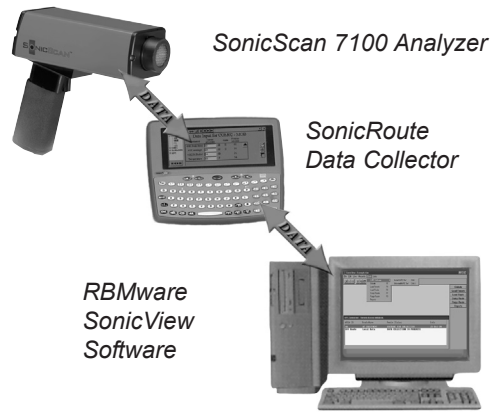


SonicScan™ Fault Isolation System

- *Uncovers commonly missed equipment faults*
- *Accurately characterizes faults using multiple isolated analysis ranges*
- *Performs in-field application-specific diagnostics*
- *Delivers consistent and quantifiable sound analysis*
- *Provides PdM software tools to manage equipment monitoring programs*
- *Generates detailed reporting and cost justification*
- *Integrates seamlessly with other PdM technologies*



Setting The Standard with Fault Isolation

The CSI SonicScan Fault Isolation System gives you multiple application diagnostic capabilities, allowing you to easily and confidently detect, analyze, and report common industrial equipment problems. It generates a quick return on investment by finding costly valve, steam trap, and air leaks. It can reduce unexpected downtime by early identification of mechanical and lubrication problems.

Equipment produces unique sound patterns within specific sonic and ultrasonic frequency ranges that change as equipment condition deteriorates.

SonicScan's new Fault Isolation technology allows you to hear, analyze, and differentiate between normal and failure sounds.

Applications



Bearing Lubrication and Mechanical Failure

75 percent of bearing faults are lubricant-related



Steam Trap and Valve Malfunction

A single 1/4" orifice blowing trap costs \$6,300 per year



Air and Steam Leaks

Eliminate losses typical of \$75,000 per year



Electrical Discharge

Eliminate safety hazards and early electrical failures



Vessel Integrity

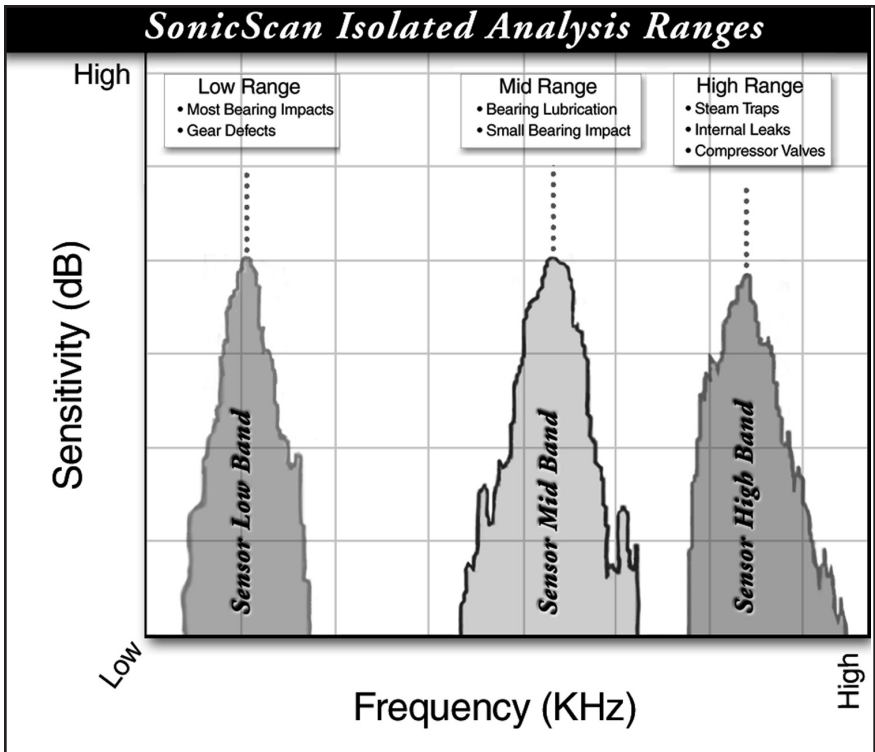
Quickly find boiler and condenser leaks.

Product Data Sheet

May 2004

SonicRoute and SonicView use Fault Isolation to automatically diagnose, report, and integrate data with other condition monitoring technologies.

