EAP Strain Sensor
Wired Evaluation Kit User Manual

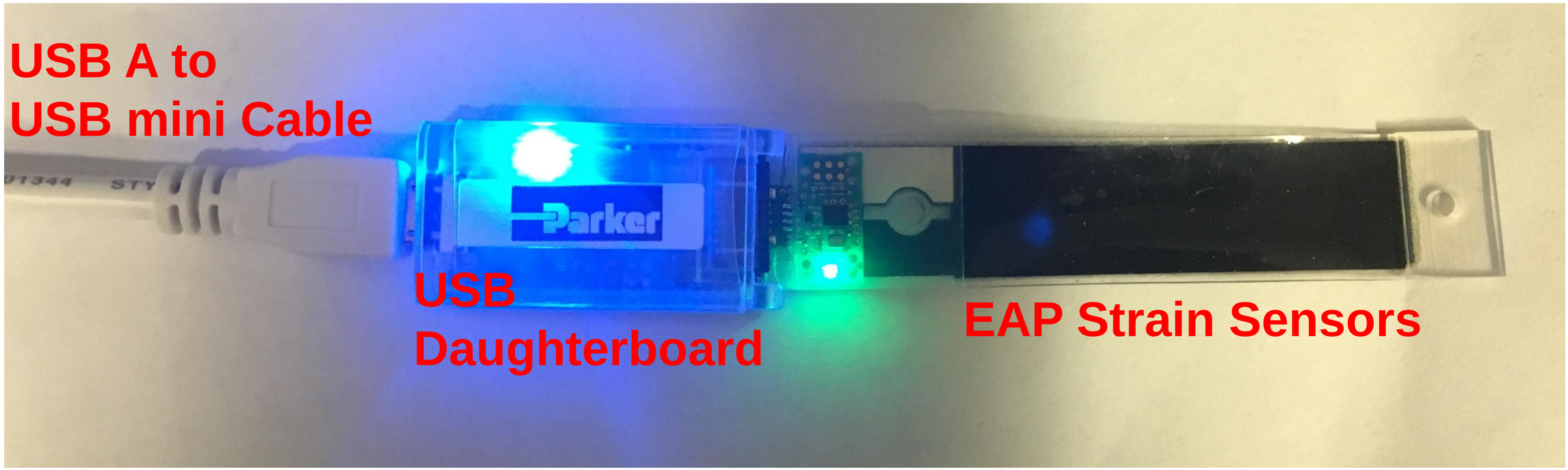
Diversified Technologies Business Unit

ENGINEERING YOUR SUCCESS.

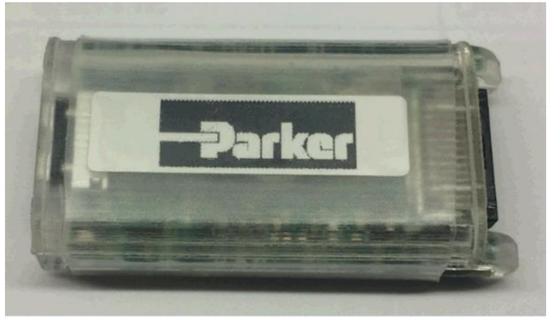
May 4, 2017

Kit Contents

Sensor Connected to USB Daughterboard connected to PC with LED indicator lights on

