

LASER DISPLACEMENT SENSOR



Content:

Technical Data2
Technical Drawing2
Operating elements3
Electrical connection3
Accessories3
Order code4

Series LAR

Key-Features:

- Measurement ranges up to 400 mm
- Linearity up to $\pm 0.1\%$
- Repeatability up to 10 μm
- Analog output: 0...5 V and 4...20 mA
- Control output PNP
- Operating temperature -10...45 °C
- Protection class IP67
- Configuration via integrated display
- Individual parametrization by teach-in procedure
- External input setting function
- Window comparator mode and Zero set function
- Peak and bottom hold function

TECHNICAL DATA

		LAR-10-5V	LAR-30-5V	LAR-70-5V	LAR-160-5V	LAR-400-5V
Measurement range MR	[mm]	25...35	35...65	65...135	120...280	200...600
Linearity	[%]	±0.1			±0.2	MR 200...400: ±0.2 MR 400...600: ±0.3
Repeatability	[µm]	10	30	70	200	MR 200...400: 300 MR 400...600: 800
Temperature drift	[%/°C]	0.03 (depending on the measurement range)				
Light source		red semiconductor laser, max. power: 1 mW				
Laser class		class 2 (IEC/JIS/GB) / class II (FDA)				
Beam diameter	[µm]	approx. 50	approx. 70	approx. 120	approx. 300	approx. 500
Wavelength	[nm]	655				
Response time ¹⁾	[ms]	1.5 (high speed) / 5 (standard) / 10 (high precision)				
Analog output ¹⁾		0...5 V (alarm: +5.2 V, output impedance: 100 Ω) 4...20 mA (alarm: 0 mA, output impedance: ≤300 Ω)				
Control output		PNP Open Collector Transistor (NPN on request)				
Supply	[VDC]	12...24 ±10 %				
Power consumption	[mA]	≤40 (at 24 V) / ≤60 (at 12 V)				
Protection class		IP67				
Operating temperature	[°C]	-10...+45				
Storage temperature	[°C]	-20...+60				
Humidity	[%]	35...85 (relative humidity)				
Ambient illuminance max.	[lx]	3000 (acceptance surface illuminance)				
Vibration resistance		10...55 Hz (1 min), 1.5 mm amplitude in X, Y, Z directions, for 2 h each				
Shock resistance		500 m/s ² (approx. 50 g) in X, Y, Z directions, for three times each				
Connection		cable, 5 poles, 2 m				
Weight	[g]	approx. 35 (without cable), approx. 85 (with cable)				
Housing		Aluminium die-cast, front cover: Acrylic				

¹⁾ configurable via display

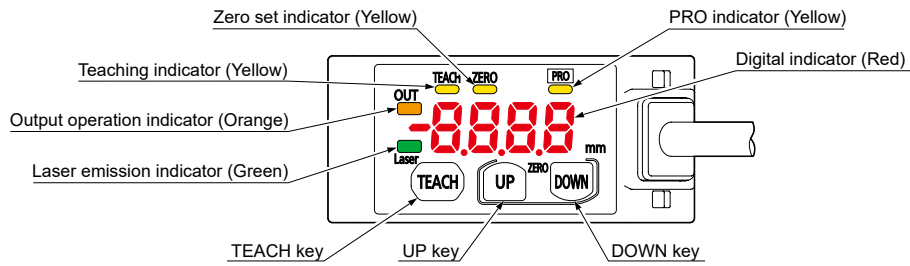
TECHNICAL DRAWING

Model	measurement center (L)	θ
LAR-10-5V	30 mm	30°
LAR-30-5V	50 mm	22.5°
LAR-70-5V	100 mm	12.5°
LAR-160-5V	200 mm	6.3°
LAR-400-5V	400 mm	3.2°

Note: Use 2 M3 screws (not included in delivery) for mounting. Tightening torque: 0.5 Nm

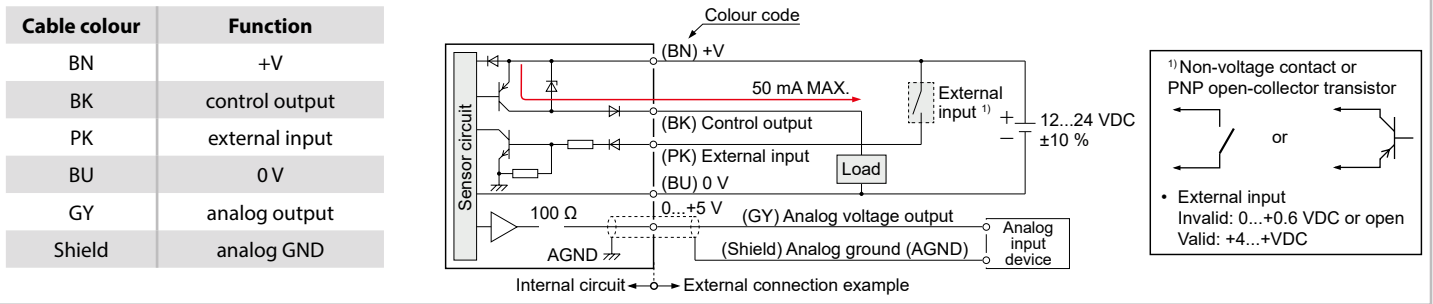
ø4.1 mm, 2 m long cable (5-core composite cable)

