

## **Low Cost 3- Axis MEMS Gyro**

### **Introduction**

The ER-3MG-302 is a three axis MEMS gyroscope which can measure the angular rate information of pitch, roll and heading in real-time and output it to the users. The product has the advantages of small size, low power consumption, light weight and good reliability, and it can meet the application needs of the corresponding fields.

### **Features**

Short startup time

Digital output

Small size, low power consumption, light weight, simple interface, easy to install and use

Output the measured value of three axial angular rate of carrier independently, continuously

Measure the angular rate of pitch, rolling and heading of the carrier and output it in real-time

## Specifications

Parameter	Indicator
Measurement range	$\pm 400^\circ/\text{s}$
Scale factor	1
Scale factor non-linearity (full temperature)	500ppm
Scale factor error	$\leq 5000\text{ppm}$ (normal temperature $\leq 2000\text{ppm}$ )
Misalignment angle	$\leq 10^\circ$
Zero-bias (full temperature)	$\leq \pm 0.2^\circ/\text{s}$ (MSEM) power on and stand still no more than 2s
Zero bias stability	$\leq 36^\circ/\text{h}$ ( $1\sigma$ , 10s smooth)
Zero bias repeatability	$\leq 36^\circ/\text{h}$ ( $1\sigma$ , 10s smooth)
Zero bias G value sensitivity	$\leq 36^\circ/\text{h/g}$
Angular random walk	$\leq 0.3^\circ/\text{h}$
Bandwidth (-3dB)	$> 100\text{ Hz}$
Interface type	RS-422
Baud rate	230400bps (customizable)
Data format	8 data bits, 1 start bit, 1 stop bit, no parity
Data updating rate	500Hz
Operating temperature	$-40^\circ\text{C} \sim +70^\circ\text{C}$
Storage temperature	$-50^\circ\text{C} \sim +80^\circ\text{C}$
Vibration (g)	10gms, 20Hz~2000Hz
Impact (g)	1/2 sin 200g, 6ms
Input voltage (VDC)	+5V
Dimension (mm)	25x25x10
Weight (g)	$\leq 30\text{g}$