Product data sheet

PRO2-P100B25A1

Profiler

DISPLACEMENT MEASUREMENT SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	Part no.
PRO2-P100B25A1	6052873

Other models and accessories ➜ www.sick.com/Profiler

Detailed technical data

Mechanics/electronics

Supply voltage V_S	DC 12 V (–5 %) ... DC 24 V (+10 %) [1]
Power consumption	≤ 180 mA
Warm-up time	≤ 30 min
Housing material	Metal (zinc diecast)
Window material	Plastic (Polycarbonat (PC))
Connection type	Female connector, HRS, 12-pin (I/O, power supply)
Indication	2 LEDs (operational status, Laser on/off) Dot matrix display
Weight	300 g
Dimensions (W x H x D)	40 mm x 94.5 mm x 60 mm
Enclosure rating	IP67
Protection class	III

[1] When using analog voltage output reduced to 18 V DC (–5%) ... 24 V DC (+10%).

Performance

Measurement range min ... max:	75 mm ... 125 mm
Measuring width (at measuring distance)	17 mm (75 mm) 22 mm (100 mm) 27 mm (125 mm)
Target	Natural objects
Repeatability	25 µm, x-direction [1] [2]

[1] Typical value; actual value depends on settings and environmental conditions. For details see field of view.
[2] Measurement on 90 % remission (ceramic, white), for OD25-x measurement on mirror; averaging set to: 256; constant ambient conditions.
[3] Measurement on 90 % remission (ceramic, white).
[4] Constant ambient conditions.
[5] Typical value, high-res mode.
[6] Wavelength: 655 nm, max. output: 1 mW.

	2 µm, z-direction
Linearity	X-direction ± 170 µm ... ± 270 µm [3) 4)] Z-direction ± 50 µm
Response time	≥ 5 ms [5)]
Light source	Laser, red visible red light
Laser class	2, complies with 21 CFR 1040.10 and 1040.11 except for the conformance according to "Laser Notice No. 50" from June 24, 2007 (IEC 60825-1:2014, EN 60825-1:2014) [6)]
Typ. light spot size (distance)	0.3 mm x 32 mm
Additional function	Timer (ON-OFF delay, one shot, off), averaging 1 ... 1,023, sensitivity (adjustable), Measurement functions (average, peak height, bottom height, width, peak height position, bottom height position, edge position, edge count, tilt, area, length, diameter)

[1)] Typical value; actual value depends on settings and environmental conditions. For details see field of view.
[2)] Measurement on 90 % remission (ceramic, white), for OD25-x measurement on mirror; averaging set to: 256; constant ambient conditions.
[3)] Measurement on 90 % remission (ceramic, white).
[4)] Constant ambient conditions.
[5)] Typical value, high-res mode.
[6)] Wavelength: 655 nm, max. output: 1 mW.

Interfaces

Serial	✓, RS-485
Data transmission rate	9.6 kbit/s ... 4 Mbit/s, half-duplex
Digital output	
Number	3
Type	PNP
Maximum output current I_A	≤ 100 mA
Analog output	
Number	1
Type	Current output
Current	4 mA ... 20 mA, ≤ 300 Ω [1)]
External input	Selectable from bank, trigger, hold, reset, laser off and offset

[1)] 24 mA for measuring out of range.

Ambient data

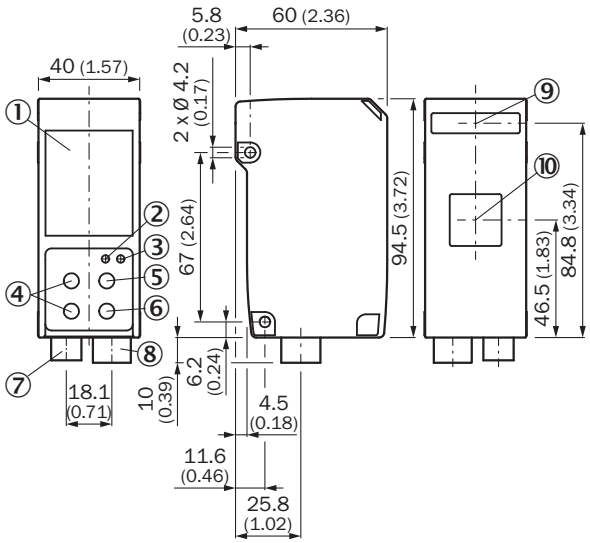
Ambient temperature, operation	–10 °C ... +40 °C, Operating temperature at V_S = 24 V
Ambient temperature, storage	–20 °C ... +60 °C
Max. rel. humidity (not condensing)	85 %
Temperature drift	± 0.05 % FS/K (FS = Full Scale = Measuring range of sensor)
Typ. Ambient light immunity	Artificial light: ≤ 3,000 lx Sunlight: ≤ 10,000 lx
Vibration resistance	10 Hz ... 55 Hz (amplitude 1.5 mm, x-, y-, z-axis 2 hours each)
Shock resistance	50 G (x, y, z axis 3 times each)

