3. Introduction to lidar

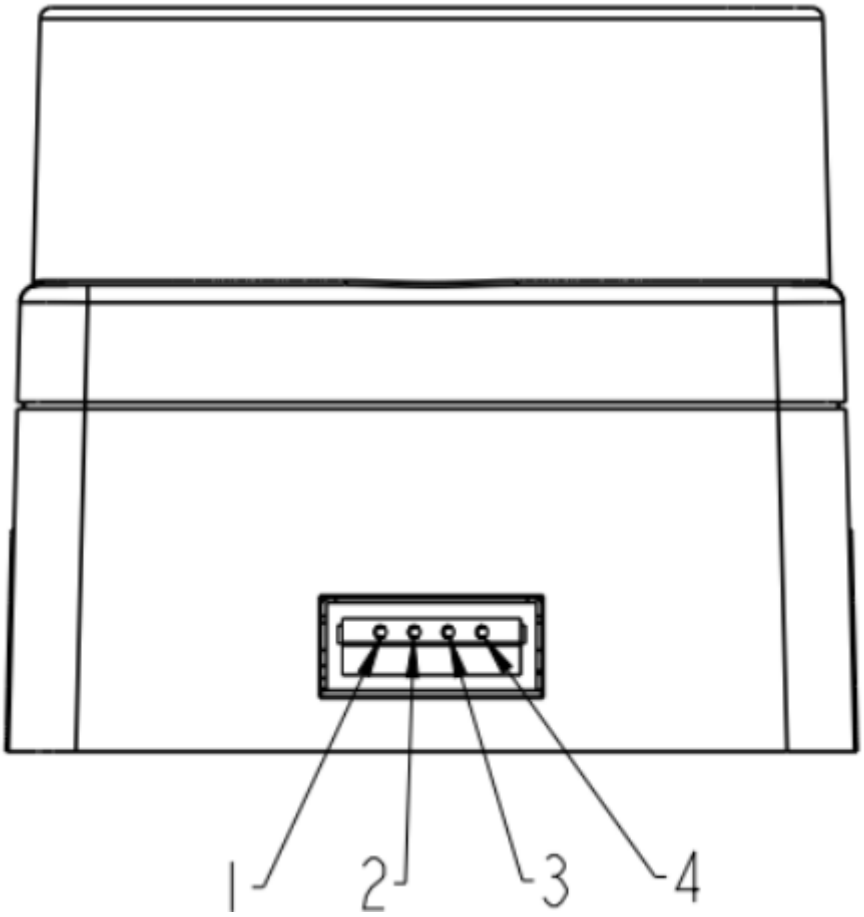
As a low-cost measurement single-line high-precision lidar sensor, the MS200 radar adopts the TOF measurement method. The small size of the MS200 radar allows it to be built into the robot body, optimizing the space usage of the robot content. Although small in size, it integrates a variety of long-distance measurement optimization algorithms, with a 90% reflectivity ranging range of up to 12.0m. At the same time, its power system uses a custom-optimized brushless DC motor with a service life of more than 10,000 hours.

Specifications are as follows:

parameter	numerical value	explanation
Measuring range	0.03m-12.0m	Under the condition of 90% reflectivity
measurement accuracy	Typical values: ≤4mm（0.2m-2.0m）、≤15mm（2.0m-12.0m）	Under the condition of 90% reflectivity, the radar collected data statistical results 100 times.
Scan angle	360°	-
Frequency	4500 points/second	-
spinning speed	10Hz	-
Angular resolution	0.8°@10Hz	-
Laser emission pitch angle	0.5°-2°	Based on the bottom surface of the radar base frame
Laser zero emission azimuth angle	0±2°	-
Operating Voltage	DC 5.0±0.5V	-
Operating temperature	-10℃~50℃	Typical value 25℃
Working current	typical：260mA	-
Starting current	less than 500mA	-
Product Size	37.7×37.5×33.0	Length × Width × Height (Unit: mm)
net weight	About 40g	-

parameter	numerical value	explanation
Serial port baud rate	230400	-

Interface definition:



Pin	Signal	Attributes	describe
1	Tx	Serial data sending	Tx（Send locally，0V~3.3V）
2	Rx	Serial port data reception	Rx（Local reception，0V~3.3V）
3	GND	Input power negative pole	GND（0V）
4	VCC	Input power positive pole	DC 5V（4.5V~5.5V）

Serial port configuration parameters:

baud rate	data bits	Stop bit	Check Digit	flow control
230400	8	1	None	None