WITMOTION WT901C-232 9 Axis Vibration Inclinometer User Manual

Contents

WITMOTION WT901C-232 9 Axis Vibration Inclinometer

Product Information

Specifications

- Product Name: WT901C(RS232) Inclinometer Sensor
- Model: WT901C RS232
- Manual Version: v23-06-28
- Website: **www.wit-motion.com**
- Email: **support@wit-motion.com**

Application

The WT901C(RS232) Inclinometer Sensor is suitable for various applications including:

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

Introduction

The WT901C(RS232) is a multi-sensor device that can detect acceleration, angular velocity, angle, and magnetic field. It is designed for industrial retrofit applications such as condition monitoring and predictive maintenance. The small size of the sensor makes it suitable for various use cases, and it can interpret sensor data using smart algorithms. The WT901C(RS232) is also known as an AHRS IMU sensor, which stands for Attitude and Heading Reference System Inertial Measurement Unit. It accurately measures 3-axis angle, angular velocity, acceleration, and magnetic field. Its algorithm ensures accurate calculation of three-axis angle. Compared to other sensors, the WT901C(RS232) offers several advantages:

- High measurement accuracy
- Compact design
- Smart Algorithms for data interpretation

Warning Statement

It is important to follow these warnings to prevent damage to the sensor:

- Do not apply more than 5 Volts across the sensor wiring of the main power supply as it can cause permanent damage.
- Do not directly connect VCC (power supply) with GND (ground) to avoid circuit board burning.
- For proper instrument grounding, use WITMOTION with its original factory-made cable or accessories.
- If you are working on a secondary developing project or integration, use WITMOTION with its compiled sample code.

Product Usage Instructions

Use Instructions with PC

To use the WT901C(RS232) Inclinometer Sensor with a PC, follow these steps:

1. Visit the WITMOTION website and navigate to the document or download center.
2. Download the necessary software and drivers.
3. Refer to the quick-guide manual for step-by-step instructions.
4. Watch the teaching videos for visual guidance.
5. If required, use the common software with detailed
6. instructions.
7. If you are developing your own software, utilize the SDK (sample code) provided.
8. Refer to the SDK tutorial documentation for guidance on utilizing the SDK.
9. Ensure proper communication protocol is followed.

Frequently Asked Questions (FAQ)

- Q: Where can I find the user manual and instructions for the WT901C(RS232) Inclinometer Sensor?
- A: You can find the user manual and instructions on the WITMOTION website. Visit the document or download center for access.
- Q: What are the applications of the WT901C(RS232) Inclinometer Sensor?
- A: The WT901C(RS232) Inclinometer Sensor is commonly used in AGV trucks, platform stability systems, auto safety systems, 3D virtual reality applications, industrial control systems, robots, car navigation,
- UAVs, and truck-mounted satellite antenna equipment.
- Q: What should I do if I accidentally apply more than 5 Volts to the sensor wiring?
- A: Applying more than 5 Volts can cause permanent damage to the sensor. It is important to follow the warning statement mentioned in the user manual. If damage occurs, please contact WITMOTION support
- for assistance.

Tutorial Link

- Google Drive

Link to instructions DEMO

- WITMOTION Youtube Channel
- WT901C 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.

Application

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

Introduction

The WT901C is a multi-sensor device detecting acceleration, angular velocity, and angle as well as magnetic filed. 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.
WT901C'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.
WT901C is employed where the highest measurement accuracy is required. It 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, and sample code for MCU integration including Python, STM32, Arduino, Matlab, Raspberry Pi, C++ 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 separate developing projects or integration: use WITMOTION with its compiled sample code.

Use Instructions with PC

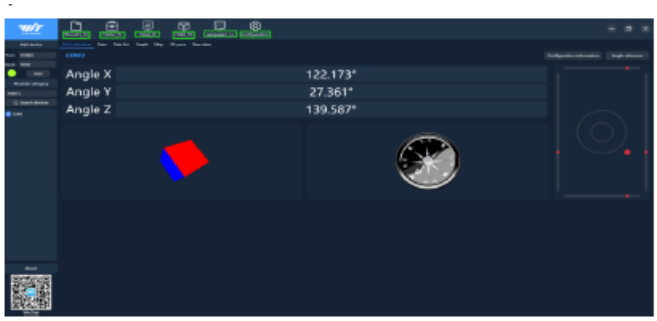
Hit the hyperlink directly to the document or download center:

