



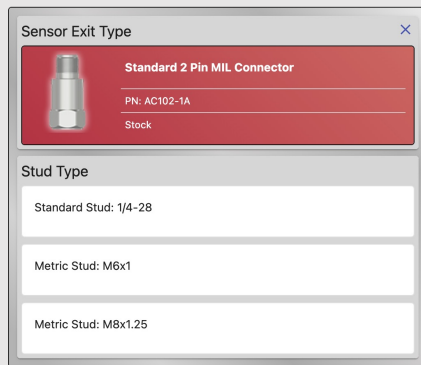
CONNECTION TECHNOLOGY CENTER, INC.

# 2022 in Review: *A Year of Innovation*

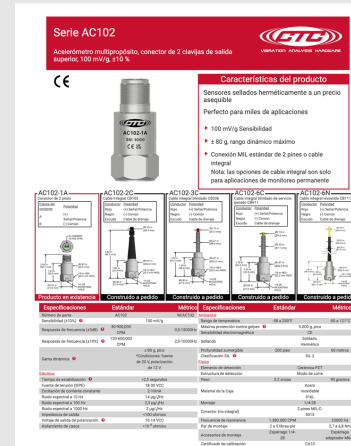


# 2022 Customer Enhancements

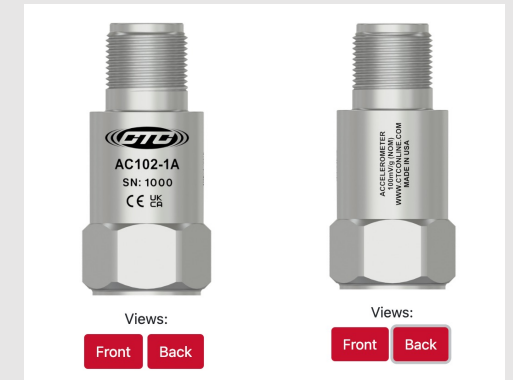
CTC is always grateful to hear from you about how we can improve our product offerings to meet your real-world needs. In 2022, we enhanced several of our products and resources based on customer requests:



**M8x1.25 Adapter Studs**  
Are now available for all top exit sensors at no extra charge. Simply select 1/4-28, M6x1, or M8x1.25 on your desired sensor's part creator or type in M8/(Sensor Part Number) into our quoting system.



**Translatable Datasheets**  
All CTC datasheets now feature a translate option that harnesses the power of Google Translate to create datasheets that can be downloaded or printed in any language.



**Dynamic, 360° Product Images**  
Have been added to our Part Creator so that when you build your part you will now see the exact product configuration you've selected.

# 2022 Customer Enhancements

Piezo Velocity Sensors:

Piezo Velocity Sensors    Velocity Triaxial Sensors

Low Cost Over-Molded Accelerometers:

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Click the + to reveal the code

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<script src="//ctconline.com/pc/embed3_src.js"></script>
<script>
let pc = new CTCPAGE('ctc-page');
pc.init();
pc.loadpc();
</script>
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Copy the code that appears

VIBRATION MONITORING SYSTEM STARTER GUIDE

Vibration analysis systems are a critical component of any predictive maintenance program. CTC offers everything you need to create a vibration monitoring system for your specific industrial application. Use this guide to familiarize yourself with the major components of a vibration monitoring system and considerations for choosing the most appropriate hardware for your application.

VIBRATION SYSTEM OVERVIEW - TABLE OF CONTENTS

Use the links below to navigate to a specific section if desired:

1. Creating Your Vibration Monitoring System
2. Sensor Considerations
3. Sensors Explained
4. Choosing Your Accelerometer
5. Mounting Hardware Explained
6. Cable Assemblies Explained
7. Enclosures Explained
8. Data Collection Instrumentation Explained
9. Other Considerations - Sensor Mounting Techniques
10. Other Considerations - Cabling
11. Enclosure Comparison

JOURNAL BEARING VIBRATION SYSTEM GUIDE

A Journal Bearing, or Fluid Film/Sleeve Bearing, is a type of bearing in which the shaft is suspended in a pressurized regime of oil. These are used on very large or powerful rotating machines in order to provide damping of the vibration in order to pass through critical speeds and suppress instabilities caused by loads or natural frequencies of the housing. This damping of the vibration protects the rest of the production line from the extreme force generated by the rotating element, but it also makes it difficult for a regular accelerometer to get accurate vibration data of the shaft while mounted on the machine housing.

