



HIGH PRECISION INERTIAL MEASUREMENT UNIT



U3500-A/B/C/D INDUSTRIAL GRADE

MEMS Based IMU

GYROSCOPES

ACCELEROMETERS

Maximum dynamic range	 ± 2000 (adjustable) $^{\circ}/\text{sec}$	 ± 12 (adjustable) g
Bias in-run instability (Alan)	3~2 $^{\circ}/\text{hr}$	0.03~0.018 mg

Pitch/Roll (Static/Dynamic).....	0.15~0.2 $^{\circ}/\text{hr}$
Heading angle drift (Static).....	0.15~0.2 $^{\circ}/\text{hr}$
Heading angle drift (Dynamic).....	9~5 $^{\circ}/\text{hr}$
Magnetometer range.....	± 20 Gauss
Barometer range.....	300-1200 hPa
Size	22 x 22 x 10 mm
Weight	8 g
Connector model	Molex/Board to board
Interface	UART(TTL)/CAN/IO

U3600-A/B/C

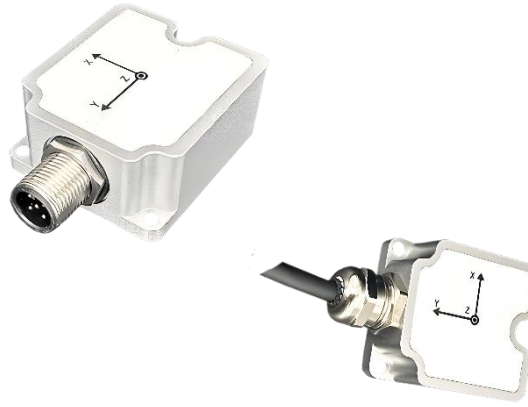
INDUSTRIAL GRADE

MEMS Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	 ± 2000 (adjustable) $^{\circ}/\text{sec}$	 ± 12 (adjustable) g
Bias in-run instability (Alan)	3~1.6 $^{\circ}/\text{hr}$	0.03~0.018 mg
Pitch/Roll (Static/Dynamic).....	0.15~0.2 $^{\circ}/\text{hr}$	
Heading angle drift (Static).....	0.15~0.2 $^{\circ}/\text{hr}$	
Heading angle drift (Dynamic).....	9~5 $^{\circ}/\text{hr}$	
Magnetometer range.....	± 20 Gauss	
Barometer range.....	300-1200hPa	
Size	25.7 x 24 x 12 mm	
Weight	11 g	
Connector model	USB	
Interface	USB	





U3700-A/B/C/D INDUSTRIAL GRADE

MEMS Based IMU

GYROSCOPES

ACCELEROMETERS

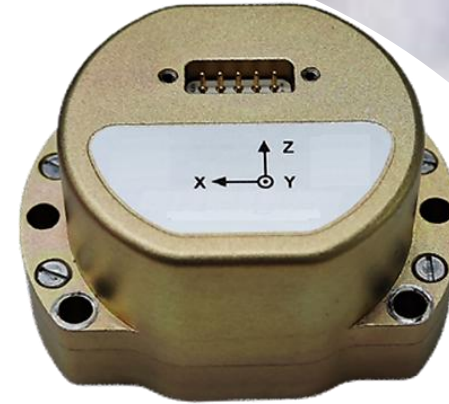
Maximum dynamic range	 ± 2000 (adjustable) $^{\circ}/\text{sec}$	 ± 12 (adjustable) g
Bias in-run instability (Alan)	 $3 \sim 1.2$ $^{\circ}/\text{hr}$	 $0.03 \sim 0.018$ mg

Pitch/Roll (Static/Dynamic).....	$0.15 \sim 0.2$ $^{\circ}/\text{hr}$
Heading angle drift (Static).....	$0.15 \sim 0.2$ $^{\circ}/\text{hr}$
Heading angle drift (Dynamic).....	$9 \sim 5$ $^{\circ}/\text{hr}$
Magnetometer range.....	± 8 Gauss
Size	$58.5 \times 40 \times 20$ mm
Weight	75 g
Connector model	USB
Interface	UART(RS-232/TTL)/RS485/CAN/USB

