



DSG-NPS Collaborators' Meeting Update

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Detector Support Group
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- External Chiller Monitoring
- ESR Film Pre-shaping
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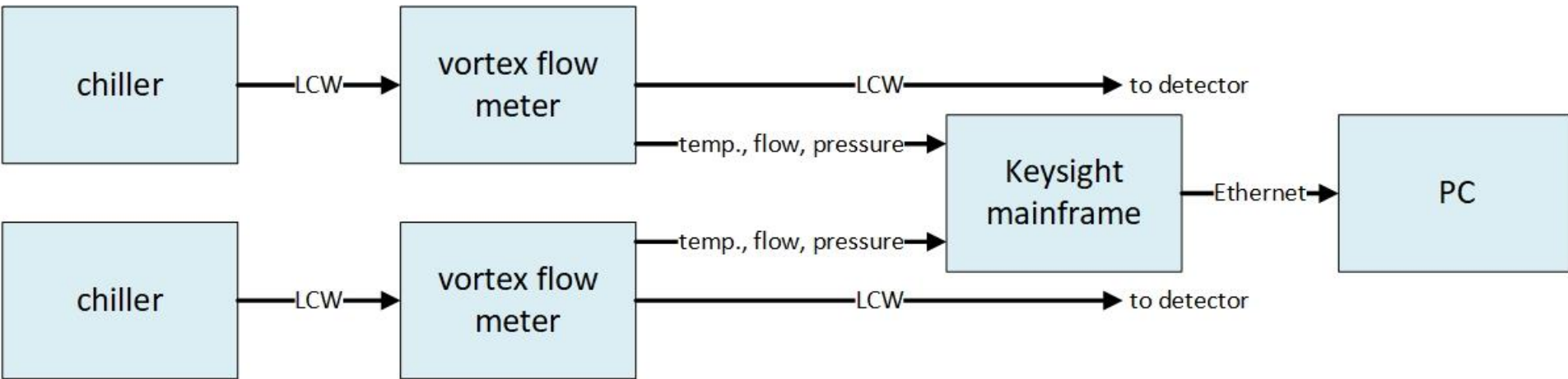
External Chiller Monitoring



Shown with the pressure transducer

- Kodiak chillers provide temperature and pressure readback
 - Do not provide flow rate readback
- Vortex flow meter used to externally monitor chillers
 - Flow rate from 0.48 GPM to 40 GPM $\geq \pm 3\%$
 - Temperature from -40°C (233 K) to 125°C (398 K) $\pm 0.3 \text{ K} \pm 0.005 \text{ K}/^{\circ}\text{C} * T^{\circ}\text{C}$ at $T \neq 0^{\circ}\text{C}$
 - Plan to run at 5°C
 - Pressure from 0 to 174 psi $\pm 1.6 \text{ psi}$

