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**SIYI MS4525
Airspeed Sensor**

SIYI MS4525 Airspeed Sensor User Manual

Contents

SIYI MS4525 Airspeed Sensor

Specifications

- Product Name: SIYI MS4525 Airspeed Sensor
- Manufacturer: SIYI Technology (Shenzhen) Co., Ltd.
- Designed for: Fixed-wing UAVs or vertical unmanned aerial vehicles
- Function: Measures airspeed of the aircraft to ensure safe operation
- Copyright: 2024 SIYI Technology

Frequently Asked Questions

Q: Can I disassemble the MS4525 Airspeed Sensor for maintenance? A: No, disassembly or modification of the sensor is prohibited without permission from SIYI Technology to maintain its reliability.

Q: What should I do if I encounter abnormal airspeed readings? A: Safely land the UAV and inspect the sensor for any issues. Ensure proper calibration and connections before flight.

Q: Can minors use this product unsupervised? A: No, minors must have professional supervision and guidance when using the sensor.

SIYI Technology (Shenzhen) Co., Ltd.
siyi.biz/en

Thank you for purchasing the products of SIYI Technology.
MS4525 Airspeed Sensor is the digital airspeed measurement module designed by SIYI for fixed-wing UAVs or vertical unmanned aerial vehicles. It measures the airspeed of the aircraft and ensures that the unmanned aerial vehicle avoids stall in windy environment, safely takes off and lands, and completes flight tasks. It is a necessary reliability component for fixed-wing UAVs and vertical unmanned aerial vehicles. Also in order to bring you a good product experience, please check the user manual carefully before installing the machine. This manual can help you solve most of your usage questions. You can also visit the product-related pages of SIYI Technology's official website (**https://siyi.biz/en**), call SIYI Technology's official after-sales service center (**400-838-2918**) or send an email to the **support@siyi.biz** to directly consult SIYI Technology Engineers about product-related knowledge and feedback product problems.

Contact Us: SIYI Official Website (**https://siyi.biz/en**)

SIYI User Group - Facebook	
Facebook	
LinkedIn	
YouTube	

Manual Version Update Record

Version Number	Update Date	Update Content
1.0	2024.11	Initial version

Reading Tips

Logo, icon
When reading the user manual, please pay special attention to the relevant contents marked as follows.

- Hazards Dangerous operations likely to cause personal injury
- Warning Operation warning that may cause personal injury
- Be careful not to cause unnecessary property damage due to illegal operations.

🚫Prohibitions ❗must implement 🔴precautions

Security
The MS4525 Airspeed Sensor of SIYI is designed and manufactured for professional application scenarios. Necessary debugging has been completed before leaving the factory. Please do not disassemble or change its structure. The MS4525 Airspeed Sensor of SIYI has a precise structure. Operators need to have certain basic skills. Please use it carefully. Any unnecessary product damage caused by the irregular and irresponsible operation of this product, causing economic losses or even personal injury to users or others, SIYI Technology does not assume any responsibility. Minors use this product must have a professional presence supervision and guidance. The products of SIYI Technology are designed for commercial scenarios and the use of SIYI products for military purposes is prohibited. Disassembly or modification of this product is prohibited without the permission of SIYI Technology.

Equipment idle, carrying, recycling
When the SIYI products you own are idle, or you want to carry SIYI products out of work, or the products have reached the end of their service life, please pay special attention to the following:

Danger

SIYI products should be kept away from areas where children can easily touch when they are idle.

Please avoid placing SIYI products in an environment that is too hot (above 60 degrees Celsius) or too cold (below minus 20 degrees Celsius).

Attention

Please avoid placing SIYI products in wet or dusty environments.

Please avoid operations that may damage components such as vibration or impact when carrying and transporting SIYI products.

Product Introduction

product characteristics

MS4525 Airspeed Sensor is the 1 digital airspeed measurement module designed by SIYI for fixed-wing UAVs or vertical unmanned aerial vehicles. It measures the airspeed of the aircraft and ensures that the unmanned aerial vehicle avoids stall in windy environment, safely takes off and lands, and completes flight tasks. It is a necessary reliability component for fixed-wing UAVs and vertical unmanned aerial vehicles.

Minimalist Mini Lightweight

Specially designed for the ecology of fixed-wing UAVs and vertical unmanned aerial vehicles, using minimalist design thinking, as small as a millimeter and as light as corn.