U4930-A/B/C

TACTICAL GRADE

MEMS Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	$\pm 400/400/500$ °/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).....	$0.02/0.05/0.1$ °/ $\sqrt{h}$	0.03 m/s/ $\sqrt{h}$
Scale factor nonlinearity.....	100ppm	100ppm
Size	64.8 x 47 x 35.3 mm	
Weight	130 $\pm$ 10 g	
Interface	RS422	



U503-A/B TACTICAL GRADE

MEMS Based IMU

GYROSCOPES

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

ACCELEROMETERS

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

Size70 x70 x 30 mm

Weight220 g

InterfaceRS422

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	





U6300 TACTICAL GRADE

MEMS Based IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	 $\pm 450^\circ/\text{sec}$	 $\pm 20\text{ g}$
Bias in-run stability (10s, 1σ)	 $1^\circ/\text{hr}$	 0.1 mg
Full temp bias in-run stability.....	 $5^\circ/\text{hr}$	 0.15 mg
Noise (Random walk).....	 $0.03^\circ/\sqrt{\text{h}}$	 $0.02\text{ m/sec}/\sqrt{\text{h}}$
Scale factor nonlinearity.....	 100ppm	 100ppm
Size	 $44.8 \times 38.6 \times 10\text{ mm}$	
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° /hr	3 (XY)/6(Z) mg
Bias in-run stability (10s, 1σ)	 5° /hr	0.1 mg
Bias in-run repeatability (10s, 1σ).....	 5° /hr	0.03 mg
Noise (Random walk).....	 0.2 °/ $\sqrt{h}$	 0.03 m/s/ $\sqrt{h}$
Scale factor nonlinearity.....	150ppm	200ppm

MAGNETOMETER

..... ± 8 gauss

Size22.4 x22.3 x 13.7 mm

Weight12 $\pm$ 2 g

InterfaceSPI/UART

U16488-D

TACTICAL GRADE

MEMS Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	±500 °/sec	±16 g
Full temperature zero bias stability (1σ)..	50°/hr	0.5 mg
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 °/√h	0.01 m/s/ √ h
Scale factor nonlinearity.....	25ppm	100ppm
	MAGNETOMETER	BAROMETER
	±8 gauss	300~1100 mbar

Size47 x44 x 14 mm
Weight50 g
InterfaceSPI/UART



U6488-B/C/D/E TACTICAL GRADE

MEMS Based IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	 ± 450 °/sec	 ± 20 g
Bias in-run stability (10s, 1σ)	 $1 \sim 4$ °/hr	 $0.1 \sim 0.5$ mg
Full temp bias in-run stability.....	 $5 \sim 8$ °/hr	 $0.15 \sim 1$ mg
Noise (Random walk).....	 $0.03 \sim 0.08$ °/ $\sqrt{h}$	 $0.02 \sim 0.05$ m/sec/ $\sqrt{h}$
Scale factor nonlinearity.....	100ppm	100~200ppm
Size	47 x44 x 14 mm	
Weight	40 g	
Interface	SPI	

U16495-A/B

TACTICAL GRADE

MEMS Based IMU



GYROSCOPES

Maximum dynamic range	 $\pm 350/\pm 500$ °/sec
Full temperature zero bias stability (1σ)..	 $20^\circ/\text{hr}$
Bias in-run stability (10s, 1σ)	 $3^\circ/\text{hr}$
Bias in-run repeatability (10s, 1σ).....	 $1/5^\circ/\text{hr}$
Noise (Random walk).....	 $0.1/0.15$ °/ $\sqrt{\text{h}}$
Scale factor nonlinearity.....	100ppm

MAGNETOMETER

U16495-A	 ± 8 gauss
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ACCELEROMETERS

.....	 ± 20 g
.....	 $1/3$ mg
.....	 $0.05/0.25$ mg
.....	 $0.05/0.5$ mg
.....	 0.03 m/s/ $\sqrt{\text{h}}$
.....	200ppm

BAROMETER

.....	300~1100 mbar
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Size47 x44 x 14 mm

