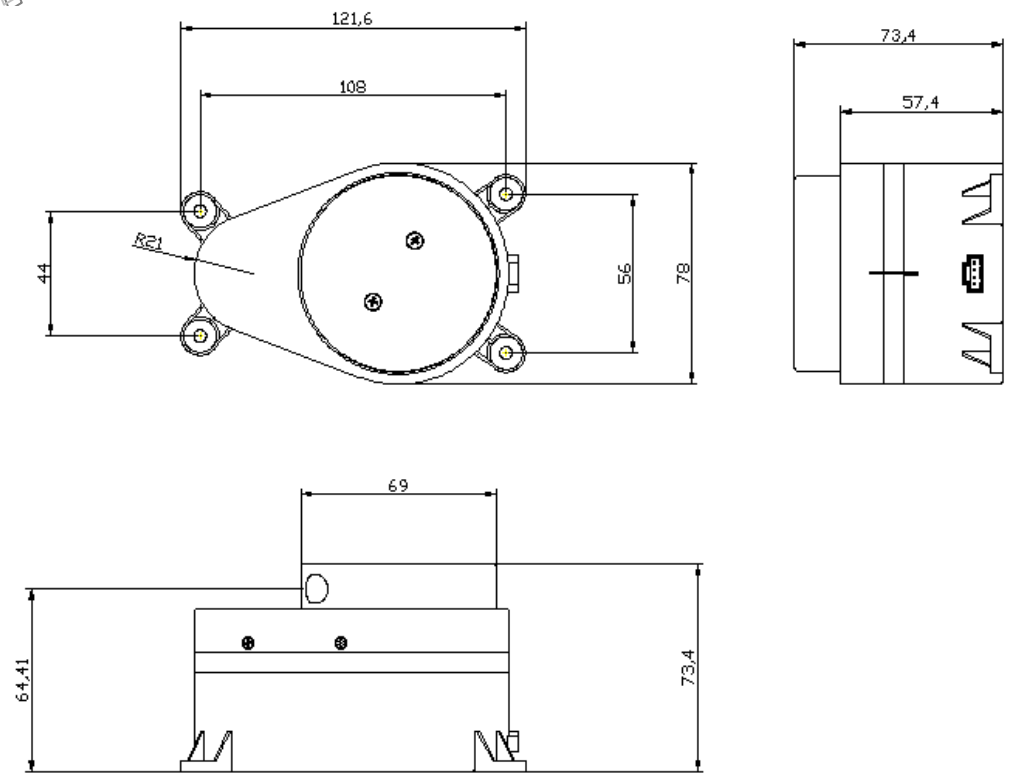
Scanning Laser Range Finder

ADS-LDS8502D is a laser sensor for 360° scanning measurement. The light source used is an infrared laser of wavelength 850nm with laser class 1 eye safety classification. The measuring range is from 15 cm to 6 m. Due to the small size of laser beam, this scanning sensor provides superior spatial resolution than traditional obstacle detector using ultrasonic method. The scanning range sensor is ideal for surrounding detection applications such as automated guided vehicles.

A. Recommended Operating Condition

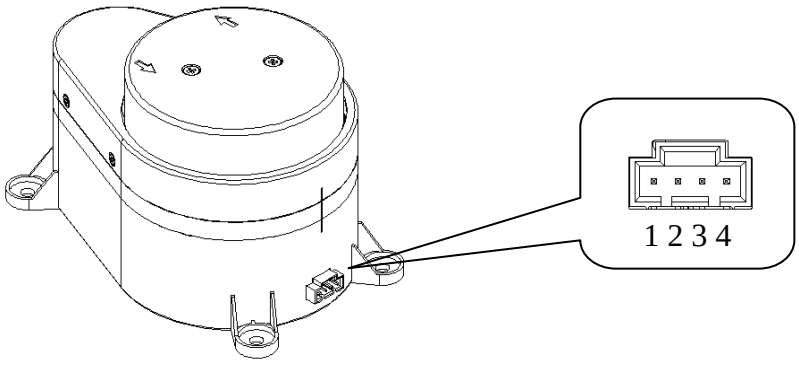
Product name	Scanning Laser Range Finder
Model	ADS-LDS8502D
Light source	Semiconductor laser diode (λ=850nm) Laser power : less than 0.7mW Laser safety Class 1
Power voltage	5 VDC ±5%
Power consumption	500mA or less
Detection	15cm ~ 6 m (Distance)
Accuracy	Distance 15 ~ 200cm： ±2% of measurement Distance 200 ~ 600cm： ±3% of measurement
Scan angle	360°
Angular resolution	<1°
Scanning speed	200msec/scan
Interface	UART(3.3V)
Dimension (W×D×H)	TBD

B. Appearance dimensions



Unite: mm

C. I/O Pin description



Pin NO.	Description
1	**5V**
2	**TX**
3	**RX**
4	**GND**

D. Important Notice

This sensor is designed for indoor use only.

E. Communication Format

Serial communication	
Baud	230400 bps
Start bit	1 bit
Stop bit	1 bit
Data	8 bit

Continuous Measuring						
Master (PC/MCU)	Initiate	command				
	0xA5	0x20				
Slave (SLRF)	Initiate	Angle(H)	Angle(L)	Distance (H)	Distance (L)	End
1th	0x55	8bit	8bit	8bit	8bit	0xFF
2th	0x55	¦	¦	¦	¦	0xFF
¦	¦	¦	¦	¦	¦	¦

Angle : 0~360 degree

Distance : 0~8000mm

Angle	
Real	15~6th bit
Decimal	5~0th bit

Bit 15 ~ Bit 6	Bit 5 ~ Bit0
Real_9 ~ Real_0	Decimal_5 ~ Decimal_0

Distance	
Starting Point	15~14th bit
Distance	13~0th bit

Angle = 0 , Starting Point = 1 , Š = 0 ;

etc, Starting Point = 0 , Š = 1 ;

Bit 15	Bit 14	Bit 13 ~ Bit 0
S	Š	Distance_13 ~ Distance _0