



Detector Support Group

We choose to do these things “not because they are easy, but because they are hard”.

Weekly Report, 2020-09-02

Summary

Hall A – SoLID Magnet Controls

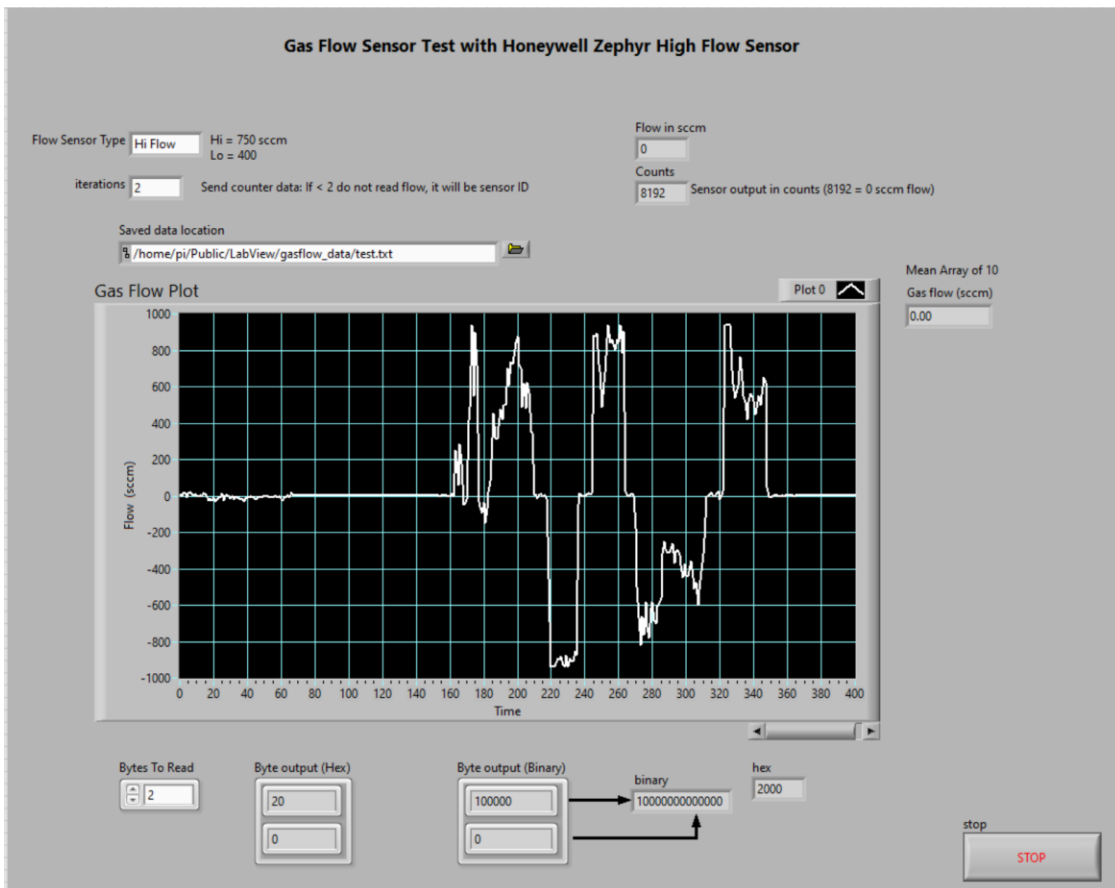
Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, Tyler Lemon, Marc McMullen

- Reviewing latest version of motor controller relay PCB
- Wrote PLC code to control heaters installed at the warm end section of the current leads
 - ★ Added code to readout two temperature sensors
 - ★ PLC logic opens and closes relays to enable and disable heaters based on the temperature readout in each current lead
- Completed *JT Valve Page* HMI screen

Hall A – GEM Detector Gas System

Peter Bonneau, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, Marc McMullen

- Received I²C multiplexer board, which reads out gas flow sensors
- Completed LabVIEW VI to readout flow from Honeywell gas flow sensor



Screenshot of LabVIEW gas flow sensor test VI used for the GEM flow sensor readback software.



Detector Support Group

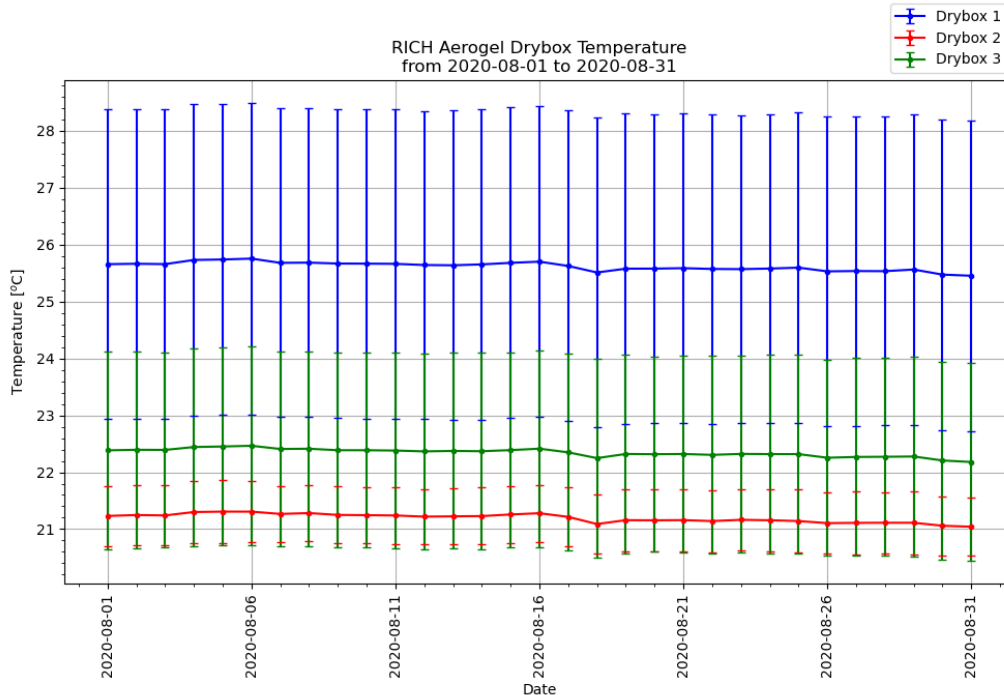
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Hall B – RICH

