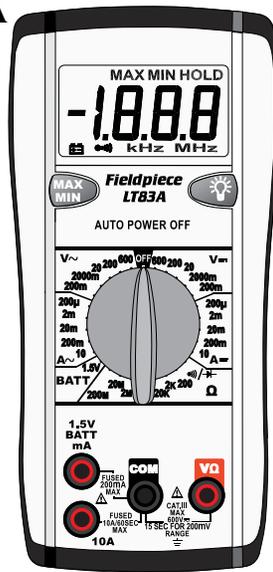


# DIGITAL MULTIMETER

Model: LT83A



## OPERATOR'S MANUAL

### General specifications

**Auto-off:** off after 25 minutes to extend battery.  
**Indicators:** Continuity beeper (<100Ω). Low bat.  
**Overrange:** "OL" or "-OL" is displayed.  
**Operating environment:** 32°F to 122°F <70%RH  
**Storage environment (with battery removed):** -4°F to 140°F <80%RH  
**Altitude:** 6561.7 feet (2000m).  
**Battery life:** 200 hours typical.  
**Battery type:** 9V NEDA 1604 type  
**Stated accuracies:** 74°F±8°F, 75%RH  
**Temperature coefficient:** 0.1 x (specified accuracy)/1°F (32°F to 66°F, 82°F to 122°F)

### MIN/MAX

Record the minimum or maximum reading during a measurement. To exit the MIN/MAX function, hold the button for more than 2 seconds.

### Backlight

Always be very careful when testing in the dark. You should always have a separate light on the area you are testing. The backlight will shine for 4.5 minutes when the backlight button is pressed.

### General description

The LT83A is a digital multimeter with the most common features needed by a technician. The LT83A meter measures current, resistance, voltage, and continuity. It also has a battery test. Test leads store within the meter and can connect the LT83A to Fieldpiece accessory heads. The body is made out of durable ABS plastic and has a backlit display.

### User maintenance

**Battery Replacement:** When the multimeter displays the " " the battery must be replaced to maintain proper operation. To prevent electrical shock, turn off the meter and disconnect leads before removing the back cover.

**Fuse Replacement:** When only certain ranges quit working, check the fuse. Open the case and replace according to the Overload Protection chart.

All other repairs must be performed by a Fieldpiece service center

### Service

Return any defective LT83A to Fieldpiece for warranty service along with proof of purchase. Contact Fieldpiece for out of warranty repair charges.

### DC voltage

**Ranges:** 200mV, 2000mV, 20V, 200V, 600V  
**Resolution:** 0.1mV  
**Accuracy:** 0.5%±1  
**Input impedance:** 10MΩ

### AC voltage (50Hz-500Hz)

**Ranges:** 200mV, 2000mV, 20V, 200V, 600V  
**Resolution:** 0.1mV  
**Accuracy:** 1.2%±4(200mV-20V ranges),  
2%±5(200V-600V ranges)  
**Input impedance:** 10MΩ

### DC current (through meter)

**Ranges:** 200μA, 2mA, 20mA, 200mA, 10A  
**Resolution:** 0.1μA  
**Accuracy:** 1.0%±1 (200μA to 200mA ranges),  
3.0%±3 (on 10A range)  
**Voltage burden:** 400mV

### AC current (through meter)

**Ranges:** 200μA, 2mA, 20mA, 200mA, 10A  
**Resolution:** 0.1μA  
**Accuracy:** 1.5%±4 (200μA to 200mA ranges),  
3.5%±4 (on 10A range)  
**Voltage burden:** 400mV

### For your safety...

**General:** Inspect the test leads for damage to the insulation or exposed metal. Replace if suspect. Never ground yourself when taking electrical measurements. Do not touch exposed metal pipes, outlets, fixtures, etc., which might be at ground potential. Keep your body isolated from ground by using dry clothing, rubber shoes, rubber mats, or any approved insulating material. When disconnecting from a circuit, disconnect the "RED" lead first, then the common lead. Work with others. Use one hand for testing. Turn off power to the circuit under test before cutting, unsoldering, or breaking the circuit. Keep your fingers on the plastic and behind the ridge of the probes.

**All Voltage Tests:** All voltage ranges will withstand up to 600VAC or 600VDC. Do not apply more than 600VDC or 600VAC.

