

Model 4605 Accelerometer



-55°C to +125°C Operating Range
 Integral Connector
 High Sensitivity, Amplified
 MEMS DC Accelerometer



The **Model 4605** is designed for both static and dynamic measurements in critical and demanding applications. The accelerometer is available in ranges from ± 2 to $\pm 500g$ and offers outstanding thermal performance over the complete operating range from $-55^{\circ}C$ to $+125^{\circ}C$. The model 4605 incorporates a gas damped silicon MEMS sensing element that incorporates mechanical overload stops for shock protection to $10,000g$ and a wide bandwidth from DC to 2000Hz.

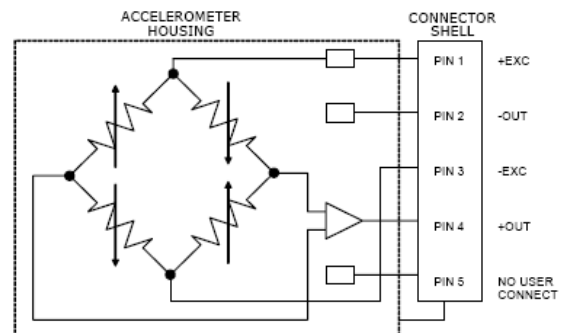
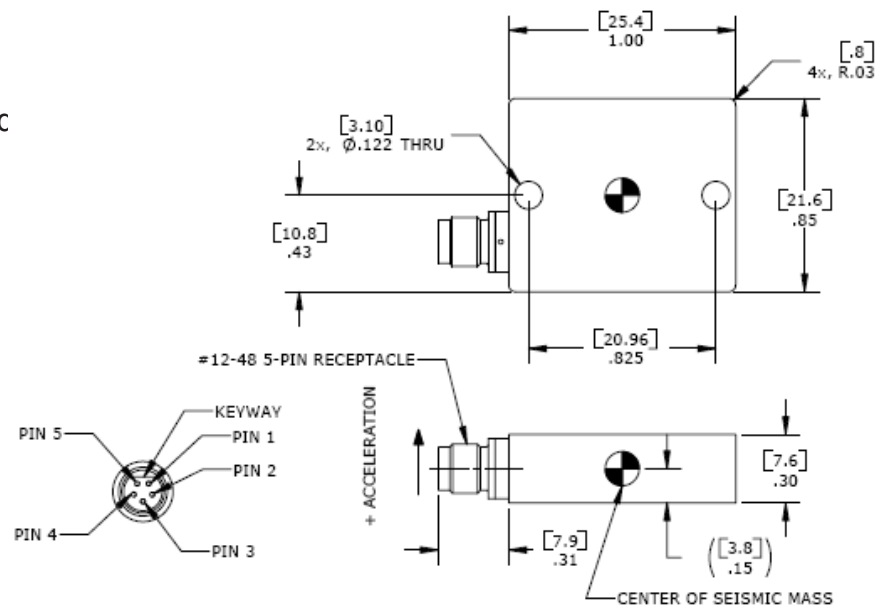
FEATURES

- $\pm 2g$ to $\pm 500g$ Dynamic Range
- Amplified Output
- Lower Power Consumption
- Gas Damping
- Integral Strain Relief
- DC, Low Frequency Response
- 8 to 36Vdc Excitation Voltage

APPLICATIONS

- Flight Testing
- Flutter and Nacelle Vibrations
- Structural Testing
- Test & Instrumentation
- Performance Testing
- Transportation

dimensions



Model 4605 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.

Parameters

DYNAMIC

	±2	±10	±30	±50	±100	±200	±500	Notes
Range (g)	±2	±10	±30	±50	±100	±200	±500	
Sensitivity (mV/g)	1000	200	67	40	20	10	4	
Frequency Response (Hz)	0-200	0-400	0-700	0-1000	0-1500	0-1500	0-1500	±5% ¹
Frequency Response (Hz)	0-400	0-600	0-1000	0-1600	0-2000	0-2000	0-2000	±1dB
Natural Frequency (Hz)	700	1000	1500	4000	6000	8000	10000	
Non-Linearity (%FSO)	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	
Transverse Sensitivity (%)	<2	<2	<2	<2	<2	<2	<2	<1 Typical
Damping Ratio	0.7	0.7	0.7	0.7	0.7	0.6	0.5	
Shock Limit (g)	10000	10000	10000	10000	10000	10000	10000	

