Specifications:

<table>
<thead>
<tr>
<th>Hardware Feature</th>
<th>Technical Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of input channels</td>
<td>4 analog channels and 1 aux channel</td>
</tr>
<tr>
<td>Channel measuring</td>
<td>Channel 1, 2, BNC, Channel 3, 4: AES 3 pin and Aux: LEMO 5 pin</td>
</tr>
<tr>
<td>Channel coupling</td>
<td>AC, DC, IEPE</td>
</tr>
<tr>
<td>Aux channel input</td>
<td>Tacho signal input and power supply</td>
</tr>
<tr>
<td>DSP processor</td>
<td>TI TMS320C6713B</td>
</tr>
<tr>
<td>Battery</td>
<td>LiPo 7.4V 5600 mAh, rechargeable</td>
</tr>
<tr>
<td>Power consumption</td>
<td>100-1200 lines</td>
</tr>
<tr>
<td>Spectral response</td>
<td>24 bit sigma-delta A/D converter</td>
</tr>
<tr>
<td>Frequency range</td>
<td>DC to 40 kHz</td>
</tr>
<tr>
<td>Dynamic range</td>
<td>130 dB (measured from spectrum)</td>
</tr>
<tr>
<td>Input impedance</td>
<td>1M Ohm</td>
</tr>
<tr>
<td>Frequency range</td>
<td>DC to 40 kHz</td>
</tr>
</tbody>
</table>

Feature for Data Collector

Types of measurement:
- Overall acceleration, overall velocity, overall displacement, overall bearing vibration (true peak value from enveloped waveform or high pass filtered waveform), time waveform, power spectrum, amplitude and phase, demodulated spectrum, Crest factor, temperature, process parameters.

Vibration sensors:
- Support instantaneous data measurement or un-ideal

Filters:
- Overall filters: 2Hz-1kHz, 5Hz-1kHz, 10Hz-1kHz, 2Hz HP, 5Hz HP, 10Hz HP
- Envelope filters: 500Hz-2kHz, 1kHz-2kHz, 2kHz-5kHz, 5kHz-10kHz, 10kHz HP
- Bearing HP filters: 50Hz, 1kHz, 2kHz, 5kHz, 10kHz, 20kHz

Overall display:
- Bar graph or trend chart (shown with historical data)

Spectrum display:
- Single plot or waterfall plot, Show band or fault frequencies on the spectral plots.

Time waveform display:
- Show waveform and/or orbit

Feature for Vibration Meter

Types of vibration:
- Acceleration, velocity and displacement

Types of detection:
- RMS, peak, peak-to-peak, true peak and quasi factor

Filters:
- 2Hz-1kHz, 5Hz-1kHz, 10Hz-1kHz, 2Hz HP, 5Hz HP, 10Hz HP, 20Hz HP

Display:
- Trend chart (vibration vs. time or rpm) or trend chart.

Tools:
- Add noise, skip point, hide archive points, show all points, show archive points only, insert or delete unscheduled points

Feature for Rotor Balancing

Rotor type for balancing:
- Single plane, double plane, 3 plane, 4 plane, overhang dual plane, 3 weights balancing

Balancing speed:
- 60 rpm to 300,000 rpm

Order resolution:
- Linear, normal, high, 0.03, 0.015, 0.008, and 0.004

Average number:
- 16, 20, 50 and 100

Balancing grade:
- Built-in ISO 1940 standard or user-defined

Tools:
- 1x caisson down order trace, decoupled balancing (static and couple), unequal radii, component calculation, drill depth, vibration history, balancing history and recalculation of balancing coefficients.

Introduction

Fieldpaq II is a portable 4 channel real-time analyzer that is built for advanced noise and vibration measurements in the field. For measurements in harsh environments, Fieldpaq II is manufactured with a ruggedized housing by a dual injection molding process and protective sealing to provide an IP 65 rating. Fieldpaq II is equipped with a large 5-inch color (800 x 480 high resolution) touch screen. The combination of Microsoft’s powerful WinCE operating system and touch screen operation provides a user friendly and intuitive interface. Fieldpaq II acquires measurement signal with precision 24 bit sigma delta A/D converters to provide a high dynamic range, up to 40 kHz maximum bandwidth. Fieldpaq II is powered by a 800 MHz CPU for running the Windows CE system and the fastest commercially available DSP chip TI TMS320C6713B for performing signal analysis at extremely fast real-time rates.

Fieldpaq II 4 channel handheld analyzer

http://www.benstone.com
Fieldpaq II 4 channel handheld analyzer

Route Based Data Collector

Fieldpaq II’s data collector module supports simultaneous triaxial and 4 channel measurements, saving many work hours in the field. High frequency spike detection and demodulated spectrum analysis is a standard feature for effectively indentifying bearing and gear faults at earlier stages of failure. By displaying fault frequencies, alarm levels and band alarms on the plots, problems of the machines are identified easily at one glance. Coupled with the powerful iSee computer based condition monitoring software, Benstone Instruments provides a most effective solution for your condition monitoring needs.

Vibration Meter

The overall vibration level is a basic parameter for determining a machine’s operational condition. By simulating the operation of an analog meter, Fieldpaq II’s vibration meter program performs time domain integration, filtering, root mean square (RMS) calculations and true peak detection for accurate measurements of vibration levels. One to Four channels can be measured at the same time, displaying the results to a trend chart, bar chart, or you may record the data continuously to a file. Easily check vibration severity with the built-in ISO 10816-3 standard. The user may select different filter settings for specialized measurements.

Rotor Balancing

The Fieldpaq II’s balancing software package supports simultaneous 4 channel measurements with multiple point balancing technique. Now with multiple-point balancing, vibration in BOTH horizontal and vertical directions is minimized at the same time. By conducting coast-down measurements for 1X vibration, the heavy spot can be easily identified with only one measurement saving you time, money and increasing safety. This technique prevents the user from danger by putting the trial weights in the wrong place, and shortens the balance time. Other features/ functions are:

- Multi-point balancing
- Component calculation
- Drill depth calculation
- Allowable residual unbalance calculated from the ISO 1940 standard
- Unequal radii calculation
- Decoupled balancing (couple + static)
- Review historical vibration data on a polar plot.
- Review historical balancing data on a polar plot
- Heavy spot estimation with one shot measurement.
- Redo a previous balancing job with saved balancing factors.
- Continue an unfinished balancing job from a saved file.

FFT Spectrum Analysis

Fieldpaq II’s FFT program allows you to conduct cross-channel analysis such as FRF, coherence, and cross power spectrum that are required for modal test, ODS testing or sound intensity measurements. Also supported is continuous spectral measurements and waterfall display, which is required for analysis of varying speed machines.

- General vibration analysis
- Modal testing
- Bearing diagnosis
- Sound intensity measurement
- Operational deflection shape measurement

Fieldpaq II’s FFT program also supports bearing vibration analysis as a standard feature. By taking advantage of demodulation technology, one may see the fault frequencies of a bearing on a demodulated spectrum at its early stage of damage. Fieldpaq II's demodulated spectrum uses a wavelet based Hilbert Transform algorithm, which shows clear spectral patterns in low levels of sidebands.