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1900 VIBRATION ANALYZER



The Vibration Tool for Everyone

Changing the way the world performs maintenance.™

The Ideal Vibration Tool For Start-up Programs

Vibration analysis programs are producing sizeable savings for companies worldwide… yet some organizations are still hesitant about making the initial investment in products and training.

Now there's a simple, economical way to take advantage of vibration technology — with CSI's 1900 Vibration Analyzer. It's lightweight and easy to use — a tool that's immediately useful in detecting and diagnosing many of the most common faults in rotating machinery.

For a small investment in the 1900, you get a complete solution… a single unit for both overall vibration measurement and frequency analysis, including vibration sensor, cables, and training video.

You don't need a computer for data printouts; a standard IBM-compatible dot-matrix printer and the optional printer interface are all that's required.



The 1900 is powerful enough to take the place of full-size analyzers for many functions.

Extend The Reach Of Your Predictive Maintenance Program

The 1900 extends the range of your predictive maintenance program without requiring the purchase of additional data collectors. For example, the 1900 can make quick checks on non-critical equipment, provide a first look at the vibration spectrum of a problem machine, and check the quality of repairs — all for a price that fits your budget.

Overall Vibration Meter Replacement

Overall vibration meters have had a well-deserved place in many plants and repair shops, but the majority of them have outlived their usefulness.

The 1900 is an ideal replacement for an overall vibration meter because it's more accurate and offers in-depth analysis at the push of a button. With easy-to-use charts and onscreen help messages, the 1900 greatly simplifies setup — even for inexperienced users.

Portable Solution That's Rugged Yet Lightweight

The 1900 fits in the palm of your hand, and it weights just 17 ounces (480 grams). Its rechargeable NiCad battery provides up to eight hours of continuous operation with sensor power. Battery level can be monitored onscreen during operation.

The unit has built-in, user-selectable sensor power (2 mA at 16 volts through the I/O connector) that's suitable for most CSI sensors.

The 1900's rugged design stands up to the plant environment — from 15° to 120°F (-10°–49°C), 0% to 95% relative humidity.

Measurement control and setup are easy because the 1900 uses only 16 dedicated function keys. It supports direct printer output of displayed parameters, waveforms, and spectra (with optional Model 721 printer interface).

The 1900's standard accessories include a hand-held accelerometer probe with integral coiled cable, AC voltage input cable, carrying pouch with shoulder strap and belt loop, manual, training video, and battery.



The 1900 is light and portable enough to be carried anywhere in the plant on a tool belt, always within reach.

The palm-sized 1900 weighs just 17 ounces, including battery. The rugged unit can withstand temperatures from 15° to 120° F (relative humidity from 0 to 95%).

Answers At A Glance — The 1900's large display screen uses an easy-to-read LCD display with backlight.

The 1900 uses 16 dedicated function keys to simplify measurement control and setup, and has five operating modes to measure and analyze machine data.



Advanced Features Save Time and Money

The 1900 has five operating modes to measure and analyze vital machine information: true peak, true RMS, waveform, spectrum, and overall level in a user-defined frequency band.

With the 1900, you can choose from a variety of resolutions: 50, 100, 200, 400, or 800 lines. Using the Expand key, all lines may be displayed.

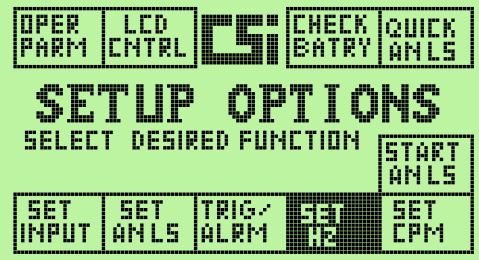
All displays are fully labeled, including parameter types and units. You may also attach a label to a stored measurement.

The 1900's adjustable trigger level lets you trigger on the input signal. It also has a single-shot trigger for impact tests and transient capture. The instrument lets you set separate alarm levels on acceleration, velocity, and displacement for overall, true RMS, and true peak measurements.

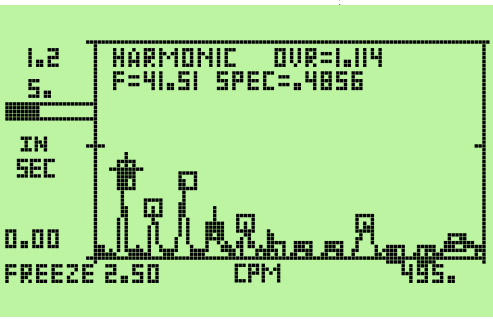
The 1900 offers instantaneous, linear average or peak hold averaging for spectra. It also provides scan (instantaneous) or exponential averaging for overall level, true peak, or DC voltage.

