

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		



Industrial Wireless Products

Wilcoxon Research, Inc. wireless technology has been designed to eliminate the cabling between sensing instrument and the signal destination. The radio technology utilized sends signals in the 2.4 Giga-Hertz ISM band. This band has been set aside worldwide for user license-free signaling. The Wilcoxon signal transmission equipment is equipped with Bluetooth™ Class 1 radios for 100 meter signal transmission.

The Wilcoxon Wireless instruments are intended for use in the industrial environment. Packaging includes DIN rail mounting and removable screw terminal blocks for ease of installation and service. 24 VDC power meets the typical instrumentation standard power and enables easy battery backup where the installation may require it.

Modular design allows for combinations of modules to handle different signal types for a specific application. Module types are for 4-20 milli-amp DC, accelerometer dynamic, thermocouple/RTD, pulse/tachometer and status signals. Module pairs are designed to eliminate the signal cabling from transmit sensor to receive instrument locations.

The radio transmitters are 100 mW output and the receivers have -70 dBm sensitivity. This combination provides for 100 meter signaling in the typical industrial environment. Beams, girders, posts, machinery and material do not generally interfere with the signal transmission. Solid metallic barriers and reinforced concrete will block the signals.

For cable replacement, BlueLynx™ modules are shipped in mated transmitter/receiver pairs that require no set up by the user. Each pair is equipped with a unique address allowing multiple sets to be utilized in the same operational environment.

For data acquisition applications, BlueLynx modules serve as the point of entry into the data acquisition network. Access points communicate with one or more BlueLynx modules and provide network access to the signal information with ethernet, IEEE 802.11b WIFI, or RS-232 connections to a computer. Protocol for signal data access is in TCP/IP, or modbus format as examples. Additional formats are available as well.

Optional accessories for the BlueLynx modules include:

NEMA 4X enclosure complete with mounting plate and DIN rail.

DC power supply for 80 – 250 VAC input and 24 VDC output, DIN rail mount.

Antenna extension with two meter cable, connectors and cable gland.

COMMON APPLICATIONS

- Moving Platforms:
 - Cranes
 - Turntables
 - Conveyors
 - Rotating Kilns
- Temporary Installations:
 - Problem Analysis
- Retrofit Installations:
 - Process Control
 - Oil Refineries
 - Pulp and Paper Plants
 - Mines
 - Power Generation and Distribution
 - Water Treatment and Distribution
 - Wastewater Treatment and Collection
 - HVAC

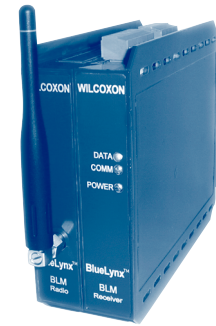
The Wireless Series

Wireless Signal Links for Process Signals

The Wilcoxon Research, Inc., BlueLynx™ product series takes the place of wired process signal connections. The BlueLynx™ modules are available in a variety of configurations for a wide range of process signals. Wilcoxon Research BlueLynx™ wireless products include 100 meter range, Class I Bluetooth™ technology for industrial applications. The Bluetooth™ technology platform utilizes a frequency hopping spread spectrum technique within the 2.4 GHz ISM band for a user license free application. Bluetooth™ incorporates a secure packet message structure in addition to the frequency hopping spread spectrum technology to provide signal security.

With the BlueLynx™ modular approach, the combination of modules can be tailored to the application signal requirements. Each BlueLynx™ module type handles a specific process signal type. Modules are available to transmit 4-20 mA signals, thermocouple/RTD temperature signals, accelerometer dynamic signals, pulse/tachometer signals, and status signals. The units are designed to interface directly to the sensors at the transmit side and interface to the process control/data acquisition equipment at the receive side.

The packaging is modular and designed for mounting on standard DIN rail. Connections to the units are by plug-in screw terminal blocks. The BlueLynx™ modules operate on 24 VDC power consistent with instrumentation installations. The BlueLynx™ modules are available for individual purchase or with power supply, NEMA 4X, and antenna extension accessories.



All BlueLynx™ wireless sensor links are offered as a transmitter/receiver pair and come factory programmed, calibrated and tested as a set. No field programming is required. Each set is given a unique address so that multiple BlueLynx™ sets can operate simultaneously in the same area without interference.

BLM – Wireless Signal Link for 4-20 mA Signals

The BlueLynx™ BLM transmitter collects analog signals from up to four 4-20 mA sensors and transmits the signals wirelessly to the BlueLynx™ BLM receiver wired to instrumentation, a PLC, DCS or other systems.

BLD – Wireless Signal Link for Dynamic Signals

The BlueLynx™ BLD transmitter transmits the analog dynamic signal from a single sensor and transmits the signal wirelessly to the BlueLynx™ BLD receiver wired to instrumentation or Vibration Analysis Systems.

BLT- Wireless Signal Link for Temperature Signals

The BlueLynx™ BLT transmitter transmits the analog temperature from types E, J, K or T thermocouples or from 100 ohm RTD sensors. Four temperature signals can be transmitted by a BLT transmitter. Temperature signals are received by a BLM receiver wired to instrumentation, a PLC, DCS or other system. Conversion from low level temperature sensor signal to 4-20 milliAmp signal is performed within the wireless link.

