KEITHLEY

Why does my 2430 fail to Source High Energy Pulses using the Pulse Mode on the 10A Range?

In the 10A range, the duty cycle is limited to 8% with a maximum pulse width of 2.5ms.

To achieve a duty cycle of 8% with the maximum allowable pulse width of 2.5 ms, the Pulse OFF Time should be set for no less than 28.75ms.

$$\textbf{Duty cycle} = \frac{\textbf{Pulse On Time}}{\textbf{Pulse On time + Pulse Off Time}}$$

Pulse Off time = (2.5ms / 0.08) – 2.5ms

= 28.75ms

The following problems can be experienced if exceeding the 8% duty cycle when using the 10A range:

- hear clicking sound in 2430 when attempting to source high energy pulses
- the 2430 fails to source High energy Pulses
- the 2430 ceases to output 10 A Pulses after a period of use

The default Pulse OFF Time for the Model 2430 with **Rev A and B** Analog board is approximately 20ms. If sourcing a 10A pulse, nearly another 10ms of OFF time (additional delay) is required to adhere to the 8% duty cycle spec. If this delay is not added, the 10 A pulse puts a constant drain on the power resources (Capacitor Bank). Some minimum delay is required by this capacitor bank to maintain sufficient charge for the generated pulses. This Delay setting can be done in the Pulse configuration menu.

With **Rev C** Analog boards, default Pulse off time is set for 30ms and hence there should not be a problem.

To determine the revision of the analog board in your 2430, use the key pad:

- Press Menu
- Scroll Right and Select ‘General’
- Scroll and Select ‘Serial#’

The second line of the displayed information will include the version of the hardware. Scroll to the right to see the end of the second line:
{….snip….} V:A02 A:B D:E

In this example, the A:B means revision B of the Analog board (A:) is present.