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

TABLE OF CONTENTS

Specialty Sensors

The specialty sensors are modifications of Wilcoxon accelerometer and hydrophone designs to meet specific application requirements. The Zerkometer™ and leak detection sensors are specialty sensors that have found wide use and acceptance in industry.

Zerkometer™

The Zerkometer accelerometers are designed to be mounted where zerk fittings exist to grease bearings. Since the grease fittings are usually located very close to the bearing they provide an ideal location for accelerometers to acquire dynamic vibration data. The Zerkometer has a tapered pipe thread base, a grease channel through the base and a zerk fitting on the side to allow users continued access to grease the bearing using existing zerk greasing equipment. The Zerkometer has excellent frequency response using the pipe thread mounting base and can be used for most high frequency analysis techniques.

Leak Detection Sensors

Wilcoxon manufactures two types of leak detection sensors, accelerometers and hydrophones. The accelerometers are used like microphones to “listen” to the vibration of the ground while the hydrophones are used to “listen” to the sounds of leaks in the piping. The accelerometers are very high sensitivity to provide the highest levels of signals to facilitate hearing the leaks through vibration in the earth caused by the noise of the leak.

The leak detection hydrophone is a pressure sensor that is directly coupled to the fluid system to allow listening to the acoustic signal produced by a leak. The sensor has a pipe thread base for mounting directly to the piping. There is an air release valve built in to permit easy purging of the air after the sensor is installed. These hydrophones have been well accepted for detecting and locating leaks.

Wilcoxon Specialty Sensors:

Model	Style	Sensitivity	Low Freq	High Freq	Accel Range
221A	shear	100 mV/g	0.5 Hz	7,000 Hz	80 g peak
221B	shear	100 mV/g	0.5 Hz	10,000 Hz	80 g peak
222A	shear	100 mV/g	0.5 Hz	8,500 Hz	80 g peak
996LD	compression	12 V/g	10 Hz	4,000 Hz	0.10 g peak
H571LD-1A	compression	–187 dB re 1 V/µPa	5.0 Hz	20,000 Hz	–
H571LD-2	compression	–175 dB re 1 V/µPa	5.0 Hz	20,000 Hz	–

Note: Frequency @ ±3dB.

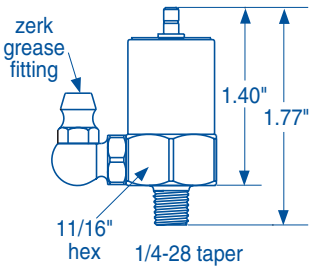
Model 221A

Accelerometer with Grease Fitting Mount

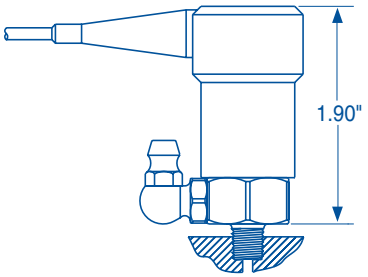
FEATURES:

- Rugged design
- Corrosion resistant
- Hermetic seal
- ESD protection
- Reverse wiring protection
- Grease channel through sensor body

DYNAMIC		
Sensitivity, ±20%, 25°C		100 mV/g
Acceleration Range		80 g peak
Amplitude Nonlinearity		1%
Frequency Response, nominal[1] :		
± 3 dB		0.5 - 7,000 Hz
Resonance Frequency, nominal		13 kHz
Transverse Sensitivity, max		5% of axial
Temperature Response		–50°C –7% +80°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	700 µg
Spectral	10 Hz	10 µg/√Hz
	100 Hz	5 µg/√Hz
	1000 Hz	5 µg/√Hz
Output Impedance, max.		100 Ω
Bias Output Voltage		12 VDC
Grounding		case isolated
ENVIRONMENTAL		
Temperature Range		–50 to 80°C
Vibration Limit		500 g peak
Shock Limit		5,000 g peak
Sealing		Hermetic
Base Strain Sensitivity, max.		0.00002 g/µstrain
PHYSICAL		
Sensing Element Design		PZT ceramic / shear
Weight		53 grams
Case Material		316L stainless steel
Mounting		1/4 - 28 taper stud
Zerk Grease Fitting		Steel, 90° angle 1/4-28 taper



