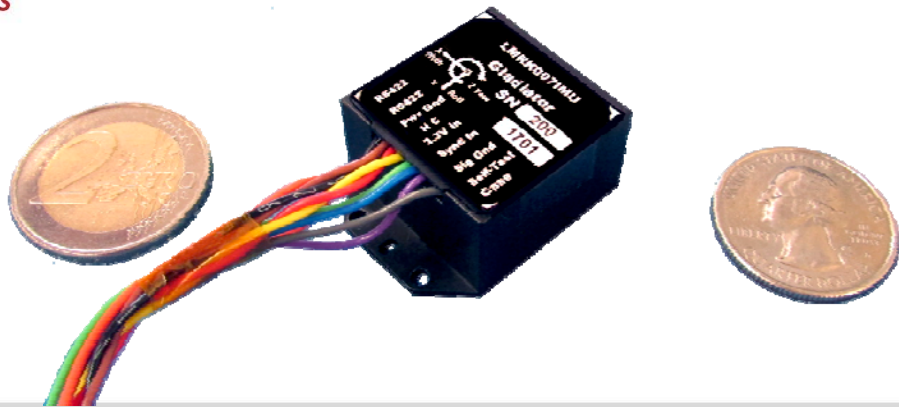




Gladiator Technologies

Division of LKD Aerospace

Low Noise Inertial MEMS



LandMark™ 007 IMU

Ultra Small High Dynamics IMU

QMS & CERTS

AS9100C

ISO9001:2008

Cage Code: 47L11

Division of

LKD Aerospace

SAM Registered

JCP certified

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
- Smallest (0.7" cube) IMU in its Performance Class
- Low Gyro Noise $\leq 0.0045^\circ/\text{sec}/\sqrt{\text{Hz}}$ (2000°/sec)
- 65g Range Accelerometer
- Wide Sensor Bandwidth 250 Hz
- Gyro Bias In Run $10^\circ/\text{hour}$ 1σ
- Bias Over Temperature $\leq 0.19^\circ/\text{sec}$ 1σ
- Compensated Misalignment $\leq 1/2$ mrad 1σ
- G-Sensitivity $\leq 0.003^\circ/\text{sec}/g$ 2σ
- Full Temperature Calibration (Bias & SF)
- RS422/485 Serial Data to 2.5kHz (selectable)
- External Sync Input (2.5kHz, 3.3V logic)
- Ultra Low Power < 40 mA typical
- Low Voltage +3.8V to +5.5V
- Light Weight: ≤ 25 grams
- Vibration 15gRMS

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)



Gladiator Technologies Division

LKD Aerospace

8020 Bracken Place SE

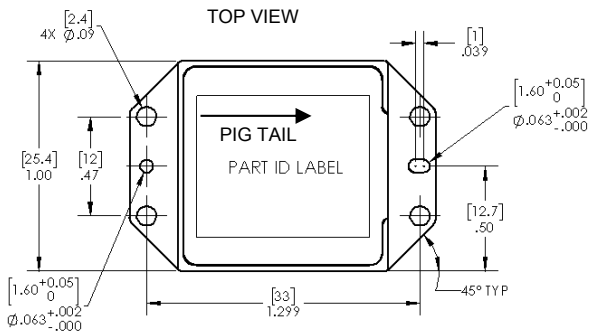
Snoqualmie, WA 98065 USA

Tel: +1.425.396.0829 Fax: +1.425.396.1129

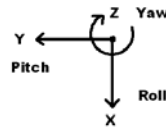


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LandMark™ 007 IMU



Axes (Top View)
Right Hand Rule

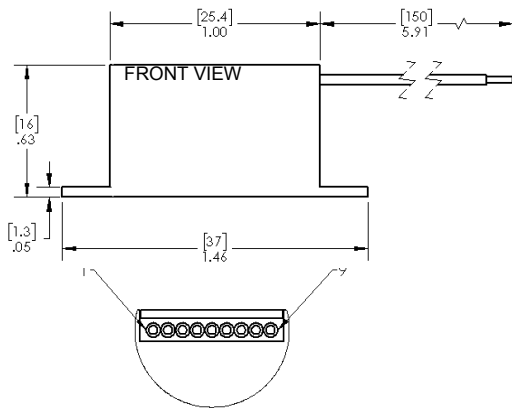


LMRK007 IMU

LMRK007IMU-2000-65-100
LMRK007IMU-490-65-100
LMRK007IMU-2000-65-XXX*

* LMRK007 can use different rate ranges in customer specified axes.

Preliminary Spec



Pin No.	Assignment
1	RS-422/485 A (+) (Twisted Pair)
2	RS-422/485 B (-) (Twisted Pair)
3	Power Ground
4	NC
5	+3.8V to +5.5V Max Input Power
6	External Sync Input (2.5kHz, 3.3V logic)
7	Signal Ground
8	Self Test (3.3V logic)
9	Case

If pin 6 or 8 is not used connect to pin 7.

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

PARAMETER	RATE AXES	ACCEL AXES
Range	±490°/sec	±2000°/sec
ARW / VRW	0.004° /sec/√Hz 1σ	6.5mg/√Hz 1σ
	0.17° /√hour 1σ	2.7m/s /√hour 1σ
Bias In-Run Stability	2.5°/hour 1σ	2mg 1σ
	10°/hour 1σ	
Bias Over Temp.	< 0.05°/sec 1σ	±20mg 1σ
	< 0.19°/sec 1σ	
Scale Factor Error %	≤0.05% 1σ	≤0.1% 1σ
Sensor Resolution	0.003°/sec	2mg
Alignment	<0.5 mrad 1σ	4 mrad 1σ
G-Sensitivity	0.001 °/sec/g 1σ	0.003 °/sec/g 1σ
Output Data Rate	2.5k Hz	
Bandwidth	250 hz	1.25k Hz
Self Test On	Δ 150°/s	Δ 4
	0±15°/s	±2.5g
Logic 1 = 3.3V at Pin 8		
Temp Range	Operating:	-40°C to +85°C
	Non-Operating:	-55°C to +85°C
Start-up Time	< 0.3 sec	
Input Power	+3.8V to +5.5V Max. Input (single sided)	
Power Consumption	180 mW at 4.5V Typical	
	230mW at 4.5V Maximum	
U.S.:	1.09 x 0.969 x 0.63 = 0.67 in ³	
	Metric:	2.8 x 2.46 x 1.6 = 11 cm ³
Weight	≤ 25 grams	
Mounting	4ea No.2-56 Screws	
Shock	500g's ½ sine 1 msec powered	
Vibration	15gRMS (20Hz to 2KHz)	
MTBF	93,636 hrs (per MIL-STD-217F, Notice 2 and ANSI/VITA 51.1-2008 with environment: ACI at 40°C Ambient)	

Specification subject to change without notice



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