Testing of National Instruments' Current Output Module NI-9265

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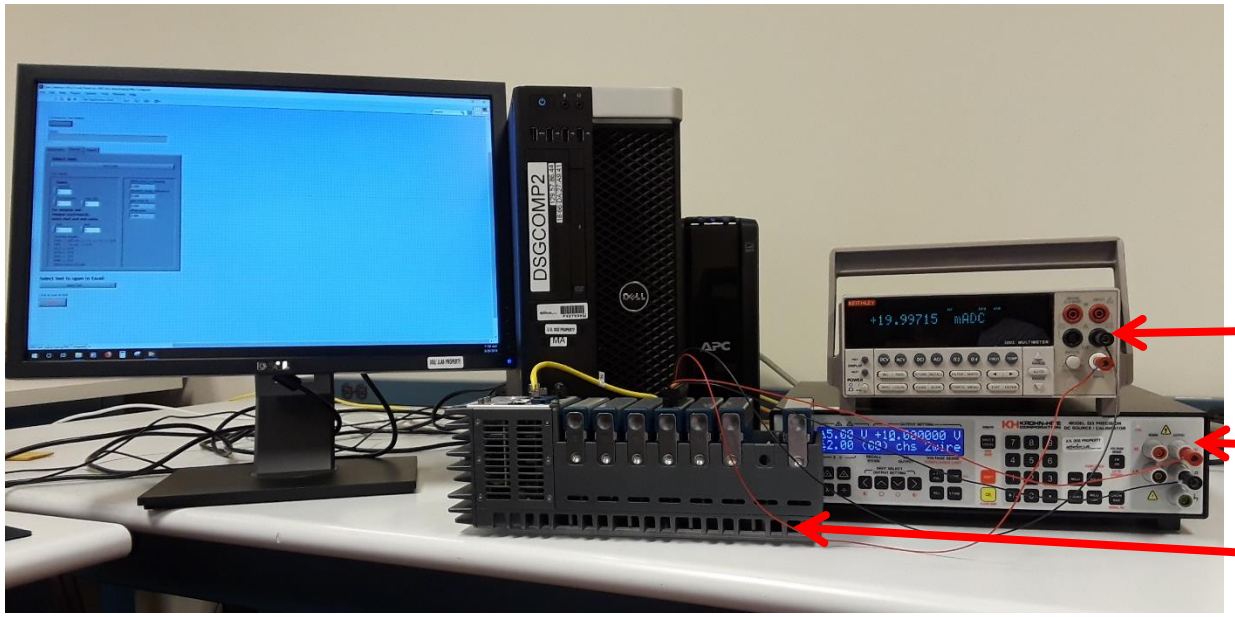
Purpose of Test

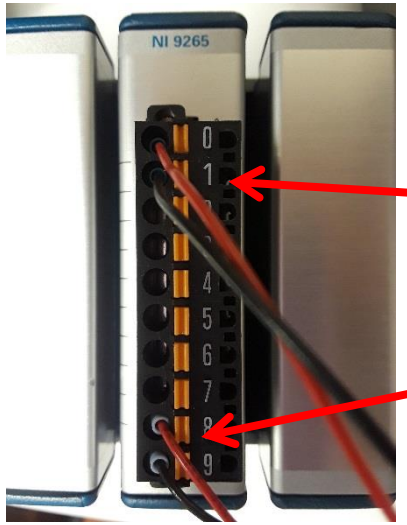
- Test stand developed to monitor and test National Instruments' compactRIO (cRIO) modules used in experimental halls
- Current output analog module NI-9265 one of 18 module types
- LabVIEW code used for testing

Test Setup



Equipment used:

- Keithley 2002 multimeter
- Krohn-Hite model 523 DC source
- cRIO system with NI-9265 module



Wiring:

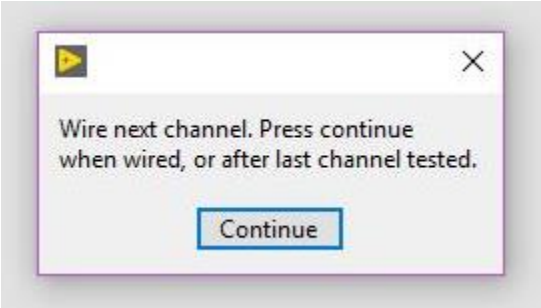
- Channel 0 to Keithley
- Connection to Krohn-Hite

Tests Written

- Mean
- Accuracy
- Standard deviation
- Differential nonlinearity
- Dynamic range
- Gain error %
- Integral nonlinearity
- Offset error

Issue

- For previous modules, all channels could be wired at once.
- For NI-9265, only one channel can be wired at a time.
- To alert user when to rewire module for next channel, a pop-up with sound was added to the code.



Pop-up message added to code.

Conclusion

- This NI-9265 passed all tests, i.e met specifications for the hardware interlock system.
- For tests that specifications were provided by National Instruments (gain error and offset error), results were better than specification.