MODEL 53 & 53A ACCELEROMETER

SPECIFICATIONS

- **Triaxial DC Accelerometer**
- **Low Cost, High Performance**
- **±50g to ±2000g Range**
- **Low Profile, Adhesive Mount**

The Model 53 Accelerometer is a small, compact triaxial device designed for vehicle impact and road testing. The accelerometer incorporates gas-damped MEMS sensing elements with mechanical stops for high overload protection. Featuring ranges from ±50g to ±2000g and frequency response to 5000Hz, this sensor is easily mounted in hard to reach places on vehicles under test.

FEATURES

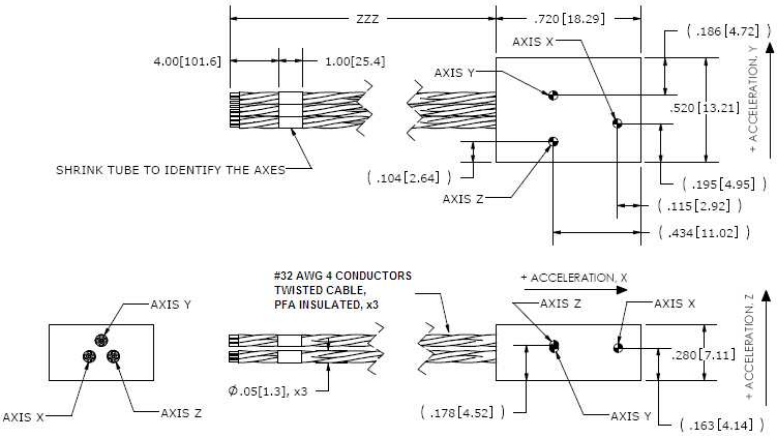
- -20 to +85°C Operating Range
- 2-10 Vdc Excitation
- ±50 mV Zero Measurand Output
- Gas Damping
- Mechanical Overload Stops
- Designed for Adhesive Mounting

APPLICATIONS

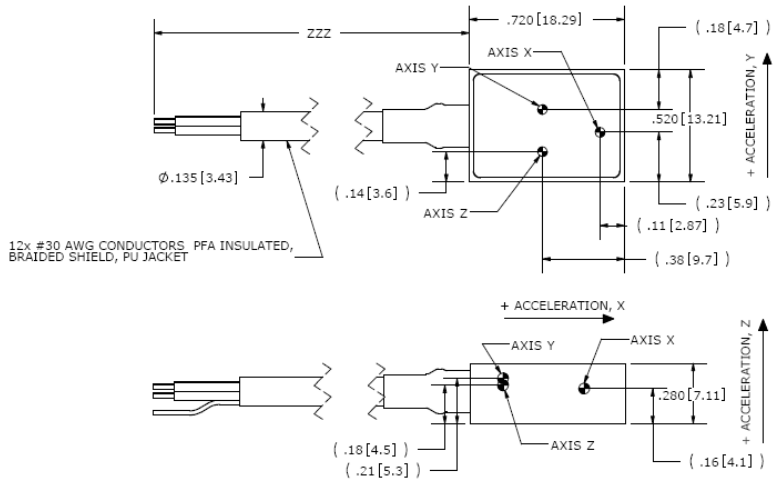
- Crash Testing
- Impact Testing
- Off Road Testing
- Vehicle Testing

DIMENSIONS

53 Dimensions



53A Dimensions



PERFORMANCE SPECIFICATIONS

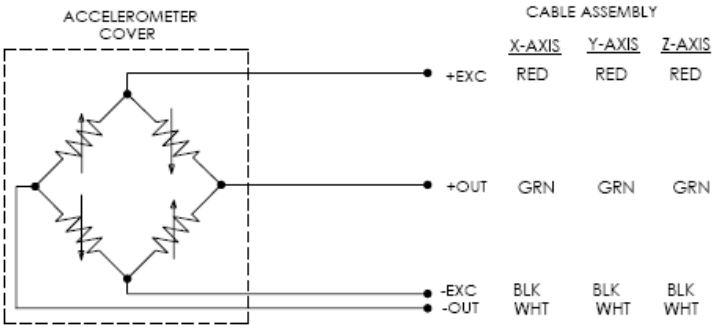
All values are typical at ±24°C, 80Hz and 10Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice.