Tyler Lemon

- Analyzed aerogel storage dry-box environment with Python
 - ★ Program calculates average temperature and humidity by day and plots results
 - ★ Standard deviation for dry-box 2 is much lower than that for dry-boxes 1 and 3 because dry-box two is poorly sealed and the temperature doesn't rise much during each drying cycle



Plot of RICH aerogel dry-box temperature for all three dry-boxes for the month of August.

HDice – fsNMR Program

Peter Bonneau, Tyler Lemon

- Reviewed the program requirements for the fsNMR based on Zurich UHFLI Lock-in Amplifier
- Implemented feature that takes screenshot of LabVIEW front panel of fsNMR program after a run

Hall C - NPS

Mary Ann Antonioli, Peter Bonneau, Aaron Brown, George Jacobs, Mindy Leffel, Tyler Lemon

- Seven hundred and twenty of 1100 high voltage divider cables fabricated
- Analyzing HV (with load) stability test current and voltage data
- Continued voltage stability testing (with load) using EPICS
- Developing CAEN HV trip test



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- Generated Channel Assignment spreadsheet showing all of the PVs assigned to each PMT

CHANNEL #	PMT LOCATION	SLOT 0		SLOT 1		SLOT 2	
		PV	PMT LOCATION	PV	PMT LOCATION	PV	PMT LOCATION
0	18:-15	hvcaentest2:00:000:VMon	18:-14	hvcaentest2:01:000:VMon	18:-13	hvcaentest2:02:000:VMon	
		hvcaentest2:00:000:IMon		hvcaentest2:01:000:IMon		hvcaentest2:02:000:IMon	
		hvcaentest2:00:000:Status		hvcaentest2:01:000:Status		hvcaentest2:02:000:Status	
		hvcaentest2:00:000:VOSet		hvcaentest2:01:000:VOSet		hvcaentest2:02:000:VOSet	
		hvcaentest2:00:000:IOSet		hvcaentest2:01:000:IOSet		hvcaentest2:02:000:IOSet	
		hvcaentest2:00:000:Trip		hvcaentest2:01:000:Trip		hvcaentest2:02:000:Trip	
		hvcaentest2:00:000:RUUp		hvcaentest2:01:000:RUUp		hvcaentest2:02:000:RUUp	
		hvcaentest2:00:000:RDWn		hvcaentest2:01:000:RDWn		hvcaentest2:02:000:RDWn	
		hvcaentest2:00:000:Pw		hvcaentest2:01:000:Pw		hvcaentest2:02:000:Pw	
		hvcaentest2:00:000:SVMax		hvcaentest2:01:000:SVMax		hvcaentest2:02:000:SVMax	
		hvcaentest2:00:001:VMon		hvcaentest2:01:001:VMon		hvcaentest2:02:001:VMon	
		hvcaentest2:00:001:IMon		hvcaentest2:01:001:IMon		hvcaentest2:02:001:IMon	
hvcaentest2:00:001:Status	hvcaentest2:01:001:Status	hvcaentest2:02:001:Status					
hvcaentest2:00:001:VOSet	hvcaentest2:01:001:VOSet	hvcaentest2:02:001:VOSet					
hvcaentest2:00:001:IOSet	hvcaentest2:01:001:IOSet	hvcaentest2:02:001:IOSet					
hvcaentest2:00:001:Trip	hvcaentest2:01:001:Trip	hvcaentest2:02:001:Trip					
hvcaentest2:00:001:RUUp	hvcaentest2:01:001:RUUp	hvcaentest2:02:001:RUUp					
hvcaentest2:00:001:RDWn	hvcaentest2:01:001:RDWn	hvcaentest2:02:001:RDWn					
hvcaentest2:00:001:Pw	hvcaentest2:01:001:Pw	hvcaentest2:02:001:Pw					
hvcaentest2:00:001:SVMax	hvcaentest2:01:001:SVMax	hvcaentest2:02:001:SVMax					

Screenshot of portion of channel assignment list showing all PVs assigned to a particular PMT.

- Developing *NPS ComCal* CSS-BOY screen
 - ★ Creating input screens for each PMT
- Developing documentation and project timeline for the design, construction, and testing of the Environment Monitoring/Interlock system
- Investigating sensors and supporting instrumentation capable of withstanding high radiation while maintaining their operational parameters
 - ★ Negative temperature coefficient (NTC) thermistors used at the Large Hadron Collider to measure temperature
 - ★ NTCs have a precision better than 0.01°C

DSG R&D

Tyler Lemon

- Implemented improved version of Test OPI Creator program
 - ★ New version creates one output screen with both local PV test screen and test controls
 - ★ Takes advantage of CSS capabilities to add widgets from its internal library
 - ★ Works for any widget type on a CSS-BOY screen

DSG – Website Design

Mary Ann Antonioli, Peter Bonneau, Aaron Brown

- Continued updating all DSG technical documentation sections