g ASC OS-115LN
MEMS Capacitive Accelerometer

detachable cable

SPECIFICATIONS

- Uniaxial
- Ultra Low Noise (LN)
- High g-Range
- 4 Wire System
- Amplified Output
- Stainless Steel Housing
- Hermetically Sealed
- Made in Germany

FEATURES

- Range: ±2g to ±400g
- DC Response
- Protection Class IP68
- Salt Water Resistance
- High Shock Resistance
- Gas Damped
- Excellent Bias and Scale Factor Stability
- Differential Mode
- Detachable Cable

OPTIONS

- Customised Cable Length
- Customised Connector
- TEDS Module

APPLICATIONS

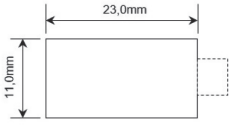
- Wind Energy
- Marine
- Structural Monitoring and Testing
- Endurance Testing
- Brake Test
- Vibration Monitoring
- Civil Engineering
- Modal Analysis
- Vehicle Testing
- Ride Quality & Comfort
- Railway Engineering

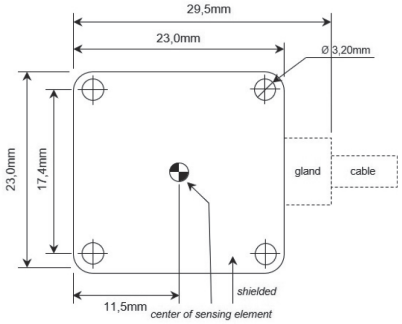
CAPACITIVE MEMS TECHNOLOGY

ASC's Offshore (OS) series capacitive accelerometers are based on capacitive sensing technology and produce an analog voltage output proportional to the input acceleration.The accelerometers can measure both static (gravity) and dynamic accelerations. ASC's OS series can be used for very low to medium frequency vibration measurements. The OS series features a MEMS sensor element where the seismic mass is connected between two conductive capacitor plates. When subjected to an input acceleration, the seismic mass oscillates between the two capacitor plates and there is a change in the capacitance. This change in capacitance is converted via an ASIC (Application Specific Integrated Circuit) into a low impedance analog voltage output signal.

DESCRIPTION

ASC's uniaxial capacitive accelerometers ASC OS-115LN are analog voltage output sensors and have been developed for the demanding requirements of offshore applications. The robusthousing and the connection cables are suitable for immersion in salt water and are designed to work at 1m water depth. The sensors can be powered by a DC power supply (+6V to +40V) where the output voltage is independent of the supply. They operate in a differential configuration, which results in an im-proved S/N ratio due to common-mode external noise rejection. ASC OS-115LN operate in a wide temperature range either from -15°C to +70°C (standard) or even -55°C to +125°C. The sen-sors exhibit exceptional temperature stability, very low non-linearity and can withstand shocks as high as 5000gpk. The hermetically sealed ASC OS-115LN sensors feature a robust and corro-sion proof stainless steel housing. A very high flexible and rugged cable provides a simple mounting. The sensors are supplied with 1 meter detachable cable as standard. Please see cable configuration.





Version | 10.2019

TYPICAL SPECIFICATIONS / ASC OS-115LN

DYNAMIC

Measurement 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	0 to 100	0 to 100	0 to 300	0 to 500	0 to 650	0 to 650	0 to 1000	0 to 1000
Amplitude Non-Linearity	% FSO	<0.5							
Transverse Sensitivity	%	typ. 1, max. 3							
Shock Limit	g_{pk}	2000	2000	5000	5000	5000	5000	5000	5000

ELECTRICAL

Excitation Voltage	V DC	6 to 40							
Supply Current	mA	10							
Zero Acceleration Output	±mV	80	80	40	40	40	40	40	40
Output Impedance	Ω	90							
Isolation		Case Isolated							
Spectral Noise	µg/√Hz	7	12	18	25	50	100	200	400
Residual / Broadband Noise (±5% Frequency Range)	µV	140	95	125	90	100	100	125	125

ENVIRONMENTAL

Thermal Sensitivity Shift	%/°C	0.02							
Thermal Zero Shift	mg/°C	0.15	0.5	1	2.5	5	10	20	40
Operating Temperature Range	°C	Standard: -15 to +70 with Cable K1 (Art.No. 12868) Optional: -55 to +125 with Cable K2 (Art. No 15342)							
Storage Temperature Range	°C	-55 to +125							
Protection Class		IP68							

PHYSICAL

Sensing Element	MEMS Capacitive
Case Material	Stainless Steel (Optional: Titanium)
Connector Housing	4-pin Comtronic
Connector at Cable End	Open end / customised
Mounting	Adhesive / screw holes
Weight (without cable)	gram 31
Cable K1: Art.No. 12868	14 gram/meter; AWG 30, Polyurethane (PUR), Diameter: 2.9 ± 0.15 mm, waterproof
Cable K2: Art.No. 15342	15 gram/meter; AWG 30, Fluorethylenpropylen (FEP), Diameter: 2.6 ± 0.15 mm, waterproof

CABLE CODE / PIN CONFIGURATION

Cable K1: Art.No. 12868	*Blue: Supply +*	*Brown: GND/Supply -*	*Black: Signal +*	*White: Signal -*
Cable K2: Art.No. 15342	*Red: Supply +*	*Black: GND/Supply -*	*Green: Signal +*	*White: Signal -*

Please note:
The housing is hermetically sealed and therefore not repairable.

Version I 10.2019

ASC OS-115LN / FACTORY CALIBRATION (SUPPLIED WITH THE SENSOR)

FACTORY CALIBRATION (SUPPLIED WITH THE SENSOR)

Measurement Range	2g and 5g	10g	25g	50g and 100g	200g and 400g
Sensitivity	5m/s²@16Hz	50m/s²@80Hz	100m/s²@80Hz	200m/s²@80Hz	200m/s²@80Hz
Frequency Response	1 to 100Hz	10 to 300Hz	10 to 500Hz	10 to 650Hz	10 to 1000Hz

CALIBRATION DIN ISO 17025 (ORDER SEPARATELY)

Measurement Range	2g and 5g	10g	25g	50g and 100g	200g and 400g
Sensitivity	5m/s²@16Hz	50m/s²@80Hz	100m/s²@80Hz	200m/s²@80Hz	200m/s²@80Hz
Frequency Response	0.5 to 150Hz	10 to 500Hz	10 to 800Hz	10 to 1600Hz	10 to 2000Hz

Conversion factor: 1g corresponds to 9,80665 m/s²

ORDERING INFORMATION

ASC	OS-115LN	002	K1	6A
	Model number	Range (Ex. 050 is 50g)	Cable Spec.	Cable Length, Connector & Pinout
				A: no connector

Example: ASC OS-115LN-002-K1-6A

Version | 10.2019