



Detector Support Group

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

Weekly Report, 2022-10-05

Hall A – CLEO Magnet Mapping

Aaron Brown, Brian Eng

- Assembled parts list for replacement sensor boxes since no previous box could be located
 - ★ Sensor boxes will be based on an ESP32 microcontroller and LIS2MDL magnetometer sensor
 - Sensors are on a PCB with connectors; libraries exist for all major functionality (sensor, display, saving files)

Hall A – ECal

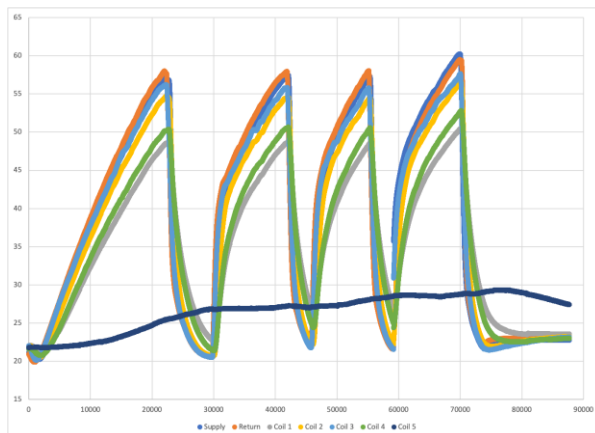
Brian Eng, Mindy Leffel, Marc McMullen

- Ordered a process controller that will read the RTDs and provide the interlock relay signal

Hall A – Moller

Aaron Brown, Brian Eng

- Started coil 3 tests with chiller
 - ★ Chiller flowed water heated to ~65°C through the coil while monitoring the coil temperature was monitored
 - ★ Then, the hot water was shut off and colder (~20°C) water from the city line was flowed through the coil
 - ★ This process was repeated to check if it caused damage to the coil (or exacerbated existing damage)
 - ★ Initially 4 ramps completed; work ongoing to increase the cycle time



Hall A – SoLID

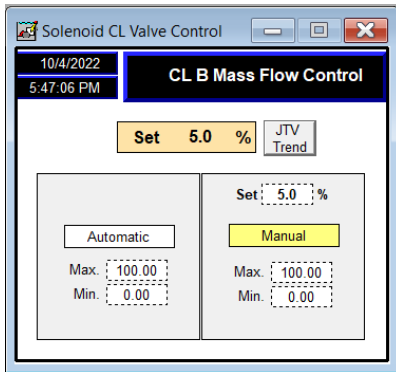
Mary Ann Antonioli, Pablo Campero, Mindy Leffel

- Reviewed PLC code that compares the strain gauge and load cell readouts against the set limits; method of comparison will be rewritten
- Revised two HMI screens
- Completed new HMI screen, *Solenoid Current Lead Valve Page*; testing screen

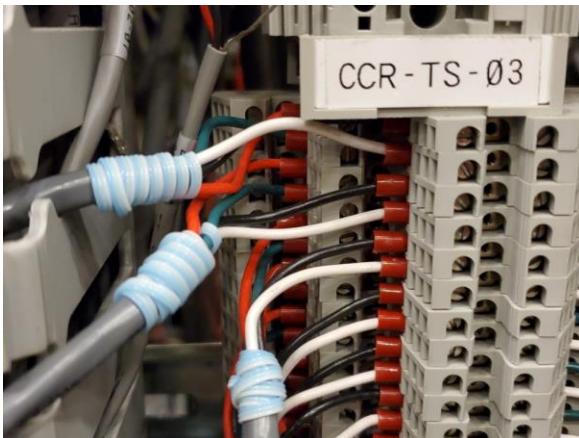
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- Developing new screen *Solenoid Current Lead Valve Trend*
- Revised five electrical drawings; reviewed, converted to pdf, rotated view, compiled if needed, and reposted
- Ordered wire wrapping material for exposed drain wires and tested on a few cables (blue material in photo below)



