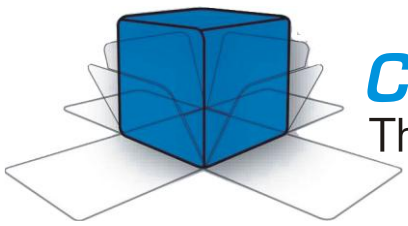
GF-30AC-TD

Ground Bond Tester

Instruction Manual



COMPLIANCE WEST USA

The blue box that tests. And tests.

Dear Customer:

Congratulations! Compliance West USA is proud to present you with your Ground Fault Circuit Tester. Your instrument features a groundbreaking circuit design and ergonomic front panel and represents the latest in high current production line testing.

To fully appreciate all the features of your new meter, we suggest that you take a few moments to review this manual. Compliance West USA stands by your instrument with a full one-year warranty and a loaner instrument policy. If need arises, please don't hesitate to call us.

Thank you for your trust and confidence.

Ver 1.1, June 2026

Table of Contents

Section 1

Introduction

This manual contains complete operating, maintenance and calibration instructions for the Compliance West USA Model GF-30AC-TD Ground Circuit Tester.

The instrument is designed to be a bench-type tester.

The GF-30AC-TD features a touch display and provides straightforward configuration of output current, test duration, and pass/fail criteria. It also includes a two-step procedure for compensating test-cable impedance.

The GF-30AC-TD meets all safety agency criteria for automatic production line ground circuit testers up to 30 Amps.

Your tester is warranted for a period of one year upon shipment of the instrument to the original purchaser.

Specifications

TESTING CIRCUITRY	
Test Type:	AC.
Max Current Output:	10-30Aac, ±5% into any load – short circuit to 0.130Ω.
Max Voltage Output:	6V.
Pass/Fail Criterion:	0.010-0.130Ω.
Ramp Time:	10mS.
Test Duration Timer:	0-60 Seconds.
Duty Cycle:	100%.
ELECTRICAL	
Input Power:	120V, 2A, 50/60Hz.
Frequency:	50/60Hz.
Fuse:	3A, 250V, time delay, 5x20mm.
OUTPUTS - Front	
Output:	2x 4mm, Banana Compatible, Red.
Return:	2x 4mm, Banana Compatible, Black.
TESTLINK - Rear	
Output:	1x 4mm, Banana Compatible, Red.
Return:	1x 4mm, Banana Compatible, Black.
TestLink Port:	DB-9 Female.
nperature:	15-35ºC.
Relative Humidity Range:	0-90% non-condensing.
Dimensions:	9¼” Wide x 4¾” High x 10” Deep.
Weight:	10.20lbs approx.

Table 1-1. GF-30AC-TD Specifications

Section 2

Operation

This section describes how to set up and make measurements with your tester. We recommend that you read the entire section carefully so that you can use all the features of your Tester.

Setting up your tester

Your tester is shipped in a special protective container that should prevent damage to the instrument during shipping. Check the shipping order against the contents of the container and report any damage or short shipment to Compliance West USA. The container should include the following:

- GF-30AC-TD Tester.
- GF-30AC-TD User Manual.
- Test Leads
  - (Qty 2) 4mm, Test Lead with alligator, Red.
  - (Qty 2) 4mm, Test Lead with alligator, Black.
- Power Cord.
- NIST traceable calibration certificate.
- Calibration Data Copy.

If shipment of the instrument is necessary, please use the original shipping container. If the original shipping container is not available, be sure that adequate protection is provided to prevent damage during shipment. We recommend that the instrument be surrounded by at least one inch of shock-absorbing material on all sides of the container.
Remove the Tester from its container and place it on a test bench.

AC Line Voltage Requirements

AC line voltage requirements for your Tester are noted on the rear panel of the instrument. Do not connect the instrument to a different voltage source.

Fuse Replacement

There is a user-replaceable fuse (F1) located on the rear panel of the instrument. It is located behind a door in the Power Inlet-Power Switch-Fuse holder device. The fuse rating is noted on the rear panel. Do not attempt to replace it with a fuse of any other rating.

