CTRL Systems
Product Catalog

Ultrasound

Turn-Key Solutions

Condition Based Monitoring Program

Compressed Air Energy Savings Program
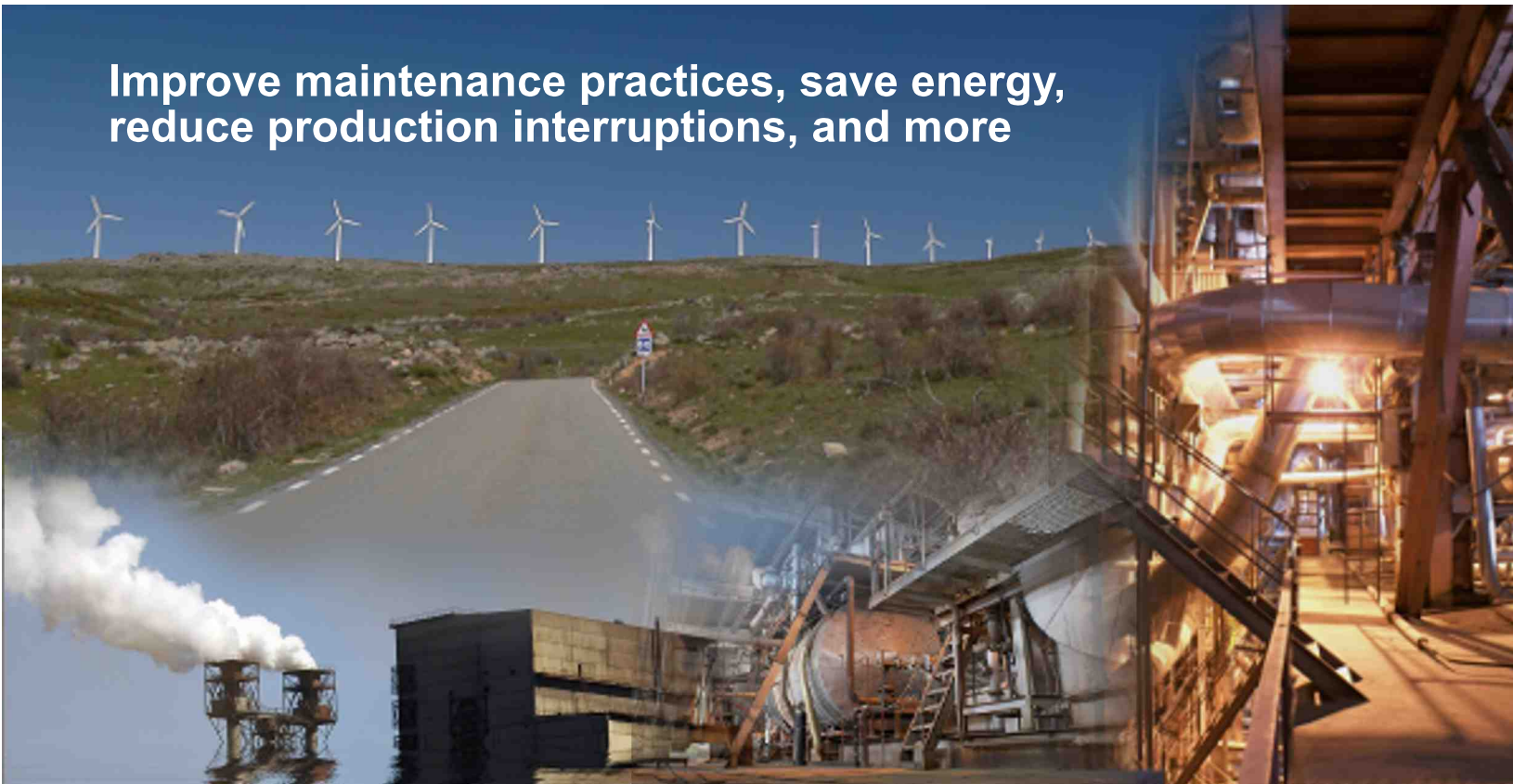
Applications

