1. Start with PSI-UTILITY version 3.00 in folder C:\PSI-Utility-300\

It is ***CRITICAL*** that PSI-Utility ***NOT BE INSTALLED*** in either of the locations listed below:

1. C:\Program Files\
2. C:\Program Files(x86)\
3. In folder C:\PSI-Utility-300\ you will find this file:
   1. BPLATE.DAT

BPLATE.DAT contains “boiler-plate” identification information, such as the ID of the person doing the CALIBRATION. It is strongly recommended that you (a) read this file and (b) modify it to reflect reality at your installation.

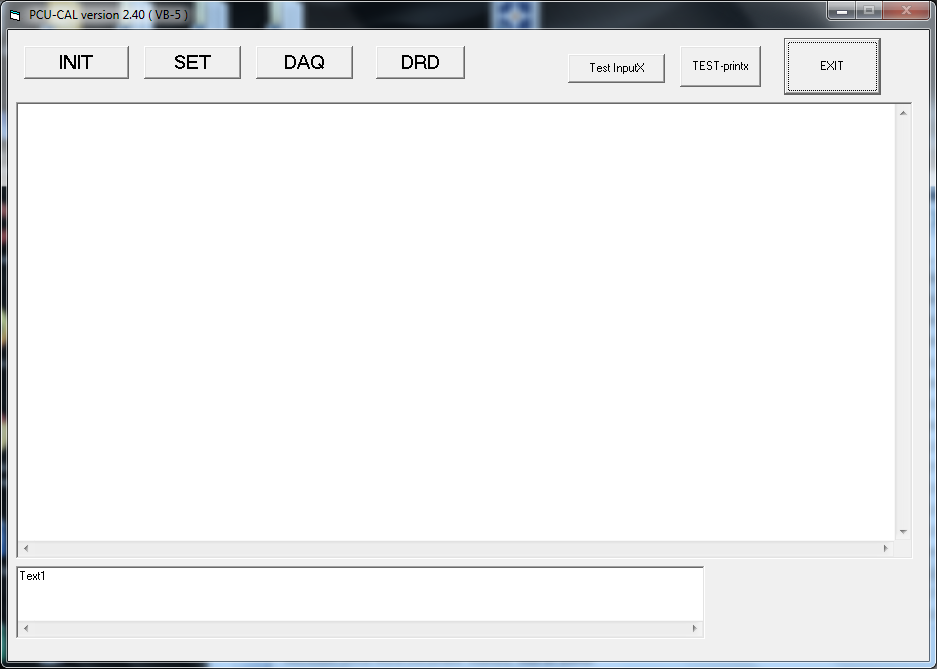
1. In the DIAGS.TXT file, create a “PCU-CAL” function