**AC Tests:** Disconnect the meter from the circuit before turning any inductor off, including motors, transformers, and solenoids. Hi voltage transients can damage the meter beyond repair. Do not use during electrical storms.

**Safety:** Designed to meet IEC 61010-1 (EN61010-1), CATIII 600V, Class II, pollution deg.2, indoor use and complies with CE UL61010-1.

### Symbols used:

- Caution, refer to manual.
- Ground
- Double insulation

### Resistance (ohms)

**Ranges:** 200Ω, 2kΩ, 20kΩ, 200kΩ, 2MΩ, 20MΩ, 200MΩ  
**Resolution:** 0.1Ω  
**Accuracy:** 1.0%±4 (200Ω to 2MΩ ranges),  
2.0%±4 (20MΩ range),  
(5.0%-10) + 10 (200MΩ range)  
**Open circuit voltage:** 0.3VDC typical, (3.0VDC on 200Ω and 200MΩ ranges)

### Diode test

**Accuracy:** 1.5%+3  
**Test current:** 1.0mA approx.  
**Open circuit voltage:** 3.0VDC typical

### Battery test

**Ranges:** 1.5V  
**Resolution:** 1mV  
**Accuracy:** 3.5%±2  
**Loaded Current:** 150mA typical for 1.5V range

### Overload protection

VAC/DC	200mV range	600VAC/DC rms for 15 sec
	>200mV range	600VAC/DC rms
Battery Test	1.5V range	0.5A/500V fuse (6.35X32mm) model RFM74
AAC/DC	<10A	0.5A/500V fuse (6.35X32mm) model RFM74
	10A	10A/500V fuse (6.35x32mm) model RFL83A
Resistance		500VAC/DC rms
Diode Test		500VAC/DC rms
Continuity		500VAC/DC rms



Fieldpiece Instruments, Inc.  
California, U.S.A.  
[www.fieldpiece.com](http://www.fieldpiece.com)

### Limited warranty

This meter is warranted against defects in material or workmanship for one year from date of purchase. Fieldpiece will replace or repair the defective unit, at its option, subject to verification of the defect.

This warranty does not apply to defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the instrument.

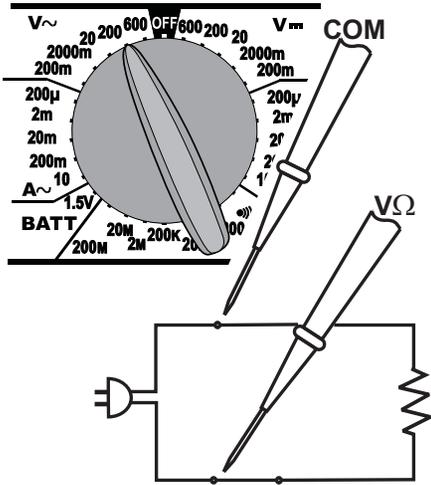
ANY IMPLIED WARRANTIES ARISING OUT OF THE SALE OF A FIELDPIECE INSTRUMENT'S PRODUCT, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE ABOVE. FIELDPIECE SHALL NOT BE LIABLE FOR LOSS OF USE OF THE INSTRUMENT OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXPENSES, OR ECONOMIC LOSS, OR FOR ANY CLAIM FOR SUCH DAMAGE, EXPENSES, OR ECONOMIC LOSS.

State laws vary. The above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

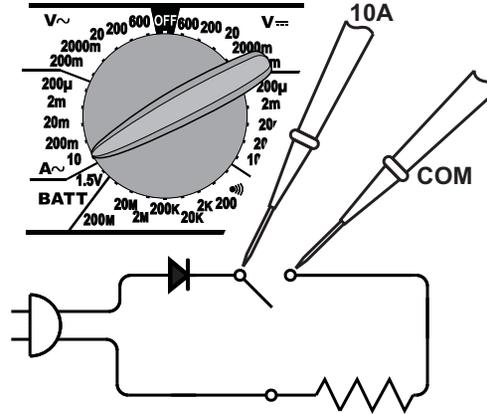
# How To Use Your Multimeter

For DC voltage and currents, set the meter to the DC parameter instead of AC as shown to the left. For all ranges and functions choose range just above value you expect. If display reads "OL" or "-OL" (overload), select a higher range. If display shows less than three numbers, select a lower range for better resolution.