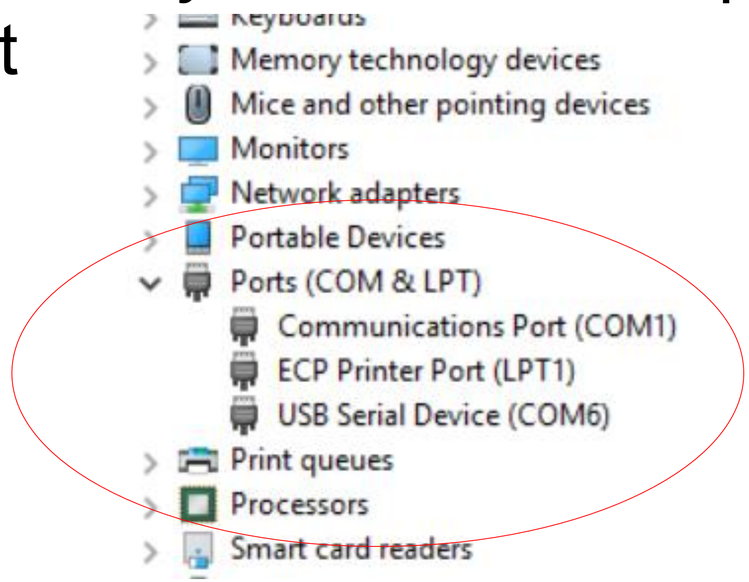


USB Daughterboard install guide



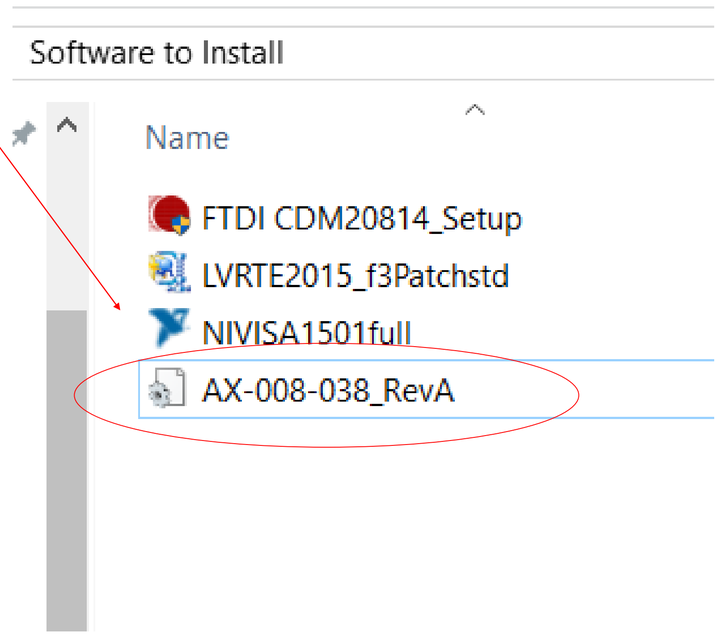
- First, plug the sensor into the USB daughterboard, then plug the daughterboard into the PC using the USB Cable.

- If using Windows 10, it will install automatically and will show up in “Device manager” as a new COM port



USB Daughterboard install guide

- If using Windows 7, Windows will try to search for a driver with windows update.
- You will need to point to the driver which is in the “software to install” folder on the USB drive.
- Driver: AX-008-038_RevA
- Once installed, it will also show up in the Device Manager as a COM Port.



