B01A01 · B02A01 · B03A02 · B05A06 · B06A14

IEPE Miniature Accelerometer



B01A01 | B02A01 | B03A02 | B05A06 | B06A14

±50 g … ±1000 g · 0.5 Hz … 12 kHz · 4.5 – 8.5 g · M5 top connector

The BXXAXX series miniature accelerometers use a shear-mode piezoelectric ceramic element with wide-band frequency response and long-term stability for years of accurate measurement. A built-in low-impedance circuit provides low noise and stable sensitivity over temperature. The laser-welded housing is available in stainless steel or titanium alloy, with a high sealing grade and strength, and has an M3 mounting thread in the base.

FEATURES

- Miniature built-in electronics
- Small and lightweight
- Memory-alloy fastener and shear structure for stable, reliable performance

TYPICAL APPLICATIONS

- Modal analysis
- Vibration control
- General vibration monitoring

SPECIFICATIONS

MODEL	B01A01	B02A01	B03A02	B05A06	B06A14	UNIT
PERFORMANCE						
Sensitivity [1]	5 (±10%)	10 (±10%)	20	50	100	mV/g
	0.5	1	2	5	10	mV/(m/s²)
Measurement range	±1000	±500	±250	±100	±50	g
Frequency range, ±5%			1–10k			Hz
Frequency range, ±10%			0.5–12k			Hz
Resonance frequency [2]	≥90k	≥65k	≥60k	≥44k	≥37k	Hz
Broadband resolution [2]	0.002	0.001	0.0005	0.0002	0.0001	g rms
Spectral noise [2] @ 10 Hz	300	150	75	30	15	μg/√Hz
@ 100 Hz	80	40	20	8	4	μg/√Hz
@ 1 kHz	40	20	10	4	2	μg/√Hz
Non-linearity [3]			≤1			%
Transverse sensitivity			≤5			%
Discharge time constant [2]			1			s

Specifications continued on next page

SPECIFICATIONS (CONTINUED)

MODEL	B01A01	B02A01	B03A02	B05A06	B06A14	UNIT
ENVIRONMENTAL						
Sine vibration limit [4]	4000	3000	2000	800	400	g rms
Shock limit [4]	8000	8000	5000	2000	1000	g pk
Temperature range			-40 ~ 120			°C
			-40 ~ 248			°F
Temperature coefficient [2]			-0.1			%/°C
Temperature response [2]			See Fig. 3			—
Sealing			Laser welded, IP68			—
ELECTRICAL						
Excitation voltage			20 – 30			VDC
Constant current excitation			2 – 20			mA
Output impedance			≤100			Ω
Output bias voltage			8 – 12			V
PHYSICAL						
Sensing element			Piezoelectric ceramic, shear			—
Housing material			Stainless steel / titanium alloy [6]			—
Size	HEX 10.1×18.8	HEX 10.1×18.8	HEX 10.1×18.8	HEX 11×20.7	HEX 11×20.7	mm
	HEX 0.40×0.74	HEX 0.40×0.74	HEX 0.40×0.74	HEX 0.43×0.82	HEX 0.43×0.82	in
Weight [2, 6]	6 / 4.5	6 / 4.5	6 / 4.5	8.5 / 5	5.3	g
	0.217 / 0.159	0.217 / 0.159	0.217 / 0.159	0.300 / 0.176	0.187	oz
Electrical connector			M5 top (opt. 10-32)			—
Mounting thread	M3	M3	M3	M5 [7]	M5 [7]	—
TEDS model number [5]	20101A	20201A	20302A	20506A	20614A	—

1 Measured at 160 Hz, 24 VDC, 4 mA excitation.
2 Typical value.
3 Per JB/T 6822-2018 §7.12.1 vibration testing method.
4 Limit of the mechanical structure in a non-powered state, not a working limit.
5 Dimensions may change slightly with the TEDS option.
6 Stainless steel / titanium alloy housing; weights given as stainless / titanium. B06A14 is titanium alloy only.
7 Optional 10-32.
— Not specified.