Inductive Proximity Probes (Eddy Current Probes) are non-contact displacement sensors used to determine the absolute displacement between the tip of a sensor and a conductive target material. These probes use the fluctuations induced in an electromagnetic field generated by the probe system to determine the bearing shaft position relative to the bearing casing and the dynamic vibration of the rotating shaft. Industrial Proximity Probes are most commonly used in petrochemical and energy production, specifically in turbines and reciprocating compressors that utilize Journal Bearings.

SHAFT    JOURNAL BEARING

## CTC's API

This convenient feature allows you to embed portions of CTC's website directly on to your site, so that your CTC product offerings are always up to date, and your customers can build their products using CTC's convenient part creator. Simply log into your distributor portal account on [www.ctconline.com](http://www.ctconline.com) and click the API button to get started.

## Vibration System & Journal Bearing Starter Guides

Are your customers new to the world of vibration analysis hardware? We've created two convenient, easy-to-understand starter guides to introduce the principles of vibration analysis and proximity probe hardware systems, which are located at:

<https://ctconline.com/resources/vibration-monitoring-system-starter-guide/>

<https://ctconline.com/resources/journal-bearing-vibration-system-guide/>

# MEB360 Series & MCB360 Series Accelerometers

The MEB360 & MCB360 Series are CTC's first ever swivel mount, molded accelerometers. The rugged, molded body is made of polyurethane and is IP68 rated.

When mounting to a machine, the convenient 360° swivel feature allows you to easily adjust the placement of the side exit integral cable so that it is correctly situated, which is otherwise very difficult to achieve in permanent mounting situations. The mounting base then locks into place once the sensor is correctly positioned, preventing unintended rotation. The unique design also offers a lower profile and a higher frequency response, all at a lower cost than others on the market.



## MEB360 Series

100 mV/g,  $\pm 5\%$  and  $\pm 15\%$  Sensitivity Options,  
30-660,000 CPM ( $\pm 3$  dB) Frequency Response,  
with Hatched Strain Relief for Extra Durability



## MCB360 Series

10 mV/g,  $\pm 5\%$  and  $\pm 15\%$  Sensitivity Options,  
30-840,000 CPM ( $\pm 3$  dB) Frequency Response,  
with Hatched Strain Relief for Extra Durability

# Dual Output Vibration & Temperature Triaxial Sensors + Compatible Hardware

The TXEA331-TA & TXEA333-TA are CTC's first ever dual output vibration and temperature triaxial sensors. These built-in Thermocouple Temperature Sensors have a temperature measurement range from -40 °F to 250 °F (-40 °C to 121 °C) and are complete, all-in-one solutions for three axes of vibration measurement with additional temperature output in one sensor. They reduce installation costs and eliminate the need for multiple cables and mounting systems while still offering reliable, high-quality data.

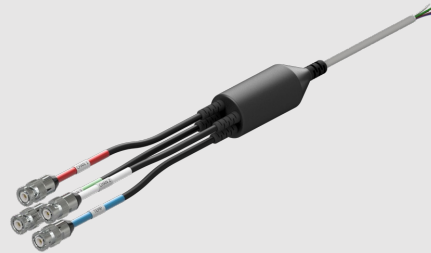
Additionally, CTC's F4DA and A5A connectors combined with CB129 FEP jacketed cable or CB629 armored cable are all designed for use with our dual output vibration & temperature triaxial sensors.



