

Piezoresistive accelerometer Model 7264B





STANDARD TOLERANCE INCHES (MILLIMETERS) .XX = +/- .02 (.X = +/- .5) .XXX = +/- .010 (.XX = +/- .25)

Key features

- Mechanical overtravel stops
- Small size, rugged
- Crash and shock testing
- 500 g and 2000 g full scale ranges
- DC response long duration transients

Description

The Endevco® model 7264B is a very low mass piezoresistive accelerometer weighing only 1 gram. This accelerometer is designed for crash testing, rough road testing and similar applications that require minimal mass loading and a broad frequency response. Used for shock testing of lightweight systems or structures, the model 7264B accelerometer also meets SAEJ211 specifications for instrumentation for impact testing and SAEJ2570 specification for anthromorphic test device transducers.

The model 7264B utilizes an advanced micromachined sensor which includes integral mechanical stops. This monolithic sensor offers improved ruggedness, stability and reliability over previous designs. The model 7264B has minimum damping, thereby producing no phase shift over the useful frequency range. With a frequency response extending down to dc (steady state acceleration), this accelerometer is ideal for measuring long duration transients as well as short duration shocks.

The model 7264B offers excellent linearity and a wide frequency response. Further, this accelerometer offers stable performance over the temperature range of -40°F to +200°F (-40°C to +93°C) and has a full bridge circuit with fixed resistors for shunt calibration. This accelerometer has a full scale output of 400 mV with 10 Vdc excitation. It is also available with less than 1% transverse sensitivity ("T" option). For calibration at 5 Vdc, request the M2 option.



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The following performance specifications are referenced at +75°F (+24°C) and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