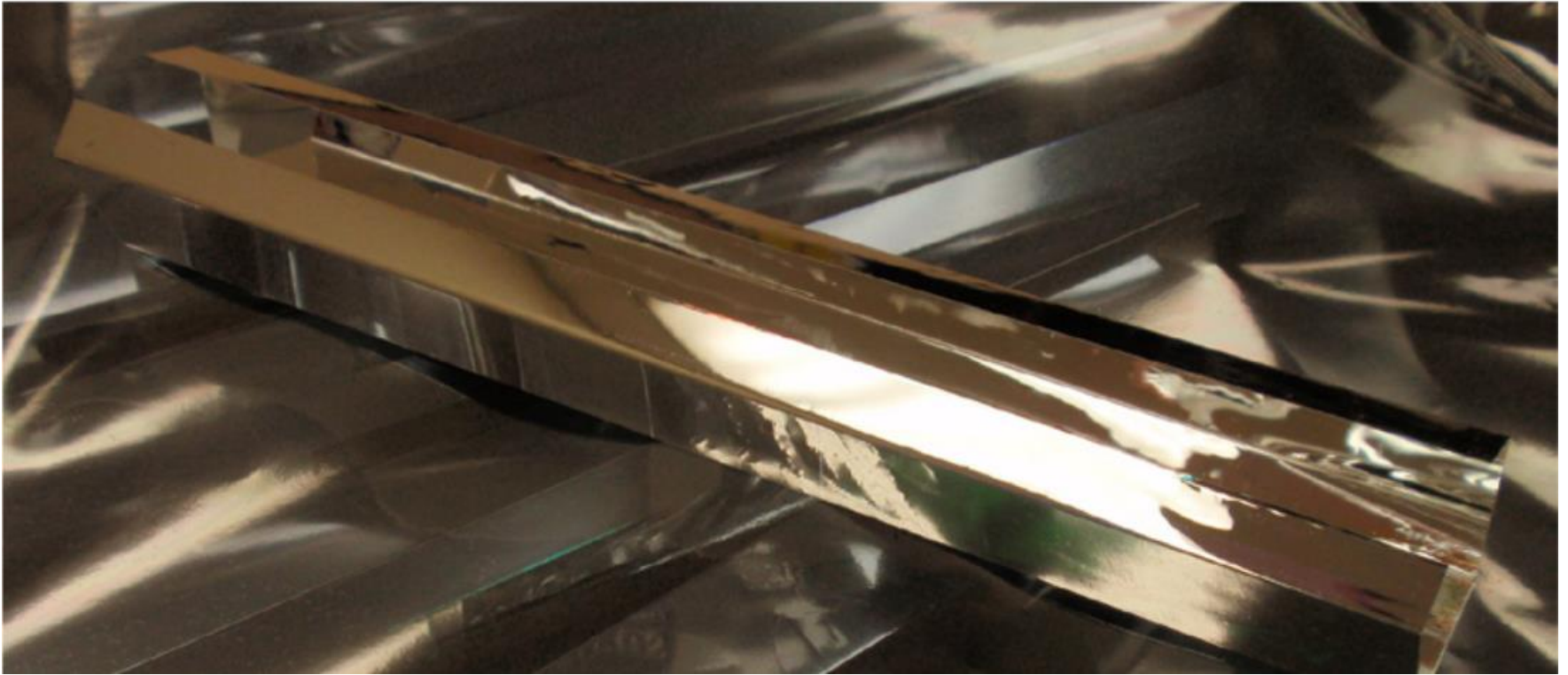
External Chiller Monitoring



NPS Chiller Monitoring Schematic
M. A. Antonioli
1/4/22















































































































- Chiller outlets will be connected to Vortex flow meters
- Flow meter returns temperature, pressure, and flow rate as voltage signal (0-10 VDC)
- Voltage signal read with Keysight mainframe – sent to LabVIEW and EPICS variables

ESR Film Pre-shaping



- 585 of ~600 films complete (97%)

EPICS Phoebe Screen Development

			All Channels On		All Channels Off				
All Mod. Chs. ON	All Mod. Chs. ON	All Mod. Chs. ON	All Mod. Chs. ON	All Mod. Chs. ON	All Mod. Chs. ON	All Mod. Chs. ON	All Mod. Chs. ON	All Mod. Chs. ON	All Mod. Chs. ON
All Mod. Chs. OFF	All Mod. Chs. OFF	All Mod. Chs. OFF	All Mod. Chs. OFF	All Mod. Chs. OFF	All Mod. Chs. OFF	All Mod. Chs. OFF	All Mod. Chs. OFF	All Mod. Chs. OFF	All Mod. Chs. OFF
 11-35	 12-35	 13-35	 14-35	 15-35	 16-35	 17-35	 18-35	 19-35	 20-35
 11-34	 12-34	 13-34	 14-34	 15-34	 16-34	 17-34	 18-34	 19-34	 20-34
 11-33	 12-33	 13-33	 14-33	 15-33	 16-33	 17-33	 18-33	 19-33	 20-33
 11-32	 12-32	 13-32	 14-32	 15-32	 16-32	 17-32	 18-32	 19-32	 20-32
 11-31	 12-31	 13-31	 14-31	 15-31	 16-31	 17-31	 18-31	 19-31	 20-31
 11-30	 12-30	 13-30	 14-30	 15-30	 16-30	 17-30	 18-30	 19-30	 20-30
 11-29	 12-29	 13-29	 14-29	 15-29	 16-29	 17-29	 18-29	 19-29	 20-29
 11-28	 12-28	 13-28	 14-28	 15-28	 16-28	 17-28	 18-28	 19-28	 20-28
 11-27	 12-27	 13-27	 14-27	 15-27	 16-27	 17-27	 18-27	 19-27	 20-27
 11-26	 12-26	 13-26	 14-26	 15-26	 16-26	 17-26	 18-26	 19-26	 20-26
 11-25	 12-25	 13-25	 14-25	 15-25	 16-25	 17-25	 18-25	 19-25	 20-25

- CAEN Channel, Module, Crate ON/OFF screen (for experts only)

Conclusion

- DSG procured two vortex flow meters to monitor chiller function
- LabVIEW chiller monitoring program in development
- ESR film pre-shaping 97% complete
- Developed screen for experts to turn on/off module channels individually, all channels of a module, or all channels of both crates

Thank You!