

# UE SYSTEM'S ULTRATRAK 850S SMART ANALOG SENSOR



THE SIMPLEST AND  
EASIEST WAY TO ADD  
THE BENEFITS OF  
ULTRASOUND TO  
YOUR EXISTING  
MEASUREMENT AND  
AUTOMATION SYSTEMS



## ABOUT THE 850S

The 850s is a modern ultrasound sensor and transmitter with state-of-the-art onboard data processing designed to detect early onset failures in industrial equipment.

The 850s works in tandem with existing plant automation and measurement applications, providing the hardware required to detect changes in ultrasonic amplitude resulting from the degradation of equipment.

The 850s can be used for a wide-range of applications, including: ultrasound condition based lubrication, bearing fault detection, valve leakage and steam trap issues with your existing measurement systems.

## QUICK FACTS

1

Continuously monitors friction, impacting and turbulence.

2

Connects to existing monitoring systems (PLC, SCADA, DCS, etc.)

3

Issues automated warnings in the event of bearing or lubrication failure.

4

Identifies steam trap issues and valve leakage.

5

Includes patented Auto-Sensitivity Adjustment.

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## HOW DOES IT WORK?






The 850s is ready to guard against unplanned downtime and product loss the minute it is installed.

The device passively senses ultrasounds produced by mechanical equipment in the form of friction, impacting, and turbulence and processes the level of decibel into an analog signal to work seamlessly with existing PLC's, SCADA, DCS and other automation systems.

This, in turn, supports real-time data trending and alerting, making it possible to detect and address important issues earlier and faster. The 850s also employs Edge Analytics – allowing for in-device data processing, less reliance on cloud computing, and the ability to act on information in real-time.

## EASY INSTALLATION & QUICK START

We are proud to deliver a flexible and user-friendly device, designed to make it quick and easy for teams to derive value from the 850s as fast as possible. This is achieved, in part, by the following important features:

-  The 850s comes out of the box with an incredibly simple, three (3) wire installation and a removable cable attachment for seamless placement.
-  Connecting the 850s to your existing PLC, SCADA, DCS or other plant technology is easy and can be achieved with little technical intervention.
-  The device is built with precision quality and is encased in stainless steel. The 850s, by its very design, is capable of being installed and used as intended in a wide variety of operating environments.
-  The 850s comes with a patented auto-sensitivity adjustment feature, removing the guesswork and pain typically associated with manual adjustment tasks common in other ultrasound sensors.
-  The 850s is built to support any rolling element bearing (at any speed) and a single sensor can cover an entire bearing, eliminating the need for additional sensors on different axis.



## WHY INVEST IN THE 850S?

The 850s gives maintenance and reliability teams an **EASY WAY TO INCORPORATE THE POWER OF ULTRASOUND INTO THEIR EXISTING MONITORING TECHNOLOGY.**

The sensors can be installed and connected within 10 minutes – giving teams a **RELIABLE AND ULTRA-FAST WAY TO START ANALYZING TRENDS AND MAKING BETTER SENSE OF THEIR APPLICATIONS.**

## COMMON APPLICATIONS



### BEARING CONDITION MONITORING & LUBRICATION

Ultrasound provides a mechanism for detecting early warnings of bearing or lubrication failure. The 850s' patented Auto-Sensitivity Adjustment feature enables users to automatically tune into bearing sound and clearly identify lubrication and health issues at speeds as low as 1 RPM.

The 850S can be used on all bearing speeds – including on slow speed bearings as low as 1 RPM.

60%-80% of bearing failures are lubrication-related. The 850s opens up the ability to quickly identify a lack of lubrication and prevent over-lubrication by providing real-time bearing friction data while greasing is being performed.



### VALVE AND STEAM TRAP MONITORING

When valves or steam traps leak or fail, it can be extremely costly in terms of product quality, safety and energy loss. The 850s Auto-Sensitivity Adjustment feature enables users to automatically tune into the trap sound and clearly identify leaking or blowing traps and valves.

### INSPECT ANY TYPE OF STEAM TRAP AND VALVE

Inverted bucket, thermostatic, thermodynamic, float & thermostatic traps, and one-way valves.

### INCREASE SAFETY

Avoid the dangers of failing steam traps - water hammer can cause serious damage to your equipment & people.

### PROCESS EFFICIENCY & COST REDUCTION

Maintain correct temperatures in your process and preserve the lifespan of condensate return lines (water in pipes will cause rusting).



# SPECIFICATIONS

## Power Supply Voltage

23 VDC to 26 VDC

## Power Supply Current Draw

30mA DC Max, Typical

## Current Output Type

Milliamp DC, Demodulated/  
Heterodyned

## Current Output Compliance Voltage

3.3 VDC

## Current Output Response

Linear, Proportional to 0 dB to 100 dB  
of Change in Detected Ultrasonic Signal

## Current Output Range

0.500 mA DC to 16.280 mA DC @  
0.158 mA/dB of Change in Detected  
Ultrasonic Signal, Typical

## dB Output Transfer Function

dB Output = + 6.321 x (Current Output  
Reading), mA DC - 2.917 dB

## Current Output Accuracy

Less Than  $\pm 1$  dB of Reading, Typical

## Ambient Operating Temperature Range

Standard Range = -20 °C to +60 °C ,  
Extended Range = -30 °C to +80 °C  
(Requires High Temperature Cable)

## $\Delta$ Current Output (Temperature)

+2 dB @ - 20 °C, -2 dB @ +60 °C, Typical  
+3 dB @ -30 °C, -4 dB @ +80 °C, Typical

## Sensitivity Adjustment

Automatic, Thru the 0 dB to 100 dB Output  
Range

## Connection Cable

3 Wire with Shield, Removable

## Cable lengths

Different Lengths Available

## Cable/Housing Connector

Harsh Environment, Meets or Exceeds IP67  
and NEMA 6P

## Cable/Housing Shielding

RF

## Housing

Stainless Steel, Water Resistant and Dust  
Proof, Meets or Exceeds IP67 and NEMA 6P

## Transducer

Piezoelectric

## Method of Attachment

10/32 Mounting Hole

## Firmware

Upgradable

