



Detector Support Group

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

Weekly Report, 2021-01-20

Summary

Hall A – GEM Detector Gas Distribution System

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

- Terminated 64 of 272 DAQ cables' BNC connectors
- Developing WEDM screen for remote monitoring of GEM gas flow
- Developing test stand to flow compressed air for testing gas distribution components

Hall B – SVT

Peter Bonneau, Mindy Leffel

- Investigating setup in the lab to test the Hardware Interlock System
 - ★ Software and hardware tests are needed after the installation of the quick disconnect system for the cables

Hall C – NPS

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

- Developed, using Python, code to generate OPI file for NPS voltage and current readback CSS-BOY screen
- Reviewed cooling circuit for the crystal and electronics zones; revised sensor signal list

Signal Type	Sensor	Qty	Location	Comments
Temperature	Type K thermocouples	112	Crystal Array	Within NPS crystal array (56 front - 56 Rear)
Temperature	4-wire RTDs	20	Detector internal frame	Dual temperature sensors in 10 locations
Temperature	4-wire RTDs	4	Crystal zone cooling circuit	Dual sensors on input and output coolant dividers
Temperature	4-wire RTDs	4	Electronics zone cooling circuit	Dual sensors on input and output coolant dividers
Temperature	4-wire RTDs	4	Electronics zone cooling circuit	Dual sensors on top and bottom heat exchangers
Temperature	4-wire RTDs	2	External ambient (Hall)	
Humidity	Resistive RH	20	Detector internal frame	Dual humidity sensors in 10 locations
Humidity	Resistive RH	2	External ambient (Hall)	
Speed	Fan RPM	4	Electronics Zone Heat exchangers	2 fans on each heat exchanger
Switch on/off	Contact micro switch	2	On frame access panel	Protects personnel from HV when servicing
Switch on/off	Coolant leak sensor	2	In NPS frame	Monitors for leaks in the cooling circuits
Pressure	Electronics zone chiller	1	Inside chiller	All parameters are read from the chiller's RS232 communication port
Set Readback Temperature		1		
Coolant Temperature		1		
Status		1		
Pressure	Crystal array zone chiller	1	Inside chiller	All parameters are read from the chiller's RS232 communication port
Set Readback Temperature		1		
Coolant Temperature		1		
Status		1		

- Verified pinout for multi-conductor HV cable SAMTEC connectors
- Terminated two Radiall 52-pin connectors for multi-conductor HV cables; six of 40
- Generated 874 of 1080 PMT Settings screens
- Compiled voltage ramp testing plots for 13 HV CAEN modules; 468 of 1188 plots

EIC

Brian Eng

- Adding dimensions and weights to detectors for floor load analysis