

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		

Mounting & Accessories

Sensor Mounting

When using Piezoelectric sensors to measure vibration, the sensor must directly contact the machine surface. The more intimate and stiff the contact between sensor and the machine, the better the ability to couple and measure high frequency signals.

The sensor should be mounted at a location that minimizes the vibration transmission route from the item being monitored (bearing) through the machine to the sensor. Avoid mounting the sensor on thin sections or vibration-free areas (antinodes).

Mounting Configurations

There are multiple mounting configurations that are used to couple the sensors to the machine surface. Figure 1 illustrates the various types of mounting configurations.

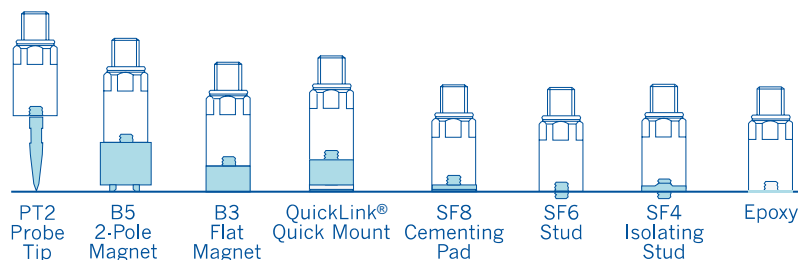
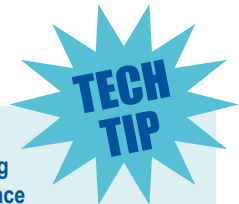


Figure 1: Types of Mounting Configuration

Temporary Mounting

The use of magnet bases or probe tips connection is convenient and quick for many applications, but they produce a significantly different response at higher frequencies compared to stud and cemented pad measurements. Attaching magnetic bases or probe tip (stingers) allow the sensor to be easily moved from point to point. Quick mounts, however, combine the capabilities of a stud with the speed of a magnet. The most significant disadvantage of the magnet base or probe tip is the lower resonant frequency of the coupled system. The more intimate the contact between sensor and the machine, the better the ability to couple and measure high frequency signals.



Mounting Resonance

As discussed previously, a sensor's high frequency usable limit is a function of the resonance of the accelerometer. Sensors with a higher resonance will generally be small, light weight and specially designed. These transducers will then be usable to read high frequency vibration signals. However, the mounting method of the sensor will have a significant impact on its "as installed" resonance and high frequency limit. As shown in Figure 1, each mounting method has an associated resonance. If the mounting resonance is less than the sensor resonance, the high frequency limit of the sensor will be compromised. In general, the more intimate the contact between the sensor and machine surface, the less chance of a low "as installed" resonance and a decreased high end response.

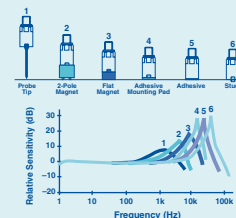


Figure 1: Mounting Method of a Sensor

Probe Tips

Probe tips require very little surface preparation and are easy to use. Tips should be slightly rounded at the point and maintained free of burrs.

Magnets

In all applications, the machine surface must be magnetically attractive and free of paint chips and scale. Painted surfaces are acceptable, but should be clean and well maintained. The magnet must be clean and free of metal particles and burrs. Magnets are available for flat and curved surfaces. Coupling fluids, such as oil, greatly improve measurements with flat bottom magnets and should be used wherever possible.

Quick Mounts

Quick mounts allow the sensor to be mounted rapidly with little effort. The coupling resonance approaches cementing pad and stud mounted configurations. Quick mounts consist of a special adapter mounted to the sensor and multiple mating pads on the machine. The mating pad can be stud mounted or cemented to the mounting location. The QuickLINK® system requires a less than one turn to mount the sensor, making walkaround collection faster without compromising repeatability. QuickLINK® is only offered by Wilcoxon.

