

## MODEL 4604 ACCELEROMETER

### SPECIFICATIONS

- MEMS DC Accelerometer
- Ultra-Stable, DC to 2000Hz Response
- Exceptional Thermal Performance
- <2.0% Total Error Band
- <0.1% Linearity Accuracy
- Titanium Housing with Rugged Cable

### FEATURES

- $\pm 2g$  to  $\pm 200g$  Dynamic Range
- Amplified Output, Signal Conditioned
- Gas Damped MEMS Sensors
- #26 AWG PFA Jacketed Cable
- Integral Strain Relief
- 4 to 30Vdc Excitation Voltage
- 6000g Shock Protection

### APPLICATIONS

- Flight Testing
- Flutter and Nacelle Vibrations
- Road Vehicle Testing
- Structural Testing
- Test and Instrumentation
- Transportation Applications

The Model 4604 is a rugged, low-profile MEMS DC accelerometer with exceptional performance over a full operating temperature range of  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ . The accelerometers are available in ranges from  $\pm 2$  to  $\pm 200g$  with a wide bandwidth from DC to 2000Hz. The model 4604 accelerometers incorporate gas damped variable capacitance MEMS sensing element with integral over-range stops for high-g shock protection. The accelerometers are designed for 4 to 30Vdc excitation voltage and incorporate a PFA insulated cable with a rugged strain relief designed for harsh applications.

For a triaxial version, TE Connectivity also offers the model 4630 and 4835A accelerometers.

**PERFORMANCE SPECIFICATIONS**

All values are typical at +24°C, 80Hz and 12Vdc excitation unless otherwise stated. TE Connectivity reserves the right to update and change these specifications without notice.

**Parameters**

**DYNAMIC**

	±2	±5	±10	±30	±50	±100	±200	<b>Notes</b>
Range (g)	1000	400	200	67	40	20	10	±5%
Sensitivity, Differential (mV/g)	0-250	0-700	0-1000	0-1500	0-1500	0-1500	0-1500	±5%
Frequency Response (Hz)	0-500	0-1000	0-1500	0-2000	0-2000	0-2000	0-2000	±1dB
Non-Linearity (%FSO)	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	
Transverse Sensitivity (%)	<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	
Shock Limit (g)	6000	6000	6000	6000	6000	6000	6000	
Residual Noise (µV RMS)	360	380	400	440	480	500	500	Passband
Spectral Noise (µg/√Hz)	14	28	45	137	231	464	920	Passband

**ELECTRICAL**

Zero Acceleration Output (mV)	±50							Differential
Excitation Voltage (Vdc)	4 to 30							
Excitation Current (mA)	<7							
Common Mode Voltage (Vdc)	1.22							
Full Scale Output (differential)	±2 Vpk (FSO=2V)							
Full Scale Output (single-ended)	+0.22 to 2.22 Vpk (FSO=1V)							
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)	±0.004							Typical
Thermal Sensitivity Shift (%/°C)	±0.008							Typical
Operating Temperature (°C)	-55 to 125							
Storage Temperature (°C)	-55 to 125							
Humidity (MEMS Sensor and Electronics)	Hermetically Sealed							
Humidity (Housing)	Epoxy Sealed, IP65							
Total Error Band	<2% (RSS of Non-Linearity, Thermal Zero Shift, and Thermal Sensitivity Shift)							

