

TABLE OF CONTENTS

PRODUCTS COMING SOON!	4	SEISMIC SENSORS	70
QUICKVIEW ACCELEROMETER CHART	6	731A Ultra Quiet, Ultra Low Frequency, Seismic Accelerometer	71
SENSOR SELECTION	8	731A / P31 Seismic Accelerometer / Power Amplifier System	72
FREQUENTLY ASKED QUESTIONS (FAQs)	12	731-207 Low Frequency, Seismic Accelerometer	73
INDUSTRIAL WIRELESS PRODUCTS	14	SHAKERS & ACCESSORIES	74
The Wireless Series	15	F3 / Z602WA Electromagnetic Shaker System	75
Wireless Module Specifications	16	F4 / Z820WA & F4/F7 Electromagnetic Shaker System	77
Wireless Accessories	18	F5B / Z11 Electromagnetic Shaker System	79
GENERAL PURPOSE ACCELEROMETERS	19	F10 / Z820WA Electromagnetic Shaker System	81
793 Premium Accelerometer	20	F7 Piezoelectric Vibration Generator	83
797 Premium, Center Mount Accelerometer	21	F7-1 Piezoelectric Shaker System	85
786A General Purpose Accelerometer	22	F4 / F7 Electromagnetic & Piezoelectric Shaker System	86
777 / 777B Light Duty Accelerometers	23	PA7F Power Amplifier	88
787A Low Profile, General Purpose Accelerometer	24	PA8F Power Amplifier	89
784A Low Cost, General Purpose Accelerometer	25	N7 & N8 Matching Networks	90
785A Low Cost, Center Mount Accelerometer	26	UNDERWATER ACCELEROMETERS	91
775A Low Cost, Pivoting Accelerometer	27	746 Underwater Accelerometer	92
S100C SNAP™ Low Cost, Epoxy Mount Accelerometer	28	754 Miniature Underwater Accelerometer	93
S100CS SNAP™ Low Cost, Stud Mount Accelerometer	29	757 Biaxial, Low Profile, Underwater Accelerometer	94
LOW FREQUENCY ACCELEROMETERS	30	HYDROPHONES	95
793L Low Frequency Accelerometer	31	H505L General Purpose, Self-Amplified Hydrophone	96
797L Low Profile, Low Frequency Accelerometer	32	H507A Ultra Low Noise, Wide Band Hydrophone	97
799LF Low Frequency Filtered Accelerometer	33	HELICOPTER	98
799M Low Frequency, High Sensitivity, Filtered Accelerometer	34	991D Internally Amplified, Helicopter Accelerometer	99
HIGH FREQUENCY ACCELEROMETERS	35	991V Internally Amplified, Helicopter Velocity Sensor	100
712F High Frequency, Integral Cable Accelerometer	36	992-1 Single Axis Accelerometer with Connector	101
732A and 732AT High Frequency Accelerometers	37	SWITCH / TERMINATION BOXES	102
736 and 736T High Sensitivity, High Frequency Accelerometers	38	CB2 & CB4 Series Cable Termination Boxes: 2 and 4 Channels	103
PIEZOVELOCITY TRANSDUCERS — PVT® VELOCITY OUTPUT	39	JB06-1H Junction Box: 6 Channels	104
793V / 793V-5 General Purpose, Velocity Output PVT®	40	JBS Series Switchable / Multichannel Junction Boxes	105
797V Low Profile, Velocity Output PVT®	41	VibraLINK® II Series Switchable Junction Boxes: 6 or 12 Channels	106
HIGH TEMPERATURE ACCELEROMETERS	42	VibraLINK® II Series Expandable Switchable Junction Boxes	107
376 High Temperature, Charge Mode Accelerometer	43	POWER / SIGNAL CONDITIONING	108
376/CC701HT Accelerometer / Charge Amplifier System	44	CC701 Charge Converter	109
793-6 FireFET® 150°C Amplified Accelerometer	45	CC701HT Charge Converter	109
797-6 FireFET® Low Profile, 150°C Amplified Accelerometer	46	CC726E Charge Converter	109
TRIAxIAL TRANSDUCERS	47	P31 Ultra Low Noise Power Unit / Amplifier	109
993A General Purpose, Triaxial 100 mV/g Accelerometer	48	P702B General Purpose Power Unit / Amplifier	109
993A-5 General Purpose, Triaxial Accelerometer with Integral Cable	49	P703B Three Channel Power Unit	109
993B Series Premium, Triaxial Accelerometers	50	P703BT Triaxial Power Unit	110
4-20 mA OUTPUT VIBRATION LOOP POWERED SENSORS LPS™	51	P704B General Purpose Power Unit	110
PC420 IS / EX Intrinsically Safe / Explosion Proof Loop Powered Sensors (LPS™) ...	52	LA704B Line Adapter Power Supply	110
PC420A Series LPS™ Acceleration Vibration Transmitters	53	NC3 Battery Kit and Line Adapter Power Supply	110
PC420V Series LPS™ Velocity Vibration Transmitters	54	PR710A & PR710B Signal Conditioners	110
PC420V2 LPS™ Dual Output Vibration Transmitter: 4-20 mA & Velocity	55	HMM-101 Hand Held Meter: "Sensor Doctor"	110
DUAL VIBRATION & TEMPERATURE SENSORS	56	CABLES AND CONNECTORS	111
793T-3 Accelerometer with Internal Temperature Sensor	57	Cables	113
797T-1 Dual Output Sensor: Acceleration & Temperature	58	Connectors / Terminations	116
797LT Low Frequency Accelerometer with Temperature Sensor	59	MOUNTING & ACCESSORIES	121
SPECIALTY SENSORS	60	INTRINSIC SAFETY	128
221A Accelerometer with Grease Mounting	61	CALIBRATION	130
221B Accelerometer with Grease Mounting	62	WARRANTY	131
222A Accelerometer with Grease Mounting	63	CONVERSION CHARTS	132
996LD High Sensitivity, Leak Detection Accelerometer	64	TROUBLE SHOOTING CHART	133
H571LD-1A Leak Detection Accelerometer	65	CUSTOMER SERVICE	134
H571LD-2 Leak Detection Accelerometer	66	GLOSSARY	135
TEST & MEASUREMENT SENSORS	67	INDEX	139
726 / 726T Small Size, Piezoelectric Accelerometer	68		
728A / 728T High Sensitivity, Low Noise Accelerometer	69		