Interface and Definition
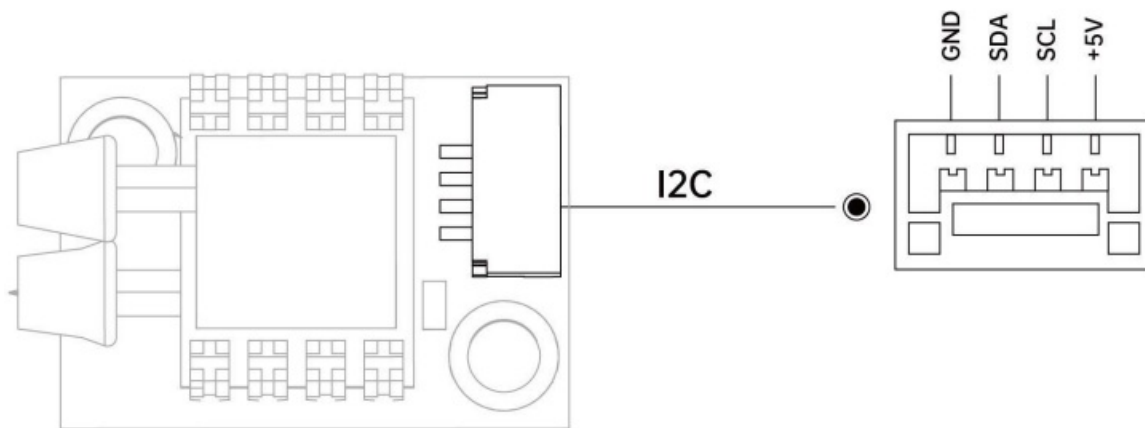
Technical Parameters

Sensor	MS4525
Measurement accuracy	±0.25% SPAN
Working pressure	1 psi
Maximum pressure	20 psi
communication protocol interface	I2C
Support Firmware	Ardupilot, PX4
Operating voltage	4.5~5.5V
Working temperature	-25 to 75°C

Product size	L25mm x W16mm x H13mm
Product Weight	3g (excluding pitot tube and connecting wire)

List of items

- 1 x SIYI MS4525 Airspeed Sensor
- 1 x differential pitot tube
- 1 x GH 1.25MM 4in double-headed 1 positive and negative 28# silicone wire line L = 300MM
- (Used to connect Airspeed Sensor I2C interface and flight control I2C interface)

Status Indicator Definitions

Power Indicator

- blue light is always on: module power supply is normal

- ◯blue light extinguished: no power supply to module

Installation and fixing

Use double-sided adhesive tape to paste the MS4525 Airspeed Sensor at the required position. The pitot tube should be installed in the airflow direction of the UAV (the nose or the left and right wings), with the air hole facing the front of the flight and away from the propeller to prevent the propeller from rotating.

Pitot tube connection

The MS4525 Airspeed Sensor is equipped with a silicone hose. The length of the hose can be cut according to the length required by the actual installation. The hose connection between the pitot tube and the airspeed module is shown in the figure below, and the same air inlet is connected together with the hose. The hoses in the engine room can be fixed on the bulkhead with adhesive tape. Be careful not to squeeze the hoses when arranging the pipes to prevent poor airflow and abnormal airspeed measurement.
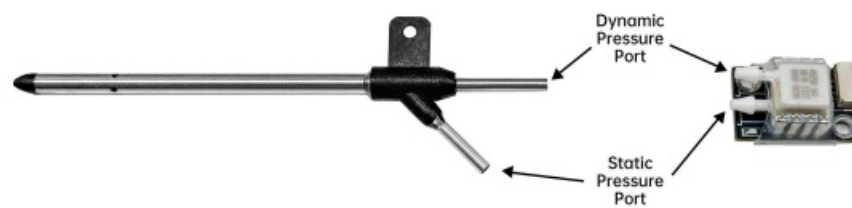
Use on ArduPlane

parameter settings
The airspeed sensor can be operated normally only after the flight control device is brushed into the ArduPlane (Fixed-Wing UAV firmware). Airspeed sensors are not supported on vehicles other than Fixed-Wing UAVs.

- ARSPD_TYPE = 1 Configured Airspeed Sensor Type = I2C-MS4525D0
- ARSPD_USE = 1 Configure whether the airspeed count value is used for actual flight control
- ARSPD_BUS = 1 Airspeed Sensor I2C bus selection, generally the default is 1
- After configuring the above parameters, restart the flight control, and observe whether there is any change in the airspeed value on the ground station. If there is any change, it means that the flight control has identified the airspeed sensor.

