



HIGH PRECISION INERTIAL MEASUREMENT UNIT



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U2200 VEHICLE GRADE

MEMS Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	 ± 500 °/sec	 $\pm 4 \sim 16$ g
Bias in-run instability (Alan)	 ≤ 2 °/hr	 ≤ 0.04 mg
Vibration.....	20~2000Hz, 6.06 (g, rms)	
Shocking.....	1000 g/1ms	
Power consumption.....	0.5 W	
Size	22.4 x23 x 9 mm	
Weight	20 g	
Interface	UART	





U2300 VEHICLE GRADE

MEMS Based IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	$\pm 250^{\circ}/\text{sec}$	$\pm 4 \sim 16 \text{ g}$
Bias in-run instability (Alan)	$\leq 1(X,Y), \leq 0.5(Z)^{\circ}/\text{hr}$	$\leq 0.03 \text{ mg}$
Vibration.....	20~2000Hz, 6.06 (g, rms)	
Shocking.....	1000 g/1ms	
Power consumption.....	2 W	
Size	75.3 x63 x 23 mm	
Weight	<100 g	
Interface	CAN/UART	

U2500-A/B

INDUSTRIAL GRADE

MEMS Based IMU

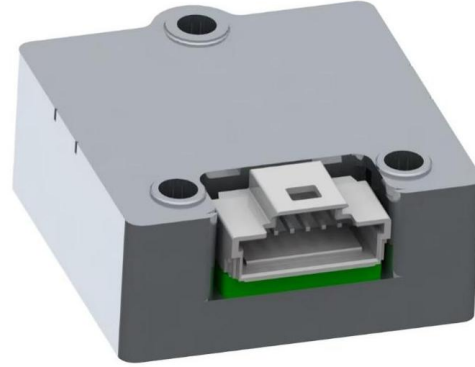


	GYROSCOPES
Maximum dynamic range	$\pm 500 \sim 2000$ °/sec
Bias in-run instability (Alan)	≤ 2 °/hr
Roll/Pitch accuracy (static).....	0.1° (rms)
Roll/Pitch accuracy (dynamic).....	1° (rms)
Vibration.....	20~2000Hz, 6.06 (g, rms)
Shocking.....	1000 g/1ms
Power consumption.....	0.5 W
Size	22.4 x23 x 9 mm
Weight	20 g
Interface	UART

ACCELEROMETERS

.....	± 16 g
.....	$\leq 0.03 \sim 0.04$ mg





U2600-A/B INDUSTRIAL GRADE

MEMS Based IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	$\pm 300 \sim 2000$ °/sec	± 16 g
Bias in-run instability (Alan)	$\leq 1 \sim 3$ °/hr	≤ 0.03 mg
Roll/Pitch accuracy (static).....	$0.3 \sim 0.5^\circ$ (rms)	
Roll/Pitch accuracy (dynamic).....	$1 \sim 2^\circ$ (rms)	
Vibration.....	$20 \sim 2000$ Hz, 6.06 (g, rms)	
Shocking.....	1000 g/1ms	
Power consumption.....	1 W	
Size	$25.3 \times 22.4 \times 10$ mm	
Weight	12 ± 2 g	
Interface	CAN/UART	

U2650

INDUSTRIAL GRADE

MEMS Based IMU



GYROSCOPES		ACCELEROMETERS
Maximum dynamic range	± 2000 °/sec	± 16 g
Bias in-run instability (Alan)	≤ 2 °/hr	≤ 0.05 mg
Roll/Pitch accuracy (static).....	0.1° (rms)	
Roll/Pitch accuracy (dynamic).....	0.2° (rms)	
Heading accuracy.....	<3° (rms)	
Vibration.....	20~2000Hz, 6.06 (g, rms)	
Shocking.....	1000 g/1ms	
Power consumption.....	1 W	
Size	39 x 34 x 13 mm	
Weight	12±2 g	
Interface	EtherCAT	