Use the following procedure to replace the fuse F1:
1. Turn the power switch to the O or off position.
2. Unplug the instrument from the source of supply.
3. Remove the power inlet cord from the instrument.
4. Using a small screwdriver, pry open the fuse holder door.
5. Replace the fuse with a new one of the correct ratings.
6. Replace the fuse holder door and power inlet cord.

Front and Rear Panel Features

Before using your Tester, take a few minutes to become familiar with the use of its controls, indicators and connectors. The front panel features of the GF-30AC-TD are shown in Figure 2-1 and described in Table 2-1. The rear panel features of the GF-30AC-TD are shown in Figure 2-2 and described in Table 2-2.

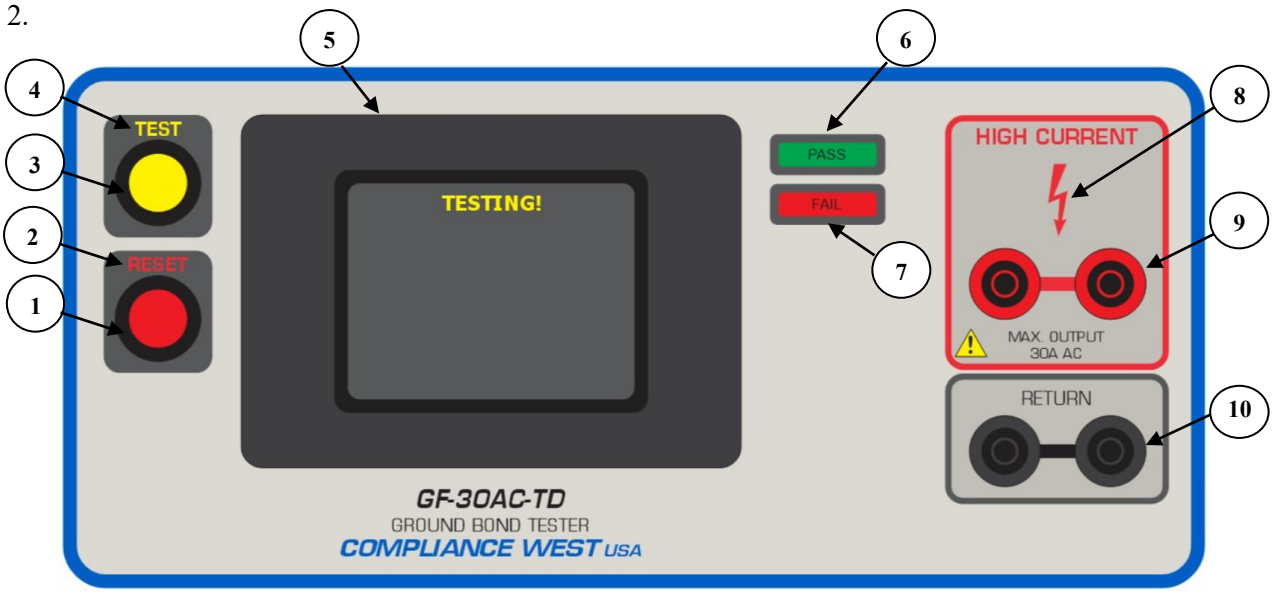


Figure 2-1. Controls, Indicators, Connectors - Model GF-30AC-TD Front Panel

ITEM NO.	NAME	FUNCTION
1	Reset Button	Cancel a test: Press to stop a test currently in progress. Acknowledge Test results: Must be pressed if the reset light is illuminated, this is not required if Autoreset is enabled, see section x.
2	Reset Lamp Indicator	When the Reset light is lit after a test, press to acknowledge the results and return to the main test display.
3	Test Button	If the device is ready to perform a test, pressing this button will start a test, after a test starts, this button is used to capture the test lead impedance offset, see section x for details.
4	Test Light Indicator	Test light indicator is Lit when the device is ready to begin a test, See section x for device ready conditions.
5	Touch Display	2.8 in touch display, display test configuration, test result and allow user to configure test settings, read this section for instructions.
6	Pass Light Indicator	Green Pass Light; When lit, indicates that equipment under test has less impedance than the Pass-Fail Point setting, see section x.
7	Fail Light Indicator	Red Fail Light; When lit, indicates that equipment under test has higher impedance than the Pass-Fail Point setting, see section x.
8	Tester Output Indicator	When tester is performing a test, this light will be lit, do not manipulate testing leads or connector, to stop the test, press the reset button.