Note

For more information: **https://ardupilot.org/plane/docs/airspeed.html**

Airspeed Sensor static calibration

Airspeed static calibration must be performed before each takeoff. Cover the pitot tube with your hand to block the effect of natural wind on the Airspeed Sensor, but do not block the Airspeed Sensor completely.

Select "PREFLIGHT CALIBRATE" in the MissionPlanner and click "Execute Action" to start calibration;
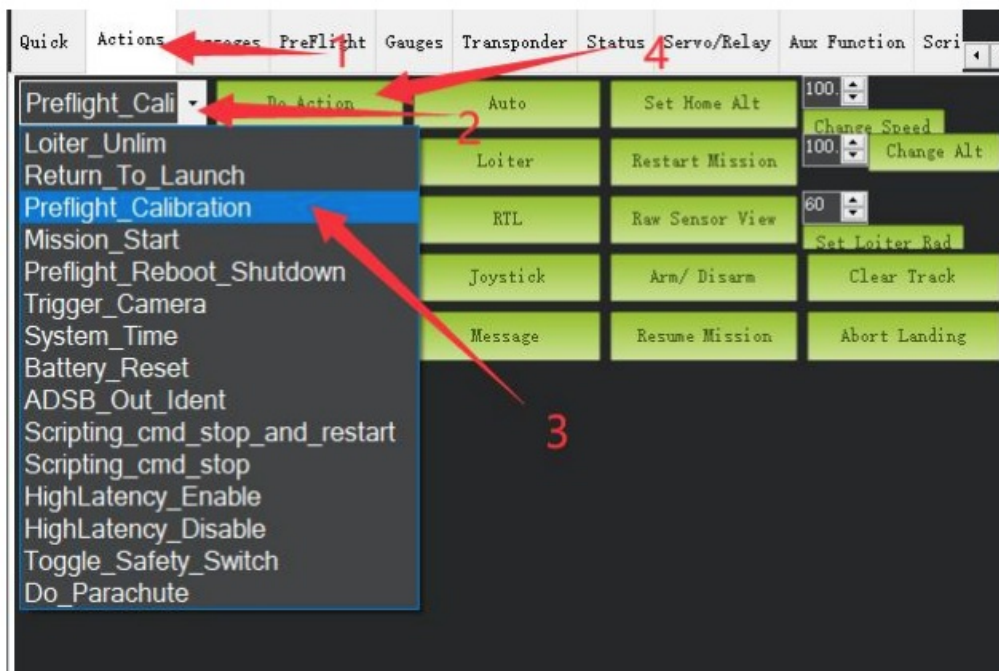
After the calibration is completed, the calibration complete text will be displayed in the "Message" column. Represents that the Airspeed Sensor is statically calibrated.

Airspeed Sensor Dynamic Calibration

ARSPD_AUTOCAL = 1 in all parameter table, write and save, and restart flight control. After restarting flight control, take off the airplane. Use the Loiter flight mode to automatically hover in the air for more than ten minutes. During the hover, the flight control will prompt to reset the Airspd ratio parameter. It means the flight control has completed the dynamic calibration. Check whether the ARSPD_RATIO value is within 1~3 after landing. If the ARSPD_RATIO is out of the range of 1 to 3, check the Airspeed Sensor pitot for normal installation or foreign matter.

You need to change the ARSPD_AUTOCAL to 0 after calibration.

Note

The Airspeed Sensor dynamic calibration must be done correctly to obtain the correct ARSPD_RATIO parameters. Otherwise, the airspeed will be inaccurate.

Used on PX4

Parameter setting

The frame type is selected as Fixed-Wing UAV.
SENS_EN_MS4525DO = 1 ON MS4525DO airspeed sensor After configuring this parameter, restart the flight control, and the airspeed data can be viewed on the QGC ground station.

