

LASER

Analog Laser Displacement Transducer



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Series LAR

Key-Features:

- Measurement ranges 10, 30, 70, 160, 400 mm
- Repeatability up to 10 μ m
- Linearity up to $\pm 0.1\%$
- Individual parametrization by teach-in procedure
- External input setting function
- Window comparator mode and Zero set function
- Peak and bottom hold function
- Working temperature -10 to 45 °C
- Protection class IP67
- Analog output 0...5 V
- PNP or NPN output type

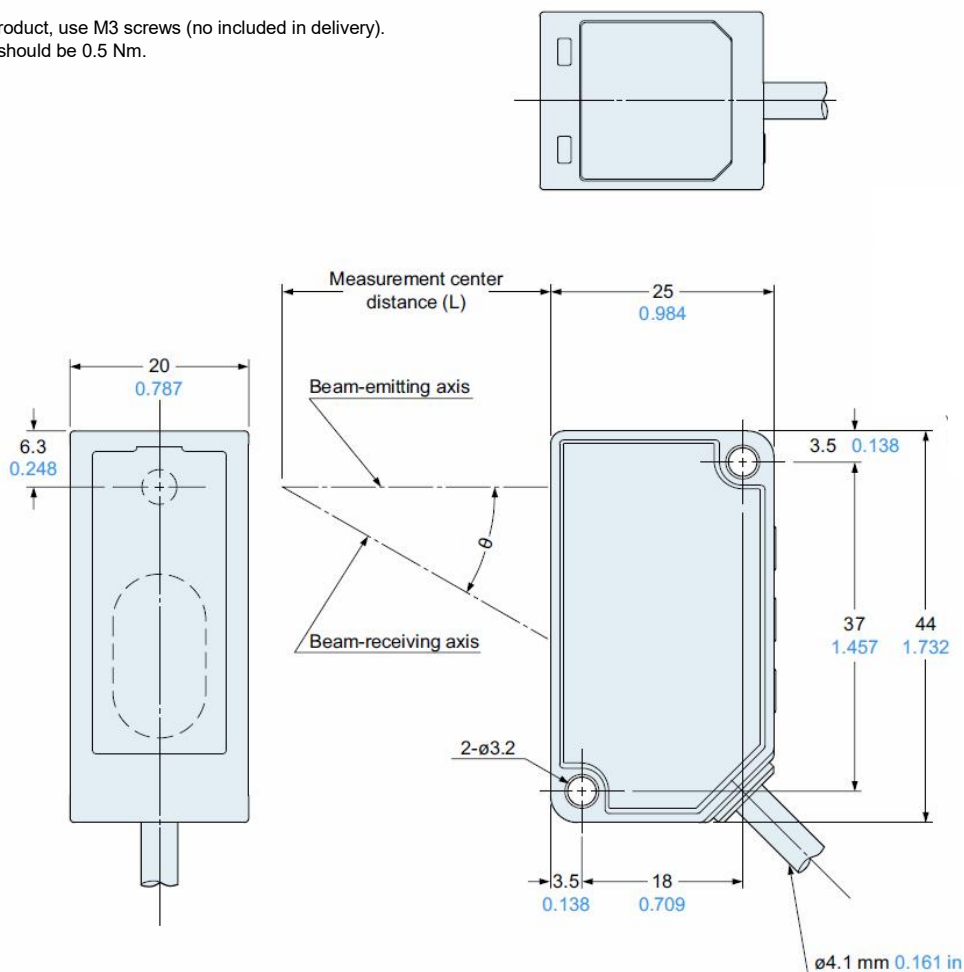
TECHNICAL DATA

	LAR-10-5V	LAR-30-5V	LAR-70-5V	LAR-160-5V	LAR-400-5V
Measurement range	25...35 mm	35...65 mm	65...135 mm	120...280 mm	200...600 mm
Linearity	±0.1 %	±0.1 %	±0.1 %	±0.2 %	±0.2 %...±0.3 %
Repeatability	10 µm	30 µm	70 µm	200 µm	300 µm...800 µm
Beam diameter	approx. 50 µm	approx. 70 µm	approx. 120 µm	approx. 300 µm	approx. 500 µm
Temperature drift	0.03 % of FS/°C				
Laser specification	Red semiconductor laser Class 2 [JIS/IEC/GB/FDA (Note 2)] Max. output: 1 mW, emission peak wavelength: 655 nm				
Supply voltage	12...24 VDC, ±10 %				
Power consumption	40 mA, or less (at 24 V) / 60 mA, or less (at 12 V)				
Control output	PNP or NPN Open-Collector Transistor				
Analog output	0...5 V (Alarm: +5.2 V), output impedance: 100 Ohm				
Response time	Switchable between 1.5 ms (high speed) / 5 ms (Standard) / 10 ms (high accuracy)				
Protection class	IP67				
Working temperature	-10...+45 °C (storage temperature -20...+60 °C)				
Humidity	35 to 85 % RH, Storage: 35 to 85 % RH				
Ambient illuminance	Incandescent lamp: Acceptance surface illuminance 3,000 lx or less				
Vibration	10 to 55 Hz (period: 1 min.) frequency, 1.5 mm amplitude in X, Y and Z directions for two hours each				
Shock	500 m/s ² acceleration (50 G approx.) in X, Y and Z directions for three times each				
Output	5 wire cable, 2 m length				
Housing	Aluminum die-cast, Front cover: Acrylic				

