

## Industrial Piezoelectric Accelerometer



# ASC P311A15 / ASC P311A25

- ▶ Uniaxial
- ▶ IEPE (Integrated Electronic Piezoelectric)
- ▶ Stainless Steel Housing
- ▶ Voltage Output
- ▶ IP68



ASC P311A15

ASC P311A25

### Features

- ▶  $\pm 32g$ ,  $\pm 80g$ ,  $\pm 160g$ , Dynamic Ranges
- ▶ High Resonance
- ▶ Wide Bandwidth (0.8Hz to 15kHz,  $\pm 3db$ )
- ▶ Excellent Price-Performance Ratio
- ▶ Side Connector or Top Connector

### Options

- ▶ Customised Cable Length
- ▶ Metric Mounting Studs
- ▶  $\pm 5\%$  Tolerance on Sensitivity (Precision Models)

### Applications

- ▶ Railway Engineering
- ▶ Gearbox Monitoring
- ▶ Rotating Machinery Monitoring
- ▶ Steel Mills
- ▶ Paper and Pulp Industry
- ▶ Food Processing Industry

### Piezoelectric IEPE Technology

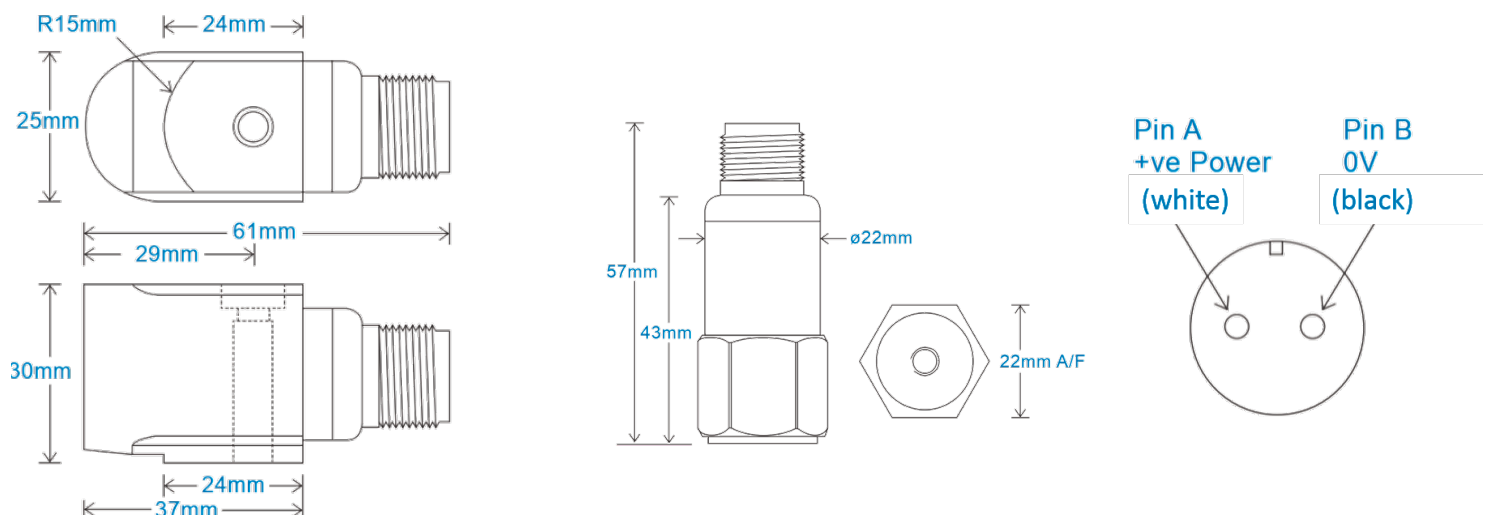
ASC's Industrial accelerometers are made of piezoelectric ceramics and are usable over a wide frequency range from 0.8Hz to 15kHz. The accelerometers are IEPE (Integrated Electronics PiezoElectric) sensors that produce an output voltage proportional to the input acceleration. The sensors feature a built-in preamplifier and a charge to voltage converter that transforms the high-impedance charge output from the piezoelectric ceramic (Lead Zirconate Titanate, PZT) into a low-impedance voltage output able to drive long cables. ASC's IEPE sensors operate on a constant-current supply and use a simple two-wire coaxial cable for power input and signal output.

### Description

ASC's IEPE Industrial accelerometers, P311A15 and P311A25, are analog voltage output sensors. These piezoelectric vibration sensors are used typically in condition monitoring and structural health monitoring applications. The sensors are based on a piezoelectric compression design, which provides high rigidity and excellent shock resistance.