Weight50 g

InterfaceSPI/UART





UF100A TACTICAL GRADE

FOG Based IMU

GYROSCOPES

Maximum dynamic range	$\pm 300^\circ/\text{sec}$
Bias in run stability (10s. 1σ)	$0.2^\circ/\text{hr}$
Bias in run repeatability (10s. 1σ)	$0.2^\circ/\text{hr}$
Noise (Random walk).....	$0.04^\circ/\sqrt{\text{h}}$
Scale factor nonlinearity.....	100ppm

ACCELEROMETERS

.....	$\pm 10 \text{ g}$
.....	0.5mg
.....	0.5mg
.....	$0.01 \text{ m/sec}/\sqrt{\text{h}}$
.....	300ppm

Size	$\phi 84.6 \times 77.2 \text{ mm}$
Weight	820 g
Interface	RS422

UF300-A/B/C NAVIGATION GRADE

FOG Based 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 °/√h	0.007m/sec/ √ h
Scale factor nonlinearity.....	50~60ppm	100~300ppm
Size	145x 125x 122 mm	
Weight	1800 g	
Interface	RS422	





UF3X80-A/UF3X80-B TACTICAL GRADE

FOG Based IMU

	GYROSCOPES
Maximum dynamic range	± 500 °/sec
Bias in-run stability (1σ , 10s)	0.3/0.5 °/hr
Bias repeatability (1σ)	0.3/0.5 °/hr
Noise (Random walk)	0.03/0.02 °/√h
Scale factor error	30/50 ppm
Size	$\varnothing 80 \times 70$ mm
Weight	680 $\pm$ 50 g

ACCELEROMETERS
..... Can be customized according to customer's requirement either made by MEMS Accelerometers or by Quartz Accelerometers

UF3X90-A/UF3X90-B TACTICAL GRADE

FOG Based IMU



GYROSCOPES

Maximum dynamic range	± 500 °/sec
Bias in-run stability (1σ , 10s)	0.1/0.2 °/hr
Bias repeatability (1σ)	0.1/0.2 °/hr
Noise (Random walk)	0.01/0.02 °/√h
Scale factor error	30/50 ppm
Size	$\phi 90 \times 78$ mm
Weight	780 $\pm$ 50 g

ACCELEROMETERS

..... Can be customized
according to customer's
requirement either made by
MEMS Accelerometers or by
Quartz Accelerometers



UF3X100-A/UF3X100-B NAVAIGATION GRADE

FOG Based IMU



	GYROSCOPES
Maximum dynamic range	±500 °/sec
Bias in-run stability (1σ, 10s)	0.05/0.1 °/hr
Bias repeatability (1σ)	0.05/0.1 °/hr
Noise (Random walk)	0.005/0.003 °/√h
Scale factor error	30/30 ppm
Size	100 x 100 x 95 mm
Weight	950 ±50 g

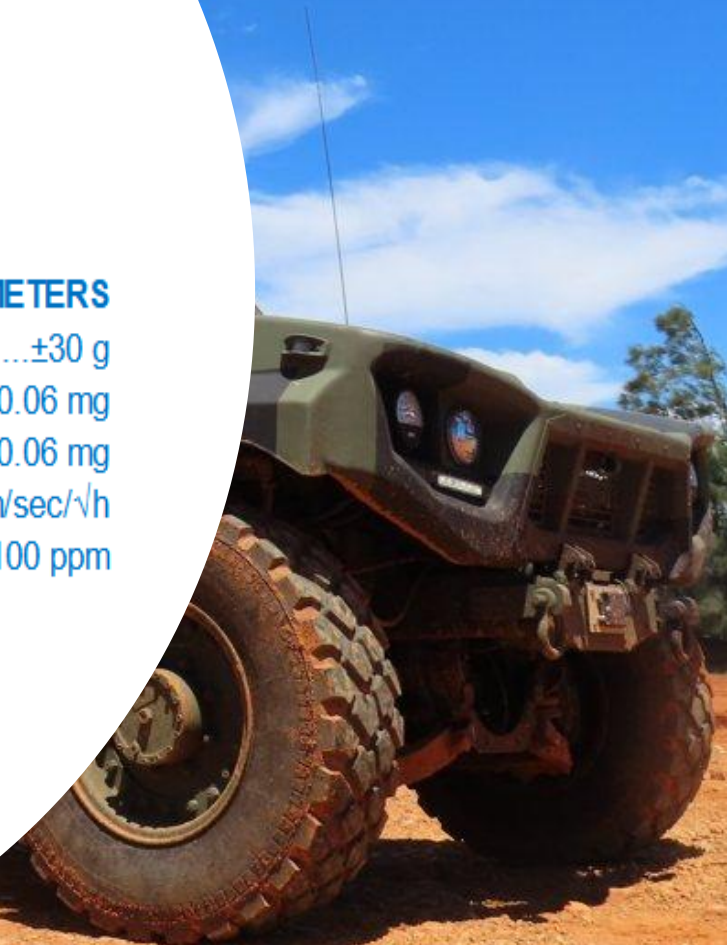
ACCELEROMETERS
..... Can be customized
according to customer's
requirement either made by
MEMS Accelerometers or by
Quartz Accelerometers

