

AIS 4120L

Capacitive Accelerometer Uniaxial



Features

The Model **AIS 4120L** model is an uniaxial, capacitive accelerometer with low mass. The sensor is over a wide range temperature compensated. Small measuring ranges are possible due to capacitive technology. The signal is independent from the power supply between 9Vdc to 24Vdc, optional 30Vdc.

The sensor is adaptive for automotive and industrial applications. For adhesive mounting.

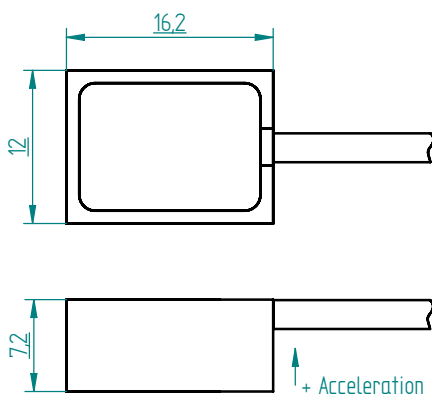
- Range $\pm 10g$ to $\pm 400g$
- Temperature Compensated from -55°C to $+125^{\circ}\text{C}$
- Responds to DC and AC Acceleration
- Amplified Output
- High Stability
- Low Noise: $7\mu\text{g}/\sqrt{\text{Hz}}$ typical for 2g FSO
- Excellent Long Term Stability
- Adhesive Mounting
- Aluminium Housing, optional Stainless Steel

Applications

- Vibration Monitoring
- Vehicle Dynamics
- Machine Control
- Automotive Dynamics

Service

- Sinusoidal Calibration
- Pendulum Calibration
- Repairable



AIS 4120L Capacitive Accelerometer / Uniaxial

Individual Technical Data $V_{DD}=V_R=5.0$ VDC, $T_C=25^\circ\text{C}$, Differential. Span = $\pm g$ range = 8000mV

AIS 4120L Performance			
Range (g)	Sensitivity (mV/g)	Frequency Response (Minimum 3 dB) (Hz)	Output Noise ($\mu\text{g}/\text{root Hz}$)
10	400	0 – 600	18
25	160	0 – 900	25
50	80	0 – 1200	50
100	40	0 – 1400	100
200	20	0 – 1750	200
400	10	0 – 2000	400

Cable Code	
Supply +	Red
Supply -	Black
Output +	Green
Output -	White

New „Wide Band“ sensor by next year 2017

AIS 4120L Performance				
		min.	typ.	max.
Bias Calibration Error	(% of Span)			
	$\pm 2 \text{ g} - \pm 400 \text{ g}$	-	0.2	0.5
Bias Temperature Shift (-55 °C – +125 °C) (ppm of Span/°C)				
	$\pm 2 \text{ g} - \pm 400 \text{ g}$	-	50	+200
Scale Factor Temperature Shift (-55 °C – +125 °C) (ppm/°C)				
	$\pm 2 \text{ g} - \pm 400 \text{ g}$	-200	0	+200
Non-Linearity (-90 to +90% of span) ($\pm\%$ of span)				
	$\pm 2 \text{ g} - \pm 400 \text{ g}$	-	0.15	0.5
Long Term Scale Factor Stability ($\pm\text{ppm}$)				
	$\pm 2 \text{ g} - \pm 400 \text{ g}$	-	500	1000

Order Information		
AIS 4120L-XXX-XXX		
1	2	3
1 Model		
2 Range		
3 Cable Length and Pinout		

Export Classification: EAR99 for $\pm 2g$ to $\pm 100g$

General Technical Data

AIS 4120L Performance				
		min.	typ.	max.
Supply Voltage	(V) ¹	9	-	30
Cross Axis Sensitivity	(%) ²	-	2	3
Output Impedance	(Ω)	-	90	-
Operating Current ($I_{DD}+I_{VR}$)	(mA) ⁴	-	5	6
Max. Mechanical Shock (0.1 ms)	(g) ³	-	-	5000
Operating Temperature	(°C)	-45	-	+95
Material Housing		Aluminium		
Weight Sensor	(g)	4		
Material Cable		Polyurethane		
Weight Cable nom. each meter	(g)	14		

1) Performance chip 5.0VDC, additional circuit for 9 to 24VDC, optional 30VDC

2) Max. 3% after assembling in housing

3) Max. Mechanical Shock (0.1 ms)
 $\pm 002 \text{ g}$ to $\pm 005 \text{ g} = 2000 \text{ g}$
 $\pm 010 \text{ g}$ to $\pm 400 \text{ g} = 5000 \text{ g}$

4) Operating current chip typ. 5 mA