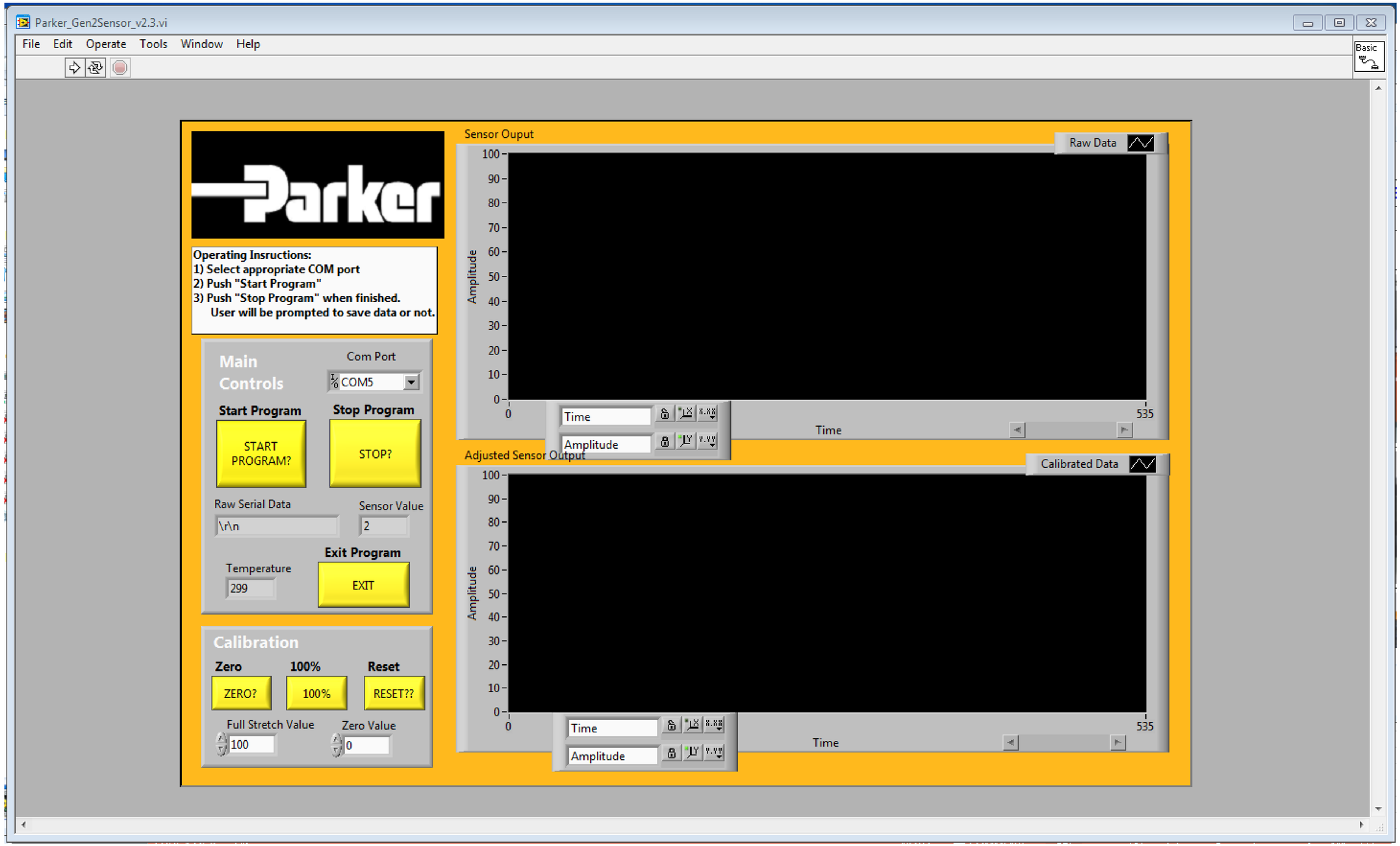
LabVIEW Software install guide

- If you already have LabVIEW 2015 installed with a valid license:
  1. Launch the “Parker_Gen2Sensor_vX.X.vi” directly through LabVIEW

- If you have LabVIEW 2015 Run-Time Engine installed
  1. Run the “NIVISA1501full” if “NI VISA” was NOT installed with the Run-Time engine. (this installs the LabVIEW serial com drivers)
  2. Launch the “Parker_Gen2Sensor_vX.X.exe” file