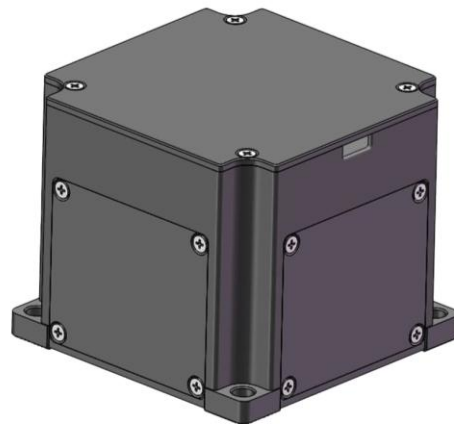
UF700 TACTICAL GRADE

FOG and MEMS Accl Combined IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	± 800 °/sec	± 30 g
Bias in-run stability (Allan)	0.5 °/hr	0.06 mg
Bias repeatability (1σ)	0.5 °/hr	0.06 mg
Noise (Random walk)	0.05 °/ $\sqrt{h}$	0.01 m/sec/ $\sqrt{h}$
Scale factor error	100 ppm	100 ppm
Size	80 x 80 x 60 mm	
Weight	1000 g	





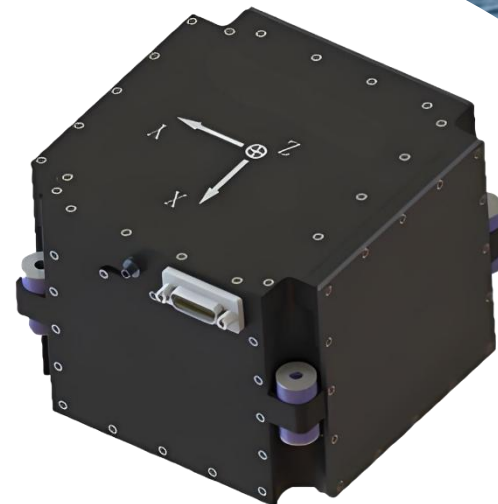
UF600 TACTICAL GRADE

FOG and MEMS Accl Combined IMU

	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	±900 °/sec	±50 g
Bias in-run stability (Allan)	0.2 °/hr	0.2 mg
Bias repeatability (1σ)	0.2 °/hr	0.2 mg
Noise (Random walk)	0.05 °/√h	0.01 m/sec/√h
Scale factor error	100 ppm	100 ppm
Size	63 x 63 × 53mm	
Weight	350 g	

RU1000 TACTICAL GRADE

RLG Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	1000 °/sec	±30 g
Bias in run stability (10s.1σ)	0.1°/hr	0.05mg
Bias in run repeatability (10s.1σ)	0.1°/hr	0.05mg
Noise (Random walk).....	0.02°/√h	0.009m/sec/ √ h
Scale factor nonlinearity.....	20ppm	50ppm
Size	105x 105x 80 mm	
Weight	1400±200g	
Interface	RS422	