OPERATING ELEMENTS

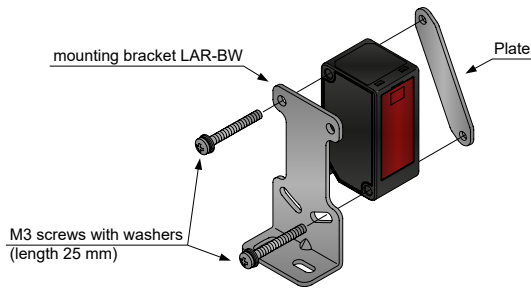


A detailed description of the functions is given in the [manual](#).

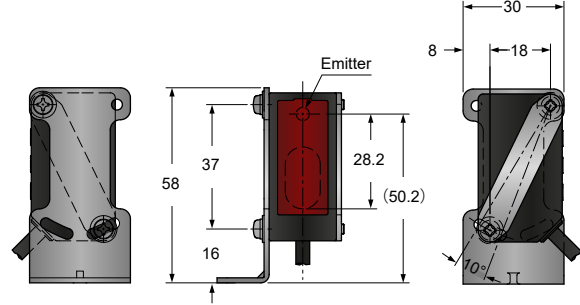
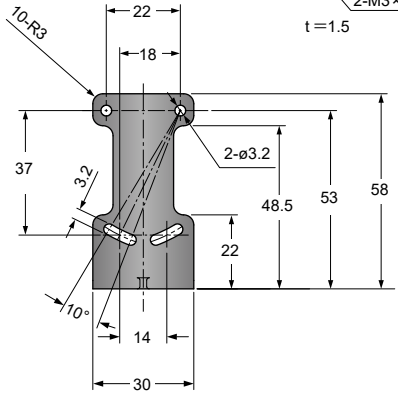
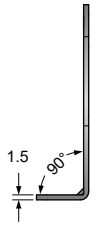
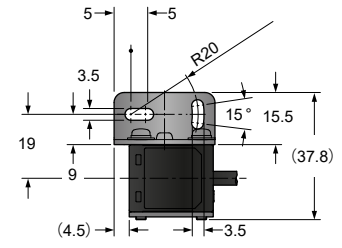
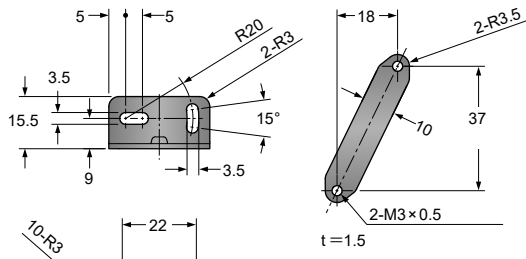
ELECTRICAL CONNECTION AND CIRCUIT DIAGRAM PNP



ACCESSORY MOUNTING BRACKET LAR-BW



Material	stainless steel
Scope of delivery	<ul style="list-style-type: none"> • Mounting bracket • holding plate • 2 x M3 screws with washers (length 25 mm)
Installation of the mounting bracket	2 x M3 screws (length 25 mm, not included in delivery) tightening torque: 0.5 Nm



ORDER CODE

LAR - - 5V

Measurement range [mm]	
25...35	10
35...65	30
65...135	70
120...280	160
200...600	400

MODELS

LAR-10-5V Measurement range 10 mm, PNP, 0...5 V / 4...20 mA

LAR-30-5V Measurement range 30 mm, PNP, 0...5 V / 4...20 mA

LAR-70-5V Measurement range 70 mm, PNP, 0...5 V / 4...20 mA

LAR-160-5V Measurement range 160 mm, PNP, 0...5 V / 4...20 mA

LAR-400-5V Measurement range 400 mm, PNP, 0...5 V / 4...20 mA

Control output NPN on request

ACCESSORIES

Mounting accessory

LAR-BW mounting bracket, holding plate, 2 x screw

Digital displays for sensors with analog output, 2 channel

WAY-AX-S touch screen, supply: 18...30 VDC

WAY-AX-S-AC touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-AX data sheet](#).

Subject to change without prior notice.

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