vbOnline™

CREATING THE STANDARD FOR AFFORDABLE ONLINE SURVEILLANCE SYSTEMS

Vibration analysis is the industry-preferred technology that allows you to monitor and accurately assess the 'health' of your machinery. Time-based maintenance programs are no longer financially viable - hidden problems will continue to develop within your plant without anyone realizing it. Online monitoring is the key to minimizing production losses and reducing the overall cost of maintenance.

The **vbOnline** monitoring system provides 24/7 round the clock surveillance of your critical assets. It is a flexible, modular online monitoring system that is constantly and automatically evaluating your data, notifying you when potential problems arise, thus avoiding costly downtime.

The **vbOnline** system allows you to collect data more cost effectively, efficiently and with greater frequency than monitoring with a portable instrument alone. You can safely monitor machines in dangerous and inaccessible environments more frequently.

The **vbOnline** monitoring system uses 16 or 32 channel devices to provide a flexible tailor-made solution to suit each and every requirement. Compact in size, the **vbOnline** device measures only 306 mm x 128 mm x 60 mm [mounted on DIN rail].

The **vbOnline** system is expandable so it can monitor small or large applications with ease. Each device utilizes an Ethernet (wired or wireless) connection to transfer the data to the host computer. Connect straight into your plant's Ethernet or, for that difficult to monitor machine, simply integrate the **vbOnline** with a wireless network (when used in conjunction with a commercially available wireless bridge).

Reduce the installation cost - each compact device can be installed as close as practical to your machine, lessening the cost of lengthy sensor cabling. Power supply to the device is 200 mA at 12 V to 24 V DC.

DC-coupled analog measurements allow monitoring of process data. Temperature, pressure, flow and load are but a sample of engineering process values which are collected as AC & DC voltage (+/-20 V) or as 4-20 mA inputs. Collected process data can be trended and alarmed.

LED indicators display the current status of the device at a glance. Speed reference is accepted by 4 tachometer inputs per device. Pulse-type speed input gives you the option to configure the number of tach pulses per revolution.

Each **vbOnline** device provides 4 relay outputs, which are configurable upon alarm condition. The device can be configured to collect data based on operating conditions. It checks the speed during data collection to ensure suitability of data, or can collect additional data based on alarm condition.

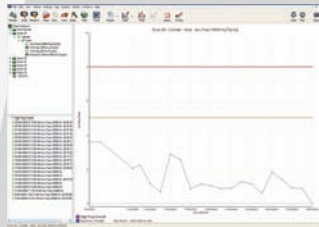Suplied with **Ascent** software

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ASCENT LEVEL 3 – OUR MOST ADVANCED SOFTWARE

The powerful **Ascent** vibration analysis software package is the cornerstone of both our online and portable hand held systems. Configured either as a single user PC or networked application, **Ascent Level 3** provides immediate notification of alarms and evaluation of problems. View the plant status at a glance - **Ascent Level 3** provides visual notification of the current alarm levels.

Automatically set up alarms using the Proven Method or ISO standards then fine-tune alarm limits with statistical analysis based on each machine's historical data. **Ascent Level 3** will notify plant personnel by e-mail when your machine develops a problem.

Time waveforms, FFT, overall vibration values, bearing demodulation, phase, speed and interactive charting are some of the **Ascent** software's diagnostic capabilities, allowing you to investigate specific machine problems. Design or customize your own reporting options with our powerful SQL/HTML-based reporting engine. Standard reporting options include status of machines in database, most recent vibration level and percentage change.

The **Ascent** software is OPC data acquisition compliant which makes integration with your plant's DCS or SCADA system seamless.


Trend machine history

Alarm conditions – one of the reporting options within **Ascent Level 3**. View current alarm status and vibration change since last measurement.

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ONLINE MANAGER

The 'brain' of the **vbOnline** system is our **Online Manager**. The **Online Manager** is responsible for managing the collection of data as specified within the **Ascent** program, and writing of data to your network database. As is standard with all Commtest products, the simplicity and ease of use is an important feature within the **Online Manager** - configuring the online system is easy.

