
Subject: Re:thank you for your offer

Posted by [wunhuanglo](#) on Fri, 25 Mar 2005 10:16:30 GMT

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Maybe somebody else will take you up on it. Myself, I'm firmly in the objectivist camp. One point of reference I do have vis-a-vis performance of electronics after exposure to LN2 temperatures is a program I worked on for a couple of years. We built a series of electro-mechanical devices - very high precision optical encoders that incorporated digital and analog circuits mounted to 7-layer PCBs. The application was sub-synchronous altitude satellites, so we weren't fooling around here. The electrical and mechanical performance was extensively characterized before we went cold for about two weeks on each device. What I remember is that there was no change in how the electronics performed, before or after return to RT. Our issues were with the delta-alpha problems between the steel bearings, the quartz optical elements and the beryllium structure, but the electronics were completely stable as far as anyone could measure. The stability of the electronics was a key issue because we were measuring 1 part in 2^{24} (+/- 20 millionths) of a single rotation of the devices, and they had to be repositionable to that accuracy after many rotations. The point is that if the electronics drifted at all you couldn't get back to your original position - but we always did, as measured by a laser positioning system (LUPI) external to the devices. So at the bottom line, there was no effect on the digital / analog electronics after exposure to LN2 that could be discerned by a bunch of USDA-certified Rocket Scientists. That may be not enough of an experiment to indicate what might happen to a power cord, but it's good enough for me.
