This product has been dedicated to Dr.H.C.Verma, Padma shree and professor emeritus for his unprecedent effort in contributing to the world of physics which has helped hone young minds for generation opening to a new world of creativity and innovation.

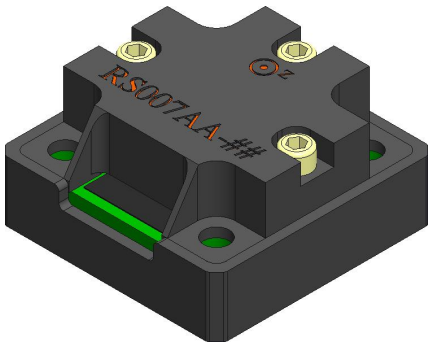
RS007AA / RS018AA - DATA SHEET

Single Axis MEMS Accelerometer

Entropy Technologies

Making Sense Out of Motion....

Entropy Technologies Accelerometers are an excellent choice for low noise, low drift and low power.



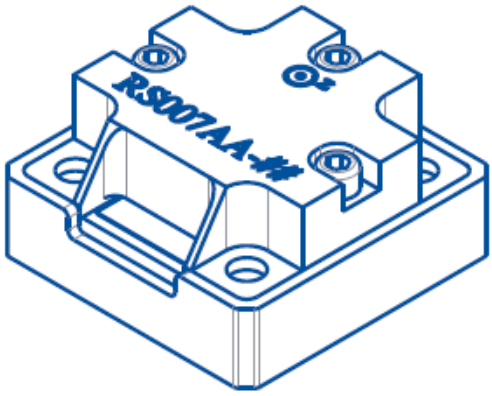
This accelerometers based on hermetically shield capacitive sensors (which offers long term stability) and external sensor signal processing electronics.

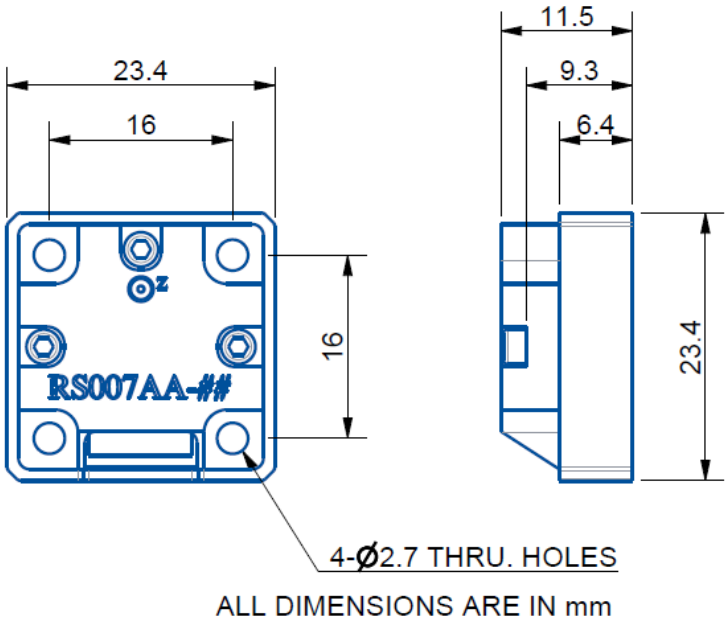
This accelerometer is not ratiometric to supply voltage, where bias and scale factor are depends on power supply variation.

This accelerometer operates with dual power supply where bias and scale factor are independent from power supply variation.

Internal LDO regulator is used to achieve inherent noise and offset performance.

Outline Diagram





Features

- **Tri axial configuration**
- **Robust up to 5000g Acceleration (Any Axis, 0.1msec)**
- **Operate from dual Power Supply, offers excellent Bias Stability**
- **Capacitive Sensor Operating Temperature Range –40°C to +125°C**
- **Tuneable Band Width from DC to 1KHz**
- **Integrated Temperature Sensor**
- **Full differential sensor and circuitry for high resistance to EMI/RFI**
- **Full differential sensor and circuitry for high resistance to EMI/RFI**

Applications

- Inertial Measurement Units (IMUs)
- Altitude and Heading Reference Systems (AHRSs)
- Platform Stabilization Systems Structural Health Monitoring Seismic Imaging
- Tilt Sensing
- Automatic Control Systems
- Vibration Measurement
- Robotics

Pin Out

Pin No.	Name	Function
1	P5V	+ve supply (+3.3V to 5V)
2	G1	Supply Ground
3	N5V	-ve supply (-3.3V to -5V)
4	G2	Signal Ground
5	ZH	Accleerometer O/P (±7g/±18g)
6	TM	Temperature O/P
7	S1	For Self test

For Self test operation, both S1 & S2 pins should be connected to 3.3V. In this condition, an internal force will be applied on accelerometer and 1.25g acceleration will be shown at acclelerometer output.

S1, S2 pins should be grounded to come back to normal operation.

Performance Specifications

STATIC/DYNAMIC

	RS007AA	RS018AA
Measurement Range, (g)[1]	±7	±18
Scale Factor (mV/g, Typ.)	160	40
Scale Factor Temp Coefficient (ppm/°C, typ.)	100	100
Bias (mV, Max.)	5	5
Bias Temp Coefficient (µg/°C, typ.)[2]	150	200
Resolution and Threshold (mg max, @1Hz)	0.1	0.2
Noise Spectral Density (µg/√Hz)[3]	80	150
Nonlinearity (% of Full Scale, Max,abs.)	0.1	0.1
Cross Axis Sensitivity (%)	<1	<1
Bandwidth (KHz)[4]	1	1
Bias Long Term Stability (10 yr. mg, Max.)	<3.5 for X&Y, <9 for Z axis	<3.5 for X&Y, <9 for Z axis
Resonance Frequency (KHz)	>5	>5

ELECTRICAL AND ENVIRONMENTAL

Power Supply Voltage (V)	±3.3V to ± 5V
Power Supply Current (Typ, mA)	2
Operating Temperature	-40°C to +125°C
Storage Temperature	-55°C to +150°C
Shock (any axis 0.1 ms, g)	5000

TEMPERATURE SENSOR

Output Voltage at 25°C (mV)	890
Sensitivity (mV/°C)	3

Physical Specifications

Dimensions	Length x Width x Height (23.4mm x 23.4mm x 11.5mm)
Weight	

Notes:

1. Custom Ranges from ±1g to ±35g are available on request.
2. For better Bias Temperature Coefficient up to ±30 µg/° C fr om -40°C to +125°C contact to manufacturer.
3. For low noise upt o ±10 µg/√Hz contact to manufacturer.
4. Custom Bandwidth from DC to 1KHz available on request .
5. Self test feature can be provided only on Z- axis.
6. For MIL-Grade cont act to manufacturer.
7. No external decoupling capacitors required.
8. If ATP report is requested, additional charges will apply.
9. Specifications subject to change with out notice due to continued product development.
10. MTBF of MEMS Accelerometer is more than 2×10^6 hrs. as reported at (https://www.mdpi.com/1424-8220/7/11/2846) .