

## IEPE Triaxial Accelerometer

### DETAILS

BXXY31 series three-axis acceleration sensor, using piezoelectric ceramic shear structure, with a wide-band frequency response, high-quality piezoelectric ceramic with long-term stability can ensure years of accurate measurement. Built-in low impedance circuit, low noise, better sensitivity temperature response and other characteristics. The shell is made of titanium alloy with lower density and laser welding. Each of the three axial directions is equipped with calibration holes for easy calibration and mounting, and an insulated mounting kit is standard.

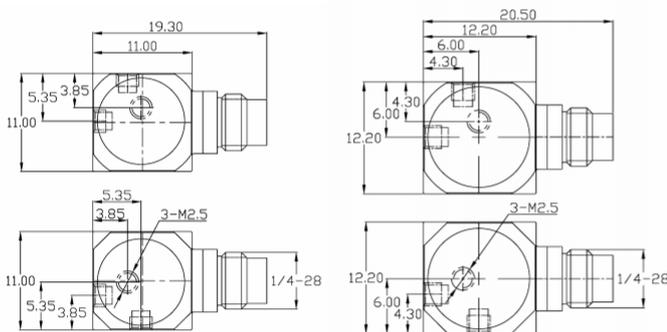
### FEATURES

- Integrated Microminiature Built-in
- One-point multi-axial measurement
- Shear structure, stable and reliable
- Insulated mounting base as standard

### TYPICAL APPLICATIONS

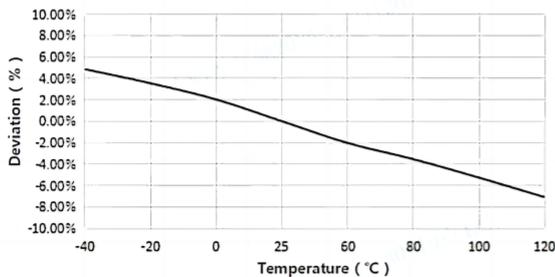
- Powertrain NVH
- HASS/HALT
- Modal structure and analysis

**Fig\_1** Dimensions of BXXY31

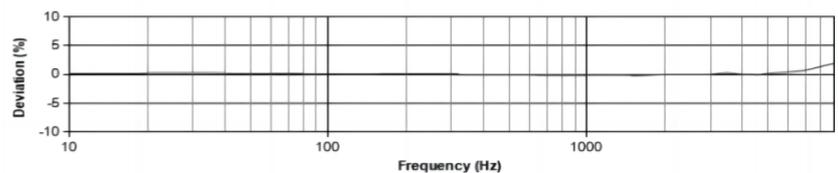


BXXY31

**Fig\_2** Typical Temperature Response



**Fig\_3** Typical Frequency Response



## Specifications-BXXY31

MODEL NUMBER	UNIT	B01Y31	B02Y31	B03Y31	B05Y31	B06Y31
<b>PERFORMANCE</b>						
Sensitivity ( $\pm 5\%$ ) <sup>1</sup>	mV/g	5( $\pm 10\%$ )	10( $\pm 10\%$ )	20	50	100
	mV/(m/s <sup>2</sup> )	0.5	1	2	5	10
Measurement Range	g	$\pm 1000$	$\pm 500$	$\pm 250$	$\pm 100$	$\pm 50$
Broadband Resolution <sup>2</sup>	g rms	0.002	0.001	0.0005	0.0002	0.0001
Non-Linearity <sup>3</sup>	%	1				
Frequency Range	$\pm 5\%$	1-9k	1-8k	1-8k	1-7k	1-7k
	$\pm 10\%$	0.5-10k	0.5-10k	0.5-10k	0.5-9k	0.5-9k
Resonance Frequency <sup>2</sup>	Hz	$\geq 70k$	$\geq 70k$	$\geq 70k$	$\geq 39k$	$\geq 35k$
Discharge Time Constant <sup>2</sup>	s	$\leq 1$				
Transverse Sensitivity	%	$\leq 5$				
<b>ELECTRICAL</b>						
Excitation Voltage	VDC	20-30				
Constant Current Excitation	mA	2-20				
Output Impedance	$\Omega$	$\leq 100$				
Output Bias Voltage	V	8-12				
Electrical Isolation	$\Omega$	-				
Spectral Noise <sup>2</sup>	$\mu\text{g}/\sqrt{\text{Hz}}$	300	150	75	30	15
		80	40	20	8	4
		40	20	10	4	2
<b>ENVIRONMENTAL</b>						
Sinusoidal Vibration Limit <sup>4</sup>	g rms	2500	2000	1200	800	400
Shock Limit <sup>4</sup>	g pk	8000	5000	3000	2000	1000
Temperature Range	$^{\circ}\text{C}$	-40-120				
	$^{\circ}\text{F}$	-40-248				
Temperature Response <sup>2</sup>	$\%/^{\circ}\text{C}$	-0.1				
<b>PHYSICAL</b>						
Sealing	-	Laser welding IP68				
Sensing Element	-	Piezoelectric ceramics				
Housing Material	-	Titanium alloy				
Size	mm	11.00 Cube			12.20 Cube	
	in	0.433 Cube			0.480 Cube	
Electrical Connector	-	1/4-28 4-pin Side				
Mounting Thread	-	M2.5				
Weight <sup>2</sup>	g	4.2	4.8	5	6.5	7.6
	oz	0.148	0.169	0.176	0.229	0.268
TEDS Optional <sup>5</sup>	-	Yes				

## Additional Information

### Note:

- @ 160Hz, 24VDC, 4mA conditions
- Typical values
- JBT 6822-2018 7.12.1 Vibration Testing Method
- References the mechanical structure of the sensor not being damaged in a non powered state, rather than in a working state
- Some products may have changes in size after adding TEDS

### BXXY31

Supplied Accessories:

- Product Verification Report
- Install Screws

### COMPLIANCE WITH STANDARDS



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