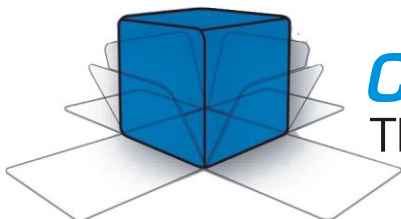


# ***GFM-500A-DM***

*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 new 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. If the need arises, please don't hesitate to call on us.*

*Thank you for your trust and confidence.*

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# Section 1

## Introduction

This manual contains complete operating instructions for the Compliance West USA Model GFM-500A-DM Ground Bound Tester. The instrument is a bench-type ground circuit tester.

The GFM-500A-DM features a large variac knob, current and voltage digital meters and is equipped with a zero start feature, always operate with precaution. The GFM-500A-DM meets all safety agency criteria for ground bound testers.

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.
Current Output:	20-500Aac (Short circuit to a max. load of 6mΩ). 20-400Aac (Short circuit to a max. load of 8mΩ).
Current Meter:	5% (20-500A)
Voltage Output:	0-3.75Vac (Open circuit)
Voltage Meter:	1.5% (0.37-5.00V).
Alarm Trigger:	510A.
Output Shutoff:	525A.
Test Time limit:	6min.
Duty Cycle:	80% up to 400A (4min. ON and 5min. OFF) 50% over 400A (2min. ON and 4min. OFF)

### ELECTRICAL

#### (\*120V model)

#### (\*220V model)

Input Power:	120V, 15.0A (short circuit to 6mΩ).	TBD.
Frequency:	50/60Hz.	TBD.
Fuse:	16A, 250V, fast acting, 6.3x32mm.	TBD.

### OUTPUTS

Red:	4/0AWG, 500A clamp.
Black:	4/0AWG, 500A clamp.

### ENVIRONMENTAL

Operating Temperature:	15-35°C.
Relative Humidity Range:	0-90% non-condensing.

### GENERAL

Dimensions:	17.00" Wide x 11.00" High x 17.00" Deep.
Weight:	85lbs approx.
Product Package:	<ul style="list-style-type: none"><li>• GFM-500A-DM Tester.</li><li>• GFM-500A-DM User Manual.</li><li>• NEMA 5-15P C19 16A/250V Power Cord.</li><li>• 4-Wire sense premium leads with high current clamps.</li><li>• NIST traceable calibration certificate to ANSI Z540.</li><li>• Calibration Data Copy.</li></ul>

Table 1-1. GFM-500A-DM 120V Specifications

## Section 2

### Operation

This section describes how to set up and operate your tester. We recommend that you read the entire section carefully so that you can use all of 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 must include the items listed in the general sections of the specifications table.

If reshipment 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.

**NOTE:** The GFM-500A-DM is a heavy tester, 2 persons are required to move/lift the tester.

#### 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 located on the rear panel of the instrument. The fuse rating is noted on the rear panel. Do not attempt to replace it with a fuse of any other rating. The recommended Fuse is MPN: ABE 16A 250V

Use the following procedure to replace the fuse F1:

1. Turn the power switch to the OFF position.
2. Unplug the instrument from the source of supply.
3. Remove the fuseholder.
4. Replace the fuse with a new one of the correct rating.
5. Replace the fuseholder.

## Front and Rear Panel Features

Before using your Tester, take a few minutes to become familiar with the controls and indicators. The front panel features of the GFM-500A-DM are shown in Figure 2-1 and described in Table 2-1.

