CTC is excited to announce the launch of several new features for SC300 series signal conditioners. All the latest features mentioned below are available when ordering at no additional charge or programmed onto an existing SC300 in the field using CTC's free reconfiguration software.*

MORE COMPATIBLE TEMPERATURE SENSORS

Previously, when used with a temperature sensor, SC300 Signal Conditioners were limited to use with CTC TA200 Series Sensors only. Our software now includes a new temperature scaling option compatible with our legacy TA100 and current hazardous-rated TA900 series dual output sensors. The TA200 series features an enhanced temperature range of -40 °F to 250 °F. TA100 and TA900 Series Sensors have a temperature measurement range from -40 °C to 121 °C. Please refer to *this document* for more scaling information.

Here is a full list of compatible sensor types:

- Standard CTC AC series accelerometers
- TA200 Series Dual Output Acceleration and Temperature Sensors
- VT200 Series Dual Output Velocity and Temperature Sensors
- TA100 Series Legacy Dual Output Acceleration and Temperature Sensors
- TA900 Series Hazardous Rated Dual Output Acceleration and Temperature Sensors**
- AC900 Series Hazardous Rated Accelerometers**
- VE100 Series Velocity Sensors
- UEB300 Series Vibration and Ultrasound Sensors

MULTIPLE PEAK-HOLD REFRESH RATES

CTC now offers multiple peak-hold refresh rates so that you can select the best rate based on your application. Below is a complete list of new selections:

- Peak Hold, 60 Seconds (Default)
- Peak Hold, 1 Second
- Peak Hold, 10 Seconds
- Peak Hold, 30 Seconds
- Peak Hold, 10 minutes, 15 Second Transient Suppression
- Peak Hold, 30 Minutes, 15 Second Transient Suppression
- Peak Hold, 1 Hour, 15 Second Transient Suppression
- Peak Hold, 12 Hours, 15 Second Transient Suppression
- Peak Hold, 24 Hours, 15 Second Transient Suppression
- Peak Hold, Indefinite, 15 Seconds Transient Suppression

CUSTOMIZED OUTPUT SMOOTHING

Signal Conditioners provide a continuous electrical process signal output that provides information on the current operating condition of the monitored machine. Due to this continuous nature, transient events, noise, signal jitter, impacts, and other spikes within the configured frequency

**If you already have downloaded CTC's software onto your PC, you will need to re-download it from our Customer Portal to access these new features.*

***The SC300 is not rated for use within any hazardous area but can be used with sensors located in a hazardous area and are installed to a certified control drawing and cable run into a safe zone for signal termination in the signal conditioner.*

passband can make their way through to the output. Normal industrial noise and jitter can make it difficult to read an accurate and constant overall vibration amplitude. Further, when utilizing signal conditioners to set alarm and shutdown limits, false alarms or shutdowns could be triggered by short-duration transients or spikes. While alarms and shutdown triggers are critical for a machine's safe and efficient operation, false alarms can be extremely costly, causing unnecessary maintenance calls and machine downtime.

Custom time constant output smoothing will allow end 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 occurs that is over the configured amplitude level but shorter than the configured time constant setting, the SC300 Signal Conditioner will flatten out the spike, reducing the chance of a false trigger on any alarm levels.

Our SC300 Series Configurations with "Default Smoothing" come with a default time constant built in that equals the output signal's nominal refresh rate.† Our Custom Smoothing option allows the user to select between several time constants ranging from less to more aggressive and select the option for no spike suppression/smoothing.

USING SC300 SERIES SIGNAL CONDITIONERS WITH HAZARDOUS RATED SENSORS

CTC SC300 Series Signal Conditioners are not hazardous rated, which means they may not be located within the hazardous zone. However, they may be used with hazardous-rated sensors when located outside the hazardous zone in accordance with the appropriate hazardous-rated protocols.

Class 1 Division 1 (Zone 0/1) Applications

The signal conditioner may be used in conjunction with Class 1, Division 1 hardware when located outside of the hazardous area and in conjunction with an approved barrier. Hazardous-rated sensors using the intrinsic safety protection method (C1D1, Zone 0/1) must be used with barriers to limit the energy the sensor can receive. Cabling brings the signal from the sensor to the Zener diode barrier or galvanic isolator, which is the energy-limiting interface. CTC recommends using our series of Grounded Connectors for Intrinsically Safe sensor applications to avoid noise issues. The signal may then be transferred through the barrier (which can be located inside or outside the hazardous area) to the signal conditioner situated outside the hazardous zone. The SC300 series signal conditioner may be installed in this manner with standard AC900 or TA900 intrinsically safe accelerometers. Since the signal conditioner must be located outside the hazardous zone, it is permissible for an analyst to plug into the BNC on the front of the signal conditioner to take dynamic output readings.

Class 1, Division 2 (ATEX Zone 2) Applications

For Class 1, Division 2 applications, C1D2-approved cabling may be run directly from the sensor to the Signal Conditioner Enclosure as long as the enclosure is located outside the hazardous environment. No barrier is required.

†The nominal refresh rate of the output signal is approximately:

- *0.1 second for High Pass Filter >= 10Hz*
- *0.2 second for High Pass Filter = 5Hz*
- *0.5 second for High Pass Filter = 2Hz*
- *1 second for High Pass Filter = 1Hz.*