9	Output Red Connectors	High current output red connector, use leads shipped with the equipment only.
10	Return Black Connectors	High current return black connector, use leads shipped with the equipment only.

Table 2-1. Controls, Indicators, Connectors - Model GF-30AC-TD Front Panel

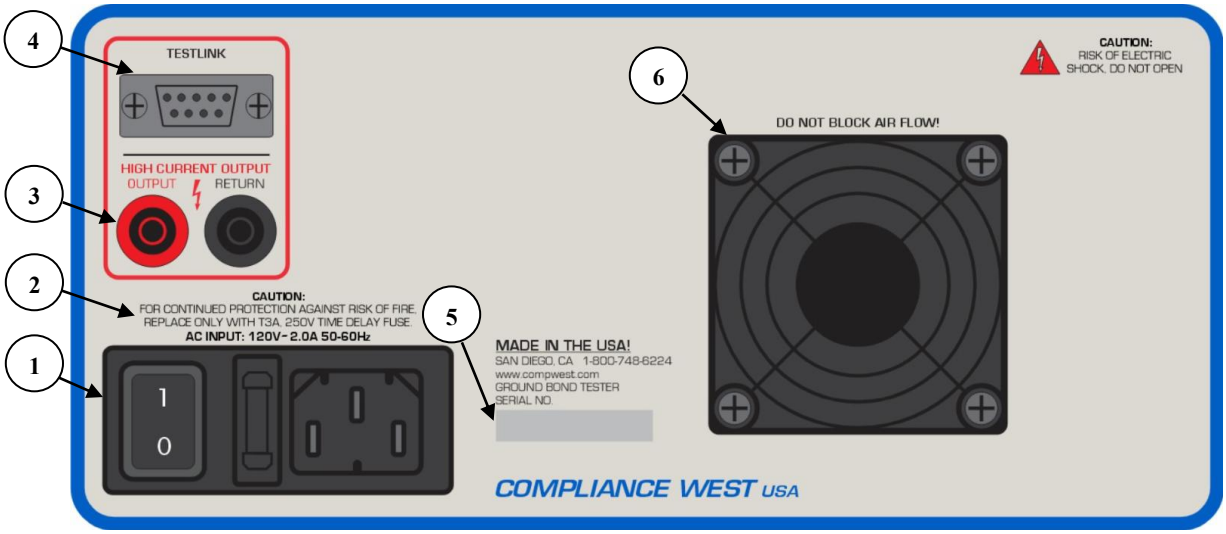


Figure 2-2. Control, Indicators, Connectors - Model GF-30AC-TD Rear Panel

ITEM NO.	NAME	FUNCTION
1	Appliance Inlet / Fuse holder / Power Switch	Use 18 AWG cordset to connect tester to appropriate source of supply. Replace line fuse. Turn tester ON/OFF.
2	Fuse replacement warning / Rating of supply	Specifies replacement fuse and supply voltage used.
3	Rear Output Connectors	High current output red and black connector, use leads shipped with the equipment only.
4	Test Link Port	9-pin D subminiature female connector for remote control with a dielectric withstand tester (Only Compliance West Models).
5	Device Information	Device model information, Serial number of equipment label.
6	Thermal Cooling Fan	Required to avoid component overheat.

Table 2-2. Control, Indicators, Connectors - Model GF-30AC-TD Rear Panel

GF-30AC-TD User interface

This section of the manual acts as a visual and functional map for the GF-30AC-TD controls. Its goal is to orient the user so he can recognize and interact with every button, icon, and menu.

By mastering these interface elements, the users can accurately configure test parameters, execute commands, and interpret test results with precision.

Main Screen

Upon powering on, the system automatically launches this primary screen “Main Screen”. The Last Result panel populates with data from the most recent test session, while the Settings section displays current configurations to ensure the equipment is ready for immediate use.

Prior to initiating any testing procedures, ensure this screen remains active. It serves as the primary navigation hub, providing the essential pathway required to access the main configuration settings, system parameters and memory management. When this screen is active, the "Test" indicator light illuminates to signify that the equipment has successfully initialized and configured and is prepared to perform a test.