Classifications

ECLASS 5.0	27270801
ECLASS 5.1.4	27270801
ECLASS 6.0	27270801

ECLASS 6.2	27270801
ECLASS 7.0	27270801
ECLASS 8.0	27270801
ECLASS 8.1	27270801
ECLASS 9.0	27270801
ECLASS 10.0	27270801
ECLASS 11.0	27270801
ECLASS 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

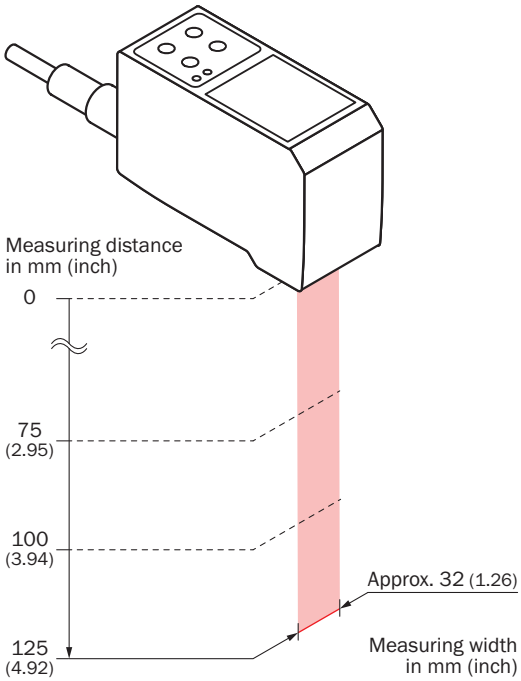
Dimensional drawing (Dimensions in mm (inch))



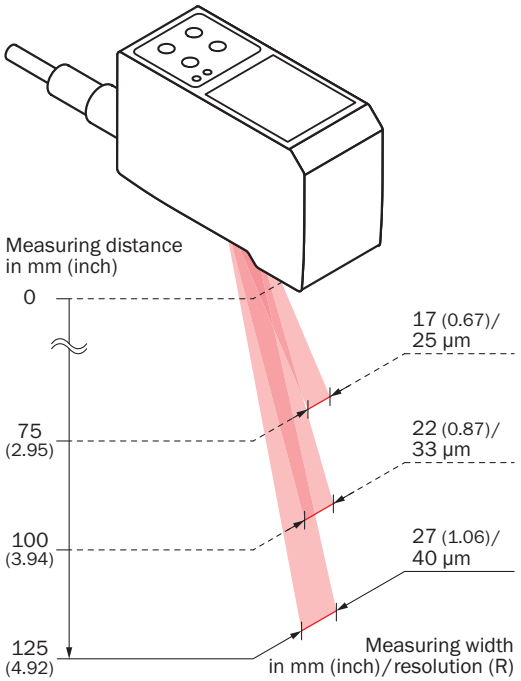
① LCD
② LED indicator for laser on (green)
③ LED display for supply voltage active (green)
④ Cursor keys
⑤ Exit button
⑥ Set button
⑦ Male connector, HRS, 6-pin (communication interface)
⑧ Female connector, HRS, 12-pin (I/O, power supply)
⑨ Sender
⑩ Receiver

Field of view

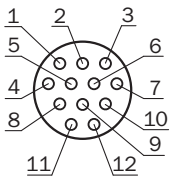
Field of view: sending area



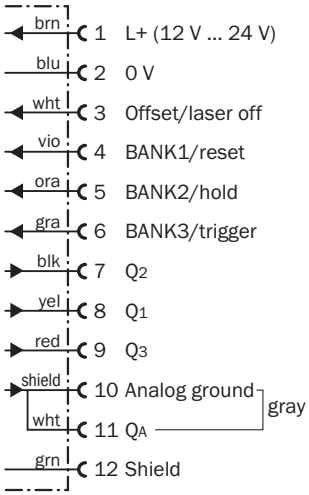
Field of view: receiving area



Connection type



Connection diagram



Recommended accessories

Other models and accessories ➜ www.sick.com/Profiler

	Brief description	Type	Part no.
Others			
	• **Connection type head A:** Male connector, HRS, 12-pin • **Signal type:** Digital I/Os, Power • **Cable:** 2 m, 12-wire, PVC • **Description:** Digital I/Os, Power, unshielded	YFHRSB-020VD3XLEAX	6053017
	• **Connection type head A:** Female connector, HRS, 6-pin • **Connection type head B:** Male connector, USB • **Signal type:** RS-485 • **Cable:** 1.8 m, 6-wire, PVC • **Description:** RS-485	YFHRS6-018VD3MUSA4	6053020

Recommended services

Additional services ➜ www.sick.com/Profiler

	Type	Part no.
Commissioning		
• **Product area:** Displacement measurement sensors • **Range of services:** Inspection of connection, fine adjustment, optimization of parameters of SICK product as well as tests, set-up of previously defined functions of profile and camera imaging, correction settings, range evaluation and function adjustment, input/output functions and settings, calculation functions, memory management, or communication interface • **Travel expenses:** The prices do not include travel costs such as hotel, flight, travel time and expenses. • **Duration:** Additional work will be invoiced separately	Profiler commissioning	1612804

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

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