

AIS 3520L

Capacitive Accelerometer Uniaxial, screw mounting



Features

The Model **AIS 3520L** is an uniaxial, capacitive accelerometer. The sensor is over a wide range temperature compensated. The 3520L was designed with a protective circuit for overvoltage protection up to 600 Volt. The cube form allows multiple screw mounting. The sensor is adaptive for automotive and industrial applications. The model AIS 3520L has a low noise performance and improved scale factor stability and temperature behavior due to drop in next generation of MEMS Technology.

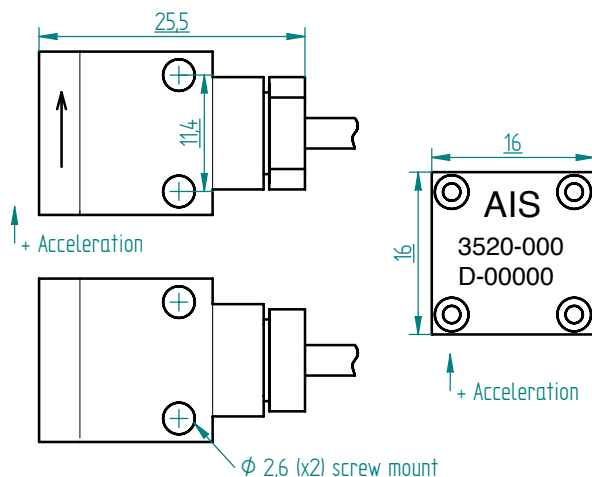
- Range $\pm 2g$ to $\pm 400g$
- Temperature Compensated from -55°C to $+125^{\circ}\text{C}$
- Differential or Single Ended Mode
- Responds to DC and AC Acceleration
- Amplified Output
- Improved Scale Factor Stability
- Low Noise: $7\mu\text{g}/\sqrt{\text{Hz}}$ typical for 2g FSO
- Excellent Long Term Stability
- Overvoltage Protection up to 600 Volt
- Aluminium Housing

Applications

- Vibration Monitoring
- Seismic Monitoring
- Vehicle Dynamics
- Machine Control
- Helicopter Monitoring

Service

- Sinusoidal Calibration
- Different cable length
- Repairable
- Signal Conditioning
- Protective Circuit



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

AIS 3520L Performance			
Range (g)	Sensitivity (mV/g)	Frequency Response (Minimum 3 dB) (Hz)	Output Noise ($\mu\text{g}/\text{root Hz}$)
2	2000	0 – 300	7
5	800	0 – 400	12
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 3520L Performance				
		min.	typ.	max.
Bias Calibration Error	(% of Span)			
	$\pm 2 g - \pm 400 g$	-	0.2	0.5
Bias Temperature Shift (-55 °C – +125 °C) (ppm of Span/°C)				
	$\pm 2 g - \pm 400 g$	-	50	+200
Scale Factor Temperature Shift (-55 °C – +125 °C) (ppm/°C)				
	$\pm 2 g - \pm 400 g$	-200	0	+200
Non-Linearity (-90 to +90% of span) ($\pm\%$ of span)				
	$\pm 2 g - \pm 400 g$	-	0.15	0.5
Long Term Scale Factor Stability ($\pm\text{ppm}$)				
	$\pm 2 g - \pm 400 g$	-	500	1000

Order Information		
AIS 3520L-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 3520L 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 ⁵		Aluminium		
Weight Sensor	(g)	13		
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)
 $\pm 002 g$ to $\pm 005 g = 2000 g$
 $\pm 010 g$ to $\pm 400 g = 5000 g$

4) Operating current chip typ. 5 mA, in modul typ 20 mA

5) Optional low impedance output driver and overvoltage protection circuit