

Model 4630 Accelerometer



MEMS Triaxial Accelerometer
 DC Response, Ultra-Stable
 Accurate Temp Compensation
 Signal Conditioned Output
 5,000g Over-Range Protection



The **Model 4630** is an ultra-stable triaxial accelerometer offering both static and dynamic response. The silicon MEMS accelerometer incorporates integral temperature compensation that provides a stable output over a wide operating range. The three independent circuit assemblies have independent signal conditioning and can operate on common or separate power supplies. The advanced MEMS sensing elements are gas damped in order to provide a wide stable frequency response.

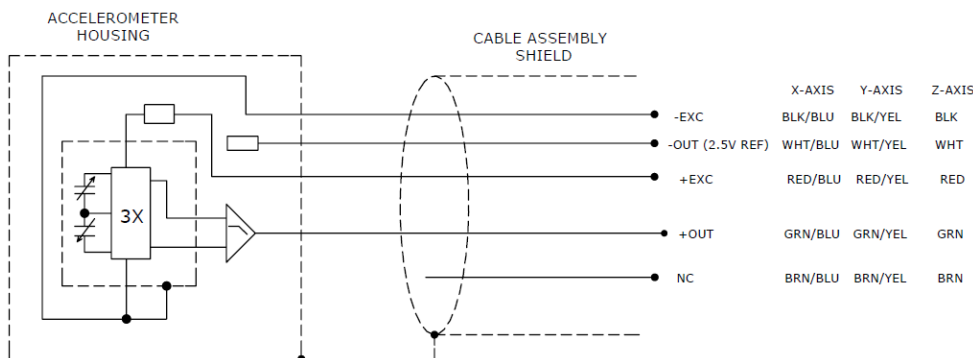
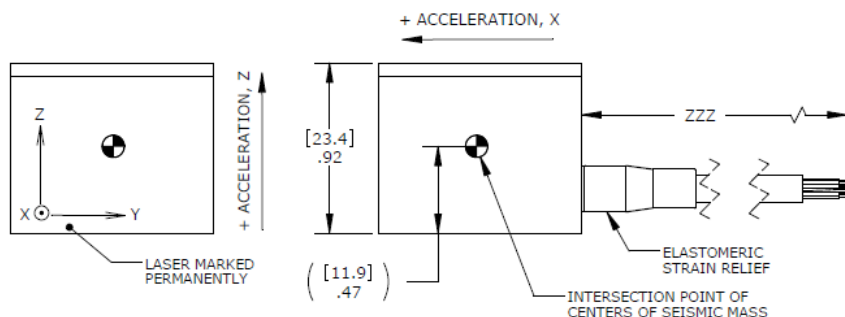
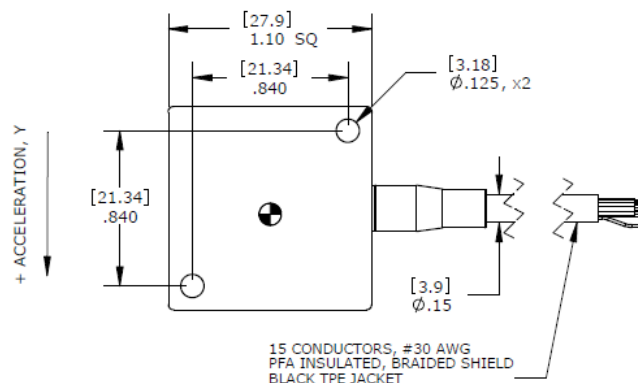
FEATURES

- Three Independent Circuits
- Low Current Consumption
- Ranges: $\pm 2g$ to $\pm 200g$
- Gas Damped, DC Response
- High Over-Range Protection
- -55°C to $+125^{\circ}\text{C}$ Operating Range
- Low Transverse Sensitivity