Low Frequency

Low Frequency Accelerometers

Low frequency measurement is critical for many industries. The petrochemical, machine tool, and paper industries use low frequency for both condition monitoring and process measurements. Other applications include slow speed agitators, cooling towers, semiconductor lithography, and structural testing.

Low frequency measurements and low levels of vibration are closely related. As shown in Figure 1, acceleration levels decrease at low frequencies. In order to have adequate voltage signals at the acquisition equipment, low frequency sensors have greater output sensitivity (usually 500mV/g) than general-purpose sensors. Additionally, the low-end frequency cut-off is improved (down to 0.1 Hz @ -3dB) in order to read slow speed vibration signals.

All Wilcoxon low frequency accelerometers incorporate a low-pass filter within the on-board amplifier electronics. Low frequency measurement usually involve low levels of vibration. The accelerometer's mechanical gain yield very high signal levels within the amplifier. High frequency signals could easily excite the resonance of the accelerometer and cause the amplifier to reach maximum voltage and saturate. This results in a "clipped" signal and distortion. Unless a high sensitivity accelerometer incorporates this protection, it could easily lead to obscured or false data.

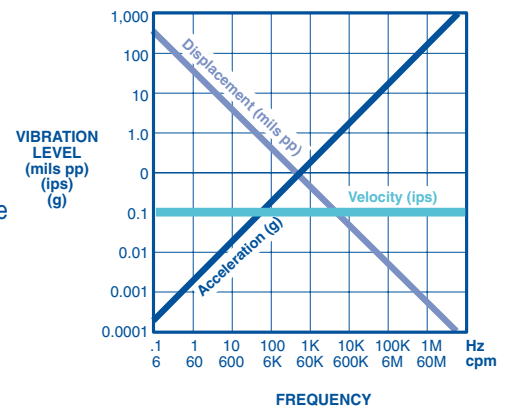


Figure 1: Acceleration & Displacement Levels Relative to a Constant Velocity Level

Wilcoxon Low Frequency Sensors:

Model	Style	Sensitivity	Low Freq	High Freq	Accel Range
793L	compression	500 mV/g	0.2 Hz	2,300 Hz	10 g peak
797L	shear	500 mV/g	0.2 Hz	3,700 Hz	10 g peak
799LF	shear	500 mV/g	0.1 Hz	2,500 Hz	10 g peak
799M	shear	1,000 mV/g	0.2 Hz	2,500 Hz	5 g peak

Note: Frequency @ ±3dB.

Model 793L

Premium, Low Frequency Accelerometer



DYNAMIC

Sensitivity, ±5%, 25°C	500 mV/g
Acceleration Range	10 g peak
Amplitude Nonlinearity	1%
Frequency Response:	
-5%	0.6 - 700 Hz
-10%	0.4 - 1,000 Hz
-3 dB	0.2 - 2,300 Hz
Resonance Frequency	15 kHz
Transverse Sensitivity, max.	5% of axial
Temperature Response	-50°C -10%
	+120°C +10%

