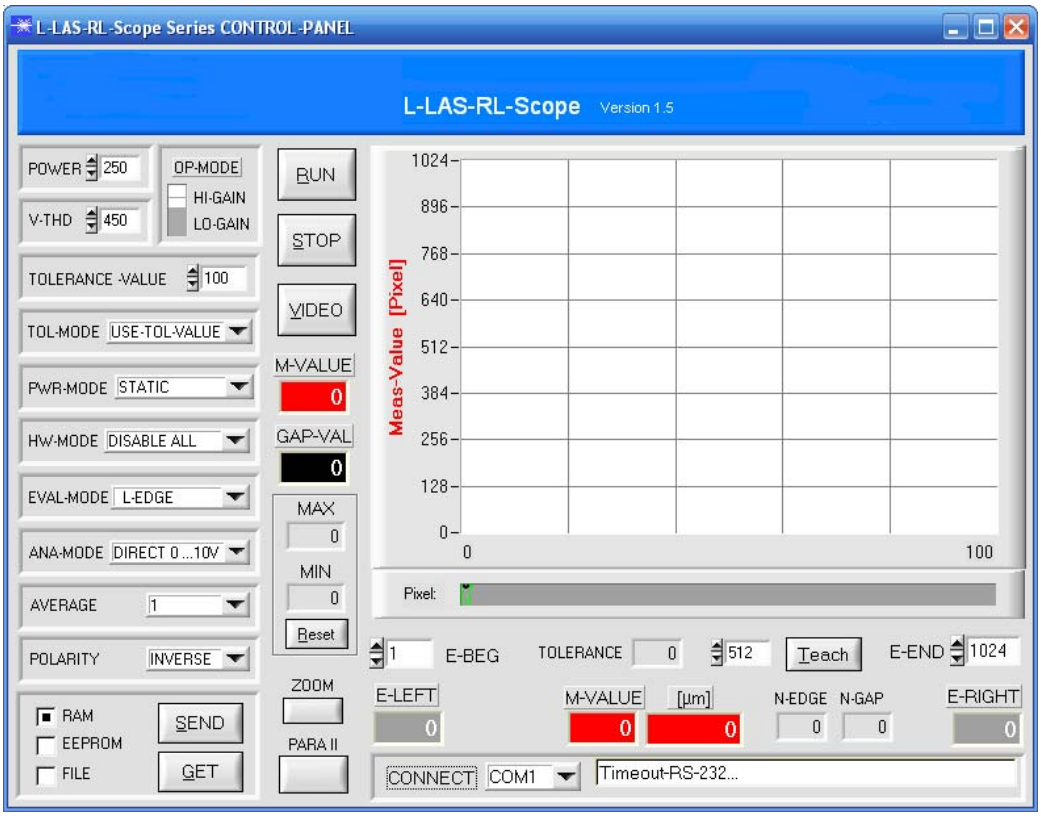


Windows® Software

Windows® software L-LAS-RL-Scope:

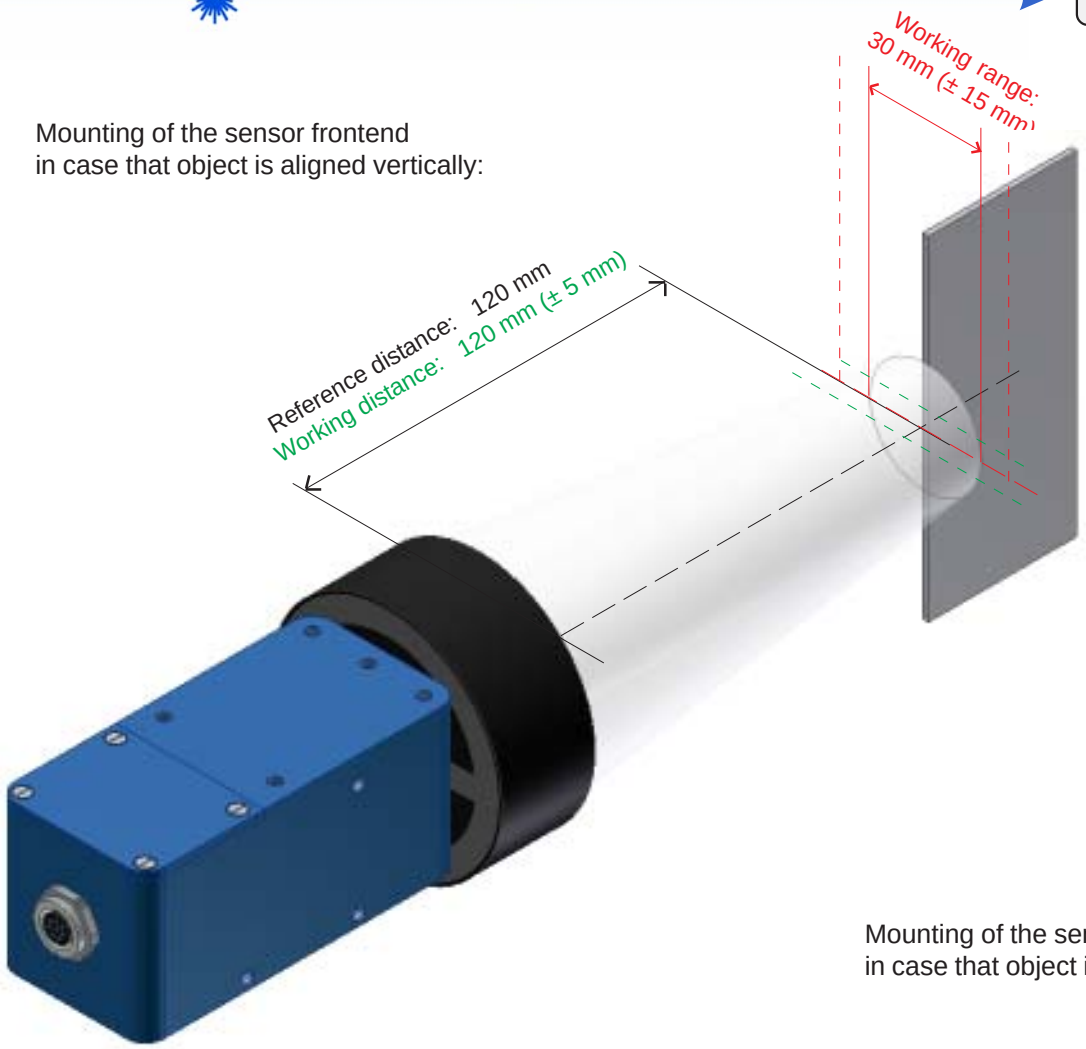
The L-LAS-RL-CON1 electronic control unit can be easily parameterised with the Windows® user interface. For this purpose the sensor is connected to the PC with the serial interface cable cab-las4/PC.

