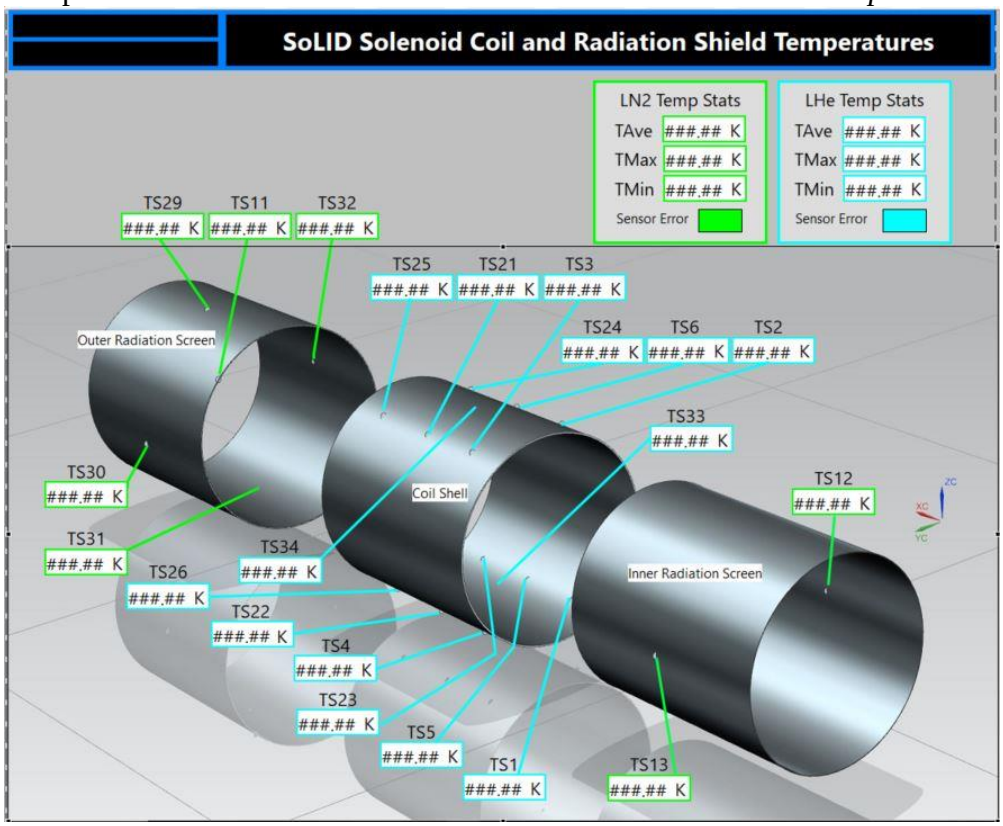
Detector Support Group
Weekly Report, 2020-04-29

Summary

Hall A – SoLID Magnet Controls

Mary Ann Antonioli, Aaron Brown, Pablo Campero, Brian Eng

- Developing AutoCAD drawings:
  - ✶ A00000-16-03-1150 Linear Voltage Differential Transformers (LVDT)
  - ✶ A00000-16-03-2450 JT Valve Cables Diagram
  - ✶ A00000-16-03-1200 LVDT Voltage Readout
- Developing PLC code to control JT valves for heat exchanger
- Developed PLC code to monitor three LHe temperature sensors and two LN_2 temperature sensors located in the SoLID Neck
- Developing PLC routine to read hall probe in magnet
- Updated vacuum signal channel assignment on PLC to match latest documentation
- Updated PLC system to include an additional 1756-IF16 module in "Remote B" chassis
- Completed initial schematic of JT Valve/motor controller operation
- Added color and blink features to indicators on *Solenoid-Neck Temperatures* HMI to show sensors readout errors and over limit conditions
- Developed CSS screen for *SoLID Solenoid Coil Radiation Shield Temperatures*

