

IEPE Triaxial Accelerometer

Miniature Ceramic Shear 50 ... 2 000 g

The Type 8763B... triaxial accelerometer measures vibration in three orthogonal axes. This 0.43 in [10.9 mm] cube accelerometer has ±50, 100, 250, 500, 1 000 and 2 000 g measuring ranges with low mass.

- Miniature, low mass cube
- 3 x 5-40 threaded holes for mounting ease
- M4.5 and 1/4-28, 4 pin connector options
- Hermetic, titanium construction
- Low base strain sensitivity
- Voltage output (IEPE)
- Ceramic shear sensing element
- TEDS option
- Waterproof IP68 integral cable option (up to 16 bar)
- Conforming to CE

Description

Type 8763B... is an IEPE (Integrated Electronics Piezo-Electric) triaxial accelerometer allowing vibration measurements in x, y, and z axes.

Type 8763B... uses Kistler shear element technology, assuring high immunity to base strain. The welded titanium construction provides a lightweight hermetic housing. An integral silicone cable option is available for waterproof vibration testing up to 16 bars. In addition to adhesive mounting, Type 8763B... has 3 x 5-40 threaded holes for flexible mounting options which also allows for calibration in each orthogonal axis. See PiezoStar triaxial Type 8766A... for high temperature 165°C [+330°F] and other frequency response options.

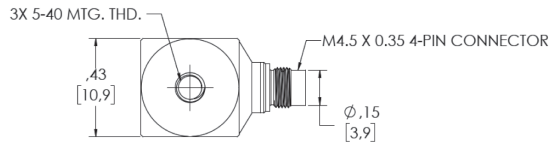
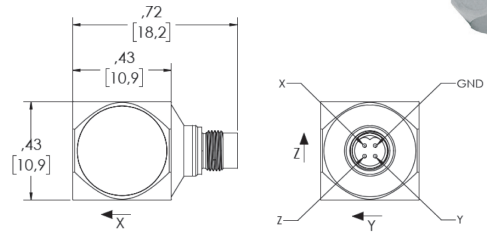
Application

Type 8763B... provides wide frequency response in each axis, ideal for dynamic vibration measurements, and is well-suited for lightweight structures.

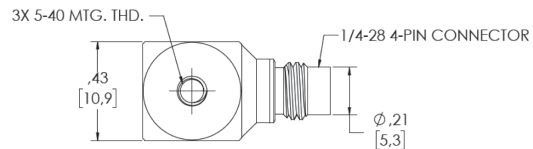
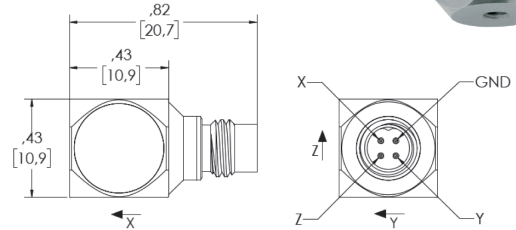
Type 8763B...



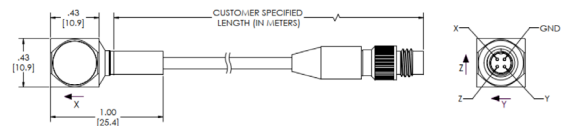
Type 8763B...Ax



Type 8763B...Bx



Type 8763B...CBSP



Dimensions are shown in in. [mm], unless otherwise noted.

Technical data

Type	Unit	8763B050...	8763B100...	8763B250...	8763B500...	8763B1K0...	8763B2K0...
Acceleration range	g	±50	±100	±250	±500	±1 000	±2 000
Threshold (1 Hz ... 10 kHz), typ.	g_{rms}	.00022	.00025	.00095	.0012	.0016	.0022
Sensitivity, at 100 Hz, 10 g_{rms}	mV/g	100 ±15%	50 ±15%	20 ±15%	10 ±15%	5 ±15%	2.5 ±15%
Resonant frequency, typ.	kHz	40		75			
Frequency response, ±5% ±10%	Hz	0.5 ... 7 000 0.3 ... 10 000		1 ... 10 000 0.7 ... 15 000			
Amplitude linearity	%FSO	±1					
Transverse sensitivity, typ. (max.)	%	2.5 (5.0)					