### Front Panel

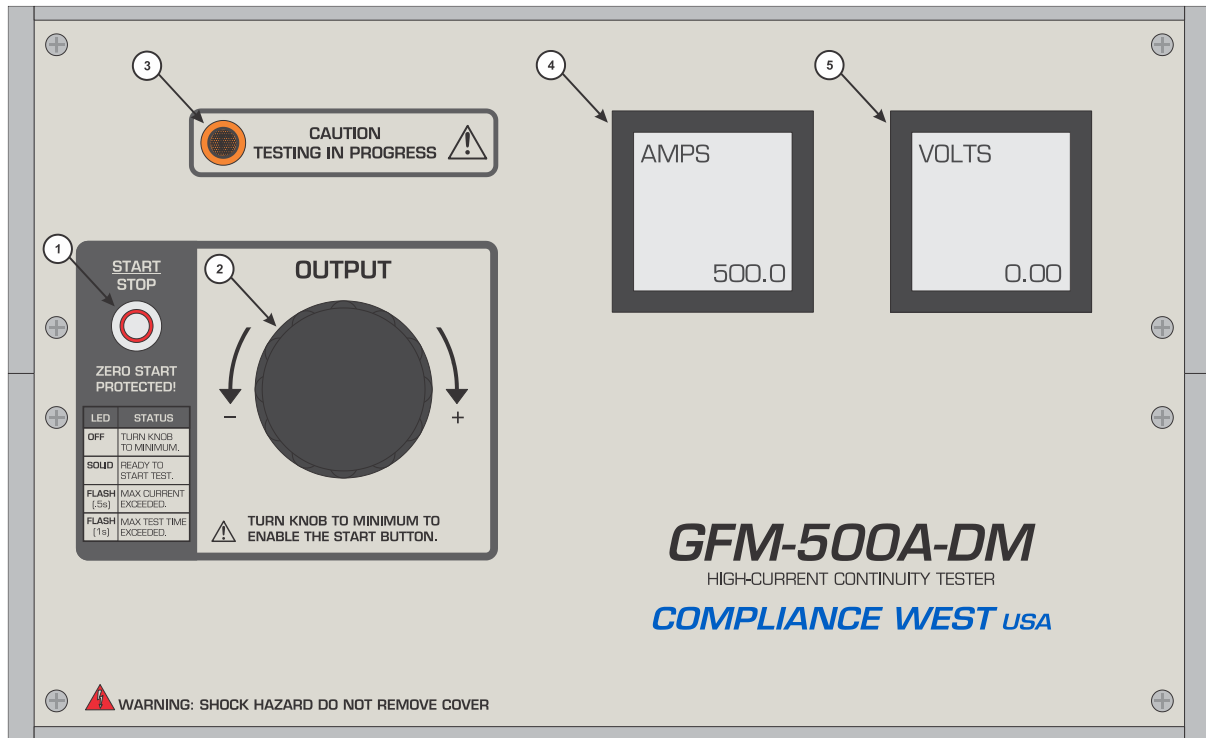


Figure 2-1. Controls, Indicators, Connectors - Model GFM-500A-DM Front Panel

## Front Panel Description

ITEM	NAME	FUNCTION										
1	Start/Stop Button	<div>The Start/Stop button an start the test when the knob is at minimum and can stop the test at anytime, the red button led indicates the test status:</div> <table><tr><th>LED</th><th>STATUS</th></tr><tr><td>OFF</td><td>TURN KNOB TO MINIMUM.</td></tr><tr><td>SOLID</td><td>READY TO START TEST.</td></tr><tr><td>FLASH [.5s]</td><td>MAX CURRENT EXCEEDED.</td></tr><tr><td>FLASH [1s]</td><td>MAX TEST TIME EXCEEDED.</td></tr></table>	LED	STATUS	OFF	TURN KNOB TO MINIMUM.	SOLID	READY TO START TEST.	FLASH [.5s]	MAX CURRENT EXCEEDED.	FLASH [1s]	MAX TEST TIME EXCEEDED.
LED	STATUS											
OFF	TURN KNOB TO MINIMUM.											
SOLID	READY TO START TEST.											
FLASH [.5s]	MAX CURRENT EXCEEDED.											
FLASH [1s]	MAX TEST TIME EXCEEDED.											
2	Knob Output Adj.	The large knob facilitates the increase or decrease of current output. The knob is equipped with a zero start safety feature which allows to start the test only if the knob is at minimum.										
3	Testing LED +buzzer	The led will flash and buzzer will beep while testing is on going.										
4	Current Meter	The Current Meter displays the current that is flowing through the output leads. A Red flashing backlight alarm is activated when exceeding 510A. The test will be terminated if the output exceeds 525A or exceeds 6min.										
5	Voltage Meter	The Voltage Meter displays the voltage that is between the output leads clamps.										

