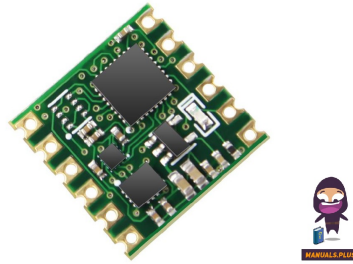


Wit motion WT901B Inclinometer Sensor



# Wit motion WT901B Inclinometer Sensor User Manual

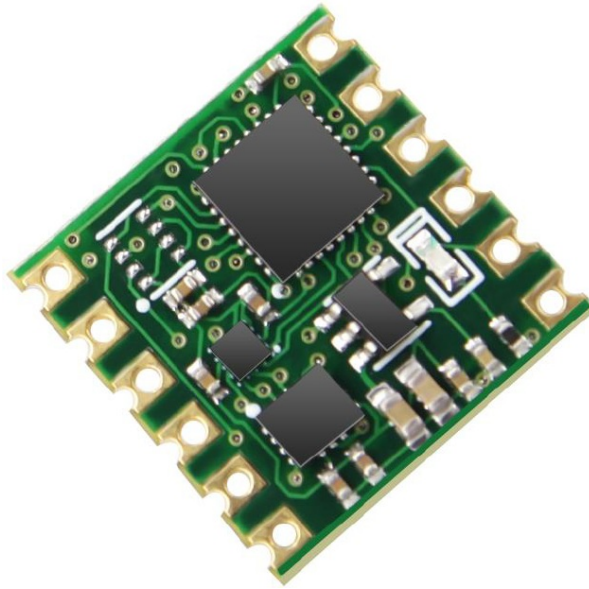
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Wit motion WT901B Inclinometer Sensor



## Product Information

- **Specifications:**

- **Device:** WT901B Inclinator Sensor
- **Functionality:** Detects acceleration, angular velocity, angle, and magnetic field
- **Applications:** AGV Truck, Platform Stability, Auto Safety System, 3D Virtual Reality, Industrial Control, Robot, Car Navigation, UAV, Truck-mounted Satellite Antenna Equipment
- **Features:** CE standard accelerometer, compact design for industrial retrofit applications

## Product Usage Instructions

- **Introduction**

- The WT901B is a multi-sensor device that measures acceleration, angular velocity, angle, and magnetic field. It is ideal for industrial retrofit applications like condition monitoring and predictive maintenance.
- The device's smart algorithms allow for a wide range of use cases by interpreting sensor data.

- **Warning Statement**

- It is important to note the following warnings:
- Do not exceed 5 Volts across the sensor wiring to avoid permanent damage.
- Do not directly connect VCC with GND to prevent circuit board damage.
- For proper instrument grounding, use WITMOTION's original cables or accessories.
- When working on secondary development projects or integration, use WITMOTION's compiled sample code.

- **Use Instructions**

- Access software and resources through the provided links:
- Software and driver downloads

- **Quick-guide Manual**

- Teaching Videos
- Common Software with detailed instructions
- SDK (sample code)
- SDK Tutorial Documentation

- Communication Protocol
- **Software Introduction**
  - Learn about the software functions and menu options through the provided link.
- **MCU Connection**
  - Follow the instructions in the manual for connecting the WT901B to an MCU.
- **IIC Connection**
  - Refer to the manual for guidance on establishing an IIC connection with the WT901B.

## FAQs

- **Q: What should I do if I exceed the recommended voltage across the sensor wiring?**
  - **A:** Exceeding the recommended voltage can lead to permanent damage to the sensor. It is crucial to adhere to the specified limits to avoid any such issues.
- **Q: Can I directly connect VCC with GND?**
  - **A:** No, direct connection of VCC with GND can result in circuit board burning. Always follow the recommended guidelines for proper connections.
- **Q: Where can I find software and driver downloads for the WT901B?**
  - **A:** You can access software and driver downloads from the provided link in the user manual or visit the official website of WITMOTION for support.