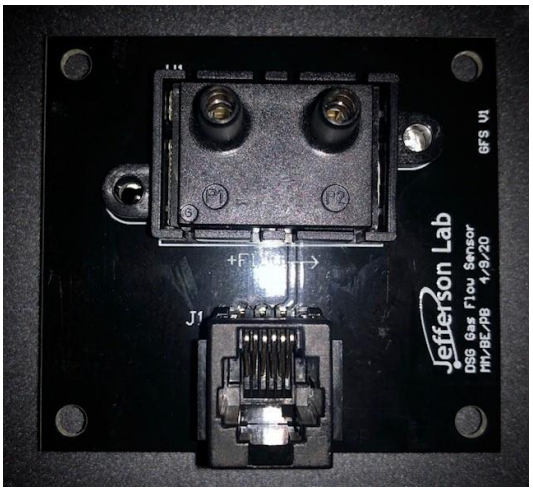


SoLID Solenoid Coil Radiation Shield Temperatures CSS screen

Hall A – SBS GEM

Brian Eng, Mindy Leffel, Marc McMullen

- Received DSG Gas Flow Sensor PCB
  - ★ All parts are through-hole mounted, so PCBs can be populated while teleworking

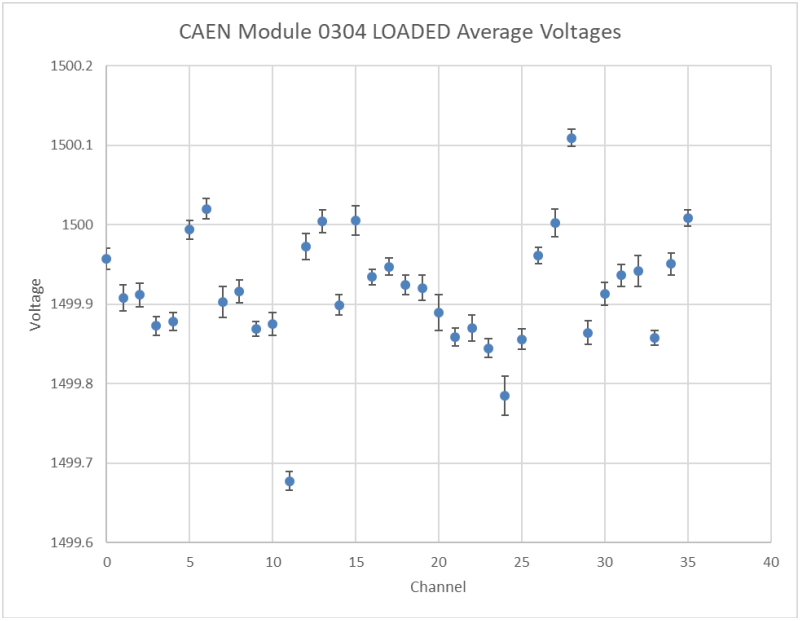


Populated DSG Gas Flow Sensor PCB.

Hall C – CAEN Testing

Aaron Brown, George Jacobs

- Continued analysis of stability test data in Excel for module 0304.
  - ★ Error bars on plots are standard deviation of voltages during stability test



Average voltage of each channel of module 0304 during stability test with load.

Hall C – NPS

Mindy Leffel

- Received and inventoried parts for HV diverter cable
  - ★ Prepared for task by researching connector assembly, strip lengths, and terminating practice cable

DSG R&D – MSELV Chassis

Peter Bonneau, Tyler Lemon, Marc McMullen

- RMC sent for manufacturing and population. Expected delivery ~6/1.
- Concluded initial investigation into Raspberry Pi 4 as controller for chassis
  - ✶ Raspberry Pi is capable of communicating to DACs and ADCs with *pigpio* library
  - ✶ However, without multiplexing or addressable devices, communication must be drivers built from scratch since only four GPIO pins are usable with library

DSG R&D – RICH

Peter Bonneau, Aaron Brown, Tyler Lemon

- Developing EPICS communication monitor for RICH Drybox PVs
  - ✶ Looking into caEventRate command to see whether DSG Archiver can be adapted to log event rate data instead of PV values

DSG Website

Mary Ann Antonioli, Aaron Brown, Brian Eng

- Troubleshooting InDesign hyperlinking issues when exporting a PDF
- Continued redesign website layout
  - ✶ "Publications" space created on website for storing externally published documents to which DSG has contributed
- Created databases to store DSG notes and talks