Diagnose Motor Bearings & Gearboxes

Detect Gas & Vacuum Leaks

Assess Steam Traps & Valves

Detect Electrical Arcing & Corona

Detect Leaks In Non-Pressurized Systems

Improve maintenance practices, save energy, reduce production interruptions, and more

PROGRAMS & SERVICES

CTRL CBM (Condition Based Monitoring)

Total Solution

CTRL's CBM is a customized turn-key program that integrates ultrasound technology with analysis. Ultrasound data and reporting is available from any PC through the secure web-based application. CTRL works with your organization at each step to ensure success.

Program Components

|		
Step 1	**Identify Critical Equipment**	
		Initial locations, equipment, and test points
Step 2	**On-Site Training & Integration**	
		Take initial readings with CTRL Ultrasound Technology
		Set thresholds
		Hands-On use to multiple applications
Step 3	**Implementation**	
		Capture and trend ultrasound data
		Compare to history
Step 4	**Measurable Results**	
		Reduce unexpected production downtime
		Extend equipment life
		Email notification of call to action

Analysis

Real-Time Analysis:
Identifies characteristics within the real-time wavefile that are anomalous to what a good bearing should sound like

RMS Amplitude Comparison (with respect to set threshold):
Automatically flagged and notified by email if threshold exceeded

Bearing Health Assessment (with respect to the threshold):
"Normal", "Underlubricated", "Suspect", "Questionable"
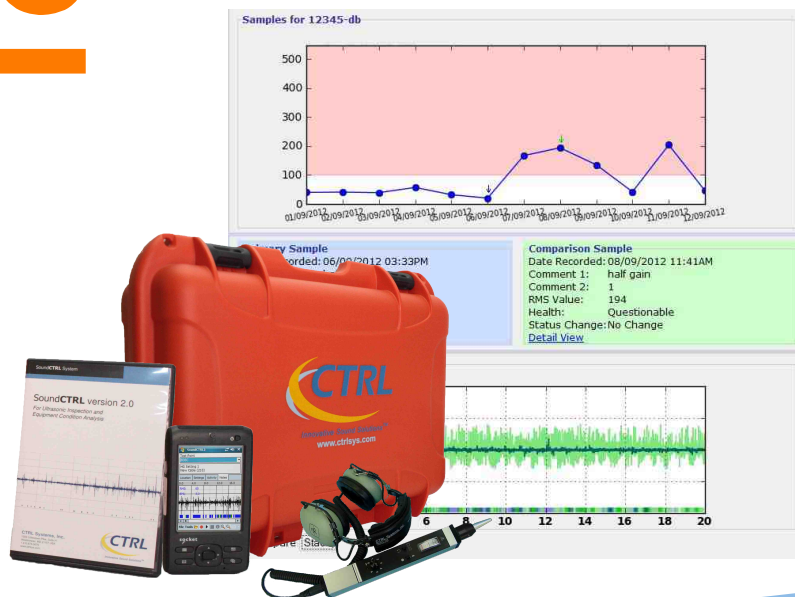
CTRL CBM
- Make Informed Decisions
- Reduce Parts Swapping
- Extend Equipment Life

Reduce catastrophic production loss!

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PROGRAMS & SERVICES

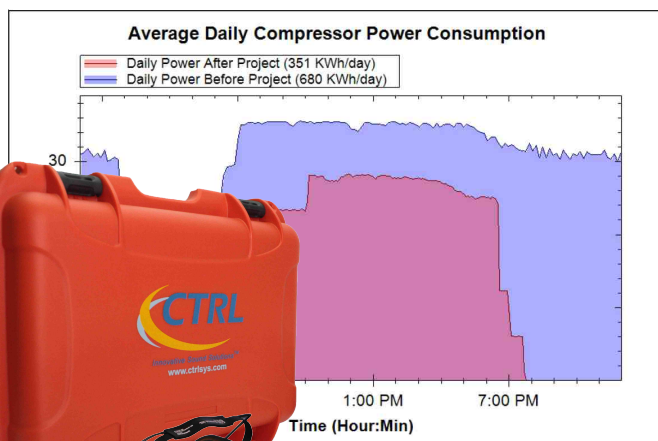## CTRL ESP (Compressed Air Energy Savings)

