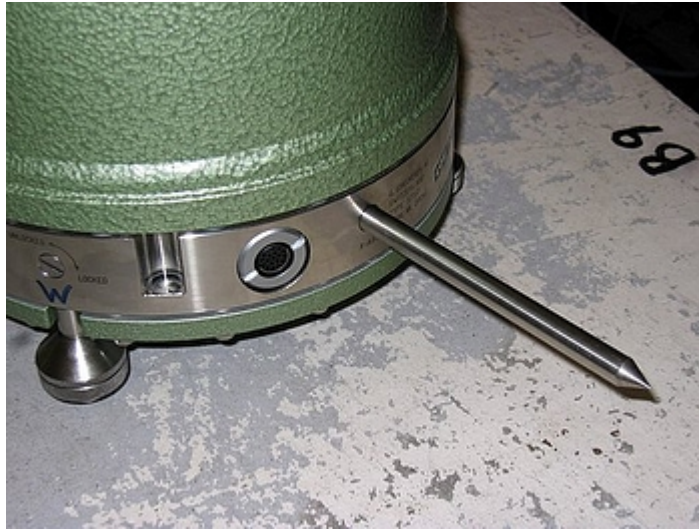
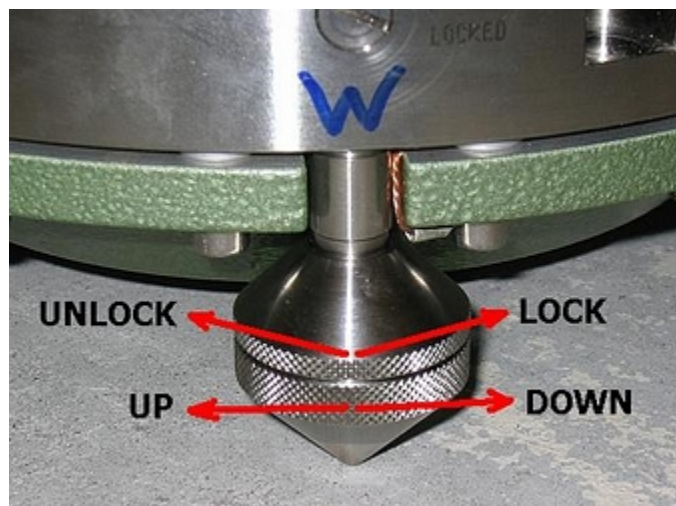


1. Fill out items 1, 2 and 3 on the RT-130/Broadband Site Installation Data Sheet.
2. Prepare the vault. Install the power system. Check that the DC voltage levels and polarities are correct if necessary. Place the DAS in the vault and connect power. Connect the GPS clock to the DAS.
3. **Align, level and unlock the sensor.** Place the sensor in the location that it will remain for the duration of the experiment. Insert the alignment rod in the hole on the side of the sensor. Align it as close as possible to EAST. Remove the alignment rod when finished.



4. Level the sensor by adjusting the leveling feet. The top portion locks and unlocks the foot, and the bottom portion adjusts the height up and down. **IMPORTANT:** Lock the leveling feet when finished or the data will be noisy.

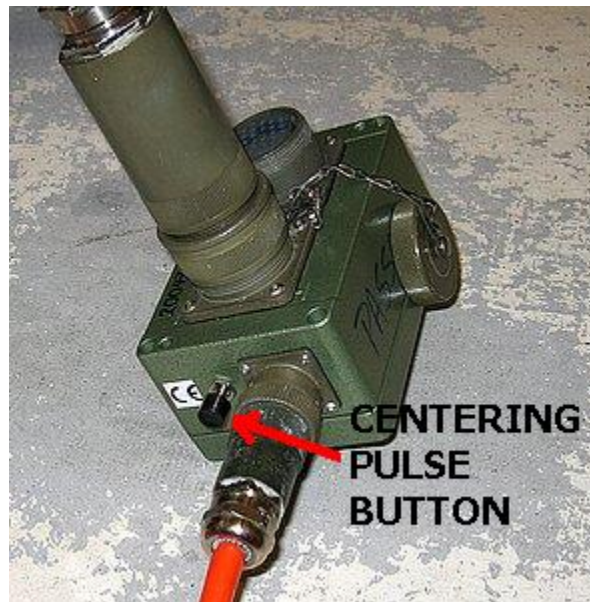


5. Connect the orange sensor cord to the sensor, and to the breakout box. Connect the thick gray cable to the breakout box and to the DAS. This will apply power to the sensor. Do not leave it in this state for too long before proceeding to the next step of unlocking the sensor elements.

6. Use a screwdriver to unlock the three sensor elements. Recheck the level of the sensor when finished to ensure that level was not lost while working around the sensor. Make any required adjustments VERY carefully since the sensor is now unlocked.



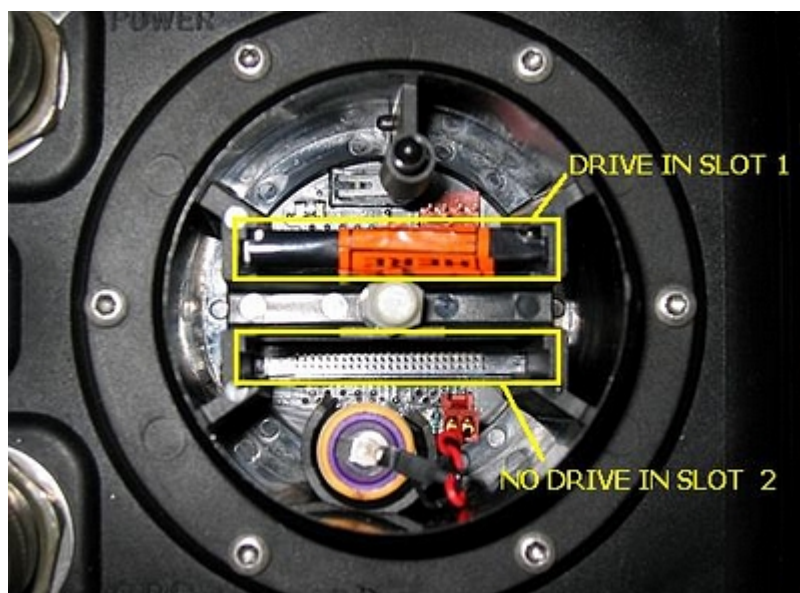
7. **Send** a centering pulse to the sensor by pressing and releasing the centering pulse button on the side of the breakout box.



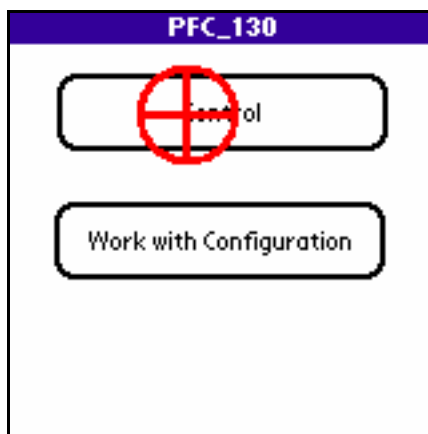
8. **Connect** the handheld terminal to the RT-130.



9. **Load the CompactFlash disk drives.** Remove the round cover from the RT-130 and place one or two CompactFlash drives or cards into their slots. Slot 1 is towards the top of the DAS as you look at the connectors. As you insert each card an LED light (one for each card) will change from green to red, and then back to green. **Record** the serial numbers of the disks in item 7 of the RT-130/Broadband Site Installation Data Sheet.



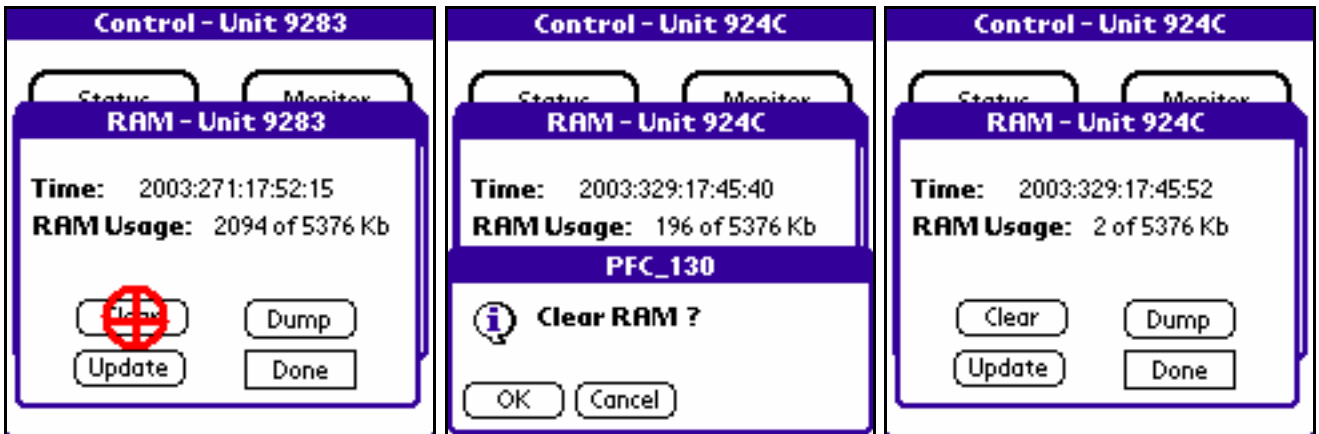
10. **Start the PFC_130 application.** Enter the Control portion of the application.



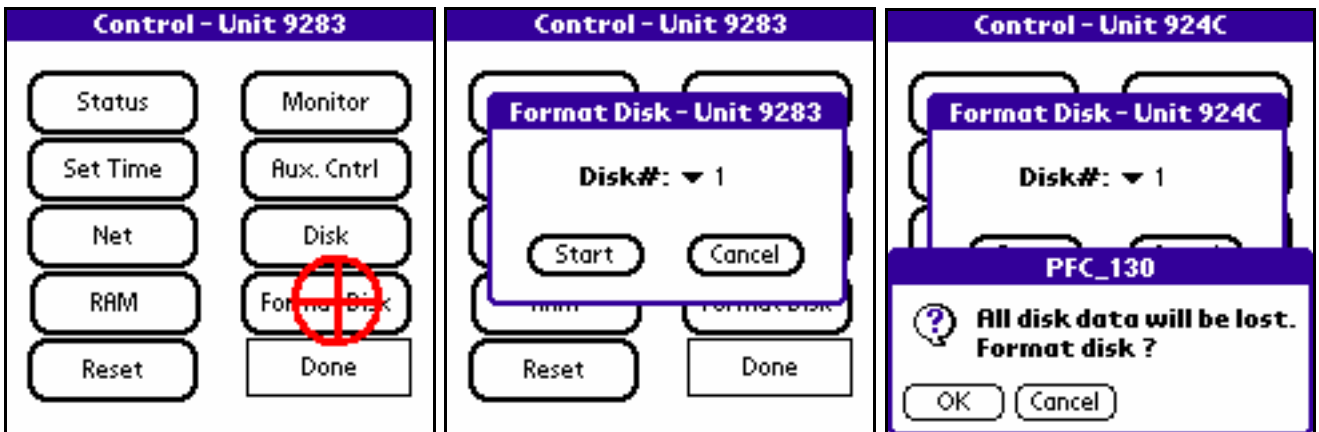
11. **Check the centering voltages.** Check the voltages for the three elements by tapping the Aux Cntrl button on the Control menu, then the Aux Ch button on the Aux Control menu. The voltages for the channels in use should be in the range -1.5V to +1.5V. If any of the voltages are out of range press and release the centering pulse button again, and recheck. It may take up to 10 centering pulses to get the sensor to center. You must wait about 30 seconds after sending a centering pulse for the sensor to finish the centering pulse operation. If you update the Aux Channels form too soon the voltages will surely be out of range. Resend the centering pulses as necessary. If the voltages cannot be brought into range, relock the elements, recheck the level of the sensor, unlock the elements and try again. **Record** the final centering voltage levels in item 4 on the RT-130/Broadband Site Installation Data Sheet. Tap the Done button on the Aux Channels form, and on the Aux Control form to return to the Control menu.

12. **Monitor the sensor.** From the Control menu select the Monitor function. A dialog box will appear. Select one of the data streams and a channel for that stream that is in use and tap the View button. The handheld terminal will command the DAS to sample and collect data from the selected data stream and channel for 8 seconds. During the 8 seconds noise in the area should be kept to a minimum. The handheld terminal will download and display the results. Tap the Ch.Sel button and repeat the procedure for each of the channels in use until you are sure that the sensor is functioning. Tap on the Done button when finished.

13. **Clear the RAM.** Tap the RAM button on the Control menu. A dialog box showing the time and the RAM usage will appear. Tap the Clear button and then the OK button on the confirmation dialog box. When the program is finished the RAM Usage value should still show 2 KBs used.



14. **Format the disks.** From the Control menu tap on the Format Disk button. A dialog box will appear. Select each disk slot where a CompactFlash disk or memory card is installed and tap the Start button. While the disk is formatting you should see a red LED light in the well where the CompactFlash cards are located. The CompactFlash cards should never be removed any time that LED is red.



15. **Program the parameters.** Now return to the main menu and enter the Work with Configuration portion of the application to program and load the desired parameters into the RT-130 from the handheld terminal. See other documentation for this procedure.