Environmental

Base strain sensitivity @250 $\mu\epsilon$	$g/\mu\epsilon$	0.002		0.005			
Shock (150 us (micro) pulse width), max.	g	5 000					
Operating temperature range	°C [°F]	-54 ... 100 [-65 ... 210]		-54... 110 [-65... 230]		-54 ... 120 [-65 ... 250]	
Time constant	s	0.8 ... 2.0		0.4 ... 1.5			

Output

Bias, nom.	VDC	13*					
Impedance	Ω	<200					
Voltage, F.S., nom.	V	±5					

Supply

Current, nom.	mA	2 ... 18					
Voltage	VDC	22 ... 30					

Construction

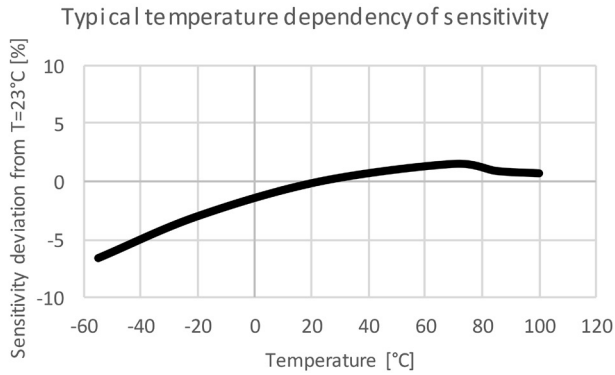
Weight	Type 8763B...Ax	grams	4.5		3.6		3.6	
	Type 8763B...Bx		4.6		3.8		–	
Case material		Titanium						
Sealing	type	Hermetic (8763B...CBSP option: IP68 (waterproof) tested at 16 bar for 48 hours)						
Mounting torque	N·m [lbf/in]	0.7±0.07 [6.2±0.7]						
Connector	Type 8763B...Ax Type 8763B...Bx Type 8763B...CBsp	type	M4.5, 4 pin ¼–28, 4 pin integral cable terminated with 4 pin (¼–28)					

1 g = 9.80665 m/s², 1 in = 25.4 mm, 1 gram = 0.03527 oz, 1 lbf-in = 0.113 N·m

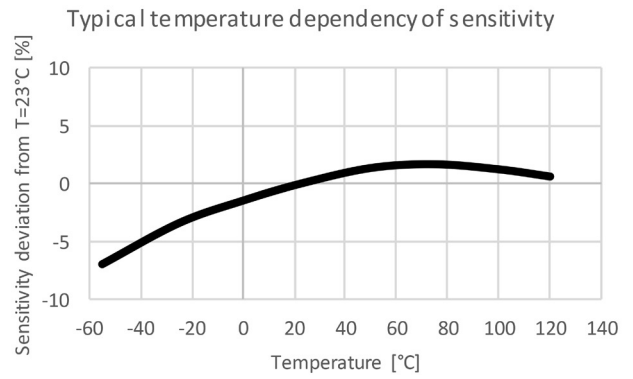
* TEDS Txx will increase Bias by 0.5 VDC nominally

Temperature coefficient of sensitivity

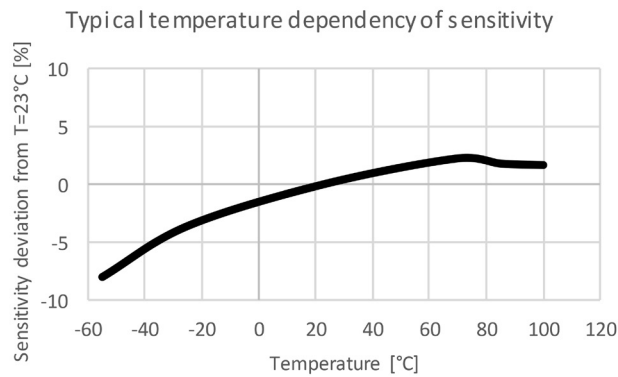
Type 8763B050...