Users can manage test settings, load or save configurations from internal memory, and navigate to the menu by using the dedicated touchscreen buttons available on this screen.

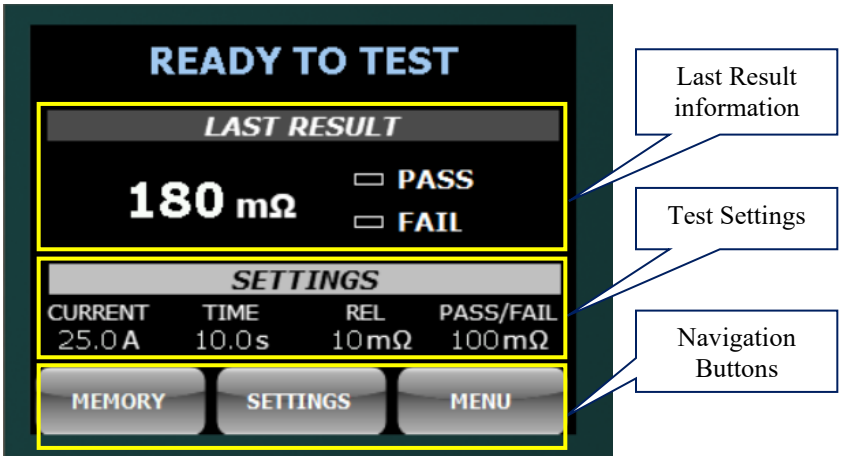


Figure 2-3: Main Screen

Memory Screen

Users can save and retrieve test configurations, the GF30AC-TD have 10 available memory (0-9) slots for users to save different test setups, these setups include; output current, test time, pass-fail impedance, offset configuration setting and auto reset setting.

To retrieve a test configuration previously saved, press LOAD button, to save the current configuration press SAVE button.

Figure 2-4: Main Memory Screen

- **Load Memory:** Navigate the available memory slots using the "<" and ">" Buttons, the seetings contained in the memory will be displayed in the "Settings" section of the screen, to retrieve the settings to the current test configuration press the "LOAD" button.

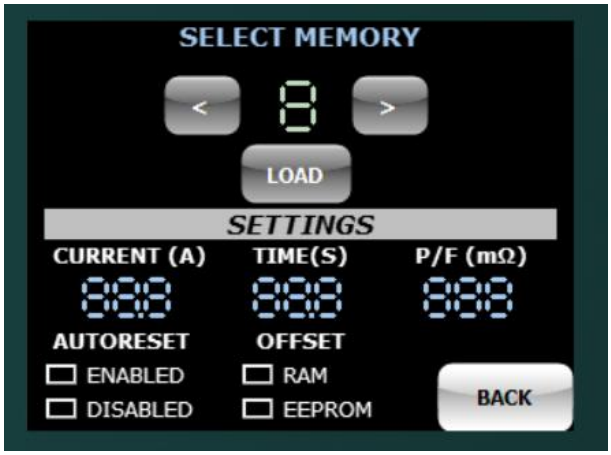


Figure 2-5: Load memory Screen

- **Save Memory:** Using the "<" and ">" buttons select the desired memory slot number, once selected, press "SAVE" to write to the memory slot the current test settings.

Figure 2-6: Save memory Screen

Settings Screen

This section serves as a guide to the test configurations available. By navigating through this screen, you can view the complete list of selectable test parameters to suit your current operational requirements.

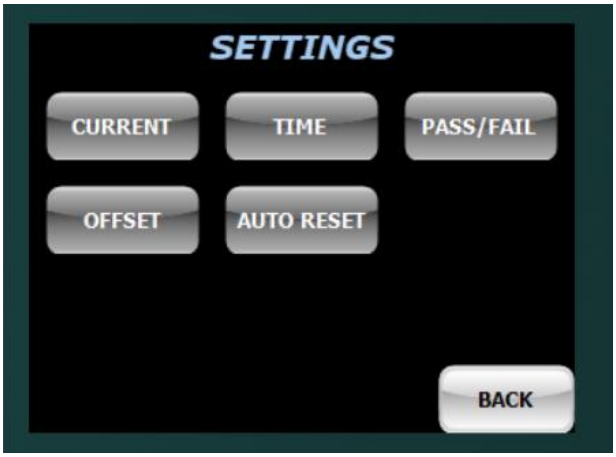


Figure 2-7: Main Settings Screen

- **Change Current Setting:** Press **Current** on the Settings screen to open the current adjustment screen. Enter the new output current in amperes. The "Saved value" area displays the current output setting. When you finish entering the new value, press **Enter** to confirm it. Press **Back** to discard your changes.

