

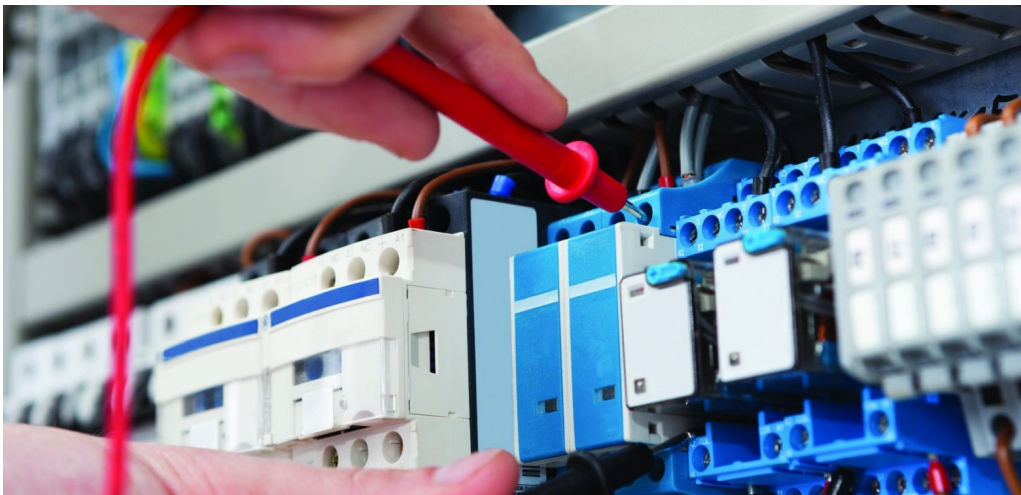


DIGITECH Digital Clamp Meter Multimeter User Manual

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1000 Amp AC/DC
SPECIALIST
Clampmeter User Manual



QM-1634

Thank you for purchasing this 1000 Amp AC/DC Clamp Meter. The reading range of up to 1000A makes this clamp meter ideal for electrical fitters and contractors working with high currents. Autoranging by default, the clamp meter also features true RMS for accurate readings. Utilize the data hold and relative measurement modes to log and compare data. The backlight will assist you to view various readings in low-light conditions.

Please familiarise yourself with the functions of the clamp meter before use. We recommend retaining this manual for ease of reference.

- Improper use of this meter can cause damage, shock, injury, or death.
- Always remove the test leads before replacing the battery or fuses.
- Before using the meter, please inspect the condition of the test leads and the meter itself for any damage. If damage is present, please discontinue use.
- Do not measure voltage if the voltage on the terminals exceeds 1000V above earth ground.
- Use great care if voltages are greater than 30VAC RMS. Anything above this is considered a shock hazard.
- Do not apply voltage to the meter when the resistance is selected.
- Do not exceed the maximum limits of the input values shown in the specification tables on pages 10-12 of this manual.
- Remove the batteries from the meter if they will be unused for an extended period of time.

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FUNCTIONS

Max. Display	6000 Count
Basic Accuracy	0.5%
DC Voltage Range	600mV – 1000V
AC Voltage Range	600mV – 750V
DC Current Range	60A – 1000A
AC Current Range	60A – 1000A
Resistance	600Ω – 60MΩ
Capacitance	10nF – 100mF
Diode Test	Yes
Continuity	Yes
Frequency	10Hz – 10MHz
NCV (Non-Contact Voltage) Detection	Yes
Duty Cycle	Yes
Temperature	-20°C – 1000°C
Relative Measurement	Yes
Data Hold	Yes
Autoranging	Yes
Auto Power Off	Yes



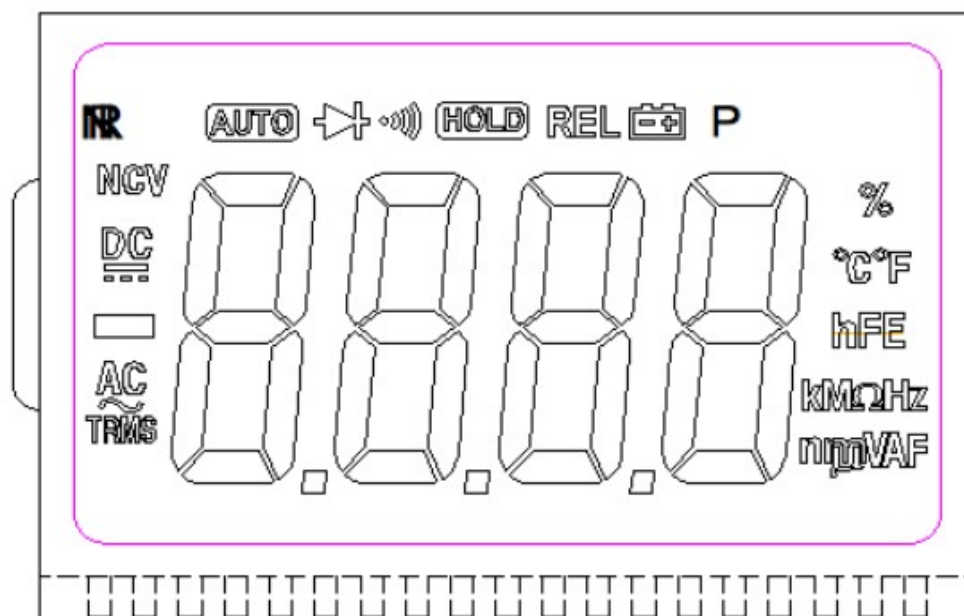
The battery compartment is at the rear of the multimeter.

FUNCTIONS

NCV Detection	Move the rotary switch to NCV position, hold the meter once detect the voltage, the meter will be alarmed and LED flash
Current Clamp	Clamp the cable once measuring the current, the current reading will be displayed in LCD
Flash Light	Turn on the flashlight and the light bulb will be lighted
NCV Indicator	Once the NCV function detects the voltage, the LED indicator will be twinkled
Data Hold	Push this button to hold the readings in LCD, push one more time to exit the data hold function
Clamp Opening Trigger	The max. jaw opening size is 23mm
Rotary Switch	Move the rotary switch for selecting the proper range and function
Backlight Button	Push the button to activate the LCD backlight, push one more time to exit. Once the rotary switch move to the current measurement range, push this button can also turn on the flashlight
LCD Display	Readings and measurements are taken by the clamp meter appear in this area.
Input Jacks	<ul style="list-style-type: none"> • V/TEMP: Positive input jack • COM: Negative input jack

FUNCTION BUTTONS

SEL	Push SEL to shift AC/DC, °C / °F, resistance, diode & continuity test
RAN	Push this button to switch the proper range under-voltage and resistance measurement mode
HOLD	Push this button to hold the readings in LCD, press again to exit the data hold function
Hz/%	Under AC voltage measurement, press Hz/% to selection function from voltage frequency to duty cycle
REL	Under DC current measurement, press to measure relative current. Under AC current measurement hold the button down to activate inrush/surge current measurement. Hold the button down again to exit the function.



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
HOLD	Data Hold		Low Voltage Indication
	Diode Test		Continuity
NCV	Non-Contact Voltage Detection	INR	Inrush Current
mV V	Unit of Voltage	uA mA A	Unit of Current
Hz KHz MHz	Unit of Frequency	pF nF uF mF	Unit of Capacitance
DC	Direct Current	AC	Alternating Current
°F	Fahrenheit Temperature	°C	Centigrade Temperature
%	Duty Cycle Measurement	REL	Relative Value Measurement
TRMS	True RMS Measurement		

OPERATING INSTRUCTIONS

NOTE: Read and understand all Warning and Caution statements in this operation manual prior to using this meter. Set the rotary switch to the OFF position when the meter is not in use.