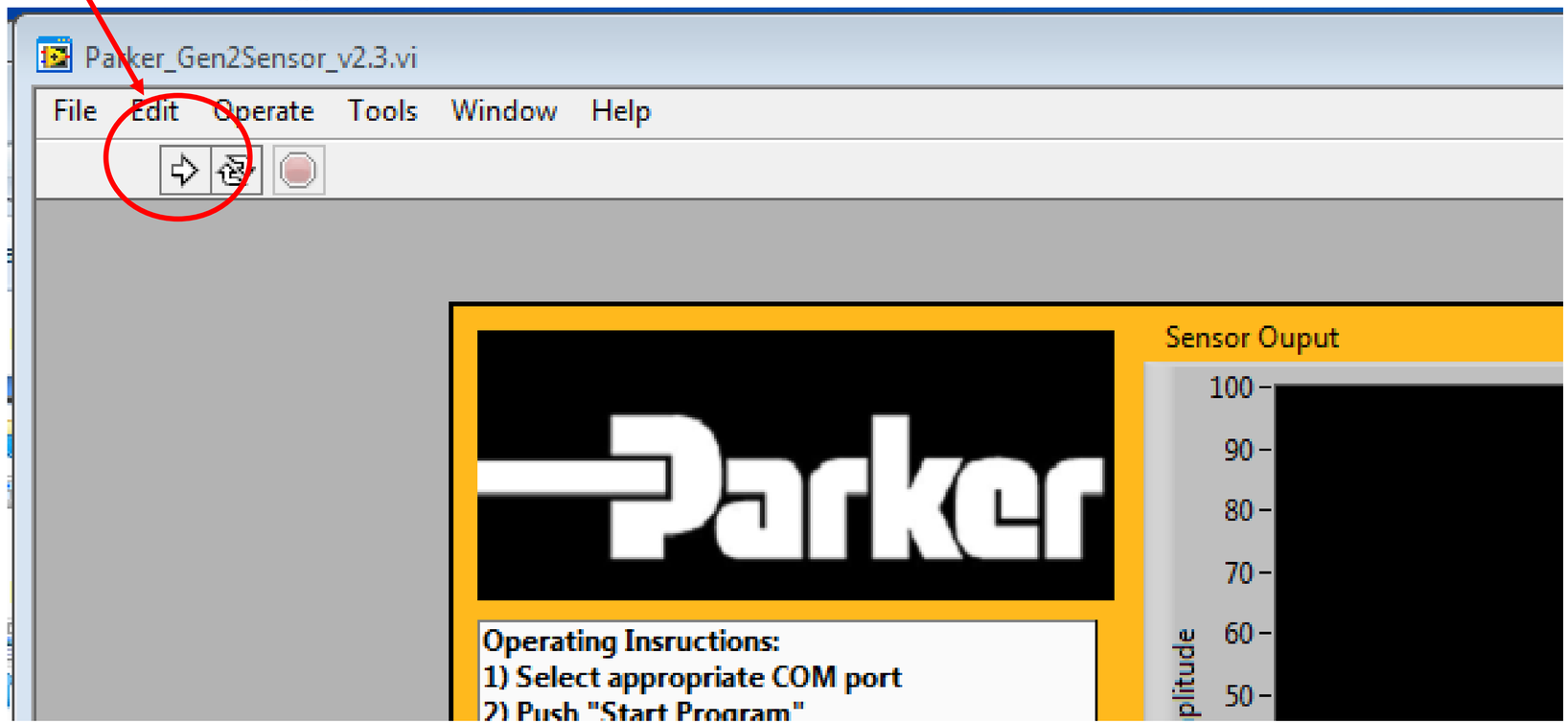
- If you have NO LabVIEW software currently installed
  1. First install the LabVIEW Run-Time Engine: “LVRTE2015_f3Patchstd”
  2. Then run the “NIVISA1501full” (this installs the LabVIEW serial com drivers)
  3. Then you can launch the “Parker_Gen2Sensor_vX.X.exe” file

