



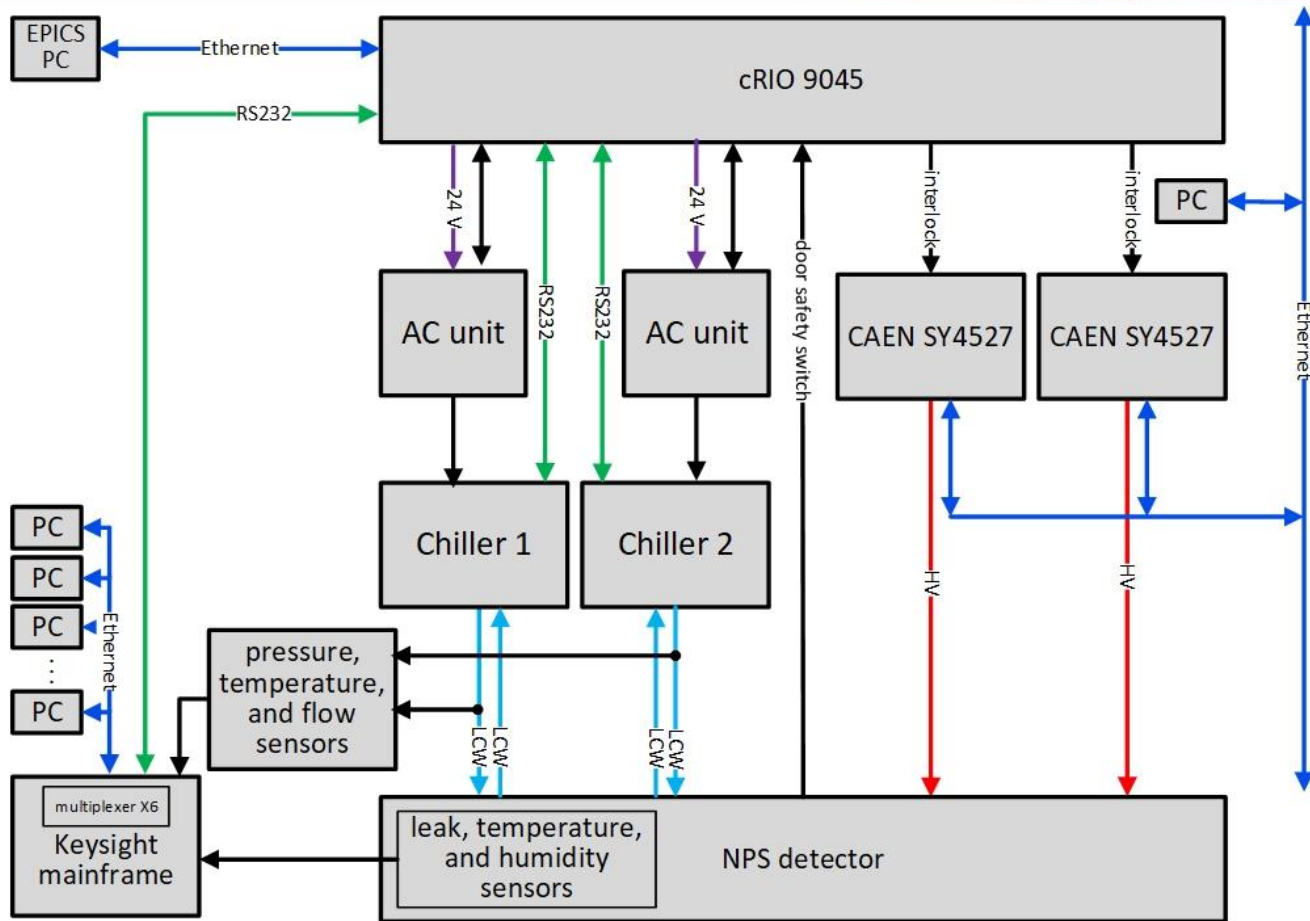
DSG NPS Collaborators' Meeting Update

Aaron Brown and the
Detector Support Group
07/29/2021

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- Hardware Interlock System Development
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System Layout



NPS Hardware Interlock System
M. A. Antonioli
7/21/21

- Hardware interlock system layout [DSG Note 2021-15](#)

Chiller Interlock

RPC-20-SCD
Remote Power Controller



NI-9485 SSR Module



- Remote power controller (RPC-20-SCD) provides AC power for chillers
- While RPC receives 24 VDC from cRIO via NI-9485 relay module, power is supplied to chillers
- If relay contact opens, 24 VDC signal stops and power is shut off to chillers

CAEN Crate Interlock

- Connects to CAEN SY4527 CPU via LEMO cable with interlock switch in “OPEN” position
- If interlock command is given the contact is opened and ground connection is removed
- All channels switched off simultaneously



CAEN SY4527 CPU

Interlock Overrides

- Two independent interlock overrides
 - CAEN SY4527 HV crates
 - Kodiak chillers
- Interlock overrides allow for hardware repair or program update while detector is in operation
 - Keyed switches on the cRIO crate used by system experts only

Conclusion

- Majority of hardware needed arrived at JLab
 - Stored in the DSG Control Room
- Hardware Interlock System development progressing

Thank You!