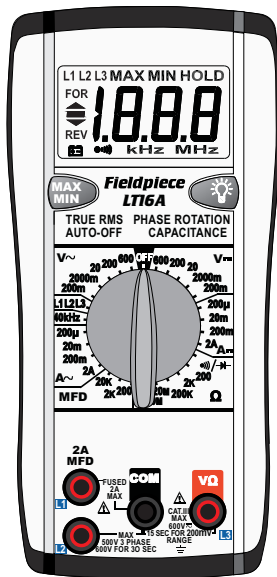


DIGITAL MULTIMETER

Model: LT16A



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 to 122°F (0 to 50°C) <70%RH
Storage environment (with batteries removed): -4 to 140°F (-20 to 60°C) <80%RH
Altitude: 6561.7 feet (2000m).
Battery life: 150 hours typical.
Battery type: 9V NEDA 1604 type
Stated accuracies: 74°F±8°F (23°C±4°C), 75%RH
Temperature coefficient: 0.1 x (specified accuracy) 1°F/°C (32 to 66°F (0-19°C), 82 to 122°F (28-50°C)).

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.

True RMS

Digital multimeters use one of two types of AC sensing. The most common is average sensing, normalized to a true RMS value of a sine wave. The other is true RMS sensing. The actual true RMS value is sensed for a wave form within the limits of the crest factor. True RMS is needed to calculate power. Either sensing method will give the same results on a clean sine wave but they may differ on a non-sinusoidal waveform.

General description

The LT16A is an excellent true RMS digital multimeter for testing motors and electrical equipment. The LT16A meter measures current, resistance, voltage, capacitance, frequency, continuity, and phase rotation. Test leads store within the meter and can connect the LT16A to Fieldpiece accessory heads. The body is made out of durable ABS plastic and comes with an alligator clip test lead for measuring phase rotation. It also has a backlight.

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



DC voltage

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

AC voltage True RMS (50Hz-500Hz)

Ranges: 200mV, 2000mV, 20V, 200V, 600V
Conversion: True RMS
Crest factor: Less than or equal to 3
Resolution: 0.1mV
Accuracy: 1.5%±5(200mV to 20V ranges), 2%±5(200V, 600V ranges)
Input impedance: 10MΩ

DC Current (through meter)

Ranges: 200µA, 20mA, 200mA, 2A
Resolution: 0.1µA
Accuracy: 1.0%±1 (200µA to 200mA ranges), 2.5%±1 (on 2A range)
Voltage burden: 800mV

AC Current True RMS (through meter)

Ranges: 200µA, 20mA, 200mA, 2A
Crest factor: Less than or equal to 3
Resolution: 0.1µA
Accuracy: 1.5%±5 (200µA to 200mA ranges), 3.0%±5 (on 2A range)
Voltage burden: 800mV

Frequency (autoranging)

Range: 10Hz to 40KHz
Resolution: 1Hz
Sensitivity: 3.5V rms min
Accuracy: 0.1%±3

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. CE UL61010-1. C-Tick certified.

Symbols used:

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

Resistance (ohms)

Ranges: 200Ω, 2kΩ, 200kΩ, 20MΩ, 2000MΩ
Resolution: 0.1Ω

Accuracy: 1.0%±4 (200Ω to 200kΩ ranges), 2.0%±4 (20MΩ range), (5.0%-10)+10 (2000MΩ range)

Open circuit voltage: 0.3VDC typical, (3.0VDC on 200Ω and 2000MΩ range)

Diode test

Accuracy: 1.5%±3
Test current: Approx. 1.0mA
Open circuit voltage: 3.0VDC typical

Capacitance (MFD)

Ranges: 200µF, 2kµF, 20kµF
Resolution: 0.1µF
Accuracy: 4%±10
Test frequency: 21Hz

Test voltage: <3.0V

Phase rotation

Range: 80VAC to 500VAC (45Hz to 450Hz)

This function enables you to connect 3-phase power to the correct leads of a motor to insure the motor turns in the intended direction. The terminals the motor are marked L1, L2, and L3. The wires supplying power are not marked. Connect meter jacks marked L1, L2, and L3 to the power wires in any order. Make sure all three leads are connected (L1, L2, and L3 will be "on"). "OK" indicates "for-

Overload protection

VAC/DC	200mV range	600VAC/DC rms for 15 sec
	>200mV range	600VAC/DC rms
Phase Rot.		600VAC/DC rms for 30 sec
AAC/DC		2A/600V fuse (6.35X25.4mm) model RFM70
Capacitance		0.25A/500V fuse (6.3X32mm) model RFM66
Resistance		500VAC/DC rms
Diode Test		500VAC/DC rms
Continuity		500VAC/DC rms

Service

Call Fieldpiece Instruments for one-price-fix-all warranty service pricing. Send check or money order for the amount quoted. Send the meter freight prepaid to Fieldpiece Instruments. Send proof of date and location of purchase for in-warranty service. The meter will be repaired or replaced, at the option of Fieldpiece, and returned via least cost transportation.

www.fieldpiece.com

ward". Connect L1 on the meter to L1 on the motor, L2 on the meter to L2 on the motor, etc. The motor will turn in the direction designed. If you get "ER" (reverse), swap any two leads. It should then say "OK."

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.

