Manual Calibration sequence for mA-2000

Notes:
Use TP0 as ground reference for electrical measurements.
Make sure probe cores are clean and moving / closing freely.

1. Set pots to initial positions in DC mode, 2000mA range;
   a. RV109 fully CCW
   b. Center the Zero controls (RV102 & RV103), RV104 and RV111.
2. Adjust RV100 for 11kHz ±0.10kHz excitation (frequency adjust at TP4)
3. Remove clip from TP4
4. Adjust RV104 for low AC noise 0±200mV at analog output (with DC offset = 0±80mV)
5. Check offsets in DC & AC Hi modes, 0±100mVdc
6. Adjust RV111 for LoBatt indicator threshold ~14.5Vdc (on at 14, off at 14.6)
7. Adjust RV110 for 998.5 ± 1.5 at 1000 mAdc (gain for DC & AC-low) at analog output
8. Adjust RV106 to match display to analog output (adjusts voltage into A/D chip) at 1.8Adc & check at 1Adc. Readjust if needed.
9. Check 200/2000mA range error at 100mAdc (switch between ranges)
10. Switch to AC-High frequency mode
11. Adjust RV107 for 0.0 (TRMS offset)
12. Adjust RV108 to match outputs ±2mA at 700mA, 200Hz and 2kHz (high filter circuit)
13. Adjust RV105 for correct output ± 1mA at 700mA, 10kHz (gain for AC-high mode)
14. Checks output at 200Hz, 180 ± 1%+0.2mA and 1500 ±1%+2mA
15. Check 700mA, 40kHz ±7mA
16. Switch to AC-LOW frequency mode
17. Adjust RV104 for 1510 ± 20mA at 1500, 200Hz (gain AC-low mode)
18. Adjust RV109 for 1500 ± 10mA at 200Hz (gain for DC & AC-low)
19. Check for <200µV AC noise at 0mA

Performance Test (short version)
1. Low battery indicator & zero pot span tests
2. DC offset test, 0±1mA
3. DC range noise test, 200µVac max
4. Ranging test at 100mA, ±1mA
5. Display vs output at 1000mA, ±4mA
6. DC Linearity
   a. 9 and 12mA, 0.3%+0.3mA
   b. 100 and 190mA, 0.3%+0.5mA
   c. 1000 and 1900mA, 0.3%+1.5mA
7. AC High mode, 200Hz Linearity
   a. 7 and 33mA, 2%+0.2mA
   b. 350, 500 and 1500mA, 2%+2mA
8. AC high mode, 2kHz Linearity
   a. 7 and 33mA, 1.5%+0.2mA
   b. 350, 500 and 1500mA, 1.5%+2mA
9. AC High mode 40kHz Linearity
   a. 7 and 34mA, 1.5%+0.2mA
   b. 500mA, 1.5%+2mA
10. AC High mode, Freq. Response
    a. 350mA at 200Hz, 2%+0.2mA
    b. 350mA at 5kHz, 1.5%+0.2mA
    c. 325mA at 40kHz, 2%+0.2mA
    d. 125mA at 100kHz, 2%+0.2mA
11. AC Low mode 200Hz Linearity
    a. 7 and 33mA, 1.5%+0.2mA
    b. 1000mA, 1.5%+2mA