APPLICATIONS

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

dimensions



Model 4630 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

DYNAMIC

	±2	±5	±10	±20	±30	±50	±100	±200	Notes
Range (g)									
Sensitivity (mV/g)	1000	400	200	100	67	40	20	10	
Frequency Response (Hz)	0-200	0-600	0-800	0-800	0-800	0-800	0-1000	0-1000	±5% ¹
Natural Frequency (Hz)	700	800	1000	1500	1500	4000	6000	8000	
Non-Linearity (%FSO)	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	
Transverse Sensitivity (%)	<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	
Shock Limit (g)	2000	5000	5000	5000	5000	5000	5000	5000	
Residual Noise (µV RMS)	550	700	750	1100	750	750	800	800	Passband
Spectral Noise (µg/√Hz)	38	71	126	379	378	632	1265	2530	Passband

ELECTRICAL

Zero Acceleration Output (mV)	±50								Differential
Excitation Voltage (Vdc)	8 to 36								
Excitation Current (mA)	<15 (<5 per channel)								
Bias Voltage (Vdc)	2.5								
Output Resistance (Ω)	<100								
Full Scale Output Voltage (V)	±2								
Insulation Resistance (MΩ)	>100								@100Vdc
Turn On Time (msec)	<100								
Ground Isolation	Isolated from Mounting Surface								

ENVIRONMENTAL

Thermal Zero Shift (%FSO/°C)	±0.004								Typical
Thermal Sensitivity Shift (%/°C)	±0.010								Typical
Operating Temperature (°C)	-55 to 125								
Storage Temperature (°C)	-55 to 125								
Housing (Active Element & Electronics)	Hermetic Solder Seal								
Humidity (Housing)	Epoxy Seal, IP65								

PHYSICAL

Case Material	Anodized Aluminum
Cable	15x #30 AWG Conductors PFA Insulated Leads, Braided Shield, TPE Jacket
Weight (grams)	40
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 ¹

