

PLC Test Station Status Report

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1. Tested Dynapower PLC program on new CompactLogix PLC
 - 1.1. Found discrepancy between behavior of program and how Dynapower test procedure states how it should behave: interlocks require reset to clear.
2. Investigated ways to communicate with instrumentation over GPIB from PLC.
 - 2.1. To verify modules meet specification, instrumentation that can output or measure at a higher resolution than modules is needed.
 - 2.1.1. Krohn-Hite Model 523 precision DC source will be used to test analog input modules.
 - 2.1.2. Keithley 2002 multimeter will be used to test analog output modules.
 - 2.2. PLC cannot communicate via GPIB, so an intermediate device or program is needed.
 - 2.3. Two intermediate devices/programs investigated:
 - 2.3.1. Prologix GPIB-Ethernet device to connect GPIB instrumentation to network so PLC can communicate to instrumentation over network.
 - 2.3.2. Python program using *pycomm* (Python PLC communication package) and *pyvisa* (Python VISA package for GPIB) to pass data from/to PLC to/from GPIB.
3. Developed “PLC health” routine for test program.
 - 3.1. Routine generates and monitors Boolean and counter heartbeats to ensure PLC is running.