Table 2-1. Controls, Indicators, Connectors - Model GFM-500A-DM Front Panel



## Rear Panel

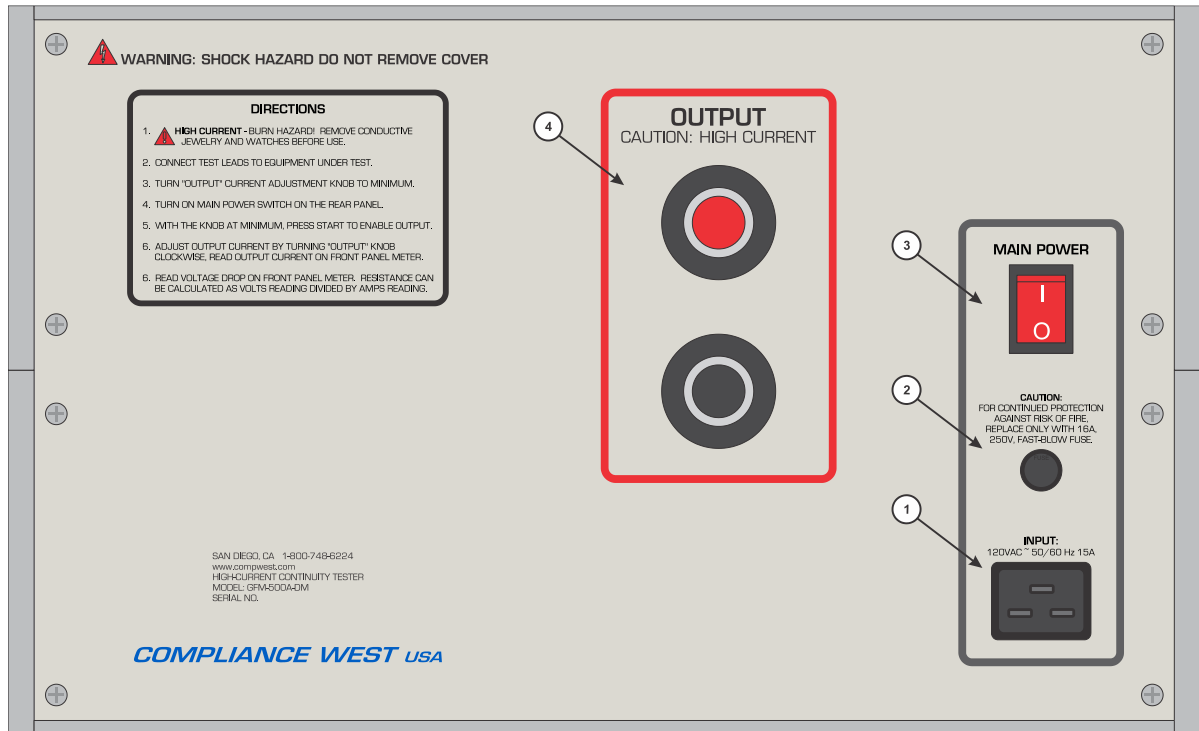


Figure 2-2. Control, Indicators, Connectors - Model GFM-500A-DM Rear Panel

## Rear Panel Description

ITEM	NAME	FUNCTION
1	AC Input	Use supplied cordset to connect the GFM-500A-DM tester to an appropriate source of supply.
2	Fuse	Fuse holder provides access for Fuse replacement. Replace fuse only with the specified in the Specifications table.
3	Power Switch	Switch to I to turn ON the tester. Switch to O to turn OFF the tester.
4	Output	Tester Outputs, the panel strain relief secures the tester output leads, do not attempt to loose the leads, always use the provided leads and clamps to test.

