ASC P101A15 / ASC P101A25

General Purpose Piezoelectric Accelerometer

ASC P101A15

ASC P101A25

SPECIFICATIONS

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

FEATURES

- ±50g, ±100g, ±500g and ±1000g Dynamic Ranges
- Stud Mount
- Side Connector or Top Connector
- Hermetically Sealed
- High Resonance Frequency (>50kHz)
- Wide Bandwidth (±1dB, 10kHz)
- Light Weight (<10 grams)
- -55° to +125°C Operating Range
- Annular Shear Design
- TEDS

OPTIONS

- Customised Cable Length
- DAkkS Calibration

APPLICATIONS

- General Purpose Vibration & Shock Monitoring
- Test & Measurement Applications
- Modal Applications
- High-Frequency Applications

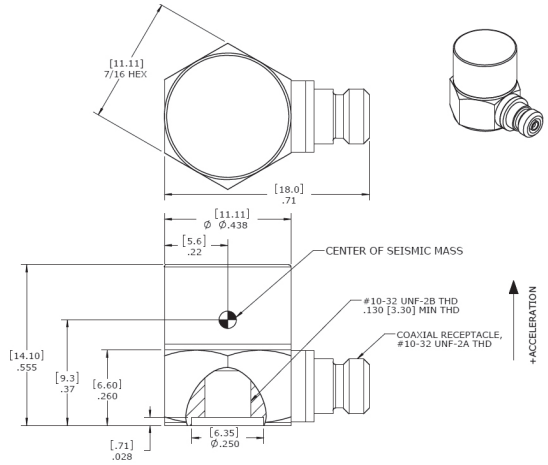
PIEZOELECTRIC IEPE TECHNOLOGY

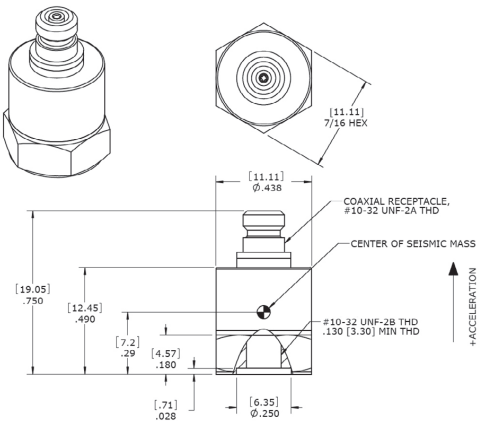
ASC's General Purpose IEPE accelerometers are made of piezoelectric ceramics and are usable over a wide frequency range from 0.3Hz to 10kHz. The accelerometers are IEPE (Integrated Electronics PiezoElectric) sensors that produce an output voltage proportional to the input acceleration. The sensors feature 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 that is suitable to drive long cables. ASC's IEPE sensors operate on a 2-10mA constant-current supply and use a two-wire coaxial cable for power input and signal output.

DESCRIPTION

ASC's General Purpose IEPE accelerometers, P101A15 and P101A25, are analog voltage output sensors. These piezoelectric vibration sensors are used typically in general purpose vibration and shock monitoring applications. The sensors are based on a piezoelectric annular shear design, which provides excellent immunity against base strain and temperature transients.

ASC Type P101A15 has a side exit connector and Type P101A25 has a top exit connector. ASC's General Purpose accelerometers, P101A15 and P101A25, feature a rugged stainless steel housing that is corrosion proof and chemical resistant. ASC Type P101A15 and P101A25 operate over a wide temperature range from -55°C to +125°C. Both sensors incorporate a welded hermetic construction and can withstand shocks up to 5000g's. The industry standard 10-32 coaxial connectors with side and top exit options provide flexibility in mounting. The sensors are available with built-in TEDS.





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TYPICAL SPECIFICATIONS

DYNAMIC

Measurement Range	g	±50	±100	±500	±1000
Sensitivity (±10%)	mV/g	100	50	10	5
Full Scale Output	V		±5		
Frequency Response: ±5%			0.5 to 6k		0.5 to 8k
±1dB	Hz		0.3 to 10k		
Non-Linearity	%FSO		±1		
Resonance Frequency	kHz		>50		
Transverse Sensitivity	%		<5		
Shock Limit	±g		5000		
Output Polarity			Acceleration in the direction of the arrow (see outline drawing) generates a positive output		

ELECTRICAL

Supply Voltage	V DC		18 to 30		
Supply Current	mA		2 to 10		
Bias Voltage	V DC		10±2 (room temperature) ; 10±4 (in full temperature range)		
Output Impedance	Ω		<100		
Discharge Time Constant	sec		0.8 to 1.2		
Isolation			Case Grounded		
Broadband Noise (1Hz to 10kHz)	mg (RMS)	0.4	0.5	0.8	1.4

ENVIRONMENTAL

Temperature Error of Sensitivity	%	<2.2
Operating & Storage Temperature Range	°C	-55 to +125
Protection Class / Sealing		IP 68 / Hermetic

PHYSICAL

Sensing Element / Design		PZT / Shear
Case Material		Stainless Steel
Connector		10-32 coaxial UNF-2A
Mounting		Adhesive / Stud
Mounting Thread		10-32 UNF 2B (10-32 to 10-32 mounting stud included)
Mounting Torque	Nm	2
Weight (without cable)	gram	ASC P101A15: 8.6 ASC P101A25: 7.3
Cable		10-32 to BNC Low-Noise coaxial PTFE

Note: $1g_n = 9.80665 m/s^2$

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TYPICAL SPECIFICATIONS

FACTORY CALIBRATION (SUPPLIED WITH THE SENSOR)

Measurement Range	±50g	±100g	±500g	±1000g
Sensitivity		200m/s²@80Hz		
Frequency Response	10Hz to 6kHz	10Hz to 6kHz	10Hz to 8kHz	10Hz to 8kHz

CALIBRATION DIN ISO 17025 (ORDER SEPARATELY)

Measurement Range	±50g	±100g	±500g	±1000g
Sensitivity		200m/s²@80Hz		
Frequency Response		10Hz to 10kHz (High-Frequency Shaker Calibration)		

ORDERING INFORMATION

ASC P101A15 or ASC P101A25	T	XX
Sensor Type	TEDS	Range
Side Connector: P101A15 or Top Connector: P101A25		51 ±50g 12 ±100g 52 ±500g 13 ±1000g

Example: ASC P101A15-T52

ACCESSORIES

Cable Assembly for ASC Uniaxial IEPE Accelerometers	
KPU	XXX
	Cable Length in Meters
Cable for Uniaxial IEPE Accelerometer 10-32 UNF to BNC -55°C to +200°C	003: 3m 006: 6m 009: 9m

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