A40 MEMS ACCELEROMETER

- **Low Cost & High Performance MEMS Single Axis Accelerometer**
- **Wide G Range Options** *6g to 15g*
- **Low Noise** *0.08mg/√Hz for 6g*
- **Excellent Bias** *≤ 0.7mg for 6g 2σ*
- **Bias Repeatability** *1.5mg for 6g*
- **Axis Alignment** *< 8mrad 1σ*
- **Low Power** *< 10 mA Typical*
- **Light Weight** *< 15 grams*
- **Low Voltage** *+5V (single sided power)*
- **Bandwidth** *140Hz (-3db point)*
  (450 Hz option – consult factory)
- **Voltage Output** *0 ± 4.5V*
- **Reference Voltage** *2.5V*
- **Rugged EMI Resistant Packaging**
- **Internal Temperature Sensor**
- **Self Test**
- **Shock Resistant** *500g*
- **Vibration** *6gRMS (10g+ unit)*
- **Long Life**

Low Noise, Excellent Bias, Light Weight and Low Power

Export Classification: Commerce ECCN7A994

The all new A40 MEMS High Performance Single Axis Accelerometer offers both low noise and excellent bias with a small light weight form factor and low power. Designed for commercial marine, train and aircraft applications that require high performance, the unit utilizes standard +5V DC power and the voltage output is non-ratiometric to power. The signature features of the A40 are our low noise, impressive bias over temperature performance, low power consumption, light weight and easy pinout interface. The unit is highly durable and can withstand environmental vibration and shock typically associated with commercial aircraft requirements. The unit has no inherent wear-out modes for long life. In addition, the A40 has a rugged black anodized case for environmental sealing. The A40 MEMS Accel offers standard g ranges ±6g ±10g and ±15g . The A40 is designed for seismic monitoring, train motion monitoring, automotive crash testing, commercial marine motion monitoring systems, platform motion monitoring systems, general aviation as well as laboratory use where low noise, excellent bias, small form factor and rugged durability at low cost are required.

Thermal model available - consult factory.

QMS
AS9100 Rev B &
ISO 9001:2008
Cert# FM 509639

Gladiator Technologies, Inc.

Rev. Dec0811
SN: 150

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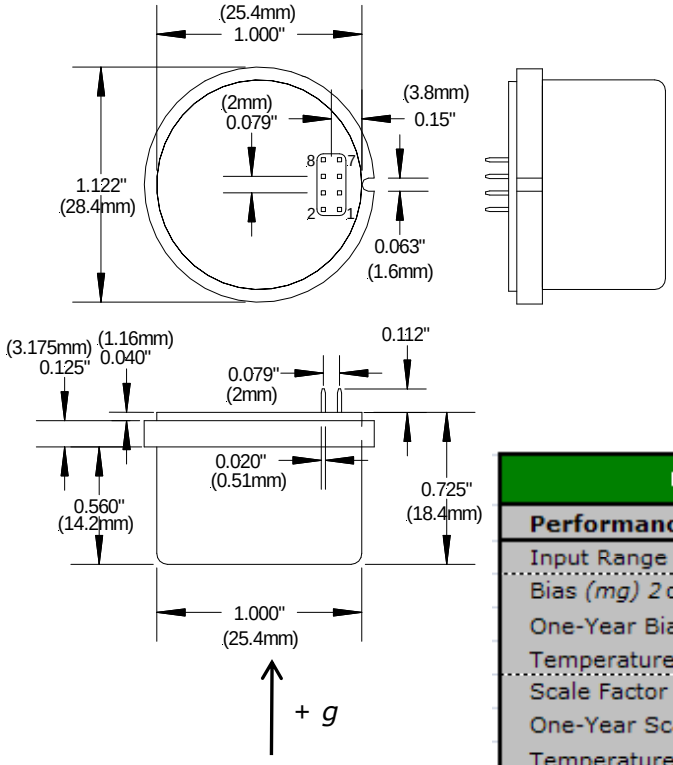

A40 Accelerometer Part Numbers
A40-06-200
A40-10-200
A40-15-200

Preliminary Specification

PARAMETER	A40-06-200	A40-10-200	A40-15-200
Performance			
Input Range *(g)*	6	10	15
Bias *(mg)* 2σ 20°C	0.7	1	1.5
One-Year Bias Repeatability *(mg)* 1σ	1.5	2	2.5
Temperature Sensitivity *(µg/°C)* 1σ	200	200	300
Scale Factor *(mV/g) Nominal*	750	450	300
One-Year Scale Factor Stability *(ppm)*	<1000	<1000	<1000
Temperature Sensitivity *(ppm/°C)* 1σ	<275	<275	<275
Axis Alignment *(mrad)* 1σ	8	8	8
Vibration Rectification *(mg/g^2 rms)* 1σ	1	0.15	0.2
Intrinsic Noise *(mg/√Hz)* 1σ	0.08	0.15	0.17
Resolution/Threshold *(mg) @ 1Hz*	0.05	0.06	0.07
Bandwidth *(Hz)*	140	140	140
Self Test (logic "1" applied) delta g	1 ± 0.5g	1 ± 0.5g	1.5 ± 0.5g
Environments			
Operating Temperature	- 40°C to + 85°C		
Storage Temperature	- 55°C to + 100°C		
Vibration Operating	6gRMS (10g and up)		
Shock	500g, any axis		
Thermal Modeling			
	Available		
Electrical			
Input Voltage	+5V ±0.25V (not ratiometric)		
Power Consumption	9.5mA *typical*		
	12mA *maximum*		
Physical			
Weight (grams)	< 15 grams		
Size (less flange)	1" Diameter X 0.725"		
Case Material	Anodized Aluminum		

Pin No.	Pin Assignment
1	Accel Output Voltage 0V *Nominal*
2	Temperature +2.5V @ 25°C
3	Power Ground
4	+2.5V Reference Voltage Output
5	**+4.75V to +5.25V DC Input**
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

Gladiator Technologies, Inc.

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