The vbOnline Pro provides automated, user-scheduled monitoring of an asset’s mechanical health. It is a flexible and scalable system fully supported by the Bently Nevada System 1* condition monitoring and diagnostic software. The system assists in the early detection of machinery and process problems. The vbOnline Pro provides economic vibration monitoring for important assets. The device is easy to install and configure.

**Machinery applications**

vbOnline Pro is an ideal condition monitoring instrument for machinery with rolling element bearings and complex gearboxes, including:

- Agitators
- Air Compressors
- Blowers
- Centrifuges
- Cooling tower fans and pumps
- Extruders
- Machine tool spindles
- Mill stands
- Motors
- Paper machines
- Pumps
- Small Centrifugal Compressors
- Wind turbine generators

**Hardware key features**

System 1 enables strategic, data-driven maintenance planning and decision making to optimize asset reliability. The key features and benefits include:

- Compact and easy to install
- Simultaneous 12 channel data sampling
- Support for use with single PC or network
- Wired Ethernet connection
- 24-bit A/D conversion
- Continues to operate and store data on communication loss
- Supports 2 wire IEPE/ICP accelerometers
- Multiple user configurable waveforms and types per channel
- Configurable setpoints with alarming and events
- Machine operating state based data storage and alarming

**Software key features**

The vbOnline Pro and System 1 software complement your predictive maintenance program by performing cost effective data collection and condition monitoring analysis. System 1 software is the core of GE’s Bently Nevada* condition monitoring solution. It is an innovative approach to provide users with a single ecosystem for full plant-wide machinery management.
Capability

System 1 provides scale when it comes to database management, diagnostics, and work prioritization.

- High resolution trends and alarming
- Short-term “black box” flight recorder
- Anti-friction rolling element bearings
- Diagnostic reporting

vbOnline specifications

<table>
<thead>
<tr>
<th>Analog Inputs</th>
<th>Channels 1 to 10</th>
<th>IEPE/ICP 2 wire accelerometers</th>
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<tbody>
<tr>
<td>Channels 11 and 12</td>
<td>IEPE/ICP 2 wire accelerometers - or - Bently Nevada 3 wire accelerometers</td>
<td></td>
</tr>
<tr>
<td>Sampling method</td>
<td>All channels sampled simultaneously</td>
<td></td>
</tr>
<tr>
<td>AC coupled range</td>
<td>24 V peak-to-peak</td>
<td></td>
</tr>
<tr>
<td>Sensor drive current (2 wire mode)</td>
<td>3.3 mA @ -24 V</td>
<td></td>
</tr>
<tr>
<td>A to D conversion</td>
<td>24 bit</td>
<td></td>
</tr>
<tr>
<td>Input impedance</td>
<td>&gt; 100 kΩ for 2 wire accelerometers</td>
<td></td>
</tr>
<tr>
<td>Dynamic range</td>
<td>± 110 dB</td>
<td></td>
</tr>
<tr>
<td>Amplitude accuracy</td>
<td>± 1% (0.1 dB)</td>
<td></td>
</tr>
</tbody>
</table>

**Advanced features**

- Data storage intervals: Direct (overall) amplitudes – configurable in 30 second increments (default = 30 secs) | Waveforms & Spectra – configurable in 10 minute increments (default = 10 mins)
- Current values mode viewed in System 1: Direct (overall) amplitudes – 1 second Waveforms and Spectra – 1 second or as per waveform collection time
- Waveform and spectrum support: Multiple user configurable waveforms, spectra and types per channel
- Configuration assistance: Calculation of available vbOnline Pro resources based on monitor configuration
- Alarming and events: Configurable setpoints for all direct (overall) amplitudes. Additional data snapshot of all measurements for all channels in a machine collection group when alarm threshold exceeded for user defined dwell period.
- Machine operating state-dependent data collection: Supports machine operating state data collection and compartmentalization based on multi-parametric logic. Additional data snapshot of all measurements for all channels in a machine collection group on state change.
- Offline operation: The instrument continues to operate independently, with full functionality on loss of connectivity with a System 1 server. Data is stored and retained on a FIFO basis.

**Dynamic channel measurements (Channels 1 – 12)**

- Measurement domains: Acceleration, Velocity, Demodulation
- Measurement types: Asynchronous and synchronous
- Trended measurements: Direct (overall) amplitude, Bias voltage, Spectral bands (from waveform dynamic data in System 1)
- Sample rate: 102.4 KHz maximum
- Waveform samples per measurement: User configurable up to 32,768 samples
- Spectral lines: 1000 to 12,800 in 2x increments
- Spectral resolution: Down to 0.78 mHz/line
- Spectrum maximum frequency: User configurable up to 40 KHz
- Window type: Hanning
- Demodulation bandwidths: 125 Hz – 10 Hz (19 preset options)

**Speed pulse inputs**

- Channels: 2 (KPH1 & KPH2)
- Input types: Keyphasor TTL
- Power supply to speed pulse sensor: -24 VDC
- Detection threshold: Auto detection
- Events per revolution: User definable in System 1
- Recommended sensor: Bently Nevada Proximitors/Keyphasors, Proximity Switch Turck Ni-B-MB7-A-P6X7M +5 V TTL
- Type: Notch

**Instrument memory and system capacity**

- Offline storage capacity: 3,000 waveforms to supporting 6,400 spectral lines per waveform. Retention time duration depends on user defined storage interval.
- Data retrieval to System 1: Automatic synchronization and transfer of all captured data after a communication loss
- System 1 enterprise database instrument capacity: 200 vbOnline Pro instruments per database (2400 accelerometer channels, 400 speed pulse channels)

**Power, mechanical, environmental and EMC**

- Power supply: 1.7 A @ 18 to 36 VDC
- Boot-up time: < 5 minutes
- Mounting: Standard 35 mm DIN rail
- Size: 199 mm x 130 mm x 45 mm
- Temperature range: -40° C to +70° C (-40° F to +158° F)
- Humidity: 95% RH non-condensing
- EMC: EMC Directive 2004/108/EC EN 55011/CISPR 11 EN 61000-6-2 EN 61000-6-4

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