

# WDS Series CAN Bus dynamic inclinometer

## Product introduction



WOOSENS WDS series CAN Bus dynamic inclinometer module is a low power consumption and high-performance dynamic inclinometer module that made by high- accuracy acclerometer MEMS device and standard MCU, built-in automatic compensation and advanced Kalman filtering algorithms.

It can analyze the dynamic and accurate Euler angle, which is suitable for various fast-changing tilt angle measurement applications. The product has undergone strict production calibration, factory inspection, to ensure excellent product consistency and reliability.

WOOSENS WDS series CAN Bus dynamic inclinometer with two interface modes: CAN bus user-defined protocol andCANopen standard protocol, Customers can choose the appropriate output interface according to the actual situation of your system, which is convenient for customers who use Bus communication and is compatible with other standard protocol modules.

## Features

- High accuracy, high stability
- Power supply: 9~35V
- Operating temperature -40-85°C
- IP67 protection
- Dynamic measurement
- Advanced Kalman filtering algorithms
- CAN bus interface output

## Application

- Driverless
- Horizontal adjustment
- UAV
- Underwater unmanned boat
- Fan tower

With many potential applications, the WDS series dynamic inclinometer modules provide flexible and convenient command Settings, and many parameters are user-programmable.

## Product specification

### Electrical Specification

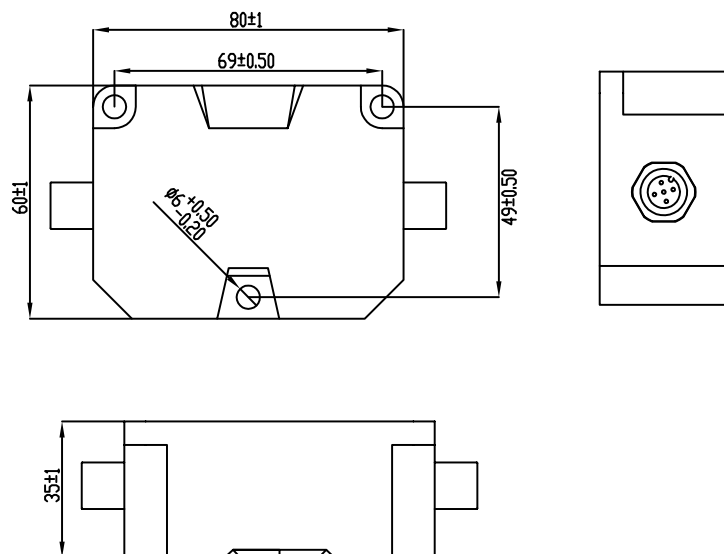
Parameter	Condition	Minimum	Typical	Maximum	Unit
Power supply	Wide voltage	9	12	35	V
Operating current		20		120	mA
Operating temperature		-40		+85	°C
Store temperature		-40		+100	°C

**Performance Specification**

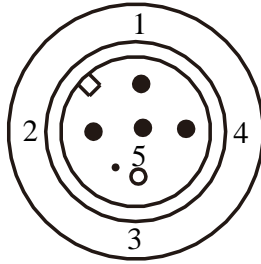
Parameter	Condition	Specification
Measuring axis		X-Y(360°360°Measuring range is uniaxial only)
measuring range		Dual-Axis(Pitch:±90°roll:±180°/uniaxial (0-360°)
Output resolution		0.01°
Dynamic accuracy		1.0°
Static accuracy		0.5°
Output Frequency		100Hz
Start delay		2000ms
Default communication ID		0x05
Default communication baud rate		250K
Measuring range	Gyroscope	±125°/s
Bias stability		20°/h(1σ)
The effect of acceleration on gyro		0.01°/s
Bandwidth		60Hz
Noise density		0.008°/s/√Hz
Non-linear		±0.03%FS
Zero temperature drift		0.006°/s/°C
Measuring range	Accelerometer	±2g
Zero offset		±40ug
Bandwidth		60Hz
Non-linear		±0.03%FS
Zero temperature drift		0.08mg/°C

Note: All parameters are measured at room temperature 25°C.

**Mechanical Characteristic**



## Interface Definition



Output interface	PIN1	PIN2	PIN3	PIN4	PIN5
CAN Module	NC	VIN	GND	CAN-H	CAN-L

## Ordering information

Measuring range	Measuring axis	Part number
±90°	Dual-Axis	WDS202
0-360°	Uniaxial	WDS201

## Communication Protocol

For the WDS module communication protocol, please refer to <The CAN open Inclinometer Module Communication Protocol Manual V2.0>

Note: All Specifications are subjected to change without notice.