

DLI Watchman® SPRITEMAX™

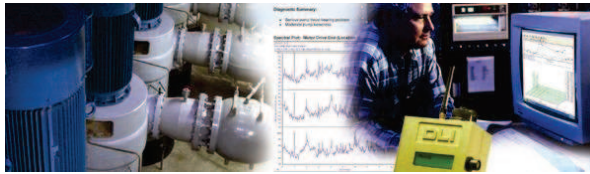
Wireless Machine Condition Assessment System



The DLI Watchman® SpriteMAX™ is the next generation online monitoring system. Unlike simple alarm systems, SpriteMAX automatically diagnosis hundreds of common mechanical faults and makes this information available to you wherever you are.

Embedded in SpriteMAX is 40 years of vibration analysis expertise that make use of the following data types to diagnose common faults in rotating machinery:

- **Vibration time waveforms**
- **Vibration Spectra (FFT)**
- **Envelope demodulation for early stage rolling element bearing wear**
- **Orbits and full spectrum for turbine analysis or other critical equipment using journal bearings**
- **Phase, speed, and overall vibration amplitude**
- **Process measurements including DC voltage and 4-20 mA current loop sensors**



SpriteMAX Standard Capabilities:

- **Embedded rule-based diagnostic system that turns data into actionable information**
- **Performs local, real time data analysis and machine condition assessment**
- **Online Dashboard for live, "at-a-glance" machine status**
- **Distributes reports and data globally for remote monitoring applications**
- **Convenient web page interface for viewing data and machine condition status**
- **RSS Feeds via email client software or RSS Feed interface software**
- **Seamless, network integration with DLI's ExpertALERT™, DCX™, DCX Online™ and ABB's Expert Advisor™ condition assessment systems.**

Wireless Condition Monitoring

Wireless capabilities drastically reduce installation costs. SpriteMAX's standard network interfaces include both a sealed RJ-45 connection to your plant's wired Ethernet and an integral IEEE 802.11b wireless network adapter. If you need to install a SpriteMAX processor in a remote, hard to reach or outdoor location, save time and installation costs by utilizing it's wireless networking feature.



Compact and Modular Design

SpriteMAX's modular design makes it easy to expand the system to include additional assets. 16 channel multiplexers can be added for up to 512 channels per SpriteMAX or additional SpriteMAX's may be added As needed. Since SpriteMAX's operate independently of each other there is no limit to how many online processors can be installed in a facility.

Tough as Nails

SpriteMAX's billet aluminum enclosure was designed to exceed IP67 rating (suitable for the toughest industrial or marine environments). It can be submerged in water, operate at 140° F (60° C) and can withstand continuous exposure to vibration of 15 G RMS (0-5kHz). Its operating system and mass storage utilize the latest in Compact Flash high-density technology, offering the ruggedness of solid state memory.

SpriteMAX Optional Features:

- Live Excel-based graphical mimic displays for machine diagrams and data display
- Web Exchange for remote data management using internet and/or file transfer protocol (FTP)
- OLE for Process Control (OPC) output interface allows SpriteMAX to be act as OPC server
- Full line of accelerometers, cabling, junction boxes, multiplexers and commissioning services (Call DLI or your local representative for details)



Delta-3N Kft.
 7030 Paks, Jedlik Á. u. 2.
 Tel.: +36 75 510 115
 Fax: +36 75 510 114
 drnagyi@delta3n.hu
 www.delta3n.hu



Specification

CPU	<ul style="list-style-type: none"> • NS Geode GX1-300 MHz (low-power) processor • System memory: 256 / 512 MB SDRAM SODIMM x 1 • Watchdog Timer: Can generate a system reset, IRQ or NMI. (1~ 255 sec, 1 sec/step) • Operating System - Microsoft Windows® Embedded XP • 512 MB / 1 GB / 3 GB CF solid state drive (OS, Programs & Data) 	Time Domain	<ul style="list-style-type: none"> • Long time record capture, four channels simultaneous • Sample rates from 1 Hz to 41 kHz
Input / Output	<ul style="list-style-type: none"> • Networking: <ul style="list-style-type: none"> ○ Ethernet: Realtek RTL8139DL, 10/100Base-T RJ-45 ○ Wireless: IEEE 802.11b (data transfer rate up to 11 MB/s) • Com Ports / Peripherals: USB • Keyboard / Mouse: PS/2 	Inputs	<ul style="list-style-type: none"> • Four single-ended analog inputs • Selectable ICP accelerometer sources • Cable fault detection • Input signal clipping detection (25 Volts maximum input signal amplitude) • TTL-level tachometer input • Analog Signal Processing • Selectable DC coupling or 0.2 Hz or 10 Hz high pass analog filtering • Selectable single stage analog integration • No more than -76 dB inter-channel cross talk
Display	<ul style="list-style-type: none"> • Integral: 16 x 2 LCD Text Display, System Status • External Video Adapter: NS CS5530A LCD/CRT controller - 4MB • Resolution: 1280 x 1024@16bpp (CRT), 1024 x 768@18bpp (TFT LCD) 	Triggering	<ul style="list-style-type: none"> • Internal: <ul style="list-style-type: none"> ○ Selectable from any analog input channel ○ Level, slope • External: <ul style="list-style-type: none"> ○ TTL trigger, rising or falling edge ○ Pre or Post-triggering: 0 to 100% of capture
Signal Processing	<ul style="list-style-type: none"> • Texas Instruments TMS320C51 Digital Signal Processor (DSP) running @ 40 MHz • Four 16 Bit delta-sigma A/D converters • Simultaneous sampling of all four inputs up to 41 KHz • Anti-aliasing via an analog RC filter plus a 64th order digital FIR filter • Dynamic range greater than 85 dB • Signal to noise ratio greater than 76 dB • Overall RMS amplitude detection from 10 Hz to 1 kHz per ISO 2954-1975 (E) 	Environmental	<ul style="list-style-type: none"> • Fully machined from high grade aluminum • Max operating temperature: 60°C • Humidity: 0 to 100% condensing humidity • Vibration: 15 G RMS (random vibration 0-5000 Hz)
Spectral	<ul style="list-style-type: none"> • Four channel simultaneous FFT analysis of the analog input channels up to 16 kHz span • FFT Resolution of: 50, 100, 200, 400, 800, 1600, 3200, 6400, 12800 & 25600 lines • Spectral Windows: Hanning, Hamming and Uniform • Averaging Types: Linear, Exponential and Peak-hold continuous • Overlap processing: selectable overlaps of 0%, 25%, 50% and 75% 	Connections	<ul style="list-style-type: none"> • Power: 90 - 264 VAC 47-63 Hz • Network: RJ-45 Ethernet, 802.11b wireless adapter antenna • Video: SVGA • Peripherals: USB • Mouse / Keyboard: PS/2 • 4 Analog data acquisition inputs (input) • TTL Tachometer (input) • Multiplexer control (RS-485) (output)
		Enclosure	<ul style="list-style-type: none"> • Sealing: IP67 (Totally protected against dust and the effects of submersion to 1 meter) • Machined high grade aluminum enclosure • Dimensions: CPU, 8.25"x4.5"x3" CPU / Sprite MUX, 8.25"x10"x3" • Durable powder coated finish

* Specifications are subject to change without notice



Delta-3N Kft.
 7030 Paks, Jedlik Á. u. 2.
 Tel.: +36 75 510 115
 Fax: +36 75 510 114
 drnagy@delta3n.hu
 www.delta3n.hu



SpriteMAX Product Info Sheet
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