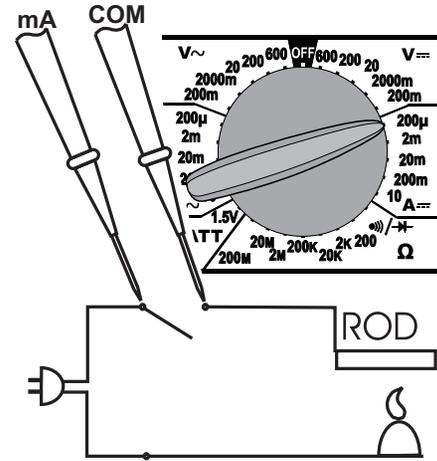
## Voltage



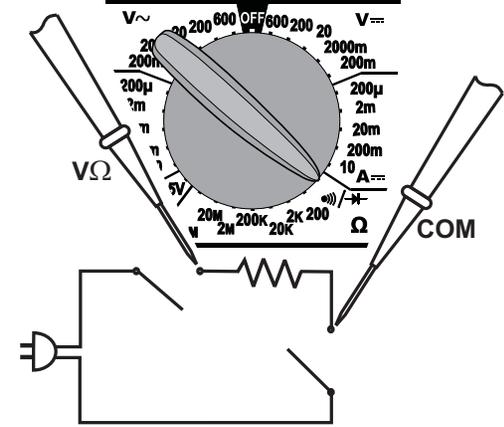
## Amps



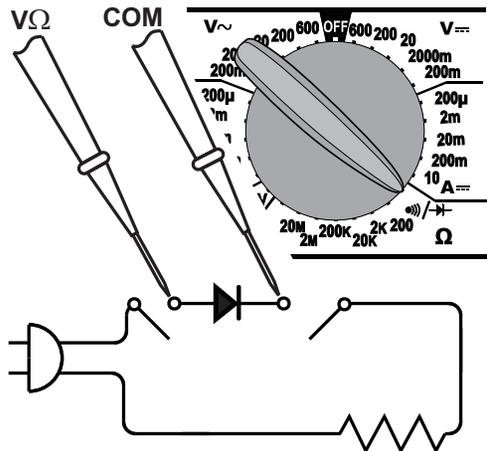
## Microamps



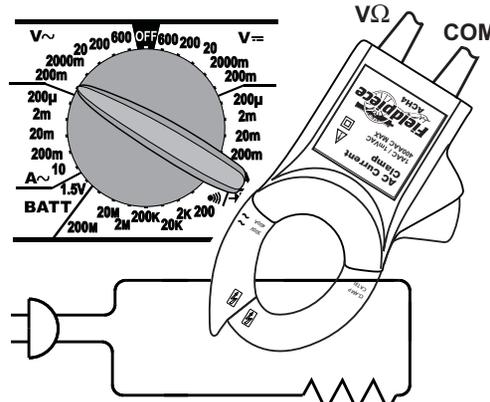
## Resistance & continuity beeper



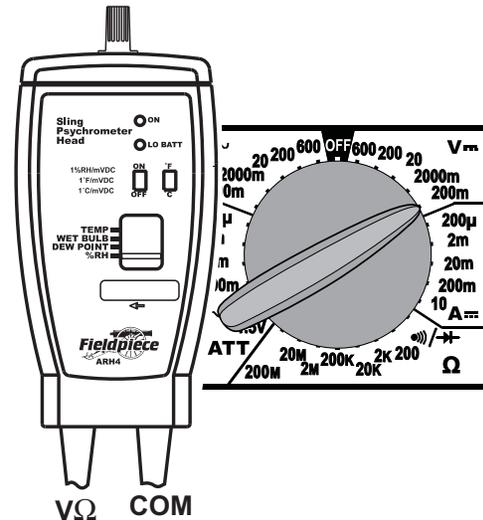
## Diode Test



## AC current clamp (ACH4 sold separately)



## Accessory Heads



## Optional accessory heads

Fieldpiece accessory heads convert the desired parameter into a millivolt signal. For example, the ARH4 converts one °F into one milli-volt DC. The multimeter must then be set to read millivolts DC. One exception is the ACH4 current clamp which must be set to read AC millivolts. Any digital multimeter with these scales can be used in conjunction with Fieldpiece Accessory Heads.

Use Fieldpiece deluxe silicone test leads (model# ADLS2) with removable probe tips to use the accessory heads with the LT83A.

