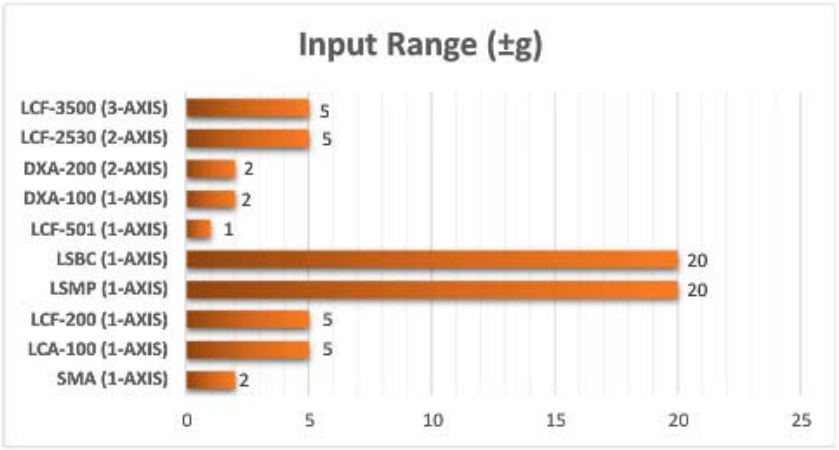
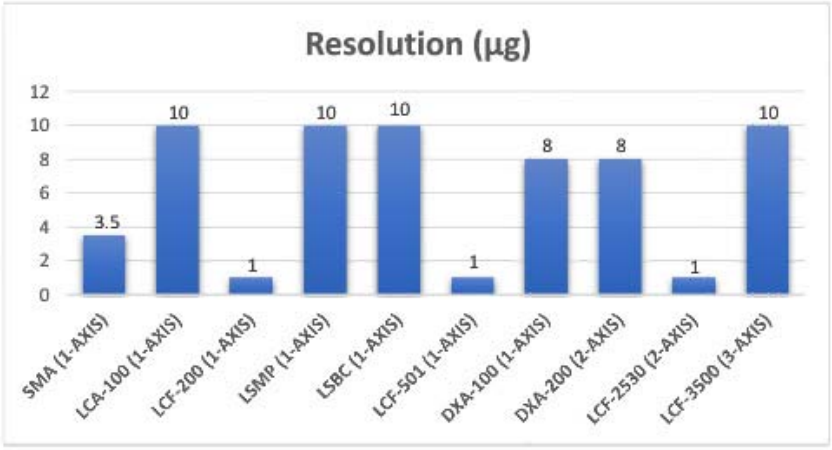
Linear Accelerometer Comparison Charts





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Rev 1

Linear Accelerometers

LCA-100 Series

Features & Benefits

- Built-in Output Filter
- DO-160 Quality Versions
- Available 28V Aircraft Input
- Connector or Pin Config
- 0.20% 10-year Scale Factor

Applications

- Aircraft Flight Controls
- Aircraft Fatigue Monitoring
- Aircraft Autopilot System Input
- Aircraft Wind-shear Detect
- Double Integrated Railcar Pos
- Train Performance Testing

LCF-200 Series

Features & Benefits

- ±0.5g to ±5.0g Full Range
- Filtering 5 to 100 Hz Bandwidth
- Exceptional Bias and Scale Factor
- High Level ±V dc Output
- 1,500g Shock Capability

Applications

- Geophysical Testing
- Railcar Accel/Decel Control
- Ocean Buoy Accel Sensing
- Aircraft Stability Control
- Aircraft Flight Testing
- Vehicle Roadway Profiling

LSM Series

Features & Benefits

- ±0.5g to 20g Full Range
- Filtering to 200 Hz Bandwidth w/0.6 Damping
- Satellite Application Reliability

Applications

- Satellite Nutation Sensing
- Radar Leveling
- Fire Control
- AHRS System Input
- Attitude Heading and Reference System

Performance Specs

Input Range (Ang: rads/sec², Lin: g)	±0.5	±1.0	±2.0	±5.0	±0.5	±1.0	±2.0	±5.0	±0.5	±5.0	±2.0	
Full Range Output (FRO V± 1.0%)	±5.0	±5.0	±5.0	±5.0	±5.0	±5.0	±5.0	±5.0	±5.0	±5.0	±5.0	
Non Linearity (%FRO' Max.)	0.05	0.05	0.05	0.02	0.05	0.05	0.05	0.02	0.05	0.10	0.05	
Scale Factor (Ang: V/rad/sec² Lin: V/g, Nom.)	10.0	5.0	2.5	1.0	10.0	5.0	2.5	1.0	10.0	1.0	2.5	
Scale Factor Temp Sens (% reading, PPM/°C, Max.)	180	180	180	180	100	100	100	100	200	200	200	
Bias (Ang: rad/sec², Lin: g, Dig: g, Max.)	±0.01	±0.01	±0.01	±0.01	±0.005	±0.005	±0.005	±0.005	±0.050	±0.010	±0.010	
Bias Temp Sens (FRO, PPM/°C, mg, Max.)	100.0	100.0	100.0	100.0	50.0	50.0	50.0	50.0	50.0	100.0	50.0	
Bandwidth (-3db) (Hz, Nom.)	60	60	60	60	30	30	30	30	70	100	140	
Damping Ratio (Nom)	-	-	-	-	-	-	-	-	0.5 to 0.9			
Transverse Axis Misalignment (°, Max.)	±0.71	±0.71	±0.71	±0.71	±0.71	±0.71	±0.71	±0.71	±0.71	±0.71	±0.71	
Resolution and Threshold (rad/sec², µg, Max.)	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0	10.0	10.0	10.0	

