



SPA-04 Series Laser Ranging Sensor

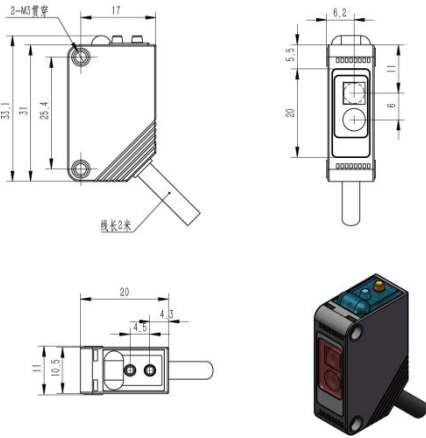
The SPA-04 overcomes the limitations of conventional photoelectric sensors in detection range, object color recognition, and compact design. By employing Time-of-Flight (TOF) technology, it enables versatile applications such as material handling in production lines and assembly lines with constrained installation space.

The SPA-04 series sensors feature PNP+NPN output interfaces. Equipped with an OLED display for real-time distance measurement and parameter configuration via buttons, this single-point LiDAR utilizes DTOF technology with a 100Hz measurement frequency and 4-meter range. Offering exceptional cost-effectiveness, these sensors are widely used in industrial automation, intelligent transportation, and precision measurement applications including: 1) Material height detection in production lines, 2) Material quantity monitoring in assembly lines, 3) Forklift alignment verification in logistics systems. For more product details, visit: www.siman.asia

warn	Follow the equipment usage guidelines! This product is not a safety sensor and cannot be used for personnel protection.		
	➤ Main measurement laser (905nm): Class 1 laser product. Safe under normal operating conditions. ➤ Indicative laser (650nm): Class 2. Do not look directly at the beam or use optical instruments to observe. ➤ This product has no explosion-proof structure, and it is forbidden to use in flammable and explosive environments. ➤ Do not remove this product. ➤ Be sure to turn off the power before operating. Do not connect wires while powered on! 1. Avoid use in dust/steam or corrosive gas environment; 2. Where corrosive gases are generated; ➤ Do not use this product in water. ➤ When used outdoors, pay attention to adding a waterproof cover.		
hookup			
pin	Definition / Wire color	customer interface	
1	9-30V (Brown)	External power is on	
2	GND (Lan)	External power negative	
3	NPN / PNP (black)	NPN / PNP	
Specifications:			
#	model	SPA-04P	SPA-04N
1	range	0.05 ~ 4m (90% reflectivity) 0.05 ~ 1.8m	

		(10% reflectivity)
2	Distance measurement frequency	100Hz (adjustable to 100 or 1KHz)
3	absolute accuracy	±40mm
4	repeatability precision	1mm
5	Environmental light resistance	< 4000Lux
6	Measure laser wavelength	650nm (visible light)
7	Measure laser level	Class 2
8	Measure laser field of view	8mm diameter @2m
9	Indicate laser wavelength	N/A
10	Indicate laser level	N/A
11	input voltage	9-30V DC
12	peak point current	100mA
13	average current	17mA
14	Average Power Consumption	0.4W
15	output interface	PNPNPN
16	levels of protection	IP65
17	Size (length x width x height)	33.1 x 20 x 11mm
18	weight	7g (excluding cable)
19	working temperature	-20°C~+55°C
20	Cable Specifications	0.2mm 3-core PVC cable, 2 meters long
21	Customize range	Supports custom cable length Supports customized output protocols

product size:



Set method:

The NPN and PNP relays feature two operational modes: fully automatic configuration and two-point configuration, with both supporting NO/NC functionality.



Automatic setting method:

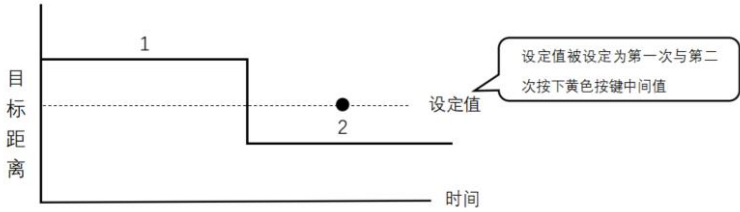
Stay-on mode (NO): Press and hold the NPN/PNP button for 2.5 seconds (2.5-7 seconds) and release. If successful, the green light will flash three times rapidly.

Normally Closed (NC) mode: Press and hold the NPN/PNP button for 7 seconds (more than 7

seconds but less than 12 seconds) and release. If successful, the green light will flash rapidly three times.

If the setting fails, the red light will flash three times in succession and revert to its original state.

Two-point setting method:



(1) Setting method:

- 1) Short-press the NPN/PNP button once when the workpiece is not present
- 2) Press the NPN/PNP button once while the workpiece is present
- 3) To set the target distance, simply press the NPN/PNP button once when the workpiece is present and once when it is absent. The preset value is the midpoint between the first and second button presses.
- 4) Steps 1) and 2) can be swapped
- 5) The interval between step 1) and step 2) cannot exceed 12 seconds. Otherwise, the setting will restart.

(2) Status indicator

The green light will flash three times in succession when the setting is successful.

If the setting fails, the red light will flash three times in succession and revert to its original state.

Signal indicator light:

(1) When the NPN switch signal is active, the orange light stays on; when inactive, it stays off.

(2) When the PNP switch signal is active, the green light stays on; when inactive, it remains off.

How to set the instant response mode or delayed response mode:

Press and hold the NPN/PNP setting key for 12 seconds or longer, then release. The green indicator will flash six times rapidly, indicating successful instant response mode setup. Press and hold the key for 12 seconds or longer, then release. The green indicator will flash six times slowly, indicating successful delayed response mode setup (default mode with signal anti-shake function).

Order Model List:

model	range	communication interface
SPA-04P	0.05...4m	PNP
SPA-04N		NPN

contact us:

