

How Do I Calibrate my PLS2?

On the odd occasion it's possible for the calibration of a PLS2 to drift a little, resulting in a small apparent charge or load current (say 0.2Amp) when there shouldn't be any. While this doesn't sound like a lot, it can add up to 4.8 Ah over a 24hr period making the recorded system information incorrect.

There is a small trimpot near the green terminal where the shunt connects that is used for adjusting the calibration. It's a little tricky, and in general we recommend that you send it to Plasmatronics for adjustment. However if you want to do it yourself, here's how:

Method #1 (for PLS2 that is used for measuring load currents).

Equipment = Good quality meter that can measure low currents between 0-1Amps
 Load that draws around 0.5Amps (say 5W globe on a 12V system ?)
 Small flat blade jeweler's screwdriver.

- Remove the main current carrying wire from one side of the shunt and put the current meter in series with (between) the removed wire and the shunt.
- Turn on a small load that draws around 0.5Amp (less than 1Amp).
- Very carefully adjust the trimpot on the PLS2 until the LOAD/LINT screen of the regulator reads exactly the same as the current meter.
- Remove the small load and make sure the LOAD/LINT screen of the regulator reads 0.0Amps. Repeat above procedure if necessary to achieve 0.0A when no load is connected.
- Remove current meter and make good connection of main current carrying wire back to shunt.

NOTE: If there's a lot of separation between the PLS2 and the regulator, you can consider temporarily moving your regulator, or using a spare regulator powered from a small battery and plugged into the PLS2 via a spare cable to make the readings and adjustment easier.

Method #2 (for PLS2 that is used for measuring load and/or charge currents).

Make really sure that there is no valid current information at the input to the PLS2. The easiest way to do this may be to remove the fine wires from the shunt and connect them together so that the PLS2 sees zero volts even if there is some residual current in the shunt that you hadn't thought of.

Go to the LINT screen (a long push, then a short push under the LOAD screen).

If you still see some current at LINT you can use the trim pot to cancel it out. If the PL and the PLS2 are not next to each other you may need assistance from someone calling out the reading while you adjust the pot or vice versa (or see note below).

You will find that the reading jumps from 0.2 to 0.0. Values if 0.1 are suppressed to reduce the need for adjustment.

Try to adjust the value to be just inside the 0.0 range.

Now comes the tedious part. Because the PLS2 is a bidirectional device and is capable of showing either load or charge information, if you go too far on your adjustment, you can produce an invalid charge reading in the CINT (a long push, then a short push under the CHRG screen). Once you have adjusted the pot to read 0.0A load on the LINT screen, you need to navigate to the CINT screen and check that you also have 0.0A charge there. If not you will need to adjust this screen to 0.0 and then check again on the LINT screen. In practice it often takes several cycles before you can get a stable reading of 0.0A on both screens.

Then you can reconnect the fine wires to the shunt. If you now see 0.2A again, you may well have some current flowing in the shunt that you had previously overlooked. It may also mean that there is some noise being picked up in the wires between the shunt and the PLS2. Twisting these wires together may help this. If it doesn't, you could try using a shielded cable and earthing the shield at ONE end.

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