RU2000 NAVIGATIONAL GRADE

RLG Based IMU

GYROSCOPES

Maximum dynamic range	500 °/sec
Bias in run stability (10s.1 σ)	0.01°/hr
Bias in run repeatability (10s.1 σ)	0.008°/hr
Noise (Random walk).....	0.002°/√h
Scale factor nonlinearity.....	10ppm

ACCELEROMETERS

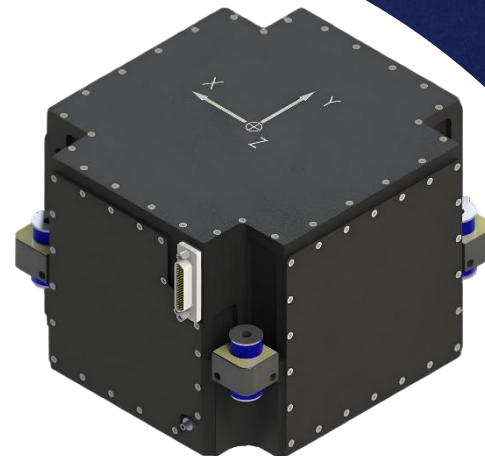
.....	±30 g
.....	0.03mg
.....	0.03mg
.....	0.008m/sec/ √ h
.....	30ppm

Size	150x 140x 115 mm
Weight	3300±200g
Interface	RS422

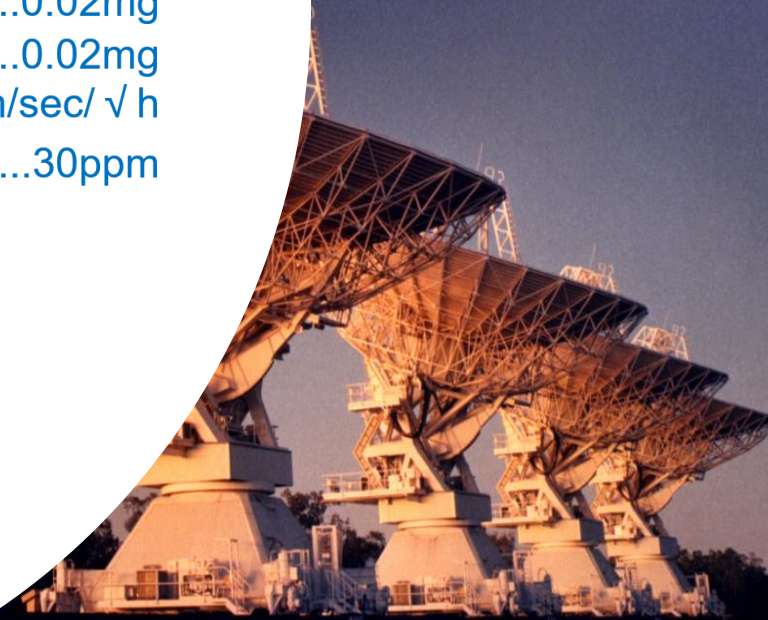
RU3000

NAVIGATIONAL GRADE

RLG Based IMU



	GYROSCOPES	ACCELEROMETERS
Maximum dynamic range	500 °/sec	±30 g
Bias in run stability (10s.1σ)	0.005°/hr	0.02mg
Bias in run repeatability (10s.1σ)	0.0025°/hr	0.02mg
Noise (Random walk).....	0.001°/√h	0.006m/sec/ √ h
Scale factor nonlinearity.....	10ppm	30ppm
Size	160x 150x 115 mm	
Weight	3300±200g	
Interface	RS422	





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**Unmanned Aerial
Vehicles**



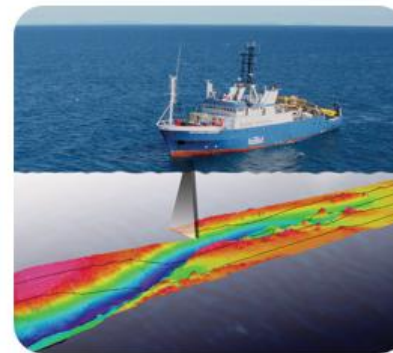
Satellites



Autonomous Vehicles



**Remotely Operated
Underwater Vehicles**



**Maritime Echosounder
Application**



**Petroleum Extraction
and Exploration**