U3500-A/B/C/D INDUSTRIAL GRADE

MEMS Based IMU

GYROSCOPES

ACCELEROMETERS

Maximum dynamic range	 $\pm 400 \sim 2000$ °/sec	 $\pm 8 \sim 32$ g
Bias in-run instability (Alan)	 $\leq 1.6 \sim 3(X,Y), \leq 2(Z)$ °/hr	0.01~0.03 mg

Pitch/Roll (Static/Dynamic).....0.15~0.2 °/hr

Heading angle drift (Static).....0.15 °/hr

Heading angle drift (Dynamic).....5 °/hr

Magnetometer range..... ± 20 Gauss

Size22 x22 x 9 mm

Weight8 g

Connector modelMolex/Board to board

InterfaceUART(TTL)/CAN

U3600-A/B/C

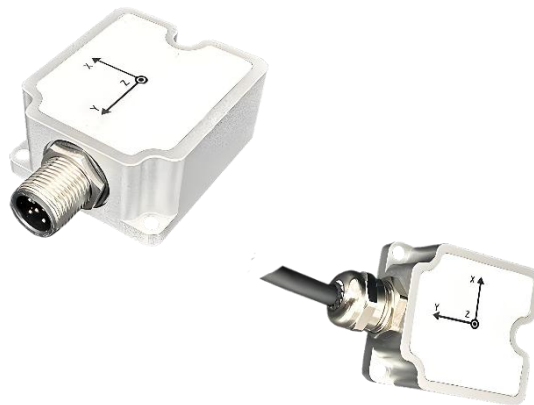
INDUSTRIAL GRADE

MEMS Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	 $\pm 2000 \sim 4000$ °/sec	 $\pm 8 \sim 32$ g
Bias in-run instability (Alan)	 $1.6 \sim 3$ °/hr	 $0.03 \sim 0.012$ mg
Pitch/Roll (Static/Dynamic).....	 $0.15 \sim 0.2$ °/hr	
Heading angle drift (Static).....	 0.15 °/hr	
Heading angle drift (Dynamic).....	 5 °/hr	
Magnetometer range.....	 ± 20 Gauss	
Barometer range.....	 $300 \sim 1200$ hPa	
Size	 $25.7 \times 24 \times 12$ mm	
Weight	 11 g	
Connector model	USB	
Interface	Binary protocol (91)	





U3700-A/B/C/D INDUSTRIAL GRADE

MEMS Based IMU

GYROSCOPES

ACCELEROMETERS

Maximum dynamic range	±2000~40000 °/sec	±8~32 g
Bias in-run instability (Alan)	1~3 °/hr	0.007~0.03 mg

Pitch/Roll (Static/Dynamic).....	0.15~0.2 °/hr
Heading angle drift (Static).....	0.15 °/hr
Heading angle drift (Dynamic).....	5 °/hr
Magnetometer range.....	±20Gauss
Size	58.5 x40 x 20 mm
Weight	75 g
Connector model	M12 aviation plug/PG connector
Interface	UART(RS-232/TTL)/RS485/CAN/USB

U4200-A/B

TACTICAL GRADE

MEMS Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	 ± 300 °/sec	 ± 16 g
Bias in-run instability (Alan)	 0.3 °/hr	 0.01 mg
Pitch/Roll (Static/Dynamic).....	 $0.05 \sim 0.07$ °/hr	
Heading angle drift (Static).....	 0.1 °/hr	
Heading angle drift (Dynamic).....	 3 °/hr	
Magnetometer range.....	 ± 20 Gauss	
Size	 $44.8 \times 38.6 \times 18.5$ mm	
Weight	 55 g	
Connector model	J30	
Interface	CAN/RS-232/RS-422	