LabVIEW Software

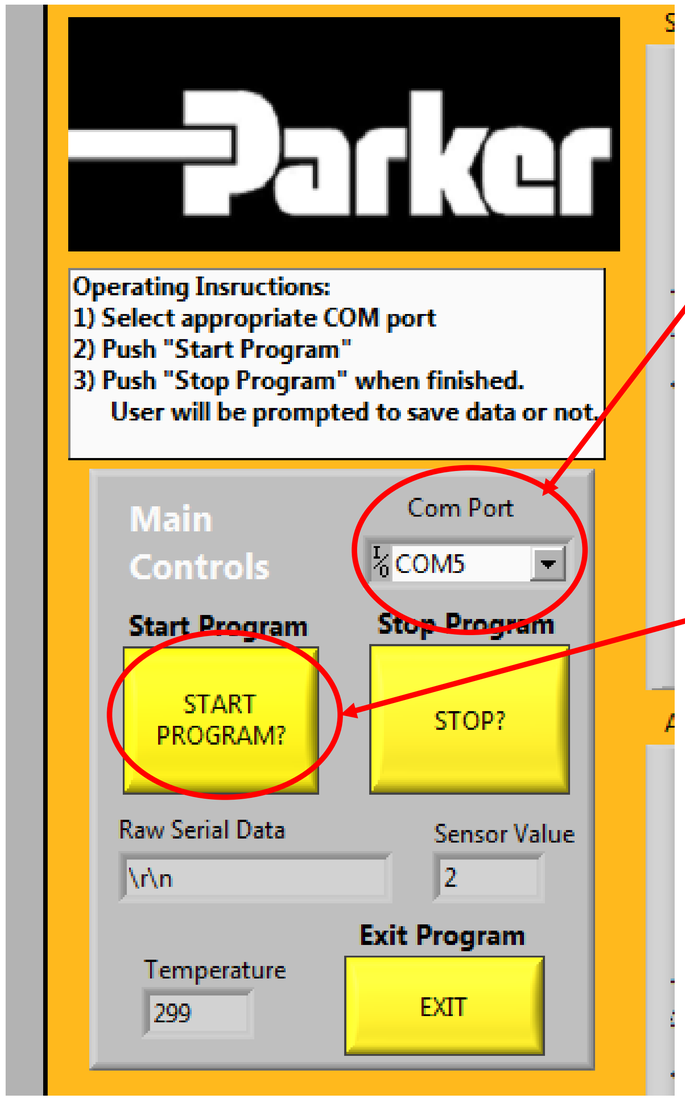


LabVIEW Software

This RUN arrow will initiate the program (or VI for Virtual Instrument in LabVIEW terminology)
NOTE: if you are running “Parker_Gen2Sensor_vX.X.exe”, this will start automatically when you launch the program. If you EXIT the program using the EXIT button, this arrow will restart the program.