TECHNICAL DRAWING

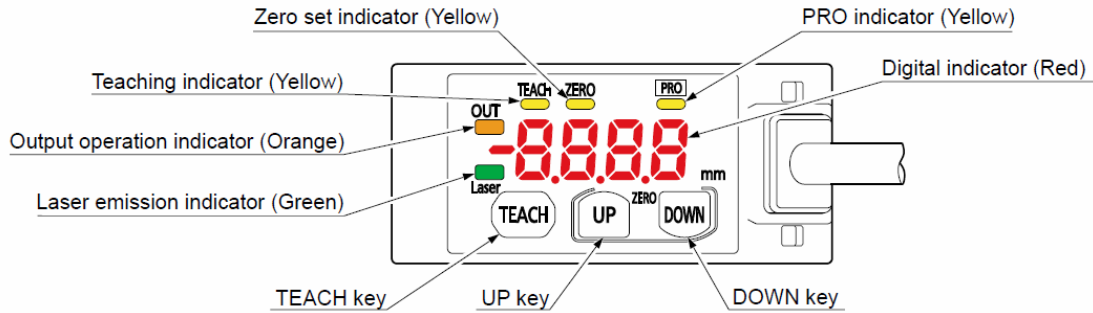
LAR, all models

When mounting this product, use M3 screws (no included in delivery).
The tightening torque should be 0.5 Nm.



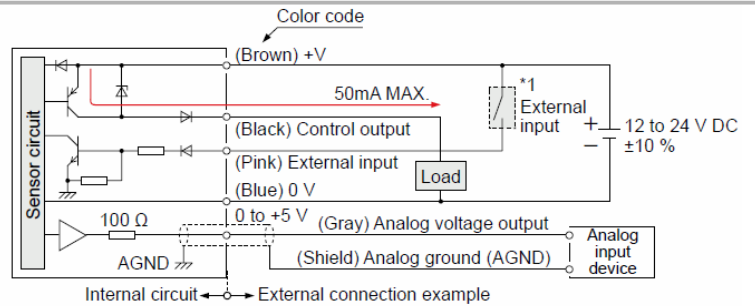
OPERATING ELEMENTS

A detailed description of the functions is given in the manual that comes with every LAR sensor.



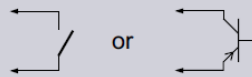
ELECTRICAL CONNECTION PNP

Cable colour	Function
brown	+V
black	Control output
pink	External input
blue	0 V
grey	Analog output 0...5 V
silver	Shield



*1

Non-voltage contact or PNP open-collector transistor



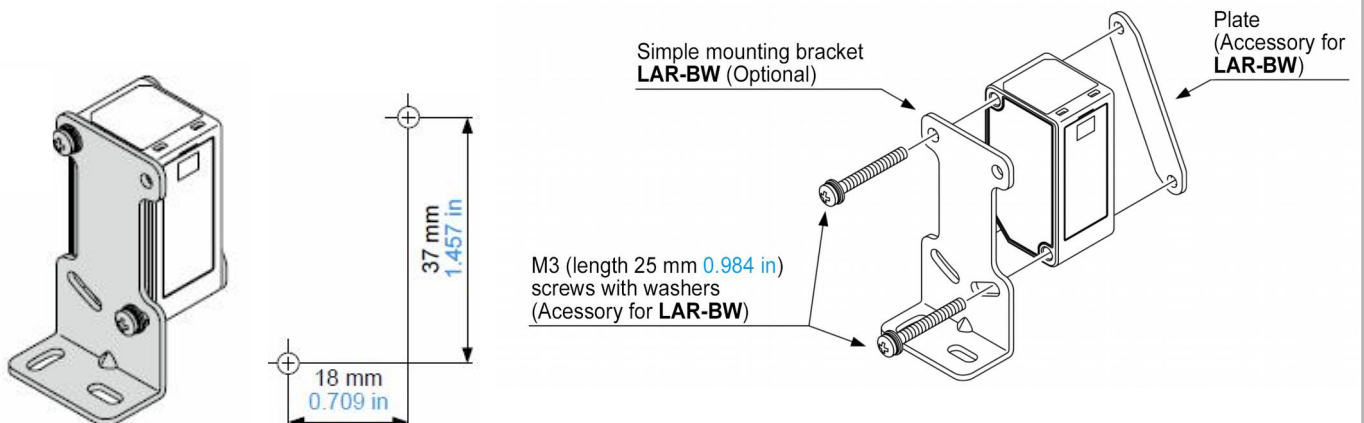
- External input
- Invalid: 0 to +0.6 V DC or open
- Valid: +4 to +V DC

NPN output on request.

ACCESSORY

Mounting bracket LAR-BW

When mounting this product, use M3 screws (no included in delivery). The tightening torque should be 0.5 Nm.



ORDER CODE LAR WITH PNP OUTPUT

LAR —  — 5V

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

NPN output on request.

ACCESSORIES

LAR-BW

Mounting bracket



General safety instructions

Attention radiation laser.

Do not stare into beam.

Do not point the laser beam towards someone's eye.

It is recommended to stop the beam by a matte object or matte metal shield.

Laser regulations require the power to the sensor be switched off when turning off the whole system this sensor is part off.

Subject to change without prior notice.

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