U4500-A/B/C/D

TACTICAL GRADE

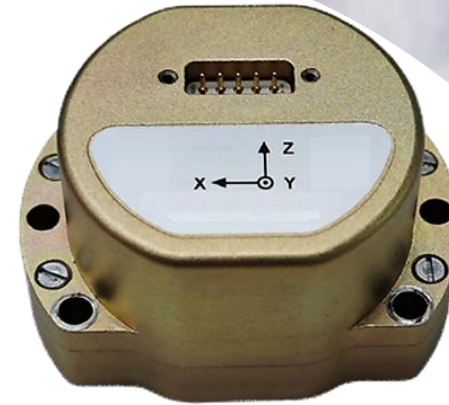
MEMS Based IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	 $\pm 300^\circ/\text{sec}$	 $\pm 16\text{ g}$
Bias in-run instability (Alan)	 $0.3^\circ/\text{hr}$	 0.01 mg
Pitch/Roll (Static/Dynamic).....	 $0.05\sim 0.1^\circ/\text{hr}$	
Heading angle drift (Static).....	 $0.2^\circ/\text{hr}$	
Heading angle drift (Dynamic).....	 $2^\circ/\text{hr}$	
Magnetometer range.....	 $\pm 20\text{ Gauss}$	
Barometer.....	 $300\sim 1200\text{hPa}$	
Size	 $24 \times 24 \times 14\text{ mm}$	
Weight	 13 g	
Connector model	J30	
Interface.....	Binary protocol/Modbus/CAN/NMEA0183	

U4930-A/B/C

TACTICAL GRADE

MEMS Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	±400/400/500 °/sec	±30 g
Full temperature zero bias stability (3σ)..	2/3/30°/hr	2 mg
Bias in-run stability (10s, 1σ)	0.3/0.8/2°/hr	0.05 mg
Bias in-run repeatability (10s, 1σ).....	0.3/0.5/1°/hr	0.05 mg
Noise (Random walk).....	0.02/0.05/0.1 °/√h	0.03 m/s/ √ h
Scale factor nonlinearity.....	100ppm	100ppm
Size	64.8 x47 x 35.3 mm	
Weight	130±10 g	
Interface	RS422	



U503-A/B TACTICAL GRADE

MEMS Based IMU

GYROSCOPES

ACCELEROMETERS

Maximum dynamic range	± 300 °/sec	± 30 g
Full temperature zero bias stability (3σ)..	$2^\circ/\text{hr}$	$0.5/2$ mg
Bias in-run stability (10s, 1σ)	$0.15/0.3^\circ/\text{hr}$	$0.01/0.05$ mg
Bias in-run repeatability (10s, 1σ).....	$0.3^\circ/\text{hr}$	$0.01/0.05$ mg
Noise (Random walk).....	$0.005/0.2$ °/ $\sqrt{\text{h}}$	$0.01/0.03$ m/s/ $\sqrt{\text{h}}$
Scale factor nonlinearity.....	100ppm	100ppm

Size70 x70 x 30 mm

Weight220 g

InterfaceRS422

U1925-A/B

TACTICAL GRADE

MEMS Based IMU

	GYROSCOPES
Dynamic range — X/Y,Z Axis.....	±5400~9000(X); 500~2000(Y/Z) °/sec
Zero position (full temperature).....	0.1°
Bias stability (10s, 1σ).....	20°/hr
Bias instability (Allan)	5°/hr
Bias in-run repeatability (10s, 1σ).....	20°/hr
Non-orthogonality.....	0.001
Scale factor nonlinearity.....	300ppm

Size	Φ55×15 mm
Weight	60 g
Interface	RS422



ACCELEROMETERS

.....±20~80 g
.....20mg
.....2 mg
.....0.05 mg
.....0.05 mg
.....0.001
.....300ppm



U6300 TACTICAL GRADE

MEMS Based IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	 ± 450 °/sec	 ± 20 g
Bias in-run stability (10s, 1σ)	 1° /hr	0.1 mg
Full temp bias in-run stability.....	 5° /hr	0.15 mg
Noise (Random walk).....	 0.03 °/ $\sqrt{h}$	 0.02 m/sec/ $\sqrt{h}$
Scale factor nonlinearity.....	100ppm	100ppm
Size	44.8 x38.6 x 10 mm	
Weight	60 g	
Interface	RS422	

