

# Model 4630 Accelerometer

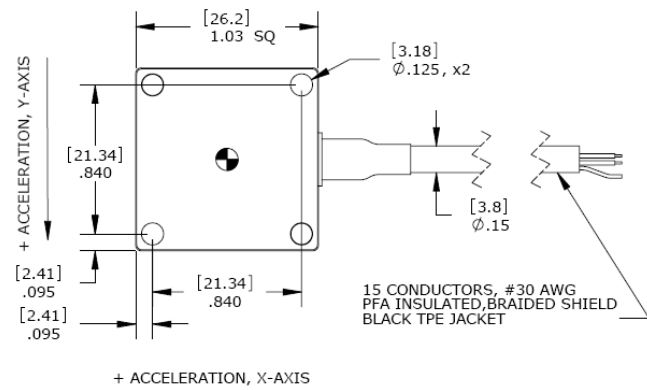


MEMS Triaxial Accelerometer  
 DC Response  
 Accurate Temp Compensation  
 Signal Conditioned Output  
 5,000g Over-Range Protection



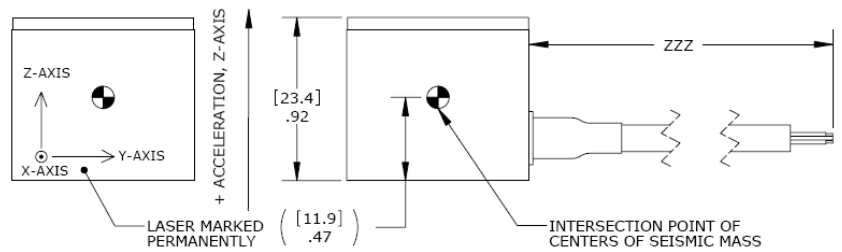
The **Model 4630** is a low noise triaxial accelerometer offering both static and dynamic response. The silicon MEMS accelerometer incorporates integral temperature compensation that provides a stable output over a wide operating range. The three independent circuit assemblies have independent signal 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



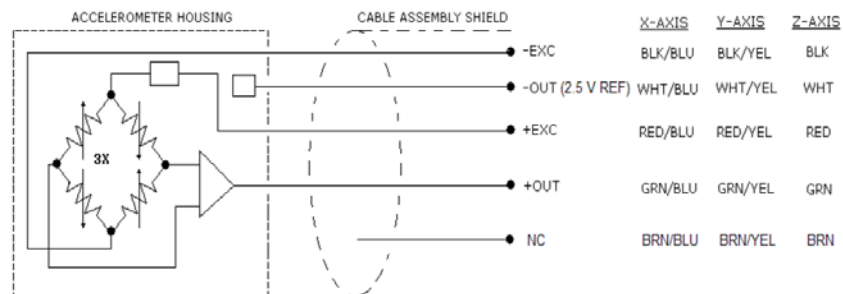
## FEATURES

- Three Independent Circuits
- Lower Current Consumption
- Ranges:  $\pm 2g$  to  $\pm 500g$
- Gas Damped, DC Response
- High Over-Range Protection
- Temperature Compensation
- Low Transverse Sensitivity



## APPLICATIONS

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



# Model 4630 Accelerometer

## performance specifications

All values are typical at +24°C, 100Hz 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	±50	±100	±200	±500	Notes
Range (g)									
Sensitivity (mV/g)	1000	400	200	100	40	20	10	4	
Frequency Response (Hz)	0-150	0-300	0-400	0-600	0-800	0-1000	0-1000	0-1200	±5% <sup>1</sup>
Frequency Response (Hz)	0-400	0-500	0-600	0-1000	0-1400	0-1600	0-2000	0-2000	±1dB
Natural Frequency (Hz)	700	800	1000	1500	4000	6000	8000	10000	
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	0.6	0.5	
Shock Limit (g)	5000	5000	5000	5000	5000	5000	5000	5000	