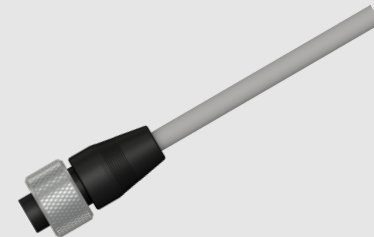
**TXEA331-TA**  
100 mV/g, Premium  
±5% Sensitivity,  
10 mV/°C



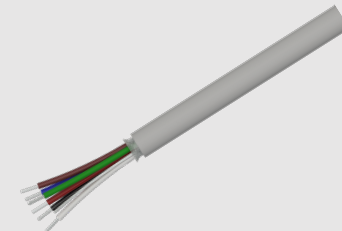
**TXEA333-TA**  
100 mV/g,  
±15% Sensitivity,  
10 mV/°C



**F4DA**  
4 Channel BNC Plug  
Connector,  
Polyurethane Molded



**A5A**  
6 Socket MIL-Style  
with 5 Live Sockets,  
Polycarbonate Molded



**CB129**  
6 Conductor  
Shielded Cable with  
FEP Jacket



**CB629**  
6 Conductor  
Shielded Cable with  
Stainless Steel Armor

# Low Frequency Triaxial Sensors

CTC's new Low Frequency Triaxial Sensors are designed for use in slow speed applications such as very slow-rotating rotors, main bearings, gear box inputs, and shafts.

CTC offers Low Frequency Triaxial Sensors for both acceleration and velocity. Each sensor is available in 4 pin mini-MIL connector exit, molded integral cable, and armor integral cable options.



**TXFA330 Series**  
500 mV/g,  $\pm 5\%$  or  
 $\pm 15\%$  Sensitivity  
Options



**TXFA330-VE Series**  
500 mV/in/sec, Piezo  
Velocity,  $\pm 5\%$  or  $\pm 15\%$   
Sensitivity Options



**TXEA330-VE Series**  
100 mV/in/sec, Piezo  
Velocity,  $\pm 5\%$  or  $\pm 15\%$   
Sensitivity Options



**TXGA330 Series**  
100 mV/g,  $\pm 5\%$  or  
 $\pm 15\%$  Sensitivity  
Options

# M12 Connector Compact Accelerometers

CTC has expanded our compact accelerometer line to include M12 connector exit options. CTC's compact line of accelerometers are wildly popular throughout the vibration analysis industry for the lower profile form factor and premium frequency responses. They are a great solution for a wide variety of applications, especially those with reduced clearance requirements.



**AC192-M12A**  
100 mV/g,  
±10% Sensitivity,  
Top Exit



**AC194-M12A**  
100 mV/g,  
±10% Sensitivity,  
Side Exit



**AC292-M12A**  
100 mV/g,  
±5% Sensitivity,  
Top Exit



**AC294-M12A**  
100 mV/g,  
±5% Sensitivity,  
Side Exit

# Enhanced SC300 Series Signal Conditioners

CTC's SC300 Series Signal Conditioners are ideal for use on any machinery needing 24-hour monitoring. CTC has made several updates to the SC300 Series Signal Conditioner firmware, which is available free of charge when ordering a new Signal Conditioner, or our can be used to program the new features onto an existing SC300 in the field.

## More Compatible Temperature Sensors

Our software now includes a new temperature scaling option compatible with CTC's legacy TA100 and current hazardous rated TA900 Series dual output sensors. The following sensors are now compatible with SC300 Series Signal Conditioners: CTC's Standard AC Series, TA200 Series, VT200 Series, TA100 Series, TA900 Series, AC900 Series, VE100 Series, and UEB300 Series Sensors.

## Multiple Peak-Hold Refresh Rates

CTC now offers multiple peak-hold refresh rates which allows you to select the best rate based on your specific application.

## Customized Output Smoothing

Custom time constant output smoothing allows users to "smooth" out non-repetitive, sudden spikes and other sources of signal noise, offering a cleaner and more steady overall output signal. If a spike over the configured amplitude level but shorter than the configured time constant setting occurs, the spike will be flattened, which reduces the chance of a false trigger on any alarm levels. This saves your team time and money by preventing costly, unnecessary equipment shutdowns.