LabVIEW Software: Starting Data Stream



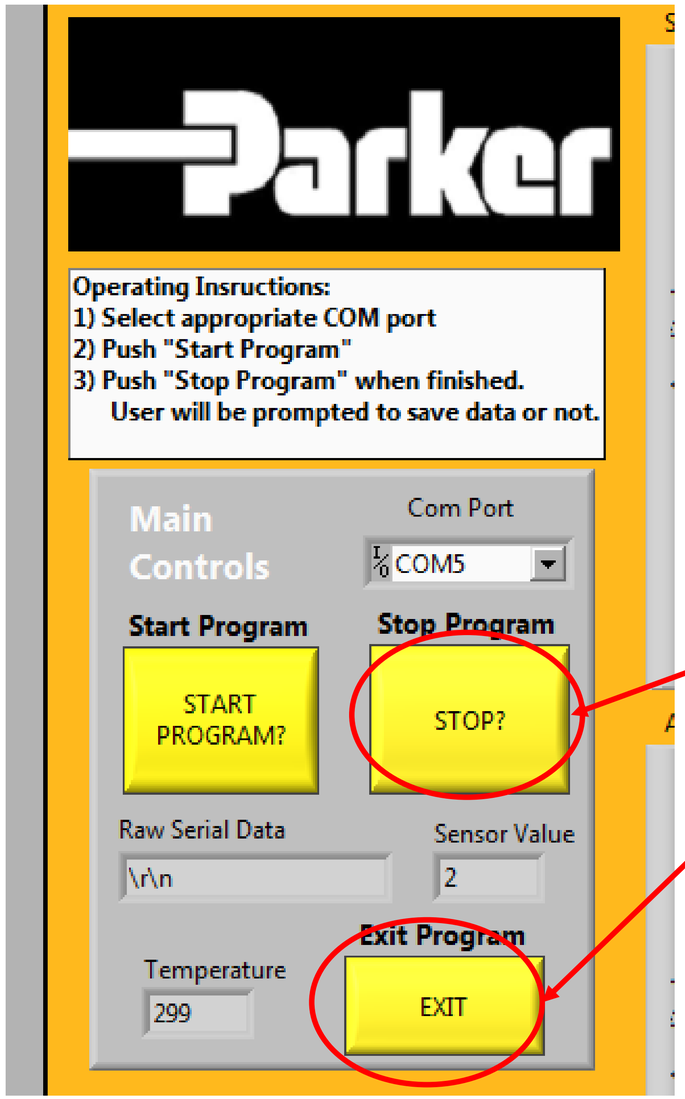
1) Choose Proper Com Port

2) Press the “Start Program” button to start the program

3) Once the program has started, the “Start Program Button” will turn Green.

NOTE: If you choose the wrong COM PORT or the device is not connected, you will be notified by the program, and will have to try again.

LabVIEW Software: Stopping Data Stream

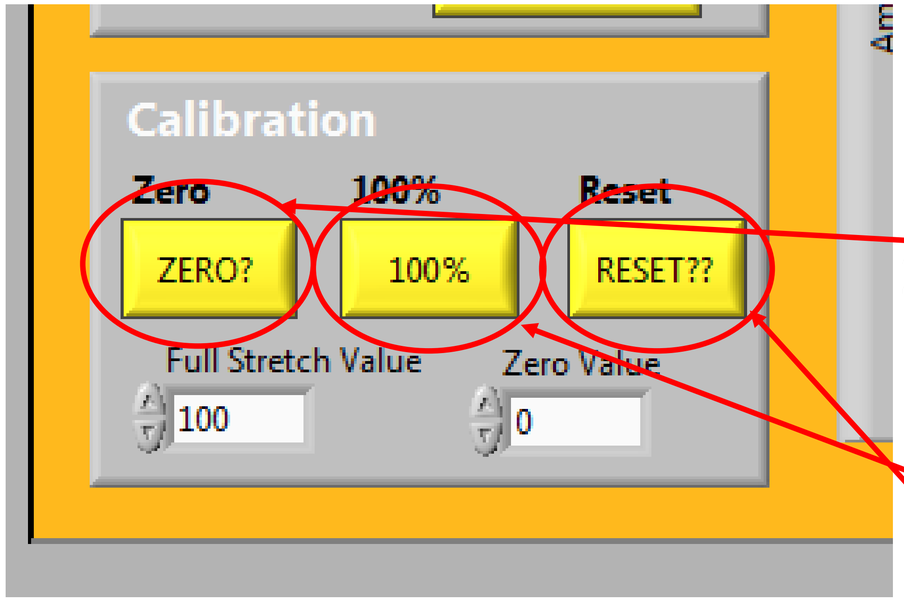


1) You can STOP the program using the STOP button. The program will not exit, and you can restart the program using the START button.

2) If you push the EXIT Button, the program will end and you will have to re-launch the .exe file, or push the RUN arrow at the top left of the window.

3) After pushing the STOP or EXIT button, the user will be prompted to save the data or not.