Electrical

Number of Axes	1				1				1			
Input Voltage (Vdc)	±12 to ±18				±12 to ±18				±12 to ±18			
Input Current (mA, Nom.)	±25				±15				±10			
Output Impedence (Ohms, Nom.)	100.0				100.0				10.0K	5.0K	2.5K	
Noise (Vms, Max.)	0.005				0.001				5.000			

Environmental

Operating Temperature Range	-55°C to +85°C				-40°C to +80°C				-55°C to +95°C			
Survival Temperature Range	-60°C to +90°C				-40°C to +90°C				-65°C to +105°C			
Vibration	0 g				20 g				20 g			
Shock	100 g				1000g, 1 msec, 1/2 sine				100 g, 0.011 sec, ½ sine			
Seal	MIL-STD-202, Method 112				MIL-STD-202, Method 112				MIL-STD-202, Method 112			

Mechanical

Weight	5.0 oz.				4.0 oz.				2.0 oz.			
Dimensions	1.38" W x 3.10" L x 1.50" H				1.38" W x 3.10" L x 1.50" H				1.05" W x 1.50" L x 1.235" H 1.39" Over Terminal Pins			
Custom Ability	No				No				Yes			

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Linear Accelerometers

	LSB Series	SMA Series	LCF-500 Series
			
Features & Benefits	• ±0.5g to 20g Full Range • Filtering to 200 Hz Bandwidth w/0.6 Damping • Satellite Application Reliability	• Low-cost, high precision solution • ±0.25g to ±2g Full Range • 3.5µg Resolution • -55°C to +85°C Operating Temperature Range	• Filtering Available • Exeptional Bias & Scale Factor • High Level ± Vdc Output • 1,000g Shock Capability
Applications	• Train Braking & Banking • Missile Orientation • Autopilot Systems • Train Performance Testing • Performance Testing	• Industrial Automation • OEM • Wind Turbine Motion Control • Robotics • Track Monitoring and Testing	• Railcar Acceleration Control • Railcar Harshness (NVH) • Train Performance Testing • Railcar Monitoring • Railcar Vibration Testing

Performance Specs

	LSB Series			SMA Series				LCF-500 Series	
Input Range (Ang: rads/sec², Lin: g)	±5.0	±10.0	±20.0	±0.25	±0.5	±1	±2	± 0.5	± 1.0
Full Range Output (FRO V± 1.0%)	±5.0	±5.0	±5.0	±5.0	±5.0	±5.0	±5.0	±5.0	±5.0
Non Linearity (%FRO' Max.)	0.10	0.50	0.25	0.02	0.02	0.05	0.05	0.02	0.02
Scale Factor (Ang: V/rad/sec² Lin: V/g, Nom.)	1.0	0.5	0.25	20	10	5	2.5	5	5
Scale Factor Temp Sens (% reading, PPM/°C, Max.)	200	200	200	100	100	100	100	100	100
Bias (Ang: rad/sec², Lin: g, Dig: g, Max.)	±0.010	±0.020	±0.050	±0.0025	±0.005	±0.01	±0.02	±0.004	±0.004
Bias Temp Sens (FRO, PPM/°C, mg, Max.)	100.0	100.0	100.0	85	100	140	200	50	50
Bandwidth (-3db) (Hz, Nom.)	100	140	160	5	5	5	5	75	75
Damping Ratio (Nom)	0.5 to 0.9			-	-	-	-	30	30
Transverse Axis Misalignment (°, Max.)	±0.71	±0.71	±0.71	1	1	1	1	2	2
Resolution and Threshold (rad/sec², µg, Max.)	10.0	20.0	50.0	3.5	3.5	3.5	3.5	1	1

Electrical

	LSB Series			SMA Series				LCF-500 Series	
Number of Axes	1			1				1	
Input Voltage (Vdc)	±12 to ±18			±12 to ±18				±12 to ±18	
Input Current (mA, Nom.)	±10			40				25	
Output Impedence (Ohms, Nom.)	10.0K	5.0K	2.5K	10				100	
Noise (Vms, Max.)	5.000			0.002				0.005	