ELECTRICAL

Zero Acceleration Output (mV)	±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	
Excitation Current (mA)	<5	<5	<5	<5	<5	<5	<5	
Bias Voltage (Vdc)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Output Resistance (Ω)	<100	<100	<100	<100	<100	<100	<100	
Insulation Resistance (MΩ)	>100	>100	>100	>100	>100	>100	>100	@100Vdc
Turn On Time (msec)	<100	<100	<100	<100	<100	<100	<100	
Residual Noise (μV RMS)	500	300	350	400	400	400	400	Passband
Spectral Noise (μg/√Hz)	35	75	197	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	Typical
Thermal Sensitivity Shift (%/°C)	±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 for Model 4600							
Compensated Temperature (°C)	-55 to 125 for Model 4602							
Storage Temperature (°C)	-55 to 125							

PHYSICAL

Case Material	Anodized Aluminum
Connector	#12-48 5-Pin
Weight (grams)	12
Mounting	2x #4 or M3 Screws
Mounting Torque	6 lb-in (0.7 N-m)
Mating Cable	Model 340A

Wiring color code: +Excitation = Pin 1; -Excitation = Pin 3; +Output = Pin 4; -Output = Pin 2; Programming = Pin 5 (Pin 5 is used for programming and is not to be connected)

Calibration supplied: CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit¹

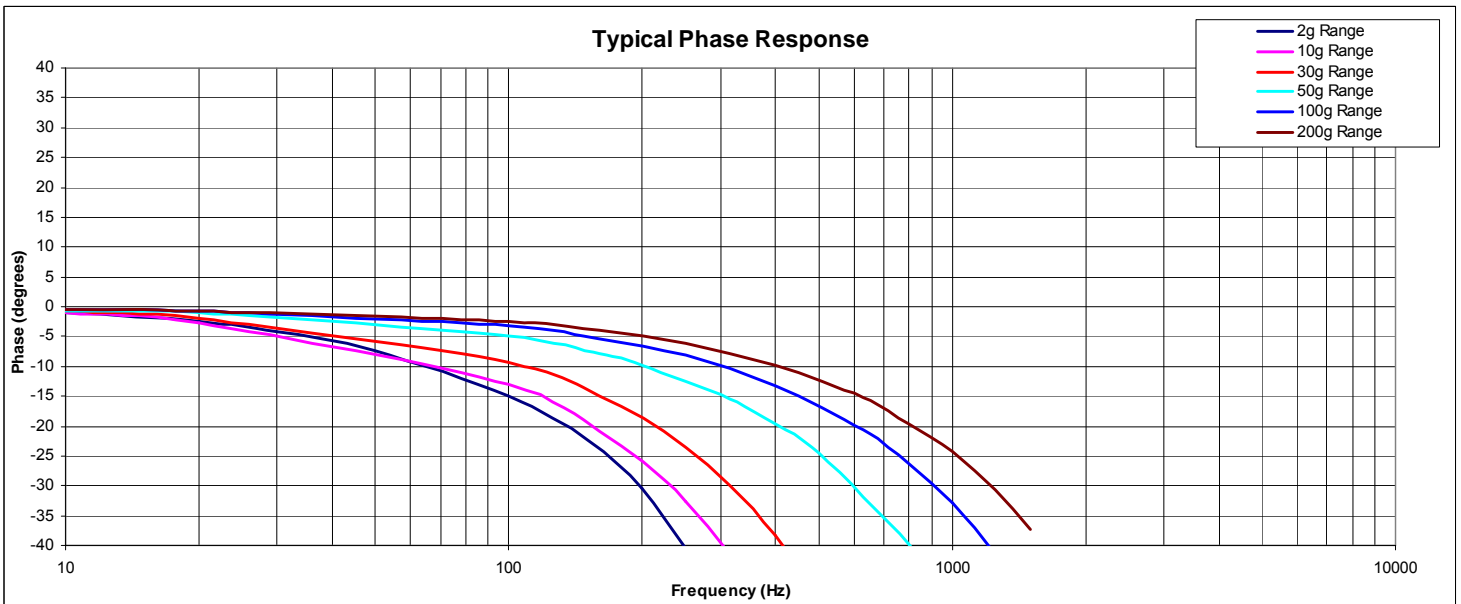
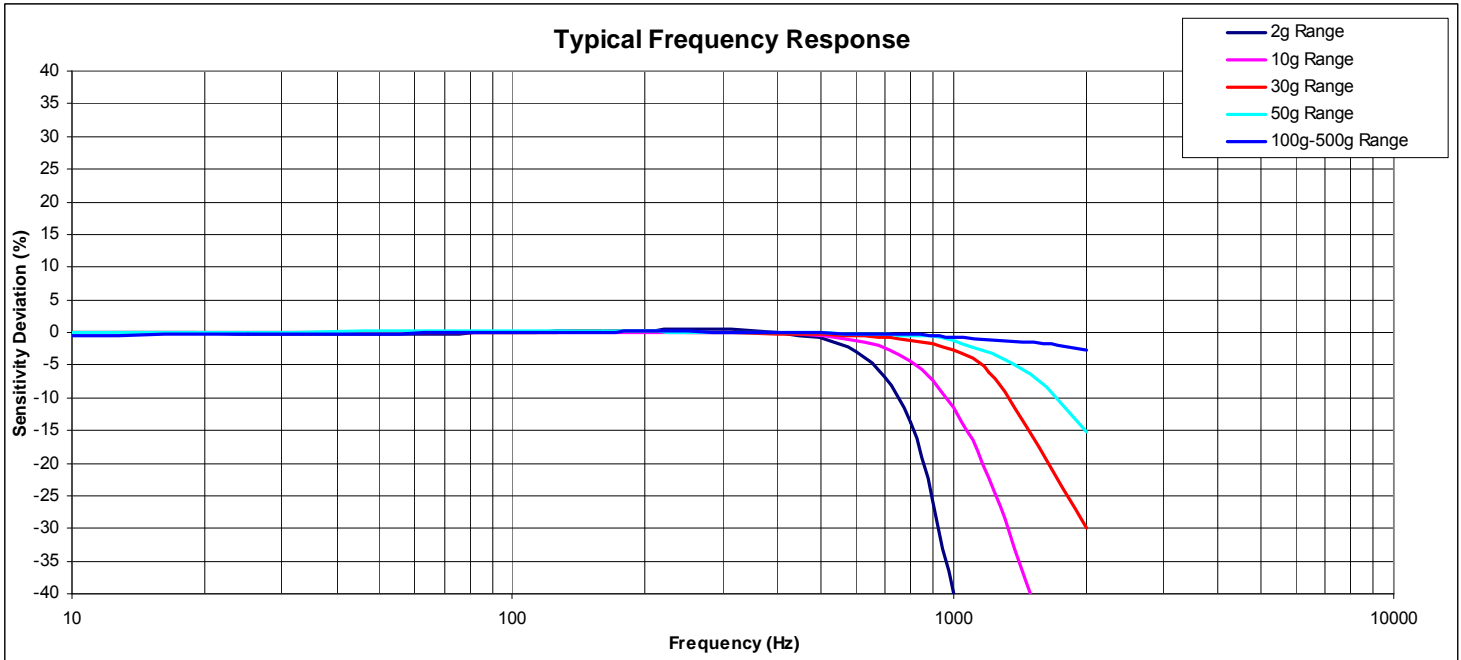
Supplied accessories: AC-A02285 2x #4-40 (7/16 length) Socket Head Cap Screw and Washer

Optional accessories: 340A-XXX Cable Assembly, #28 AWG, -54 to +121°C (XXX designates length in inches, 5ft standard)
AC-D02669 Triaxial Mounting Block
101 Three Channel DC Signal Conditioner Amplifier

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Model 4605 Accelerometer

performance specifications



ordering info

PART NUMBERING Model Number+Range

4605-GGG

|
| _____ Range (010 is 10g)

Example: 4605-010
Model 4605, 10g