The **Online Manager** is a separate executable that takes measurements according to the collection schedules that have been specified in the **Ascent** program. The online log contains a recording of all the actions taken by the **Online Manager** It can show all actions or a basic summary of the data collection over a date range.
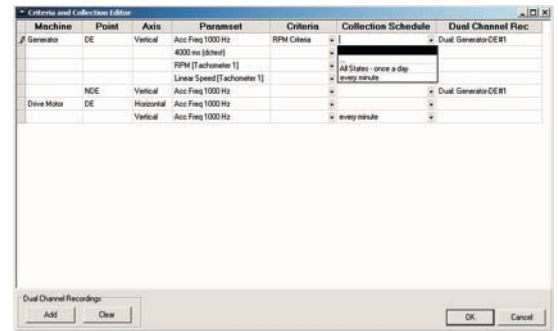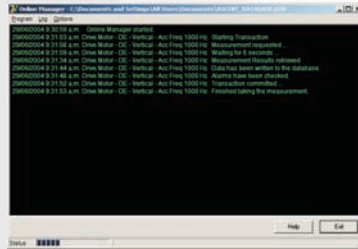
Here you can associate criteria with a particular schedule entry. When the **Online Manager** attempts to collect the schedule entry it will first determine whether the collection criteria have been met. You can assign a collection schedule to a schedule entry allowing you to specify how often a recording should be taken, or assign a dual channel recording for simultaneous measuring,

Initial setup is simple.
From the main screen you can:
- choose when a relay should be activated according to which LEDs are set.
- enter a description for each tachometer and the number of pulses per revolution.
- specify what type of sensor will be attached to each channel.
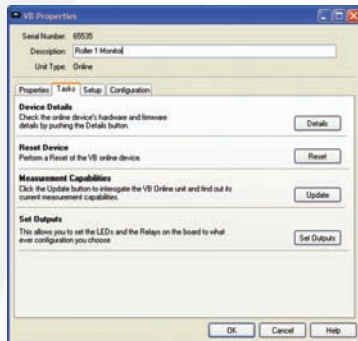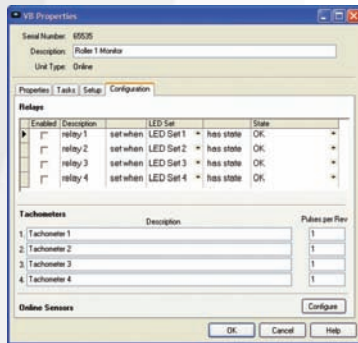
Configure the measurement capabilities of the device, perform a reset of the firmware and set the LEDs and relays to a configuration of your choice.

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vbONLINE CONNECTIVITY

Simplicity is our goal. Each **vbOnline** device connects directly into the LAN / WAN network within your plant. Single user PC or network capable, our system can be as small as required or is easily expandable. As your surveillance needs increase, simply plug in additional modules.

Ascent software
Display spectra, waveforms, overalls
Schedules data collection intervals
Automatically checks alarms
Controls status LEDs automatically
Notifies of alarm condition

Client PC

Client PC

Local TCP/IP-based Ethernet network or
wireless LAN/WAN

vbOnline device
16 or 32 channels and 4 tach inputs ●
12/24 V DC ●
screw terminals ●
4 relays ●
red, yellow, green LED status indicators ●

Sensors
vibration data
process values
tachometers

local alert system

vbOnline device

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FEATURES

- Modular design for system expansion
- Compact design
- 16 or 32 channel option
- Powerful **Ascent** vibration analysis software
- Common software platform supports both **vbOnline** and **vb** portable systems
- Simultaneous dual channel data sampling
- Single user or network compatible
- Ethernet or wireless connection
- 24 bit analog to digital conversion, fully digital processing in DSP
- Intelligently designed to accept machine data from the following sensor types:
  Accelerometers
  Velocity probes
  Proximity Probes
  AC/DC voltage signals
  4–20 mA
- Automatic detection and reporting of alarms
- Plant personnel alerted by email or text message
- Conditional data collection upon RPM and/or DC level, either server based or onboard the vbOnline device
- **AscentView** web-based machine information viewing tool

