

DSG-SoLID R&D Meeting Minutes

Date: January 28, 2022

Time: 11:00 – 12:00

Attendees: Mary Ann Antoniol, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, Marc McMullen, and Amrit Yegneswaran

1. Cable fabrication

Pablo Campero and Mindy Leffel

1. Fabricated a total of 152 of 216 cables
 - Updated *Cable Information* spreadsheet with information for all cables that need to be fabricated
 - Completed fabrication of intra-rack cables
 - Remaining cables are 100', connecting instrumentation located on magnet and cryo control reservoir (CCR) to the racks
2. Fabrication of 100' cables
 - Cutting cables, terminating ends that connect to rack, and labeling
 - Requested information to complete termination of ends that connect with magnet and CCR connectors; cables for load cell and strain gauge load sensors will have to be soldered to old cable that is still attached to sensors
 - Most old cable labels are blurry since painter tape was used
 - Will need to check continuity between connector and wires of cut end to re-label cables and connect to rack
 - Checking old drawings to make sense of the few legible labels



Fig.1. Strain gauge load sensor old cables (left picture) and connector already installed on magnet (right picture)

2. Rack wiring

Pablo Campero and Mindy Leffel

1. Wiring of rack A front 100% completed
2. Wiring of rack A rear 75% completed
3. Wiring of rack B front 99% completed
 - Need to ground signal conditioning modules' breakout boards
4. Wiring of rack B rear 100% completed

