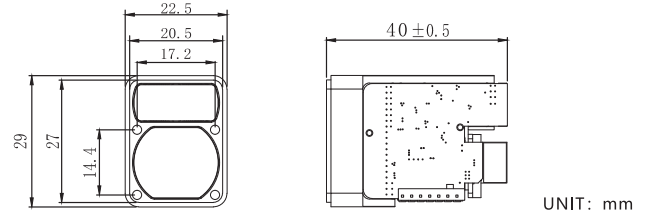# Ranging Module
J5A60

Basic parameters

Measurement Range	10~1500/2000/2500m
Application Scenario	Rangefinder / UAV / Lidar / Sight Glass / Sensor
Ranging Accuracy	≤400m,±1m; >400m,±(d*0.3%)
Laser Divergence Angle	3~5 mrad
Measurement Frequency	≤10hz
Laser Type	905nm
Transmitting Aperture	18.6x8 mm
Receiving Aperture	18.6x15.5 mm
Data Interface	UART TTL
Low Battery Detection	YES
Supply Voltage	DC 3.3~5V
Baud Rate	115200 is the default baud rate; Eight types can be set.
Power Consumption	Standby power consumption < 0.6W Short range (blind spot) power consumption < 0.7W Long distance (air to air) power consumption < 1.5W
Movement Material	Alufer
Product Weight	≈31g
Product Size	40x22.5x29 mm
Working Temperature	-20 ~ +60 ℃
Storage Temperature	-40 ~ +70 ℃

Assembly diagram

Housing

Movement

Waterproof ring

1-2 mm

Operating Steps

Step 1: Insert a data line into the ranging module to supply power to the module and output measurement data;

Note: Do not plug in the plug backwards, and strictly control the power supply voltage range between 3-5 V.

Step 2: Install the serial port wizard software and link the computer or other control devices through the adapter;

Step 3: After the software is installed, open the display interface.
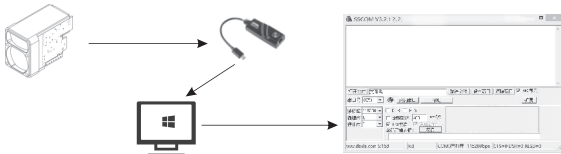
Step 4: Commissioning and testing

1. Select the serial port number:
   Set the corresponding serial port number in the software according to the computer serial port number;

2. Baud rate setting:
   Open the software interface, and you can set the baud rate. The optional baud rate is 9600, 115200

Scan QR code
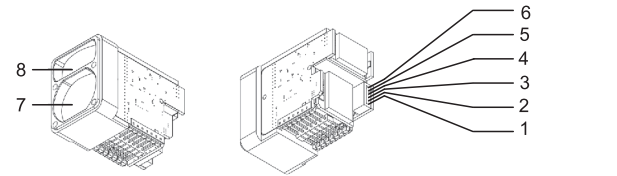Obtain detailed communication protocols

Product Description

This ranging sensor module can quickly and accurately provide measurement data to the main control system, using a 905 nm semiconductor laser, with a ranging resolution of 1.2 m; It has a TTL interface for communication (can directly communicate with MCU), and can also communicate through a 485 serial port through an adapter (requires a data adapter line); At the same time, it provides host computer testing software and communication protocol instructions to facilitate customer secondary development and build their own ranging system platform; It is a distance sensor with high integration, low power consumption, and light weight.

Product size
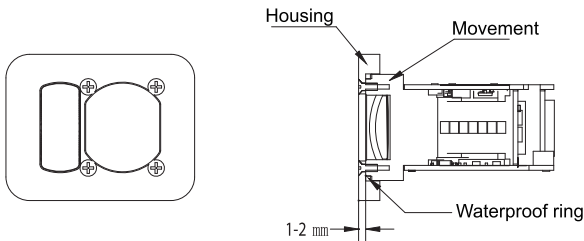

UNIT: mm

Structure and pins

1. SW-SHOT (DNG recommended)
2. RX (communication bit)
3. TX (communication bit)
4. IO (reserved)

5. VCC (3.3-5V input)
6. GND
7. Laser receiving hole
8. Laser emission hole

*Attention
1. The power supply input is 3.3V, and the SW-SHOT setting level is above 3.3V.
2. The power supply input is 5V, and the SW-SHOT setting level is above 4.5V.

Matters Needing Attention

- Do not look directly at the laser beam.
- Do not modify this module without permission to avoid module damage
- During transportation, pay attention to shock absorption and avoid stacking.
- Do not place it near extreme environments or heat sources to avoid uncontrollable effects on the module.
- When the temperature changes sharply, there will be condensation mist on the lens surface of the module. Do not use the module at this time.
  If the lens is dirty, gently wipe it clean with a lens wiping cloth; Do not use other objects to wipe to avoid damage to the film layer on the lens surface.
- This module has a one-year warranty and a lifetime warranty; Free replacement due to quality issues; Do not disassemble the module. Disassembling the product will disqualify it from free maintenance. For problems caused by human factors, fees for maintenance and replacement of parts are charged.

Influencing Factors: Range, Speed, Accuracy Of Ranging Function

Target reflectance:Generally, the higher the reflectivity of the target, the better the ranging ability, and the faster the ranging response speed. For example, for targets with medium reflectivity, it can measure 1500 meters, for targets with high reflectivity, it can measure no less than 1800 meters, and for targets with low reflectivity, it may only measure 600 meters. (Targets that are difficult to form diffuse reflection, such as water surfaces, may not be able to measure) Target shape: When the reflective surface area of the measured target is too small or uneven, The ranging ability and ranging response speed will decrease accordingly;
Measuring angle:When the laser angle is vertically irradiated on the reflective surface of the measurement target, the better the ranging ability, the faster the ranging response speed, and conversely, the ranging ability and the ranging response speed will decrease; Using at extreme measurement angles cannot ensure that the range finding ability and range finding response speed specified in this manual can be achieved. Measurement environments: Factors that affect the range finding ability and range finding response speed also include sunlight intensity, concentrations of water vapor and suspended particulate matter in the air, and the angle of deviation from sunlight exposure.

Definition of module range:

1) The measurement target has medium reflectivity: such as the wall surface of a building;
2) The reflection surface of the measurement target is perpendicular to the laser emission direction;
3) The measured weather is sunny but not in direct sunlight;
Recommendations:
When measuring distant targets, use a tripod to fix the module to reduce jitter during the measurement process, thereby achieving better measurement results.