

# Model 4630 Accelerometer

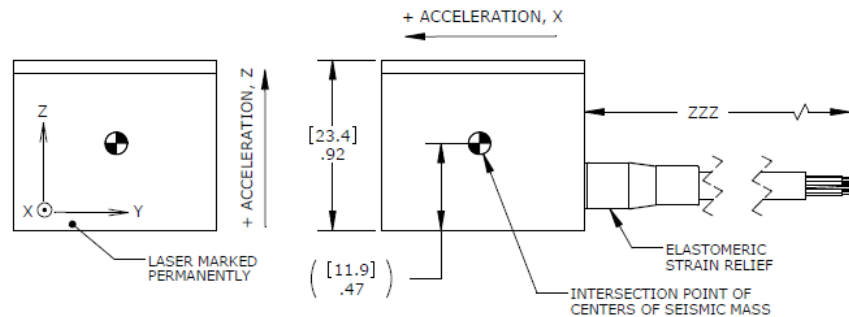
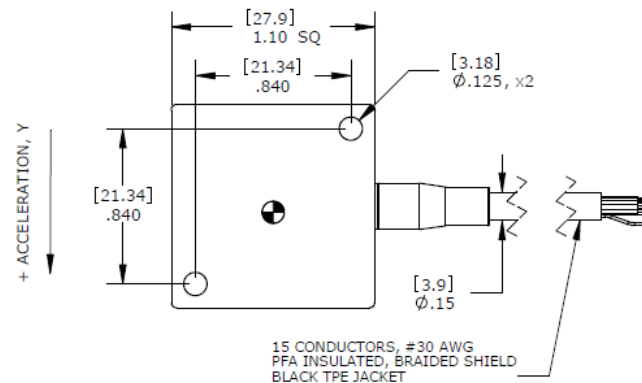


MEMS Triaxial Accelerometer  
DC Response, Ultra-Stable  
Accurate Temp Compensation  
Signal Conditioned Output  
5,000g Over-Range Protection



**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.

## dimensions

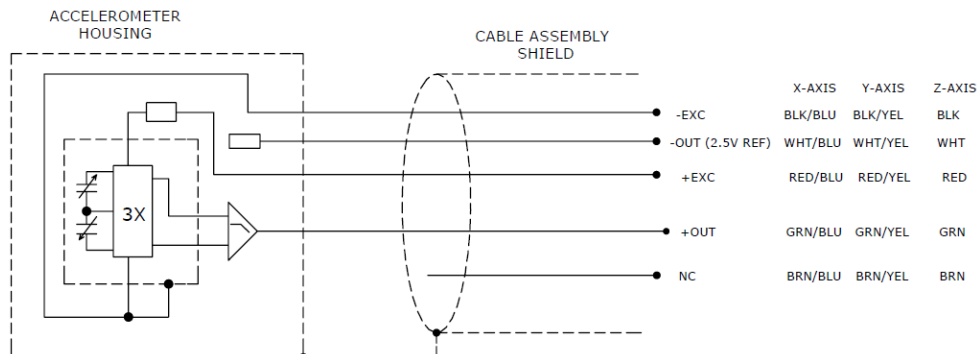


## FEATURES

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

## APPLICATIONS

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



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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

	±2	±5	±10	±20	±30	±50	±100	±200	Notes
Range (g)	±2	±5	±10	±20	±30	±50	±100	±200	
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% <sup>1</sup>
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 <sup>1</sup>