## Tutorial link

- **Google Drive Link to instructions DEMO:** [WITMOTION Youtube Channel WT901B Playlist](#)
  - If you have technical problems or cannot find the information that you need in the provided documents, please contact our support team.
  - Our engineering team is committed to providing the required support necessary to ensure that you are successful with the operation of our AHRS sensors.
- **Contact**
  - [Technical Support Contact Info](#)

## Application

- AGV Truck
- Platform Stability
- Auto
- Safety System
- 3D Virtual Reality
- Industrial Control
- Robot
- Car Navigation
- UAV
- Truck-mounted Satellite Antenna Equipment

## Introduction

- The WT901B is a multi-sensor device detecting acceleration, angular velocity, angle as well as magnetic field.
- The small outline makes it perfectly suitable for industrial retrofit applications such as condition monitoring and predictive maintenance.
- Configuring the device enables the customer to address a broad variety of use cases by interpreting the sensor data with smart algorithms.
- WT901B's scientific name is AHRS IMU sensor A sensor measures 3-axis angle, angular velocity, acceleration, and magnetic field. Its strength lies in the algorithm which can calculate three-axis angle accurately.
- WT901B is a CE standard accelerometer. It is employed where the highest measurement accuracy is required.

#### **WT901B offers several advantages over competing sensors:**

- Heated for best data availability: new WITMOTION patented zero-bias automatic detection calibration algorithm outperforms traditional accelerometer sensor
- High precision Roll Pitch Yaw (X Y Z axis) Acceleration + Angular Velocity + Angle + Magnetic Field output
- Low cost of ownership: remote diagnostics and lifetime technical support by the WITMOTION service team
- Developed tutorial: providing manual, datasheet, Demo video, free software for Windows computer, APP for Android smartphones, and sample code for MCU integration including 51 serial, STM32, Arduino, Matlab, Raspberry Pi, a communication protocol for project development
- WITMOTION sensors have been praised by thousands of engineers as a recommended attitude measurement solution

#### **Warning Statement**

- Putting more than 5 Volts across the sensor wiring of the main power supply can lead to permanent damage to the sensor.
- VCC cannot connect with GND directly, otherwise it will lead to the burning of the circuit board.
- **For proper instrument grounding:** use WITMOTION with its original factory-made cable or accessories
- For secondary developing project or integration: use WITMOTION with its compiled sample code.