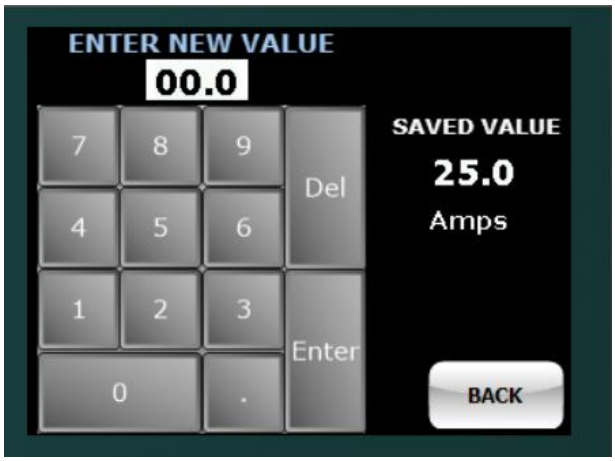


Figure 2-8: Change Current Setting Screen.

- **Change Test Time Setting**: Press **Time** on the Settings screen to open the test time adjustment screen. Enter the new test time in seconds. The "Saved value" area displays the current test time setting. When you finish entering the new value, press **Enter** to confirm it. Press **Back** to discard your changes.

Figure 2-9: Change Test Time Setting Screen.

- **Change Pass/Fail Setting**: Press **Pass/Fail** on the Settings screen to open the impedance pass and fail adjustment screen. Enter the new output current in amperes. The "Saved value" area displays the current setting. When you finish entering the new value, press **Enter** to confirm it. Press **Back** to discard your changes.

Figure 2-10: Change Pass/Fail Setting Screen.

- **Change Offset Setting:** Press **Offset** on the Settings screen to open the offset management screen. This setting compensates for test lead impedance, so it is not included in the measurement result.
  For best accuracy, keep the offset setting store **DISABLED**. When stored in RAM, the operator must run the adjusting lead impedance offset procedure (Page 16) each time the tester is powered on.
  If you use the same test leads consistently, you can save the offset value (set **ENABLE**). In that case, perform the adjusting lead impedance offset procedure (Page 16) periodically.

Figure 2-11: Change Offset Setting Screen.

- **Change Auto Reset Setting:** Press **Auto Reset** on the Settings screen to open the Auto Reset Configuration screen. Use this option when the tester is connected through the Test Link option. When enabled, Auto Reset automatically resets the GF-30AC-TD after each test ends.

Figure 2-12: Change Auto Reset Setting Screen.

Menu Screen

The Menu screen is accessed from the Main screen. It provides access to calibration screen section and displays the unit's software version information in the About section.

CAL: To access the calibration screen, enter the special code provided by Compliance West USA upon request. Refer to the calibration procedure for instructions on adjusting the equipment calibration data.

ABOUT: Displays the equipment software version information.

Figure 2-13: Main Menu Screen.

Testing Screen

The Testing screen appears when a test begins. To start a test, the Main screen must be active, the Test LED must be illuminated, and the Test button must be pressed. Once the test starts, the Red Testing LED turns on, and the Testing screen is displayed.

The Testing screen displays the output current, output voltage, and measured test impedance.

The Settings section shows the elapsed test time and the test lead offset value.

