

# A40 MEMS ACCELEROMETER



- Low Cost & High Performance MEMS Single Axis Accelerometer
- Wide G Range Options 6g to 15g
- Low Noise 0.065mg/√Hz for 6g
- Excellent Bias  $\leq 0.7\text{mg}$  for 6g  $2\sigma$
- Bias Repeatability 1.5mg for 6g
- Axis Alignment  $< 5\text{mrad } 1\sigma$
- Low Power  $< 10\text{ mA Typical}$
- Light Weight  $< 15\text{ grams}$
- Low Voltage +5V (single sided power)
- Bandwidth 140Hz (-3db point)  
(450 Hz option - consult factory)
- Voltage Output  $0 \pm 4.5\text{V}$
- Reference Voltage 2.5V
- Rugged EMI Resistant Packaging
- Internal Temperature Sensor
- Self Test
- Shock Resistant 500g
- Vibration 6gRMS (10g+ unit)
- Long Life

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



## Applications

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

**Low Noise, Excellent Bias,  
Light Weight and Low Power**

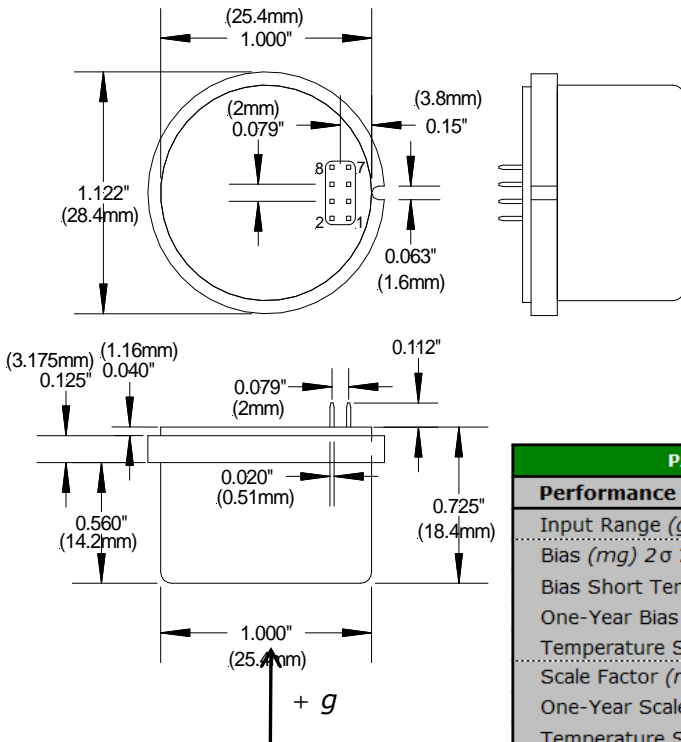


**Gladiator Technologies**  
Division of LKD Aerospace  
High Performance Inertial MEMS

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# A40 MEMS ACCELEROMETER



## A40 Accelerometer Part Numbers

**A40-06-200**  
**A40-10-200**  
**A40-15-200**

## Specification

PARAMETER	A40-06-200	A40-10-200	A40-15-200
<b>Performance</b>			
Input Range (g)	6	10	15
Bias (mg) 2σ 20°C	0.7	1	1.5
Bias Short Term In-Run (mg) 1σ	0.045	0.05	0.1
One-Year Bias Repeatability (mg) 1σ	1.5	2	2.5
Temperature Sensitivity (μg/°C) 1σ	200	200	300
Scale Factor (mV/g) Nominal ±5%	825	460	290
One-Year Scale Factor Stability (ppm)	<1000	<1000	<1000
Temperature Sensitivity (ppm/°C) 1σ	<275	<275	<275
Axis Alignment (mrad) 1σ	5	5	5
Vibration Rectification (mg/g <sup>2</sup> rms) 1σ	1	0.15	0.2
Intrinsic Noise (mg/√Hz) 1σ	0.065	0.075	0.10
Resolution/Threshold (mg) @ 1Hz	0.05	0.06	0.07
Bandwidth (Hz)	140	140	140
Self Test (logic "1" applied) delta g	0.15 ± 0.08g	0.15 ± 0.08g	0.15 ± 0.08g
<b>Environments</b>			
Operating Temperature	- 40°C to + 85°C		
Storage Temperature	- 55°C to + 100°C		
Vibration Operating	6gRMS (10g and up)		
Shock	500g, any axis		
<b>Thermal Modeling</b>			
	Available		
<b>Electrical</b>			
Input Voltage	<b>+5V ±0.25V (not ratiometric)</b>		
Power Consumption	9.5mA typical 12mA maximum		
<b>Physical</b>			
Weight (grams)	< 15 grams		
Size (less flange)	1" Diameter X 0.725" (25.4mm Dia. X 18.4mm)		
Case Material	Anodized Aluminum		

Pin No.	Pin Assignment
1	Accel Output Voltage 0V Nominal
2	Temp +2.5V @ 25°C 10mV/°C
3	Power Ground
4	+2.5V Reference Voltage Output
5	<b>+4.75V to +5.25V DC Input</b>
6	Signal Ground
7	Self Test Input
8	Case

Accel output is Pin 1 with respect to Pin 6.  
Temperature is Pin 2 with respect to Pin 6.  
Self Test On is 3.3V to 5V on Pin 7. Self Test Off is open or < 1V. Accel Load: <100pf >5kΩ Vref and Temp < 500pf >5kΩ

Specification subject to change without notice



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