

⚠ Warning

Do not service the Meter unless you are qualified to do so. The service information provided in this document is for the use of qualified personnel only.

To avoid electrical shock or personal injury: Always remove the test leads and input signals from the Meter before opening the case.

Use caution when working with voltages above 60V dc or 30V ac.

⚠ Warning

To avoid false readings, which could lead to possible electric shock or personal injury, replace the battery as soon as the battery indicator appears.

⚠ Caution

The Meter is protected throughout by double insulation or reinforced insulation. When servicing the Meter, use only specified replacement parts.

⚠ Caution

This Meter contains parts that can be damaged by static discharge. Follow the standard practices for handling static sensitive devices.

Introduction

This service sheet covers the following topics relating to the calibration of the Fluke 32 Rms Clamp Meter, hereafter referred to as the meter:

- Required Test Equipment
- Assembly/Reassembly
- Calibration Adjustments
- Performance Check

Service

To contact Fluke, call one of the following telephone numbers:

USA and Canada: 1-888-99-FLUKE (1-888-993-5853)

Europe: +31 402-678-200

Japan: +81-3-3434-0181

Singapore: +65-* -276-6196

Anywhere in the world: +1-425-356-5500

Or, visit Fluke's Web site at www.fluke.com.

To order replacement parts, call 1-800-526-4731.

Outside U.S.A. contact your nearest service center.

Required Equipment

Table 1 lists the equipment required to perform the calibration procedure.

Table 1. Calibration Equipment

Instrument Type	Recommended Model
AC Calibrator	Fluke 5700A
Transconductance Amplifier	Fluke 5220A
Digital Multimeter	Fluke 77
Lab Supply (0-10V)	
Resistor (MF, 40.2 ohms, 1%)	Fluke PN 245373
Resistor (MF, 36.5 ohms, 1%)	Fluke PN 168187
50 Turn Current Coil	5500A coil

Preparing for Calibration

1. Configure the test equipment as shown in Figure 1.
2. Disassemble the meter by removing the four screws on the case back.
3. Remove the battery cover and front panel.
4. Turn on the meter and use a DMM to verify that the battery level is between 7 and 9 volts. If the battery does not meet this criteria, replace the battery before proceeding with the calibration procedure.

Note

The test equipment should be allowed to warmup and stabilize for at least 30 minutes before starting the calibration checks.