TYPICAL RESPONSE

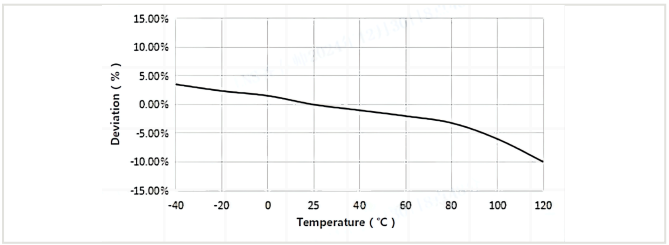


Fig. 3 — Typical temperature response

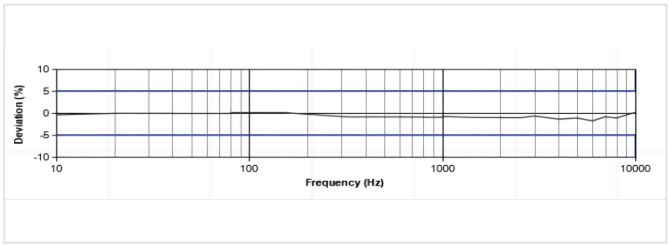


Fig. 4 — Typical frequency response

DIMENSIONS

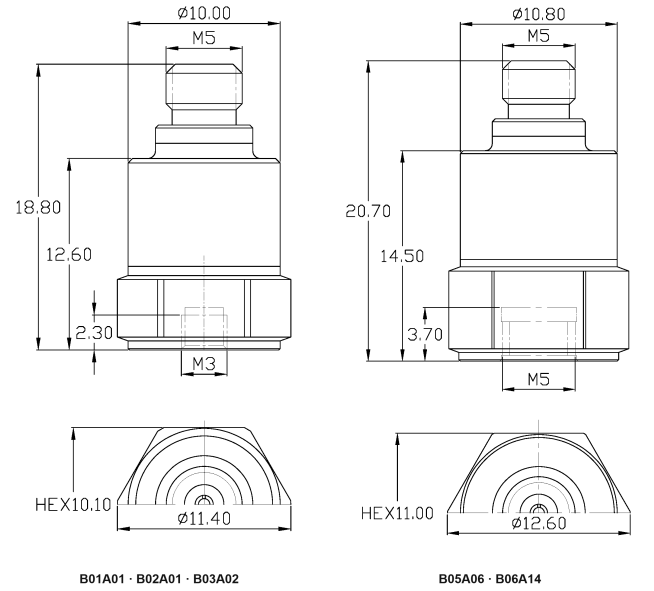


Fig. 2 — Dimensions, mm — left: B01A01 · B02A01 · B03A02 (M3 mount); right: B05A06 · B06A14 (M5 mount)

OPTIONS & ACCESSORIES

OPTIONAL VERSIONS

- **-A** 10-32 output connector
- **-E** 10-32 mounting thread
- **-M** Titanium alloy housing
- **-P** Phase optimized

RECOMMENDED ACCESSORIES

Cable **K01AB02 / K14AB02**

ORDERING INFORMATION

ORDER	SENSITIVITY	RANGE	FREQUENCY ±5%	SHOCK LIMIT
B01A01	5 mV/g	±1000 g	1–10k Hz	8000 g pk
B02A01	10 mV/g	±500 g	1–10k Hz	8000 g pk
B03A02	20 mV/g	±250 g	1–10k Hz	5000 g pk
B05A06	50 mV/g	±100 g	1–10k Hz	2000 g pk
B06A14	100 mV/g	±50 g	1–10k Hz	1000 g pk

SUPPLIED ACCESSORIES

– Product calibration certificate
– Mounting screws

CALIBRATION & COMPLIANCE

Every sensor is calibrated at 160 Hz (24 VDC, 4 mA) before shipment and ships with a product calibration certificate documenting measured sensitivity.

Vibration testing per JB/T 6822-2018. LNS Intelligent Technology is an ISO 9001:2015 certified manufacturer.

In the interest of continuous product improvement, LNS reserves the right to change specifications without notice. Values shown are typical unless stated otherwise.