

Capacitive Accelerometer

BST 53K1 Uniaxial

FEATURES

- Aluminium Housing, Anodized
- Option: Stainless Steel Housing
- DC Response (0 Hz) to 2500 Hz
- Very Low Noise
- High Voltage Output
- Calibration

APPLICATION

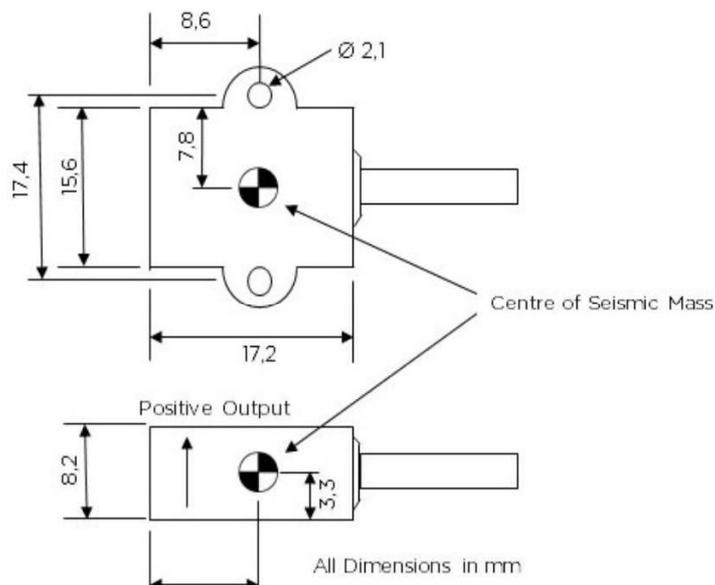
- Test Flight
- Truck and Buses
- Train
- Motion
- Automotive
- Comfort



DESCRIPTION

The model BST 53K1 is a small uniaxial accelerometer based on variable capacitive technology with a very good Signal-to-Noise Ratio. The accelerometers are designed for relatively low amplitudes. It can be easily mounted with two screws. The sensor has 6m very high rugged and flexible cable. This makes it easy to connect the sensor on data acquisition systems. It operates between 5 and 28 VDC unregulated. The housing is available in Aluminium and Stainless Steel. As an option, we supply the sensor with connector, Dallas ID or TEDS module. A calibration for the sensor is obligatory.

DIMENSIONS



SPECIFICATION ACCELEROMETER

All data are typical at 23 °C AND 10 VDC SUPPLY.

| Range (g) | 2 | 5 | 10 | 25 | 50 | 100 | 200 |
|-----------------------------------|-------|-------|-------|---------|---------|---------|---------|
| Frequency (Hz) | 0–250 | 0–300 | 0–450 | 0–1,000 | 0–1,500 | 0–2,000 | 0–2,500 |
| Sensitivity (mV/g) (Differential) | 2000 | 800 | 400 | 160 | 80 | 40 | 20 |
| Noise (µg/root Hz) | 7 | 12 | 18 | 25 | 50 | 100 | 200 |

Single Ended Mode (3-wire) is half of the Sensitivity from differential Signal.

ELECTRICAL PERFORMANCES

| | |
|-------------------------|--|
| Supply voltage | 5 to 28 VDC unregulated |
| Power Consumption | 10 mA max. |
| Zero measurement output | +/- 50 mV typ in Differential Mode (> 10 g) +/- 80 mV typ in Differential Mode (2 g and 5 g) 2500 mV DC +/- 50 mV in Single Ended Mode |
| Isolation | sensing element isolated from housing |

ENVIRONMENTAL PERFORMANCES

| | |
|-----------------------|---|
| Sensitivity | 20 mV/g (200 g) up to 2000 mV/g (2 g) (Differential Mode) |
| Shock limit | 4000 g (2 g and 5 g); 10000 g (>10 g) |
| Operation Temperature | - 50 °C to + 100 °C (120 °C for short time) |
| Storage Temperature | - 55 °C to + 125 °C |
| Protection Class | IP64 |
| Housing Material | Aluminium anodized, Option: Stainless Steel |
| Mounting | 2 Screws M2 |
| Dimensions | 24.4 x 17.2 x 8.2 mm (l x w x h) |
| Weight Housing | 7 grams, without cable |
| Cable | 4-wire shielded PUR-Cable, AWG 30 |
| Cable Length | 6 m |
| Cable Material | PUR, black |
| Cable Weight | 12 grams per meter, Ø 3.0 mm |

CABLE CODE DIFFERENTIAL

red = Excitation +
black = Excitation -

green = Signal +
white = Signal -

CABLE CODE SINGLE ENDED

red = Excitation +
black = Excitation -

green = Signal +

ORDER INFORMATION

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| BST 53K1-050-6Z |
| 53K1 (E) = Model Name, (Stainless Steel) |
| 050 = Range 50 g |
| 6 = 6 m Cable |
| Z = no connector |

OPTIONAL

| |
|---|
| Stainless Steel housing |
| Additional Cable Length |
| Connector |
| TEDS |
| Dallas ID |
| Calibration DAkkS DIN EN ISO/IEC 17025:2018 |