16. **Check the GPS.** Return to the Control menu and tap the Status button. On the Status form tap the GPS button. This will bring up the GPS Status form. If the GPS has been operating correctly since the DAS power was connected the value following the Sec since LL label should indicate an amount of time less than 20 minutes (i.e. 00:00:20:00). The Phase Diff.(us) value should also be some small number. The GPS attempts to get a lock every 20 minutes, so the Status value may be any one of Asleep, Searching, or Lock. If it does not appear that the GPS is functioning attempt to troubleshoot the system before continuing. Check the current position of the GPS satellites with a handheld GPS, if possible, to determine if the equipment is not functioning, or if the antenna is just not able to see enough satellites from its current position. When the GPS is functioning correctly **record** the form values in item 5 on the RT-130/Broadband Site Installation Data Sheet. When finished tap the Done button which will return you to the Status form.

Control - Unit 9283	Status - Unit 9283	GPS Status - Unit 9283
<div> <div>Start</div> <div>Monitor</div> <div>Set Time</div> <div>Aux. Cntrl</div> <div>Net</div> <div>Disk</div> <div>RAM</div> <div>Format Disk</div> <div>Reset</div> <div>Done</div> </div>	<div> <div>Time: 2003:271:17:51:51</div> <div>Acq: Start ON <div>Stop Acq.</div></div> <div>Events: 144</div> <div>RAM: 2086 of 5376 Kb</div> <div>Disk1: 68 of 1025 Mb (Current)</div> <div>Disk2: not installed</div> <div>Temperature: +18.4C</div> <div>Power: 13.4 in , 03.3 bkp Volts</div> <div>Ch: 123--- DS: CC-----</div> <div> <div>Start</div> <div>Net</div> <div>Event</div> <div>Update</div> <div>Version</div> <div>Done</div> </div> </div>	<div> <div>Time: 2003:271:17:51:57</div> <div>Sec since LL: 00:00:17:00</div> <div>Phase Diff.(us): +00,000,004</div> <div>Mode: Cycle</div> <div>Status: Asleep SV's: 5</div> <div>Lat: N 34:04.4191</div> <div>Log: W106:55.1366</div> <div>Alt (m): +01401</div> <div> <div>Update</div> <div>Done</div> </div> </div>

17. **Start acquisition.** On the Status form the last thing to do should be to start data acquisition. To start acquisition tap the Start Acq. button. Once acquisition has been started the Status form will update, but you may have to tap the Update button again to get everything to update. The Start Acq. button should change to Stop Acq., the value following the Acq label should change to Start ON, the Events value should increment by some amount (dependent on the recording parameters), and the amount of RAM used should increase. Wait a few moments and tap the Update button and note that the amount of used RAM is increasing. This is the best indication that the DAS is recording for most programs. **Record** the values on the Status form in item 6 on the RT-130/Broadband Site Installation Data Sheet.

Status - Unit 924C	Status - Unit 924C	Status - Unit 924C
<div> <div>Time: 2003:329:17:46:04</div> <div>Acq: Stop OFF <div>Start Acq.</div></div> <div>Events: 0</div> <div>RAM: 2 of 5376 Kb</div> <div>Disk1: 0 of 1025 Mb (Current)</div> <div>Disk2: not installed</div> <div>Temperature: +17.5C</div> <div>Power: 13.6 in , 03.3 bkp Volts</div> <div>Ch: 123--- DS: CC-----</div> <div> <div>GPS</div> <div>Net</div> <div>Event</div> <div>Update</div> <div>Version</div> <div>Done</div> </div> </div>	<div> <div>Time: 2003:329:17:46:04</div> <div>Acq: Stop OFF <div>Start Acq.</div></div> <div>Events: 0</div> <div>RAM: 2 of 5376 Kb</div> <div>Disk1: 0 of 1025 Mb (Current)</div> <div>Disk2: not installed</div> <div>PFC_130</div> <div> <div>Start Acquisition ?</div> <div>OK</div> <div>Cancel</div> </div> </div>	<div> <div>Time: 2003:329:17:46:04</div> <div>Acq: <u>Start ON</u> <div>Stop Acq.</div></div> <div>Events: <u>2</u></div> <div>RAM: <u>8</u> of 5376 Kb</div> <div>Disk1: 0 of 1025 Mb (Current)</div> <div>Disk2: not installed</div> <div>Temperature: +17.5C</div> <div>Power: 13.6 in , 03.3 bkp Volts</div> <div>Ch: 123--- DS: CC-----</div> <div> <div>GPS</div> <div>Net</div> <div>Event</div> <div>Update</div> <div>Version</div> <div>Done</div> </div> </div>

18. If everything appears to be functioning, tap the Done button on the Status form, turn off the handheld terminal, and secure the site.

(END)