#### ELECTRICAL

Zero Acceleration Output (mV)	±50	±50	±50	±50	±50	±50	±50	±50	Differential
Excitation Voltage (Vdc)	8 to 36	8 to 36	8 to 36	8 to 36	8 to 36	8 to 36	8 to 36	8 to 36	
Excitation Current (mA)	<5	<5	<5	<5	<5	<5	<5	<5	
Bias Voltage (Vdc)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Output Resistance (Ω)	<100	<100	<100	<100	<100	<100	<100	<100	
Insulation Resistance (MΩ)	>100	>100	>100	>100	>100	>100	>100	>100	@100Vdc
Turn On Time (msec)	<100	<100	<100	<100	<100	<100	<100	<100	
Residual Noise (μV RMS)	500	300	300	350	400	400	400	400	Passband
Spectral Noise (μg/√Hz)	35	38	75	132	316	516	1033	2582	Passband
Ground Isolation	Isolated from Mounting Surface								

#### ENVIRONMENTAL

Thermal Zero Shift (%FSO/°C)	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	Typical
Thermal Sensitivity Shift (%/°C)	±0.010	±0.010	±0.010	±0.010	±0.010	±0.010	±0.010	±0.010	Typical
Operating Temperature (°C)	-55 to 125								
Compensated Temperature (°C)	-40 to 100								
Storage Temperature (°C)	-55 to 125								

#### PHYSICAL

Case Material	Anodized Aluminum
Cable	Teflon Insulated Leads, Braided Shield, TPE Jacket
Weight (grams)	40
Mounting	2x #4 or M3 Screws
Mounting Torque	6 lb-in (0.7 N-m)
AWG	#30

**Wiring color code:**  
 X-axis: +Excitation = Red/Blu; -Excitation = Blk/Blu; +Output = Grn/Blu; -Output = Wht/Blu; Programming = Brn/Blu  
 Y-axis: +Excitation = Red/Yel; -Excitation = Blk/Yel; +Output = Grn/Yel; -Output = Wht/Yel; Programming = Brn/Yel  
 Z-axis: +Excitation = Red; -Excitation = Black; +Output = Green; -Output = White; Programming = Brown  
 (brown wires are used for programming and are not to be connected)