ASC's Industrial accelerometers, P311A15 and P311A25, feature a rugged stainless steel housing that is corrosion proof and chemical resistant. Types P311A15 and P311A25 operate over a wide temperature range from  $-55^{\circ}\text{C}$  to  $+140^{\circ}\text{C}$ . The sensors are environmentally sealed to IP68 grade and can withstand shocks up to  $5000g$ 's. The industry standard 2-pin MIL-C-5015 type top and side exit connectors provide flexible mounting options. The sensors can be optionally fitted with an integral cable.

ASC Type P311A15 has a side exit connector and Type P311A25 has a top exit connector. The standard versions have a measuring range of  $\pm 80g$  (Sensitivity:  $100\text{mV/g}$ ) and a  $\frac{1}{4}$ "-28 UNF mounting thread. For flexibility in mounting, metric mounting studs and threads (M6/M8/M10) are available as options.



## Typical Specifications

### MODEL NUMBER: ASC P311A15 / ASC P311A25

Type: Piezoelectric IEPE Accelerometer

#### DYNAMIC

Sensitivity ( $\pm 10\%$ )	mV/g	250	100	50
Measurement Range	g	32	80	160
	$\pm 5\%$	2Hz - 10kHz		
Frequency Response: $\pm 10\%$	Hz	1.5Hz - 12kHz		
	$\pm 3\text{dB}$	0.8Hz - 15kHz		
Resonance	kHz	P311A15	19kHz	21kHz
Frequency		P311A25	28kHz	30kHz
Transverse Sensitivity	%	<5		
Shock Limit	g	5000		

#### ELECTRICAL

Supply Voltage	V DC	18 to 30
Supply Current	mA	0.5 to 8
Bias Voltage	V DC	10 to 12
Output Impedance	$\Omega$	<200
Settling Time	sec	2
Isolation		Case Isolated
Insulation Resistance	M $\Omega$	>100 (at 500V)
Max. Broadband Noise	mg	0.1

#### ENVIRONMENTAL

Operating & Storage Temperature Range	$^{\circ}\text{C}$	-55 to +140
Protection Class / Sealing		IP68 / Hermetic

#### PHYSICAL

Sensing Element		PZT
Case Material		Stainless Steel
Connector		2-pin MIL-C-5015
Mounting		Adhesive / Stud
Mounting Thread		P311A15: 1/4"-28 UNF (Male) P311A25: 1/4"-28 UNF (Female)
Mounting Torque	Nm	8
Weight (without cable)	gram	ASC P311A15: 185 ASC P311A25: 106
Cable		Optional (Polyurethane / Braided / Silicon)

**ASC P311A15 / ASC P311A25****FACTORY CALIBRATION (SUPPLIED WITH THE SENSOR)**

Sensitivity	250mV/g	100mV/g	50mV/g
Reference Conditions	200m/s <sup>2</sup> @80Hz		
Frequency Response	20Hz to 2500Hz		

**ORDERING INFORMATION**

ASC P311A15 or ASC P311A25	XXX
Industrial Sensor Type	Sensitivity
P311A15: Side Connector	050: 50mV/g (±160g range)
P311A25: Top Connector	100: 100mV/g (±80g range)
	250: 250mV/g (±32g range)

**Example: ASC P311A15-050****ACCESSORIES**

ASC P311A15	Mounting Thread for Centre Bolt 06: M6x1mm Male 08: M8x1.25mm Male
ASC P311A25	Mounting Studs 06: ¼"-28 UNF Male to M6x1mm Male 08: ¼"-28 UNF Male to M8x1.25mm Male 10: ¼"-28 UNF Male to M10x1.5mm Male

**CABLE (ORDER SEPARATELY)**

KPI	X	YYY
Cable Name	Cable Type	Cable Length
	1: Polyurethane (PUR)	001: 1m
	2: Braided ETFE	005: 5m
	7: Silicon	010: 10m

**Example: KPI-1-001****PUR-Cable:** -40°C to +90°C, IP 68, oil resistant, high abrasion and tear resistance, recommended for petrochemical industry**ETFE-Cable:** Stainless steel braided armour, -65°C to +150°C, durable, recommended for steel industry**Silicon-Cable:** -50°C to +150°C; IP68, high flexibility and temperature resistance, recommended for paper, marine or food industry**QUALITY**

- ▶ ASC GmbH is ISO 9001:2015 certified.
- ▶ The Deutsche Akkreditierungsstelle GmbH (DAkkS) has awarded to our calibration laboratory the DIN EN ISO/IEC 17025:2018 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.

**ASC GmbH**

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