The 1900's main cursor, fixed harmonic cursor, and moveable harmonic cursor functions can be controlled completely from the keypad. The Peak Locate function allows more precise readout of amplitude and frequency. The interval (delta) cursor allows readout of time intervals from waveforms.

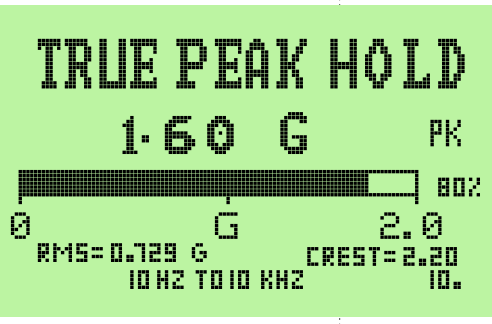
When setup questions arise, the 1900's onscreen help messages quickly guide you to the right choice.



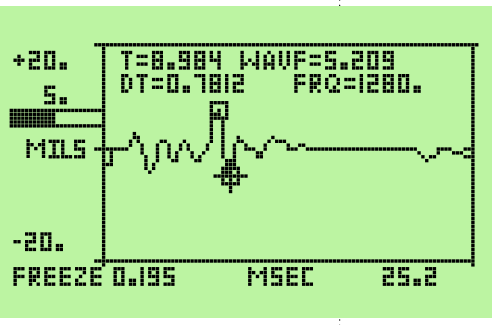
Main setup options



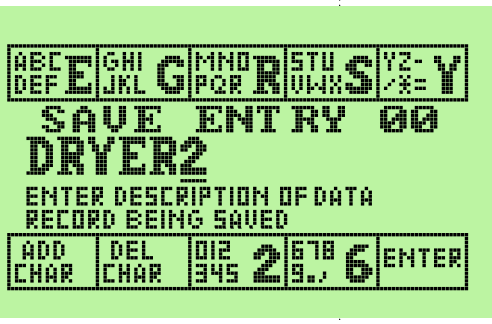
Spectrum display showing harmonic cursor



True Peak Hold



Time waveform showing interval cursor



Save Entry display

Wide-Ranging Versatility

The 1900 pays for itself quickly because it's a multi-application tool that can be used by various personnel, including novice vibration analysts and machine operators.

Evaluating Equipment Repairs

Whether you do your own repairs or rely on outside service companies, there are major benefits to using vibration analysis to check the quality of repair work.

Because the CSI 1900 tackles both overall vibration measurement and frequency analysis, it's a handy tool for quickly and accurately evaluating the condition of a machine before and after repair service. Checking repair work before bringing a machine on-line can significantly reduce premature machine failure, prevent disputes about subsequent problems, and help safeguard product quality.

Quality Checking for Repair Shops and Field Service Companies

The 1900 lets you check repair work before returning it to the customer — boosting both the quality of your service and customer satisfaction. The unit can also help you correctly determine the problem before repairs. With the 1900 on the job, you can avoid costly confrontations with customers by having documentation of machine condition before and after repair.

Frequency Analysis for Control Panel Signals

If you see a high vibration level on a panel meter, you can often pinpoint the problem without help from the engineering or reliability departments. The 1900's compact size and lightweight design allows it to be attached to the panel alongside the meter (or to be easily connected to the panel output on a regular basis).

The 1900's detailed spectral and waveform information lets you make informed decisions about when to use more sophisticated equipment or seek help from highly trained personnel.

On-The-Spot Problem Identification

Just put the 1900 in your pocket while you're out in the plant and you'll have the essential tool for assessing machine condition — on the spot. In many cases, a simple check of the overall vibration provides the answers you need. But when that's not enough, the 1900's frequency analysis capabilities give you the power to pinpoint the cause of the vibration.

Vibration Measurement for Machine Operators

The 1900 helps you make a fast, accurate measurement of machine vibration level for your operator's log. The unit provides precise, reliable vibration measurements, and its large screen display virtually eliminates user errors.

The 1900 gives you an accurate picture of machine condition so that major problems get immediate attention… while less critical problems are fixed later. The goal is to ensure maximum capacity without endangering critical — and costly — machinery.



The 1900 is ideal for spot checks on critical equipment and for testing the results of repairs.

CSI's Commitment To Training and Support

CSI provides a training video with each 1900 that lets you learn right from your plant or home. Highlights of the 45-minute tape include plot options, setup options, advanced features and techniques, and special measurements (non-vibration, true RMS, and true peak).

To help you maximize your investment in the 1900, our team of support professionals is available 8 a.m. to 6 p.m. EST every business day to answer questions and provide guidance. You can also get ready answers on our INTOUCH® electronic bulletin board — available 24 hours a day.