Model 221A



Model 221A with mating connector and cable

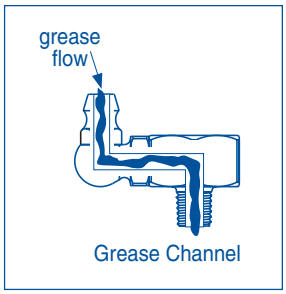
CONNECTOR PIN	FUNCTION	CABLE CONDUCTOR COLOR
SHELL	common	Shield
PIN	power/ signal	Center
HOUSING	isolated	N/C

NOTES: [1] At 50 lbs. inch torque.

CE

ACCESSORIES SUPPLIED: Model GF90: 90° steel 1/4-28 Zerk grease fitting; Calibration data (level 2).

AVAILABLE ACCESSORIES: GFA18 – Grease fitting adapter, 1/4-28 taper - 1/8 female; Hex thread mounting adapters; (Call factory Customer Service).



Model 221B

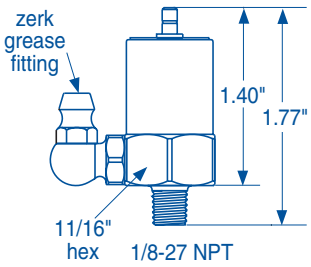
Accelerometer with Grease Fitting Mount

FEATURES:

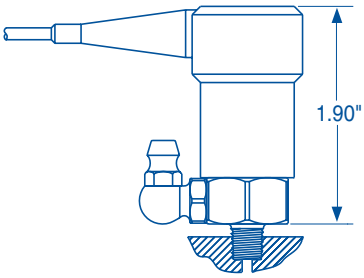
- Rugged design
- Corrosion resistant
- Hermetic seal
- ESD protection
- Reverse wiring protection
- Grease channel through sensor body

DYNAMIC		
Sensitivity, ±20%, 25°C		100 mV/g
Acceleration Range		80 g peak
Amplitude Nonlinearity		1%
Frequency Response, nominal[1] :		
± 3 dB		0.5 - 10,000 Hz
Resonance Frequency, nominal		18 kHz
Transverse Sensitivity, max		5% of axial
Temperature Response		–50°C –7%
		+80°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	700 µg
Spectral	10 Hz	10 µg/√Hz
	100 Hz	5 µg/√Hz
	1000 Hz	5 µg/√Hz
Output Impedance, max.		100 Ω
Bias Output Voltage		12 VDC
Grounding		case isolated
ENVIRONMENTAL		
Temperature Range		–50 to 80°C
Vibration Limit		500 g peak
Shock Limit		5,000 g peak
Sealing		Hermetic
Base Strain Sensitivity, max.		0.00002 g/µstrain
PHYSICAL		
Sensing Element Design		PZT ceramic / shear
Weight		57 grams
Case Material		316L stainless steel
Mounting		1/8 - 27 NPTstud
Zerk Grease Fitting		Steel, 90° angle 1/4-28 taper
Mating Connector		R35
Recommended Cabling		J96

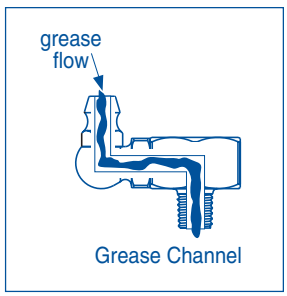
CONNECTOR PIN	FUNCTION	CABLE CONDUCTOR COLOR
SHELL	common	Shield
Pin	power/ signal	Center
Housing	isolated	N/C



Model 221B



Model 221B with mating connector and cable



NOTES: [1] At 200 inch lbs. torque and 0.225 inch thread engagement.

