

August 12, 2013

Situation:

Polara's CCU2EN and EN4 products include a Real-Time Clock (RTC) for the purpose of recording a time stamp with events in the Health Log. Periodically, our customers have asked about the time keeping accuracy of this internal RTC.

Solution:

The CCU2EN and EN4 use identical components for the crystal oscillator, and integrated circuit RTC for time keeping. The initial frequency tolerance spec is +/-20ppm. This is equivalent to +/-0.002% or +/- 52 seconds in a 30 day period.

The variation over the NEMA TS 2 Operating Temperature range is -144ppm (The crystal oscillator frequency is maximum at 25C). Adding the initial tolerance of 20ppm gives a worst case -164ppm. This is equivalent to -.0164%, or -425 seconds (about 7 minutes) in a 30 day period.

The RTC's used in the CCU2EN and EN4 products meet NEMA TS 2 requirements.

CCU2EN has the ability to use Simple Network Timekeeping Protocol (SNTP) in an Ethernet environment to synchronize the RTC to network time. The EN4 cannot connect to a network (no Ethernet), so does not have this feature.

The AC power frequency is NOT used in any time keeping, or RTC capacity.

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