Permanent Mounting

Direct stud mounting, epoxy, and cementing pads are used for permanent installations. The sensor can be directly mounted by tapping a hole into the structure and attaching the sensor with a threaded stud. Stud mounting is viewed by users as the most reliable way to mount a vibration sensor. Stud mounting will attain the maximum sensor frequency range. Cementing pads can be epoxied in place of the tapped hole; the sensor is then mounted to the pad. Cementing pads approach the capabilities of stud mounts when used properly. Procedures should be evaluated with respect to frequency response, sensor/shield grounding, and installation requirements. In some cases, the sensor can be mounted directly to the machine using epoxy. Adhesive selection is critical for long-term reliability.

Threaded Stud

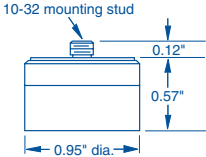
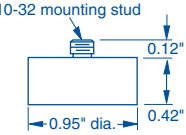
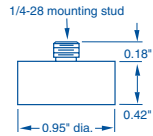
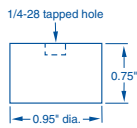
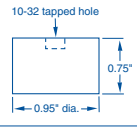
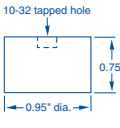
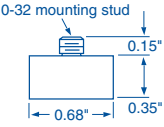
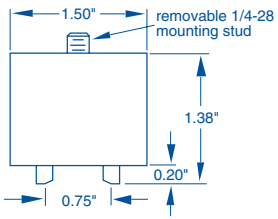
Stud mounting requires a tapped hole drilled directly into the structure. A threaded stud provides electrical and mechanical connection between the sensor and machine. The sensor requires a flat spot faced surface with a perpendicular tapped hole.

Cementing Pad

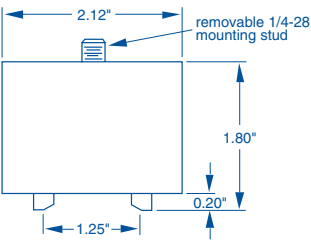
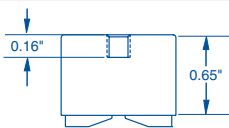
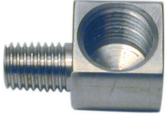
Cementing pads eliminate tapping into the structure, but provide high frequency capability approaching stud mounts. The flat side is bonded to the machine with an appropriate adhesive. The opposite side contains a 1/4-28 stud for mounting the sensor. The proper installation leaves the pad and the sensor housing electrically isolated from ground.

Request *Technical Note 21, Mounting Considerations* for detailed procedures.

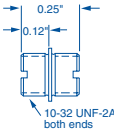
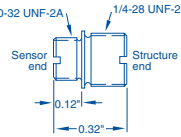
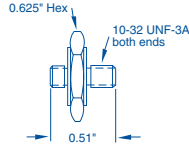
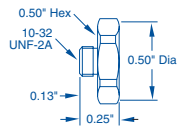
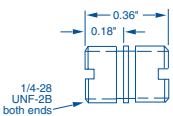
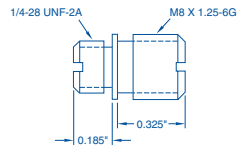
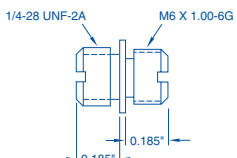
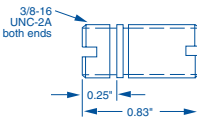
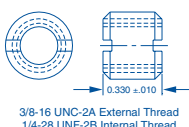
MOUNTING / ACCESSORIES