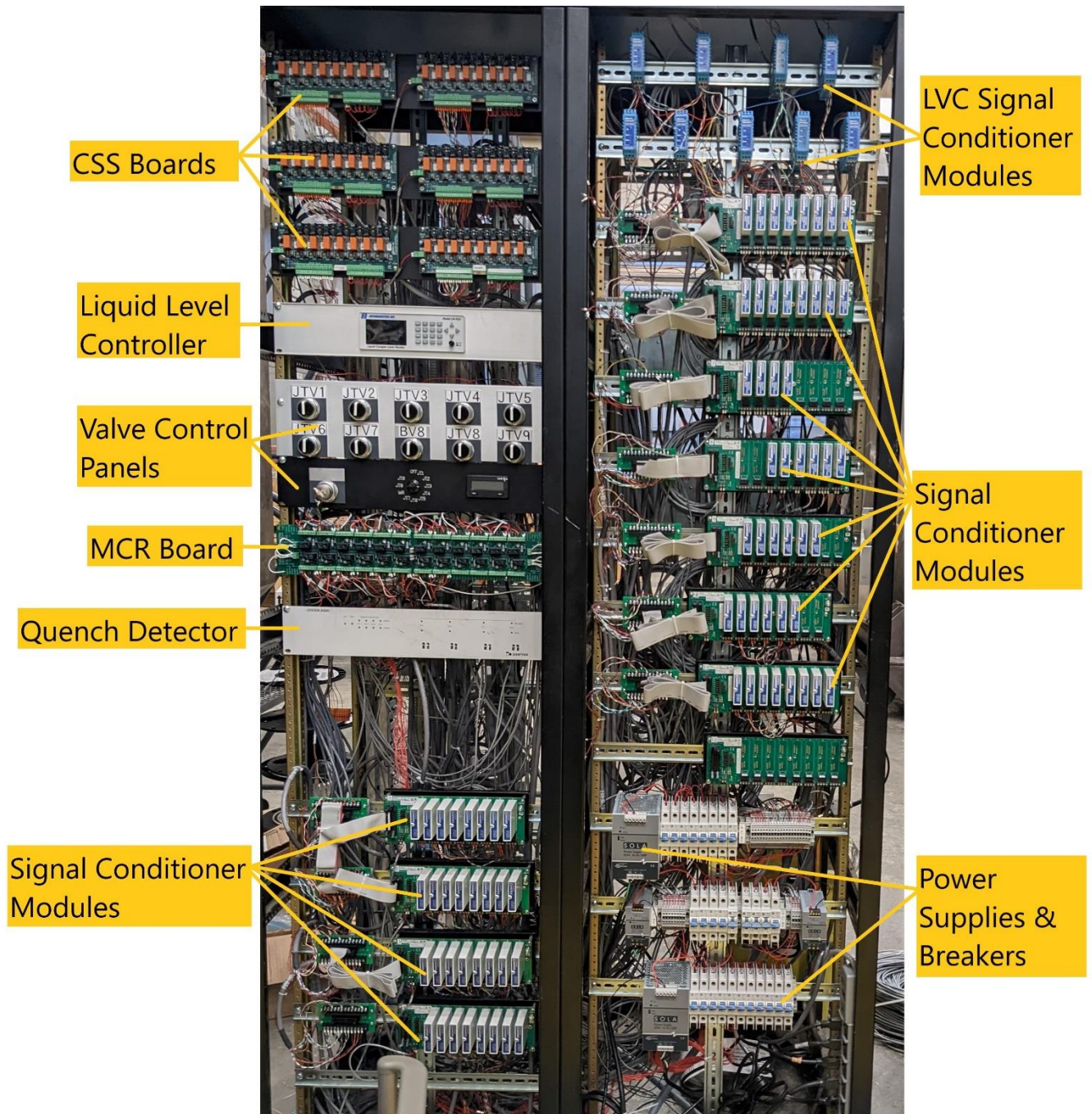


Fig.2. Rack A and Rack B front sides

3. Received instrumentation

Pablo Campero and Mindy Leffel

1. Ethernet cable (75')
2. 2 A breaker spares

4. Rack energization

Pablo Campero, Mindy Leffel and Steven Lassiter

1. Powered up Rack A and Rack B
2. Tested 120 V supply to the PLC power supply chassis (x3) and to the communication module power supply located in Rack B
3. Tested 24 and 5 V supply to instrumentation
4. After troubleshooting issues, following items were completed
 - Tightened loose wires on the MCR board and signal conditioning breakout boards
 - Corrected wiring from 10 A breaker to 2 A breaker
 - Added missing wire to 24 VDC power supply
 - Added two cables to power mass flow controllers
 - Fabricated and connected longer jumper wires on the MCR board
 - Added double ferrules for some MCR board connections
 - Tightened two wires on CCS board #2
 - Connected three ribbon cables between signal conditioning backplanes and breakout boards (Still need to connect one more once it is provided)
 - Corrected wiring in valve key switch
 - Connected ControlNet cables between PLC chassis
 - Added ferules for PLC chassis power supplies
5. Re-tested power and worked as expected

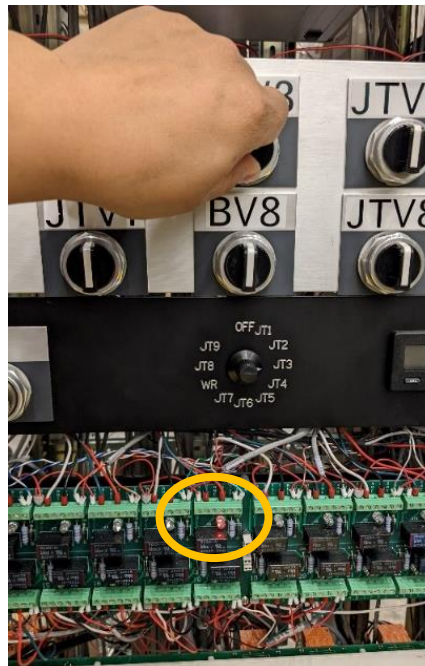


Fig.3. Red LED on the MCR board indicates proper operation of JTV3 in local control mode

6. Resistors connected to mimic temperature sensors
 - Plot of two PT-102 temperature sensors had noise in readout signal; adding filter and grounding to the signal conditioning modules would clean signal

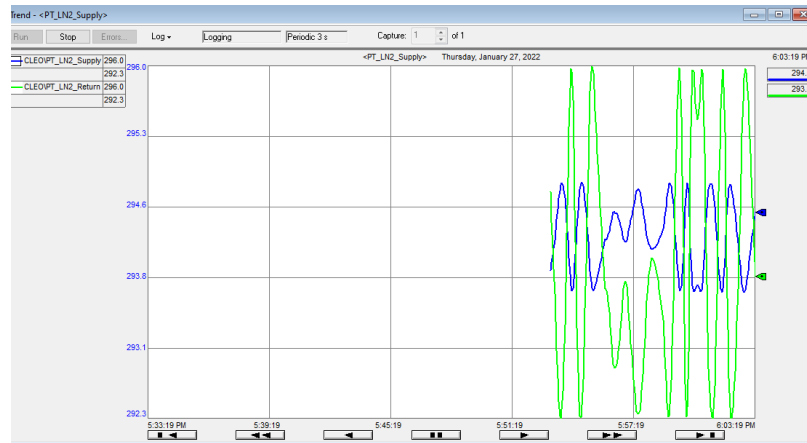


Fig.4. Initial temperature readout

5. Rack utilities

Pablo Campero

1. Configured Ethernet port located close to the racks to connect PLC to the Hall A dev subnet

6. Other topics

1. Request made to DSG that EPICS code be written to archive data of magnet test
2. Magnet will be moved 2 feet closer to the cryo lines
 - Ensured that new location will not affect cables path