Test Stand for CompactRIO Analog Input Modules

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Hall B Systems Using cRIO

- Forward Tagger hardware interlock
- Silicon Vertex Tracker hardware interlock
- RICH hardware interlock
- Torus low voltage
- Torus data acquisition
- Solenoid low voltage
- Solenoid data acquisition
- Gas system

cRIO Modules Used Within Hall B Systems

- NI-9203 current input
- NI-9205 voltage input
- NI-9207 voltage and current input
- NI-9211 temperature input
- NI-9215 voltage input
- NI-9216 temperature input
- NI-9217 temperature input
- NI-9219 analog input
- NI-9239 voltage input

cRIO Modules Used Within Hall B Systems, cont.

- NI-9263 voltage output
- NI-9264 voltage output
- NI-9265 current output
- NI-9401 digital
- NI-9474 digital
- NI-9481 relay output
- NI-9485 relay output
- NI-9870 serial interface
- NI-9871 serial interface

Test Stand

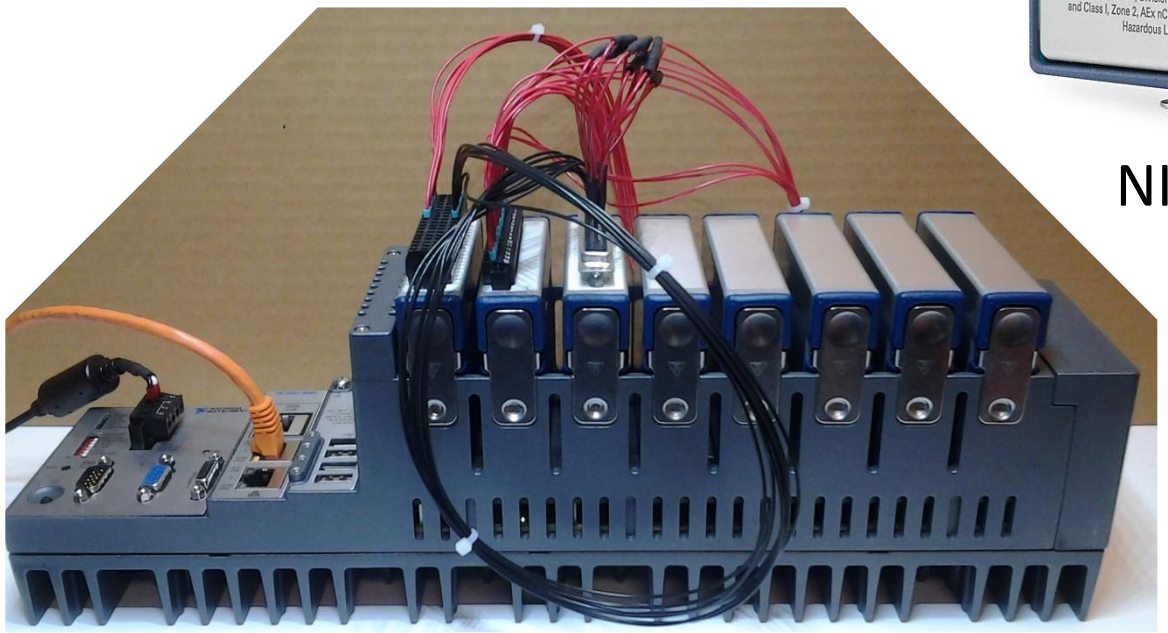
- To be used for troubleshooting
- Same specs to be tested on all analog input modules
  - Set, readback, and precision
  - Dynamic range
  - Offset error
  - Gain error
  - Differential non-linearity
  - Integral non-linearity

Test Stand, cont.

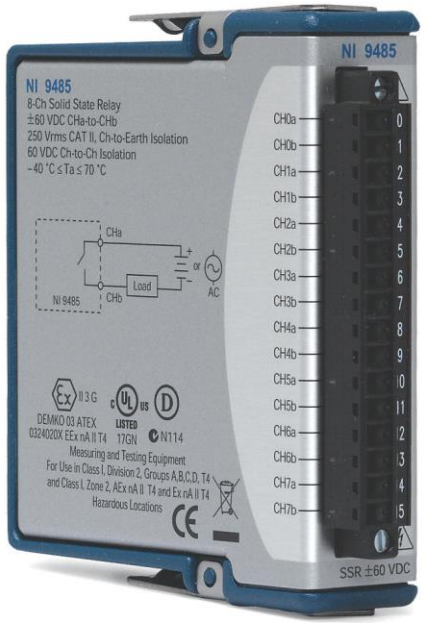
- Currently, LabVIEW code being developed to test NI-9207's set, readback, and precision
  - Voltage sent from NI-9264 module, via NI-9485 relay module
  - Voltage read back from NI-9207
  - Set and read voltages are compared and precision computed
  - Each channel tested through a specific voltage range
  - Data exported to Excel

Test Stand, cont.

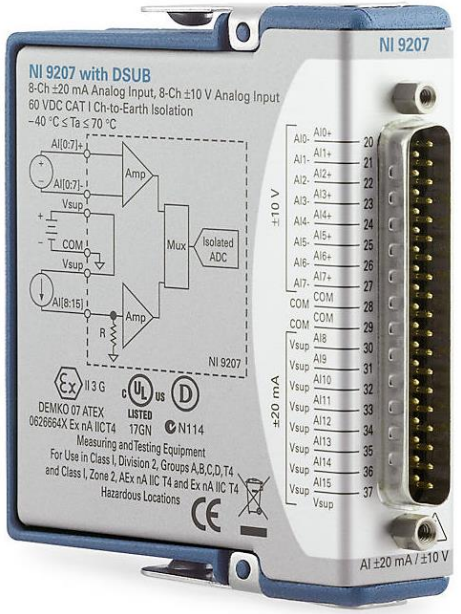
current test stand



NI-9264



NI-9485



NI-9207

Summary

- Eight Hall B subsystems use cRIO system
- Eighteen cRIO modules used throughout eight systems
- LabVIEW code development has begun