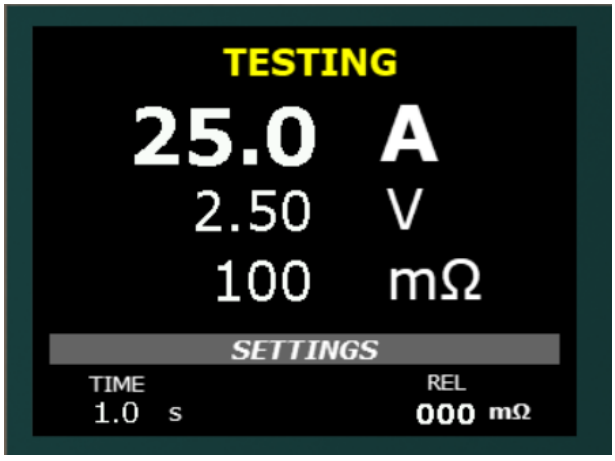


Figure 2-14: Testing Screen.

Test Results

After a test is complete, the result is displayed on the Testing screen. The test result can also be determined by the red and green indicators on the front panel. To continue operation, press the Reset button to return to the Main screen and begin a new test.

If auto reset is enabled, test results will be displayed in the last result section,

Green Light: A green light indicates the ground system of the EUT has less than the Pass/Fail value resistance.

Red Light: A red light indicates the ground system of the EUT has higher resistance than the value configured in the Pass/Fail setting. If a red light occurs, the grounding circuit of the EUT should be reworked and then retested.

Initial Checkout Procedure

The following procedure will allow you to verify that the Tester is working correctly before use. The only test equipment required is the unit itself, the test leads shipped with the unit, configure test parameters such as output current, Test time and Pass-fail point according to your requirements.

CAUTION
High current. Risk of burns. Remove any conductive jewelry before using the Tester.

1. Connect your Tester to a correctly rated source of supply, remove any other test leads, and turn the power switch to the I or ON position. The tester will perform a self-diagnostic test. Wait for the display to turn on and a “Ready to Test” legend is displayed. If the display does not turn ON, check the source of supply.
2. Plug the Red leads to the red connector of the equipment, plug the Black leads to the black connectors of the equipment.
3. Attach the alligator clips to the 4 test cords (2 red and 2 black), connect one black to one red connector from the alligator clip end, repeat this connection with the other two cables.
4. Push the Test Button. The GF-30AC-TD should indicate a "Pass" by lighting the green light.
5. Disconnect the all the Test leads from the tester connectors (no test leads are connected in the front of the unit). Push the Test button. The GF-30AC-TD should indicate a "Fail" by lighting the red light and sounding the internal buzzer.

If your Tester yielded the proper results, it is working properly. If it does not, call Compliance West USA for assistance.

Adjusting Lead Impedance Offset

This adjustment allows the GF-30AC-TD to compensate for the resistance of the cordset and test return lead. If done properly, it allows the GF-30AC-TD to measure only the resistance of the ground circuit of the EUT, while compensating for cord resistance.

Refer to the user interface section for options in how to save the cable cordset impedance offset.

CAUTION
High current. Risk of burns. Remove any conductive jewelry before using the Tester.

1. Connect your Tester to a correctly rated source of supply, remove any other test leads, and turn the power switch to the I or ON position. The tester will perform a self-diagnostic test. Wait for the display to turn on and a “Ready to Test” legend is displayed. If the display does not turn ON, check the source of supply.

2. Plug the Red leads (2) to the red connector of the equipment, plug the Black leads (2) to the black connectors of the equipment.
3. Attach the alligator clips to the 4 test cords (2 red and 2 black), connect one black to one red connector from the alligator clip end, repeat this connection with the other two cables.
4. Verify that the test time setting is 5 seconds or higher.
5. Push the Test Button. The GF-30AC-TD will start a test, wait for 1 second approximately.
6. Press the Test Button again and hold it for 2 seconds, this will terminate the test and the test lead impedance will be saved as offset.

Operating Techniques

The following paragraphs describe how to operate your GF-30AC-TD Tester. In the following sections, EUT means Equipment Under Test.

Testing the EUT

This section describes how the Tester is used to conduct an actual test.

CAUTION
High current. Risk of burns. Remove any conductive jewelry before using the tester.

NOTE
If the EUT uses a detachable power cord, use the Test Power Cord packed with the instrument, not the EUT power cord. The accuracy of the test procedure depends on use of the same power cord type for every test.