ACCESSORIES SUPPLIED: Model GF90: 90° steel 1/4-28 Zerk grease fitting; Calibration data (level 2).

AVAILABLE ACCESSORIES: GFA18 – Grease fitting adapter, 1/4-28 taper - 1/8 female; Hex thread mounting adapters; (Call factory Customer Service).

CE

WILCOXON RESEARCH, INC. • 1-800-945-2696 • TEL 301-330-8811 • FAX 301-330-8873 • EMAIL sensors@wilcoxon.com • WEB www.wilcoxon.com

Model 222A

Accelerometer with Grease Fitting Mount

DYNAMIC

Sensitivity, ±10%, 25°C	100 mV/g
Acceleration Range	80 g peak
Amplitude Nonlinearity	1%
Frequency Response[1], nominal:	
± 5%	3 - 5,000 Hz
±10%	1 - 6,000 Hz
± 3 dB	0.5 - 8,500 Hz
Resonance Frequency	23 kHz
Transverse Sensitivity, max	5% of axial
Temperature Response	–50°C –5% +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	700 µg
Spectral	10 Hz	10 µg/√Hz
	100 Hz	5 µg/√Hz
	1000 Hz	5 µg/√Hz
Output Impedance, max.		100 Ω
Bias Output Voltage		12 VDC
Grounding		case isolated, internally shielded

ENVIRONMENTAL

Temperature Range	–50 to 120°C
Vibration Limit	500 g peak
Shock Limit	5,000 g peak
Electromagnetic Sensitivity, equiv. g, max	70 µg/gauss
Sealing	Hermetic
Base Strain Sensitivity, max.	0.00002 g/µstrain

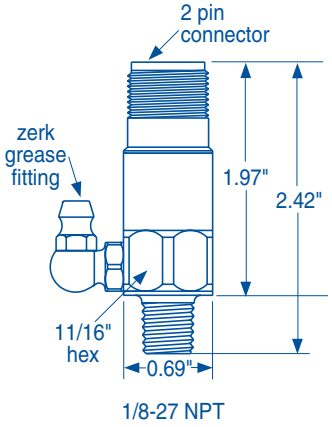
PHYSICAL

Sensing Element Design	PZT ceramic / shear
Weight	76 grams
Case Material	316L stainless steel
Mounting	1/8 - 27 NPT stud
Zerk Grease Fitting	Steel, 90° angle 1/4-27 taper
Output Connector	2 pin, MIL-C-5015 style
Mating Connector	R6 type, but not R6SL
Recommended Cabling	J10 / J9T2A

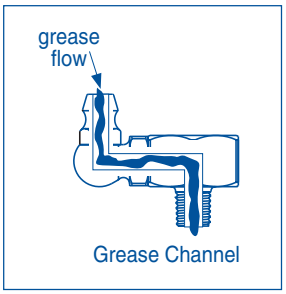
CONNECTOR PIN	FUNCTION
SHELL	ground
A	power/ signal
B	common

FEATURES:

- Rugged design
- Corrosion resistant
- Hermetic seal
- Case isolated
- ESD protection
- Reverse wiring protection
- Grease channel through sensor body



1/8-27 NPT



NOTES: [1] At 200 inch/ lb. torque and 0.225 inch thread engagement.

ACCESSORIES SUPPLIED: Model GF90: 90° steel 1/4-28 Zerk grease fitting; Calibration data (level 2).

AVAILABLE ACCESSORIES: GFA18 – Grease fitting adapter, 1/4-28 taper - 1/8 female; Hex thread mounting adapters; (Call factory Customer Service).