CURRENT MEASUREMENTS

WARNING:

- Disconnect the test leads before making clamp measurements
- To avoid electrical shock and/or damage to the meter, do not attempt to take any voltage measurement that might exceed 600V.

1. Set the rotary switch to the proper current range, select the correct range based on measurement.
2. Press the clamp opening trigger to open the jaws and fully enclose one conducting wire.

3. Read the measured current value in the LCD display.
4. If the display shows “**OL**”, which means overload, should select the higher range of measurements.
5. To shift the AC or DC current by pressing the SEL button.

DC VOLTAGE MEASUREMENTS

WARNING:

- The max. input DC voltage is 600V DC, to avoid electrical shock and/or damage the meter, do not attempt to take any voltage measurement that might exceed 600V DC.


1. Set the rotary switch to the position.
2. Insert the black test lead banana plug into the **COM** jack, insert the red test lead banana plug into INPUT jack.
3. Touch the black test probe tip to the negative side of the circuit; touch the red test lead probe tip to the positive side of the circuit.
4. Read the voltage value in the display.

NOTE: Unstable display may occur, especially at the low voltage range measurement (like 200mV range), even no test leads insert at input terminals, and it is the normal situation and not influences the accuracy.

AC VOLTAGE MEASUREMENTS

WARNING:

- The max. input DC voltage is 600V DC, to avoid electrical shock and/or damage the meter, do not attempt to take any voltage measurement that might exceed 600V DC

1. Set the function switch to the **V**  position.
2. Insert the black test lead banana plug into the COM jack, insert the red test lead banana plug into INPUT jack.
3. Touch the black test probe tip to the negative side of the circuit; touch the red test lead probe tip to the positive side of the circuit.
4. Read the voltage value in the display.

NOTE: The unstable display may occur, especially at the low voltage range measurement (like 2V range), even no test leads insert at input terminals, and it is a normal situation and not influences the accuracy.

RESISTANCE MEASUREMENT

WARNING:

- To avoid electric shock, disconnect power to the unit under test and discharge all capacitors before taking any resistance measurements

1. Set the function switch to $\rightarrow \Omega$ position and press the **SEL** button to select the range.
2. Insert the black test lead banana plug into the **COM** jack, insert the red test lead banana plug into the **INPUT** jack.
3. Touch the black test probe tip to one side of the resistance of the under test; touch the red test probe tip to the other side.
4. Read the resistance value in the display.

DIODE TEST



WARNING:

- To avoid electric shock, disconnect power to the unit under test and discharge all capacitors before taking the diode test

1. Set the function switch to $\rightarrow \Omega$ position and press the **SEL** button to choose diode test mode $\rightarrow \nabla$
2. Insert the black test lead banana plug into COM jack, insert the red test lead banana plug into the INPUT jack.
3. Place the red test lead on the anode of diode and black test lead on the cathode of diode.
4. The meter will show the approx. the forward voltage of diode. Reverse voltage will indicate OL.

CONTINUITY CHECK



WARNING:

- To avoid electric shock, disconnect power to the unit under test and discharge all capacitors before taking continuity check

1. Set the function switch to $\rightarrow \Omega$ position and press the **SEL** button to choose continuity check mode $\rightarrow \nabla$
2. Insert the black test lead banana plug into **COM** jack, insert the red test lead banana plug into **INPUT** jack.
3. Touch the test probe tips across the circuit or component under test.
4. If the resistance is $<30\Omega$, the audible signal will be sounded.

