

Part No. 6551

LASER[®]

Mini AC/DC Digital Clamp Meter

CAT III 80A

Instructions



www.lasertools.co.uk

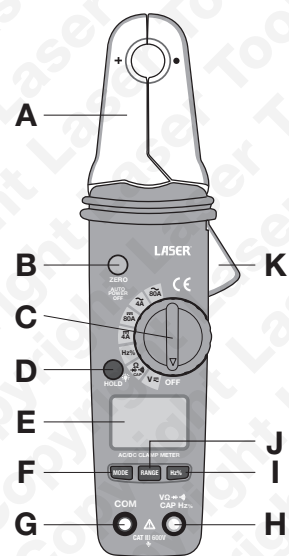
Introduction

The Laser 6551 is a versatile instrument and ideal for use in the installation, maintenance or checking of AC or DC electrical systems and equipment. Capable of measuring AC and DC current of up to 80 amps, and AC and DC voltage of up to 600 volts. It is also capable of measuring resistance, diode function, continuity, frequency, duty cycle and capacitance test with inputs of up to 250 volts AC or DC.

Input Limits

Function	Maximum Input
Amps AC, Amps DC	80A
Volts DC, Volts AC	600V DC/AC
Resistance, Diode, Continuity, Frequency, Duty Cycle, Capacitance Test	250V DC/AC

Components



Ref.	Description
A	Current clamp
B	ZERO button
C	Rotary function switch
D	Data HOLD & Backlight
E	LCD Display
F	MODE select button
G	COM input jack
H	V Ω Hz% jack
I	Hz% button
J	RANGE select button
K	Clamp trigger

Display

Refer to Fig. 1: The clear LCD digital display shows symbols corresponding to the function selected by the rotary function switch and (in the Ω and V function positions), the mode and range selected. DC or AC is shown as is a low battery power meter symbol.

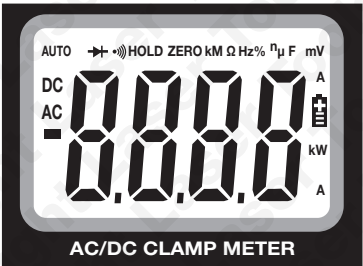


Fig. 1

Instructions

Read and understand all the warnings and precautions listed in the **Precautions** section of this instruction booklet prior to using the digital clamp meter. Set the rotary function switch to OFF when the meter is not in use.

RANGE button: Auto Range and Manual Range:

When first switched on, the meter is in the auto ranging mode; this automatically selects a measurement range based on voltage present. Press the **RANGE** button (J), to change to manual ranging. Each press of the **RANGE** button will step to the next range as indicated by the units displayed and the position of the decimal point. Manual ranging does not function in current, wattage, frequency, diode and continuity check functions.

Test Leads:

- First insert the black lead into the **COM** jack.
- Next insert the red lead into the **VΩ** jack.
- When finished, remove the leads in reverse order: red first, then black.
- When testing, connect the black lead first, red lead second.
- Ensure that the test leads are **disconnected** from the meter before making **current clamp measurements**.

CAUTION: Do not let fingers touch the lead tips. Do not allow the tips to contact one another.

Instructions

Current Measurement (AC):

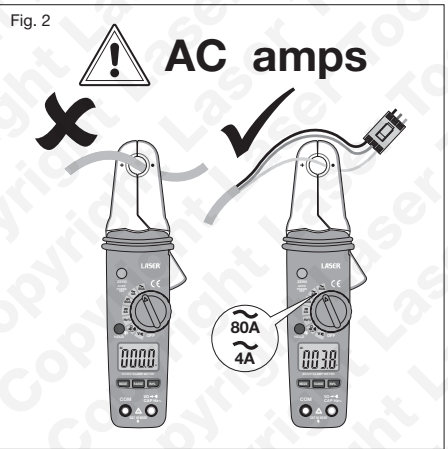


Fig. 2

Voltage Measurement (DC):

