Preliminary

13207A 23207A

Uniaxial Biaxial

SPECIFICATIONS

- **±10 g to ±70 g Accelerometers with Wide Bandwidth to 10 kHz**

Simplify Acceleration and Temperature Measurements

The Measurement Specialties 13207A and 23207A accelerometers include a temperature sensor in their small, rugged package. The small size and built-in power regulation allow the 13207A and 23207A to fit where other accelerometers can't. Choose the bandwidth and range options best suited for your application to measure ±10 g, ±20 g, ±30 g, ±40 g, ±50 g, ±60 g, or ±70 g accelerations on one or two axes.

The high repeatability of the built-in temperature sensor allows precise compensation of temperature effects. Alignment data provided on the included calibration certificate can be used to manually correct transverse sensitivity and alignment errors, or when extra precision is required, Option C002, offset compensation is available.

Tested over the -40 to +85°C temperature range, the accelerometers have a nominal full scale output swing of ±2 Volts. The zero g output level is nominally +2.5 Volts. Precise values are available on the included calibration certificate. Custom versions of the 13207A and 23207A can be provided for applications which require different range and/or bandwidth.

FEATURES AND BENEFITS

High Accuracy and Linearity over Wide Temperature Range
The Voltage output for each axis of the 13207A and 23207A is directly proportional to the acceleration along that axis. Each DC-coupled output is fully scaled, referenced, and temperature compensated. Accuracy is improved by minimizing variations due to temperature and aging effects, resulting in a sensor that is more stable over temperature than piezoelectric or piezoresistive devices.

Calibration Certificate
Each 13207A and 23207A is supplied with a calibration certificate listing sensitivity and offset, as well as the on-axis and transverse alignment parameters needed to ensure rapid and efficient system implementation. The alignment data can be used to compensate the measured values to achieve an even higher level of sensor accuracy.

Self-Test on Digital Command
A TTL-compatible self-test low input causes a simulated acceleration to be injected into the sensor(s) to verify channel integrity.

Small Size
Complete conditioned uniaxial or biaxial accelerometer in less than a cubic inch.

-Built-In Power Supply Regulation
Unregulated DC power from +8.5 to +36 Volts is all that is required to measure acceleration and temperature. Reverse power voltages of up to -80 V can be withstood indefinitely. Transients of +80 V for 550 ms compatible with MIL-STD-704A can be withstood with full operation.

Easy Installation
Built-in terminal block or cable with 9-pin connector makes it easy to wire. Two through-holes and four tapped holes simplify mounting.

Suitable for Harsh Environments
The 13207A and 23207A are robust and can be used in harsh environments. The units will survive 4000 g powered or unpowered.

Warranty
These Measurement Specialties accelerometers come with a three-year factory warranty

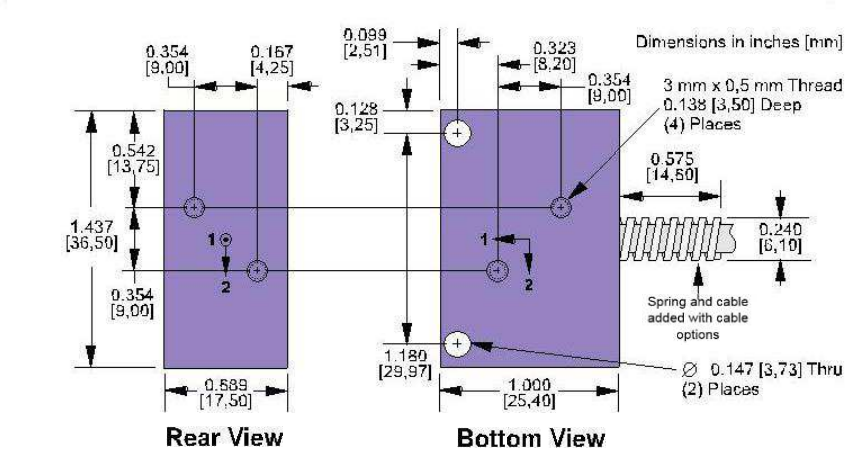
SPECIFICATIONS FOR 13207A AND 23207A *- improved specifications available upon request*

Ta = Tmin to Tmax; 8.5 ≤ Vs ≤ 36 V; Acceleration = 0 g unless otherwise noted; within one year of calibration.