When parameterisation is finished, the PC can be disconnected again (press STOP button), the sensor systems then continues to operate with the current parameters in "stand alone" mode without a PC.

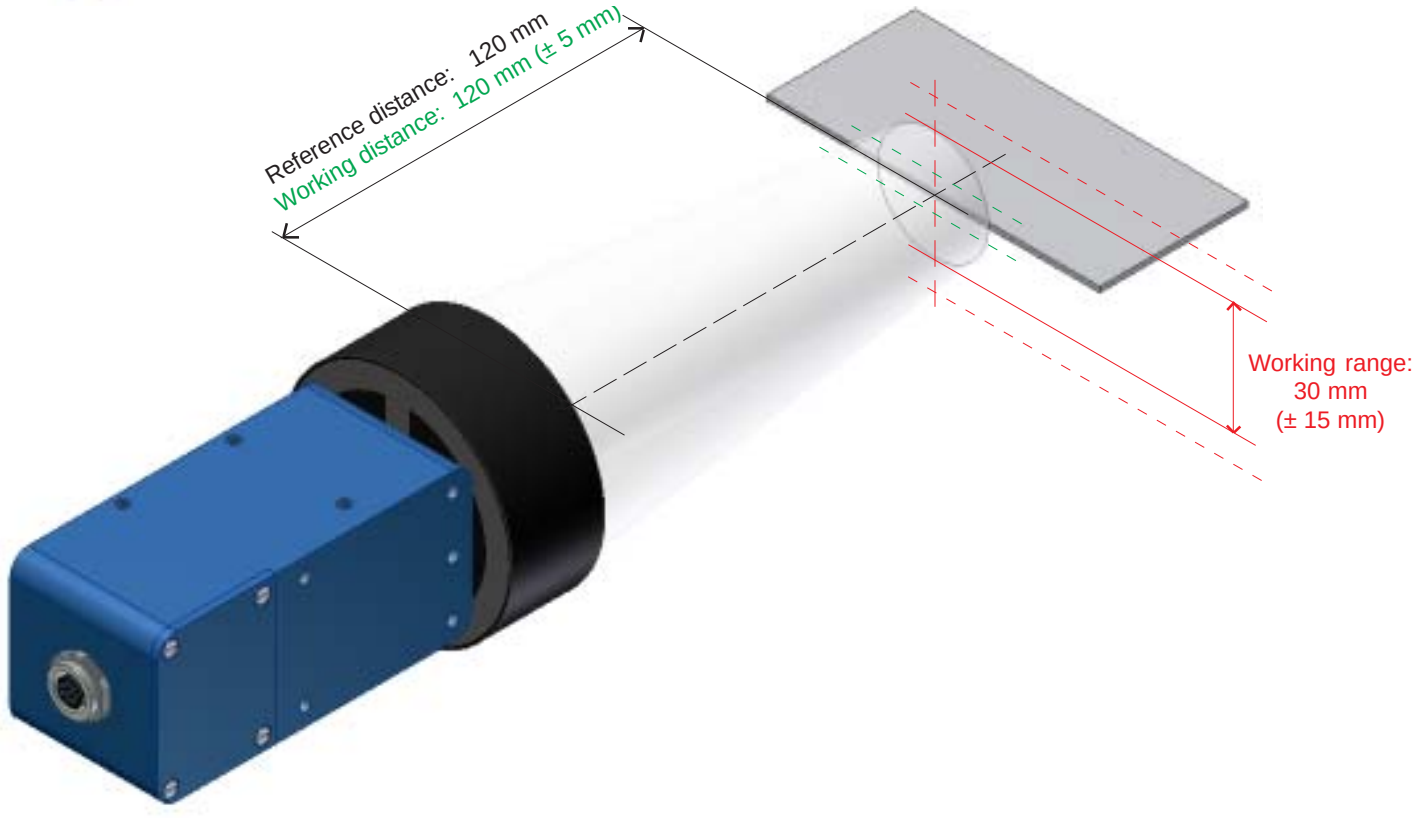


Mounting

Mounting of the sensor frontend
in case that object is aligned vertically:



Mounting of the sensor frontend
in case that object is aligned horizontally:



Application Examples

Monitoring of sheet metal doubling

The sensor (in this application example: frontend L-LAS-RL-15-FE with electronic control unit L-LAS-RL-CON1) should monitor possible doubling of sheet metal. For this purpose light from the integrated white-light LEDs is directed onto the object, and a segment of the object is projected onto a line detector.
If there are two layers of sheet metal, the projected light covers a considerably wider area of the line detector, which allows a differentiation between single sheet and double sheet.