Table 2-2. Control, Indicators, Connectors - Model GFM-500A-DM Rear Panel

## Initial Checkout Procedure

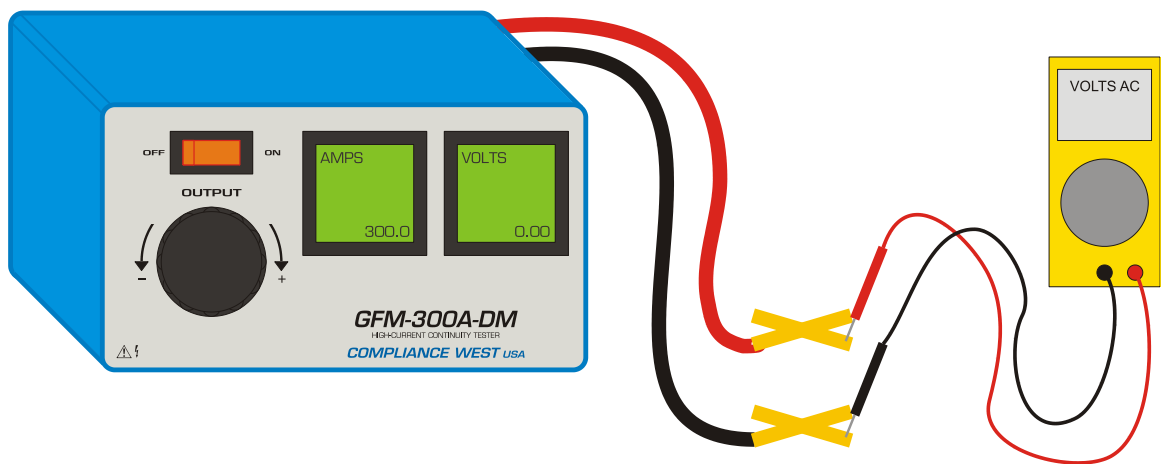
The following procedure will allow you to verify that the Tester is working correctly before use. The only test equipment required is the unit itself, Digital meter, and high current meter (clamp).

### CAUTION

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

#### Voltage Verification

1. Make sure power switch is on the OFF position.
2. Remove other objects from the work area to avoid shock.
3. Make sure the clamps are placed on a non conductive bench.
4. Plug your Tester to a correctly rated source of supply.
5. Turn Variac Knob to the minimum.
6. Connect a Voltage meter at the output.
7. Turn the power switch on the back to the I or ON position.
8. Press the start button.
9. Increase the voltage by turning the variac knob clockwise and confirm voltage meter in the front panel is in accordance with the Voltage meter connected at the output, current meter should not move, significantly.
10. Turn voltage knob to minimum.
11. Press stop to terminate the test.
12. Turn the power switch on the back to the O or OFF position.
13. Remove the Voltage meter.

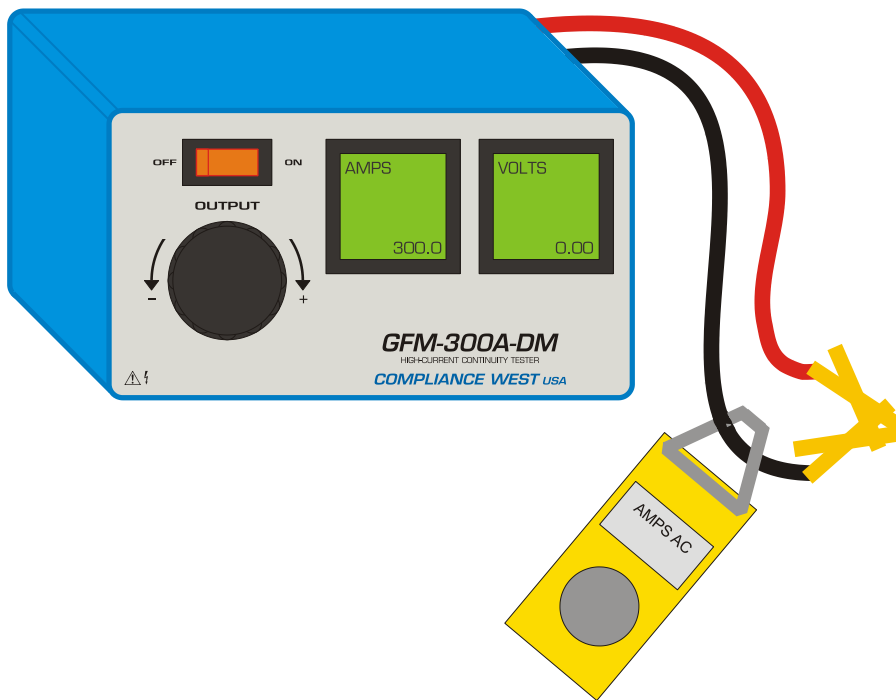


\*Image for reference only.

