Zimbra **lassiter@jlab.org**

RE: shms HB PSU

From : Christian Nielsen <cn@danfysik.dk> Fri, Dec 04, 2015 04:59 AM

Subject : RE: shms HB PSU

To : Steve Lassiter <lassiter@jlab.org>

Cc : Henrik Jørgensen <hjen@danfysik.dk>

Hello Steven

I recall dealing with a similar issue back when Henrik did the SAT. Quoting Henriks e-mail of September 16th, 2014:

> "Offset adjustment of V-loop modules: During the FAT, the V-loop modules were off-set adjusted to 0mV. However, due to inherent offset on operational amplifier inputs, this may cause some V-loop modules to actually drive a small output voltage, even though the "set-signal" is clamped to zero during the soft-start period. (And a small output voltage may become a large current in a short circuit or a super-conducting load.) To ensure zero output current during the soft-start period, the offset adjustment of the V-loop module should be set to +30mV±5mV (TP104, GND on TP102) using POT1 with main power OFF. This must be done on-site with the correct regulation module/V-loop

module combination installed.

Regulation module soft-start modification: During recent debugging in the Danfysik lab, it was discovered that the regulation module soft-start circuit generates a ”spike” (~25ms soft pulse) at the instant the main contactor is closed. This, leading to an unintended output voltage pulse, may cause a quench detector to trip. This issue has been solved on all the regulation modules. Furthermore, the timing of the soft-start circuit has been modified (shorter delay and softer release).”

To sum it up:

- All hardware should be correct (all regulation modules were sent back and updated).
- An offset-adjustment (with the actual reg. mod./V-loop combination) might be necessary to completely eliminate the soft-start spike.

Please let me know how this turns out.

Best regards,

Christian Nielsen

Project Engineer, B.Sc.E.E.
Electronics Design
Mobile +45 72 20 23 65

cn@danfysik.dk

Danfysik A/S
Gregersensvej 8
2630 Taastrup
Denmark
Telephone +45 72 20 24 00

http://www.danfysik.com

From: Steve Lassiter [mailto:lassiter@jlab.org]
Sent: 3. december 2015 20:03
To: Christian Nielsen
Subject: Re: shms HB PSU

Hi Christian,

It was the regulation board that had the problem not the v-loop driver.
sorry

Steven

From: "Steve Lassiter" <lassiter@jlab.org>
To: "Christian Nielsen" <cn@danfysik.dk>
Sent: Thursday, December 3, 2015 11:50:47 AM
Subject: shms HB PSU

Hello Christian,

THe SHMS HB magnet PSU is experiencing voltage spikes about 2 sec after the power on button is pressed.
This is resulting in the quench detector generating an interlock, preventing the psu from turning on.

The PSUs had this problem of a voltage spike during turn on before and a mod to the V-loop board was made.
Could you advise as to what needs to be adjusted to reduce the turn on voltage spike?

Thank you

Steven