Function PCU-CAL

PCU-CAL

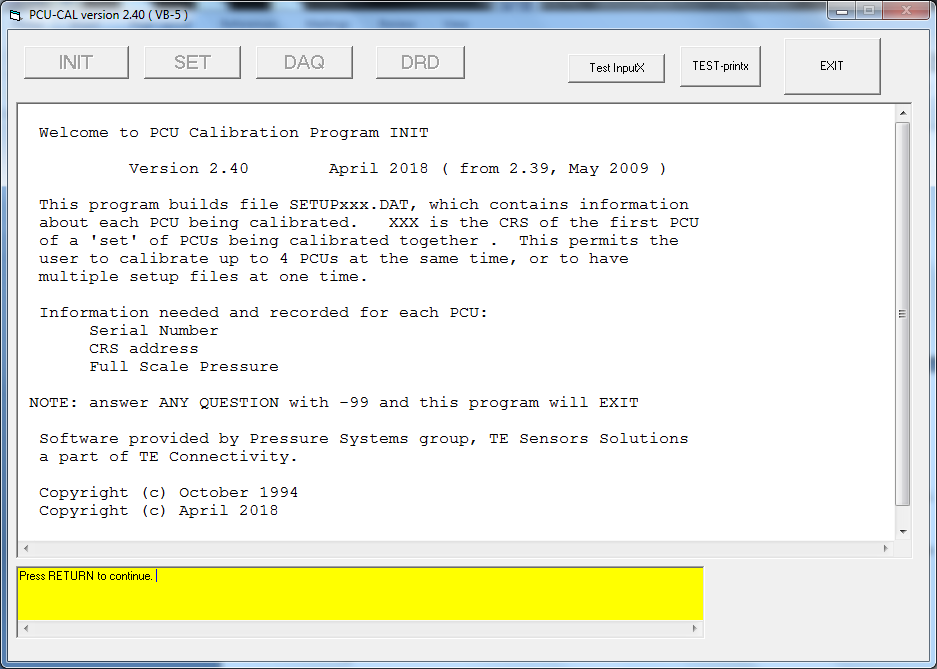
ENDM

1. Run PSI-Utility-300.exe
   1. Switch to the DIAGS menu
   2. Click on PCU-CAL
   3. when you “click on” PCU-CAL, you should see this:

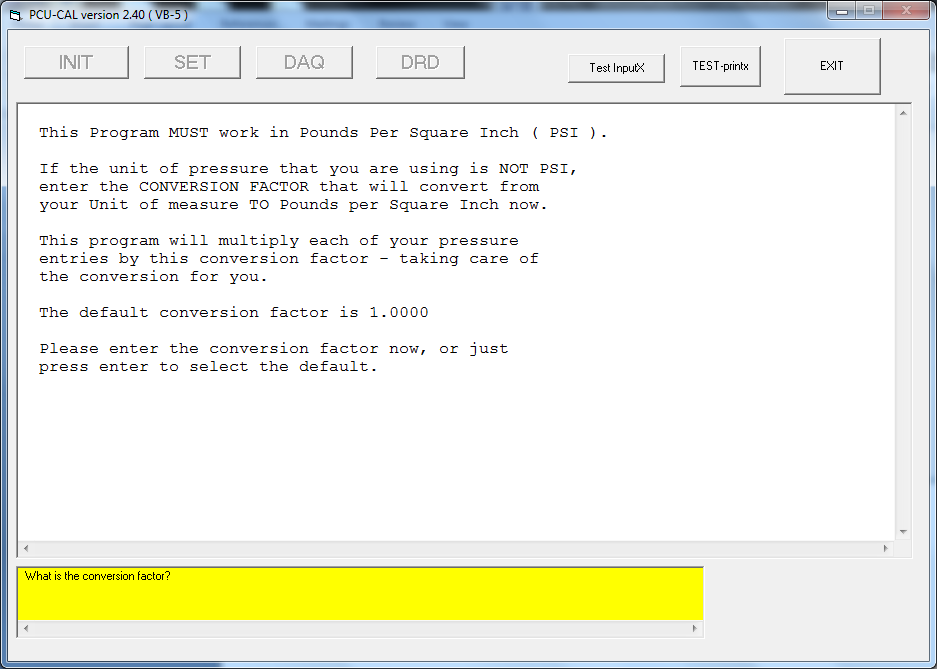


1. This Windows compatible PCU-CAL was designed to “look and feel” like the much older 16-bit DOS versions of PCU-CAL that PSI has distributed over the past 20 years. It is built on PCU-CAL Version 2.39, but any user of version 2.36 and later will find this very familiar.

