INFORMATION RELEVANT TO THE CONTENT OF THIS PDF IS HIGHLIGHTED BELOW.

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High Frequency

High Frequency Accelerometers

High frequency accelerometers are used on machinery with gear mesh or small bearings such as high-speed machine tool spindles and compressors. High frequency sensors are available with 100 mV/g or 10 mV/g output sensitivity. The 10 mV/g version is most commonly used due to its high amplitude range which can prevent sensor overload.

As previously discussed there is little vibration in terms of displacement and velocity at high frequency; however tremendous amounts of acceleration amplitudes may be present. It is not uncommon for vibration amplitudes on a very high speed gearbox to exceed 80 g peak prior to failure. High frequency accelerometers with low voltage sensitivity will prevent sensor overload from these high amplitudes. Whereas a 100 mV/g accelerometer may overload at 50g peak, a 10 mV/g sensor will measure to 500g peak.

Because high frequency sensors are generally smaller and lighter weight than their general purpose or low frequency counterparts, they have the advantage of less mass loading (mounting of the sensor will have less tendency to change the vibration of the structure under test). However, the signal to noise ratio will be reduced with high frequency units because of the lower sensor sensitivity. If measurement of low-level signals is necessary, check the narrowband noise levels of the sensor.

Wilcoxon High Frequency Accelerometers:

Model	Style	Sensitivity	Low Freq	High Freq	Accel Range
712F	shear	100 mV/g	3.0 Hz	25,000 Hz	60 g peak
732A/732AT	compression	10 mV/g	0.5 Hz	25,000 Hz	500 g peak
736/736T	compression	100 mV/g	2.0 Hz	25,000 Hz	50 g peak

Note: Frequency @ ±3dB.

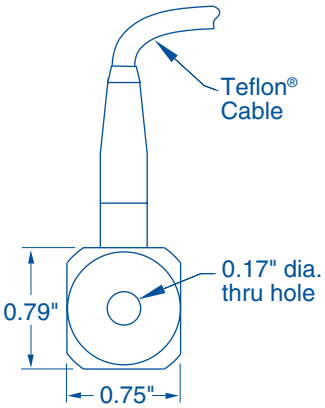
Model 712F

High Frequency, Integral Cable Accelerometer

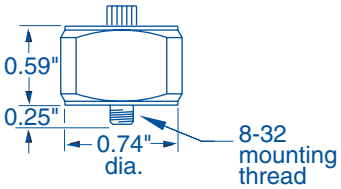
FEATURES:

- Corrosion resistant
- Hermetically sealed
- Ground isolated
- ESD protection
- Reverse wiring protection
- EMI/RFI protection

Top View



Side View



DYNAMIC		
Sensitivity, ±10% @25°C		100 mV/g
Acceleration Range		60 g peak
Amplitude Nonlinearity		1%
Frequency Response:		
±5%		9.0 - 15,000 Hz
±10%		6.0 - 20,000 Hz
±3 dB		3.0 - 25,000 Hz
Resonance Frequency, mounted		>45 kHz
Transverse Sensitivity, max		3% of axial
Temperature Response		–50°C –10% +120°C +10%
ELECTRICAL		
Power Requirement:	voltage source	18 - 30 VDC
	current regulating diode	2 - 10 mA
Electrical Noise, equiv. g,	nominal:	
Broadband	2.5 Hz to 25 kHz	1,000 µg
Spectral	10 Hz	25 µg/√Hz
	100 Hz	10 µg/√Hz
	1000 Hz	8 µg/√Hz
Output Impedance, max.		100 Ω
Bias Output Voltage, nominal		12 VDC
Grounding		case isolated, internally shielded
ENVIRONMENTAL		
Temperature Range		–50 to 120°C
Vibration Limit		±1,000 g
Shock Limit, max.		5,000 g peak
Sealing		Hermetic
Base Strain Sensitivity, max		0.03 g/µstrain
PHYSICAL		
Sensing Element Design		PZT ceramic / shear
Weight		35 grams
Case Material		316L stainless steel
Mounting		8-32 captive screw with 0.047" diameter safety wire hole
Mating Connector		N/A
Integral Cabling		J9T2K, 16 ft. blunt cut

FUNCTION	712F
power / signal	White
common	Black
case	Shield

ACCESSORIES SUPPLIED: 8-32 captive screw; Calibration data (level 2).

ACCESSORIES AVAILABLE: M4 captive screw.