Total Solution

CTRL's ESP is a customized turn-key program that integrates ultrsound technology with real-time power monitoring. Energy usage of the compressors is measured 24/7, along with pressure and costs. The savings generated through leak detection are accurate. There is no guess-work.

Program Components

Step 1	**On-Site Survey & Training**
Step 2	**Monitoring - initial measurements of compressors**
	24/7 measurements of kWh usage and costs
	Date delivered wirelessly
Step 3	**Leak Detection & Repair**
	Ultrasound used to locate and tag leaks for repair
	Leaks repaired and confirmed
Step 4	**Monitoring - post repair measurements of compressors**
	Comparison of measurements
	Accurate, quantified results
Step 5	**Sustained Savings**
	Thresholds set to notify when leak detection required

Compressed air accounts for 10%-30% of the electric bill in a typical manufacturing facility, but only half is used for operations.

U.S. Department of Energy

Operational Usage, 50%

Waste, 20%

Leaks, 30%

Average Daily Compressor Power Consumption

Daily Power After Project (351 KWh/day)
Daily Power Before Project (680 KWh/day)

30

1:00 PM   7:00 PM

Time (Hour:Min)

CTRL ESP

- Know Your Cost
- Correct Your Loss
- Sustain Your Savings

Reduce energy usage by 20% or more!

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SOFTWARE

Data Management, Reporting & Analysis

InCTRL

Samples for 12345-db

Primary Sample
Date Recorded: 06/09/2012 03:33PM
Comment 1:   half gain
Comment 2:   1
RMS Value: 20
Health: Normal
Status Change: No Change
Detail View

Comparison Sample
Date Recorded: 07/09/2012 11:40AM
Comment 1:   half gain
Comment 2:   1
RMS Value: 167
Health: Suspect
Status Change: Flagged
Detail View

Sample View

☑ Compare Stack

PDA w/ Touch Screen
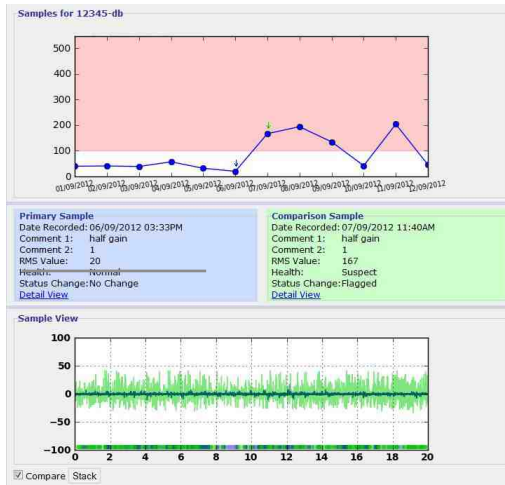
Trend Ultrasound Data

Analyze Amplitude

Assess Bearing Health Conditions

Track Changes

Compare Wave Files

RMS Measurement (Root Mean Squared)

Identify Location & Test Point

EPS Measurement (Events Per Second)

Wireless Upload To Server

Real-Time Waveform Display

Instant Feedback For Analysis

Part Number	Description
041000	**InCTRL Secure Web-Based Subscription**
Options	
	Single-User (ie. Single Site)
	Multi-User (Multiple User or Site)
Hardware	
0000010	**SoundCTRL Software For Data Acquisition with PDA**

Subscription Includes

Web-Based Application (Software as a Service)