LabVIEW Software: Software Calibration



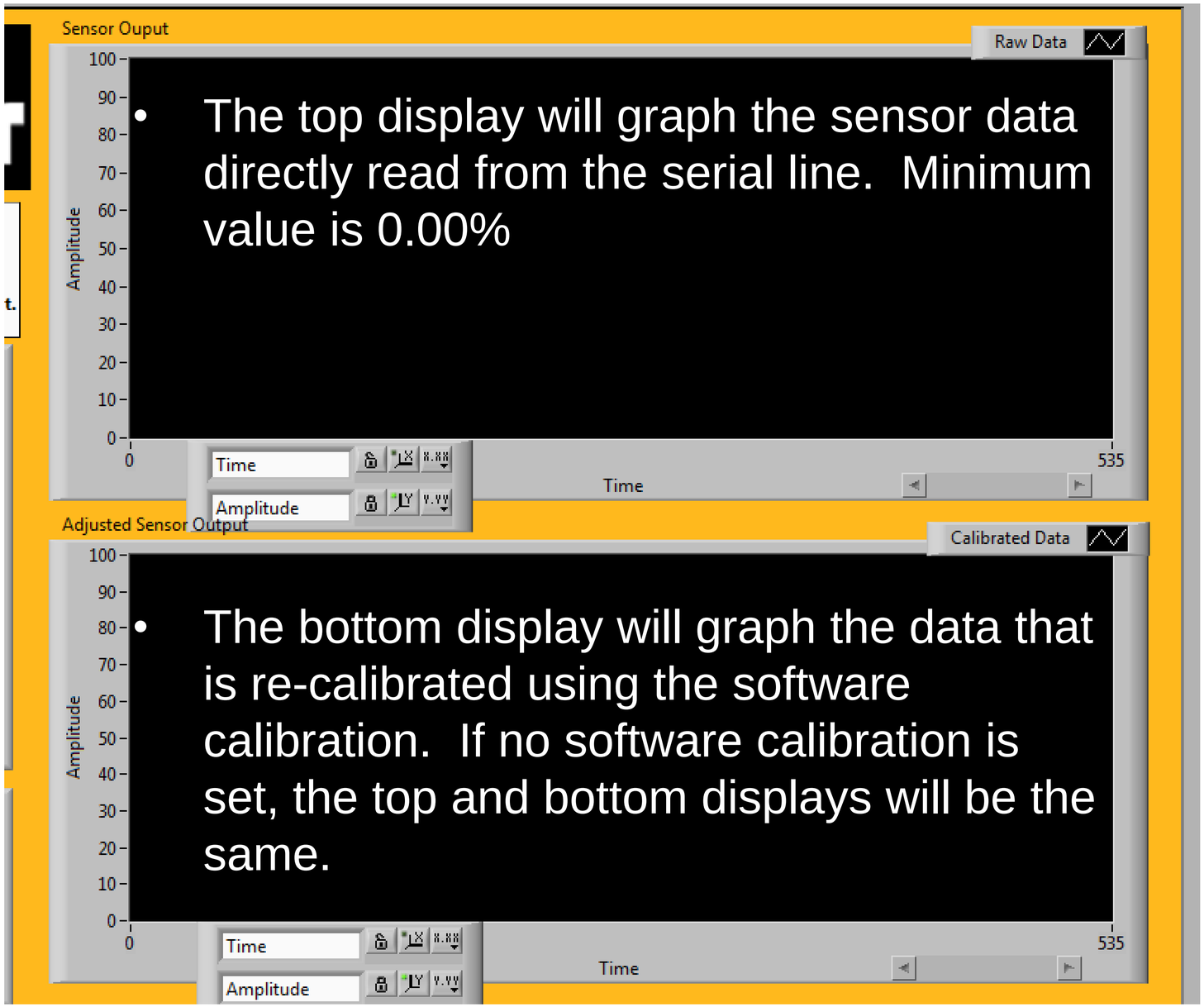
1) You can apply new calibration values in the software. (NOTE: This does not overwrite the hardware based calibration from the factory)
   - This software calibration is useful if you want to create your own “zero position” and your own “fully stretched position)

2) Hitting the “ZERO” button will make the current sensor position/stretch the new “zero” position. This will be reflected in the “Adjusted Sensor” readout (and subsequent data collection),

3) Hitting the “100%” button will make the current sensor position/stretch the new “100%” position. This will be reflected in the “Adjusted Sensor” readout (and subsequent data collection)

4) Pressing the “Reset” button will reset the zero and full stretch values

LabVIEW Software: Display Screen



- The top display will graph the sensor data directly read from the serial line. Minimum value is 0.00%

- The bottom display will graph the data that is re-calibrated using the software calibration. If no software calibration is set, the top and bottom displays will be the same.