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# BS-AQ31 Accelerometer



BS-AQ31 series quartz flexible accelerometer is a miniaturized, high-precision inertial navigation class accelerometer for a large number of military applications. The product has excellent long-term stability, repeatability, start-up performance, environmental adaptability and high reliability, which can be used for static and dynamic testing. It is also a standard vibration sensor and inclination sensor.

The product adopts a unique miniaturized design and packaging process, the output current and the force or acceleration is linear relationship, users can calculate and select the appropriate sampling resistance, to achieve high precision output. And according to user needs built-in temperature sensor, used to offset value and scale factor compensation, reduce the impact of environmental temperature.

Applications: inertial measurement of military inertial navigation system in aerospace, aviation, ships, weapons and other fields and precision instrument equipment vibration isolation test and inclination test.

## Features

1. Excellent turn-on repeatability performance
2. Environmentally rugged
3. Analog output
4. Field adjustable range
5. Smaller outline size ( $\leq 30\text{gram}$ )

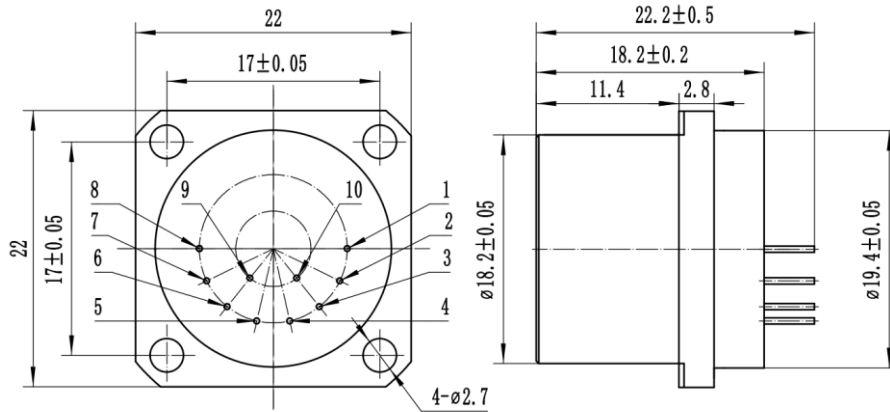
## Full product codes:

BS-AQ31A-60-A1ES

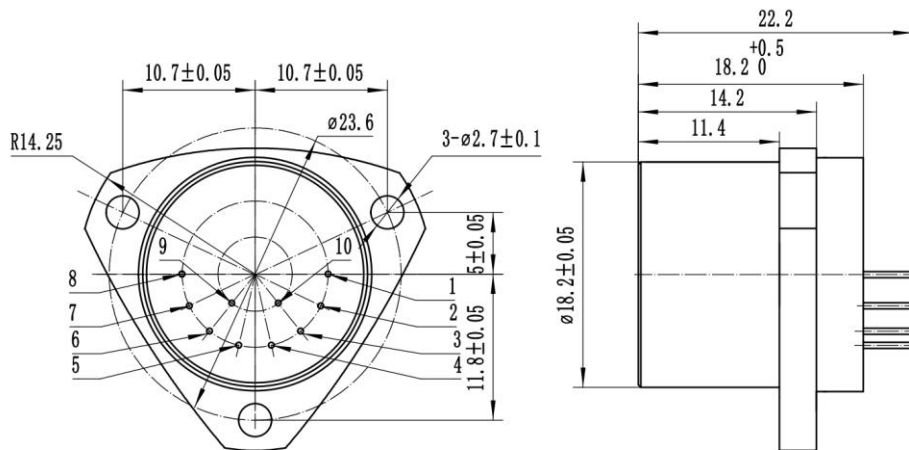
BS-AQ31B-60-A1ES

BS-AQ31C-60-A1ES

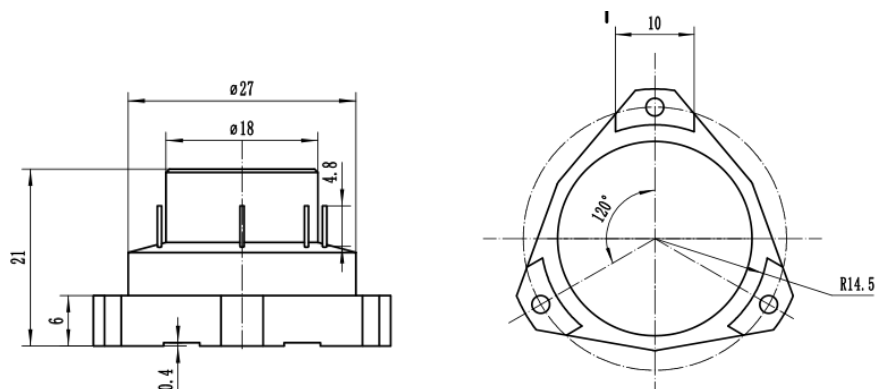
## Configuration Drawing and interface



Outline 1 for square



Outline 2 for triangle



Outline 3 for inverted triangle

## Performance characteristics

S/No	Parameters	BS-AQ31A	BS-AQ31B	BS-AQ31C
1	Range	±60g	±60g	±60g
2	Threshold /Resolution	5µg	5µg	5µg
3	Bias k0/k1	≤(±5 mg)	≤(±5 mg)	≤(±5 mg)
4	Scale factor k1	1.0±0.2 mA/g	1.0±0.2 mA/g	0.6±0.2mA/g
5	Class II nonlinearity coefficient k2/k1	≤±20µg /g2	≤±30µg /g2	≤±20µg /g2
6	0g 4 hours short time stability	≤10 µg	≤20 µg	≤20 µg
7	1g 4 hours short time stability	≤10 ppm	≤20 ppm	≤20 ppm
8	Bias drift Sigma k0( 1σ, one month)	≤15 µg	≤50 µg	≤50 µg
9	Repeatability of scale factor Sigma k1/k1( 1σ, one month)	≤15ppm	≤50 ppm	≤50ppm
10	Class II non-linearity Coefficient repeatability k2/k1(1σ, one month)	≤±20 µg /g2	≤±30 µg /g2	≤±30 µg /g2
11	Bias thermal coefficient	≤±15 µg /°C	≤±50 µg /°C	≤±50 µg /°C
12	Scale factor thermal coefficient	≤±15 ppm /°C	≤±80 ppm /°C	≤±50 ppm /°C
13	Noise (sample resistance 840Ω)	≤5mv	≤8.4mv	≤8.4mv
14	Natural Frequency	350~800 Hz	350~800 Hz	350~800 Hz
15	Bandwidth	800~2500 Hz	800~2500 Hz	800~2500 Hz
16	Vibration	10g(20-2000Hz)	10g(20-2000Hz)	10g(20-2000Hz)
17	Shock	150g,4.5ms, 1/2sin	150g,4.5ms, 1/2sin	150g,0.5ms, 1/2sin
18	Temperature range(Operating)	-55~+85°C	-55~+85°C	-55~+85°C
19	Temperature range(saved)	-60~+120°C	-60~+120°C	-60~+120°C
20	Power	±12~±15V	±12~±15V	±12~±15V
21	Consume current	≤±20mA	≤±20mA	≤±20mA
22	Temperature sensor	Option	Option	Option
23	Size	Φ18.2X23mm	Φ18.2X23mm	Φ18.2X23mm
24	Weight	≤30gram	≤30gram	≤30gram