

Model 52F Accelerometer



Small Size, Aluminum Housing
Low Noise, Jacketed Cable
±50g to ±2000g Range
Silicon MEMS Technology
High Over Range Protection



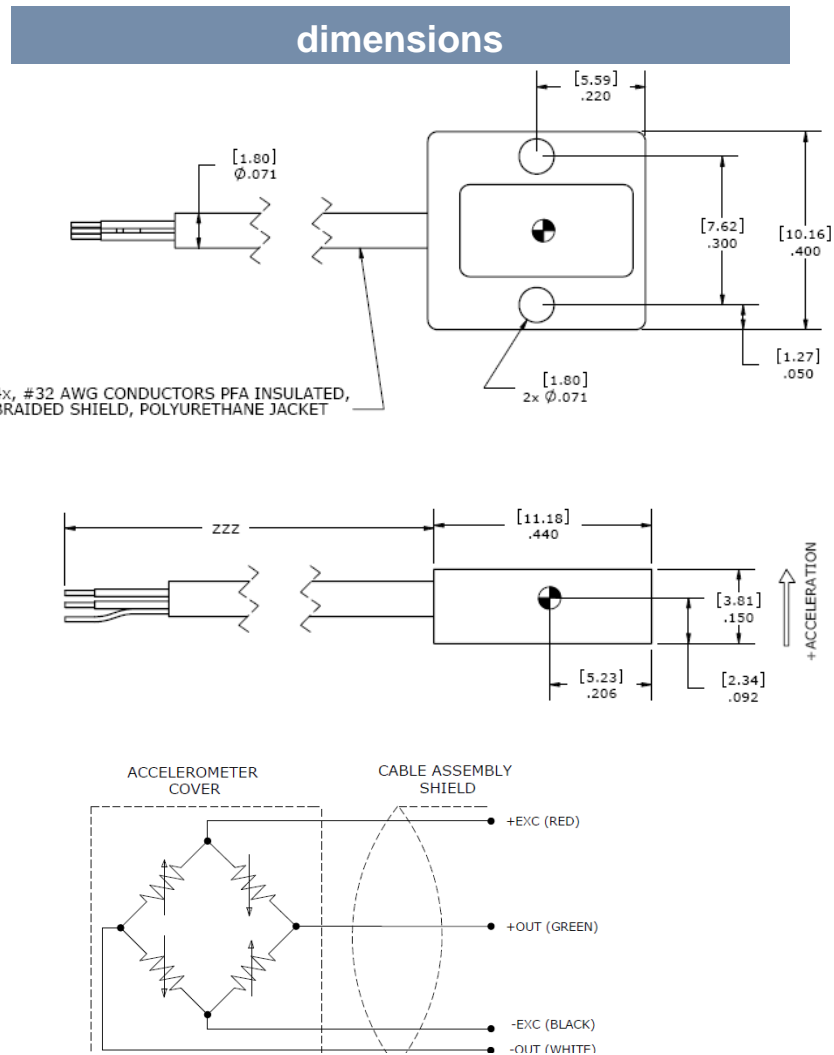
The **Model 52F** accelerometer has an advanced piezoresistive MEMS sensing element which offers excellent dynamic range and stability. This unit features a full bridge output with an operating temperature range from -40 to +90°C. A slight amount of gas damping provides outstanding shock survivability and a flat amplitude response to 7kHz.

FEATURES

- 2-10 Vdc Excitation
- Measures Static Acceleration
- ±5,000 g's Shock Protection
- Transverse sensitivity <3%
- Weight <1.0 grams
- 26kHz Resonant Frequency
- Linearity ±1%

APPLICATIONS

- Automotive crash testing
- High impact research
- Biomechanical studies
- Blast testing



Model 52F Accelerometer

performance specifications

All values are typical at $\pm 24^{\circ}\text{C}$, 100 Hz and 10 Vdc 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

	± 50	± 200	± 500	± 2000	Notes
Range(g)	2	0.9	0.4	0.15	
Sensitivity (mV/g) ¹	2	0.9	0.4	0.15	
Frequency Response (Hz)	0-1000	0-1400	0-2000	0-4500	$\pm 5\%$
	0-1400	0-1900	0-2800	0-6000	$\pm 1\text{dB}$
Resonant Frequency (Hz)	4000	8000	15000	26000	
Non-Linearity (% FSO)	± 1	± 1	± 1	± 1	
Transverse Sensitivity (%)	< 3	< 3	< 3	< 3	
Shock Limit (g)	5000	5000	5000	5000	

ELECTRICAL

Zero Acceleration Output (mV)	$< \pm 50$				
Excitation (Vdc)	2 to 10				
Input Resistance	2400-6000				
Output Resistance (Ω)	2400-6000				
Insulation Resistance ($\text{M}\Omega$)	> 100				@100Vdc
Ground Isolation	Isolated from mounting surface				

ENVIRONMENTAL

Thermal Zero Shift (%FSO/ $^{\circ}\text{C}$ (%FSO/ $^{\circ}\text{F}$))*	$\pm 0.05 (\pm 0.03)$				0°C to $+50^{\circ}\text{C}$
Thermal Sensitivity Shift (%/ $^{\circ}\text{C}$ (%/F))*	$-0.20 \pm 0.05 (-0.11 \pm 0.03)$				0°C to $+50^{\circ}\text{C}$
Operating Temperature ($^{\circ}\text{C}$)	-40 to +90				
Storage Temperature ($^{\circ}\text{C}$)	-40 to +90				
Humidity	Epoxy Sealed, IP65				

PHYSICAL

Case Material	Anodized Aluminum				
Cable (Integral 30 Foot Cable)	4x #32 AWG PFA Insulated, Braided Shield, PU Jacket				
Weight (grams)	1.0				Cable not included
Mounting	2x #0-80 x 1/4" Socket Head Cap Screws				Torque 3 lb-in

¹ Output is ratiometric to excitation voltage

Calibration supplied: CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to $\pm 1\text{dB}$ Frequency Limit

Optional accessories: 101 Three Channel DC Signal Conditioner Amplifier
140 Auto-zero Inline Amplifier

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ordering info

PART NUMBERING Model Number+Range+Cable Length+Options

52F-GGGG-CCC-ZZ

| | | Options
| | Cable (360 is 360 inches)
| Range (0500 is 500 g)

Optional Dash Numbers

-001 5Vdc Calibration
-002 2Vdc Calibration

Example: 52F-2000-360

Model 52F, 2000g Full Scale Range, 360 inches cable, No Options