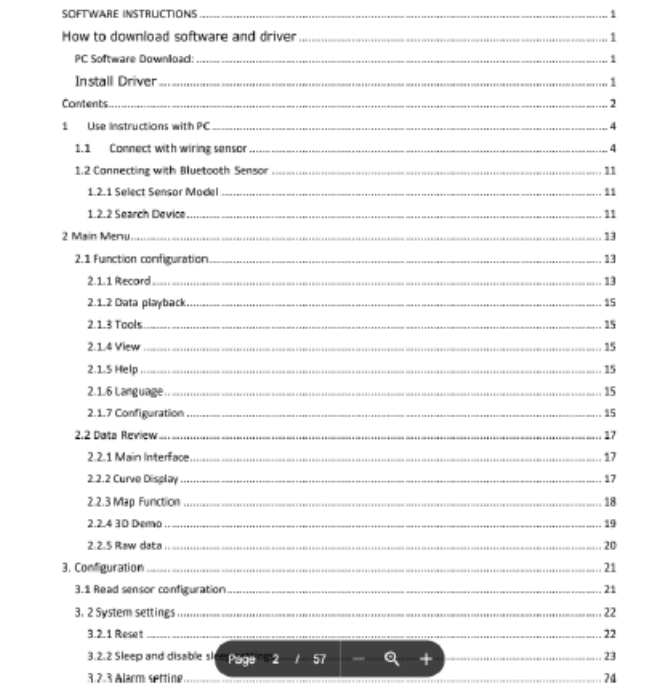
- Software and driver download
- Quick Guide Manual
- Teaching Video
- Common Software with detailed instructions
- SDK(sample code
- SDK Tutorial Documentation
- Communication Protocol

Software Introduction

Software function introduction

(Ps You can check the functions of the software menu from the link.



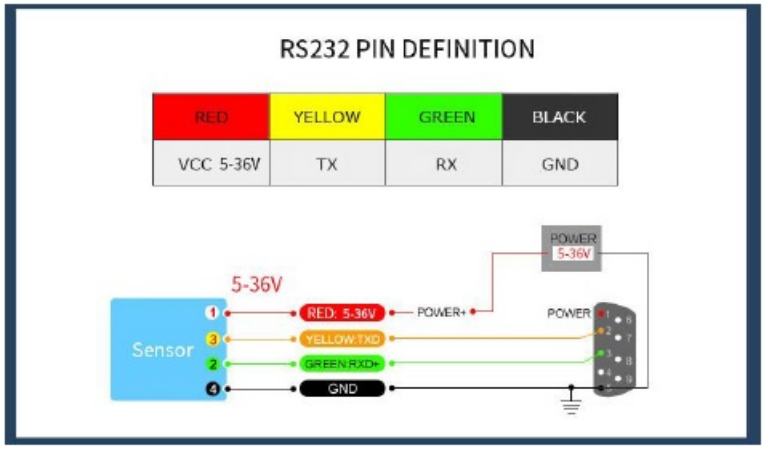


MCU Connection

Step 1. Connect the sensor with a serial converter
PIN Connection:

- VCC -5~36 V
- TX-Yellow
- RX-Green
- GND-GND

(When connecting with a computer, VCC 5 36 V is recommended.)



CONTACT

- WT901C RS232
- manual v23-06-28
- www.wit-motion.com.
- support@wit-motion.com.

Documents / Resources

	WITMOTION WT901C-232 9 Axis Vibration Inclinometer [pdf] User Manual WT901C-232 9 Axis Vibration Inclinometer, WT901C-232, 9 Axis Vibration Inclinometer, Vibration Inclinometer, Inclinometer

References

- Hukseflux | #1 in solar radiation & heat flux measurement
- Accelerometer, Gyroscope, 6050 Mpu, Ahrs Sensor, Mpu-6050 Supplier
- Accelerometer, Gyroscope, 6050 Mpu, Ahrs Sensor, Mpu-6050 Supplier
- GitHub - WITMOTION/WitStandardProtocol_JY901: (c#)
- SDK - WITMOTION SDK
- Contacts
- User Manual