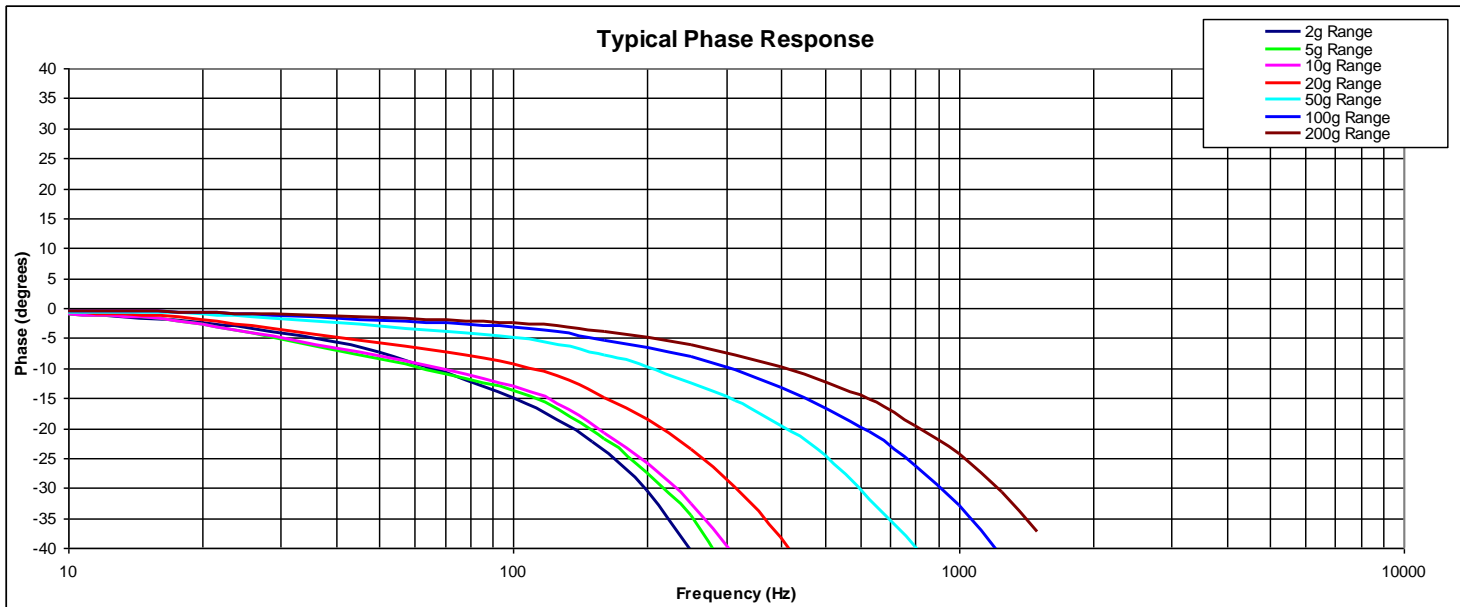
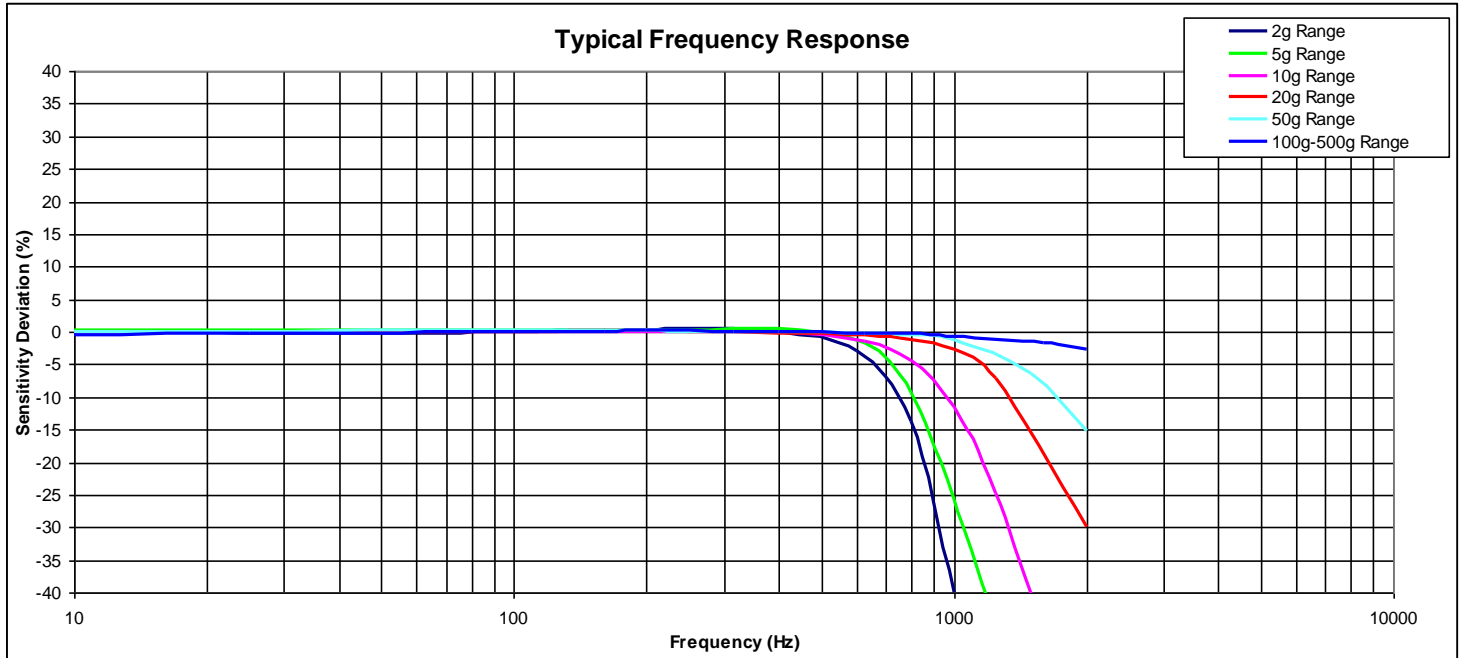
Supplied accessories: AC-D02855 2x #4-40 (1^{1/8} length) Socket Head Cap Screw and Washer

Optional accessories: 121 3-Channel Precision Low Noise DC Amplifier

The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.

Model 4630 Accelerometer

performance specifications



ordering info

PART NUMBERING Model Number+Range+Cable Length

4630-GGG-ZZZ-C

| |
| | Cable (060 is 60 inches)
| Range (020 is 20g)

Example: 4630-020-060-C
Model 4630, 20g, 60" (5ft) Cable