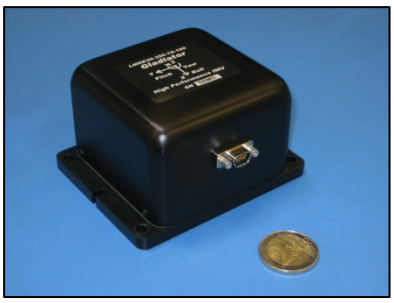
LandMark™ 30 IMU *"LN Series"*

- ***Low Noise* & High Performance Silicon MEMS Digital IMU**
- **Low Gyro Noise** *0.003º/sec/√Hz*
- **Low Accel Noise** *0.035mg/√Hz*
- **In-Run Gyro Bias** *8°/hour 1σ*
- **Fully Temperature Compensated Bias and Scale Factor**
- **Compensated Misalignment** *1mrad* **and g-Sensitivity** *<0.01°/sec/g typical*
- **Input Power** *+6V to +36V (single sided)*
- **Light Weight** *388 grams*
- **Small Size** *< 321cm³/19.6in³*
- **RS485 Data Rate** *200 Hz (user selectable)*
- **Wide Sensor Bandwidth** *500 Hz*
- **Bandwidth Filtering Capability**
- **External Sync** *(1 kHz or 1 pps)*
- **Precision Alignment**
- **Internal Vibration Isolation** *6 gRMS*
- **Shock Resistant** *500g's*
- **6 Internal Temperature Sensors**
- **Self Test & No Wearout Modes**

High Performance MEMS IMU With Low Noise & Low Bias Performance

Export Classification: Commerce ECCN7A994

The LandMark™ 30 IMU *"LN Series"* is our premium performance model featuring both our lowest noise *"LN Series"* MEMS gyros and accelerometers that also offer outstanding bias in-run and bias over temperature. This high performance MEMS Inertial Measurement Unit (IMU) provides internally temperature compensated RS485 output of delta velocity and delta theta. Designed for commercial stabilization and aircraft applications this IMU is ideal for commercial applications requiring high inertial performance **"FOG-Class", yet available at much lower cost.** Other key advantages include small size, light weight and no inherent wear out modes for long life. The signature features of the LandMark™ 30 IMU are the exceptionally low noise and bias performance. The **low noise MEMS gyros & accels** enable precision measurement including excellent in-run bias and bias over temperature. The IMU's performance is optimized with **fully temperature compensated bias and scale factor and compensated misalignment and g-sensitivity.** The unit is environ-mentally sealed in a rugged enclosure and Mil-Spec connector in order to withstand environmental vibration and shock typically associated with commercial aircraft requirements. The LandMark™ 30 IMU *"LN Series"* is well suited for low cost commercial navigation, precision platform and antenna stabilization, general aviation as well as laboratory use. Custom ranges available.



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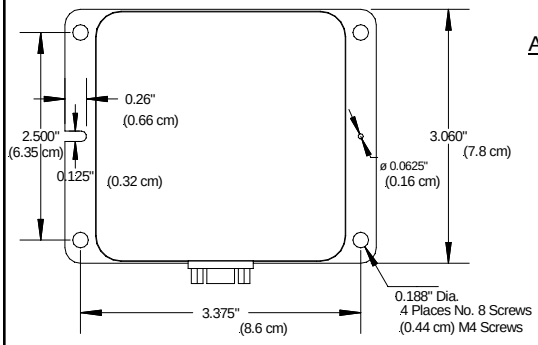
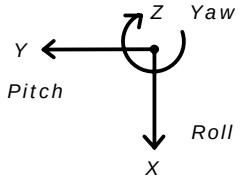
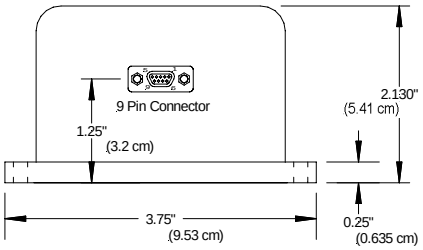
LandMark™ 30 IMU *"LN Series"*



Axes (Top View) Right Hand Rule



LandMark™ 30 IMU *"LN Series"*	
LMRK30IMU-025-**02**-300	or -**06** or -**10**
LMRK30IMU-100-**02**-300	or -**06** or -**10**
LMRK30IMU-175-**02**-300	or -**06** or -**10**
LMRK30IMU-350-**02**-300	or -**06** or -**10**



Mating Connector: M83513/01-AN

Pin No.	Assignment
1	RS-485 A (+)
2	RS-485 B (-)
3	Power Ground
4	Analog/Digital Input (0V to 5V)
5	+6.0V to +36V Input Power
6	External Sync Input (1kHz or 1pps)
7	+5V Regulator Out
8	Signal Ground
9	Self Test

Outputs	Serial Sequence at 200Hz
1	Roll Gyro (X)
2	Pitch Gyro (Y)
3	Yaw Gyro (Z)
4	X Accelerometer
5	Y Accelerometer
6	Z Accelerometer
7	Temperature ± 0.5º C *Typical*

Specification

PARAMETER	*LandMark™ 30 IMU "LN Series"*						
	RATE AXES				ACCEL AXES		
Range	±25°/sec	±100°/sec	±175°/sec	±325°/sec	±2 g's	±6 g's	±10 g's
Bias (Over Temp.)	<0.03°/sec *2 σ*				<0.15mg *typical*	<0.4mg *typical*	<0.8mg *typical*
Bias (In Run Stability)	8°/hour *1 σ*				0.02mg *typical*	0.04mg *typical*	0.08mg *typical*
Scale Factor Error %	≤0.08% *(over temperature)*						
Resolution	0.002°/sec	0.002°/sec	0.0025°/sec	0.003°/sec	0.01mg	0.02mg	0.03mg
Angle Random Walk	0.003°/sec /√Hz	0.0035°/sec /√Hz	0.005°/sec /√Hz	0.006°/sec /√Hz	0.035mg/ √Hz	0.07mg/ √Hz	0.12mg/ √Hz
Alignment	1mrad *typical*						
G-Sensitivity	<0.01°/sec/g *typical*						
Self Test On	Δ 50°/s ± 25 °/s	Δ 50°/s ± 25 °/s	Δ 50°/s ± 25 °/s	Δ 50°/s ± 25 °/s	Δ 0.2 ±0.1g	Δ 0.2 ±0.1g	Δ 1.25 ±0.75g
	Logic 1 = 3V to 5V at Pin 9						
Temp Range Operating: Non-Operating:	 -40˚C to +85˚C -55˚C to +100˚C						
Update Rate	200 Hz or 100 Hz *(user selectable)*						
Temp Sensors	6 Internal Temperature Sensors						
Start-up Time	< 0.65 sec *at 200 Hz*						
Input Power	+6.0V to +36V Max. Input *(single sided) (Input Transient Protection to 80V)*						
Power Consumption	2200 mW at +12V *typical* 2350 mW at +12V *maximum*						
Size U.S.: Metric:	3.0 x 3.06 x 2.13 = 19.6 in^3 7.62 x 7.8 x 5.4 = 321cm^3						
Weight	388 grams						
Mounting	4ea No.8 or M4 Screws						
Shock	500g's ½ sine 30 msec powered						
Vibration	6 gRMS *(20Hz - 2KHz ~ 10g accelerometers)*						
MTBF	No inherent wear out modes for long life.						

Specification subject to change without notice

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