

# 6 Adjustment Procedure

This procedure can be used to adjust the warranted characteristics of the CP150 Current Probe. This procedure should be used if a parameter measured in the Performance Verification Procedure is outside of the specification limits.

Adjustment should only be performed by qualified personnel.

## TEST EQUIPMENT REQUIRED

The following table lists the test equipment and accessories, or their equivalents, which are required for adjustment of the CP150 Current Probe.

Because the input and output connector types may vary on different brands and models of test instruments, additional adapters or cables may be required.

**Table 6-1. List of Required Equipment**

Description	Minimum Requirements	Test Equipment Examples
Wide Band Oscilloscope	ProBus interface equipped Software version 8.6.0 or higher	LeCroy LT322
Digital Multimeter (2 required)	DC: 0.1% Accuracy 5½ digit resolution	Agilent Technologies 34401A, or Fluke 8842A-09
Function Generator	50 Hz sine wave output. 3 Vrms into 50 $\Omega$	Agilent Technologies 33120A, or Stanford Research Model DS340
Calibration Fixture, 50 Turn Loop	500 Turn loop in series with 0.5 $\Omega \pm 0.1\%$ resistor with sense terminals.	LeCroy CP150-CF02
Calibration Fixture	ProBus Extension Cable	LeCroy PROBUS-CF01
Banana Plug Adapter	Female BNC to Dual Banana Plug	Pomona 1269
Patch Cables (4 required)	Male Banana to Male Banana, 12"	Pomona B-12-0 (black), B-12-2 (red)
BNC Adapter	BNC Male to Dual Banana Jack	Pomona 1296
Double-sided tape	Adhesive tape to re-attach probe label	Scotch Double Stick Tape 0.5" wide

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### ADJUSTMENT PROCEDURE

The warranted characteristics of the CP150 Current Probe are valid at any temperature within the Environmental Characteristics listed in the Specifications. However, some of the other test equipment used to verify the performance may have environmental limitations required to meet the accuracy needed for the procedure. Make sure that the ambient conditions meet the requirements of all the test instruments used in this procedure.

**Note:**

*The correct operation of the controls of the CP150 requires oscilloscope software version 8.6.0 or higher. The software version in the test oscilloscope can be verified by pushing **SCOPE STATUS**, then selecting the **System** menu option. Contact your local LeCroy representative if the software in your oscilloscope requires updating.*

### PRELIMINARY PROCEDURE

1. Remove the light blue product label from the probe head to expose three variable resistors. Remove the old adhesive from the label and probe head.
2. Connect the CP150 to the channel 1 input of the oscilloscope through the ProBUS extension cable, and close and lock the probe jaws.
3. Turn the oscilloscope on and allow at least 30 minutes warm-up time for the CP150 and test equipment before performing the Verification Procedure.

### ADJUST DC ACCURACY.

1. Set the Function Generator to 50 Hz, sinewave output at 1.7 Vrms with 50  $\Omega$  output.
2. Connect BNC male of ProBus extension to DMM #1 using BNC Female to Dual Banana adapter.
3. Using banana patch cords, connect the 'V Source' and 'V Return' terminals of the 500 Turn Calibration Loop, to the output of the Function Generator using the BNC to Dual Banana plug adapter Output. (Refer to Figure 5-1)
4. Connect the Current Sense terminals of the 500 Turn Calibration Loop to the voltage inputs of DMM #2

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5. Set both DMMs to measure AC Volt.
6. With the CP150 removed from any signal and the slider returned to the LOCKED position, degauss the probe by pressing the **DEGAUSS** button on the oscilloscope, (located on the coupling menu), twice.
7. Open the CP150 jaws and position the probe input around the 500 Turn loop. Close and LOCK the slider.
8. Adjust the Function Generator voltage until the voltage measured at the 'Current Sense' terminals (DMM #2) is  $10 \text{ mV} \pm 0.01 \text{ mV}$ . (This corresponds to 10 A at the probe head).
9. Adjust the center variable resistor on the probe head until the voltage measured on DMM #1 is close to 10X the voltage measured on DMM #2.
10. Verify that the measured voltage is between 99 mV and 101 mV.
11. Disconnect the probe from the test set-up.
12. Re-apply the light blue product label to the probe head using the double-sided tape.

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