BLP – Wireless Signal Link for Pulse Signals

The BlueLynx™ BLP transmitter transmits the analog pulse signals from up to four sensors and transmits the signals wirelessly to the BlueLynx™ BLP receiver wired to instrumentation, a PLC, DCS or other systems.

BLS – Wireless Signal Link for Status Signals

The BlueLynx™ BLS transmitter transmits the on/off status signals from up to twelve devices and transmits the signals wirelessly to the BlueLynx™ BLS receiver wired to instrumentation, a PLC, DCS or other systems.



Wireless Module Specifications

Wireless Signal Links for Process Signals

SPECIFICATIONS	TRANSMIT MODULE	RECEIVE MODULE
WIRELESS TRANSMISSION		
Technology Platform Modulation	Bluetooth™ Frequency Hopping Spread Spectrum	Bluetooth™ Frequency Hopping Spread Spectrum
Radio Frequency	2.4 GHz user license free band	2.4 GHz user license free band
Communication Range	100 meters	100 meters
Output Power	+20 dBm / 100 mW	+20 dBm / 100 mW
ELECTRICAL		
Power Requirements	24 VDC (18 – 27.5 VDC) 200 mA	24 VDC (18 – 27.5 VDC) 200 mA
ENVIRONMENTAL		
Operating Temperature	-35°C – +85°C (32 - 122°F)	-35°C – +85°C (32 - 122°F)
Humidity	5% - 90% non-condensing	5% - 90% non-condensing
Enclosure Rating	NEMA 1 / IP40	NEMA 1 / IP40
PHYSICAL		
Dimensions (H x L x W)	5.8" x 4.5" x 1.7" (14.7cm x 11.4 cm x 4.3 cm)	5.8" x 4.5" x 1.7" (14.7cm x 11.4 cm x 4.3 cm)
Weight	0.8 lbx. (0.37 kg)	0.8 lbx. (0.37 kg)
Connector	Screw Terminal	Screw Terminal
Mounting	DIN-Rail	DIN-Rail
INDICATORS		
Power	Green	Green
Data	Blue	Blue
Comm Fail	Red	Red

BLUELYNX™ ACCESSORIES

BL-ENC - NEMA 4X enclosure with back panel and DIN Rail 8" x 8" x 8"

BL-PS - Power Supply 80-250 VAC input / 24 VDC at 250 mA output

BL-AN - BlueLynx antenna extension cable 2 meters with connectors and cable gland

The Wireless Series

Wireless Signal Links for Process Signals

SPECIFICATIONS	TRANSMIT MODULE	RECEIVE MODULE
MODEL BLM		
Input Signal	Four 4-20 mADC (250Ω input impedance) 1-5 VDC (50KΩ input impedance)	Radio Frequency Signal
Output Signal	Radio Frequency Signal	4-20 mADC (250Ω input impedance) 1-5 VDC (50KΩ input impedance) 4-20 mADC(max 750Ω load)
Data Resolution	16 Bit	16 Bit
MODEL BLD		
Input Signal	One Dynamic Vibration Signal	Radio Frequency Signal
Power Supply to Sensor	24 VDC through a 2.4 mA constant current diode	N/A N/A
Output Signal Signal Bandwidth	Radio Frequency Signal 0.5 Hz to 4.0 kHz	Dynamic Vibration Signal 0.5 Hz to 4.0 kHz
MODEL BLT		
Input Signal	Four Thermocouple type E, J, K, T or RTD 100 ohm	Radio Frequency Signal
Output Signal Data Resolution	Radio Frequency Signal 16 Bit	(use BLM-RM) 16 Bit
MODEL BLP		
Input Signal	Four Dry contact or voltage pulse (100 Hz maximum frequency)	Radio Frequency Signal
Output Signal	Radio Frequency Signal	Dry contact or voltage pulse)
MODEL BLS		
Input Signal	Twelve Dry contact or voltage	Radio Frequency Signal
Output Signal	Radio Frequency Signal	Dry Contact

BLUELYNX™ ACCESSORIES

BL-ENC - NEMA 4X enclosure with back panel and DIN Rail 8" x 8" x 8"

BL-PS - Power Supply 80-250 VAC input / 24 VDC at 250 mA output

BL-AN - BlueLynx antenna extension cable 2 meters with connectors and cable gland



Wireless Accessories

Wireless Signal Link

BLUELYNX™ ACCESSORIES

Wire and cable for data acquisition systems in an industrial environment can be eliminated by using the Wilcoxon Research, Inc. BlueLynx process signal communication modules to perform the input/output functions for the system. By locating the BlueLynx modules at the signal source and communicating Bluetooth to the data acquisition system, the signal cabling is eliminated. This approach is ideal for temporary applications, or for modifications or upgrades to an existing system. The data acquisition system can utilize a personal computer, laptop, PDA or a combination for the human machine interface. The process data is monitored wirelessly from the BlueLynx modules by the personal computer, laptop, or PDA equipped with Bluetooth communications. For larger installations, the BlueLynx modules can communicate with a Bluetooth equipped access point which can also be equipped for communications by ethernet, fiber optics, or other high speed data communications. Communication protocols are available for several industrial standards including MODBUS, TCP/IP and so forth to enable communications with existing systems.

Typical BlueLynx data acquisition system.

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

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

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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