1. Connect your Tester to a correctly rated source of supply and turn the power switch to the I or ON position. The tester will perform a self-diagnostic test. Make sure the buzzer sounds and the red light is illuminated during this test.
2. Tester, and then into the power inlet of the equipment to be tested.
3. Plug the Red leads (2) to the red connector of the equipment, plug the Black leads (2) to the black connectors of the equipment.
4. Attach the alligator clips to the 4 test cords (2 red and 2 black).
5. If required, perform the test cable offset adjustment procedure.
6. Connect the alligator clips end of the Test Return Lead to the chassis of the equipment to be tested – Black Cables.
7. Connect the 2 red alligator clips to the ground connection input from the DUT inlet.
8. Push the test button. (If the GF-30AC-TD duration control has been set according to the calibration procedure, the test will automatically continue for the duration set in the calibration procedure. If the duration control of the GF-30AC-TD is set to zero, the test will continue only as long as the test button is pressed.)
9. The result of the test will be shown by a combination of lights and a buzzer.

Technical Assistance

Technical Assistance from Compliance West USA is available:

Phone: (800) 748-6224
Hours: 8:00 AM - 4:00 PM Pacific Time.
Also available on our web site at: **www.compwest.com**

Contact:

Compliance West USA
650 Gateway Center Way, Suite D
San Diego, CA, 92102.
United States of America.

Phone: (619) 878-9696

Section 3

Maintenance

WARNING
THESE SERVICE INSTRUCTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY. TO AVOID ELECTRIC SHOCK, DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.

Introduction

This section of the manual contains maintenance information for the Model GF-30AC-TD High Current Ground Tester. This maintenance information is divided into service information, general maintenance, a performance test, and a calibration access description. The performance test is recommended as an acceptance test when the instrument is first received, and later as a preventative maintenance tool to verify proper instrument operation. A 1-year calibration cycle is recommended to maintain the specifications given in Section 1. The Test equipment required for both the performance test and calibration is a DMM able to read true rms 0-6 VAC ± 1%.

Service Information

The GF-30AC-TD is warranted to the original purchaser for a period of 1 year. This warranty does not cover problems due to misuse or neglect.

Malfunctions which occur within the limits of the warranty will be corrected at no charge. Mail the instrument post paid to the manufacturer. Dated proof of purchase is required for all in-warranty repairs.

The manufacturer is also available for calibration and / or repair of instruments that are beyond their warranty period. Contact the manufacturer for a cost quotation. Ship the instrument and your remittance according to the instructions given by the manufacturer.

General Maintenance

Interior Access

NOTE
To avoid contaminating the PWB with oil from your fingers, handle it with the edges or wear gloves. If the PWB becomes contaminated, refer to the cleaning procedures given later in this section.

Calibration Access

Use the following procedures to gain access to the calibration adjustments of your instrument.

Request the calibration procedure and access code to Compliance West USA.

1. Set Line Power switch to OFF.
2. Disconnect the power cord from the rear of the instrument.
3. Remove the two upper screws on each side of the unit.
4. Grasp the top of the enclosure clamshell and lift it off the front and rear panels.
5. Slide the rear panel / PWB assembly upward until it is clear of the bottom enclosure clamshell.
6. All calibration adjustments are now accessible.
7. To reassemble, reverse steps 1-6 above.

NOTE
With the power cord replaced, the instrument is operational for service.

WARNING
Dangerous voltages exist inside the enclosure when energized. Exercise extreme care when working on an energized circuit. See PWB layout diagram for high voltage areas.

Cleaning

CAUTION
Do not use aromatic hydrocarbons or chlorinated solvents for cleaning. These solutions will react with the plastic materials used in the instrument.

Clean the front panel and case with a mild solution of detergent and a damp sponge. Clean dust from the PWB with clean, dry, low pressure (<20 psi).

Performance Test

The performance test compares the performance of your instrument with the list of specifications given in Section 1. This test is recommended for incoming inspection, as a preventative maintenance check, and to verify the specifications. It is not necessary to disassemble the instrument to conduct these tests. If the instrument fails any part of the performance test, calibration and / or repair are indicated.

Allow the instrument to stabilize and perform the test at an ambient temperature of 23°C ±5°C (73°F ±9° F). During the performance test (and the calibration procedure) your Tester is referred to as the UUT.