3 GB Server Storage (10,000 Samples)

Data Securely Stored & Managed by CTRL

Automatic Updates & Upgrades

Unlimited Technical Support

Access Anytime & Anywhere Using Web Browser

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DETECTORS
Ultrasound Kits & Components

UL101 Detector

Part Number	Description
000031	**UL101 Full Kit, Standard**
000033	**UL101 Full Kit, Intrinsically Safe***
000036	**UL101 Air Audit Kit, Standard**
000038	**UL101 Air Audit Kit, Intrinsically Safe***

Kit Components

UL101 Receiver

UT2000 Transmitter (Full Kit Only)

Industrial Grade Headset: Over or Behind-The-Head Style

Concentrator Set: Large, Mini, & Acoustic Tip

Acoustic Extension Probe Set: 4 Extension Probes & Adaptor

3-inch Solid Probe

Solid Probe Set: 5, 8, and 13-inch (Full Kit Only)

Training CD

Operator's Manual

Carrying Case

Shipping Weight: 9 lbs./Dimensions: 16" x 15" x 7"

*ANSI/UL 913-88, for DIVISION 1, CLASS I, Groups A, B, C and D, CLASS II, Groups E, F, G and CLASS III. It also complies with DIVISION 2, CLASS I, Groups A, B, C and D, CLASS II, Groups F, G, and CLASS III

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LONG RANGE

UI101 Attachment

PowerBeam 300

Pinpoint Sites

Laser Pointer

UL101 Receiver

Detachable Parabloic Dish

Laser Trigger

Part Number	Description
007005	PowerBeam 300
000041	UL101 Corona Detection Kit, Standard

Corona Kit Components

UL101 Receiver

Industrial Grade Headset: Over or Behind-The-Head Style

PowerBeam 300

Training CD

Operator's Manual

Carrying Case

Shipping Weight: 15 lbs./Dimensions: 21" x 18" x 7"

Extends range of detection of UL101 Receiver to 300 Feet!

The PowerBeam 300 accurately pinpoints source of ultrasound to within 1 degree from center and improves the sensitivity of the UL101. The "PB300" was originally designed for the indication and location of corona discharge and arcing on medium/high voltage transformers. The PB300's ability to pinpoint ultrasound is very useful when finding compressed air/gas or steam leaks in pipes located on high ceilings. There is no need to get a ladder or scissor lift.

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SPARES

Kit Components & Accessories

Parts

Concentrator Set

UT2000 Transmitter

UL101 Receiver

Solid Probe Set

Acoustic Extension Probe Set

1-inch Acoustic Tip   Adapter

Part Number	Description	Part Number	Description
026005	UL101 Receiver, Standard	000005	Acoustic Extension Probe Set
026007	UL101 Receiver, Intrinsically Safe	070005	Adaptor
026010	UT2000 Transmitter, Standard	070040	Polycarbonate Probe (12-inch)
026012	UT2000 Transmitter, Intrinsically Safe	070045	Metal AcousticProbe (12-inch, double threaded end)
		070050	Metal AcousticProbe (12-inch, single threaded end)
000065	Concentrator Set		
070007	Large Concentrator	070035	1-inch Acoustic Probe
070009	Mini-Concentrator		
070037	Acoustic Tip	020015	Carrying Case
		025010	Industrial Grade Headset (Over-The-Head)
000050	Solid Probe Set	025005	Industrial Grade Headset (Behind-The-Head)
040045	3-inch Solid Probe		
040050	5-inch Solid Probe	005055	Receiver Jacket
040055	8-inch Solid Probe	005035	Belt Pouch
040060	13-inch Solid Probe	005007	Gel Ear Seals
040065	23-inch Solid Probe (Special Order)		

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PRODUCT SUPPORT
Options

Training

CTRL's provides several options for training and support to maximize the benefits and ROI of ultrasound technology. The turn-key programs include on-site training as part of the program. Training includes use & operation of CTRL products, hands-on experience, tips & techniques, and more. Support does not stop there. CTRL's "womb-to-tomb" support approach helps organizations throughout their lifetime.