ELECTRICAL

Power Requirements:	voltage source	18 - 30 VDC
	current regulating diode	2 - 10 mA
Electrical Noise, equiv. g:		
Broadband	2.5 Hz to 25 kHz	8.0 µg
Spectral	2 Hz	2.0 µg/√Hz
	10 Hz	0.4 µg/√Hz
	100 Hz	0.2 µg/√Hz
Output Impedance, max.		100Ω
Bias Output Voltage		10 VDC
Grounding		case isolated, internally shielded

ENVIRONMENTAL

Temperature Range	-50 to 120°C
Vibration Limit	250 g peak
Shock Limit	5,000 g peak
Electromagnetic Sensitivity, equiv. g.	20 µg/gauss
Sealing	Hermetic
Base Strain Sensitivity	0.0001 g/µstrain

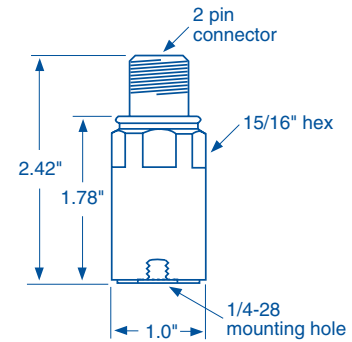
PHYSICAL

Sensing Element Design	PZT ceramic / compression
Weight	142 grams
Case Material	316L stainless steel
Mounting	1/4-28 tapped hole
Output Connector	2 pin, MIL-C-5015 style
Mating Connector	R6 type
Recommended Cabling	J9T2A

CONNECTOR PIN	FUNCTION
SHELL	ground
A	power/ signal
B	common

FEATURES:

- High sensitivity
- Ultra low-noise electronics for clear signals at very low vibration levels
- Low pass filtered to attenuate high frequencies
- Hermetic seal
- ESD protection
- Miswiring protection
- Reverse wiring protection



ACCESSORIES SUPPLIED: SF6 mounting stud (International customers specify mounting requirements); Calibration data (level 3).

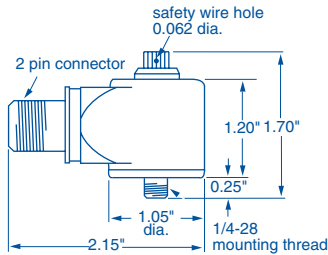
OPTIONS: Temperature sensor
Intrinsic safety certification





FEATURES:

- High sensitivity
- Ultra low-noise electronics for clear signals at very low vibration levels
- Low pass filtered to attenuate high frequencies
- Hermetic seal
- ESD protection
- Miswiring protection
- Reverse wiring protection



Model 797L

Premium, Low Frequency, Center Mount Accelerometer

DYNAMIC

Sensitivity, $\pm 5\%$, 25°C	500 mV/g
Acceleration Range	10 g peak
Amplitude Nonlinearity	1%
Frequency Response:	
-5%	0.6 - 850 Hz
-10%	0.4 - 1,500 Hz
-3 dB	0.2 - 3,700 Hz
Resonance Frequency	18 kHz
Transverse Sensitivity, max	7% of axial
Temperature Response	-50°C -8%
	+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	12 μ g
Spectral	2 Hz	2.0 μ g/ \sqrt Hz
	10 Hz	0.6 μ g/ \sqrt Hz
	100 Hz	0.2 μ g/ \sqrt Hz
Output Impedance, max.		100 Ω
Bias Output Voltage		10 VDC
Grounding		case isolated, internally shielded

ENVIRONMENTAL

Temperature Range	-50 to 120°C
Vibration Limit	250 g peak
Shock Limit	2,500 g peak
Electromagnetic Sensitivity, equiv. g	5 μ g/gauss
Sealing	Hermetic
Base Strain Sensitivity	0.001 g/ μ strain

PHYSICAL

Sensing Element Design	PZT ceramic / shear
Weight	148 grams
Case Material	316L stainless steel
Mounting	1/4-28 captive socket head screw
Mating Connector	R6 type
Recommended Cabling	J9T2A

CONNECTOR PIN	FUNCTION
SHELL	ground
A	power/ signal
B	common

ACCESSORIES SUPPLIED: #12105-01 captive socket head (International customers specify mounting requirements); Calibration data (level 3).

OPTIONS: Intrinsic safety certification



Optional Safety Approvals

Model 799LF

Premium, Low Frequency, Filtered Accelerometer



DYNAMIC

Sensitivity, ±5%, 25°C	500 mV/g
Acceleration Range	10 g peak
Amplitude Nonlinearity	1%
Frequency Response:	
-5%	0.3 - 1,200 Hz
-10%	0.2 - 1,600 Hz
-3 dB	0.1 - 2,500 Hz
Resonance Frequency	18 kHz
Transverse Sensitivity, max	5% of axial
Temperature Response	-50°C -7%
	+120°C +5%

