# **AC-1: HIGH PRECISION QUARTZ ACCELEROMETER**



#### PRODUCT DESCRIPTION

AC-1 quartz flexible accelerometer series is a high-precision military inertial navigation class accelerometer with excellent long-term stability, repeatability, start-up performance, environmental adaptability and high reliability. It can be used for both static and dynamic testing, and it is also a standard vibration sensor and inclination sensor. The output current of the product has a linear relationship with the force or acceleration received. Users can select the appropriate sampling resistance through calculation 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.

### PRODUCT MAIN SPECIFICATION

# PRODUCT DIMENSION

Parameters	AC-1A	AC-1B	AC-1C	Unit	
Range	±50 (10Ω)		g	Rs (Top.) 14.4±0.05 14.4±0.05 25.3-0.1	
Threshold /Resolution	1	2	3	μg	99.3 a17.36 3-e3.5
Bias k0/k1	≤±1	≤±3	≤±5	mg	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Scale factor kl	1.05~1.30		mA/g	9 10 10 10 10 10 10 10 10 10 10 10 10 10	
Class II nonlinearity coefficient					98 7 2 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
k2/k1	≤±10	≤±15	≤±20	μg /g2	14.7±0.3
0g 4 hours short time stability	≤10	≤10	≤15	μg	29.3±1
1g 4 hours short time stability	≤10	≤10	≤15	ppm	to shall be also to the one
Bias drift					Install hole is U type
Sigma k0( 10, one month)	≤10	≤20	≤30	μg	
Repeatability of scale factor Sigma					
kl/kl(1σ, one month)	≤15	≤30	≤50	ppm	25.3
,					130° 031.8 5.2
Class II nonlinearity				, .	8
Coefficient repeatability k2/k1	≤±10	≤±20	≤±30	μg /g2	6
(1σ, one month)					5 4 1 14.7±0.1
Bias thermal coefficient	≤±10	≤±30	≤±50	μg /°C	#3.5 29.3±0.5
Scale factor thermal coefficient	≤±10	≤±30	≤±50	ppm /℃	
Noise (sample resistance 840Ω)	≤5	≤8.4	≤8.4	mv	Install hole is U type, 8 pin
Natural Frequency	400~800			Hz	install flole is 0 type, 8 pill
Bandwidth	800~2500			Hz	
Vibration	6g			Hz	#9.3 #17.36 25.3-0.1
Shock	100g			8ms, 1/2s in	92.3
Temperature range (Operating)	-55~+85			$^{\circ}$	5.2
Temperature range (saved)	-60~+120			°C	88.2±0.10 10 10 10 10 10 10 10 10 10
Power	±12~±15			V	6 3
Consume current	≤±20			mA	5 20.5±0.05 4 14.7±0.3 29.3±1
Temp. sensor	PT1000/AD590			Optional	27.321
Size	Ф25.4Х30			mm	
Weight	≤80			g	Install hole is square

# **■ PRODUCT APPLICATION**

 Inertial measurement of military high-precision inertial navigation system and vibration isolation test of precision instruments and equipment in aerospace, aviation, ships, weapons and other fields