**PHYSICAL**

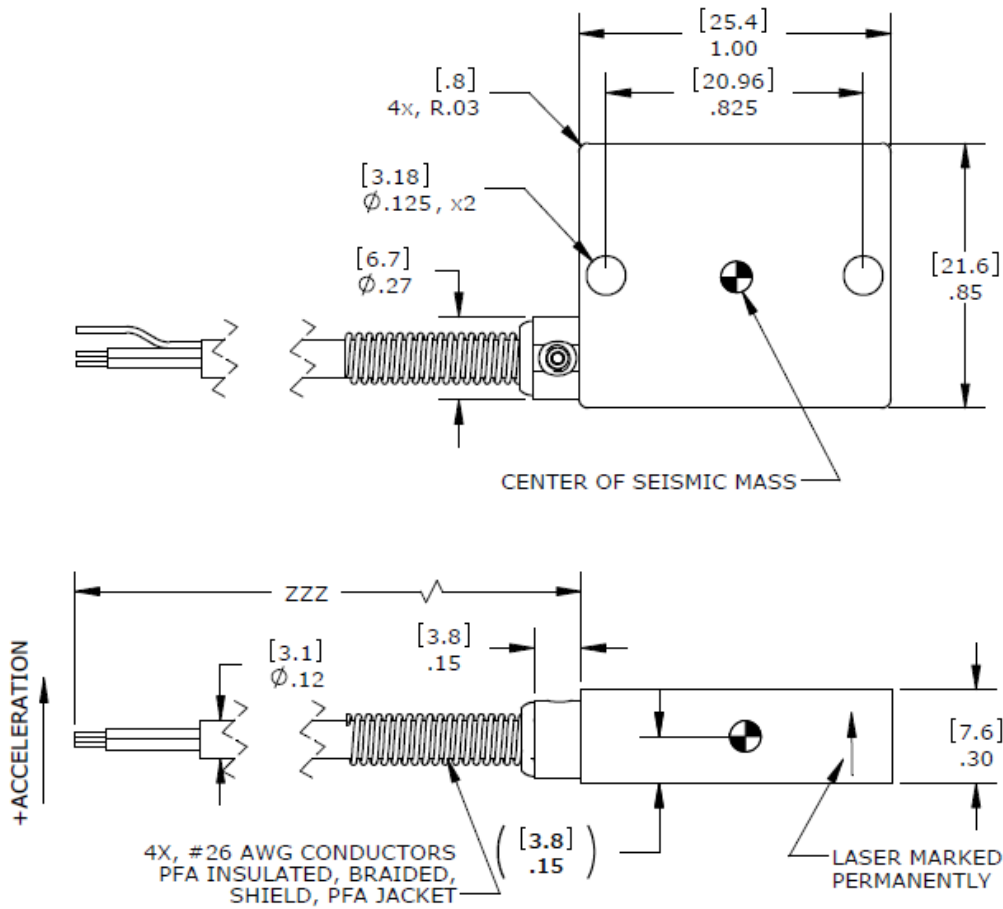
Case Material	Anodized Aluminum
Cable	4x, #26 AWG Conductors, PFA Insulated, Braided Shield, PFA Jacket
Weight (grams)	10
Mounting	2x #4 or M3 Screws
Mounting Torque	6 lb-in (0.7 N-m)

<b>Calibration supplied:</b>	CS-FREQ-0100	NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit
<b>Supplied accessories:</b>	AC-A02285	2x #4-40 (7/16 length) Socket Head Cap Screw and Washer
<b>Optional accessories:</b>	AC-D02669	Triaxial Mounting Block
	AC-D02744	Adhesive Mounting Adaptor
	121	Three Channel DC Differential Amplifier

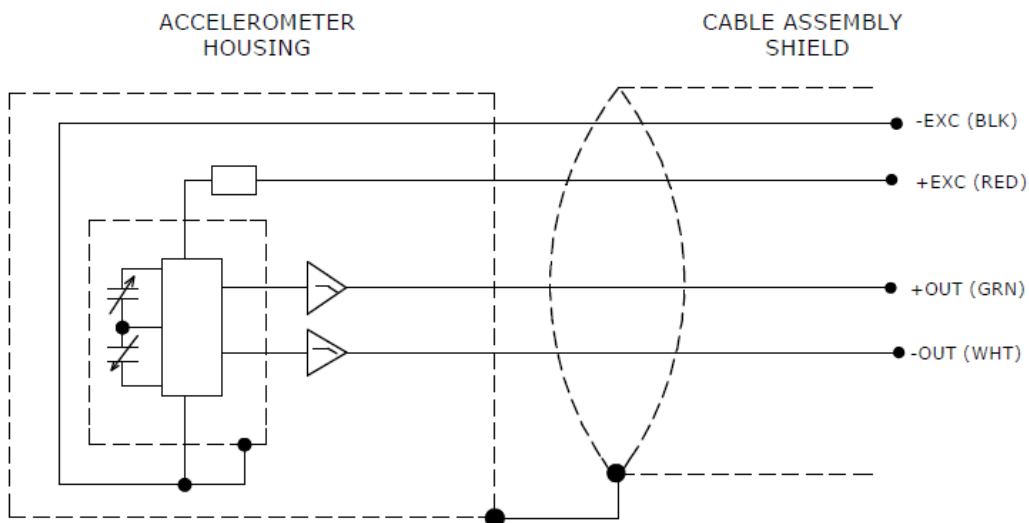
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# MODEL 4604 ACCELEROMETER

## DIMENSIONS



## SCHEMATIC



## ORDERING INFORMATION

4604	GGG	ZZZ	D
<b>Range</b>			
002 = 2g			
005 = 5g			
010 = 10g			
030 = 30g			
050 = 50g			
100 = 100g			
200 = 200g			
<b>Cable length</b>			
120 = 120 inches, 10 feet			
240 = 240 inches, 20 feet			
360 = 360 inches, 30 feet			
480 = 480 inches, 40 feet			
600 = 600 inches, 50 feet			
197 = 197 inches, 5 meters			
394 = 394 inches, 10 meters			

Example;            4604-010-120-D  
                         Model 4604, 10g range, 120inch (10ft) cable length

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