

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

**Features**

- ▶ Range:  $\pm 2g$  to  $\pm 400g$
- ▶ DC Response
- ▶ Protection Class IP68
- ▶ Salt Water Resistance
- ▶ High Shock Resistance
- ▶ Gas Damped
- ▶ Excellent Bias and Scale Factor Stability
- ▶ Differential Mode
- ▶ Integrated 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



integrated cable

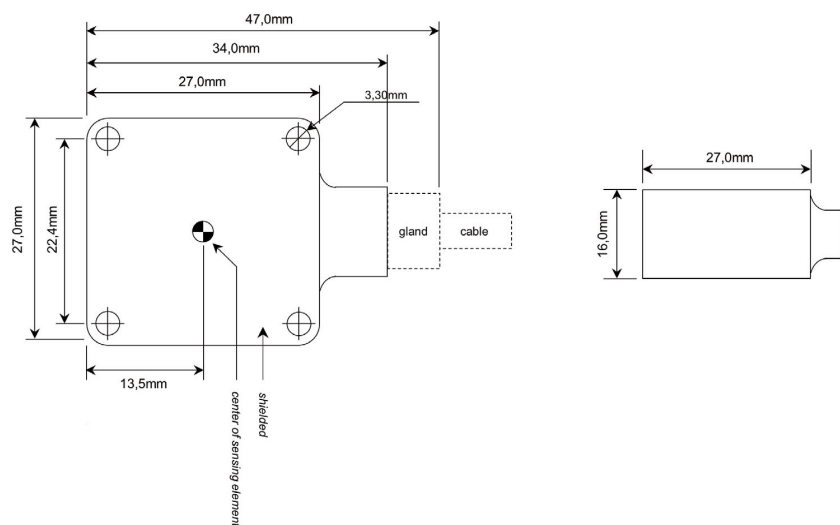
**Capacitive MEMS Technology**

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 biaxial capacitive accelerometers ASC OS-215LN-PG 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 (+6V to +40V) where the output voltage is independent of the supply. They operate in a differential configuration, which results in an improved S/N ratio due to common-mode external noise rejection. ASC OS-215LN-PG operate in a wide temperature range either from  $-15^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  (standard) or even  $-20^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ . The sensors exhibit exceptional temperature stability, very low non-linearity and can withstand shocks as high as  $5000g_{pk}$ . The hermetically sealed ASC OS-215LN-PG sensors feature a robust and corrosion proof stainless steel housing. A very high flexible and rugged cable provides a simple mounting. The sensors are supplied with 1 meter integrated cable as standard. Please see cable configuration.



**Typical Specifications**

**ASC OS-215LN-PG**

|                         |                 |                |          |          |          |          |          |           |           |
|-------------------------|-----------------|----------------|----------|----------|----------|----------|----------|-----------|-----------|
| 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 (<0.1ms)    | g <sub>pk</sub> | 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<br>(±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 Art.No. 12301 (K3) |    |    |    |  |
|                             |       | Optional: -20 to +100 |     |   |     | with Cable Art. No 15344 (K4) |    |    |    |  |
| Storage Temperature Range   | °C    | -55 to +125           |     |   |     |                               |    |    |    |  |
| Protection Class            |       | IP68                  |     |   |     |                               |    |    |    |  |

**PHYSICAL**

|                         |   |    |  |  |  |  |  |  |  |
|-------------------------|---|----|--|--|--|--|--|--|--|
| Sensing Element         | MEMS Capacitive   |    |  |  |  |  |  |  |  |
| Case Material           | Stainless Steel (Optional: Titanium)  |    |  |  |  |  |  |  |  |
| Connector Housing       | PG Gland, integrated  |    |  |  |  |  |  |  |  |
| Connector at Cable End  | Open end / customised   |    |  |  |  |  |  |  |  |
| Mounting                | Adhesive / screw holes  |    |  |  |  |  |  |  |  |
| Weight (without cable)  | gram  | 68 |  |  |  |  |  |  |  |
| Cable K3: Art.No. 12301 | 22 gram/meter; AWG 30, Polyurethane (PUR), Diameter: 3.6 ± 0.15mm, waterproof         |    |  |  |  |  |  |  |  |
| Cable K4: Art.No. 15344 | 29 gram/meter; AWG 30, Fluorethylenpropylen (FEP), Diameter: 3.6 ± 0.15mm, waterproof |    |  |  |  |  |  |  |  |

*Please note:*

*The housing is hermetically sealed and therefore not repairable.*

**ASC OS-215LN-PG**

**CABLE CODE / PIN CONFIGURATION**

The biaxial sensor ASC OS-215LN-PG comes with the x- and y-axes as standard. Upon request all other combinations of axes are possible.

**6-Wiring-System, Cable K3: Art.No. 12301**

|               |                     |                |
|---------------|---------------------|----------------|
| Red: Supply + | Brown: GND/Supply - |                |
| X-axis:       | White: Signal +     | Grey: Signal - |
| Y-axis:       | Yellow: Signal +    | Pink: Signal - |
| Z-axis:       | Green: Signal +     | Blue: Signal - |

**6-Wiring-System, Cable K4: Art.No. 15344**

|               |                        |                        |
|---------------|------------------------|------------------------|
| Red: Supply + | Black: GND/Supply -    |                        |
| X-axis:       | Green/Purple: Signal + | White/Purple: Signal - |
| Y-axis:       | Green/Grey: Signal +   | White/Grey: Signal -   |
| Z-axis:       | Green: Signal +        | White: Signal -        |

**FACTORY CALIBRATION(SUPPLIED WITH THE SENSOR)**

| Measurement Range  | 2g and 5g               | 10g                      | 25g                       | 50g and 100g              | 200g and 400g             |
|--------------------|-------------------------|--------------------------|---------------------------|---------------------------|---------------------------|
| Sensitivity        | 5m/s <sup>2</sup> @16Hz | 50m/s <sup>2</sup> @80Hz | 100m/s <sup>2</sup> @80Hz | 200m/s <sup>2</sup> @80Hz | 200m/s <sup>2</sup> @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 to 100g               | 200g and 400g             |
|--------------------|-------------------------|--------------------------|---------------------------|---------------------------|---------------------------|
| Sensitivity        | 5m/s <sup>2</sup> @16Hz | 50m/s <sup>2</sup> @80Hz | 100m/s <sup>2</sup> @80Hz | 200m/s <sup>2</sup> @80Hz | 200m/s <sup>2</sup> @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/s<sup>2</sup>

**ORDERING INFORMATION**

|     |              |                        |             |                                  |
|-----|--------------|------------------------|-------------|----------------------------------|
| ASC | OS-215LN-PG  | 002                    | K3          | 6A                               |
|     | Model number | Range (Ex. 050 is 50g) | Cable Spec. | Cable Length, Connector & Pinout |
|     |              |                        |             | A: no connector                  |

Example: ASC OS-215LN-PG-002-K3-6A

**QUALITY**

- ▶ ASC GmbH is ISO 9001:2015 certified.
- ▶ 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. The pictured DAkkS-ILAC logo refers exclusively to the accredited service.
- ▶ All ASC products are CE-compliant.