

TF-SV24S08 LiDAR Based Relay Module

Datasheet BP-DS-TF-SV24S08 A02



TF-SV24S08 is a single-point LiDAR based relay module. The working principle of LiDAR used by this module works on ToF (Time of Flight). With the unique optical and electrical design, the single-point ranging LiDAR safety sensor can realize stable, accurate and sensitive distance measurement. It is characterized by small size, light weight, low power consumption, and built-in adaptation algorithms for various application environments and targets.

Main features of product

- Distance range up to 8 meters
- Light weight
- Low cost
- Low power consumption

Main applications

- Parking system
- Machine security
- Intrusion detection
- Any switching application



■ Specifications and Parameters

Parameter Name		Value
Product Performance	Operating Range	0.2m~8m (90%reflectivity indoor 0klux) ¹ 0.2m~2.5m (10%reflectivity indoor 0klux) ² 0.2m~8m (90%reflectivity outdoor 90klux) 0.2m~2.5m (10%reflectivity outdoor 90klux)
	Accuracy	±6cm (0.2~3m) ±2% (3~8m)
	Distance Resolution	1cm
	Frame rate	1-250Hz
	Ambient light resistance	70Klux
	Operation temperature	-10~60°C
Optical Parameters	Light source	VCSEL
	Central wavelength	850nm
	Photobiological safety	Class 1 (EN60825)
	FoV	2°
Electrical Parameters	Supply voltage	DC8V~DC36V; AC8V~AC24V
	Average Current	≤30mA

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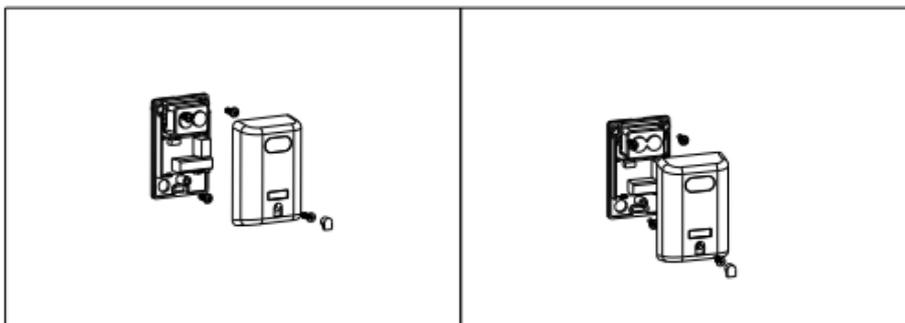
	Peak Current	150mA
	Communication level	LVTTL (3.3V)
Other Parameters	Dimensions	70mm*46mm*20mm (L*W*H)
	Enclosure material	PC/ABS
	Storage temperature	-20~75°C
	Accessories	6mm expandable rubber washer × 3 25mm*3mm stainless steel self-tapping screws×3 10mm*3mm stainless steel self-tapping screw×3 Shell rubber washer × 1

Protective distance installation method

After installing and fixing the sensor according to the method shown in section *Product Appearance and Structure*, power on, the red light on the sensor will light up; when the obstacle is not within the range of 0.2m to 8m, it will be considered as out of range and the orange light will turn on. It is because 20cm is the blind zone of LiDAR used in this module and 8m is maximum detection range of LiDAR. Place an obstacle in front of the sensor (within the monitoring range 0.2. to 8m), press and hold the **SET** button on the sensor (for more than 3 seconds), after the red light flashes several times, the green light turns off, and the distance range calibration is completed. After completing the distance setting, as long as there is an obstacle within the set distance range, the green light on the sensor will light up and output a switch signal through the relay.

Note: The monitoring range distance of the product is set to 2.5m by the factory, which can be reset according to the requirement of application.

■ Product Appearance and Structure



■ Configurable Parameters

Parameters	Parameter value
1 = GND AC/DC	Ground/negative power supply
2 = 12/24V AC/DC	Positive power supply
3 = NO	Normally open contact
4 = COM	Common
5 = NC	Normally closed contact

1. The distance range is tested on a white background with 90% reflectivity at 25°C;
2. The accuracy is measured on a white background with 90% reflectivity at 25°C;
3. The maximum supported frame-rate is 250Hz, the frame rate that can be set is $500/n$, n is an integer greater than or equal to 2, that is, 250-167-125-100-, etc. The factory default frame-rate is 100Hz;
4. The FoV angle is a theoretical value, and there is a certain deviation in the actual angle value;