SPECIFICATIONS	MODEL **vb**Online	REMARKS
Analog Inputs		
Number of channels	16 or 32	Choice of two models
Simultaneous recordings	Dual channel	Any odd #channel with any even #channel
Channel scan rate	≤ 8 seconds per channel pair	Accel 1000 Hz 400 lines
Compatible sensors	Accel, vel, displ, voltage o/p, 4-20 mA	
DC-coupled ranges	0 V to 20 V, -10 V to 10 V, -20 V to 0 V	
AC-coupled range	16 V peak-peak	Selectable to suit sensor type
Sensor drive current	4 mA @ 24 V	Enable for ICP type sensors
A to D conversion	24 bits	
Input impedance	> 100 kΩ	
Analog Measurements		
Measurement types	Single value, time waveform, spectrum	
Quantities	Accel, velocity, displacement, demod, user-scaled	User scaling for voltage and 4-20 mA sensors
Max value with Accelerometer	± 80 g, ± 100 mm/s (4 in/s), ± 10 mm (0.4 in)	With 100 mV/g sensor
Max value with Vel. sensor	± 2000 mm/s (80 in/s)	With 100 mV/in/s sensor
Max value with Displ. sensor	± 2 mm/s (80 mil)	With 100 mV/mil sensor
Spectrum Fmax values	100 Hz to 40 kHz (6000 CPM to 2400 kCPM)	In 23 steps
Sampling rates	256 Hz to 102.4 kHz	In 23 steps
Dynamic range	≥ 95 dB	
Harmonic distortion	Less than -70 dB typical	Other distortions and noise are lower
Accuracy	± 1 % (0.1 dB)	For DC level and AC measured at 100 Hz
AC frequency response	± 0.2 dB from 10 Hz to 15 kHz;	From value measured at 100 Hz
	± 0.5 dB from 3 Hz to 40 kHz	High freq response also applies to DC ranges
Signal Processing		
Number of spectral lines	400, 800, 1600, 3200, 6400	3200 lines (8192 samples) max for dual channel recordings
Time waveform samples	1024, 2048, 4096, 8192, 16 384	
Window types	Hanning, rectangular	
Averaging types	Linear, exponential, peak hold, synchronous	
Number of averages	1, 2, 4, 8, 16, 32, 64, 128	
Overlap	0, 12.5, 25, 37.5, 50, 62.5, 75 ,87.5%	
Demodulation bandwidths	20 bandwidth options	From 125 Hz to 1250 Hz up to 16 kHz to 20 kHz
QuickScan		
Scan rate	2 seconds per channel pair	For DC-coupled sensors, no integration e.g. prox probes
	5 seconds per channel pair	For other sensors
Measurement type	Average value or 10 Hz to 1 kHz overall	Accelerometer readings are converted to velocity
Tachometer Inputs		
Number	4	Multiplexed
Range	0.5 Hz to 5000 Hz (30 to 300 000) RPM	Divided by number of pulses per revolution
Recommended sensor	Hall effect	Also optical, laser and Keyphasor® tach sensors
Power supply to sensor	12 V	Current limited by a 50 mA PTC
Input type	Optically isolated, accepts TTL	
TTL input pulses	2.5 V (2 mA) min, 12 V (20 mA) max, off-state < 0.8 V	
Relay Outputs		
Number	4	
Type	SPST, normally open	
Voltage and current rating	250 V AC or 30 V DC, 5 A	
Controlled by	Server	User configurable, based on alarms
Status Indicators		
System status	2 x LEDs	One for power, one for DSP status
Vibration status	4 sets LEDs: red, yellow, green	Indicates alarm state, user configurable
Relay status	4 x LEDs	Indicates if each relay is energized
Comms and Power		
Network comms	Ethernet v2.0, IEEE 802.3, TCP/IP, 10/100baseT	Auto senses 10/100 Mbps and half/full duplex
Network connection, link speed	RJ-45 socket, ≥ 256 kbps (optimum), 2400 bps (min)	Via any commercially available link
Diagnostic comms	RS232 @ 230 kbaud, RJ-12 socket	Auto-baud at power up 57.6 kbaud to 230 kbaud
Power supply	200 mA @ 9 V to 36 V DC	
Mechanical		
Mounting	Standard 35 mm DIN rail	For installation in enclosed control cabinet
Size	306 mm x 128 mm x 45 mm	(60 mm including DIN rail)
Environmental		
Temperature range	-10 °C to 60 °C (14 to 140) °F	
Humidity	95% RH non-condensing	
EMC	EN61326	Emissions and immunity
Analysis Software		
Name	**Ascent Level 3**	
Compatible portables	**vbSeries**	

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