5511 LN

MEMS Capacitive Accelerometer

- *Triaxial*
- *Ultra Low Noise (LN)*
- *High g-Range*
- *8 or 12 Wire System*
- *Amplified Output*
- *Aluminium Housing / Stainless Steel Housing*
- *Made in Germany*

Features

- *Range: ±2g to ±400g*
- *DC Response*
- *Protection Class IP67*
- *High Shock Resistance*
- *Gas Damped*
- *Excellent Bias and Scale Factor Stability*
- *Differential Mode*

Options

- *Customised Cable Length*
- *Customised Connector*
- *TEDS Module*

Applications

- *Structural Monitoring and Testing*
- *Endurance Testing*
- *Brake Test*
- *Vibration Monitoring*
- *Civil Engineering*
- *Modal Analysis*
- *Vehicle Testing*
- *Automotive Ride Quality & Comfort*
- *Railway Engineering*
- *Flutter Test*

Capacitive MEMS Technology

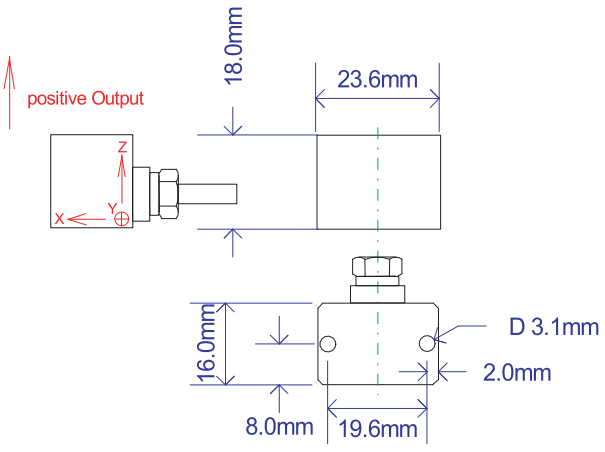
The accelerometers are based on a capacitive MEMS technology and can be used in a low frequency response up from 0Hz. Inside the sensor element, the seismic mass is connected with two conductive capacitor plates. If the seismic mass oscillates between the two capacitor plates the capacitance will change. This capacitance change is converted via an ASIC (Application Specific Integrated Circuit) into an analog signal.

Description

The models ASC 5511LN and ASC 5515LN have been developed for the demanding requirements of different applications. The highly robust housing and the connecting cables are suitable for the rough application areas in automotive, train, military and so on. These ASC accelerometers benefit from the high stability of the chip technology with a low noise level and a low bias and an excellent scale factor temperature coefficient.

The ASC 5511LN and ASC 5515LN are fully compensated over a wide temperature range and are factory calibrated. As capacitive technology is used, extremely small measuring ranges are possible. The amplified output is easy to use with a data acquisition unit. The signal is independent from the power between +8VDC to + 30VDC.

A very high flexible and rugged cable provides a simple mounting. The ASC 5511LN and ASC 5515LN are equipped with 6 meter cable as standard.



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Typical Specifications

DYNAMIC

		Range (±g)							
		2	5	10	25	50	100	200	400
Sensitivity	mV/g	2000	800	400	160	80	40	20	10
Frequency response: ±5%	Hz	100	100	300	500	650	650	1000	1000
Amplitude non-linearity	% FSO				<1				
Transverse sensitivity	%				3				
Shock limit	±g	2000	2000	4000	4000	4000	4000	4000	4000
Recovery time	ms				<1				

ELECTRICAL

Excitation voltage	V DC				8-30				
Supply current	mA				10				
Zero acceleration output	±mV	150	150	80	80	80	80	80	80
Output Impedance	Ω				100				
Isolation					Case Isolated				
Spectral noise	µg/√Hz	7	12	18	25	50	100	200	400
Residual / Broadband noise (±5% frequency range)	µV	100	60	70	90	100	100	125	125

ENVIRONMENTAL

Thermal sensitivity shift	%/°C				0.015				
Thermal zero shift	mg/°C	0.15	0.4	0.75	2	4	7.5	15	30
Operating temperature range	°C				-40°C to +100°C				
Storage temperature range	°C				-55ºC to +125ºC				
Humidity/Sealing					Epoxy sealed (IP67)				

