



SDT NORTH AMERICA

800-667-5325 or 905-377-1313



SDT 170 : RELIABILITY AND FLEXIBILITY



The complete solution for the predictive maintenance professional.

**SDT : WORLD LEADER IN ULTRASONIC DETECTION
PREDICTIVE MAINTENANCE FOR THE MASSES**

For details about SDT products and their applications, visit our website at:
www.sdtnorthamerica.com

THE WORLD'S SMARTEST ULTRASONIC DETECTOR

THE LITTLE BLUE WONDER- ultrasonic detection

ACCURACY AND REPEATABILITY

The success of any predictive maintenance program depends on data that is meaningful. The Ultrawave 170 delivers unmatched accuracy and repeatability. Is 100% uptime achievable? The Little Blue Wonder™ from SDT takes you one step closer.

VERSATILITY AND FLEXIBILITY

Only SDT provides a total maintenance monitoring solution in one package. Ultrawave is a system that fits your budget today, grows with your needs tomorrow, and is always evolving, putting the most up-to-date technology in the palm of your hand for now and the future.

Multifunctional

One instrument, endless possibilities. SDT defines the power of ultrasonic detection for predictive maintenance and energy efficiency, but it redefines the power of versatility. In addition to ultrasound, the Ultrawave 170 measures non-contact temperature, contact temperature, RPM, noise (dBA), and air flow (SCFM). Why buy six tools when you can buy one Ultrawave?

Intelligent

Each SDT sensor has on-board intelligence to identify itself to the Ultrawave 170 once connected. Sensor recognition means less button pushing and more productivity. Simply plug in the required sensor and the 170 does the rest.

Rugged

The Ultrawave 170 easily passes the 3 meter drop test and is designed to withstand serious punishment. Encased in a sturdy aluminum outer shell, then shielded with shock-absorbing rubber, the internal electronics are protected from the harsh environment of the factory floor.

Ergonomic

The Ultrawave 170 is designed for single-handed use. All functions are controlled by an eight key touch pad that can be accessed with just the thumb. A generous LCD screen displays all multiple parameters in 8 or more languages.

Digital and Versatile

- Only detector with true digital and RMS averaging.
- Only detector to offer the versatility of multifunctional sensors.



The complete solution for the predictive maintenance professional.

The Ultrawave 170 is in a league all its own.

SYSTEMS AVAILABLE



SDT170S - Entry Level System

The 170S is the entry-level system for the Ultrawave platform and includes the following standard features.

- Internal Airborne sensor
- 8 Language menu
- Input for optional sensors
- Auto sensor recognition
- Auto-scaling numeric bar graph
- Fully upgradeable

SDT170S+ Digital Entry Level System

SDT170M - Multi Functional System

The 170M is a True Digital upgrade from the 170S with these additional features:

- Standard contact sensor
- Accepts multi-function sensors
- True RMS for accuracy
- True digital for repeatability
- 1000 point onboard memory
- 4000 measured data storage
- AVM compatible

SDT170M+ Multi Functional System

SDT170MD - Multi Functional System with the power of data collection

The SDT170MD (Multifunctional-Data Collector) is a complete ultrasonic inspection and predictive maintenance trending solution. With all the features of the SDT170S Standard and the SDT170M multifunctional, we have added 15,000-point customizable data logger that interface directly with your PC via DataManager software.

DataManager is the bridge between your SDT 170MD data collector and your PC. All data is stored onboard then downloaded to PC. DataManager organizes the measurements into a logical and easily retrievable filing system, which is built and customized by the individual user. Reports are easily generated or exported to Excel with one mouseclick allowing for open platform data sharing. Customized routes are created within DataManager and uploaded to the 170MD for easy field access. Multiple parameters (Temp, RPM, dBA, SCFM) are stored for each asset in the route.



CERTIFICATION TRAINING

Training is the foundation of an effective ultrasound program. Its a fact that certified airborne ultrasound inspectors have a deeper understanding of the technology and make more confident decisions as a result. Hands on practical training from field experienced trainers ensure your ultrasound inspection program will be successful now, and into the future.

Call today for details about classes near you.

Or visit www.sdtnorthamerica.com to register online.



1,2 or 3 day workshops available

MULTI-FUNCTIONAL ULTRASONIC INSPECTION

- External sensor
- Internal ultrasonic sensor



Buy what you need for today and build as your requirements evolve tomorrow. Ultrawave is a single hardware platform with endless sensor and function upgrades.

The SDT 170 Standard is easily upgraded to 170S+ to 170M Multifunctional to 170M+ or 170MD Multifunctional Data Collector with a simple upgrade key that can be emailed right to your desktop!

With the Ultrawave 170 virtually any inspection is achievable, and the possibilities are endless. Our user-friendly interface means results right out of the box and a worthwhile investment that is usually paid for after the first use.



