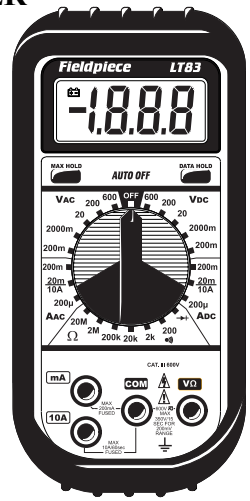
DIGITAL MULTIMETER Model LT83



OPERATOR'S MANUAL

General Description

The LT83 is an excellent low cost digital multimeter for testing basic electrical parameters including current, resistance and voltage. The LT83 works with all Fieldpiece accessories, when connected with our deluxe test leads. The body is made out of durable ABS plastic and comes standard with a rubber holster for added protection.

For Your Safety...

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 behind the finger guards on the probes.

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

General Specifications

Auto-power off: automatically turns off after approximately 25 minutes to extend battery life.
MAX HOLD and DATA HOLD: all ranges
Indicators: Continuity beeper, (<100Ω, <100msec, 3V typ), low battery, polarity. Overrange: "OL" is displayed.
Environmental: Operating temperature 32°F to 122°F, storage 0°F to 140°F with batteries removed, RH<70%.
Temperature coefficient: 0.05 x (accuracy) per °F (32° F to 65°F, 80°F to 122°F)
Measurement rate: 2.5 times/sec nominal.
Battery life: >300 hours typical (carbon-zinc battery)
Battery type: 9V NEDA 1604 type
Safety: Designed to IEC1010-1 Cat. III 600V, UL1244.

Functional Specifications

Accuracy specifications @ 74°F±8°F, relative humidity less than 75%. Accuracy specified as ±% of reading ± number of least significant digits.

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.

Unit Of Measure Multipliers

For your reference, the following symbols are often used to make measurement easier:

Symbol	Verbal	Multiplier
M	mega	X1,000,000
K	kilo	X1,000
m	milli	÷1,000
µ	micro	÷1,000,000

Optional Cases

ANC1 Four pocket case: holds meter and two accessory heads.
ANC2 Single pocket case: holds one head.
ANC3 Briefcase-style case: holds two meters, twelve heads, plus most hand tools needed for any job.
ANC5 Padded pouch-style case with handles.
ANC7 Padded case for SC series: holds clamp meter or meter with one head.
ANC8 Mid-size case: holds two meters with four accessory heads.

DC Voltage

Ranges: 200mV, 2000mV, 20V, 200V, 600V.
Resolution: 100mV.
Accuracy: 0.5%±1
Input impedence: 10MΩ

AC Voltage

Ranges: 200mV, 2000mV, 20V, 200V, 600V.
Resolution: 0.1mV.
Accuracy: (50Hz to 500Hz)
≤ 20V range 1.2%±4
≥ 200V range 2%±4
Input impedence: 10MΩ

DC Current (through meter)

Ranges: 200µA, 20mA, 200mA, 10A
Accuracy: 1%±1 (2%±3 for 10A range)
Voltage burden: 350mV (650mV for 200mA range, 850 mV for 10A range)
Resolution: 100nA

AC Current (through meter)

Ranges: 200µA, 20mA, 200 mA, 10A
Resolution: 100nA
Accuracy: (50Hz to 500Hz) 1.5%±4, 2.5% on 10A range.
Voltage burden: 350mV, 650mV for 200mA range, 850 mV for 10A range.

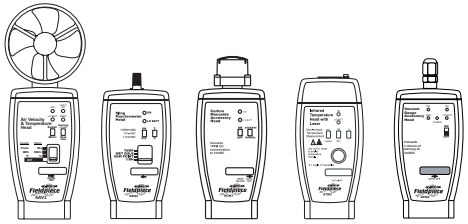
Optional Accessory Heads

Fieldpiece accessory heads convert the desired parameter in to a milivolt signal. For example, the ATH4 converts one °F into one mili-volt DC. The multimeter must then be set to read milivolts DC. An exception is the ACH current clamp which must be set to read AC milivolts. Any digital multimeter can be used in conjunction with Fieldpiece Accessories.

Use Fieldpiece deluxe silicone test leads (model ADLS2) to use the accessory heads with the LT83 or most other meters.

As of this printing, Fieldpiece offers the following accessory heads:

ATH4 Dual Temperature Head: measures temperatures with a resolution of 0.1°F.
ARH4 Digital Sling Psychrometer Head: measures wet bulb, dew point, RH% and temperature of ambient air.



AAV3 ARH4 ACM3 ATIR3 AVG2

Resistance (Ohms)

Ranges: 200Ω, 2KΩ, 20KΩ, 200KΩ, 2MΩ, 20MΩ
Resolution: 0.1Ω.
Accuracy: 1%±4 (2%±4 on 20MΩrange)
Open circuit voltage: 0.3V (3V on 200Ω range)

Diode Test

Displays forward voltage drop.
Test current: 1mA
Test voltage: 3VDC typical.
Accuracy: 1.5%±1

Overload Protection

V_{AC} & V_{DC}	200m Vrange	500VDC / 350VAC for 15 sec
	>200m Vrange	600VDC / 600VAC
A_{AC} & A_{DC}	mA input	0.5A / 500V (6.35X32mm) model RFM74
	10A input	10A / 600V (.25" x 1") model RFL83
Ohms (Ω)		500VDC / 500VAC
Diode		500VDC / 500VAC
Contiuity		500VDC / 500VAC