TEMPERATURE MEASUREMENT

1. Set the function switch to $^{\circ}\text{C}$ $^{\circ}\text{F}$ position, the value of environmental temperature shows in the display. Press **SEL** button to shift $^{\circ}\text{C}$ mode or $^{\circ}\text{F}$ mode.
2. Insert the red terminal of the temperature probe into the **INPUT** jack, black terminal into **COM** jack, place the temperature probe tip where needed to measure.
3. Read the temperature on the display

RESISTANCE MEASUREMENT



WARNING:

Due to external interference source, this function may cause wrong voltage detection, the detection result is for reference only. Set the function switch to NCV position, contact the top part of the meter with the circuit under test, the indicating LED will be flashed and an audible signal will be sounded once detecting the voltage, the signal

strength showed in LCD display.

NOTE:

- The detection result is for reference, do not determine the voltage by NCV detection ONLY
- Detection may interfere by socket design, insulation thickness and other variable conditions
- The external interference sources, such as flashlight, motor, etc, may cause the wrong detection

LINE (LIVE WIRE RECOGNITION) TEST

Set the rotary switch to LINE position, connect the black test lead to the COM jack and the red test lead to V Ω jack, hold the insulation part of black test lead and not put into the circuit under measurement; contact the red test lead to the living wire, the buzzer of the meter will be activated and red LED will be flickered, when the red test lead connects the earth line, the buzzer does not sound and LED will not flicker.

NOTE: When the circuit is in serious leakage (approx. over 15V), the red test lead even contacts the earth line, the buzzer of the meter will be sounded, and the LED will be flickered.

CAPACITANCE MEASUREMENT



WARNING:

- To avoid electric shock, disconnect power to the unit under test and discharge all capacitors before taking capacitance measurement.

1. Set the rotary switch to Ω position and press the **SEL** button to choose \overline{H} mode.
2. Insert the black test lead banana plug into **COM** jack, insert the red test lead banana plug into **INPUT** jack.
3. Touch the test probe tips across the capacitance under test.
4. Read the capacitance value in the display.

MEASUREMENT SPECIFICATIONS

Accuracy: \pm (%readings + digit), warranty period: 12 months)

The following guide is based on the environmental temperature of 18-28°C and humidity <80%.

DC VOLTAGE

RANGE	RESOLUTION	ACCURACY
600mV	0.1mV	\pm (0.5% reading + 3 digits)
6V	0.001V	\pm (0.8% reading + 5 digits)
60V	0.01V	
600V	0.1V	
1000V	1V	\pm (1.0% reading + 5 digits)

Input impedance: 10M Ω ; Max. input voltage: 1000V DC / 750V AC RMS

AC VOLTAGE

RANGE	RESOLUTION	ACCURACY
600mV	0.1mV	$\pm(1.0\% \text{ reading} + 10 \text{ digits})$
6V	0.001V	$\pm(1.0\% \text{ reading} + 5 \text{ digits})$
60V	0.01V	
600V	0.1V	
750V	1V	$\pm(1.2\% \text{ reading} + 5 \text{ digits})$

Input impedance: 10M Ω ; Max. input voltage: 1000V DC / 750V AC RMS Frequency response: TRMS40Hz-1kHz

DC CURRENT

RANGE	RESOLUTION	ACCURACY
60A	0.01A	$\pm(2.5\% \text{ readings} + 10 \text{ digits})$
600A	0.1A	
1000A	1A	

AC CURRENT

RANGE	RESOLUTION	ACCURACY
60A	0.01A	$\pm(2.5\% \text{ reading} + 10 \text{ digits})$
600A	0.1A	
1000A	1A	



Frequency response: TRMS 40Hz-1kHz

RESISTANCE

RANGE	RESOLUTION	ACCURACY
600 Ω	0.1 Ω	$\pm(1.0\% \text{ reading} + 10 \text{ digits})$
6k Ω	0.001k Ω	$\pm(0.8\% \text{ reading} + 5 \text{ digits})$
60k Ω	0.01k Ω	
600k Ω	0.1k Ω	
6M Ω	0.001M Ω	
60M Ω	0.01 Ω	$\pm(2.0\% \text{ reading} + 10 \text{ digits})$