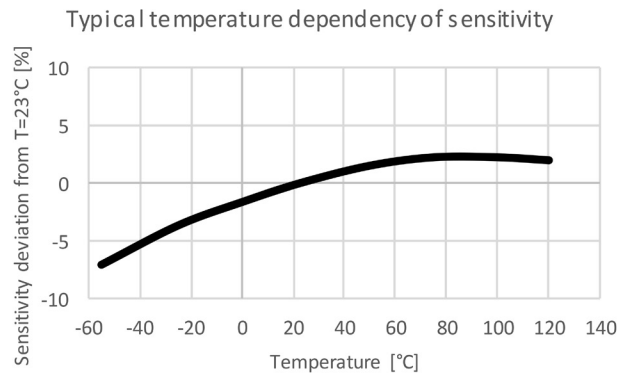
Type 8763B500...



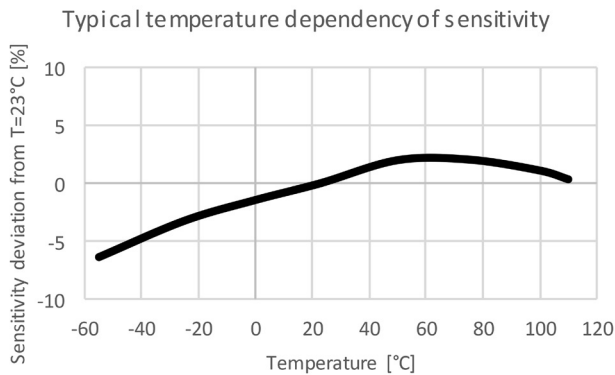
Type 8763B100...



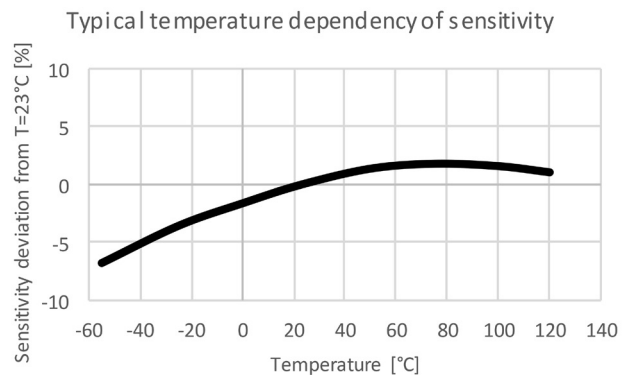
Type 8763B1K0...



Type 8763B250...



Type 8763B2K0...



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Accessing TEDS Data

Accelerometers with a "T" suffix are variant options which incorporate the TEDS 'Smart Sensor' design. Viewing an accelerometer's data sheet requires a TEDS compatible data acquisition system. The TEDS Interface provides a negative current excitation (reverse polarity) altering the operating mode of the PiezoSmart sensor, allowing the program editor software to read or add information contained in the memory chip.

Mounting

Reliable and accurate measurements require that the mounting surface be clean and flat. The sensor can be attached to the structure with wax or adhesive or using the supplied adaptor stud on any of the 3 x 5-40 threaded holes. The instruction manual for Type 8763B... provides detailed information regarding mounting surface preparation.

Accessories included

	Type
• Mounting stud, 5-40 to 10-32	8416
• Mounting wax (except for integral cable sensors)	8432
• Mounting stud, 5-40 to M6	8418
• ISO 17025 Calibration Certificate	

Optional cables

	Type
• Fluoropolymer jacketed breakout cable, ¼-28, 4 pin (neg.) to 3 x BNC (pos.); (x = length: 1, 3, 5, 7, 10, and 20 meters or customer specified SP)	1756CxK04
• Fluoropolymer jacketed breakout cable, M4.5 4 pin (neg.) to 3 x BNC (pos.); (x = length: 1, 3, 5, 10, and 15 meters or customer specified SP)	1784BxK03
• Fluoropolymer jacketed cable, M4.5, 4 pin (neg.) to ¼-28, 4 pin (pos.); (length: 0.5 meter or customer specified SP)	1784AK02
• Flexible silicone jacketed breakout cable, ¼-28, 4 pin (neg.) to 3 x BNC (pos.); (x = length: 1, 3, 5, 7, 10, 15, and 20 meters or customer specified SP)	1734AxK04

Ordering key

Type 8763B...