Parameters					
DYNAMIC					**Notes**
Range(g)	±50	±200	±500	±2000	
Sensitivity (mV/g)	2	0.9	0.4	0.15	Ratiometric to Exc. Voltage
Frequency Response, Z Axis (Hz)	0-1000	0-2000	0-3000	0-4500	±1dB
Frequency Response, X & Y Axis (Hz)	0-500	0-1000	0-1500	0-2500	±1dB
Resonant Frequency (Hz)	4000	8000	15000	26000	
Damping Ratio	0.5	0.5	0.3	0.05	Typical
Shock Limit (g)	5000	5000	5000	5000	
Non-Linearity (% FSO)	±1	±1	±1	±1	Of Reading
Transverse Sensitivity (%)	<3	<3	<3	<3	
ELECTRICAL					
Zero Acceleration Output (mV)	<±50				
Excitation (Vdc)	2 to 10				
Input Resistance (Ω)	2400-6000				
Output Resistance (Ω)	2400-6000				
Insulation Resistance (MΩ)	>100				@100Vdc
Residual Noise (µV RMS)	<10				
Ground Isolation	Isolated from Mounting Surface				
ENIVIRONMENTAL					
Thermal Zero Shift (%FSO/°C (%FSO/°F))	±0.05 (±0.03)				From 0 to +50°C
Thermal Sensitivity Shift (%/°C (%/°F))	-0.20 ±0.05 (-0.11 ±0.03)				From 0 to +50°C
Operating Temperature (°C (°F))	-20 to +85 (-4 to +185)				
Storage Temperature (°C (°F))	-40 to +90 (-40 to +194)				
Humidity	Epoxy Sealed, IP65				
PHYSICAL					
Case Material	Anodized Aluminum				
Cable, Model 53	#32 AWG Twisted Conductors, PFA Insulated				
Cable, Model 53A	#30 AWG Conductors PFA Insulated, Braided Shield, PU Jacket				
Weight (grams)	3.5				Without cable
Mounting	Adhesive				

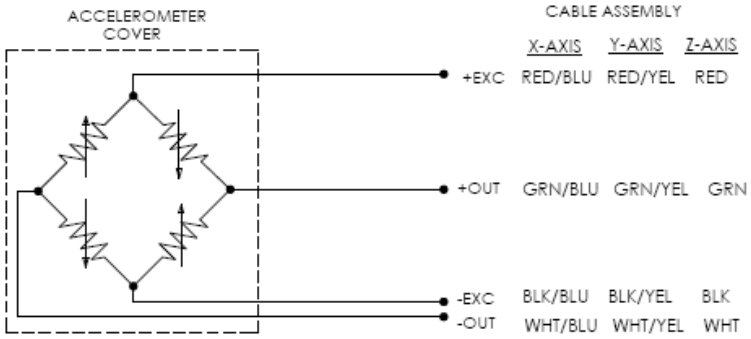
Calibration supplied:	CS-FREQ-0100	NIST Traceable Amplitude Calibration from 20Hz to ±1dB Frequency Response Limit
Optional accessories:	121	Three Channel DC Signal Conditioner Amplifier
	140A	Auto-zero Inline Amplifier

SCHEMATIC

53 Schematic



53A Schematic



ORDERING INFORMATION

PART NUMBERING Model Number+Range+Cable Length

53-GGGG-CCC-XXX
I I I_____Options (leave blank otherwise)
I I_____Cable (360 is 360 inches)
I_____Range (0500 is 500g)

Example: 53-0500-360
Model 53, 500g, 360” (30ft) Cable

53A-GGGG-CCC-XXX
I I I_____Options (leave blank otherwise)
I I_____Cable (360 is 360 inches)
I_____Range (0500 is 500g)

Example: 53A-0500-360
Model 53A, 500g, 360” (30ft) Cable

Optional Dash Number
-003 5Vdc Calibration

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