The SonicScan Fault Isolation System integrates the SonicScan Analyzer with a SonicRoute data collector and SonicView software to build the most advanced and comprehensive, yet easy-to-use, ultrasound analysis system available.



The SonicScan 7100 analyzes three distinct frequency ranges where specific type of faults are known to occur.

Sonic Scan 7100 Analyzer

- **Housing:** Extruded aluminum/composite materials
- **Battery:** Rechargeable nickel/cadmium. 6-9 hours continuous battery life. 12 hours typical. Continuous battery level indicator with low battery warning and auto-shutdown.
- **Charger:** 110-240 VAC, auto-switching. Recharges in less than 3 hours.
- **Dimensions:** 7x6.5x2.5 in. (175x165x65mm)
- **Weight:** Approx 2lb. (1kg)
- **Dynamic Range:** Greater than 100dB

■ Ultrasonic Signal

Analog: Heterodyne with digitally controlled frequency range and display; frequency range user-defineable from 2-250kHz.

Digital: Selectable processing modes at fixed frequency for trending are peak, peak hold, average, and peak factor.

■ Optimum ranges:

RI and RIM sensors 2-8kHz, 25-35kHz, 35-45kHz
Airborne Sensor 35-45kHz

■ Temperature:

Built-in contact probe, upper limit of 500PF continuous (800PF for intermittent exposure)

■ **Display Type:** 2x12 character backlit LCD display. Bar graph with instantaneous reading.

Digital output with dB signal value and degree F or C.

■ Output:

Audio 8 Ohm impedance for connection to headphones or speaker.

Digital envelope waveform to machinery analyzer.

■ **Alarm Limits:** User-definable limits for both ultrasonic signal and temperature.

■ **Volume:** User-definable for 0-100%

■ Communication:

Either direct serial cable connection or cableless IR communication



SonicScan Fault Isolation System: Part #A710030

- 1. SonicScan Analyzer*
- 2. OSHA compliant headphones designed to work with hardhat*
- 3. Airborne sensor*
- 4. Range Isolation (RI) contact probe*
- 5. Range Isolation Magnet (RIM) mount sensor*
- 6. Flexible focus cone to help isolate sounds*
- 7. Ultrasonic tone generator for testing vessels*
- 8. SonicScan Holster*
- 9. Industrial H/PC with color display*
- 10. Extension rods with tip set*
- 11. RBMware SonicView and SonicRoute Software*
- 12. H/PC Carrying Pouch*

*Not Shown: Carrying case, instructional video, and manuals,
battery chargers, communication cables*

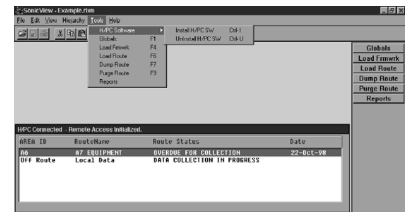
Sonic View

- Application specific reporting
- Advanced trending
- PdM integration for advanced diagnostics
- Performance metrics
- Cost reporting
- Problem management
- Route management
- Wizard database setup

SonicView performs advanced management of the information that is automatically downloaded to it from SonicRoute. New equipment, points, and routes will be added to the database. Problems found in the field will be assigned to case histories for work order creation and comparison with problems found using other technologies. Application-specific cost analysis, status, and general data reports are ready for printing.

SonicView is powerful, yet designed for ease-of-use, as it provides the necessary tools to setup and manage a comprehensive monitoring program for applications such as steam traps, compressed air systems, valves, and grease points.

SonicView is the work manager for surveys. Survey routes can be built and scheduled based on equipment location, type, or importance. It tracks route status as due, in progress, or incomplete.



The SonicView software provides powerful, Windows®-based management and trending of information downloaded from SonicRoute.

A screenshot of an 'Advanced Steam Trap Analysis Summary' report. The report header includes 'Area: area 2', 'Route Name: STW0751', and 'Report Date: 04-Aug-99 14:29:27'. Below the header is a table with columns for 'Trap ID', 'Manufacturer', 'Model', and 'Install Date'. The table contains two rows of data:

Trap ID	Manufacturer	Model	Install Date
873	Blalock, Babcock & Becker (25-Jun-99 09:40:13)	B9877-08765	02-Mar-91
874	Armstrong (25-Jun-99 09:41:12)	AB8768-1	02-Dec-88

SonicView generates detailed, application-specific analysis reports. The above steam trap diagnostic report shows trap condition and severity.

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