



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™ 65 IMU

Ultra Low Noise High Dynamics 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 High Range
- Upgrade for LandMark™ 10/20/40 IMU's
- Low Gyro Noise 0.0016°/sec/√Hz
- Low Accel Noise 0.035mg/√Hz (40g)
- In-Run Gyro Bias 5°/hour 1σ
- Wide Sensor Bandwidth 250 Hz
- Compensated Misalignment <1/2 mrad and g-Sensitivity <0.003°/sec/g 1σ
- Full Temperature Compensation (Bias & SF)
- RS422/485 Data Rate to 2.5kHz (selectable)
- CAN BUS 2.0B 1MHz
- External Sync Input (2.5kHz)
- Low Power < 500 mW Typical
- Low Voltage +7 to +36V (available for +5Vin*)
- Light Weight ≤ 115 grams
- Small Size < 76cm³/4.6in³

Applications

- Platform Stabilization
- Antenna Stabilization
- Antenna Pointing
- EO/IR Stabilization
- LIDAR Stabilization
- Low Cost Navigation
- Flight Testing
- High Vibration Environments

Export Classification:
Commerce
ECCN7A994 (NLR)

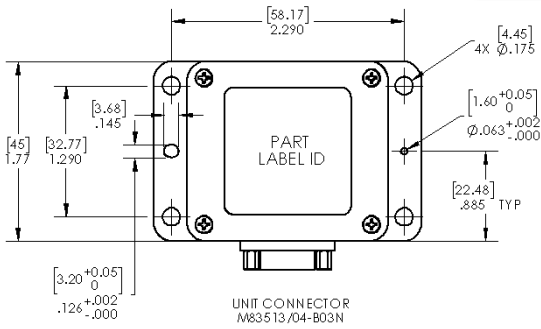


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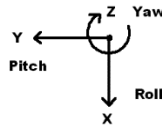


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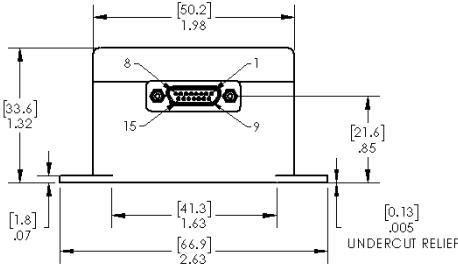
LandMark™ 65 IMU



Axes (Top View)
Right Hand Rule



LMRK65 IMU
LMRK65IMU-490-40-100 or -65
LMRK65IMU-2000-40-100 or -65



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 (2.5kHz)
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	±490°/sec	±2000°/sec	±40 g's	±65 g's
ARW / VRW	0.0016°/sec/√Hz	0.002°/sec/√Hz 1σ	0.035mg/√Hz 1σ	2mg/√Hz 1σ
Bias In-Run Stability	5°/hour 1σ	7°/hour 1σ	0.1mg 1σ	0.5 mg 1σ
Bias Over Temp.	<0.025°/sec 1σ	<0.03°/sec 1σ	1mg 1σ 2mg max	3mg 1σ 10mg max
Scale Factor Error %	≤0.1% (over temperature) 1σ			
Sensor Resolution	0.001°/sec		0.035mg	0.5mg
Alignment	<0.5 mrad 1σ			
G-Sensitivity	<0.003°/s/g 1σ		0.5 mg/g²	0.1 mg/g²
Self Test On	Δ 1.4°/s ±1.1°/s		Δ 1.25 ±0.5 g	Δ 6.4 ±3 g
	Logic 1 = 3V to 5V at Pin 9			
Temp Range	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 at 12V Typical 600 mW at 12V Maximum			
Size	U.S.: 1.975 x 1.77 x 1.325 = 4.6 in³ Metric: 5 x 4.5 x 3.4 = 76 cm³			
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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