- Battery charger



- PC connection for logging and analysis (170 MD)

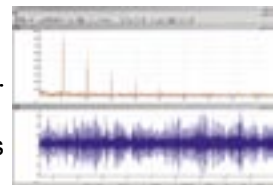
- Headphone



- Loudspeaker



- Vibration data collector



- Waveform and Spectrum Analysis

- PREDICTIVE MAINTENANCE FOR THE MASSES

TECHNICAL DATA

Function	Multifunction detector
Display	Extended temperature Graphic high contrast LCD with backlighting, 100 X 32 pixels
Keyboard	8 function key's
Dimensions	203 x 38 x 88 mm / 8 x 1.5 x 3.4 inches (L x H x W)
Measuring range	-10 dBµV to 120 dBµV
Measuring resolution	0.1 dBµV
Sensitivity	Detects .004" (118 mm) diameter leak @ 6 psi at a distance of 70 feet
Threshold	1 x 10 ⁻² - 1x 10 ⁻³ std. cc/sec. freon
Accuracy	± 0.5 dBµV
Signal to noise ratio	-5 dBµV typical
Bandwidth	(-3dB) 2 kHz
Auto power down	Auto power down after pre set time
Operating temperature	-15°C to +60°C / 5°F to 140°F
Battery pack	<ul style="list-style-type: none"> • Rechargeable NiMH (Nickel Metal Hydrate) • Autonomy of 8 to 10 hours without backlighting • Recharge time: 5 to 6 hours • Nominal Capacity: 1,3 Ah • Life span: 500 to 1000 charge/discharge cycles • Recharge only with appropriate charger
Housing	Extruded aluminum
Protective Cover	Rubber resistant to hydrocarbons (Fluorsilicone)
Weight	Approximately 700 g / 24.69 oz. (with battery and holster included)
Warranty	1 year parts and labour 5 years with product registration
Frequency Range	16KHz-190 KHz tunable

External Ultrasonic Sensors



Extended distance



Flexible sensor



Parabolic sensor



Magnetic sensor



Tri-Band Contact Probe



Broadband Contact Probe

Multi Functional Sensors



Noise sensor - dBA



Tachometer-Laser



Contact T° interface



Infrared T° sensor



Flow sensor - SCFM



Acoustic Lube Adapter



Threaded sensor

For the
Marine
Industry



SDT's leak testing technology is Type Approved by the world's major marine classification societies.



ENDLESS APPLICATION FOR INDUSTRY - limited



Leak Detection

Compressed air leaks are the most expensive utility waste in manufacturing. Turbulence from leaks creates white noise with a strong ultrasonic component. Scan an area with the Ultrawave and hear the turbulent rushing sound through the headphones. Ultrawave pinpoints all pressurized gas and vacuum leaks regardless of ambient background noise. Finding leaks can save hundreds of thousands of dollars.



Bearing Condition Monitoring

Roller bearings produce ultrasonic friction as the internal rolling elements turn against the raceway. Likewise, the friction absorbing properties of grease means a well-lubricated bearing produces less friction than a bearing that lacks lubrication. True digital RMS readings from the SDT 170 provide accurate and reliable advanced warning of impending failures to rotating equipment.



Ultrasound Based Lubrication

AVM™ - Acoustic Vibration Monitoring trends high frequency bearing energy to determine proper lubrication intervals and predict when the bearing is entering its FIRST stages of wear.

Over lubricating bearings can damage seals, build pressure on the bearing, and cause premature failures. Over greasing an electric motor can push lubricant into the windings causing shorts and more severe damage. Under lubricating bearings negatively affects the lifespan of rotating machinery also. So how can you get it just right??

The SDT 170's advanced digital detection techniques opens up communications between bearing and lubricator. Let the bearing tell you how much grease is enough.



Steam Trap Inspection

Rising energy costs make steam an expensive utility... too expensive to waste. A typical failure rate is 30-40% of a facility's steam trap population. Failed traps also contribute to contaminated, poor quality steam and dangerous water hammer.

Ultrasonic testing gives the inspector an "inside view" of the trap. The SDT 170 translates high frequency ultrasonic noise to audible frequencies localized to the source of contact. The inspector will not be disturbed from ambient parasite noise downstream.

Temperature measurements upstream and downstream of the trap can often provide alerts to failed traps. The SDT 170 M and 170 MD Steam Trap Inspector's Kit includes a standard non-contact temperature measurement interface to further enhance trap inspections.