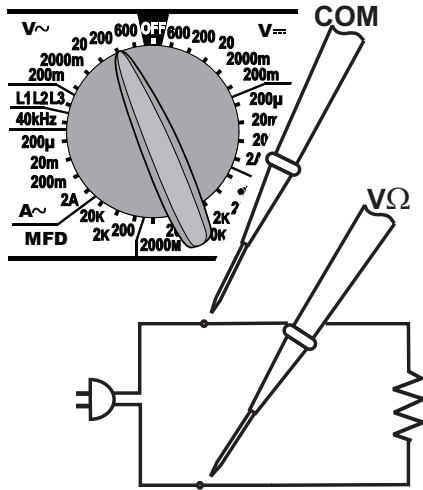
ANY IMPLIED WARRANTIES ARISING OUT OF THE SALE OF A FIELDPIECE INSTRUMENT'S PRODUCT, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE ABOVE. FIELDPIECE SHALL NOT BE LIABLE FOR LOSS OF USE OF THE INSTRUMENT OR OTHER INCIDENTAL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

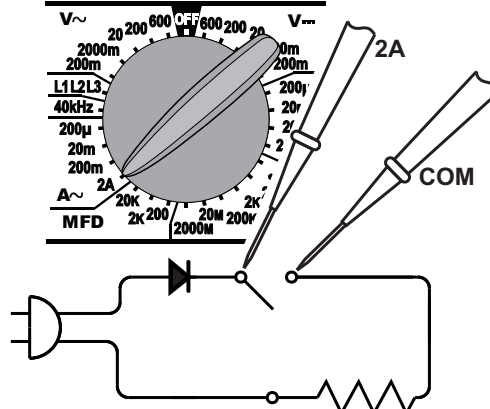
How To Use Your Multimeter

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.

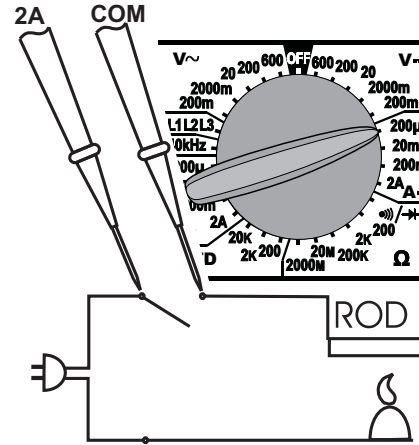
Voltage



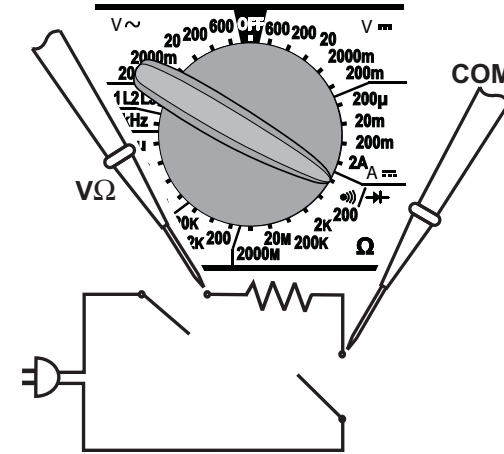
Amps



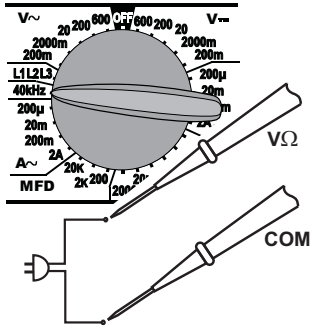
Microamps



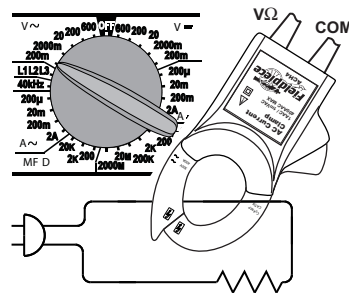
Resistance & Continuity Beeper



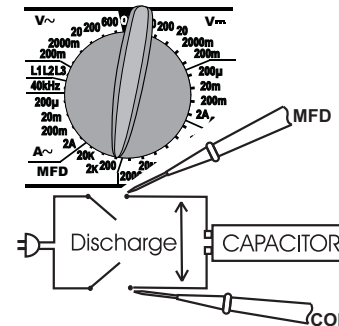
Frequency



AC Current Clamp



Capacitance (MFD)

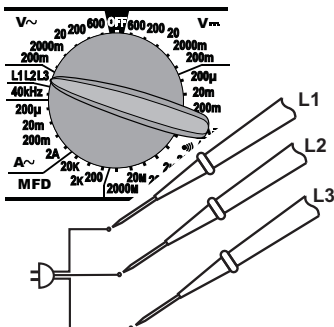


Optional accessory heads

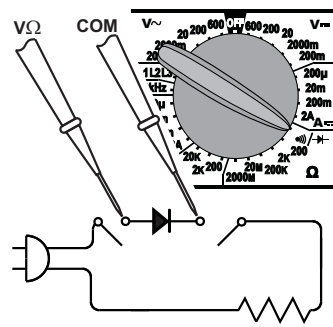
Fieldpiece accessory heads convert the desired parameter into a millivolt signal. For example, the ARH4 converts one °F into one milli-volt DC. The multimeter must then be set to read millivolts DC. One exception is the ACH4 current clamp which must be set to read AC millivolts. Any digital multimeter 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 LT16A.

Phase Rotation



Diode Test



Accessory Heads

