LandMark™ 40 VG

- *Ultra Low Noise* MEMS VG
- Form, Fit and Function with LandMark™ 10 and 20 VG's
- Low Gyro Noise *0.002°/sec/√Hz (100°/s)*
- Low Accel Noise *0.04mg/√Hz (2g)*
- In-Run Gyro Bias *6°/hour 1 σ*
- Pitch & Roll Angles *±0.25° stationary 1σ*
- *Rugged* Environmentally Sealed Packaging & MILSPEC Connector
- Fully Temperature Compensated Bias and Scale Factor
- Compensated Misalignment *1mrad* and g-Sensitivity *<0.01°/sec/g typical*
- External Sync Input *(1kHz or 1pps)*
- Low Power *<430 mW Typical*
- Low Voltage *+3.3V (single sided power)*
- Light Weight *103 grams*
- Small Size *< 72cm³/4.4in³*
- Wide Sensor Bandwidth *200 Hz*
- Bandwidth Filtering Capability
- RS485 Data Rate *100 Hz (user selectable)*
- Internal Vibration Isolation
- Precision Alignment
- User Supplied Velocity Input

Applications

Airborne Platform Stabilization
Antenna Stabilization & Pointing
EO/IR Stabilization
LIDAR Stabilization
Navigation
Flight Testing
Racing Yacht Marine Compass

Export Classification:
Commerce ECCN7A994 (NLR)

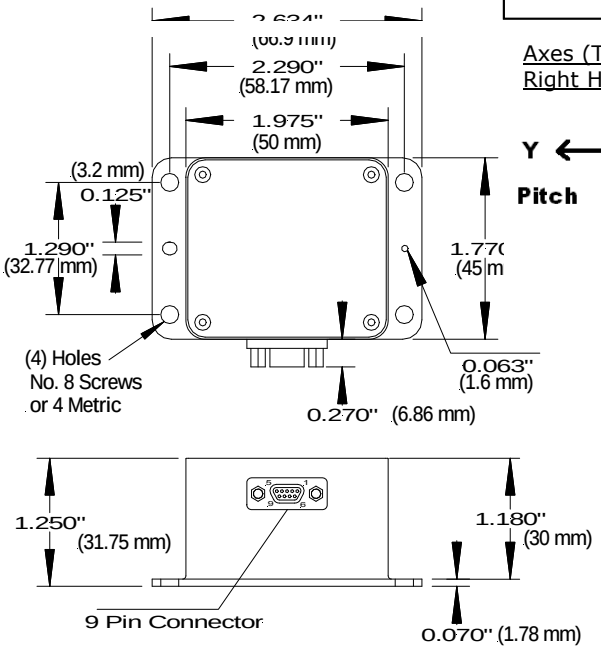
Next Generation Low Noise MEMS VG with Small Size & Low Power

Gladiator Technologies
Division of LKD Aerospace
High Performance Inertial MEMS

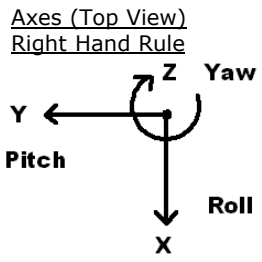
Gladiator Technologies Division
LKD Aerospace, Inc
8020 Bracken Place SE
Snoqualmie, WA 98065 USA

Rev. 15/April16
SN: 192

LandMark™ 40 VG



Mating Connector: M83513/01-AN



LandMark™ 40 VG
LMRK40VG-075-**02**-100 or -**10** LMRK40VG-100-**02**-100 or -**10** LMRK40VG-300-**02**-100 or -**10**

Specification

PARAMETER	RATE AXES		ACCEL AXES	
Range	±100°/sec	±300°/sec	±2 g's	±10 g's
Bias (Over Temp.)	<0.1°/sec *1 σ*	<0.15°/sec	< 0.5mg *1 σ*	< 1.5mg
Bias (In Run Stability)	6°/hour *1 σ*		0.02mg *1 σ*	0.08mg
Scale Factor Error %	≤0.1% *(over temperature)*			
Sensor Resolution	0.001°/sec		0.02mg	0.06mg
Angle Random Walk	0.002° /sec√Hz *1σ*	0.004°	0.04mg /√Hz *1σ*	0.12mg
Alignment	1mrad *1σ*			
G-Sensitivity	<0.01°/sec/g *1σ*			
Self Test On	N/A		Δ 1.5 ±0.5g	Δ 0.3g ± 0.2g
	Logic 1 = 3V to 5V at Pin 9 *(open = off)*			
Temp Range Operating: Non-Operating:	-40°C to +85°C -55°C to +85°C			
Pitch & Roll	± 0.25° *stationary 1σ*			
Update Rate	100 Hz *(full VG mode)*			
Temp Sensors	Internal Temperature Sensors			
Start-up Time	< 0.65 sec			
Input Power	**+3.1V to 5.5V Max. Input (*single sided*)**			
Power Consumption	430 mW at 3.3V *typical* 450 mW at 3.3V *maximum*			
Size U.S.: Metric:	1.97 x 1.77 x 1.25 = 4.4 in^3 5 x 4.5 x 3.2 = 72 cm^3			
Weight	≤ 103 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)*			

Pin No.	Assignment
1	RS-485 A (+)
2	RS-485 B (-)
3	Power Ground
4	Analog/Digital Velocity Input (0V to 5V)
5	**+3.1V to +5.5V Input Power**
6	External Sync Input (1kHz or 1pps)
7	+5V Regulator Out
8	Signal Ground
9	Self Test

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

Outputs	Serial Sequence at 100Hz
1, 2, 3	Gyros: Roll (X), Pitch (Y), Yaw (Z)
4, 5, 6	Accelerometers: (X), (Y), (Z)
7	IMU Temperature
8, 9 , 10	No Magnetometers: (X), (Y), (Z)
11	No Pressure
12, 13, 14	Angles: Roll, Pitch (No Yaw)
15, 16, 17	AC Velocities: (X), (Y) & (Z)
18, 19, 20	No Altitude, Temp, Forward Velocity (As Input)

User to provide either analog or external velocity for velocity functions to be enabled (pin 4).

Specification subject to change without notice

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