Overload protection: 250V DC or 250V AC RMS

DIYODE AND CONTINUITY

RANGE	FUNCTION
	Display approximate forward voltage of the diode, the reverse shows OL
	Built-in buzzer will be sounded if resistance is less than 30Ω

CAPACITANCE

RANGE	RESOLUTION	ACCURACY
10nF	0.01nF	±(4.0% reading + 25 digits)
100nF	0.1nF	±(4.0% reading + 15 digits)
1μF	0.001μF	
10μF	0.01μF	
100μF	0.1μF	
1mF	1μF	±(5.0% reading + 25 digits)
10mF	10μF	
100mF	100μF	

Overload protection: 250V DC or 250V AC RMS

FREQUENCY

RANGE	RESOLUTION	ACCURACY
10Hz	0.01Hz	±(0.5% reading + 2 digits)
100Hz	0.1Hz	
1kHz	0.001kHz	
10kHz	0.01kHz	
100kHz	0.1kHz	
1MHz	0.001MHz	
10MHz	0.01MHz	

Overload protection: 250V DC or 250V AC RMS

TEMPERATURE

RANGE	-20°C – 1000°C	
Resolution	1°C	
Accuracy	-20°C – 0°C	±(5% reading + 4 digits)
	0°C – 400°C	±(2% reading + 3 digits)
	400°C – 1000°C	±(3% reading + 3 digits)
RANGE		0°F – 1800°F
Resolution	1°F	
Accuracy	-0°F – 50°F	±(5% reading + 4 digits)
	50°F – 750°F	±(2% reading + 3 digits)
	750°F – 1800°F	±(3% reading + 3 digits)

Overload protection: 250V DC or 250V AC RMS

MAINTENANCE



WARNING:

- To avoid electric shock, disconnect the test leads from any source of voltage before removing the back cover or the battery or fuse covers
- To avoid electric shock, do not operate the meter until the battery and fuse covers are in place and fastened securely

CLEANING AND STORAGE

Periodically wipe the case with a damp cloth and mild detergent, do not use abrasives or solvents. If the meter is not be used for a long time, remove the battery and store it separately.

BATTERY INSTALLATION

To avoid false readings, replace the battery as soon as the battery indicator appears.

1. Turn the power off and disconnect the test leads from the meter.
2. Open the rear battery cover by using a screwdriver.
3. Insert the battery into the battery holder, observing the correct polarity.
4. Put the battery cover back in place, secure it with the screws.

SPECIFICATIONS

Operating Temperature:	0~40°C
Operating Humidity:	< 80%RH
Storage Temperature:	-10°C~60°C
Storage Humidity:	< 70%RH (Remove Battery)
Max Input Voltage	1000VRMS
Measuring Principle	Double Integral A/D Conversion
Measurement Rate:	2 per second, nominal
Display	3 3/4 LCD display, max. reading 5999
Range Selection	Auto Range Selection
Over Range Indication	“OL”
Power Supply:	3 x AAA
Clamp Size:	23mm opening (approx)
Dimensions:	194(H) x 72(W) x 35(D)mm
Weight:	230g (including battery)

BOX CONTENTS

1 x Clampmeter
 1 x Test Leads
 1 x Carry Case
 1 x Temperature Probe
 1 x User Manual

WARRANTY

This product is protected by a lifetime warranty (from the date of purchase) covering all product manufacturing defects/faults that may occur within this timeframe. This warranty does not cover damage caused by neglect, misuse, contamination, alteration, accident or abnormal conditions of operation or handling, including failures caused by use outside of the product's specifications, or the normal wear and tear of mechanical components.

In the event that you suspect your product is defective/faulty, cease using the product when the suspected defect/fault arises and return the product along with proof of purchase to the place of purchase or distributor for assessment. Distributor contact details are available below.

If the assessment concludes that the product is indeed defective/faulty, the product will either be repaired or replaced at no cost to you. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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Documents / Resources



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References

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