U7000-A/B

TACTICAL GRADE

MEMS Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	±400 °/sec	±30 g
Bias in-run stability (10s, 1σ)	0.3~1°/hr	0.1 mg
Full temp bias in-run stability.....	2~10°/hr	1 mg
Noise (Random walk).....	0.02~0.05 °/√h	0.01 m/sec/√h
Scale factor nonlinearity.....	100ppm	500ppm
Size	44.8 x38.6 x 21.5 mm	
Weight	55 g	
Interface	RS232/RS422	





U16575 TACTICAL GRADE

MEMS Based IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	 ± 500 °/sec	 ± 8 g
Full temperature zero bias stability (3σ)..	 $100^\circ/\text{hr}$	3 (XY)/6(Z) mg
Bias in-run stability (10s, 1σ)	 $5^\circ/\text{hr}$	0.1 mg
Bias in-run repeatability (10s, 1σ).....	 $5^\circ/\text{hr}$	0.03 mg
Noise (Random walk).....	 0.2 °/ $\sqrt{\text{h}}$	 0.03 m/s/ $\sqrt{\text{h}}$
Scale factor nonlinearity.....	150ppm	200ppm

MAGNETOMETER

..... ± 8 gauss

Size22.4 x22.3 x 13.7 mm

Weight12 $\pm$ 2 g

InterfaceSPI/UART

U16488-C/D/E

TACTICAL GRADE

MEMS Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	±480/500°/sec	±16/20/40 g
Full temperature zero bias stability (1σ)	50°/hr	0.3/0.5 mg
Bias instability (Allan curve)	0.3~0.8°/hr	0.02 ~0.04mg
Bias in-run stability (10s, 1σ)	3°/hr	0.02 mg
Bias in-run repeatability (10s, 1σ)	1.5°/hr	0.02 mg
Noise (Random walk)	0.08/0.03°/√h	0.01 m/s/ √ h
Scale factor nonlinearity	25/100ppm	100ppm
	MAGNETOMETER	BAROMETER
	±8 gauss	300~1100 mbar
Size	47 x44 x 14 mm	
Weight	50 g	
Interface	SPI/UART	



U16495-A/B/C TACTICAL GRADE

MEMS Based IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	±350/500/450 °/sec	±20 g
Full temperature zero bias stability (1σ) ..	20°/hr	1/3 mg
Bias in-run instability (Allan)	0.3/0.3/0.5 °/hr	0.01/0.07/0.015 mg
Bias in-run repeatability (10s, 1σ)	1/5°/hr	0.05/0.5 mg
Noise (Random walk)	0.1/0.15/0.03 °/√h	0.03 m/s/√h
Scale factor nonlinearity	100/100/300 ppm	200/200/300 ppm

MAGNETOMETER

U16495-A ±8 gauss

Size 47 x44 x 14 mm

Weight 50 g

Interface SPI/UART

U5000 TACTICAL GRADE

MEMS Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	±500 °/sec	±30 g
Full temperature zero bias stability (3σ)..	30°/hr	2 mg
Bias in-run stability (10s, 1σ)	2°/hr	0.05 mg
Bias in-run repeatability (10s, 1σ).....	1°/hr	0.05 mg
Noise (Random walk).....	0.1 °/√h	0.03 m/s/ √ h
Scale factor nonlinearity.....	100ppm	100ppm
Size	44.8 x38.6 x 21.5 mm	
Weight	52 g	
Interface	RS422	





UF100A-H/M

TACTICAL GRADE

FOG Based IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	 ± 500 °/sec	 ± 10 g
Bias in run stability (10s.1 σ)	0.1/0.3°/hr	0.5mg
Bias in run repeatability (10s.1 σ)	0.1/0.3°/hr	0.5mg
Noise (Random walk).....	0.01/0.03 °/ $\sqrt{h}$	0.01 m/sec/ $\sqrt{h}$
Scale factor nonlinearity.....	100ppm	300ppm
Size	 $\phi 88.5 \times 77.2$ mm	
Weight	820 $\pm$ 50 g	
Interface	RS422	