Each year, CSI Training offers more than 175 courses in its state-of-the-art training facilities in Knoxville and Houston. Our instructors have wide experience in a number of fields, including the petrochemical, steel, automotive, power, and pulp & paper industries. They understand more than maintenance technology — they understand your business.

Strength of a Global Leader

CSI is a recognized leader in predictive maintenance solutions, with offices and affiliates in more than 40 countries worldwide. CSI's 1900 vibration analyzer is the ideal tool for launching a productivity-boosting vibration analysis program. To learn more, call your nearest CSI office today.



The 1900 training videotape helps you understand plot and setup options — right at your home or plant.



CSI's state-of-the-art training facilities in Knoxville and Houston offer hands-on instruction throughout the year.

1900 Accessories

Standard accessories include:

“1900 Troubleshooting Guide”

an informative booklet that helps you identify common faults such as imbalance, misalignment, mechanical looseness, bearing defects, and many more

819-V Vinyl Carrying Case

with shoulder strap and belt loop

Optional accessories:

8BA-PRN Portable Printer

a 2.5 lb. laser-quality printer with parallel interface. Operates on AC power or with battery

721 Printer Interface Adapter



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Spec sheet

Get Immediate Results With These Powerful 1900 Features

Compact size, light weight — Only 6.34" (161 mm) long, 3.02" (76.5 mm) wide, and 1.34" (34 mm) deep. Weighs just 17 ounces (0.48 kg) including NiCad battery.

Rugged design — Temperature: 15° to 120° F (-10° to 50° C

Relative humidity: 0 to 95% non-condensing

Easy-to-read display screen — LCD display 2.7" (68 mm) x 1.5" (38 mm) with backlight.

Battery powered — The 1900's rechargeable NiCad battery provides up to 8 hours of continuous operation (with sensor power). Battery level may be monitored onscreen during operation.

Comes complete with standard accessories — The 1900 comes with compact, hand-held accelerometer probe with integral coiled cable, AC voltage input cable, carrying pouch with shoulder strap and belt loop, manual, training video, and battery.

Built-in sensor power — User-selectable sensor power; 2 mA at 16 volts through the I/O connector, suitable for most CSI sensors.

Wide dynamic range — Better than 50 dB from full-scale level.

Additional Technical Specifications

Frequency Ranges

Spectrum and waveform: 0 - 200 Hz and 0 - 1000 Hz with full aliasing protection

Waveform:
0 - 400 Hz and 0 - 2,000 Hz without aliasing protection

True RMS:
2 or 10 Hz, to 1,000 or 10,000 Hz.

True Peak:
2, 10, or 100 Hz to 1,000 Hz

Selectable Resolution — 50, 100, 200, 400, or 800 lines; using the expand key, all lines may be displayed.

Averaging — Instantaneous, linear average or peak hold for spectra. Scan (instantaneous) or exponential averaging for overall level, true peak, or DC voltage.

Cursor functions — Main cursor, fixed harmonic cursor, and moveable harmonic cursor functions, with full keyboard control. Peak locate function at cursor allows more precise readout of amplitude and frequency. Interval (delta) cursor allows readout of time intervals from waveforms.

Five operating modes — The 1900 has five operating modes to measure and analyze vital machine information: true peak, true RMS, waveform, spectrum, and overall level in user-defined frequency band.

Direct printer output — The 1900 supports direct printer output of displayed parameters, waveform, and spectrum (with optional Model 721 printer interface).

Fully labeled displays — All displays are fully labeled, including parameter types and units. You may also attach a label to a stored measurement.

Trigger — Ability to trigger an input signal, with adjustable trigger level; repetitive or single shot for impact tests and transient capture.

Alarms — Set separate alarm levels on acceleration, velocity, and displacement for overall, true RMS, and true peak measurements.

Autoranging or selectable input ranges — The 1900 covers a wide range extending from 10 volts full-scale down to 100 millivolts full-scale; minimum measurable level is 0.2 mV (represents an input acceleration range from 0.002 to 100 g with 100 mV/g accelerometer).

Built-in integrators — Analog integration from acceleration to velocity, acceleration to displacement, or velocity to displacement with 2.5 Hz high-pass filter and automatic gain compensation. With a 100 mV/g accelerometer, the velocity input range is 0.001 ips (.025 mm/s) to 50 ips (1,250 mm/s) and the displacement input range is 0.002 mils (0.05 microns) to 100 mils (2,500 microns).

AC input coupling — 1 Hz (-3 dB) cutoff AC coupling on all frequency ranges.

Digital integration when analog integrators are turned off.

Convenient, side-mounted input/output connector — The 1900 uses a single side-mounted (9-pin D) connector for input signals and printer output (with optional Model 721 printer interface adapter).

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