

Re: Change in thermocouple readout for NOVA target monitor

Paul A. Kasley

Sent: Wednesday, September 05, 2012 2:33 PM**To:** James Hysten**Cc:** Michael W Mcgee; Philip Schlabach

I located two open inputs on the nearby HRM for BTHT01 and BTHT02. I will have Charlie Briegel change their database entries to point to that HRM.

I will purchase two signal conditioners (Acromag 801T-0500 @ \$315) and mount them to the PLC sub-panel that the thermocouples are presently routed to. This eliminates changing the Conditioning Box and "stretching" the thermocouple wires. The move should be relatively painless.

Paul Kasley

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From: [James Hysten](#)**Sent:** Friday, August 31, 2012 12:25 PM**To:** [Paul A. Kasley](#)**Cc:** [Michael W Mcgee](#) ; [Philip Schlabach](#)**Subject:** Change in thermocouple readout for NOVA target monitor

Hi, Paul,

We need to make a change to thermocouple conditioning/readout for one or two channels in the NuMI power supply room in order to accommodate the new beam positioning monitor on the new target for ANU.

At a minimum, E:BTHT01 needs to be moved. Moving E:BTHT02 as well is desirable, but could be left if the cost would be very high.

To expand on what I am trying to accomplish here, the comparison of E:TGTT1 and E:TGTT2 and E:BTHT01 will monitor the beam position, so it is important that their read-out chain be as identical as possible, including the timing of the readout. Also, E:BTHT01 does not have sufficient resolution now.

E:BTHT01 and 02 are currently received in a low resolution thermocouple input to the PLC in rack THSR 101.

I think the efficient change is to re-route them through high resolution conditioners as used for E:TGTT1 and E:TGTT2 received in THSR 104 and read out by the Hot-Link Rack Monitor, but look forward to your feedback. I think this will also enable fast-time-plotting of the channels, which may be useful. Since THSR 104 is closer to the penetration, moving the cable to THSR 104 does not look like a problem (I traced the cabling yesterday).

The Thermocouple Conditioning Box in THSR 104 currently supports 5 channels – each channel is in a separate module (see picture, where I removed the cover). The box was built with six feedthroughs, so I am hoping you will find that at least adding a sixth module/channel here would be relatively painless. I leave to you the investigation of what the power supply can support, what extra modules would fit, and whether the same conditioner units are currently available for purchase. You already indicated that extra channels are available in the HRM.

The expected temperature range is about 18 deg C to 80 deg C. The conditioner chain for E:TGTT1 etc currently

has a range up to 100 deg C (and I am guessing that the lower end is -100 deg C). While you are investigating these conditioners, I would be curious to know if they can be adjusted to give a higher top end to the range. I don't want to make an adjustment at this point, but it is possible that it could be desirable sometime in the future, either for the position thermocouples, or the baffle monitoring thermocouples which come through these same modules.

I believe budget code should be ANU-NOVA 425 - 2.0.3.2.1, as this is required for the ANU target.

Thanks,
Jim

PS to Mike and Phil – E:BTHT02 would be the channel that could be used to monitor the heat sink of the Target Vertical Position Thermometer.

PPS reminder to Jim: the 5 channels currently in the conditioner box are E:BAFT1, E:BAFT2, E:TGTT1, E:TGTT2, and E:TPCAST. The TPCAST cable is labeled as TCPT10.