UF200-N TACTICAL GRADE

FOG and MEMS Accl Combined IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	±500°/sec	±30 g
Zero bias.....	1°/hr	1 mg
Bias stability (10s,1σ).....	0.5°/hr	0.03 mg
Full temperature zero bias stability	0.5°/hr	0.03 mg
Noise (Random walk).....	0.02°/√h	0.015 m/s/ √ h
Scale factor nonlinearity.....	200ppm	5 ppm
Size	Φ88.9 x 89.55 mm	
Weight	500 g	
Interface	RS422/RS232	





UF300-A/B/C TACTICAL GRADE

FOG and MEMS Accl Combined IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	$\pm 300/1000$ °/sec	± 10 g
Bias in run stability (10s.1 σ)	0.05~0.1°/hr	0.05~0.07mg
Bias in run repeatability (10s.1 σ)	0.05~0.1°/hr	0.05~0.07mg
Noise (Random walk).....	0.005~0.01 °/ $\sqrt{h}$	0.007m/sec/ $\sqrt{h}$
Scale factor nonlinearity.....	50~60ppm	100~300ppm
Size	145x 125x 122 mm	
Weight	1800 g	
Interface	RS422	

UF370 TACTICAL GRADE

FOG Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	± 300 °/sec	± 10 g
Bias in run stability (10s.1 σ)	0.03°/hr	0.03 mg
Bias in run repeatability (10s.1 σ)	0.03°/hr	0.03 mg
Noise (Random walk).....	0.003 °/√h	0.005m/sec/ √ h
Scale factor nonlinearity.....	20 ppm	200 ppm
Size	100x 100x 80 mm	
Weight	1800±50 g	
Interface	RS422	





UF400-H/M TACTICAL GRADE

FOG Based IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	 ± 500 °/sec	 ± 50 g
Bias in run stability (10s.1 σ)	0.06/0.1°/hr	0.1 mg
Bias in run repeatability (10s.1 σ)	0.06/0.1°/hr	0.01 mg
Noise (Random walk).....	0.006/0.01 °/√h	0.007m/sec/ √ h
Scale factor nonlinearity.....	100 ppm	200 ppm
Size	100x 72x 85 mm	
Weight	800±50 g	
Interface	RS422	

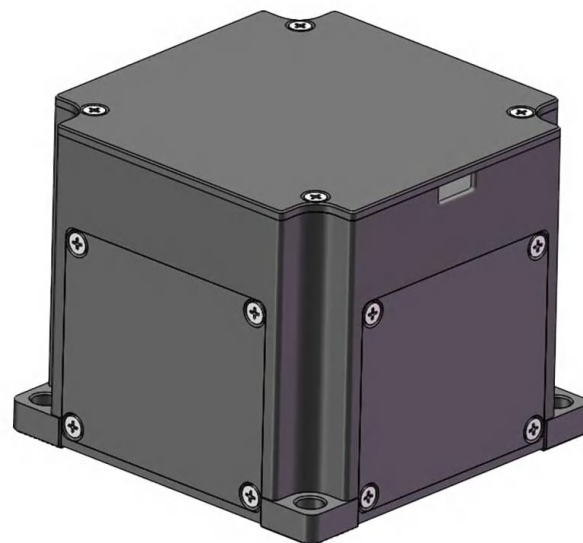
UF570 TACTICAL GRADE

FOG Based IMU



GYROSCOPES		ACCELEROMETERS
Maximum dynamic range	$\pm 1000^{\circ}/\text{sec}$	$\pm 60 \text{ g}$
Zero bias.....	$1^{\circ}/\text{hr}$	5 mg
Bias stability (10s, 1σ).....	$0.1^{\circ}/\text{hr}$	0.03 mg
Full temperature zero bias stability	$0.1^{\circ}/\text{hr}$	0.05 mg
Noise (Random walk).....	$0.01^{\circ}/\sqrt{\text{h}}$	$0.02 \text{ m/s}/\sqrt{\text{h}}$
Scale factor nonlinearity.....	200 ppm	5 ppm
Size	$90 \times 90 \times 70 \text{ mm}$	
Weight	900 g	
Interface	RS422	