**Calibration supplied:** CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit<sup>1</sup>

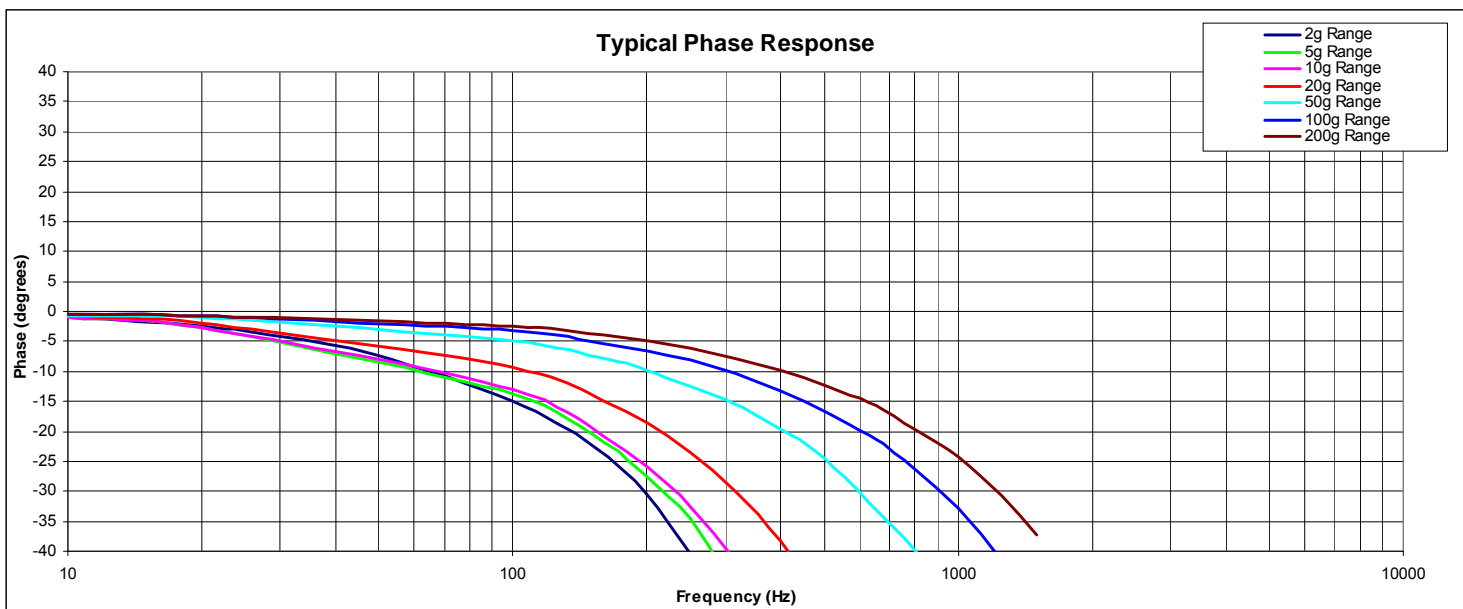
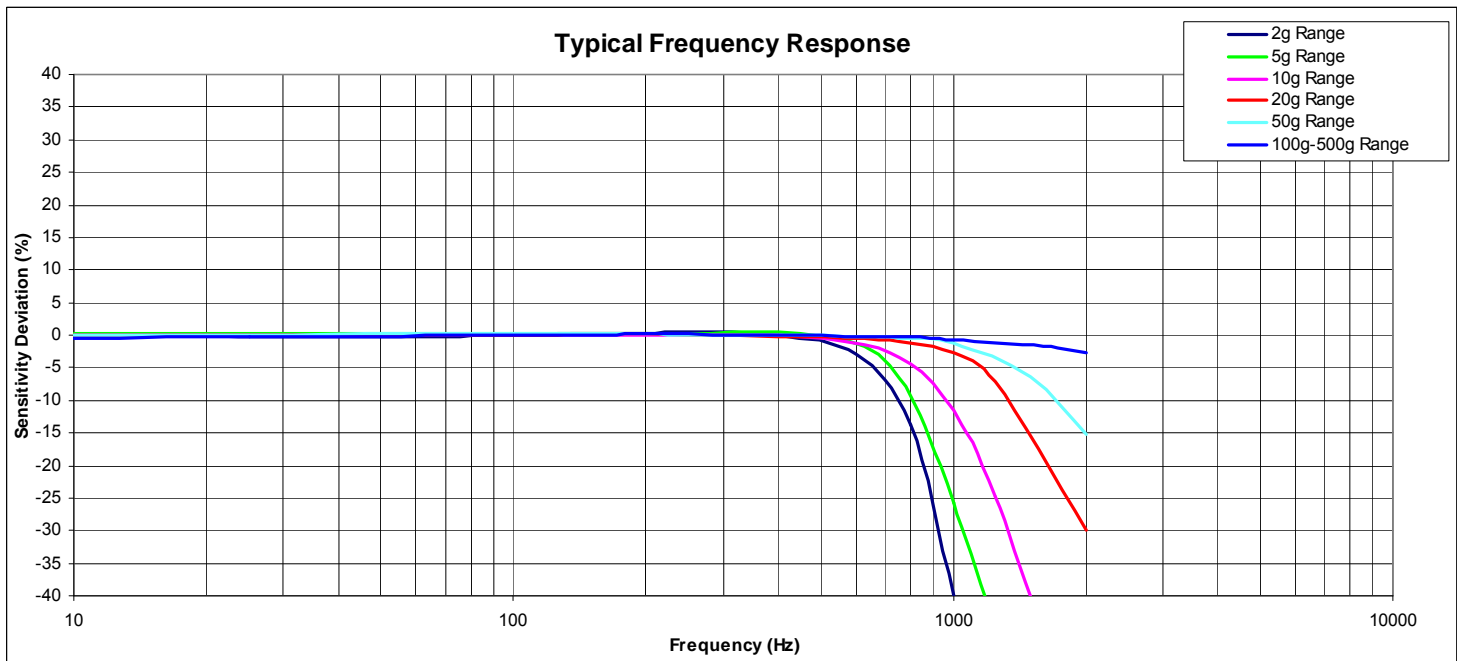
**Supplied accessories:** AC-D02855 2x #4-40 (1<sup>1/8</sup> length) Socket Head Cap Screw and Washer

**Optional accessories:** 101 Three Channel DC Signal Conditioner Amplifier

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# Model 4630 Accelerometer

## performance specifications



## ordering info

PART NUMBERING Model Number+Range+Cable Length

4630-GGG-CCC

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

Example: 4630-020-060

Model 4630, 20g, 60" (5ft) Cable