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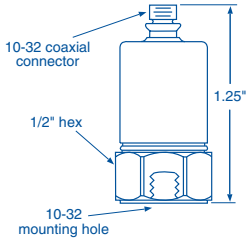
Model 732A / 732AT

High Frequency Accelerometer

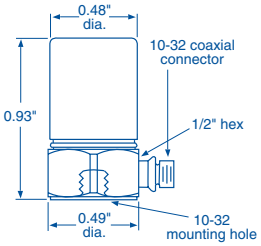
FEATURES:

- Wide dynamic range
- Compact construction to fit in tight spaces
- Wide frequency range

DYNAMIC			
Sensitivity, ±5%, 25°C			10 mV/g
Acceleration Range			500 g peak
Amplitude Nonlinearity			1%
Frequency Response			
±5%			2.0 - 15,000 Hz
±3 dB			0.5 - 25,000 Hz
Resonance Frequency			60 kHz
Transverse Sensitivity, max.			7% of axial
Temperature Response			–50°C –10%
			+120°C +5%
ELECTRICAL			
Power Requirement:	voltage source		18 - 30 VDC
	current regulating diode		2 - 10 mA
Electrical Noise, equiv. g:			
Broadband	2.5 Hz to 25 kHz		200 µg
Spectral		10 Hz	20 µg/√Hz
		100 Hz	3 µg/√Hz
		1,000 Hz	2 µg/√Hz
		10,000 Hz	2 µg/√Hz
Output Impedance, max.			100 Ω
Bias Output Voltage			10 VDC
Grounding			case grounded
ENVIRONMENTAL			
Temperature Range			–50 to 120°C
Vibration Limit			500 g peak
Shock Limit			5,000 g peak
Electromagnetic Sensitivity, equiv. g			100 µg/gauss
Base Strain Sensitivity			0.005 g/µstrain
PHYSICAL			
Sensing Element Design			PZT ceramic / compression
Weight			13 grams
Material			316L stainless steel
Mounting			10-32 tapped hole
Output Connector			10-32 coaxial
Mating Connector			R1
Recommended Cabling			J93



Model 732AT



Model 732A

CONNECTOR PIN	FUNCTION
SHELL	common
PIN	power / signal

ACCESSORIES SUPPLIED: SF1 mounting stud (International customers specify mounting requirements); Calibration data (level 3).

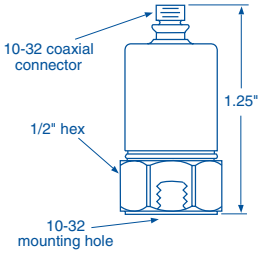
CE

Model 736 / 736T

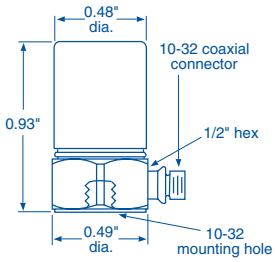
High Sensitivity, High Frequency Accelerometer

FEATURES:

- Wide dynamic range
- Compact construction to fit in tight spaces
- Wide frequency range



Model 736T



Model 736

DYNAMIC		
Sensitivity, ±5%, 25°C		100 mV/g
Acceleration Range		50 g peak
Amplitude Nonlinearity		1%
Frequency Response:		
±5%		5.0 - 15,000 Hz
±3 dB		2.0 - 25,000 Hz
Resonance Frequency		60 kHz
Transverse Sensitivity, max.		7% of axial
Temperature Response		–50°C –10%
		+120°C +5%

ELECTRICAL		
Power Requirement:	voltage source	18 - 30 VDC
	current regulating diode	2 - 10 mA
Electrical Noise, equiv. g:		
Broadband	2.5 Hz to 25 kHz	150 µg
Spectral	10 Hz	10 µg/√Hz
	100 Hz	2 µg/√Hz
	1,000 Hz	1 µg/√Hz
	10,000 Hz	0.8 µg/√Hz
Output Impedance, max.		150 Ω
Bias Output Voltage		10 VDC
Grounding		case grounded

ENVIRONMENTAL	
Temperature Range	–50 to 120°C
Vibration Limit	500 g peak
Shock Limit	5,000 g peak
Electromagnetic Sensitivity, equiv. g	100 µg/gauss
Base Strain Sensitivity	0.005 g/µstrain

PHYSICAL	
Sensing Element Design	PZT ceramic / compression
Weight	13 grams
Material	316L stainless steel
Mounting	10-32 tapped hole
Output Connector	10-32 coaxial
Mating Connector	R1
Recommended Cabling	J93

CONNECTOR PIN	FUNCTION
SHELL	common
PIN	power / signal

ACCESSORIES SUPPLIED: SF1 mounting stud (International customers specify mounting requirements); Calibration data (level 3).

CE

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