Environmental

	LSB Series	SMA Series	LCF-500 Series
Operating Temperature Range	-55°C to +95°C	-55°C to +85°C	-40°C to +80°C
Survival Temperature Range	-65°C to +105°C	-60°C to +90°C	-60°C to +90°C
Vibration	20 g	-	20 g
Shock	100 g, 0.011 sec, ½ sine	500g, 1 msec, ½ sine	100g, 11 msec, ½ sine
Seal	MIL-STD-202, Method 112	IP65	MIL-STD-202, Method 112

Mechanical

	LSB Series	SMA Series	LCF-500 Series
Weight	5.0 oz.	4.0 oz.	8.0 oz.
Dimensions	1.10" W x 2.60" L x 1.235" H 1.657" Over Connector	1.55" W x 3.10" L x 1.52" H 2.04" Over Connector	1.38" W x 3.46" L x 1.65" H 2.15" Over Connector
Custom Ability	No	Yes	Yes

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	Dual Axis Accelerometer				Triple Axis Accelerometer			Digital Accelerometer			
	LCF-2530				LCF-3500			DXA-100/200 Series			
											
Features & Benefits	• ± 0.25 g to ± 5.0 g Full Range • Dual Axis Version of LCF-Series • High Accuracy and Superior Repeatability • -40°C to +80° C Operating Temp Range				• ±0.5g to ±5.0g Full Range • Filtering 5 to 100 Hz Bandwidth • Exceptional Bias & Scale Factor			• Resolution 8 µg • Mechanical Shock 1500 g 1msec ½ sine • Industry Standard RS485 & RS422 Output • High Precision and Performance			
Applications	• Satellite Nutation Sensing • Train Braking and Banking • Performance Testing • Attitude Heading and Reference Systems • Autopilot				• Geophysical Testing • Railcar Acceleration & Deceleration Control • Ocean Buoy Acel Sensing • Aircraft Stability Control • Vehicle Roadway Profiling			• Radar/Antenna Control • Structural Monitoring • Linear Acceleration/Deceleration Measuring • Automatic Train Position Control • Seismic Monitoring • Track Leveling			
Performance Specs											
Input Range (Ang: rads/sec², Lin: g)	± 0.25	± 0.50	± 1.00	± 5.00	±0.5	±2.0	±5.0	± 0.25	± 0.50	± 1.00	± 2.00
Full Range Output (FRO V± 1.0%)	± 5.0	± 5.0	± 5.0	± 5.0	±5.0	±5.0	±5.0	± 0.25	± 0.50	± 1.00	± 2.00
Non Linearity (%FRO' Max.)	0.02	0.02	0.02	0.10	0.05	0.05	0.05	0.02	0.02	0.05	0.03
Scale Factor (Ang: V/rad/sec² Lin: V/g, Nom.)	20.00	10.00	5.00	1.00	10	2.50	1.00	0.05	0.05	0.05	0.05
Scale Factor Temp Sens (% reading, PPM/°C, Max.)	100	60	60	100	100	100	100	100	100	100	100
Bias (Ang: rad/sec², Lin: g, Dig: g, Max.)	±0.001	±0.002	±0.004	±0.005	±0.005	±0.005	±0.005	1	1	1	1
Bias Temp Sens (FRO, PPM/°C, mg, Max.)	0.001	0.0005	0.0003	0.0003	100.0	100.0	100.0	90.0	90.0	90.0	90.0
Bandwidth (-3db) (Hz, Nom.)	30	30	30	30	30	30	30	30	30	30	30
Damping Ratio (Nom)	-	-	-	-	30.0	30.0	30.0	-	-	-	-
Transverse Axis Misalignment (°, Max.)	±0.50	± 1.00	± 1.00	± 1.00	±1.0	±1.0	±1.0	0.5	0.5	0.5	0.5
Resolution and Threshold (rad/sec², µg, Max.)	1.0	1.0	1.0	1.0	10.0	10.0	10.0	8.0	8.0	8.0	8.0
Electrical											
Number of Axes	2				3			1 or 2			
Input Voltage (Vdc)	±12 to ±18				±12 to ±18			±10 to ±30			
Input Current (mA, Nom.)	±50				±15			DXA-100 ±80 mA/DXA-200 ±70 mA			
Output Impedence (Ohms, Nom.)	100.0				100.0			-			
Noise (Vms, Max.)	0.002				0.002			0.005			
Environmental											
Operating Temperature Range	-40°C to +80°C				-40°C to +80°C			-40°C to +70°C			
Survival Temperature Range	-60°C to +90°C				-60°C to +90°C			-40°C to +75°C			
Vibration	20 g				20 g			20 g			
Shock	1000g, 1msec, 1/2 sine				1000g, 1msec, 1/2 sine			1500g, 1msec, 1/2 sine			
Seal	MIL-STD-202, Mtd 112				MIL-STD-202, Mtd 112			MIL-STD-202, Mtd 112			
Mechanical											
Weight	8.0 oz.				16 oz.			DXA-100 8 oz./DXA-200 10 oz.			
Dimensions	3.609" L x 1.62" W x 1.83" H				3.25" L x 2.75" W x 2.75" H			3.609" L x 1.62" W x 1.83" H			
Custom Ability	Yes				Yes			Yes			