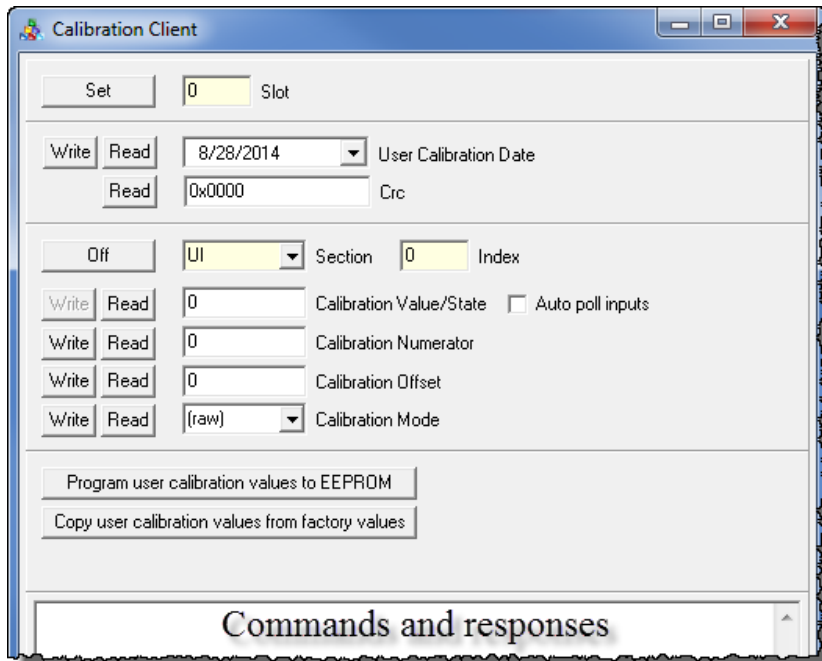# Using the ScadaBuilder Calibration Client

Each new ICL Pinnacle controller is pre-calibrated at the factory before shipping. The calibration client is provided in case any of the analog inputs (UI and AI) or analog outputs (AO) need to be re-calibrated in the field.

The calibration client is under the Tools menu in ScadaBuilder:

When read or write buttons are clicked, the program sends commands the controller. The controller responds to the program, and these commands and responses show up in the bottom area of the program. Updates to this area are automatic and there is no user input required.

Start by setting the I/O "slot" that you wish to work with. Simply put the slot number and click the "Set" button.
Note: Even though slot 0 is displayed when you first open the client, it is still necessary to click the set button before any read or write buttons will have access to the calibration values for that slot.

Some Pinnacle controllers only have analog inputs and outputs on the main board, and some have support for expansion I/O:

Lassen: Main board only = Slot 0.
Rubicon: Main board only = Slot 0.
Shasta: Main board = Slot 0.
       Expansion 1 = Slot 1.
   Expansion 2 = Slot 2.
Everest: Main board = Slot 0.
       Expansion 1 = Slot 1.
       Expansion 2 = Slot 2.

Once the slot is set, you can read and write information to the controller.

The universal inputs have multiple modes. The mode you wish to view or change is selected with the "Calibration Mode" dropdown control. Analog outputs only have one mode which is mA (current). The other modes show up in the dropdown list for AO, but "mA" must be selected when calibrating an AO.
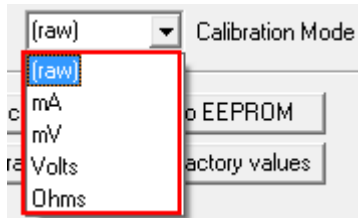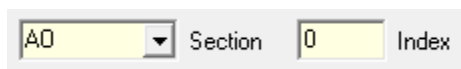

UI – mA, mV, volts, ohms
AI – mA only
AO – mA only

Each input or output type (UI, AO, etc) also has multiple points (UI1, UI2, UI3, AO1, AO2, etc), so the index must be set to the one you're working on with the "Index" box.
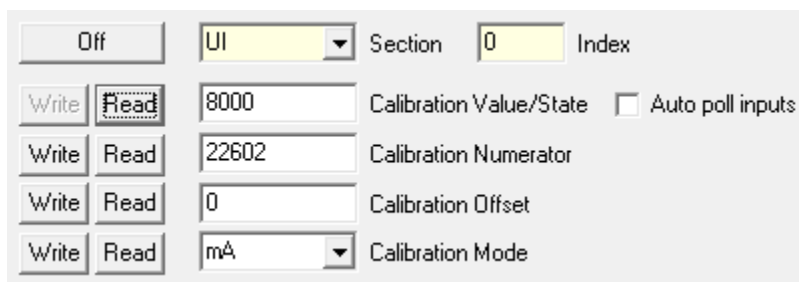

The index for each type starts at zero in the calibration client, instead of one, so the UI at index 0 will calibrate what ScadaBuilder calls UI1 in the I/O configuration:

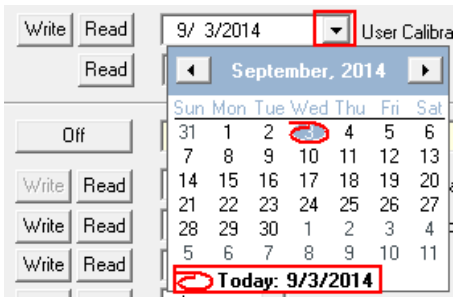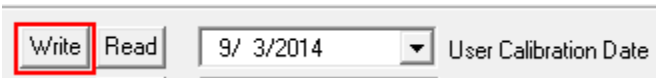This is a typical calibration to UI1 (UI at index 0), with 8mA at the input:
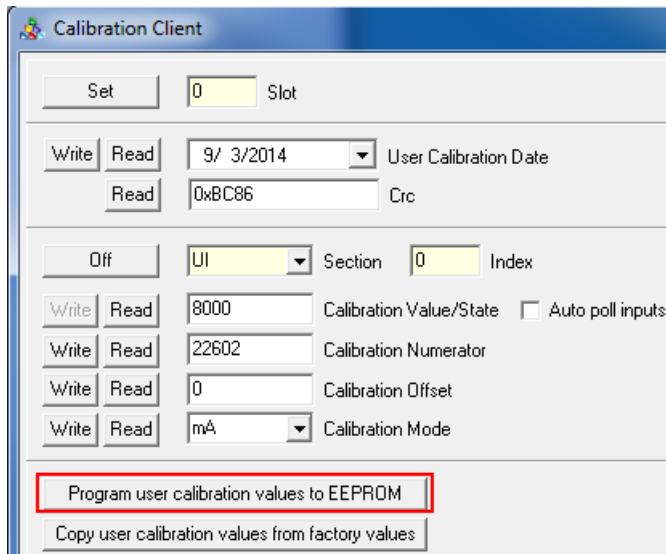

To finalize the calibration:

1. Change the date to today's date:

    a. Click the User Calibration Date dropdown control and then click at the bottom to select today:

2. Click the "Write" button to write the date to the controller:

3. Click the "Program user calibration values to EEPROM" button:

Note that the original factory calibrations can be loaded with the "Copy user calibration values from factory values" button, but once the user values are copied to EEPROM the factory values are no longer available since the factory values are written over with user values.