

# Model 52F Accelerometer

- Small Size
- Jacketed Cable
- Integral Cable Shield
- Aluminum Housing
- Silicon MEMS Technology
- High g Range



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.

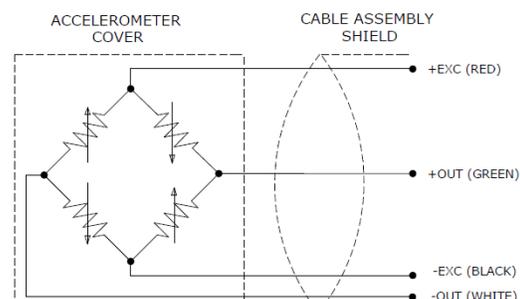
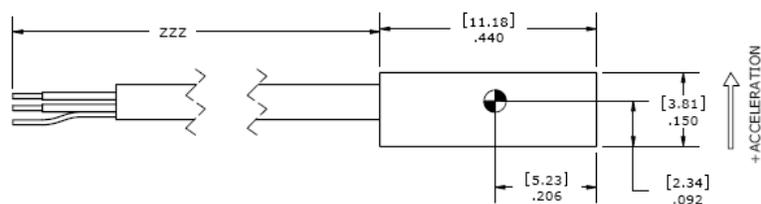
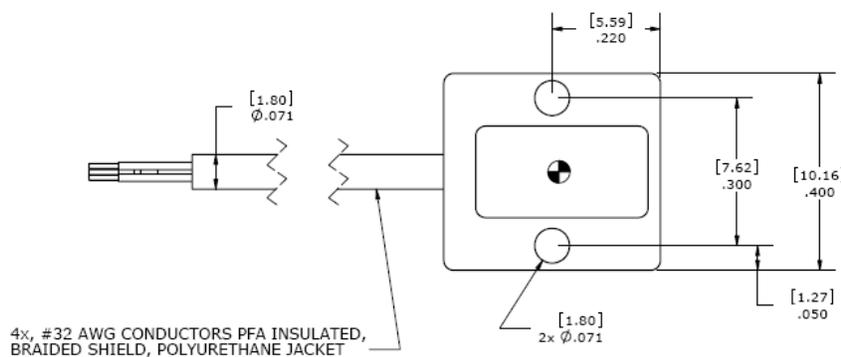
## FEATURES

- 2-10 Vdc Excitation
- Range  $\pm 2000$  g's
- Measures static acceleration
- Over shock protection to  $\pm 5,000$  g's
- Transverse sensitivity <3%
- Weight <0.5 grams
- Output ratiometric to excitation
- Resonant frequency to 26,000 Hz
- Linearity  $\pm 1\%$

## APPLICATIONS

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

## dimensions



# 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

	$\pm 50$	$\pm 200$	$\pm 500$	$\pm 2000$	Notes
Range(g)	2	0.9	0.4	0.15	
Sensitivity (mV/g)	0-400	0-600	0-800	0-2000	$\pm 2\%$
Frequency Response (Hz)	0-1000	0-1400	0-2000	0-4500	$\pm 5\%$
	0-1400	0-1900	0-2800	0-6000	$\pm 1\text{dB}$
Resonance (Hz)	4000	8000	15000	26000	
Shock Limit (g)	5000	5000	5000	5000	
Non-Linearity (% FSO)	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	
Transverse Sensitivity (%)	<3	<3	<3	<3	
Zero Acceleration Output (mV)	$<\pm 50$	$<\pm 50$	$<\pm 50$	$<\pm 50$	
TZS (%FSO/ $^{\circ}\text{C}$ (%FSO/ $^{\circ}\text{F}$ ))*	$\pm 0.05 (\pm 0.03)$				
TSS(%/ $^{\circ}\text{C}$ (%/ $^{\circ}\text{F}$ ))*	$-0.20 \pm 0.05$ $(-0.11 \pm 0.03)$				

#### ELECTRICAL

Excitation (Vdc)	2 to 10	2 to 10	2 to 10	2 to 10	
Input Resistance ( $\Omega$ )	2400-5000	2400-5000	2400-5000	2400-5000	
Output Resistance ( $\Omega$ )	2400-4800	2400-4800	2400-4800	2400-4800	Varies with current
Insulation Resistance ( $M\Omega$ )	>100	>100	>100	>100	

#### PHYSICAL

Case Material	Aluminum	Aluminum	Aluminum	Aluminum	Black anodized
Cable (Polyurethane Jacket, 4 wire+shield)	32 AWG	32 AWG	32 AWG	32 AWG	PVC insulated
Weight (grams)	0.9	0.9	0.9	0.9	Without cable
Mounting	Adhesive	Adhesive	Adhesive	Adhesive	

#### ENVIRONMENTAL

Operating Temperature ( $^{\circ}\text{C}$ )	-40 to +90	-40 to +90	-40 to +90	-40 to +90	
Humidity		Epoxy Sealed, IP65			

#### PART NUMBERING

Model Number + Range (g's)+Cable Length (Options require factory-specified Model Numbers)

\*  $0^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  ( $32^{\circ}\text{F}$  to  $122^{\circ}\text{F}$ )

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

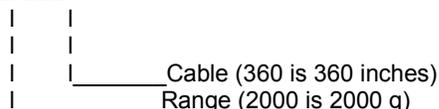
**Optional accessories:** 101 Three Channel DC Signal Conditioner Amplifier

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## ordering info

PART NUMBERING Model Number+Range+Cable Length

52F-ZZZZ-ZZZ



Example: 52F-2000-360

Model 52F, 2000g Full Scale Range, 360 inches cable

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