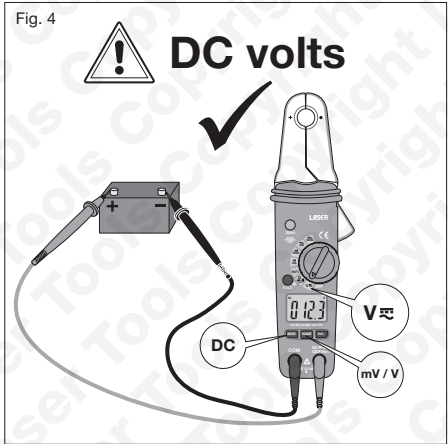
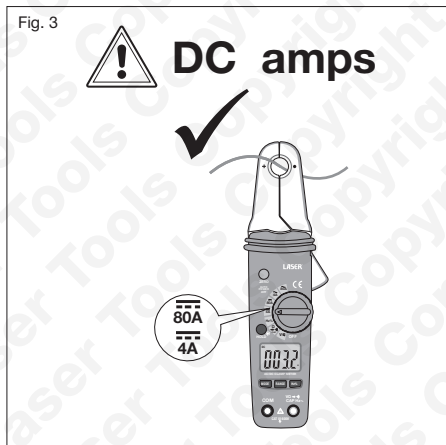


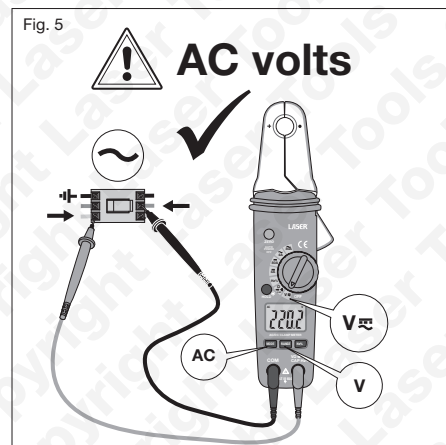
Fig. 4

Instructions

Current Measurement (DC):



Voltage Measurement (AC):



Instructions

Resistance and Continuity Measurements:

- With test leads attached, set rotary function switch (C) to Ω \rightarrow CAP position.
- Use MODE button (F) to select resistance (Ω) on display.
- Disconnect one side of component to be tested.
- Touch test probes across the circuit of component to test and read off resistance figure from display.
- For continuity, if the resistance is less than $< 150\Omega$, tone will sound.

Diode Measurements:

- With test leads attached, set rotary function switch (C) to Ω \rightarrow CAP position.
- Use MODE button (F) to select diode \rightarrow on display.
- Touch test probes to the diode to be tested. Forward voltage will indicate 0.4V to 0.7V. Reverse voltage will display **OL**.
- Shorted devices will indicate 0mV and an open device will indicate **OL** in both directions.

Capacitance Measurements:

- **CAUTION:** To avoid electric shock, **disconnect power to the unit under test and discharge all capacitors** before taking any capacitance measurements. Remove the batteries and/or unplug the line cords.
- With test leads attached, set rotary function switch (C) to Ω \rightarrow CAP position.
- Touch test probes to the capacitor to be tested.
- Read the capacitance value in the display.

Instructions

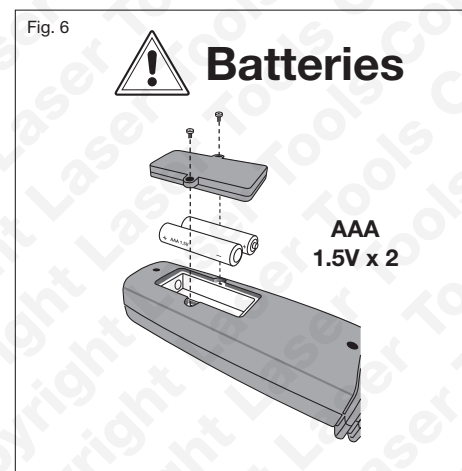
Frequency and % Duty Cycle Measurements:

- With test leads attached, set rotary function switch (C) to Hz% position.
- Select Hz or % Duty with the **Hz%** button (I).
- Touch test probes to the circuit under test and read off frequency from display.

Data Hold and Backlight:

- To hold (freeze) the LCD reading, press the **Data HOLD** button (D). The **HOLD** icon appears on the display. This stable measurement can be viewed after the measurement is complete. Press the **HOLD** button again to return to normal operation.
- The backlight function illuminates the display in low light conditions. To turn on, press and hold the **HOLD** button for one second. Press and hold again to switch off.
- The normal **HOLD** feature works as normal when the backlight is switched on.

Battery Replacement



Precautions

Improper use of this meter can cause damage, shock, injury or death. Read and understand this instruction leaflet before operating the meter.

