



The SV3X's *four* (4) or *eight* (8) channel configuration and unmatched versatility makes finding and repairing machinery faults easy while saving you considerable time, money, and effort.

This is the ultimate predictive maintenance toolbox for rapidly identifying, troubleshooting, and repairing every machine problem that threatens your machinery's reliability. The SV3X's ever-evolving tool sets ensure you have the right tool for every problem while saving the environment with paperless data collection, analysis, reporting, and storage.

VIBRATION ANALYSIS - Collect detailed frequency, trending, waveform, and process data like a pro for fast, accurate, and lasting results.

ROTOR BALANCING - Smooth operating machinery is the signature of a great maintenance program and provides huge savings in repair costs, time, and energy.

ROUTE COLLECTION - 3x faster data collection than 1 or 2 channel systems. Providing you 66% more time to repair the faults you find.

EVENT MONITORING- Finally capture elusive diagnostic data from unexpected machinery shutdowns for fault identification and repair.

LASER ALIGNMENT - Precision alignment across a coupling saves energy, coupling and bearing wear, and premature motor degradation from soft foot.

REMOTE MONITORING - Analyze data and control the SV3X through the internet from anywhere in the world with a Virtual Private Network (VPN).

DIGITAL TAPE RECORDING - Stream up to eight (8) channels of gap free data to disc for the most advanced machinery diagnostics and analysis.

ROLLER BEARING ENVELOPE ANALYSIS - Bearings are the weakest link in the failure chain - so know when they need lubricating, repair, and replacement.

More options evolving all the time to *Keep You Running*

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SV3X™ SPECIFICATIONS*

Input

Number of Channels ^(a) – 4 or 8, simultaneous

Coupling – AC 0.5 Hz to 20 kHz; DC. Along with ICP™^(h) and 4-20 interfacing capability can interface to virtually any vibration probe and most industrial parameter transducers

Auto-Switching – All channels feature independent control including Enable, ICP, 4-20 interfacing, coupling, range/gain, hardware integration, AA filtering, self-calibration, etc... Software controlled for ease of use and ultra-low power consumption

Auto-continuity check – detects shorts or opens in transducer cabling

Accelerometer power ^(b) – constant 2.4 mA at 18V

Sensitivity ^(b) – 10mV to 30V Full Scale in 12 steps; visual overload indicators. Measures to 1.3 μ V

Auto-scaling ^(b) – to 3 db (variable) margin above maximum peak in any channel in less than 1 sec. Scaling for each channel is independent of other channels.

Dynamic range – Collective dynamic range >147 dB utilizing all voltage ranges; typ. >80 dB for each range down to 1.3 μ V at lowest range (10mV); 16-bit A/D (96 dB) on each channel.

Integration ^(b) – single analog (g's \rightarrow ips, 3.5 to 5kHz) or single/double digitally (acc \rightarrow vel, acc \rightarrow disp, DC to 20kHz)

Sampling rate – 50kHz samples/sec max each channel (continuous, gap-free) for F_{max} of 20kHz. Max cumulative sampling rate 200kHz in burst-mode and 100kHz continuous. Not channel independent.

Frequency range – F_{max} from 10 to 20 kHz in 11 standardized steps for up to 8 channels.

Auto-anti-aliasing filters – Hardware (Chebyshev) and digital FIR filters provide 80dB of pass-band protection. Unused filters are powered down. Filter placement occurs before main gain stage so that high frequency noise can be filtered for maximum dynamic range.

Protective out-of-band filter – 20 kHz 4-pole LP. Used for single stage prior to AA filter.

Indicator LEDs – A series of LEDs provide active channel and ICP status. Two status LEDs provided to indicate various DAQ operations or conditions.

Self-Calibration – Self-looping capability to inject various calibration signals into any channel input via switch for system verification. Additionally, a NIST ^(h) traceable calibration is provided with each system. Superior accuracy is achieved by the digital storage of a calibration-table which calibrates for both dc-offset and gain for ALL signal paths ^(f).

Phase ref. trigger – Full triggering capability includes edge control (+/-), level control, functional from practically DC to F_{max} (100Kcpm+). Accepts any voltage level from mVolts to 30V. The trigger may also be routed to any channel via software control, allowing the user to view the tach signal for diagnostic and/or analytical purposes.

VIB Bus – Proprietary bus includes signal inputs, digital control lines, power, etc. for connection to VSC's other line of optional accessories.