Part Number	Description
090010	Training At CTRL Headquarters
090020	1/2 Day On-Site Quick Start Training
090030	1 1/2 Days On-Site Training
	Condition Based Monitoring Setup &Training
	Energy Savings Program Setup & Training
	Total Solution - Combined Training

Call the customer service manager at any time for additional support or for customized training options.

RESULTS
Customers With Benefits

Industrial - Energy Savings Programs

Distribution Centers such as Target, Amazon, Federated Logistics (Macy's), and others use the UL101 at each facility to maintain their conveyor system and reduce compressor energy usage. In some facilities, the UL101 has helped reduce energy usage by as much as 60%.

Compressed air accounts for 10%-30% of a typical manufacturing facilities electric bill. Companies like Graham Packaging, International Paper, and McCormick use a lot of compressed air for production. Maintaining system pressures and reducing leaks is a standard practice at each facility.
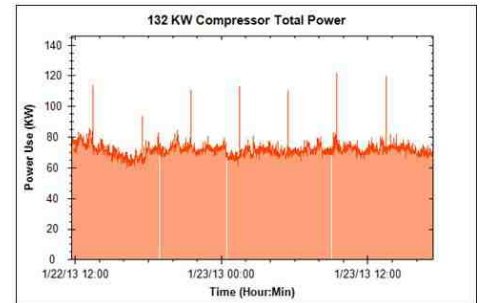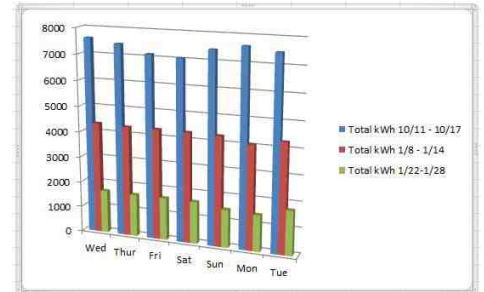

Military

CTRL products are integrated to numerous applications throughout the military. The Navy identified over 100 different maintenance applications where the UL101 could be used on board ship. The Air Force and Army integrated the UL101 for improved fleet readiness. Overall, using the UL101 helps reduce significant man-hours and costs, with an estimated ROI of 15:1.

Industry - Condition Based Monitoring

How much is one hour of production worth to you? CTRL's ultrasound solution for CBM (condition based monitoring) allows maintainers to quickly test and receive real-time feedback from bearings, gears, motors, pumps, and valves. Testing takes seconds and results are instantaneous.

Companies like International Paper and Schlumberger Oilfield Services reduce unexpected downtime significantly with the CTRL CBM program. As one paper plant put it, "we haven't had an unexpected bearing failure on the monitored equipment in eight years."
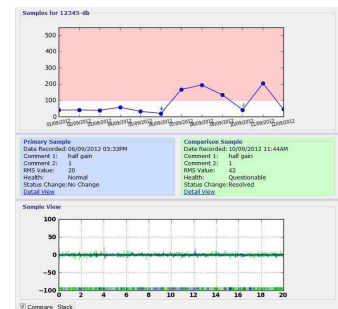
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CTRL Systems, Inc. is a designer and manufacturer of ultrasound detection systems for maintenance. Manufacturers face many challenges, such as extending the life and improving the performance of equipment. It is sometimes necessary to do these things with limited resources – less personnel, less time, and more demands.

A good predictive maintenance, energy savings, and quality control program can prevent unexpected failures, downtime, and waste. CTRL's ultrasonic technology provides an efficient and cost effective method for monitoring critical equipment and leak detection. Frequent inspection, documentation, and trending are crucial for an effective program.

CTRL can work closely with your organization to provide a seamless integration of ultrasound technology into current processes for the maximum level of ROI and satisfaction.

Selected by NASA as standard equipment on the International Space Station and all Shuttle missions.

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