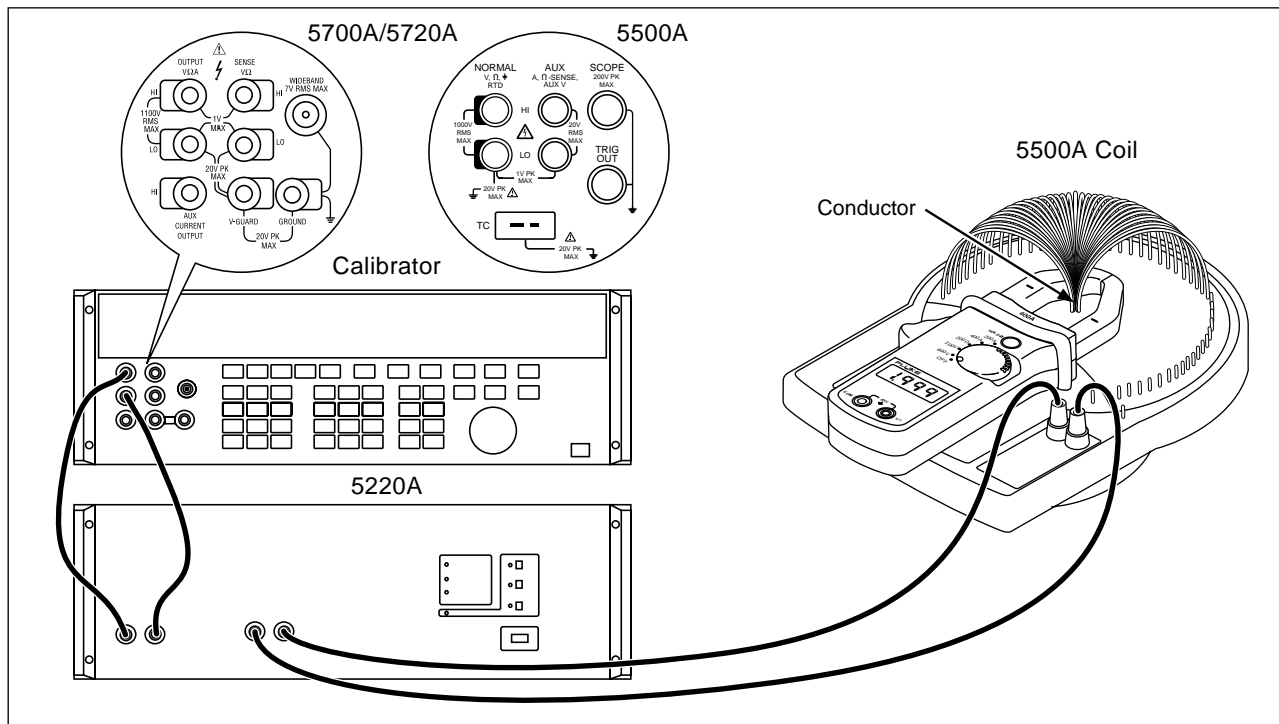


Figure 1. Calibration Equipment Configuration

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Calibration Adjustments

Complete the following procedure to calibrate the meter. Refer to Figure 2 for the adjustment locations.

Note

In later versions of this product, VR1 has been removed and VR3 is in a different location than shown in Figure 2. These later versions do not require the Low Battery Indication Calibration. See the pca silkscreening for the location of VR3.

AC Voltage Calibration

1. Set the meter to the 200V AC range. Connect the calibrator to the input of the meter, and program the calibrator to 100V AC at 60 Hz. Adjust VR3 to indicate “100.0” on the display.
2. Set the calibrator to 0V and set the meter to the 600V AC range. Set the calibrator to 600V AC at 60 Hz, and verify that the display reading is within the tolerance specified in Table 2.

AC Current Calibration

1. Set the calibrator to 3.8 amps at 60 Hz.
2. Set the meter to the 200A AC range. Clamp the meter around the 5500A coil conductor bundle as shown in Figure 1. Center the jaws on the coil using the indicator marks on the jaws of the meter and adjust VR2 to indicate “191.0” on the display (adjusting to 191.0 amps ensures that the clamp meets accuracy specifications where response roll-off occurs).
3. Set the meter to the 600A AC range and set the calibrator to 12A AC at 50 Hz. Verify that the display reading is within the tolerance specified in Table 2. If the value is out of tolerance, balance the calibration between the 200A and 600A ranges so that both ranges fall within the tolerance specified in Table 2.

Ohms Calibration

The ohms ranges are not adjustable.

Continuity Beeper Calibration

Connect a 40.2 Ω resistor (PN 245373) across the meter’s input terminals, and turn VR4 slowly until the beeper sounds.

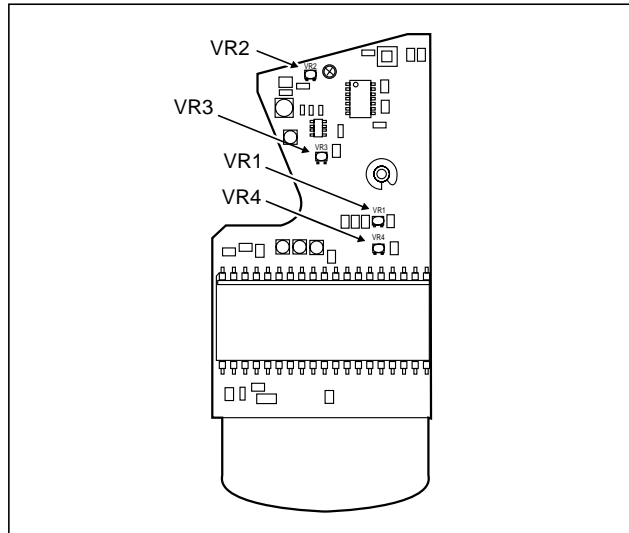


Figure 2. Calibration Adjustment Locations

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Low Battery Indication Calibration

