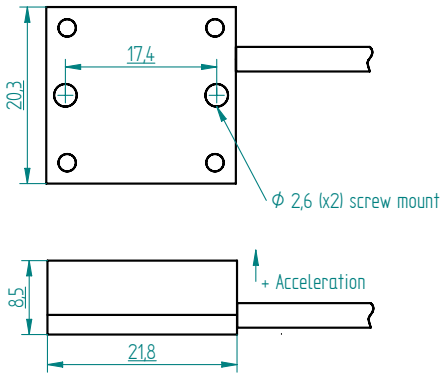
AIS 4825L

Capacitive Accelerometer
Uniaxial

Features

The Model **AIS 4825L** is an uniaxial capacitve accelerometer. The 4825L was designed to support the harsh conditions of vehicle dynamics, and the 2g version is ideally suited for seismic applications. Due to asymmetric housing the 4825L offers protection class IP67.
The sensor is over a wide range from -55°C to +125°C temperature compensated and optional minimal exposure at +175°C recommended for maximum lifespan. The sensor is relatively insensitive to temperature changes and gradients. Small measuring ranges are possible due to capacitive technology with excellent long term stability. The signal is independent from the power supply between 9Vdc to 24Vdc optional up to 30Vdc. The flexible and rugged cable provides a simple mounting.



- ❑ Range ± 2g to ± 400g
- ❑ Temperature Compensated from -55°C to +125°C
- ❑ Responds to DC and AC Acceleration
- ❑ Amplified Output
- ❑ High Stability
- ❑ Low Noise: 7µg/√Hz typical for 2g FSO
- ❑ Excellent Long Term Stability
- ❑ Double Side Labeled
- ❑ Stainless Steel Housing

Applications

- ❑ Vibration Monitoring
- ❑ Down Hole
- ❑ Seismic Monitoring
- ❑ Vehicle Dynamics
- ❑ Machine Control
- ❑ Misuse Monitoring
- ❑ Truck Testing
- ❑ Train Application

Service

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

AIS 4825L Capacitive Accelerometer / Uniaxial

Individual Technical Data $V_{DD}=V_R=5.0$ VDC, $T_C=25°C$, Differential. Span = ±g range = 8000mV

AIS 4825L 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 4825L 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 4825L-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 4825L Performance				
		min.	**typ.**	**max.**
Supply Voltage	(V)[1]	9	–	30
Cross Axis Sensitivity	(%)[2]	–	2	3
Output Impedance	(Ω)[7]	–	90	–
Operating Current ($I_{DD}+I_{VR}$)	(mA)[6]	–	5	6
Max. Mechanical Shock (0.1 ms)	(g)[3]	–	–	5000
Operating Temperature	(°C)[4]	-45	–	+95
Material Housing		Stainless Steel[5]		
Weight Sensor	(g)	22		
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
±002 g to ±005 g = 2000 g
±010 g to ±400 g = 5000 g

4) With high temperature cable up to 150 °C

5) Protection class IP67 due to asymmetric housing and integral strain relief

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

7) Optional low impedance output driver