ACH AC Current Clamp: measures AC current up to 300A.
ACM3 Carbon Monoxide Head: measures the concentration of carbon monoxide in parts per million (PPM).
ACDC6 AC/DC Current Clamp: measures AC or DC current to 600A.
AAV3 Anemometer Head: measures air velocity and temperature.
AHV28 High Voltage Probe: safely measures high voltage to 28KVAC.
AUA2 Microamp and Milliamp Head: for microamps DC on flame rectifier diodes.
ATIR3 Non Contact Infra-red Temperature Head: measures temperature at any ditance.
ASH2 Superheat Head: measures pressure, temperature, and displays superheat.
AVG2 Vacuum Gauge Head: measures vacuum in microns of mercury.

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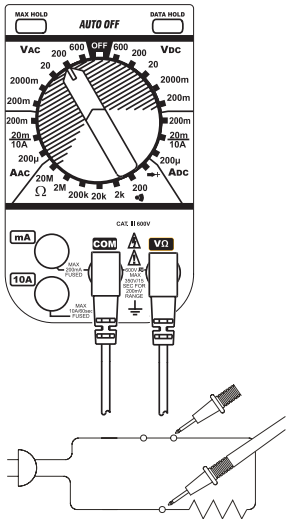
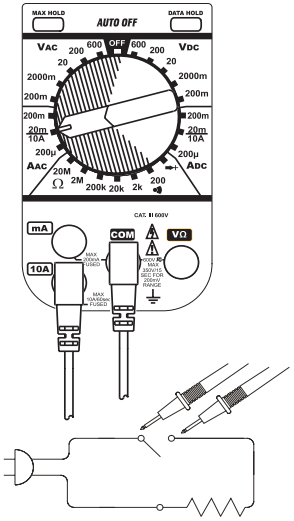
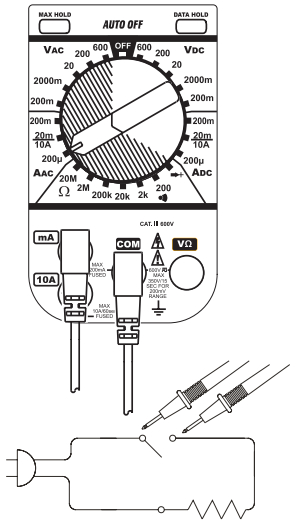
How To Use Your Multimeter:



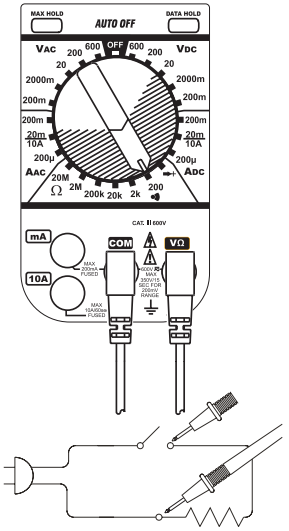
Voltage



Current >200µA

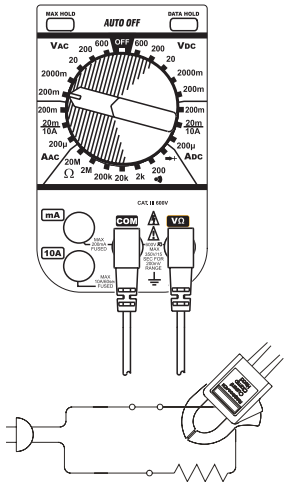


Current <200µA

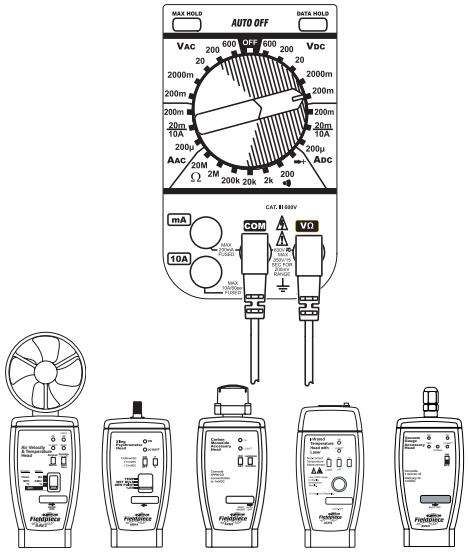


Resistance (ohms) & Continuity Beeper
(beeps at resistances <100Ω)

NOTE: For DC voltage and currents, set the meter to the DC parameter instead of AC as shown above. For all ranges and functions choose range just above value you expect. If display reads "1" (overload), select a higher range. If display shows less than three numbers, select a lower range for better resolution.



AC Current with Clamp
(Clamp coverts one amp of AC current into one milli-volt of AC voltage)



Accessories

User Maintance

All repairs must be performed by a factory service center or qualified instrument service personnel.

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.

Obtaining Service

Call Fieldpiece for an RMA# (714 257-9060) and send the meter freight prepaid to Fieldpiece Instruments. For warranty service also send proof of date of purchase. For out-of-warranty service send $25, check or money order. Do not send cash. The meter will be completely repaired or replaced, at the option of Fieldpiece, and returned to you via least cost transportation. Response time is typically 24 hours after receipt of meter.

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.