Model 4630A Accelerometer

MEMS Triaxial DC Accelerometer
Micro-g Resolution, Low Noise
Accurate Temp Compensation
Signal Conditioned Output

The Model 4630A is an ultra low-noise triaxial accelerometer offering both static and dynamic response. The silicon MEMS accelerometer is gas damped in order to provide a wide stable frequency response. The three independent circuit assemblies have independent signal conditioning and can operate on common or separate power supplies. The model 4630A accelerometer is available in ranges from ±2 to ±500g with an operating temperature range of -55°C to +125°C.

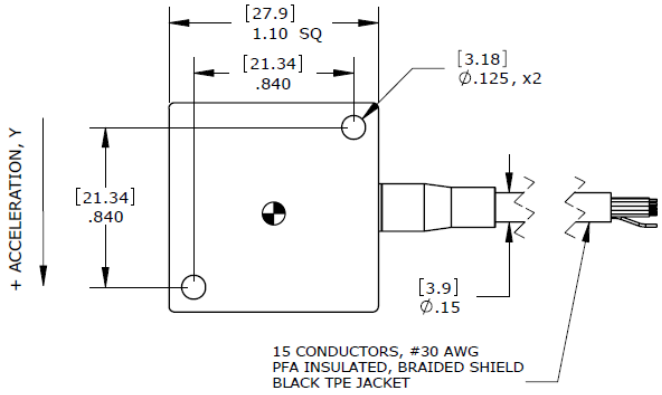
FEATURES

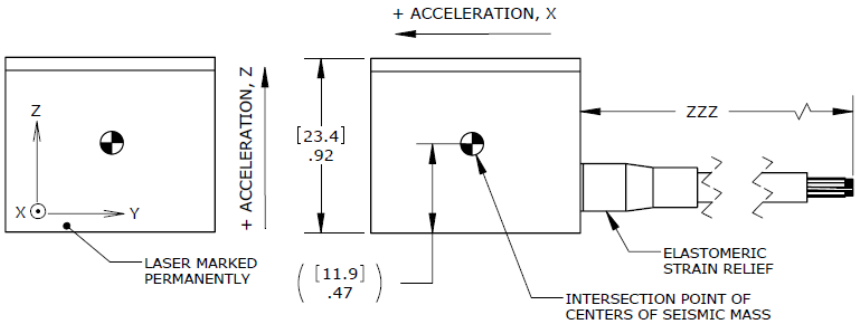
- Three Independent Circuits
- ±2g to ±500g Dynamic Range
- 5,000g Shock Protection
- 8 to 30Vdc Excitation Voltage
- Gas Damping
- Integral Strain Relief
- Temperature Compensated

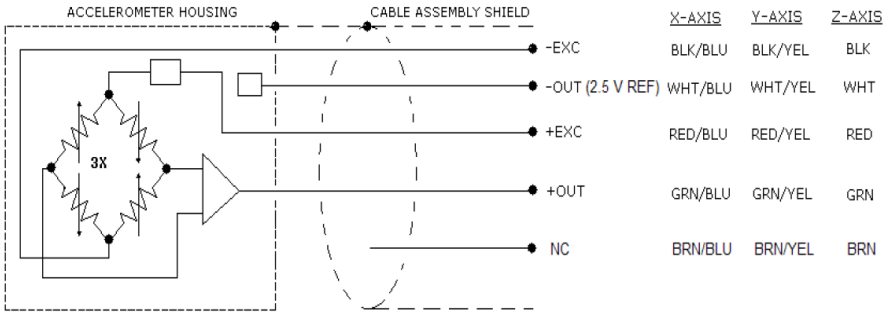
APPLICATIONS

- Transportation
- Vibration & Shock Monitoring
- Road Vehicle Testing
- Low Frequency Applications
- Modal Analyses
- Structural Monitoring

dimensions







	X-AXIS	Y-AXIS	Z-AXIS
-EXC	BLK/BLU	BLK/YEL	BLK
-OUT (2.5 V REF)	WHT/BLU	WHT/YEL	WHT
+EXC	RED/BLU	RED/YEL	RED
+OUT	GRN/BLU	GRN/YEL	GRN
NC	BRN/BLU	BRN/YEL	BRN

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performance specifications

All values are typical at +24°C, 80Hz and 12Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice. Standard product parameters are described in PSC-1004 for Plug & Play DC Accelerometers.

Parameters										
DYNAMIC										**Notes**
Range (g)	±2	±3	±5	±10	±20	±50	±100	±200	±500	
Sensitivity (mV/g)	1000	667	400	200	100	40	20	10	4	±10%
Frequency Response (Hz)	0-150	0-250	0-300	0-400	0-600	0-800	0-1000	0-1000	0-1200	±5%
Frequency Response (Hz)	0-400	0-450	0-500	0-600	0-800	0-1100	0-1300	0-1300	0-1500	±1dB
Natural Frequency (Hz)	700	750	800	1000	1500	4000	6000	8000	10000	
Non-Linearity (%FSO)	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	<3	<3	<3	<3	<1 Typical
Damping Ratio	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.5	
Shock Limit (g)	2000	2000	2000	5000	5000	5000	5000	5000	5000	
Residual Noise (µV RMS)	25	30	20	23	31	26	32	32	32	Passband
Residual Noise (µg/√Hz RMS)	2	3	3	6	13	21	41	82	210	Spectral

ELECTRICAL		
Zero Acceleration Output (mV)	±50	Differential
Excitation Voltage (Vdc)	8 to 30	
Excitation Current (mA)	<36	
Bias Voltage (Vdc)	2.5	
Full Scale Output Voltage (Vdc)	±2	
Output Resistance (Ω)	<100	
Insulation Resistance (MΩ)	>100	@100Vdc
Turn On Time (msec)	<100	
Ground Isolation	Isolated from Mounting Surface	
ENVIRONMENTAL		
Thermal Zero Shift (%FSO/°C)	±0.010	-40 to +100°C
Thermal Sensitivity Shift (%/°C)	±0.014	-40 to +100°C
Operating Temperature (°C)	-55 to +125	
Compensated Temperature (°C)	-40 to +100	
Humidity	Epoxy Sealed, IP65	
PHYSICAL		
Case Material	Anodized Aluminum	
Cable	15x #30 AWG Conductors PFA Insulated Leads, Braided Shield, TPE Jacket	
Weight (grams)	65 (cable not included)	
Mounting	2x #4 or M3 Screws	
Mounting Torque	6 lb-in (0.7 N-m)	

Calibration supplied:	CS-FREQ-0100	NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit
Supplied accessories:	AC-D02855	2x #4-40 ($1^{1/8}$ length) Socket Head Cap Screw and Washer
Optional accessories:	AC-D02744	Adhesive Mounting Adaptor
	121	3-Channel Precision Low Noise DC Amplifier

ordering info

PART NUMBERING Model Number+Range+Cable Length

4630A-GGG-CCC
| |
| |_____Cable (060 is 60 inches)
|_____Range (002 is 2g)

Example: 4630A-002-060
Model 4630A, 2g, 60" (5ft) Cable

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