Calibrate airspeed sensor

Open the QGroundControl and connect the flight control.
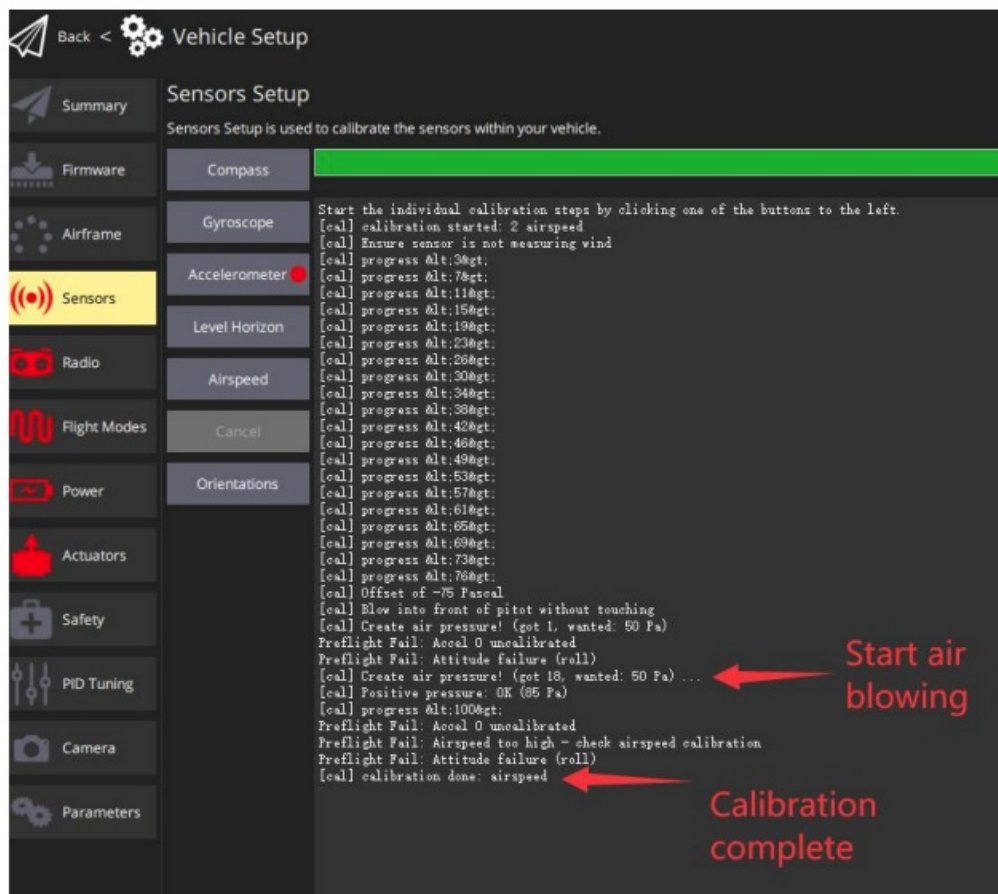
For more information, please view: **Airspeed Sensor | PX4 Documentation Tutorial**

After Sales and Warranty

SIYI Technology promises users that if you encounter any problems and difficulties when using SIYI products, you can contact our official after-sales support center (Tel: 400 838 2918 or Email: support@siyi.biz) or your sales representative or agent to be properly solved.

repair process

If the SIYI product you purchased cannot work or be used normally for some reason, please contact the official after-sales support center of SIYI Technology for consultation.

There are usually two types of product problems that need to be repaired:

- Product failure

- Man-made damage

Products with the above two situations can be returned to the factory for maintenance. For product failures, you can enjoy free repairs during the warranty period. Product failures and man-made damages outside the warranty period will incur certain expenses. Please refer to the quotation

Warranty Policy

In order to protect the legitimate rights and interests of consumers, SIYI Technology strictly abides by the national "Three Guarantees Regulations" and other relevant laws and regulations, clarifies the relevant regulations on the maintenance, exchange, and return of related products, and earnestly fulfills the maintenance, exchange and return of related products Responsibilities and obligations.

After purchasing our products, users can enjoy the following services by virtue of invoices or other purchase certificates if the products have problems or faults specified in the "Three Guarantees Regulations" and the dealers or manufacturers technical personnel confirm that they are true:

7-day package return

Return Conditions

- Within 7 natural days from the date of receipt, the product has no manufacturing defects, the outer packaging, accessories, gifts, and instructions of the product are complete, and there is no human damage, has not been activated for use, and does not affect secondary sales; Within 7 natural days from the date of receipt, it is found that the product has non-human damage performance failure.

