

ER-MIMU-01 Product features:

1)Three-axis digital gyroscope:

$\pm 400^\circ/\text{s}$ measuring dynamic range;

bias stability (Allan variance@25°C) : $0.5^\circ/\text{h}$;

random walk: $0.15^\circ/\sqrt{\text{h}}$;

Bias sensitivity: $0.15^\circ/\sqrt{\text{h}}$;

Zero bias error of gyroscope in full temperature range ($-45^\circ\text{C}\sim 60^\circ\text{C}$, The root mean square value of the zero error of the fixed temperature point relative to the total temperature) : $\leq 30^\circ/\text{h}$.



2)Three-axis digital accelerometer:

a) $\pm 30\text{g}$ measuring dynamic range:

b)bias stability (Allan @25°C) : 0.15mg ;

c)random walk: $0.21\text{m/s}/\sqrt{\text{h}}$;

d)unpitched sound: $270\mu\text{g}/\sqrt{\text{Hz}}$;

e) Zero deviation of acceleration in full temperature range ($-45^\circ\text{C}\sim 60^\circ\text{C}$, heterotherm $\Delta T \leq \pm 1^\circ\text{C}/\text{min}$, root-mean-square value) : $\leq 6\text{mg}$.

3)high reliability:MTBF>20000h;

4) All temperature range ($-45^\circ\text{C}\sim 60^\circ\text{C}$) guaranteed precision:Built-in high performance temperature calibration and compensation algorithm;

5) support uav application: high vibration environment applicable to uav;

6) support stable platform application: full parameter measurement and measurement bandwidth>100Hz;

7)data updating rate $\geq 1\text{KHz}$.

Product Specifications:

Gyro	parameter	Test Conditions	Min	Typical value	Max	unit
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	Dynamic measurement range			±400		°/s
	Bias stability	Allan variance		0.5		°/h
	Zero error in the full temperature range difference	-45 ° C ~ 60 ° C fixed temperature point Mean square of zero error for full temperature Root value		10		°/h
	Random walk			0.15		°/√h
	Zero bias repeatability	Life cycle and full temperature range		0.01		°/s
	Offset acceleration sensitivity			2		°/h /g
	Scale factor nonlinearity	FS=400 °/s		100		ppm
	bandwidth			250		Hz
Accelerometer	Dynamic measurement range			±30		g
	Bias stability	Allan variance		0.15		mg
	Zero error in the full	-45°C~60°C, variable		6		mg

	temperature range difference	temperature $\Delta T \leq \pm 1^{\circ}\text{C}/\text{min}$, rms value				
	Random walk			0.21		m/s/ $\sqrt{h}$
	Zero bias repeatability	Life cycle and full temperature range		10		mg

	parameter	Test Conditions	Min	Typical value	Max	unit
	Scale factor repeatability	Life cycle and full temperature range		1		%
	Scale factor nonlinearity	FS=10g		300		ppm
	bandwidth			100		Hz
Electrical characteristics	Voltage	DC	5.0			V
	Power consumption			3		W
	Ripple	P-P			100	mV
Use environment	Operating temperature		-45		65	$^{\circ}\text{C}$
	storage temperature		-60		85	$^{\circ}\text{C}$
	vibration			10~2000Hz, 6.06g		
	Shock			5000g, 0.1ms		
reliability	MTBF			20000		h

	Continuous working time			120		h
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Electrical Interface:

The electrical connector type is J30J-15ZKN-J, and the specific assignment of the contacts is shown in Table 1 below

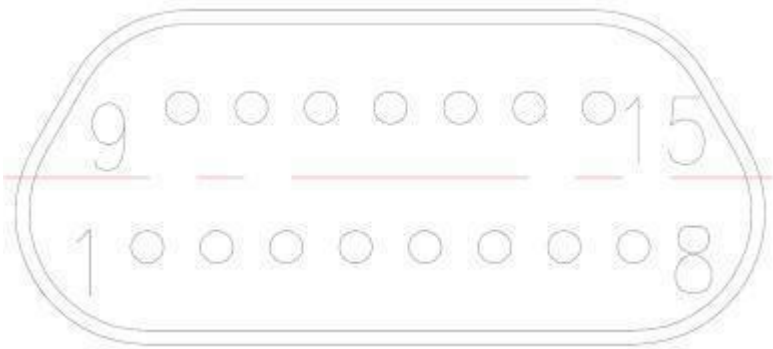


Table 1 J30J-15ZKN-J contact distribution:

Node number	definition	use
10	Rx+	RS422
2	Rx-	
1	Tx-	
9	Tx+	
8	+5V	Power supply
15	GND	Power ground

Structure size and coordinate definition