Measuring range

±50 g	050
±100 g	100
±250 g	250
±500 g	500
±1 000 g	1K0
±2 000 g	2K0

Connector

M4.5, 4 pin (pos.)	A
Standard, ¼-28, 4 pin (pos.) [only in 50, 100, 250 & 500 g ranges]	B
Waterproof IP68 integral cable	C

Variants/TEDS templates

Base model (without TEDS)	B
Default, IEEE 1451.4 V0.9 Template 0 (UTID 1)	T00
IEEE 1451.4 V0.9 Template 24 (UTID 116225)	T01
LMS Template 117, Free format Point ID	T02
LMS Template 118, Automotive Format (Field 14 Geometry = 0)	T03
LMS Template 118, Aerospace Format (Field 14 Geometry = 1)	T04
P1451.4 V1.0 template 25 - Transfer Function Disabled	T05
P1451.4 V1.0 template 25 - Transfer Function Enabled	T06

Cable length

Customer specified (for waterproof IP68 integral cable Type 8763B... CB - maximum 20 meter length)	SP
No integral cable (for connector option Types 8763B...Ax, and 8763B...Bx)	—

Optional Accessories

- 5-40 stud to 10-32 stud, ground isolated mounting base
- 5-40 stud to M6 stud, ground isolated mounting base
- 5-40 stud, ground isolated adhesive mounting base

Type

- 8400K06
- 8400K04
- 8440K01

Optional Accessories

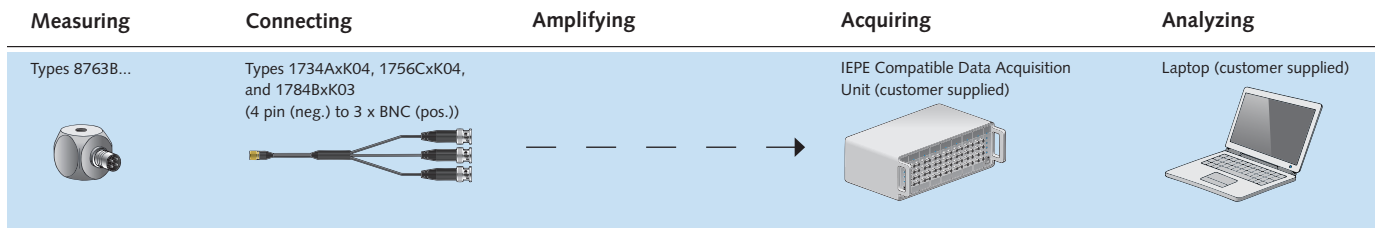
- 5-40 stud to M6 stud
- 5-40 stud to 0.062 Hex
- 5-40 threaded hole, ground isolated adhesive mounting base
- 5-40 threaded hole, magnetic mounting base

Type

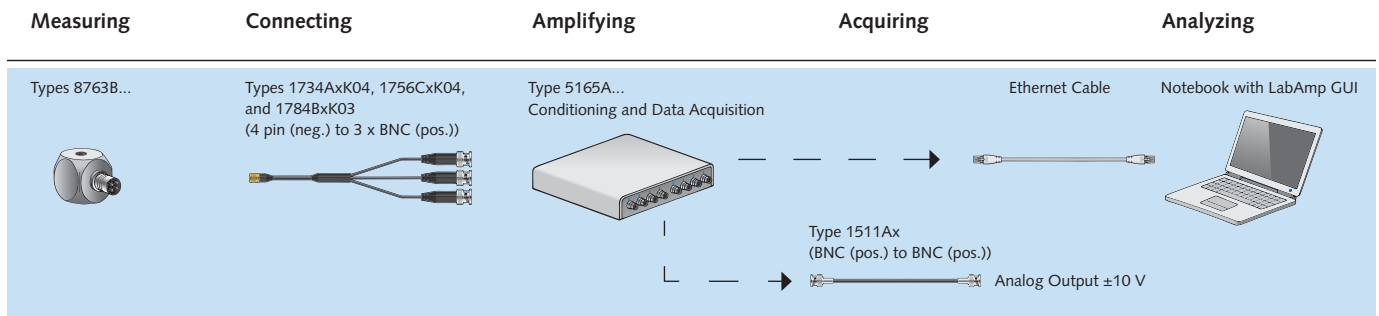
- 8418
- 8420
- 8434
- 8450A

Measuring Chains

IEPE Sensor and Customer IEPE Compatible DAQ



IEPE Sensor and Kistler LabAmp



Note: Type 1784B...K03 is used for Type 8763B...Ax;
Type 1756C... and Type 1734A... are used for
Type 8763B...Bx and Type 8763B...CBSP

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