PHYSICAL

Sensing element		MEMS Capacitive
Case material		Aluminium/Stainless Steel
Connector (at cable end)		Optional
Mounting		Adhesive / screw holes
Weight (without cable)	gram	ASC 5511LN: 22 gram ASC 5515LN: 42 gram
Cable		30 gram/meter; AWG 30, Polyurethane (PUR); Diameter: 4.4mm

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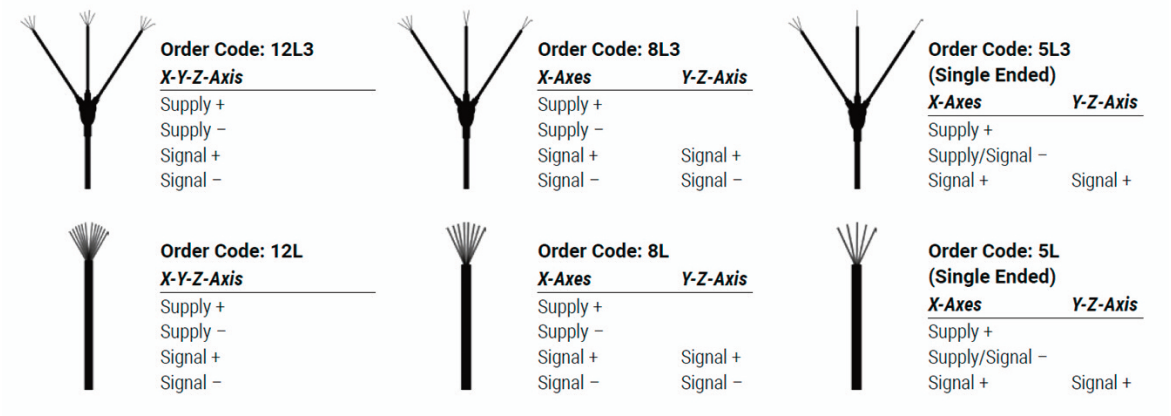
FACTORY CALIBRATION (SUPPLIED WITH THE SENSOR)

Range	2g and 5g	10g	25g	50g and 100g	200g and 400g
Sensitivity	at 16Hz and 0.5g	at 80Hz and 5g	at 80Hz and 15g	at 80Hz and 20g	at 80Hz and 20g
Frequency Response	10 to 100Hz	10 to 300Hz	10 to 500Hz	10 to 650Hz	10 to 1000Hz

CALIBRATION DIN ISO 17025 (ORDER SEPARATELY)*

Range	2g and 5g	10g	25g	50g and 100g	200g and 400g
Sensitivity	at 16Hz and 0.5g	at 80Hz and 5g	at 80Hz and 5g	at 80Hz and 20g	at 80Hz and 20g
Frequency Response	0.5 to 150Hz	10 to 500Hz	10 to 800Hz	10 to 1600Hz	10 to 2000Hz

CABLE CONFIGURATION



CABLE CODE / PIN CONFIGURATION		X-Axis	Y-Axis	Z-Axis
8-wiring-System	*Red: Supply +*	*Green/Violet: Signal +*	*Green/Grey: Signal +*	*Green: Signal +*
	Black: Supply -	*White/Violet: Signal -*	*White/Grey: Signal -*	*White: Signal -*
12-wiring-System		*Red/Violet: Supply +*	*Red/Grey: Supply +*	*Red: Supply +*
		Black/Violet: Supply -	*Black/Grey: Supply -*	*Black: Supply -*
		Green/Violet: Signal +	*Green/Grey: Signal +*	*Green: Signal +*
		White/Violet: Signal -	*White/Grey: Signal -*	*White: Signal -*

ORDERING INFORMATION

ASC	5511LN (Low Noise)	002	6	A	12L3
	Model number	Range (Ex. 050 is 50g)	Cable length (meters)	Connector & Pinout	Cable Config
				A: no connector	

Example: ASC 5511LN-002-6A-12L3

QUALITY

1) ASC is ISO 9001:2015 certified

2) The Deutsche Akkreditierungsstelle GmbH (DAkkS) has awarded to our calibration laboratory the DIN EN ISO/IEC 17025:2005 accreditation for calibrations and has confirmed our competence to perform calibrations in the field of mechanical acceleration measurements.

** accredited by the German accreditation body (Deutsche Akkreditierungsstelle, DAkkS) to DIN EN ISO / IEC 17025; the pictured DAkkS-ILAC logo refers exclusively to the accredited service*

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