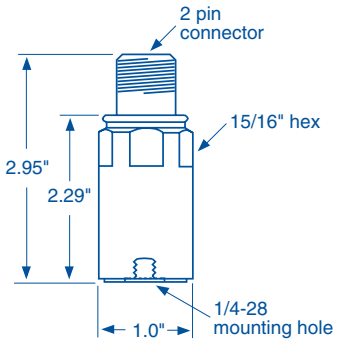
CE

Model 996LD

High Sensitivity Accelerometer

FEATURES:

- Low noise floor
- High sensitivity
- Compatible with many commercially available leak detection systems



DYNAMIC	
Sensitivity	12 V/g, ±3 dB
Frequency Response, ±3 dB	10 - 4,000 Hz
Resonance Frequency, nominal	14 kHz
Acceleration Range, nominal	0.10 g peak
Shock Limit	10,000 g
ELECTRICAL	
Supply Voltage	12 - 24 VDC
Supply Current	2 mA
Bias Output Voltage	4.8 - 7.5 VDC
Grounding	case grounded
Electrical Noise, nominal	
100 Hz	0.08 µg/√Hz
1000 Hz	0.016 µg/√Hz
ENVIRONMENTAL	
Temperature Range	–10°C to 80°C
Sealing	hermetic design
PHYSICAL	
Case Material	316 stainless steel
Mounting	1/4 - 28 tapped hole
Connector	2 pin, MIL-C-5015 style
Pin-out: Pin A	power, signal
Pin B	common, case
Mating Connector	Wilcoxon R6 (Amphenol 97-106A-10SL-4S or MS-3106A-10SL-4S)

ACCESSORIES SUPPLIED: Foam sleeve shock protector; SF6 mounting stud

ACCESSORIES AVAILABLE: Cable to interface with leak detector systems; magnetic base

WILCOXON RESEARCH, INC. • 1-800-945-2696 • TEL 301-330-8811 • FAX 301-330-8873 • EMAIL sensors@wilcoxon.com • WEB www.wilcoxon.com

Model H571LD-1A

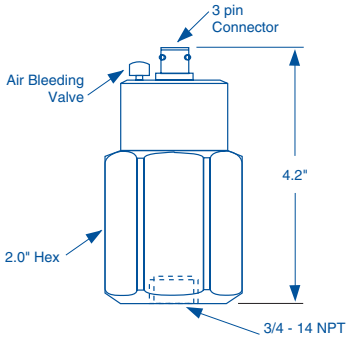
Leak Detection Hydrophone

FEATURES:

- Low noise floor
- High sensitivity
- Compatible with many commercially available leak detection systems

DYNAMIC	
Sensitivity, ±3 dB	–187 dB re 1V/µPa
Amplifier Frequency Response, ±3 dB	5 Hz to 20 kHz
ELECTRICAL	
Powering:	
voltage source	9 - 15 VDC
current regulating diode	1.5 - 4 mA
Bias Voltage	6 VDC
ENVIRONMENTAL	
MaximumTemperature	60ºC
Maximum Pressure	150 psi
PHYSICAL	
Mounting	3/4 - 14 NPT
Case Material	316 stainless steel housing
Output Connector	3 pin, MIL-C-26482
Mating Connector	Wilcoxon Research R4 (Amphenol PTO6A-8-3S(SR))

Pin Out:
PIN A ..... Case
PIN B ..... Common
PIN C ..... Power, Signal



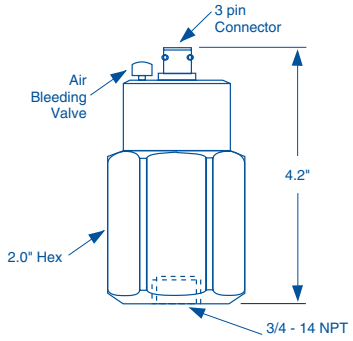
CE

Model H571LD-2

Leak Detection Hydrophone

FEATURES:

- Low noise floor
- High sensitivity
- Compatible with many commercially available leak detection systems