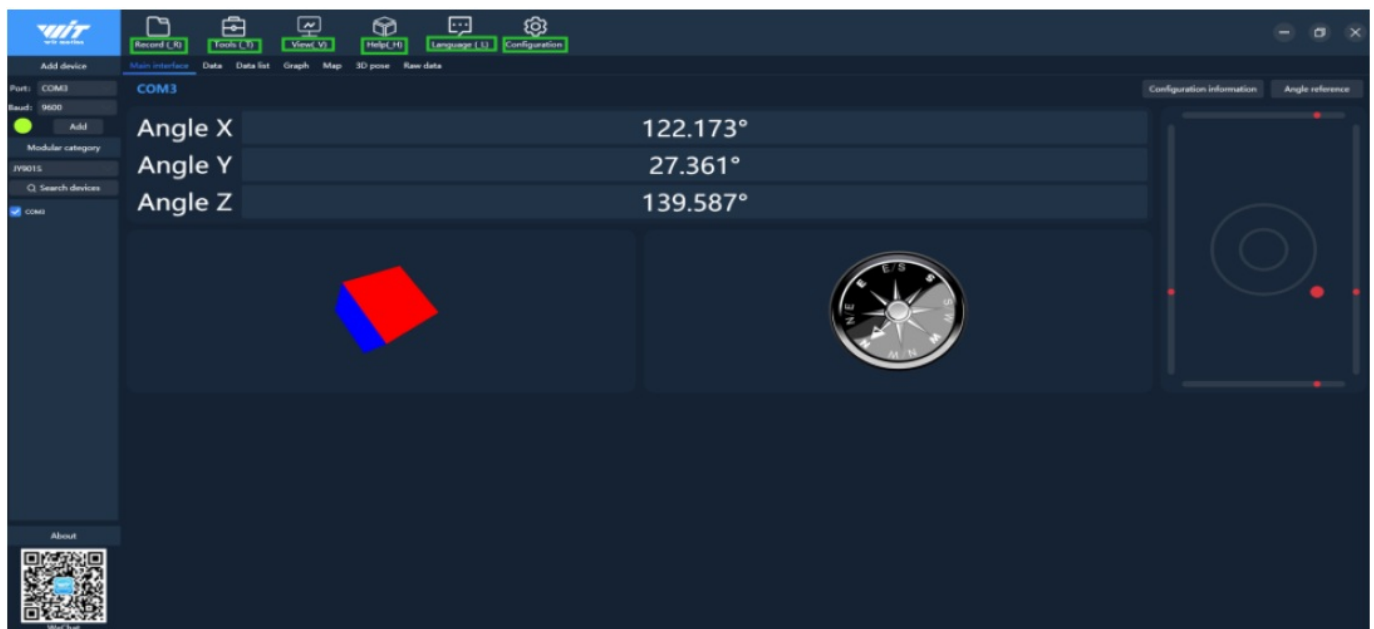
#### **Use Instructions**

Hit the hyperlink directly to the document or download centre:

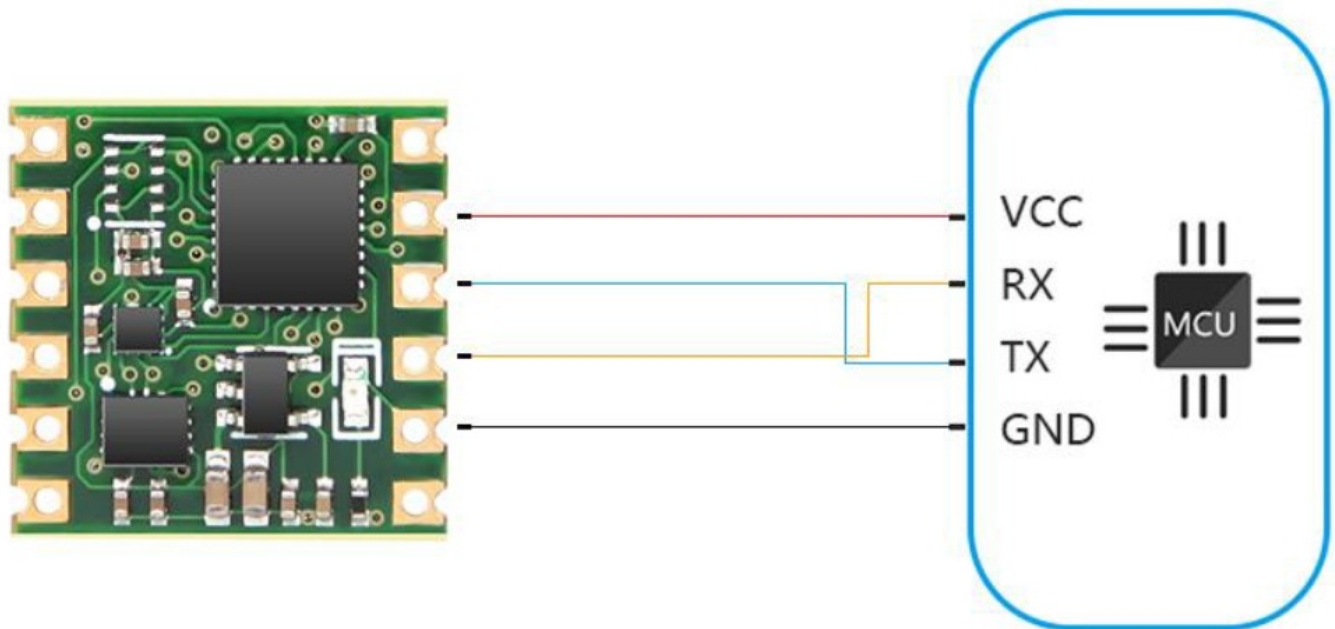
- [Software and driver download](#)
- [Quick guide Manual](#)
- [Teaching Video](#)
- [Common Software with detailed instructions](#)
- [SDK\( sample code](#)
- [SDK Tutorial Documentation](#)
- [Communication Protocol](#)

#### **Software Introduction**

[Software function introduction](#) (Ps You can check the functions of the software menu from the link.