MODEL	IMAGE	DRAWING	DESCRIPTION
B1A			Rare earth magnetic mounting base, 10-32 stud, isolated, 0.95" diameter, 40 lbs. force. Electrically isolates the sensor from ground to prevent ground loops.
B2A			Rare earth magnetic mounting base, 10-32 stud, non-isolated, 0.95" diameter, 40 lbs. force.
B3			Rare earth magnetic mounting base, 1/4-28 stud, non-isolated, 0.95" diameter, 40 lbs. force.
B3-1			Rare earth magnetic mounting base, 1/4-28 tapped hole, non-isolated, 0.95" diameter, 40 lbs. force.
B3-2			Rare earth magnetic mounting base, 10-32 tapped hole, non-isolated, 0.95" diameter, 40 lbs. force.
B3-3			Rare earth magnetic mounting base, 10-32 tapped hole, keyed, non-isolated, 0.95" diameter, 40 lbs. force.
B4			Rare earth magnetic mounting base, 10-32 stud, non-isolated, 0.68" diameter, 40 lbs. force.
B5			Two-pole magnetic mounting base, 1.5" diameter, 30 lbs. force. Removable mounting stud for use with bolt thru sensors. Specify 1/4-28 mounting stud or 10-32 adaptor stud when ordering. Use on curved surfaces. Recommended for low frequency measurements or where other mounting methods are not practical. <i>*Note: B5 is shipped with a protective washer. Washer must be removed before using the magnet.</i>

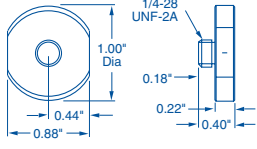
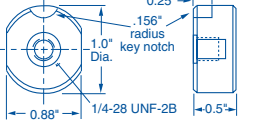
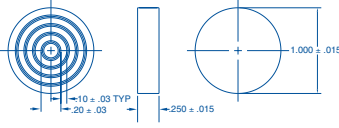
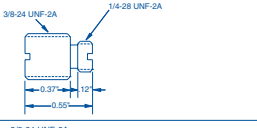
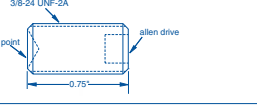
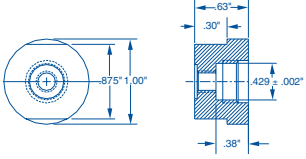
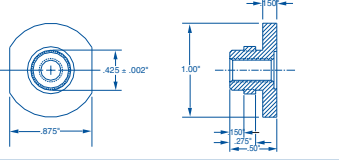
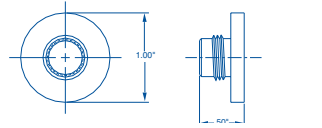
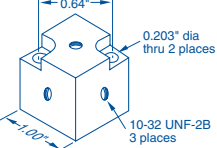
MOUNTING / ACCESSORIES

MODEL	IMAGE	DRAWING	DESCRIPTION
B6			Two-pole magnetic mounting base, 2.12" diameter, 70 lbs. force. Removable mounting stud for use with bolt thru sensors. Specify 1/4-28 mounting stud or 10-32 adaptor stud when ordering. Use on curved surfaces. Recommended for low frequency measurements or where other mounting methods are not practical. <i>*Note: B6 is shipped with a protective washer. Washer must be removed before using the magnet.</i>
B11			Magnetic mounting base for Model 712F, 8-32 mounting thread
FM101			Fin mount, 0.500" thick, 1.25" long
FM102			Fin mount, 0.500" thick, 2.00" long
FM103			Fin mount, 0.250" thick, 1.75" long
FM104			Fin mount, 0.250" thick, 1.00" long
GFA18			Zerkometer™ grease fitting adapter 1/4-28 taper to 1/8 NPT female 90°

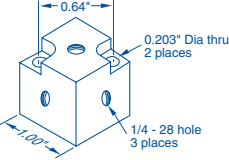
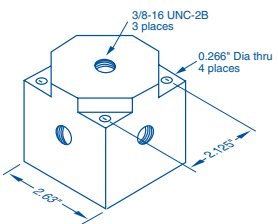
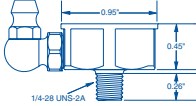
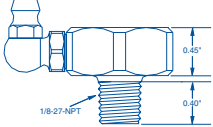
MOUNTING / ACCESSORIES