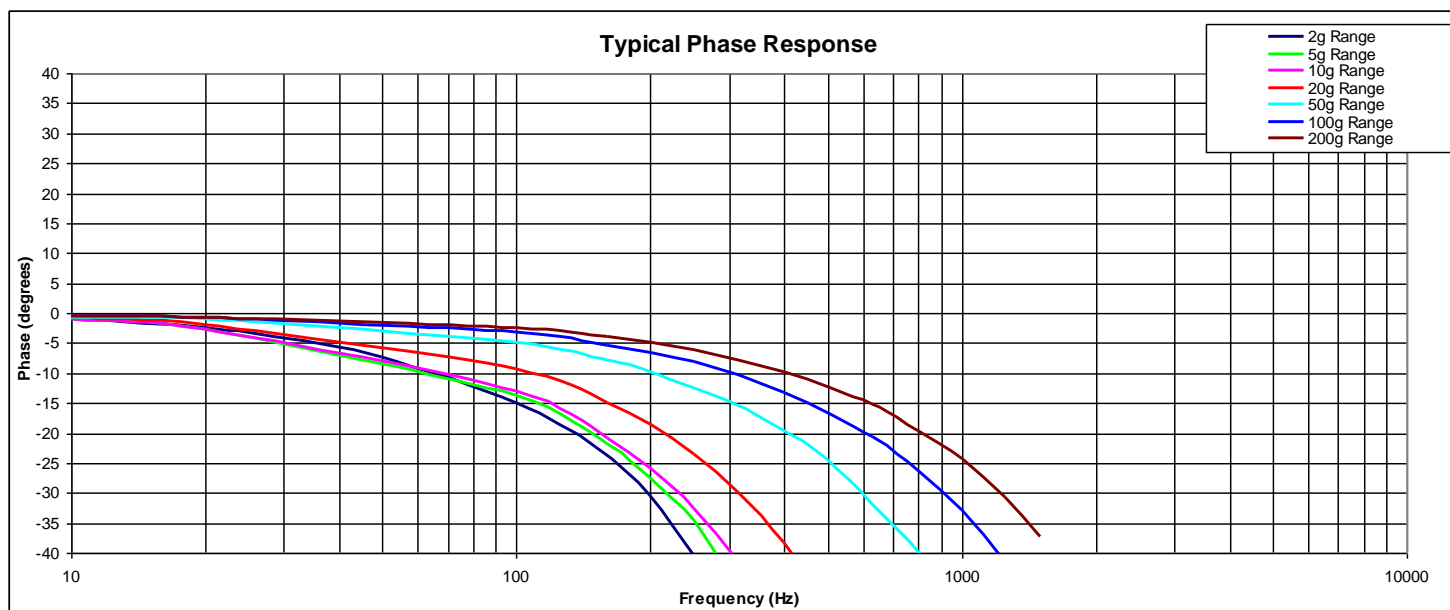
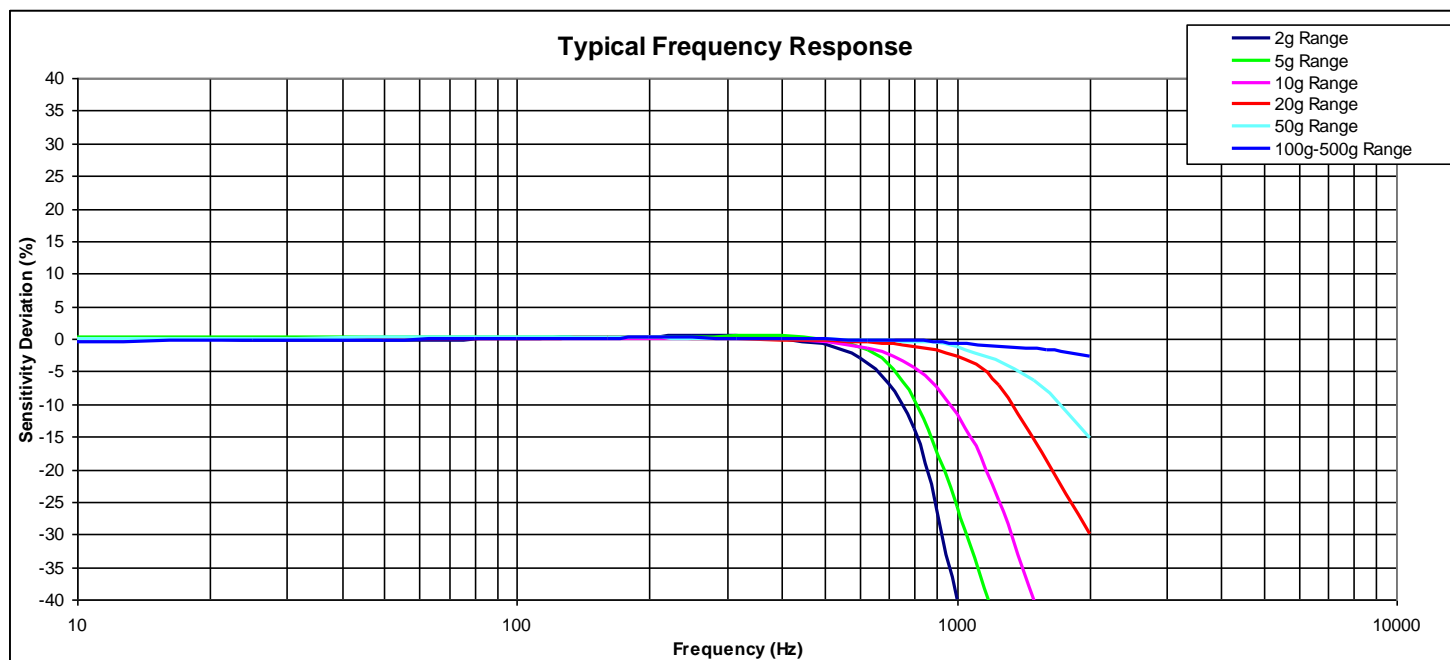
**Supplied accessories:** AC-D02855 2x #4-40 (1<sup>1/8</sup> length) Socket Head Cap Screw and Washer

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

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## 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