Valves and Hydraulics

Internal blockage or leaks in valves can be discovered precisely while the system is on-line. Trouble-shooting hydraulic circuits to find internal leakage is fast and easy with the Ultrawave. With the Ultrawave in "contact mode" take sample readings along the circuit. Technicians can clearly define the direction of flow, and more importantly, the source of trouble even in high noise areas. Internal leakage across seals on hydraulic rams produce microscopic bubbles of oil which in turn "pop" as they pass from pressure side to non-pressure side. These small explosions produce ultrasound energy which is easily detected in the Ultrawave's headset. Tune the frequency of the detector to eliminate competing ultrasounds.



Pump Cavitation

Cavitation is usually the result of a pump being asked to do something beyond its specification. Small cavities of air develop behind the vanes. These pockets have a destructive effect on the pump's internal components, including pitting and scarring the surface of the vanes.

With the Ultrawave in contact mode, isolate the pump vanes and listen for small air pocket explosions. Comparing similar pumps will help the uninitiated, but with some experience an operator will quickly be able to detect pump cavitation.

only by the imagination



Boiler, Heat Exchanger, and Condenser Leaks

Use the Ultrawave to scan for external pressure or vacuum leaks in boilers, heat exchangers, and condensers. Listen for the same rushing sound that is associated with compressed gas and vacuum leaks. All pipe connections, flanges, seals, and access doors should be inspected as part of regular PM's.

Tube leaks in condensers and heat exchangers can be inspected using either the pressure method, the vacuum method, or the bisonic transmitter method. Choose the method that suits your application and see your inspection time decrease dramatically.



Reciprocating Compressors

Reciprocating compressor valves open and close to allow internal combustion motors to "breathe". When these valves become dirty, or carbonized, their efficiency is reduced. A valve that is seating properly should be quiet while defective valves are characterized by the familiar rushing or turbulent sound of a leak. Signals from valves can be analyzed with SDT's Ultranalysis™ software. Real-time waveform analysis will reveal heavy jagged peaks representative of valve leaks. Trend these changes to PC with the SDT 170 MD and Datamanager™ software.



Electrical Inspections

Corona discharge, arcing, tracking, damaged line bushings, and other potentially dangerous and wasteful conditions in high voltage systems produce ultrasound as a warning of future failure.

By itself, or as a compliment to Infrared Imaging, Ultrasonic Detection has become the technology of choice for electrical inspections of:

- Transmission & Distribution Lines
- Substation Inspections
- Switch Gear
- Transformers
- Partial Discharge
- Arcing, Tracking, and Corona
- Radio/TV Interference



Electrical faults emit ultrasound at the site of the problem. Scan an area in the same way one would for leaks. Characteristic frying, popping, buzzing, and humming sounds can be associated with different faults. Build a library of faults by recording sound waves and sharing them on your company intranet.



Tightness Integrity - Wind Noise & Water Leaks

Quality control applications were developed for the transportation sector to improve the tightness of vehicles. The method consists of flooding the interior of a volume with microscopic ultrasound waves. Due to their properties these waves can penetrate small holes. Using the SDT 170 detector on the outside of the volume inspectors can quickly pinpoint the source of defects that could become potential sites of water leaks or wind noise. Current sector uses:

- Marine Industry – Hatch Covers of Cargo Ships
- Automobile – Wind and Water Leaks on Cars
- Aeronautics – Integrity of Aircraft and Helicopters
- Transportation – Trucks, Buses, Trains,
- Buildings – Integrity of Building Envelopes
- Military – Submarines, Aircraft, Space Vehicles
- Nuclear – Containment Wall Integrity













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Select the right sensor for your application

Sensor Selection Table

								
Application	Internal	Flexible	Parabolic	Contact	Contact	EDS	Magnetic	Lube Adaptor
Air Leak Detection								
• Close Range	√	√						
• Long Distances			√			√√		
• Tight Access Areas	√√	√						
Other Leak Detection								
• Vacuum	√√	√						
• Heat Exchangers	√√	√						
• Steam Traps			√√√	√√	√	√√√	√√√	
• Tightness Integrity	√√	√						
Bearing Inspection								
• Normal Speed				√√	√			
• Slow Speed							√	
• High Speed				√√	√			
Acoustic Lubrication								
• Trending					√√√			
• Re-Lubrication					√√√		√√	√√√
Electrical Inspections								
• Switch Gear	√√	√					√√√	
• T&D Lines			√			√√		
• Transformers	√√	√					√√√	
Other Inspections								
• Compressors					√√		√	
• Valves				√√√	√√		√	
• Pump Cavitation				√√√	√√		√	
• Gear Box					√√		√	
• Hydraulics					√√		√	

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Whatever your application(s), SDT has a kit designed specifically to fill your needs and your budget. Buy what you need today and build as your requirements evolve tomorrow. The SDT 170 S is easily upgraded to 170 M or MD.

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Due to continued research and development, specifications of this product can change without prior notice.

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