

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 $\pm 500g$ with an operating temperature range of $-55^{\circ}C$ to $+125^{\circ}C$.

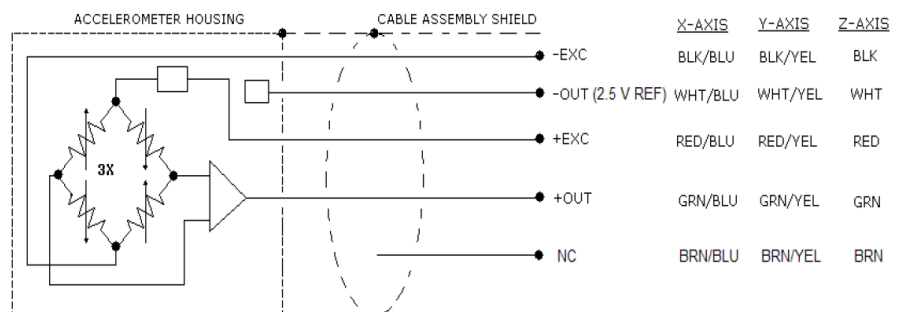
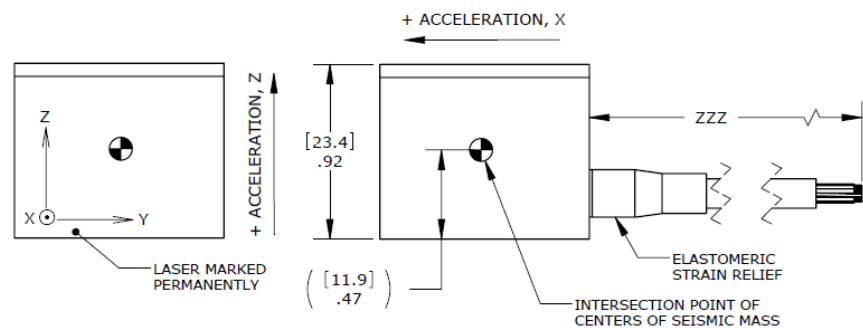
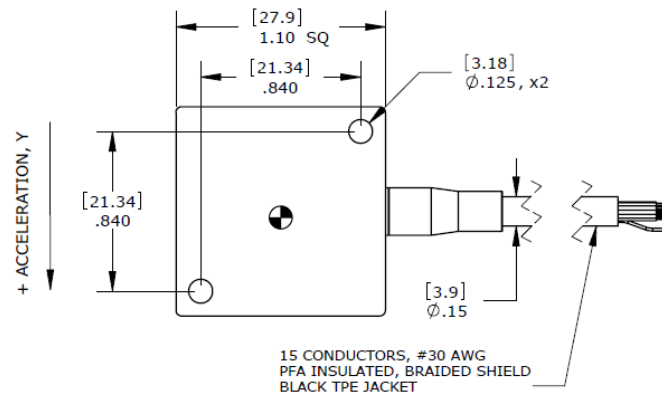
FEATURES

- Three Independent Circuits
- $\pm 2g$ to $\pm 500g$ 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



Model 4630A Accelerometer

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

Parameters	±2	±3	±5	±10	±20	±50	±100	±200	±500	Notes
DYNAMIC										
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%
Frook 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 121	Adhesive Mounting Adaptor 3-Channel Precision Low Noise DC Amplifier

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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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