Computer Configuration (Typical)

(Call for specific platform features)

Processor – 1 GHz

Operating system – Windows® XP™ or Vista™^(h)

Networking – Wireless 802.11 b + g, Bluetooth™^(h), cellular

System RAM – 512 MB SDRAM (up to 2GB)

Mass storage – shock-mounted 40 GB HD

Interfaces – pen, dual USB, VGA, IrDa, microphone, earphones, SD

Text entry – pen or software keyboard (ext. keyboard opt.)

Printing – USB, or IrDa ports

Modem – internal 56 Kbytes, 14.4 kbps FAX

Rugged Computer Option – available

Virtual Private Networking – Connect to any computer in the world

Signal Processing

Data Streaming/Display – Gap-free data storage capable of up to 8 channels simultaneously with real-time display (10 Hz typical).

Gap-free, 8 channels, up to 5kHz; Real-time^(g), 8 chs., up to 20 kHz

Spectrum – Real time spectrum processing includes amplitude & phase (complex), power, PSD, inverse transform...with 10 standard block sizes from 256 points (100-line) through 128k (51,200 lines). Displays with high refresh rates & large overlap capability ensure graphs of large FFT sizes as well as very low-frequency plots show meaningful data very quickly.

Weighting – 11 standard weightings including Hanning, Hamming, Flattop, Force, Exponential...

Averaging – Includes summation, peak, exponential in either fixed or continuous modes ^(d) up to 2³² averages.

Filtering – In addition to hardware filtering, software filtering includes adjustable High Pass, Low Pass, Notch or Band Pass.

Digital Triggering – Trigger signal is used to derive 1x phase, rpm from almost DC to F_{max} (see Input). Triggering adds flexibility^(e) and permits faster updates.

Software

The SV3X™^(h) system comes standard with WinProtect™^(h) software that is Windows® XP™^(h) compatible. All of these products are remote access capable and contain extensive help systems with demos & tutorials:

WinProtect™^(h) – This flagship software product has won user acclaim for its uncluttered, icon-rich presentation, numerous wizards, extreme flexibility, robust feature set, reports, and communication services.

Real-Time waveform and spectrum processing – Supplies default & user-defined panel setups, extensive off-route or rapid-route creation, numerous annotations and storage ability, featuring full unit support for disp/vel/accel with auto-conversion using integration/differentiation, cursor choices (harmonic, sideband, delta [difference]), peak table with order identification, rms, peak, true-peak, auto-speed tracking, orders, peak labeling, and more.

Route Collection – Quickly and efficiently collects and analyzes machinery data.

WinEvent™^(h) – Records data based on a sophisticated array of user-defined events (high spectral peak, alarm band, etc...) both before & after critical events for in-depth fault analysis.

WinEnvelope™^(h) – Bearing envelope analysis software for roller bearing analysis.

Options

WinBalance™^(h) – Dynamic rotor balancing hardware and software.

WinRecorder™^(h) – Eight (8) channel digital tape recorder. Records gap-free data with playback capability (including fast forward, rewind, etc...). Can store terabytes ^(c) of data representing days, weeks, months or even years of continuous data.

S-650 Coupling Laser Alignment System™^(h) – Hardware & software to laser align couplings

Physical (multiple options)

Weight – up to 5 lbs **Size** – up to 11.5" x 7.75" x 1.75"

Screen – Color 800x600 dpi, up to 8.4" diag.

Outdoor transfective color (CTF)

Battery – Lithium Ion with power management

(a) 3-axis vibration measurements are specified by ANSI S217 and SO 2373-1974; (b) utilizes channel independent control.; (c) limited only by the storage medium size; (d) Fixed refers to a set number of averages, N. For Continuous, N continually updates; (e) for example, any trigger amplitude level can be readily set (in addition to the standard +/- edge triggering) and additional logic conditions imposed. Also, a data block does not have to start at the trigger point to derive phase; (f) A yearly calibration at our facility is recommended. (g) burst-mode (h) SV3X, WinProtect, WinBalance, WinEnvelope, WinEvent, and WinRecorder are trademarks of Vibration Specialty Corporation. Windows, XP, and Vista are registered trademarks of Microsoft Corporation. Bluetooth is a trademark owned by Bluetooth SIG. ICP is a registered trademark of PCB Piezotronics, Inc.. NIST is the National Institute of Standards and Technology. The S-650 Coupling Laser Alignment System is a trademark of Hamar Laser Instruments, Inc.

* Specifications subject to change without notice