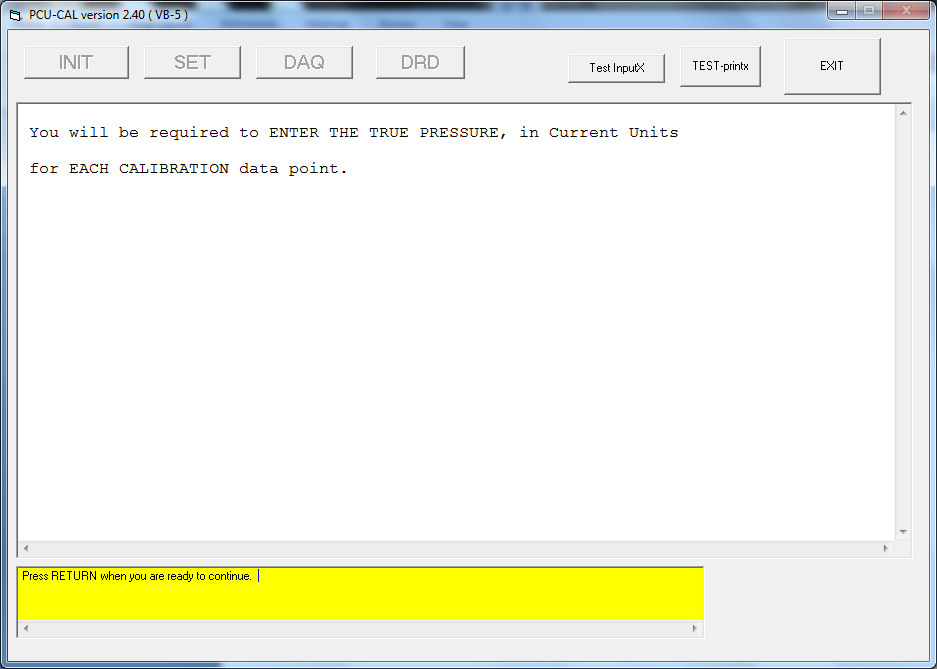
1. The 4 “Control Buttons” (labeled INIT, SET, DAQ, and DRD) correspond directly to the 4 parts of PCU-CAL version 2.39: INIT239.exe, SET239.exe, DAQ239.exe, and DRD239.exe.
2. Clicking on INIT brings up this screen:



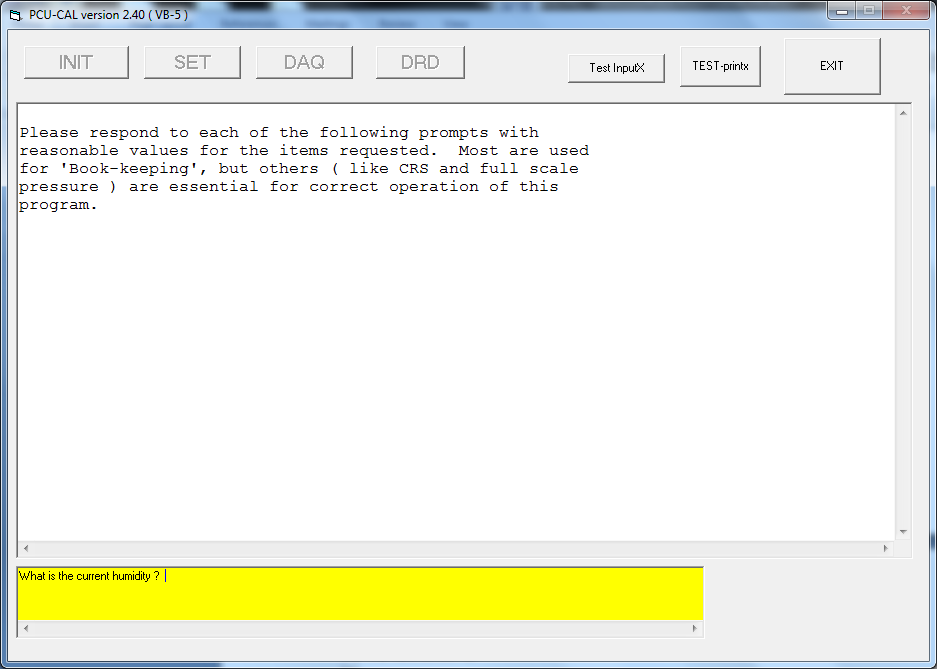
1. Pressing RETURN takes you to this screen:



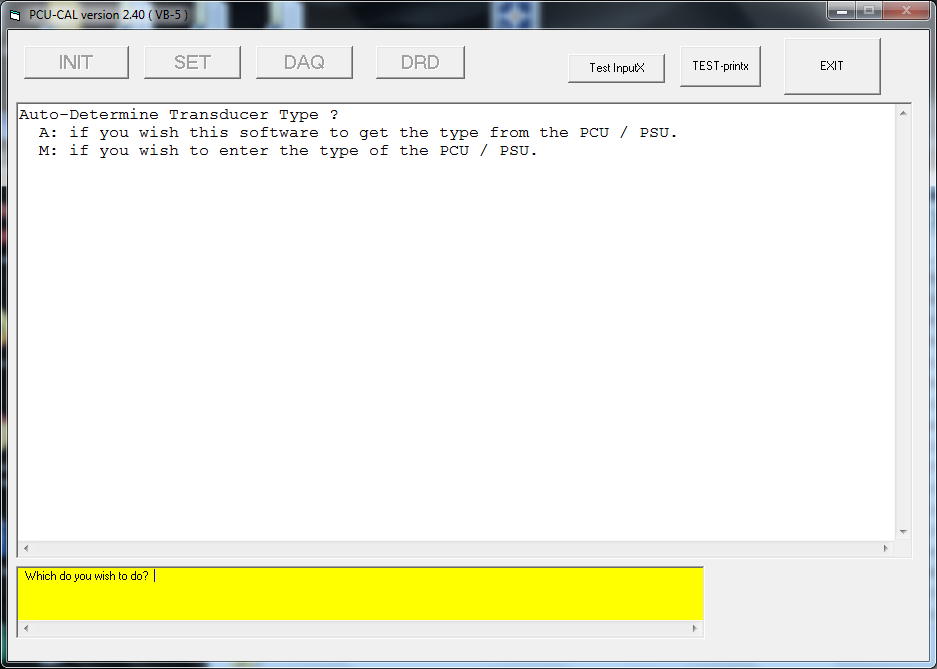
1. If you enter a conversion factor, or take the default, press return and you get to this screen:



1. The next screen is:



1. You are expected to enter current
   1. Current Relative Humidity
   2. Current Environmental Temperature, in degrees Celsius
   3. Current Barometric pressure, in PSIA
   4. The above 3 parameters ARE NOT USED IN CACLULATIONS, but are used as documentation
2. The next series of questions ARE CRITICAL:
   1. How Many PCUs are being calibrated?
   2. What is the Serial Number of PCU #1?
   3. What is the FULL SCALE PRSSURE (in PSI) for this PCU?
   4. What is the FILE NAME for the CALIBRATION DATA?
   5. What is the ORDER NUMBER? ( used for book-keeping )
   6. What is the CRS address for this PCU? ( CRITICAL )
3. That will bring you to THIS SCREEN:



* 1. It is generally easiest to AUTO-DETERMINE --- and VERIFY manually
  2. But you may manually enter the PCU Type
  3. If you select MANUAL ENTRY, you will be given a selection list

Enter the type of Transducer being calibrated, please.