Hall C – NPS

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

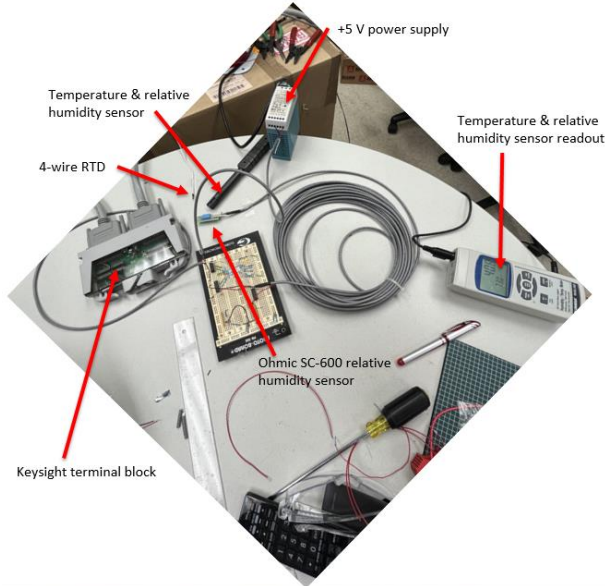
- Completed first draft of Phoebus screens manual
- Swapped transposed wires on nine 50' humidity sensor cables
- Worked on Ansys Fluent thermal analysis of crystal array
 - ★ Added enclosure to surround crystal array and cooling components of the model
 - ★ Defined name for each component of the model

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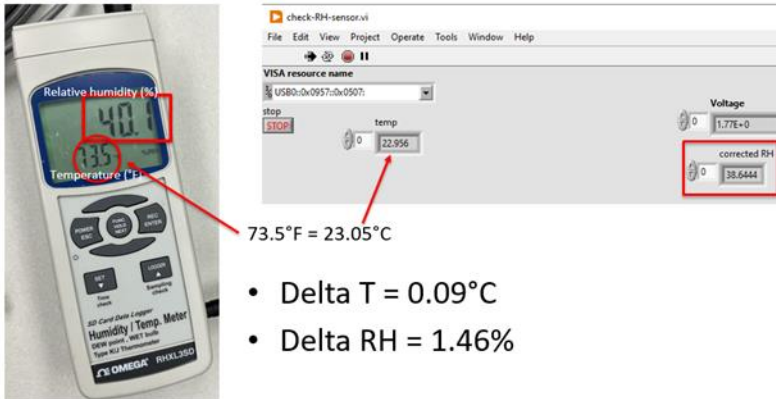
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Weekly Report, 2022-10-05

- Set up test stand to test Ohmic Instruments SC-600 relative humidity sensor



- ★ Using Omega RHXL3SD temperature and humidity sensor as a control
- ★ Temperature is needed from the SC-600 to calculate the relative humidity, so a 4-wire RTD is also used
- ★ The RTD and the SC-600 are connected to the Keysight mainframe and read out using a LabVIEW program



- Began wiring diagram for humidity sensors

Hall D – JEF

Mindy Leffel

- Wrapped 10 crystals

EIC

Pablo Campero, Brian Eng, George Jacobs, Marc McMullen

- Ordering components for beam test setup; a few components have arrived



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Weekly Report, 2022-10-05

EIC - DIRC

Tyler Lemon, Marc McMullen

- Repeating Multisim simulation of proposed laser interlock circuit in Altium
 - ★ JLab does not have a Multisim license; JLab has licenses for Altium, which has simulation abilities
- Investigating how to test the photodiode to read its response
 - ★ Test can determine amplitude of signal for ambient light and whether voltage instead of current can be read by using a resistor in series with photodiode

DSG R&D - CS-Studio Phoebus

Peter Bonneau

- Rebuilding Phoebus development system
 - ★ Completed Phoebus core and alarm system applications build from source code for alarm server, alarm configuration logger, and Kafka message streaming interface
 - ★ Implemented an alarm system preference properties file in the Phoebus source code to define the Hall C NPS alarm configuration name, default values, and user interface settings
 - ★ Installed, configured, and tested procServ program, a command wrapper for remote telnet access to the alarm system command console; also used by EPICS to connect, control, monitor, and restart softIOCs