ALTHEN SENSORS & CONTROLS

g ASC OS-125MF
MEMS Capacitive Accelerometer

detachable cable

SPECIFICATIONS

- Uniaxial
- Medium Frequency Range
- 4 Wire System
- Amplified Output
- Stainless Steel Housing
- Hermetically Sealed
- Made in Germany

FEATURES

- Range: ±2g to ±200g
- Medium Frequency (MF) 0Hz to 1.8kHz
- 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

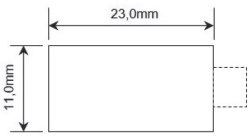
CAPACITIVE MEMS TECHNOLOGY

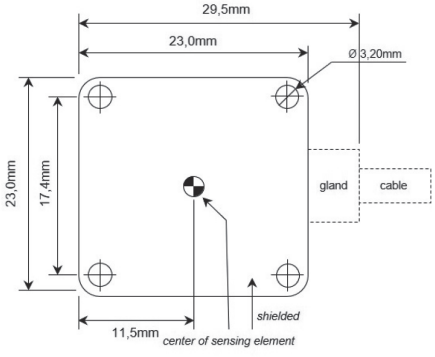
ASC's Offshore (OS) series capacitive accelerometers are based on capacitive sensing technology and produce an analog voltage output proportional to the input acceleration.The accelerometers can measure both static (gravity) and dynamic accelerations. ASC's OS series can be used for very low to medium 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-125MF are analog voltage output sensors and have been developed for the demanding requirements of offshore applications. The robust housing 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 (+5V 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-125MF 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 6000gpk. The hermetically sealed ASC OS-125MF sensors feature a robust and cor-rosion 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 config-uration.





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TYPICAL SPECIFICATIONS / ASC OS-125MF

DYNAMIC

Measurement Range	g	±2	±5	±10	±30	±50	±100	±200
Sensitivity	mV/g	1350	540	270	90	54	27	13.5
Frequency Response (±5%)	Hz	0 to 700	0 to 700	0 to 1400	0 to 1600	0 to 1800	0 to 1800	0 to 1800
Amplitude Non-Linearity	% FSO	<0.3						
Transverse Sensitivity	%	<3						
Shock Limit	g_{pk}	6000 (0.1ms, half-sine)						

ELECTRICAL

Excitation Voltage	V DC	5 to 40						
Supply Current	mA	10						
Zero Acceleration Output	±mV	<30						
Resistive Load	kΩ	>1000						
Isolation		Case Isolated						
Spectral Noise	µg/√Hz	10	20	35	100	170	340	680
Residual / Broadband Noise (±5% Frequency Range)	µV	250	250	360	360	390	390	390

ENVIRONMENTAL

Thermal Sensitivity Shift	%/°C	typ. 0.012						
Thermal Zero Shift	mg/°C	0.2	0.5	1	3	5	10	20
Operating Temperature Range	°C	Standard: -15 to +70 with Cable Art.No. 12868 (K1) Optional: -55 to +125 with Cable Art. No 15342 (K2)						
Storage Temperature Range	°C	-55 to +125						
IP 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.

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ASC OS-125MF

FACTORY CALIBRATION (SUPPLIED WITH THE SENSOR)

Measurement Range	2g and 5g	10g	30g	50g to 200g
Sensitivity	5m/s²@16Hz	50m/s²@80Hz	100m/s²@80Hz	200m/s²@80Hz
Frequency Response	1 to 100Hz	10 to 1400Hz	10 to 1600Hz	10 to 1800Hz

CALIBRATION DIN ISO 17025 (ORDER SEPARATELY)

Measurement Range	2g and 5g	10g	30g	50g to 200g
Sensitivity	5m/s²@16Hz	50m/s²@80Hz	100m/s²@80Hz	200m/s²@80Hz
Frequency Response	0.5 to 150Hz	10 to 2000Hz	10 to 2300Hz	10 to 2500Hz

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

ORDERING INFORMATION

ASC	OS-125MF	002	K1	6A
	Model number	Range (Ex. 050 is 50g)	Cable Spec.	Cable Length, Connector & Pinout
				A: no connector

Example: ASC OS-125MF-002-K1-6A

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