UF600 TACTICAL GRADE

FOG and MEMS Accl Combined IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	$\pm 900^\circ/\text{sec}$	$\pm 50 \text{ g}$
Zero bias stability (10s, 1σ).....	$0.2^\circ/\text{hr}$	0.2 mg
Full temperature zero bias repeatability..	$0.2^\circ/\text{hr}$	0.2 mg
Noise (Random walk).....	$0.02^\circ/\sqrt{\text{h}}$	$0.01 \text{ m/s}/\sqrt{\text{h}}$
Scale factor nonlinearity.....	100 ppm	200 ppm
Size	63 x 63 x 53 mm	
Weight	350 g	
Interface	RS422	

UF700 TACTICAL GRADE

FOG and MEMS Accl Combined IMU



GYROSCOPES

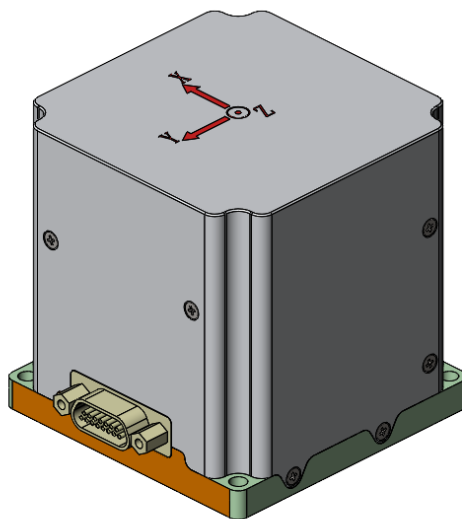
Maximum dynamic range	±800°/sec
Zero bias stability (10s, 1σ).....	0.5°/hr
Full temperature zero bias repeatability..	0.5°/hr
Noise (Random walk).....	0.05°/√h
Scale factor nonlinearity.....	100 ppm

ACCELEROMETERS

.....	±30 g
.....	0.06 mg
.....	0.06 mg
.....	0.01 m/s/√h
.....	200 ppm

Size	80 x 80 x 60 mm
Weight	≤ 1000 g
Interface	RS422





UF800 TACTICAL GRADE

FOG and MEMS Accl Combined IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	$\pm 800^\circ/\text{sec}$	$\pm 30\text{ g}$
Zero bias stability (10s, 1σ).....	$0.3^\circ/\text{hr}$	0.02 mg
Full temperature zero bias repeatability..	$0.3^\circ/\text{hr}$	0.02 mg
Noise (Random walk).....	$0.03^\circ/\sqrt{\text{h}}$	$0.01\text{ m/s}/\sqrt{\text{h}}$
Scale factor nonlinearity.....	100 ppm	100 ppm
Size	$55 \times 55 \times 56\text{ mm}$	
Weight	$\leq 270\text{ g}$	
Interface	RS422	



+8618151836753



+86-18621961329



sales@memsmag.com



Huaye Tech Park, Binjiang, Hangzhou, China



www.memsmag.com



**Unmanned Aerial
Vehicles**



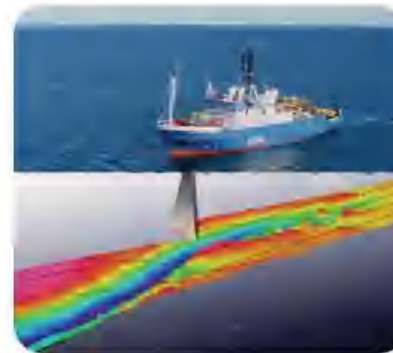
Satellites



Autonomous Vehicles



**Remotely Operated
Underwater Vehicles**



**Maritime Echosounder
Application**



**Petroleum Extraction
and Exploration**