DYNAMIC	
Sensitivity, ±3 dB	–175 dB re 1V/µPa
Amplifier Frequency Response, ±3 dB	5 Hz to 20 kHz
ELECTRICAL	
Powering:	
voltage source	9 - 15 VDC
current regulating diode	1.5 - 4 mA
Bias Voltage	6 VDC
ENVIRONMENTAL	
Maximum Input Pressure	150 PSI
Maximum Temp	60°C
PHYSICAL	
Mounting	3/4 - 14 NPT
Case Material	316 stainless steel housing
Output Connector	3 pin, MIL-C-26482
Mating Connector	Wilcoxon Research R4 Amphenol PTO6A-8-3S (SR)

Pin Out:	Pin A	Case
	Pin B	Common
	Pin C	Power, Signal

CE

WILCOXON RESEARCH, INC. • 1-800-945-2696 • TEL 301-330-8811 • FAX 301-330-8873 • EMAIL sensors@wilcoxon.com • WEB www.wilcoxon.com

SUNSTAR 商斯达实业集团是集研发、生产、工程、销售、代理经销 、技术咨询、信息服务等为一体的高科技企业，是专业高科技电子产品生产厂家，是具有 10 多年历史的专业电子元器件供应商，是中国最早和最大的仓储式连锁规模经营大型综合电子零部件代理分销商之一,是一家专业代理和分銷世界各大品牌 IC 芯片和電子元器件的连锁经营綜合性国际公司,专业经营进口、国产名厂名牌电子元件，型号、种类齐全。在香港、北京、深圳、上海、西安、成都等全国主要电子市场设有直属分公司和产品展示展销窗口门市部专卖店及代理分销商,已在全国范围内建成强大统一的供货和代理分销网络。 我们专业代理经销、开发生产电子元器件、集成电路、传感器、微波光电元器件、工控机/DOC/DOM 电子盘、专用电路、单片机开发、MCU/DSP/ARM/FPGA 软件硬件、二极管、三极管、模块等，是您可靠的一站式现货配套供应商、方案提供商、部件功能模块开发配套商。商斯达实业公司拥有庞大的资料库，有数位毕业于著名高校——有中国电子工业摇篮之称的西安电子科技大学（西军电）并长期从事国防尖端科技研究的高级工程师为您精挑细选、量身订做各种高科技电子元器件，并解决各种技术问题。

更多产品请看本公司产品专用销售网站:

商斯达中国传感器科技信息网：http://www.sensor-ic.com/

商斯达工控安防网：http://www.pc-ps.net/

商斯达电子元器件网：http://www.sunstare.com/

商斯达微波光电产品网:HTTP://www.rfoe.net/

商斯达消费电子产品网://www.icasic.com/

商斯达实业科技产品网://www.sunstars.cn/

传感器销售热线:

地址：深圳市福田区福华路福庆街鸿图大厦 1602 室

电话：0755-83370250 83376489 83376549 83607652 83370251 82500323

传真：0755-83376182 （0）13902971329 MSN: SUNS8888@hotmail.com

邮编：518033 E-mail:szss20@163.com QQ: 195847376

深圳赛格展销部：深圳华强北路赛格电子市场 2583 号 电话：0755-83665529 25059422

技术支持: 0755-83394033 13501568376

欢迎索取免费详细资料、设计指南和光盘 ；产品凡多，未能尽录，欢迎来电查询。

北京分公司：北京海淀区知春路 132 号中发电子大厦 3097 号

TEL：010-81159046 82615020 13501189838 FAX：010-62543996

上海分公司：上海市北京东路 668 号上海赛格电子市场 2B35 号

TEL：021-28311762 56703037 13701955389 FAX：021-56703037

西安分公司：西安高新开发区 20 所(中国电子科技集团导航技术研究所)

西安劳动南路 88 号电子商城二楼 D23 号

TEL：029-81022619 13072977981 FAX:029-88789382