Figure 2-3. Voltage Test Verification set up

### Current Verification

1. Make sure output and rear power switch is on the OFF position.
2. Remove other objects from the work area to avoid shock.
3. Make sure the clamps are placed on a non conductive bench.
4. Plug your Tester to a correctly rated source of supply.
5. Turn Variac Knob to the minimum.
6. Short circuit the output leads and connect a current clamp meter at one of the leads.
7. Make sure the area around the leads and clamps is free from people contact.
8. Press the start button to enable the output..
9. Increase the current by turning the variac knob clockwise and confirm current meter in the front panel is in accordance with the current clamp meter, voltage meter should not move significantly.
10. Turn voltage knob to minimum.
11. Press the stop button to terminate the test.
12. Turn the power switch on the back to the O or OFF position.
13. Remove current clamp.
14. Disconnect lead clamps (open circuit).



\*Image for reference only.

Figure 2-4. Current Test Verification set up

## Operating Techniques

The following paragraphs describe how to operate your GFM-500A-DM Tester. In the following sections, EUT means Equipment Under Test.

1. Make sure the Power switch is on the OFF position.
2. Plug your Tester to a correctly rated source of supply.
3. Turn Variac Knob to the minimum.
4. Connect the output clamp leads to the EUT, making sure the alligator clamp makes as much conductor contact as possible. This avoids extra resistance.
5. Turn the power switch on the back to the I or ON position.
6. Press the start/stop button to enable the output.
7. Adjust the desired current / voltage level by increasing the voltage knob. Do not exceed 510A.
8. When test is finish, decrease the voltage knob to minimum
9. Press the stop button to terminate the test.
10. After completion of testing turn the power switch on the back to the O or OFF position.

## Section 3

### Technical Assistance

Technical Assistance from Compliance West USA is available:

**Phone:** (800) 748-6224

**Hours:** 8:30 AM - 4:30 PM Pacific Time.

Also available on our web site at: **[www.compwest.com](http://www.compwest.com)**

Contact:

Compliance West USA  
650 Gateway Center Way, Suite D  
San Diego, CA 92102

**Phone:** (619) 878-9696

**FAX:** (619) 794-0404

## **Section 4**

### **Maintenance and Calibration**

#### **WARNING**

**MAINTENANCE AND CALIBRATION INSTRUCTIONS ARE FOR QUALIFIED PERSONNEL ONLY. TO AVOID ELECTRIC SHOCK, DO NOT PERFORM ANY SERVICING OTHER THAN THE CONTAINED IN THE OPERATING INSTRUCTIONS.**

#### **Introduction**

This section of the manual contains maintenance information for the GFM-500A-DM tester. A 1-year calibration cycle is recommended to maintain the specifications of the factory. The test equipment required for the performance test is digital meter and a current meter.

#### **Service Information**

The GFM tester 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**

##### **WARNING**

Dangerous voltages exist when energized. Make sure the tester is turned off, and unplug from supply.

##### **Cleaning**

Remove dust from the front panel and case with a microfiber, use a damp microfiber for a deeper cleaning, dry right after with another microfiber.

##### **CAUTION**

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

#### **Calibration Information**

The Calibration Procedure should be performed annually and any time the instrument has been repaired.

The calibration procedure should be performed at an ambient temperature of  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$  ( $73.4^{\circ}\text{F} \pm 9^{\circ}\text{F}$ ). The procedure consists in the verification and calibration of the meter reading. The Calibration procedure must be performed by qualified personnel, for more information contact Compliance West USA.