# High Temperature Triaxial Sensors

CTC's high temperature triaxial sensors are ideal for use in industrial environments with temperatures ranging from 250 °F to 325 °F (121 °C to 162 °C), such as dryer sections in paper mills.

The new high temperature Triaxial Sensors monitor three axis of data simultaneously in high temperature areas, saving you on installation costs in areas that may require high temperature resistance hardware.



**TXEA331-HT**  
100 mV/g,  
±5% Sensitivity



**TXEA333-HT**  
100 mV/g,  
±15% Sensitivity

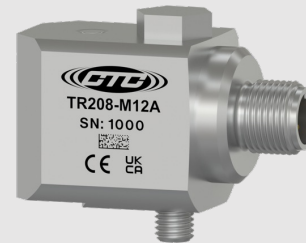
# High Temperature RTD Sensors

CTC's high temperature RTD Sensors are ideal for use in industrial environments with temperatures ranging from 250 °F to 325 °F (121 °C to 162 °C), such as dryer sections in paper mills.

The new high temperature RTD Sensors measure temperature and acceleration in areas with temperatures exceeding what can be handled by a standard accelerometer.



**TR207-M12A**  
100 mV/g,  
±10% Sensitivity



**TR208-M12A**  
100 mV/g,  
±10% Sensitivity

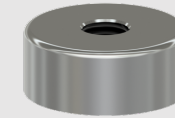
# Coming Soon in 2023!

The CTC Team is already hard at work engineering great new products for you in 2023, including:



## **LPT200 & LPT300 Series Loop Powered Triaxial Sensors**

CTC is proud to introduce Loop Powered Triaxial Sensors. Our LPT Triaxial sensors will offer 4-20 mA output in three axes with a Cartesian orientation. The LPT200 Series will feature velocity output, while the LPT300 Series will feature acceleration output. These sensors are ideal for locations requiring 24-hour alarm monitoring.



## **Ultra Low Profile Magnets**

Our lowest profile magnetic mounting base! Measuring only 0.31 in (7.7 mm) high, these high-strength Neodymium Iron Boron magnets are ideal for machinery with limited clearance where portable measurement is utilized, as well as high frequency portable measurements.

# Coming Soon in 2023!



## PXE110 & PXE210

CTC will offer compact version of our current PXE series boxes, designed to hold 1 to 2 PRO Proximity Probe Drivers. Available in fiberglass or stainless steel, these enclosures come in smaller sizes which fit in tighter, space-constrained locations.



## SC150 Low Cost Signal Conditioner

CTC will be bringing to market a lower-cost signal conditioner that will be factory configured to 100 mV/g sensor input, 0-2 IPS, RMS, 10 Hz-1000 Hz, 4-20 mA output, with user-selectable inputs of 0-5 Vdc or 1-10 Vdc, and IEPE Power enabled or disabled. The SC150 Series also provides dynamic data to be collected for analysis with conventional Vibration Data Acquisition systems.

# Coming Soon in 2023!



## HSC100 Heterodyned Signal Conditioner

CTC's HSC100 Heterodyned Signal Conditioner is designed specifically around CTC's UEA and UEB ultrasound sensors and their primary resonance points (around 35 kHz sub-resonance and 42 kHz  $\pm$ 2 kHz primary resonance).

The HSC100 is designed to take in ultrasound frequency vibration signals, filtering out any low frequency vibration, and downmix them into the standard vibration frequency range. This creates a one-to-one copy of any ultrasound spectrum vibration content (within the device's passband), shifted down 25 kHz into the standard range. This allows ultrasound frequency vibration signals to be measured and analyzed with standard data collectors or data acquisition devices, which otherwise would not have a high enough sampling rate to measure these high frequency signals. Programmable input gain also allows for amplification of the input signal to better distinguish very low amplitude signals.