



Gladiator Technologies

Division of LKD Aerospace

Low Noise Inertial MEMS



QMS & CERTS

AS9100C
ISO9001:2008

Cage Code: 47L11
Division of
LKD Aerospace
SAM Registered
JCP certified

LandMark™ 60 IMU

Low Noise MEMS IMU

**Low Noise Inertial MEMS
Rugged Low Cost Sensors & Systems**

Automated Testing

Comprehensive ERP
Environmental Test Lab:

- Shock
- Vibration
- Temperature Calibration
- G-Sensitivity
- Axis Alignment
- Centrifuge
- GPS Simulation

Products:

- Gyros
- Accelerometers
- IMU
- VG
- AHRS
- VG/GPS
- GPS/AHRS
- INS/GPS

- NON-ITAR MEMS IMU
- Upgrade for LandMark™ 10/20/40 IMU's
- Ultra Low Gyro Noise 0.0016°/sec/√Hz
- Low Accel Noise 0.05mg/√Hz
- Wide Sensor Bandwidth 250 Hz
- In-Run Gyro Bias 3°/hour 1σ
- Compensated Misalignment <1/2 mrad and g-Sensitivity <0.001°/sec/g 1σ
- Full Temperature Calibration (Bias & SF)
- RS422/485 Data Rate to 2.5kHz (selectable)
- CAN BUS 2.0B 1MHz
- External Sync Input (5kHz)
- Low Power < 500 mW Typical
- Low Voltage +7 to +36V (available for +5Vin*)
- Light Weight ≤ 115 grams
- Small Size < 76cm³/4.6in³

Applications

- Airborne Platform Stabilization
- Antenna Stabilization
- Antenna Pointing
- EO/IR Stabilization
- LIDAR Stabilization
- Navigation
- Flight Testing

**Export Classification:
Commerce
ECCN7A994 (NLR)**

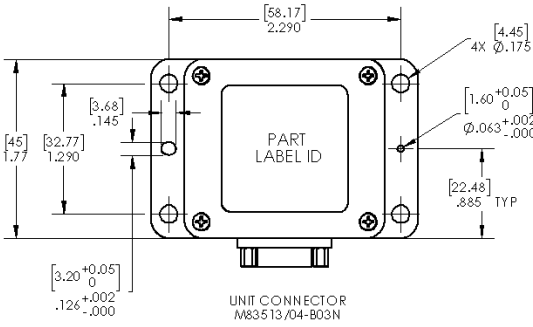


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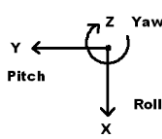


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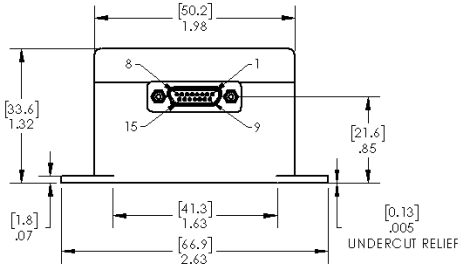
LandMark™ 60 IMU



Axes (Top View)
Right Hand Rule



LMRK60 IMU
LMRK60IMU-250-06-100 or -15
LMRK60IMU-490-06-100 or -15



Preliminary Specification

Mating Connector: **M83513/03-BN**

Pin No.	Assignment
1	RS-485 A (+) (Twisted Pair)
2	RS-485 B (-) (Twisted Pair)
3	Power Ground
4	Analog/Digital Input (0V to 5V)
5	+7V to +36V Input Power
6	External Sync Input (5kHz)
7	+5V Regulated Output
8	Signal Ground
9	Self Test
10	CAN High
11	CAN Low
12	CAN Gnd
13	NC
14	NC
15	Case

Note: Any unused inputs (Pins 4, 6, 9) must be connected to signal ground (Pin 8).

Outputs	Serial Sequence
1	Roll Gyro (X)
2	Pitch Gyro (Y)
3	Yaw Gyro (Z)
4	X Accelerometer
5	Y Accelerometer
6	Z Accelerometer
7	Temperature ± 0.5° C typical

PARAMETER	RATE AXES		ACCEL AXES	
Range	±250°/sec	±490°/sec	±6 g's	±15 g's
ARW / VRW	0.0016° /sec/√Hz 1σ		0.04mg/ /√Hz 1σ	0.05mg/ /√Hz 1σ
Bias In-Run Stability	3°/hour 1σ	5°/hour 1σ	0.025mg 1σ	0.03 mg 1σ
Bias Over Temp.	0.025°/s 1σ		<0.5 mg 1σ	<1.0 mg 1σ
Scale Factor Error %	≤0.1% (over temperature) 1σ			
Non-Linearity % of Full Scale	0.05%	0.1%	0.05%	0.1%
Sensor Resolution	0.001°/sec		0.03 mg	
Alignment	<0.5 mrad 1σ			
G-Sensitivity	<0.001°/s/g 1σ		1 mg/g ²	
Self Test On	Δ 1.4°/s ±1.1°/s		Δ 0.2 ±0.1 g	
Temp Range	Logic 1 = 3V to 5V at Pin 9			
Operating:	-40°C to +85°C			
Non-Operating:	-55°C to +85°C			
Update Rate	2.5kHz (user selectable)			
Data Interfaces	RS422/RS485 921.6k baud & CAN 2.0B at 1MHz			
Start-up Time	< 0.3 sec			
Input Power	+7V to +36V Max. Input (single sided)			
Power Consumption	500 mW Typical 550 mW Maximum			
Size	U.S.: 1.975 x 1.77 x 1.325 = 4.6 in ³ Metric: 5 x 4.5 x 3.4 = 76 cm ³			
Weight	≤ 115 grams			
Mounting	4ea No.8 or M4 Screws			
Shock	500g's ½ sine 1 msec powered			
Vibration	6gRMS (20Hz to 2KHz ≥10g accelerometers)			
MTBF	53,869 hrs (per MIL-STD-217F, Notice 2 based on AIC environment with ambient temperature at 40°C)			

Specification subject to change without notice



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