Specifications			
Dynamic characteristics	Units	7264B-500	7264B-2000
Range	g	±500	±2000
Sensitivity (at 100 Hz)	mV/g Typ	0.80	0.20
	mV/g (min)	0.50	0.15
Frequency Response (+/-5%)	Hz	0 to 3000	0 to 5000
Mounted resonance frequency	Hz	17000	28000
Damping ratio	Тур	0.005	0.005
Non-linearity and hysteresis			
(% of reading, to full range)	%	±1	±1
Fransverse sensitivity [1]	% Max	3	3
Zero measurand output	mV Max	±25	±25
Thermal zero shift			
From 0°F to +150°F (-18°C to +66°C), ref. 75°F (24°C)	mV Max	±25	±25
Thermal sensitivity shift	% / °F Typ	-0.06	-0.06
From 0°F to +150°F (-18°C to +66°C), ref. 75°F (24°C)	% / °C Typ	-0.10	-0.10
Warm-up time	ms Max	1	1
Base strain sensitivity			
(Per ISA 37.2 @ 250 µ strain)	Equiv. g's	≤ 0.1	≤ 0.1
Mechanical overtravel stops	g′s	1500 g typical	5000 g typical
Electrical characteristics	-		
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Excitation Voltage	10.0 Vdc (5 Vdc and 2 Vdc optional)		
	300 to 900 ohms		
•			
nput resistance Dutput resistance	400 to 1600 oh		
Dutput resistance Fixed resistors	400 to 1600 oh 500 ohms ±1%	ms	ds to shield shield to case
Output resistance Fixed resistors nsulation resistance	400 to 1600 oh 500 ohms ±1%		ds to shield, shield to case
•	400 to 1600 oh 500 ohms ±1%	ms	ds to shield, shield to case
Output resistance Fixed resistors nsulation resistance	400 to 1600 oh 500 ohms ±1%	ms ninimum at 100 Vdc; leads to case, lea	ids to shield, shield to case
Output resistance Fixed resistors Insulation resistance Physical characteristics	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo	ms minimum at 100 Vdc; leads to case, lea aluminum alloy pur conductor No. 32 AWG Teflon® insula	ted leads, braided
Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja	ms minimum at 100 Vdc; leads to case, lea aluminum alloy pur conductor No. 32 AWG Teflon® insula ucket. Cable length specified at time of or	ted leads, braided rder
Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections Mounting torque	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja Holes for two 0	ms minimum at 100 Vdc; leads to case, lea aluminum alloy pur conductor No. 32 AWG Teflon® insula icket. Cable length specified at time of or I–80 mounting screws/3 lbf-in (0.3 Nm)	ted leads, braided rder
Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections Mounting torque Weight	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja Holes for two 0	ms minimum at 100 Vdc; leads to case, lea aluminum alloy pur conductor No. 32 AWG Teflon® insula ucket. Cable length specified at time of or	ted leads, braided rder
Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections Mounting torque Weight Environmental characteristics	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja Holes for two 0	ms minimum at 100 Vdc; leads to case, lea aluminum alloy pur conductor No. 32 AWG Teflon® insula icket. Cable length specified at time of or I–80 mounting screws/3 lbf-in (0.3 Nm)	ted leads, braided rder
Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections Mounting torque Weight Environmental characteristics Acceleration limits (in any direction)	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja Holes for two 0	ms minimum at 100 Vdc; leads to case, lea aluminum alloy pur conductor No. 32 AWG Teflon® insula toket. Cable length specified at time of or I–80 mounting screws/3 lbf-in (0.3 Nm) veighs 9 grams/meter)	ted leads, braided rder
Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections Mounting torque Weight Environmental characteristics Acceleration limits (in any direction) Static	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja Holes for two 0	ms minimum at 100 Vdc; leads to case, lea aluminum alloy pur conductor No. 32 AWG Teflon® insula toket. Cable length specified at time of or I–80 mounting screws/3 lbf-in (0.3 Nm) veighs 9 grams/meter) 5000 g	ted leads, braided rder 10000 g
Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections Mounting torque Weight Environmental characteristics Acceleration limits (in any direction) Static Shock (half-sine pulse duration)	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja Holes for two 0	ms minimum at 100 Vdc; leads to case, lea aluminum alloy pur conductor No. 32 AWG Teflon® insula toket. Cable length specified at time of or I–80 mounting screws/3 lbf-in (0.3 Nm) veighs 9 grams/meter)	ted leads, braided rder 10000 g
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Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections Mounting torque Weight Environmental characteristics Acceleration limits (in any direction) Static Shock (half-sine pulse duration) Temperature Operating	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja Holes for two 0 1 gram (cable w	ms minimum at 100 Vdc; leads to case, lea aluminum alloy our conductor No. 32 AWG Teflon® insula icket. Cable length specified at time of or –80 mounting screws/3 lbf-in (0.3 Nm) veighs 9 grams/meter) 5000 g 5000 g 5000 g, 300 μ sec or longer (-40°C to +93°C)	ted leads, braided rder 10000 g
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Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections Mounting torque Weight Environmental characteristics Acceleration limits (in any direction) Static Shock (half-sine pulse duration) Temperature Operating Storage	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja Holes for two 0 1 gram (cable w	ms minimum at 100 Vdc; leads to case, lea aluminum alloy our conductor No. 32 AWG Teflon® insula icket. Cable length specified at time of or –80 mounting screws/3 lbf-in (0.3 Nm) veighs 9 grams/meter) 5000 g 5000 g 5000 g, 300 μ sec or longer (-40°C to +93°C)	ted leads, braided rder 10000 g
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Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections Mounting torque Weight Environmental characteristics Acceleration limits (in any direction) Static Shock (half-sine pulse duration) Temperature Operating Storage Calibration data Sensitivity (at 100 Hz and 10 g pk)	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja Holes for two 0 1 gram (cable w -40°F to +200°F -65°F to +250°F mV/g at 10V 20 Hz to 3000 Hz fo	ms minimum at 100 Vdc; leads to case, lea aluminum alloy our conductor No. 32 AWG Teflon® insula tocket. Cable length specified at time of or –80 mounting screws/3 lbf-in (0.3 Nm) veighs 9 grams/meter) 5000 g 5000 g, 300 μ sec or longer (-40°C to +93°C) (-54°C to +121°C)	ted leads, braided rder 10000 g 10000 g, 200 μ sec or longer blot continued from 3000 iation reference 100 Hz;
Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections Mounting torque Weight Environmental characteristics Acceleration limits (in any direction) Static Shock (half-sine pulse duration) Temperature Operating Storage Calibration data Sensitivity (at 100 Hz and 10 g pk) Frequency response	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja Holes for two 0 1 gram (cable w -40°F to +200°F -65°F to +250°F mV/g at 10V 20 Hz to 3000 Hz fo dB plot continu	ms minimum at 100 Vdc; leads to case, lea aluminum alloy bur conductor No. 32 AWG Teflon® insula icket. Cable length specified at time of or i–80 mounting screws/3 lbf-in (0.3 Nm) veighs 9 grams/meter) 5000 g 5000 g, 300 μ sec or longer (-40°C to +93°C) (-54°C to +121°C) 	ted leads, braided rder 10000 g 10000 g, 200 μ sec or longer blot continued from 3000 iation reference 100 Hz;
Output resistance Fixed resistors Insulation resistance Physical characteristics Case material Electrical connections Mounting torque Weight Environmental characteristics Acceleration limits (in any direction) Static Shock (half-sine pulse duration) Temperature Operating Storage Calibration data Sensitivity (at 100 Hz and 10 g pk)	400 to 1600 oh 500 ohms ±1% 100 megohms r Blue anodized a Integral cable, fo shield, silicone ja Holes for two 0 1 gram (cable w -40°F to +200°F -65°F to +250°F mV/g at 10V 20 Hz to 3000 Hz fo	ms minimum at 100 Vdc; leads to case, lea aluminum alloy bur conductor No. 32 AWG Teflon® insula icket. Cable length specified at time of or i–80 mounting screws/3 lbf-in (0.3 Nm) veighs 9 grams/meter) 5000 g 5000 g, 300 μ sec or longer (-40°C to +93°C) (-54°C to +121°C) 	ted leads, braided rder 10000 g 10000 g, 200 μ sec or longer blot continued from 3000 iation reference 100 Hz;

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Accessories			
Product	Description	7264B	
EHM35	(1) Allen wrench	Included	
EHW196	(2) Size-0 flat washers	Included	
EH828	(2) 0-80 x3/16 inch socket head cap screw	Included	
7964B	Triaxial mounting block	Optional	

Notes

- 1% transverse sensitivity available as "T" option. 1.
- Lower excitation voltages may be used but should be specified at time of order to obtain best calibration. 5 Vdc option = M2 2.
- 3. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.
- Model number definition: 4.



Block Diagram



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