

CTC AppNotes

A series of technical documents written by members of the CTC community

Low Power Sensors for Wireless Vibration Monitoring Systems

Many applications in our industry require monitoring machines in environments where regular route data collection can endanger the safety of maintenance personnel. Other situations arise where monitoring certain machines can be cost prohibitive, in both time and money, with sensors wired to a remote junction box. To help remove these obstacles for monitoring in these situations,

CTC has begun offering sensors which are designed for use with the newer wireless solutions being offered by vibration industry companies.

Three wire solutions

The new AC327-1D and AC328-1D sensors are designed to fulfill this need. They have been tested as well as being used with wireless systems from other manufacturers. This compact sensor is easier to fit into tight spaces and has a standard 100mV/g output. With a 2.5 VDC bias voltage and a recommended power supply of 5 VDC, the dynamic range of the sensor is only 15 g's peak. This lower dynamic range may limit the sensor from being used for applications where the impacting

is higher than the 15 g range. However these sensors will still be useful in many applications including the power generation industry and papermills. Other than the low-



Figure 1. AC327-1D sensor. Note the compact case size.



Figure 2. The compact AC328-1D has a frequency response from 0.5 Hz to 8000 Hz. Designed for low power and wireless applications.

er dynamic range, the AC327-1D and AC328-1D perform in most other aspects like a standard

AC192-1D sensor. The RFI and EMI immunity is very high for

a low power sensor and the noise levels are excellent, even at low frequencies. Maximum shock level for both sensors is 5000 g's like almost all of CTC's standard product line.

The frequency response for both sensors is excellent as well, with the AC327-1D's frequency response staying within 3dB all the way from 0.2 Hz to 15000 Hz and the side exit AC328-1D performing within 3dB from 0.5 to 8000 Hz. Like all of CTC's sensors, the AC327-1D and AC328-1D sensors are helium leak tested to ensure a hermetic seal and also the IP 68 rating the sensors have earned.

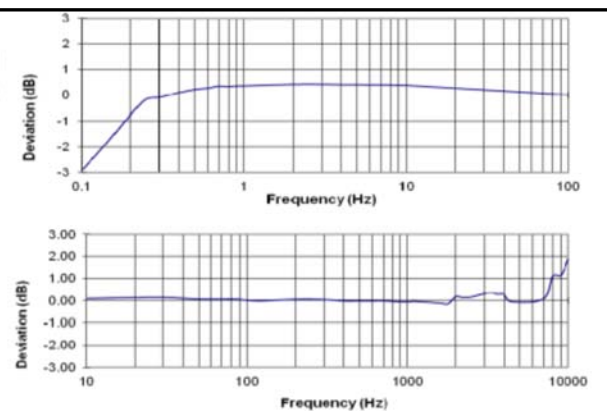


Figure 4. Frequency response curves for AC327 and AC328 series sensors with the low frequency response on top and the high frequency response below.

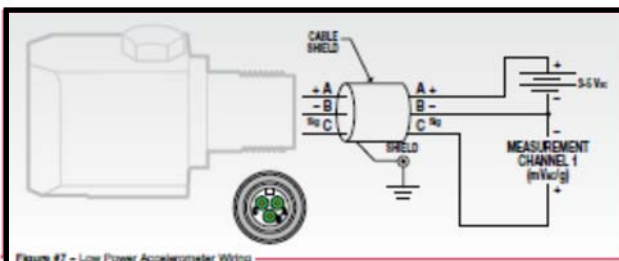


Figure 3. Power and recommended wiring for the AC327 and 328 series sensors (AC328 wiring shown).

If you have any questions feel free to contact CTC directly. Call toll free 1-800-999-5290 in the US/ Canada or +1-585-924-5900 internationally, or alternatively, email techsupport@ctconline.com.