



Displacement
sensor


Displacement Sensor Profiler: Line sensor for profile measurement



The PRO100 Profiler is a compact split-beam sensor based on the measurement principle of optical triangulation. The surface structure of the measured object is captured based on the reflections of the laser line mapped on the receiver element. Due to the selectable measurement modes, different information about the surface can be determined.


The Profiler is used in a range of industries, but especially:

- Quality control,
- Classifying and sorting of measured objects,
- Process control (e.g. positioning).




Highest point:
25.53 mm

← **PEAK-Mode:**
Measuring the distance to the highest point of the measured object




Lowest point:
48.00 mm

► **BOTTOM-Mode:**
Measuring the distance to the lowest point of the measured object



Distance between the highest and the lowest point:
22.47 mm

← **PEAK-PEAK-Mode:**
Measuring the height difference between the highest and the lowest point of the object



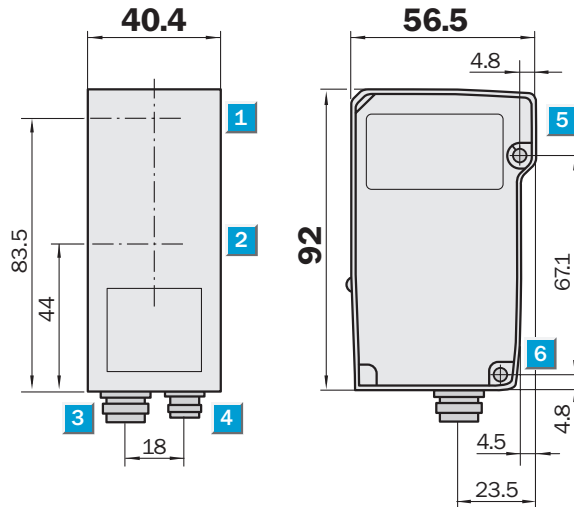
permitted deviation:
(light blue)

► **SHAPE-Mode:**
Comparing the matching of the measured object to a nominal shape

Scanning distance
100 ± 25 mm
 Displacement sensor

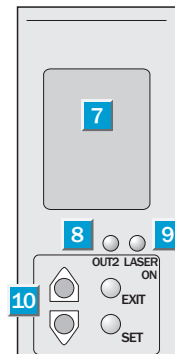
- Profile measurement with line sensor
- 32 mm laser line
- Stand-alone device
- Easy and fast setup through:
 - Integrated display
 - Teach-in function
- 3 switching outputs and 1 analogue output

Dimensional drawing



Adjustments possible

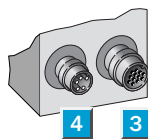
All types



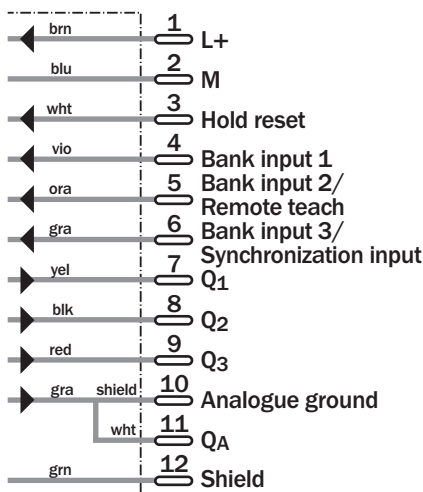
- 1 Optical axis, sender
- 2 Optical axis, receiver
- 3 Main connector, 12-pin (HRS HR30)
- 4 Display connector 6-pin (HRS HR30) (see Accessories)
- 5 Reference surface for measurements
- 6 Mounting holes, \varnothing 4.2 mm
- 7 LCD-Display
- 8 Indicator switching output 2 (orange)
- 9 LED „Laser on“ (green)
- 10 Operating keys

Connection types

All types



Connection via cable 12-pin



See chapter Accessories

Cables and connectors

Mounting systems

Technical data			PR0100-	25L2P	25L2N								
Scanning distance		100 ± 25 mm											
Light source, Light spot size		Laser diode ¹⁾ , red light, 0.3 x 32 mm ² ²⁾											
Laser Class		2M (EN 60825:2001)											
Supply voltage V _S ³⁾		DC 12 ... 24 V											
Current consumption max. ⁴⁾		120 mA/24 V; 180 mA/12 V											
Linearity ⁵⁾	in z direction	± 0.25 mm ²⁾											
	in x direction	± 0.8 % of FS in x ⁶⁾											
Accuracy ⁵⁾	in z direction	± 0.5 mm ²⁾											
	in x direction	± 1.5 % of FS in x ⁶⁾											
Resolution ⁷⁾	in z direction	50 µm											
	in x direction	80 µm											
Max. response time		10 ... 99 ms ⁸⁾											
3 switching outputs ⁹⁾		PNP Open collector											
		NPN Open collector											
Analogue output		4 ... 20 mA ¹⁰⁾											
Load dependant		± 0.05 % FS											
Temperature drift		± 0.05 % FS/°C											
Warm-up time max.		5 min.											
Indicator	Switching output2	LED, orange											
	Laser active	LED, green											
Ambient light	Sunlight	10.000 lx											
	HF lamp	3.000 lx											
Ambient temperature T _A	Operation	-10 °C ... +40 °C ¹¹⁾											
	Storage	-20 °C ... +60 °C											
8 memory banks		switchable											
Vibration resistance		10/s ... 55/s											
Shock resistance		50 G (500 m/s ²)											
VDE protection class		⊠											
Enclosure rating		IP 66											
Material	Housing	Zinc die-casting/PC											
	Window	Glas											
Weight ¹²⁾		Approx. 250 g											

- 1) Wavelength = 650 nm; Max. output 1 mW (into an aperture of 7 mm)
- 2) For Full scale in z direction = 100 mm ± 25 mm
- 3) -5 %, +10 %
- 4) Incl. analogue output current

- 5) Measured object: white ceramic, with factory settings
- 6) FS in x = full scale in x direction: depends on the distance, according to the field of vision. Eg.: at 100 mm = 22 mm
- 7) Measured object: white ceramics at medium scanning distance, with factory settings

- 8) Dependent on the chosen settings; synchronised: 6 ... 50.5 ms
- 9) 30 V/100 mA max. (residual voltage: max. 1.8 V)
- 10) 24 mA for out of range
- 11) Non-condensing
- 12) Excluding connection cable

Order information	
Profiler™	
Type	Order no.
PR0100-25L2P, Profiler PNP-Version	6030859
PR0100-25L2N, Profiler NPN-Version	6030860

Accessories	
Type	Order no.
PROM-1, external control unit, incl. LCD, 3 m pigtail, 6-pin (HRS HR30)	6029185
DOL-SH12-G02M, 2 m main connection cable (included in supply)	6029083
DOL-SH12-G05M, 5 m main connection cable	6029084
DOL-DH06-G02M, 2 m data transfer cable 6-pin (HRS HR30 + RS232)	6029801