## MCU Connection



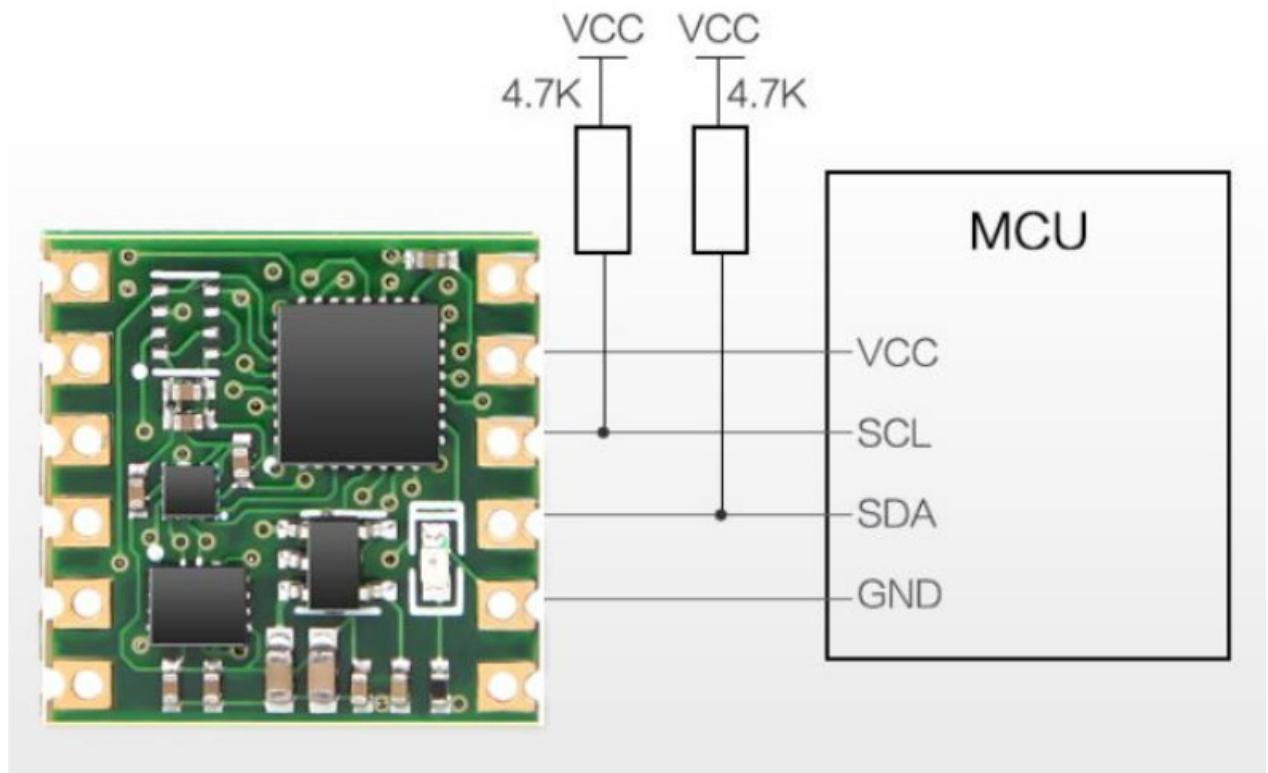
## IIC Connection

The WT901B module can be connected to the MCU through the IIC interface. The connection method is shown in the figure below.

### Note:

1. To connect multiple modules on the IIC bus, the IIC bus of the module is an open drain output. When the MCU is connected to the module, the IIC bus needs to be pulled up to VCC through a 4.7K resistor.
  2. VCC is 3.3V, it must be connected to the power supply. Directly using the power supply on the module may cause a voltage drop, so that the actual voltage of the module is not 3.3 ~ 5V.
- The internal pullup of the MCU is a weak pullup, the driving capacity is limited, and an external pullup on the


hardware is required.



## CONTACT

- WT901B
- manual v23-0627
- [www.wit-motion.com](http://www.wit-motion.com).
- [support@wit-motion.com](mailto:support@wit-motion.com).

## Documents / Resources

	<a href="#">Wit motion WT901B Inclinator Sensor</a> [pdf] User Manual WT901B Inclinator Sensor, WT901B, Inclinator Sensor, Sensor
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## References

- [Industrial Supplies, Bearings, Mechanical Power Transmission - Motion](#)
- [Market leader in solar radiation & heat flux measurement](#)
- [Wit Motion](#)
- [Wit Motion](#)
- [GitHub - WITMOTION/WitStandardProtocol\\_JY901: \(c#\)](#)

- [🌐 SDK | WITMOTION SDK](#)
- [User Manual](#)

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