- Do not exceed the maximum allowable input range of any function.
- Do not apply voltage to the meter when resistance function is selected.
- Set the rotary function switch to OFF when the meter is not in use.
- Set functions to the appropriate position before measuring.
- When measuring volts do not switch to current or resistance modes.
- When changing ranges using the RANGE selector switch, always disconnect the test leads from the circuit under test.
- Use great care when making measurements if the voltages are greater than 25V AC rms or 35V DC; these voltages are considered a shock hazard.
- Always discharge capacitors and remove power from the device under test before carrying out diode, resistance or continuity tests.

Inspect the condition of the test leads and the meter itself for any wear or damage before operating the meter. Repair or replace any wear or damage before use. Remove the battery if the meter is to be stored for long periods.

Specifications

Clamp size:	Opening 0.9" (23mm) approx
Diode Test:	Test current of 0.3mA typical; Open circuit voltage 1.5V DC typical.
Continuity Check:	Threshold <150Ω; Test current < 1mA
Low Battery Indication:	Symbol on LCD display
Overrange Indication:	"OL" is displayed
Measurements Rate:	2 per second, nominal
Input Impedance:	7.8MΩ (VDC and VAC)
Display:	4000 counts LCD
Operating Temperature:	14 to 122°F (-10 to 50°C)
Storage Temperature:	-22 to 140°F (-30 to 60°C)
Relative Humidity:	90%(0°C to 30°C); 75%(30°C to 40°C); 45%(40°C to 50°C)
Altitude Operating:	3000m; Storage 10,000m
Over voltage:	Category III 600V
Battery:	Two 1.5V "AAA" batteries
Auto OFF:	approx. 25 minutes
Dimensions/Weight:	200mm x 50mm x 35mm /200g
Safety:	For indoor use and in accordance with Overvoltage Category II, Pollution Degree 2. Category II includes local level, appliance, portable equipment, etc., with transient overvoltages less than Overvoltage Cat.III.

Specifications

Function	Range & Resolution	Accuracy (% of reading)
DC Current	4.0 A DC	± (2.8% + 10 digits)
	80.0 A DC	± (3% + 8 digits)
AC Current (50/60Hz)	4.0 A AC	± (3.0% + 10 digits)
	80.0A AC	± (3.0% + 15 digits)
DC Voltage	400.0 mV DC	± (1.0% + 15 digits)
	4.000 V DC	± (1.0% + 3 digits)
	40.00 V DC	± (1.5% + 3 digits)
	400.0 V DC	
	600 V DC	
AC Voltage (50/60Hz)	400.0 mV AC	± (1.0% + 30 digits)
	4.000 V AC	± (2.0% + 5 digits)
	40.00 V AC	
	400.0 V AC	
	600 V AC	± (2.0% + 5 digits)
Resistance	400.0 Ω	± (1.0% + 4 digits)
	4.000KΩ	± (1.5% + 2 digits)
	40.00KΩ	
	400.0KΩ	
	4.000MΩ	± (2.5% + 3 digits)
Capacitance	40.00nF	±(5.0% reading + 30 digits)
	400.0nF	±(3.0% reading + 5 digits)
	4.000μF	±(3.5% reading + 5 digits)
	40.00μF	
	100.0μF	
Frequency	5.000Hz	±(1.5% reading + 5 digits)
	50.00Hz	±(1.2% reading + 2 digits) Sensitivity: 10Vrms min. @ 20% to 80% duty cycle
	500.0Hz	
	5.000kHz	
	50.00kHz	
	500.0kHz	
	5.000MHz	
Duty Cycle	10.00MHz	
	0.5 to 99.0%	±(1.2% reading + 2 digits)
Pulse width: 100μs - 100ms, Frequency: 5Hz to 150kHz; Sensitivity: 10Vrms min.		
Accuracy: ± (4.5% reading + 1mV) Output impedance: approx 3KΩ		

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If applicable, the applications database and any instructional information provided has been designed to offer general guidance for a particular tool's use and while all attention is given to the accuracy of the data no project should be attempted without referring first to the manufacturer's technical documentation (workshop or instruction manual) or the use of a recognised authority such as Autodata.

It is our policy to continually improve our products and thus we reserve the right to alter specifications and components without prior notice. It is the responsibility of the user to ensure the suitability of the tools and information prior to their use.



Safety First. Be Protected.

**RoHS
Compliant**



Note: Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.



Guarantee

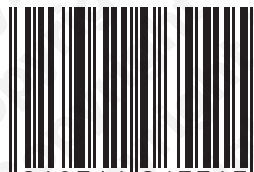
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