

A Revision to the Neutral Particle Spectrometer Control and Monitoring Software

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A LabVIEW program written for the Neutral Particle Spectrometer (NPS) is being used to control and monitor temperature and humidity sensors. The program is being revised. This note discusses the revision to the configuration of the Keysight multiplexer modules and reading the module measurements.

Figure 1 at the bottom of the page shows the current LabVIEW code, which takes up too much space on a monitor and is difficult to follow. To improve the screen-space issue, the original code—the configuration of the Keysight modules, red box, and reading the modules, blue box—was replaced by two subVIs.

Within the reading portion, code is duplicated to read thermocouples (TC), DC voltages, and RTDs from more than one module. Therefore, three subVIs were made—*read TC*, *read DC*, and *read FRTD* (four-wire RTD). Figure 2 shows the code to read a thermocouple module.

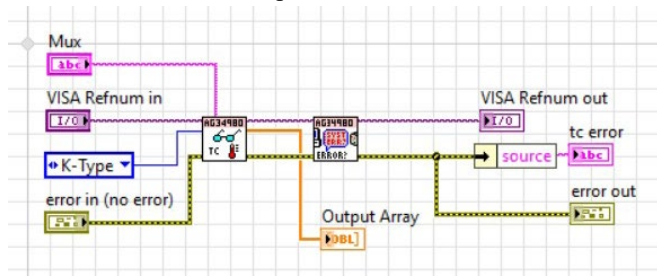


FIG. 2. Code written to read a Keysight thermocouple module.

Using the three subVIs, another subVI was made, Fig. 3, to read the Keysight measurements. The *read TC* subVIs are indicated by the red circles.

Figure 4 shows the final code that uses a subVI made for configuring the Keysight modules and a subVI for reading the modules.

In conclusion, the Keysight portion of the NPS control and monitoring software has been revised to use less screen space, which makes reading and following the code easier.

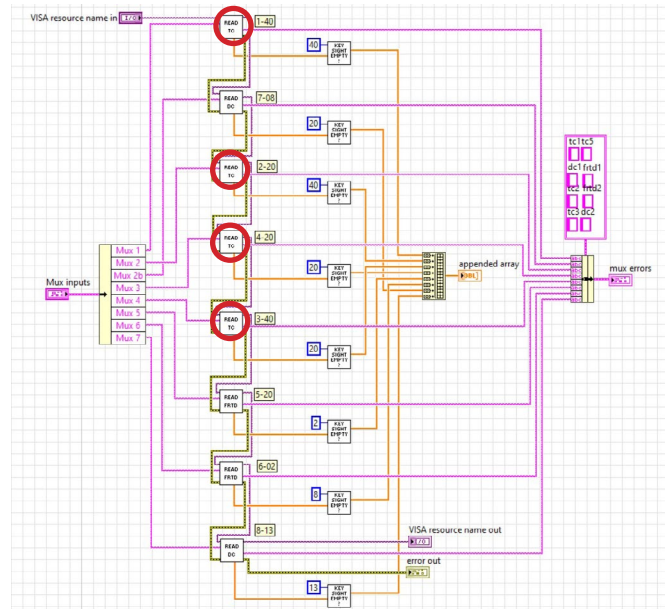


FIG. 3. SubVI code to read the Keysight measurements.

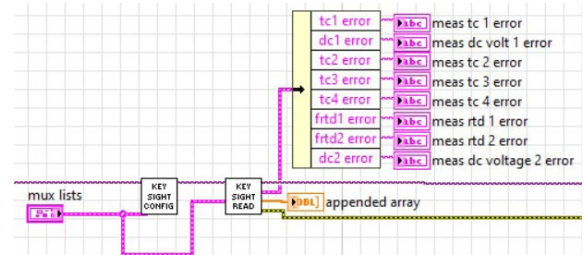


FIG. 4. Final LabVIEW code after using subVIs.

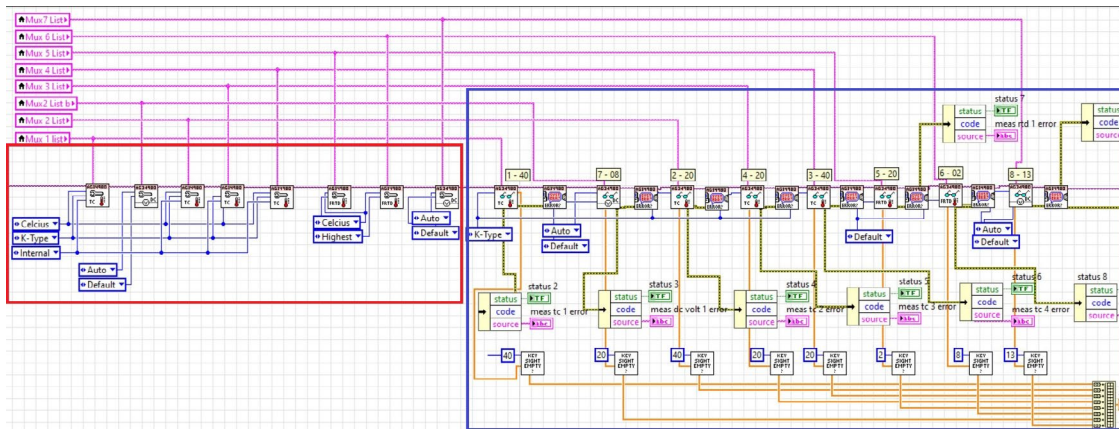


FIG. 1. LabVIEW code to configure and read the Keysight modules.