13200C 23200C

Uniaxial Biaxial

SPECIFICATIONS

- **Rugged ±10 g to ±70 g Accelerometers with Superior Zero g Bias Stability**

FEATURES AND BENEFITS

High Accuracy and Linearity over Wide Temperature Range
The voltage output for the 13200C and 23200C is directly proportional to the acceleration along the 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 sensors that are more stable over temperature than piezoelectric or piezoresistive devices.

Calibration Certificate
Each 13200C and 23200C 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 if Needed. Increased offset compensation can be Obtained With Option C002.

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

Simplify Acceleration and Temperature Measurements

The Measurement Specialties 13200C and 23200C accelerometers include a temperature sensor in their small, rugged package. The small size and built-in power regulation allow the 13200C and 23200C to fit where other accelerometers can't. Choose the bandwidth and range options best suited for your application to measure ±10 g, ±15 g, ±20 g, ±25 g, ±30 g, ±35 g, ±40 g, ±50 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 13200C and 23200C can be provided for applications which require different range and/or bandwidth.

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 13200C and 23200C 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.

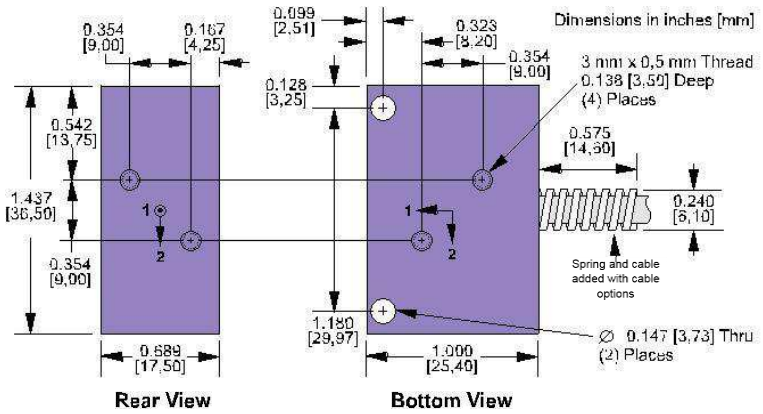
SPECIFICATIONS FOR 13200C AND 23200C- *improved specifications available upon request*

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
Range					
Measurement Full Scale	±10		±70	g	On each axis. Must specify via Option Rnnn
Sensitivity					
At 25°C, Option R050		40†		mV/g	Precise values on cal certificate
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		g	At 1.25°C/min. temperature rate of change
Drift T_{min} to T_{max}, Option C002		60		mg	At 1.25°C/min. temperature rate of change
Alignment					Precise values on cal certificate
Deviation from Ideal Axes		±1.0	±3.0	degrees	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		400	Hz	Upper cutoff per Option Bnnn, -3dB pt ±10%
Noise Density					10 Hz to 400 Hz
Option R070		1.8	3.5	mg/√Hz	
Option R050, R040		1.4	3.0	mg/√Hz	
Option R035, R030, R025, R020, R015, R010		1.1	3.0	mg/√Hz	
Self-Test Input Impedance	10			kΩ	Pullup. Logic "1"≥ 3.5 V, Logic "0"≤ 1.5 V
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	-80 V continuous, >38 V if ≤550 ms, duty <1%
Input Voltage - Operating	+8.5		+36	V	Continuous
Input Current		12		mA	
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 0.5 ms, powered or unpowered

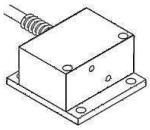
†*Scale linearly with range option Rnnn; see Ordering Information*

MECHANICAL

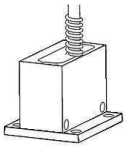


Two through holes and four 3 mm x 0.5 mm threaded holes are pro-vided for mounting.

Mounting adapters
(Sold separately)

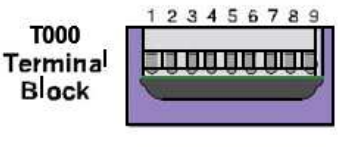


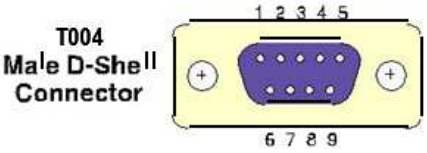
35173A Horizontal



35172A Vertical

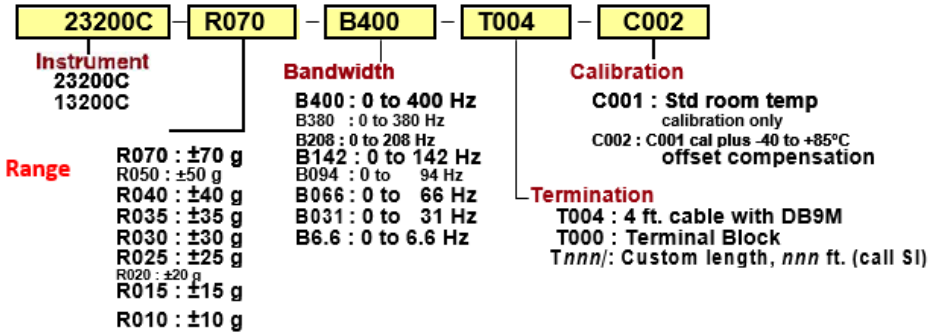
CONNECTIONS





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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