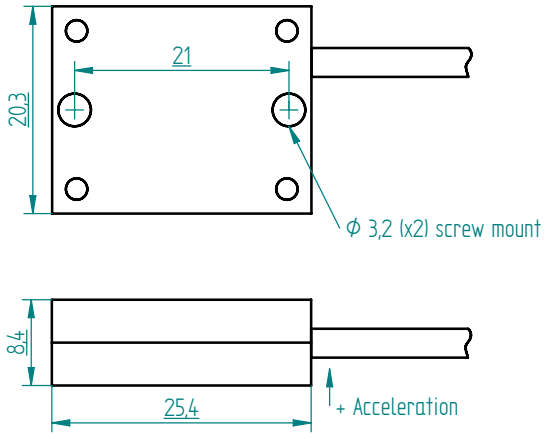
AIS 4420L

Capacitive Accelerometer
Uniaxial, screw mounting

Features

The Model **AIS 4420L** is an uniaxial, capacitive accelerometer. The sensor is over a wide range temperature compensated. The AIS 4420L was designed for standard vibration monitoring with 5 Volt regulation inside sensor housing. The sensor is adaptive for different areas of vibration control. The AIS 4420L has a low noise performance and improved scale factor stability and temperature behavior due to drop in next generation of MEMS Technology.

- ❑ Range ± 2g to ± 400g
- ❑ Integrated 5 Volt regulation
- ❑ Temperature Compensated from -55°C to +125°C
- ❑ Differential or Single Ended Mode
- ❑ Responds to DC and AC Acceleration
- ❑ Amplified Output
- ❑ Improved Scale Factor Stability
- ❑ Low Noise: 7µg/√Hz typical for 2g FSO
- ❑ Aluminium Housing, hard anodized



Applications

- ❑ Vibration Monitoring
- ❑ Vehicle Dynamics
- ❑ Machine Control

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, $T_C=25°C$, Differential. Span = ±g range = 8000mV

AIS 4420L Performance			
Range (g)	**Sensitivity** (mV/g)	**Frequency Response (Minimum 3 dB)** (Hz)	**Output Noise** (µg/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 4420L Performance				
		min.	**typ.**	**max.**
Bias Calibration Error	(% of Span)			
	±2 g – ±400 g	–	0.2	0.5
Bias Temperature Shift (-55 °C – +125 °C)	(ppm of Span/°C)			
	±2 g – ±400 g	–	50	+200
Scale Factor Temperature Shift (-55 °C – +125 °C)	(ppm/°C)			
	±2 g – ±400 g	-200	0	+200
Non-Linearity (-90 to +90% of span)	(±% of span)			
	±2 g – ±400 g	–	0.15	0.5
Long Term Scale Factor Stability	(±ppm)			
	±2 g – ±400 g	–	500	1000

Order Information
AIS 4420L-XXX-XXX
1 2 3
1 Model
2 Range
3 Cable Length and Pinout

Export Classification: EAR99 for ±2g to ±100g

General Technical Data

AIS 4420L 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)	10		
Material Cable		Polyurethane[4, 6]		
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
±002 g to ±005 g = 2000 g
±010 g to ±400 g = 5000 g

4) With high temperature cable up to 150 °C

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

6) Optional low impedance output driver