Parameter	Min	Typical	Max	Units	Conditions/Notes
Accelerometers Full Scale Range	±10		±70	g	On each axis, specify with Option Rnnn
Sensitivity					
At 25°C, Option R070		±29†		mV/g	
Drift T_{min} to T_{max}		±0.5		%	Percent of sensitivity at 25°C
Zero g Bias Level					
At 25°C		2.50 ±0.010		V	Precise values on cal certificate
Drift T_{min} to T_{max}, Option C001		±1.5		g	At 1.25°C/min temperature rate of change
Drift T_{min} to T_{max}, Option C002		±250		mg	At 1.25°C/min temperature rate of change
Alignment					Precise values on cal certificate
Deviation from Ideal Axes		±1.0	±3.0	degree	Can be compensated if required
Transverse Sensitivity		±0.25		%	Inherent sensor error, excluding misalignment
Nonlinearity		0.2	2	% FSR	Best fit straight line
Frequency Response	0		10	kHz	Upper cutoff per Option Bnnn, -3 dB pt ±10%
Noise Density		4		mg/√Hz	
Self-Test Input Impedance	10			kΩ	Pullup. Logic "1"≥3.5V, Logic "0"≤1.5V
Temperature Sensor					Accuracy ±1°C
Sensitivity		6.45		mV/°C	
0°C Bias Level		509		mV	
Outputs					
Output Voltage Swing	0.50		4.50	V	I_{out} = ±0.5 mA
Capacitive Drive Capability	1000			pF	
Power Supply (Vs)					
Input Voltage Limits	-80		+80	V	-80V continuous, >38 V if ≤550 ms, duty <1%
Input Voltage - Operating	+8.5		+36	V	Continuous
Input Current		15	20	mA	No load, quiescent
Rejection Ratio		>120		dB	DC
Temperature Range (T_a)	-40		+85	°C	
Mass		35		grams	Precise values on cal certificate
Shock Survival	-4000		+4000	g	Any axis for 0.5ms, powered or unpowered

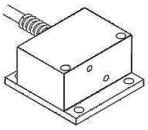
†*Scale linearly with range option Rnnn.*

MECHANICAL

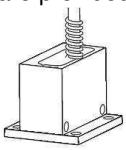


Two through holes and four 3 mm x 0.5 mm threaded holes are provided for mounting

Mounting adapters (sold separately)

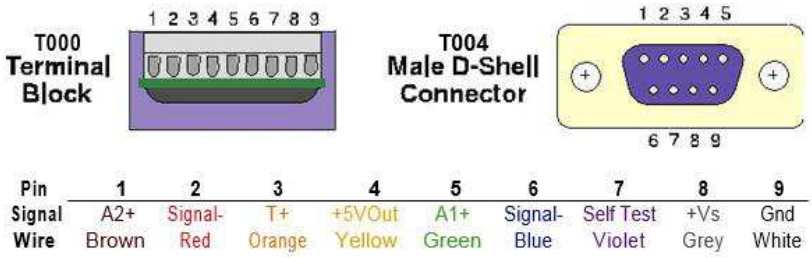


35173A Horizontal



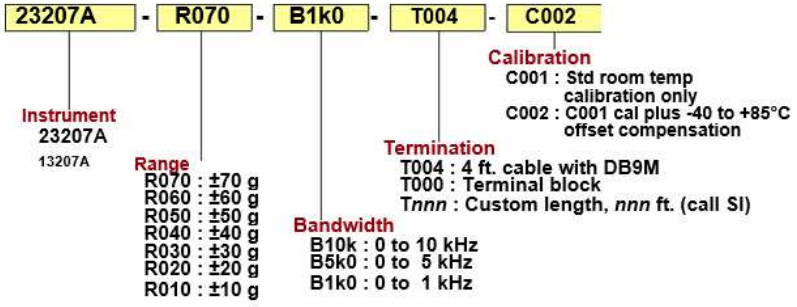
35172A Vertical

CONNECTIONS



Pin	1	2	3	4	5	6	7	8	9
Signal	A2+	Signal-	T+	+5VOut	A1+	Signal-	Self Test	+Vs	Gnd
Wire	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

ORDERING INFORMATION



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