ELECTRICAL

Power Requirement:	voltage source	15 - 30 VDC
	current regulating diode	2 - 10 mA
Electrical Noise, equiv. g:		
Spectral	0.10 Hz	15 µg/√Hz
	1 Hz	3 µg/√Hz
	10 Hz	1 µg/√Hz
	100 Hz	1 µg/√Hz
Output Impedance, max.		400 Ω
Bias Output Voltage		8.0 VDC
Grounding		case isolated, internally shielded

ENVIRONMENTAL

Temperature Range	-50 to 120°C
Vibration Limit	250 g peak
Shock Limit	5,000 g peak
Electromagnetic Sensitivity, equiv. g	150 µg/gauss
Sealing	Hermetic
Base Strain Sensitivity	0.0005 g/µstrain

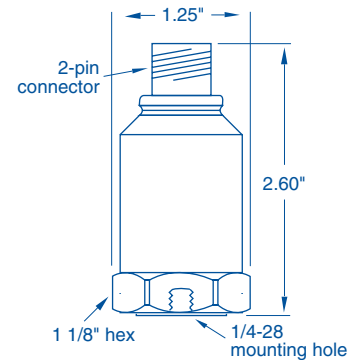
PHYSICAL

Sensing Element Design	PZT ceramic / shear
Weight	205 grams
Case Material	316L stainless steel
Mounting	1/4-28 tapped hole
Output Connector	2 pin, MIL-C-5015 style
Mating Connector	R6 type
Recommended Cable	J9T2A

CONNECTOR PIN	FUNCTION
SHELL	ground
A	power/ signal
B	common

FEATURES:

- High sensitivity
- Ultra low-noise electronics for clear signals at very low vibration levels
- Optimized for 15V supply
- Low pass filtered to eliminate high frequencies
- Hermetic sealing
- ESD protection
- Miswiring protection
- Reverse wiring protection



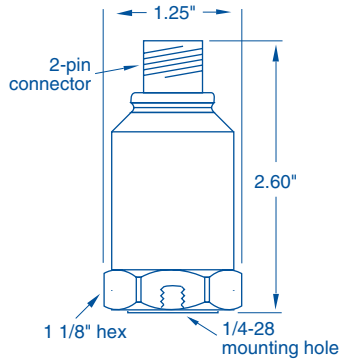
ACCESSORIES SUPPLIED: SF6 mounting stud (International customers specify mounting requirements); Calibration data (level 3).





FEATURES:

- High sensitivity
- Ultra low-noise electronics for clear signals at very low vibration levels
- Optimized for 15V supply
- Low pass filtered to eliminate high frequencies
- Hermetic seal
- ESD protection
- Miswiring protection
- Reverse wiring protection



Model 799M

Premium, Low Frequency, High Sensitivity, Filtered Accelerometer

DYNAMIC

Sensitivity, $\pm 5\%$, 25°C	1,000 mV/g
Acceleration Range	5 g peak
Amplitude Nonlinearity	1%
Frequency Response:	
-5%	0.6 - 1,200 Hz
-10%	0.4 - 1,600 Hz
-3 dB	0.2 - 2,500 Hz
Resonance Frequency	18 kHz
Transverse Sensitivity, max	5% of axial
Temperature Response	-50°C -7%
	+80°C +5%

ELECTRICAL

Power Requirement:	voltage source	15 - 30 VDC
	current regulating diode	2 - 10 mA
Electrical Noise, equiv. g:		
Spectral	0.10 Hz	15 $\mu\text{g}/\sqrt{\text{Hz}}$
	1 Hz	3 $\mu\text{g}/\sqrt{\text{Hz}}$
	10 Hz	1 $\mu\text{g}/\sqrt{\text{Hz}}$
	100 Hz	1 $\mu\text{g}/\sqrt{\text{Hz}}$
Output Impedance, max.		400 Ω
Bias Output Voltage		8.0 VDC
Grounding		case isolated, internally shielded

ENVIRONMENTAL

Temperature Range	-50 to 80°C
Vibration Limit	250 g peak
Shock Limit	5,000 g peak
Electromagnetic Sensitivity, equiv. g	150 $\mu\text{g}/\text{gauss}$
Sealing	Hermetic
Base Strain Sensitivity	0.0005 g/ μstrain

PHYSICAL

Sensing Element Design	PZT ceramic / shear
Weight	205 grams
Case Material	316L stainless steel
Mounting	1/4-28 tapped hole
Output Connector	2 pin, MIL-C-5015 style
Mating Connector	R6 type
Recommended Cabling	J9T2A

CONNECTOR PIN

SHELL	ground
A	power/ signal
B	common

ACCESSORIES SUPPLIED:

SF6 mounting stud (International customers specify mounting requirements); Calibration data (level 3).



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销世界各大品牌 IC 芯片和电子元器件的连锁经营综合性国际公司，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/](http://www.rfoe.net/)

商斯达消费电子产品网：<http://www.icasic.com/>

商斯达实业科技产品网：<http://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