1. Disconnect the battery from the meter, and connect the lab supply to the battery terminals. Set the power supply to 6.7V, and turn on the meter. Slowly adjust VR1 until the low battery indicator appears.
2. Set the power supply to 7.0V, and verify that the low battery indicator goes off.

Reassembly

1. Press and release the hold switch (so the switch is down), and fit the button over the switch housing.
2. Set the mark on the function switch axis to the 200V AC position (horizontal position), see Figure 3.
3. Set the rotary switch on the front panel to the 200V position.
4. Reinstall the front panel, making sure the wires surrounding the PCB are not caught between the front and back case halves.
5. Reinstall all but the battery cover screw (three screws) on the case back.
6. Reinstall the battery and battery cover. Then secure with the battery cover screw.

Performance Check

To perform a performance check on the meter, set up the test equipment as shown in Figure 1. Referring to Table 2, set the 5700A calibrator controls as shown, and verify that the meter readings fall between the high and low limits for each range.

Table 2. Performance Test Measurement Points

5700 Settings		Range	Low Limit	High Limit
Current AC	Freq. Hz			
20A	60	200A	18.8A	21.2A
190A	60	200A	187.3A	192.7A
40A	60	600A	36A	44A
400A	50	600A	392A	408A
550A	60	600A	533A	567A
Volts AC	Freq. Hz			
20V	60	200V	19.5	20.5
190V	60	200V	187.4V	192.6V
60V	60	600V	56V	64
600V	60	600V	590V	610V
Resistance Ω				
190 Ω	NA	Ohms	186.9 Ω	193.1 Ω

To verify the continuity beeper, connect a 36.5 Ω resistor (PN 168187) across the input terminals and verify the beeper sounds.

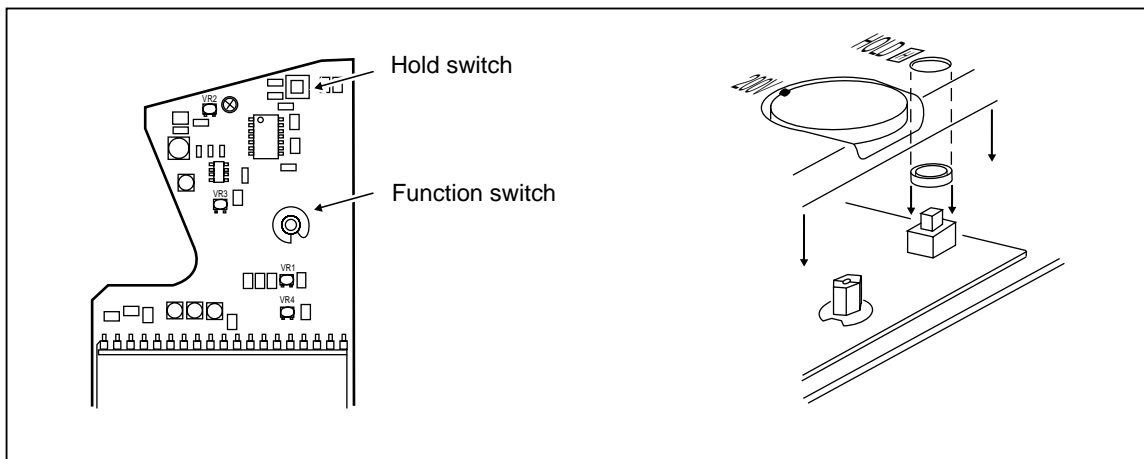


Figure 3. Rotary Switch Position

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