13200C/23200C Accelerometer

Rugged ±10 g to ±70 g
Superior Zero g Bias Stability

Analog Accelerometers

The Measurement-Specialties 13200C (uniaxial) and 23200C (biaxial) analog accelerometers are capable of accurately measuring ±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. A tough, compact housing holds potted electronics and 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.

The voltage output of the 13200C and 23200C is directly proportional to the acceleration along the axis. Each DC-coupled output is fully scaled, referenced, and temperature compensated. Users are supplied with a calibration certificate listing sensitivity and offset for each sensor, as well as the on-axis and transverse alignment parameters needed to ensure rapid and efficient system implementation. Increased offset compensation can be obtained with Option C002

Tested over the -40ºC to +85ºC 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.

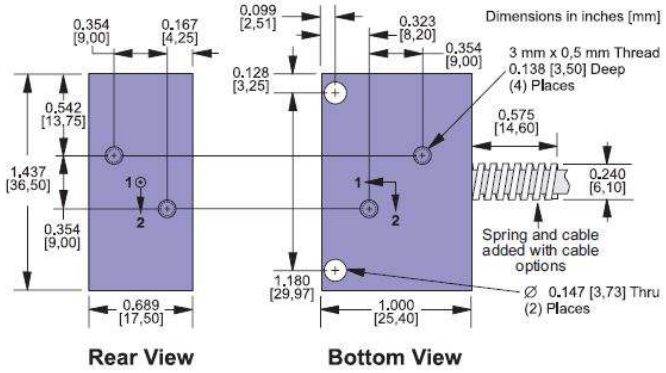
FEATURES

- High Accuracy and Linearity over Wide Temperature Range
- Rugged for Harsh Environments
- Small Size
- Built-in Power Supply Regulation
- Easy Installation
- Three Year Warranty

APPLICATIONS

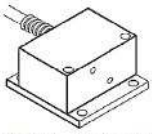
- Vehicle dynamics
- Construction Equipment
- Research & Development
- Test & Measurement
- Military/Aerospace

dimensions

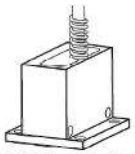


Two through holes and four 3 mm x 0.5 mm threaded holes are provided for mounting.

Mounting adapters (sold separately)



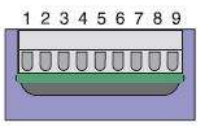
35173A Horizontal



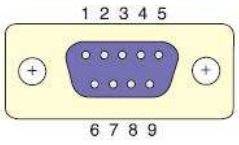
35172A Vertical

connections

T000 Terminal Block



T004 Male D-Shell Connector



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

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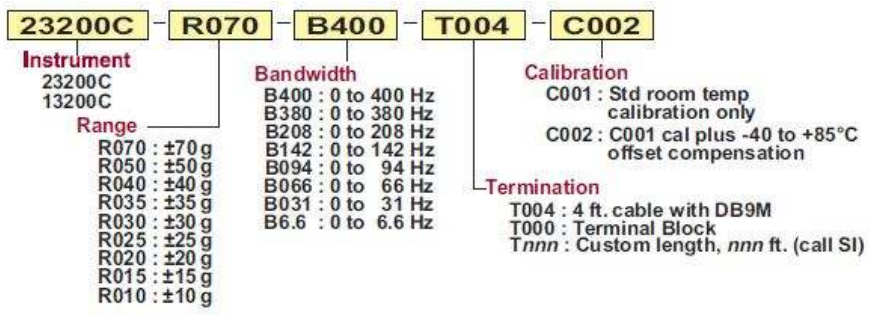
performance specifications

$T_A = T_{min}$ to T_{max} : $8.5 \le V_S \le 36$ V: Acceleration = 0 g unless otherwise noted; within one year of calibration. Improved specifications available upon request.

PARAMETERS	Min	Typical	Max	Units	Conditions/Notes
Range: Measurement Full Scale	±10		±70	g	On each axis. Must specify via Option Rnnn
Sensitivity					
At 25ºC, Option R050		38*		mV/g	Precise values on cal certificate
Drift Tmin to Tmax		±0.5		%	Percent of sensitivity at 25ºC
Zero g Bias Level					
At 25 ºC		2.5		V	Precise values on cal certificate
Drift to Tmin or Tmax, Option C001		1		g	At 1.25ºC/min. temperature rate of change
Drift to Tmin or Tmax, Option C002		60		mg	At 1.25ºC/min. temperature rate of change
Alignment					
Deviation from Ideal Axes		±1.0	±3.0	degrees	Precise values on cal certificate. 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, -3 dB pt ±10%
Noise Density					
Option R070		1.8	3.5	mg/√Hz	10 Hz to 400 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					
Sensitivity		6.45		mV/ºC	
0ºC Bias Level		509		mV	
Outputs					
Output Voltage Swing	0.05		4.95	V	I_{out} = ±0.5 mA
Capacitive Drive Capability		1000		pF	
Power Supply (V_S)					
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	ºC	
Mass		35		grams	Precise values on cal certificate
Shock Survival	-4000		+4000	grams	Any axis for 0.5 ms, powered or unpowered

*Scale linearly with range option Rnnn; see Ordering Information

ordering info



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