MODEL	IMAGE	DRAWING	DESCRIPTION
SF1			Mounting stud, 10-32 UNF both ends, stainless steel, recommended mounting torque 18 in-lbs.
SF3			Mounting stud adapter, adapts 10-32 UNF to 1/4-28 UNF, stainless steel, recommended mounting torque 18 in-lbs.
SF4			Mounting stud, 10-32 UNF both ends, isolated, stainless steel with non-conductive layer of epoxy to prevent ground loops, recommended mounting torque 18 in-lbs.
SF5			Epoxy mounting stud, 10-32 thread, 0.50" hex, anodized aluminum, recommended mounting torque 18 in-lbs.
SF6			Mounting stud, 1/4-28 UNF both ends, stainless steel, recommended mounting torque 24 in-lbs.
SF6M			Mounting stud, 1/4-28 UNF to M8 x 1.25 (metric), recommended mounting torque 24 in-lbs.
SF6M-1			Mounting stud, 1/4-28 UNF to M6 x 1.00 (metric), recommended mounting torque 24 in-lbs.
SF7			Mounting stud, 3/8-16 thread both ends, stainless steel, see specification sheet of instrumentation being used for recommended mounting torque.
SF7B			Threaded inserts (helical inserts), 1/4-28 internal to 3/8-16 external

MOUNTING / ACCESSORIES

MODEL	IMAGE	DRAWING	DESCRIPTION
SF8			Cementing pad, 1/4-28 integral stud, 1" diameter, stainless steel, recommended mounting torque 24 in-lbs.
SF8-2			Cementing pad, 1/4-28 tapped hole, 1" diameter, stainless steel, recommended mounting torque 24 in-lbs. Includes key notch for constant axis orientation; use with 993B Series Triaxial Accelerometers.
SF11			Magnetic mounting pad, stainless steel. Epoxy this pad to a structure surface to provide a place for magnetic mount sensors.
SF20-1			Mounting stud, 1/4-28 to 3/8-24.
SF20-2			Mounting stud, 3/8-24 to 3/8-24.
ST101			Spot face tool, 1.25" diameter, pilot drill for 1/4-28 hole. Drill depth is adjustable.
QB-1			QuickLINK® Sensor Base, adapter mates to 1/4-28 sensor, stainless steel. Adapts to sensor for walkaround data collection. Attaches sensor to any QuickLINK mounting pad in less than one turn.
QP-1			QuickLINK® Stud Mounting Pad, 1/4-28 tapped hole base, stainless steel. Allows quick mount of sensors in less than one turn. Use of one QB-1 on sensor required. Easy conversion to permanently mounted sensors.
QP-2			QuickLINK® Cementing Pad, flat base, stainless steel. Allows quick mount of sensors in less than one turn. Use of one QB-1 on sensor required. Easy conversion to permanently mounted sensors.
TC1			One inch triaxial mounting cube, 10-32 tapped holes, anodized aluminum, non-conductive coating prevents ground loops. Weight 36 grams.

MOUNTING / ACCESSORIES

MODEL	IMAGE	DRAWING	DESCRIPTION
TC1B			One inch triaxial mounting cube, 1/4-28 tapped holes, anodized aluminum, non-conductive coating prevents ground loops. Weight 36 grams.
TC2			Triaxial mounting cube for 731A, 3/8-16 tapped holes, anodized aluminum, non-conductive coating prevents ground loops. Weight 500 grams.
ZB14			Zerkometer™ mounting base, 1/4-28 tapered thread
ZB18			Zerkometer™ mounting base, 1/8-27 NPT
A48038			Crimp Tool for use with R6Q or R6SL/R6GSLI connectors.
A61059			Epoxy, Nozzle, EPX
SILPAK			Silicone Grease, 1.5 cc tube, Dow Corning [DC 111] for use with splash proof connectors.
SILGREASE			Silicone Grease, 5.3 ounce tube, Dow Corning [DC 111] for use with splash proof connectors.
VERSIL406			Epoxy, Versilox, A-Paks, 406 / ACC. #17

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