- SIYI Technology has the right to reject the customer's return request under the following circumstances:

- Requests for return more than 7 natural days after the date of receipt;

- The packing list of returned products is incomplete, the outer packing, accessories, gifts and instructions are missing, and the appearance of products or packages is damaged due to human reasons;

- Unable to provide legal proof of purchase or documents when making a return request, or the documents and documents have been forged or altered;

- The product is detected as damage caused by non-product quality problems; artificial modification, incorrect installation, failure to use and operate according to the instructions; foreign matter (water, oil, sand, etc.) in the product;

- Tear and alter labels, machine serial numbers, waterproof marks, anti-counterfeiting marks, etc;

- Product damage caused by fire, flood, lightning, traffic accidents and other force majeure factors.

- After contacting our company to confirm the return service, the problem product was not sent within 7 natural days;

15 days free exchange

Exchange conditions:

- Within 15 natural days from the date of receipt, it is found that the product is damaged during transportation and the goods damage certificate provided by the transportation company can be provided;

- Within 15 natural days from the date of receipt, it is found that the product is seriously inconsistent with the original product description in one or more important aspects;

- Within 15 natural days from the date of receipt, it is found that the product has non-human damage

performance failure.

- SIYI Technology has the right to reject the customer's return request under the following circumstances:
- Requests for replacement more than 15 natural days from the date of receipt;
- Unable to provide legal purchase vouchers or documents when exchanging goods, or the vouchers and documents have traces of forgery or alteration; the exchanged goods are incomplete, or the appearance is damaged due to man-made reasons;
- By SIYI technology support testing, the product itself does not have quality problems;
- The product is detected as damage caused by non-product quality problems; artificial modification, incorrect installation, failure to use and operate according to the instructions; foreign matter (water, oil, sand, etc.) in the product;
- Tear and alter labels, machine serial numbers, waterproof marks, anti-counterfeiting marks, etc;
- Products damaged due to unavoidable factors, such as fire, flood, lightning, traffic accidents and other force majeure;
- After contacting our company to confirm the replacement service, the problem product was not sent within 15 natural days;
- The product is damaged due to transportation and fails to provide the goods damage certificate issued by the transportation company;
- Other circumstances not listed under the Three Guarantees Regulations.
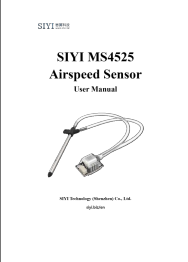
Free Warranty for 1 Years

Warranty Conditions

- After the user purchases the product, it is used normally within the specified product warranty period, and the product has a performance failure caused by non-human reasons;
- The product has not been artificially disassembled, modified or installed;
- Provide valid proof of purchase or documents.
- In the following cases, the product does not enjoy the free warranty service provided by SIYI Technology: Collision and damage of the product due to human causes;
- The product has been damaged due to unauthorized modification, disassembly and shell opening without the guidance of SIYI Technology;
- The product has been damaged by incorrect installation, use and operation without the guidance of SIYI Technology;
- Without the guidance of SIYI Technology, the customer repairs the damage caused by the assembled product by himself;
- The product has been damaged due to circuit modification without the guidance of SIYI Technology, or improper matching of battery pack and charger;
- Failure to charge in time when the battery is low, or unauthorized replacement of batteries with quality problems, resulting in insufficient discharge and product damage;
- Damage caused by forced use under the condition of aging or damage of parts;
- Damage caused by reliability and compatibility problems when used simultaneously with third-party components that are not officially certified by SIYI Technology;
- The serial number, factory label and other marks of the machine shall be free from tearing or alteration;
- After contacting our company to confirm the warranty service, the product in question was not mailed within 7 natural days.

SIYI Technology (Shenzhen) Co., Ltd.
Business mailbox: **info@siyi.biz**
Business telephone number: 400 838 2918
After-sales support mailbox: **support@siyi.biz**

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Documents / Resources

SIYI MS4525 Airspeed Sensor User Manual	**SIYI MS4525 Airspeed Sensor** [pdf] User Manual MS4525 Airspeed Sensor, MS4525, Airspeed Sensor, Sensor

References

- 🌐 **SIYI Technology | Empowering and Building an Intelligent Robot Ecology - Gimbal Camera | Optical Pod | HD Image Transmission System | Handheld Ground Station | Autopilot Flight Controller**
- **Using an Airspeed Sensor — Plane documentation**
- 🌐 **SIYI Technology | Empowering and Building an Intelligent Robot Ecology - Gimbal Camera | Optical Pod | HD Image Transmission System | Handheld Ground Station | Autopilot Flight Controller**
- **User Manual**