1) Quartz, without temperature compensation

2) Quartz, with temperature compensation

3) Mensor

4) Hass

5) Smart Quartz

6) Digital Mensor

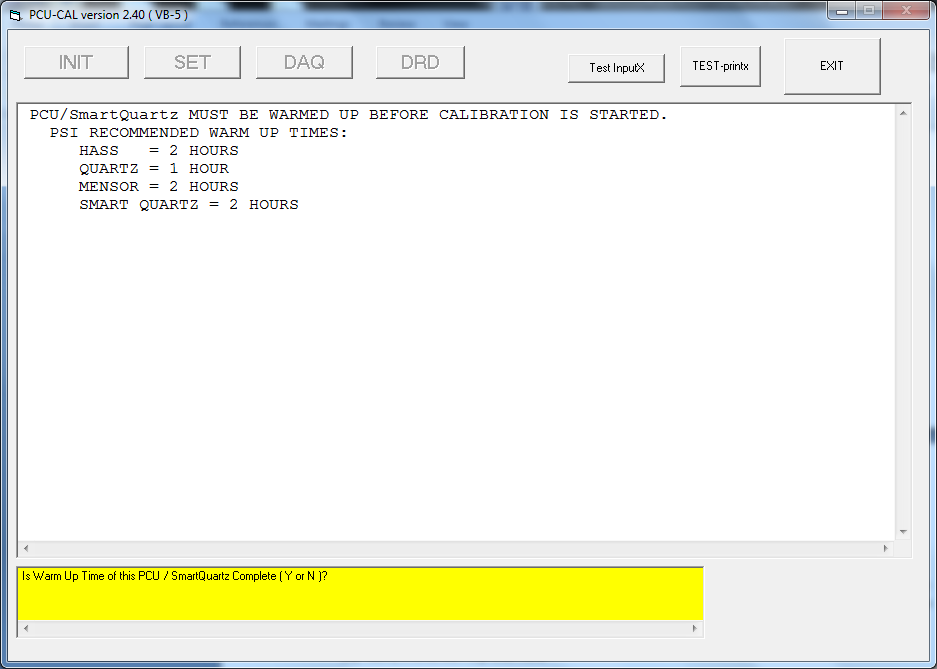
And you will be asked to enter a number: 1 to 6

You will be asked if the unit is ABSOLUTE or DIFFERENTIAL

You may be asked other questions as well.

These MENUs and QUESTIONS are IDENTICAL to the menus and questions in INIT239.exe.

1. If you are calibrating more than one PCU, these questions will be repeated for EACH PCU. The program allows for up to four (4) PCUs to be calibrated at the same time.
2. After the question-and-answer session is finished:
   1. Each PCU will be initialized
   2. The CURRENT coefficients will be “READ FROM” the PCU and written to disk file (this is slow, be patient please. It is a critical backup that you probably will never need. If you do need it, it is invaluable!)
3. Next, this screen is presented:



1. Warm-up is ENFORCED, not just recommended
2. The START OF WARMUP time is recorded in the data file(s)
3. The Start of DATA ACQUISITION time is also recorded
4. We do not care what temperature the PCU CALIBRATION occurs at, in the range of 15 C to 35 C
5. What is critical is that PCU Temperature (more precisely, the temperature of the device being calibrated) not change more than 0.5 degrees C. THIS IS MONITORED AND RECORDED.
6. At this point, the program will tell you:
   1. INIT240: That's all, folks.
   2. You have FINISHED the INIT Portion
7. THE “SET” Control button allows you to RESET all PCUs, without having to re-enter the data of the INIT section. You may need to power off the system, for example, to insert ANOTHER PCU and start it warming up. If so, JUST DO IT (power off the system, insert another PCU, power on the system), and Click on “SET”. It will ask for the CRS of the first PCU used, and it will do all necessary setup, and the warm-up will RESUME. This is a significant time-saver.
8. The DAQ Command button is where CALIBRATION DATA ACQUISITION occurs. You are prompted to enter the CRS of the first PCU to be calibrated, and you will be given opportunity to:
   1. Quit
   2. Take another data point
   3. Enter the “TRUE PRESSURE APPLIED” for this data point

And you will be given a readout showing:

1. Current Transducer Indicated Temperature
2. Temperature CHANGE since start ( stay within 0.5 C please !)
3. Current Transducer Indicated Pressure

ALL data will be recorded to DISK.

1. True Pressure
2. Raw pressure data from transducer being calibrated
3. Standard deviation of the pressure data
4. Indicated temperature of the transducer at this data point
5. The program REQUIRES you to take at least 5 data points. It will not let you quit until you take 5 data points (This is true for the BETA TEST SOFTWARE, and should be fixed before final version is released).
   1. Dummy data points may be taken until you have the minimum 5
   2. This is a work-around
   3. But it does allow you to quit data acquisition if necessary
6. The DRD command button does the DATA ANALYSIS, Report Generation, and computes the new coefficients for the device(s) being calibrated.
   1. The reports are shown on screen
   2. The reports are written to TEXT FILES on disk
   3. And you are given the option of updating coefficients in the PCU(s) – or not

We have tested on Windows 7 and Windows 10, and have not had issues.