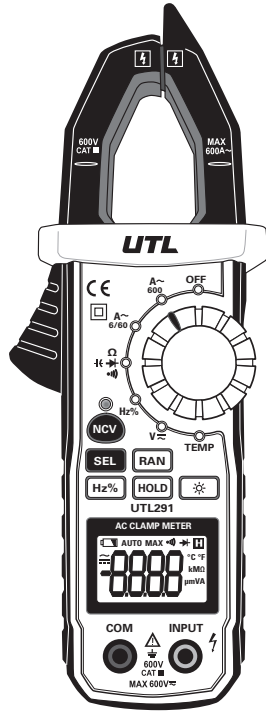


Instruction Manual
English



PROFESSIONAL VALUE

GENERAL SPECIFICATIONS

- ▶ Display: LCD 3-5/6 Digits 6000 count
- ▶ Refresh Rate: 3 times/sec
- ▶ Overrange display: "OL"
- ▶ Power battery: DC1.5V x3 SIZE AAA.
- ▶ Battery Life: Approx. 100 hours
- ▶ Clamp jaw opening: 1.02in (26mm)
- ▶ Operating Elevation Up to 6571.7 ft. (2000m)
- ▶ Operating Temperature: 32°F to 104°F (0°C to 40°C) at < 75% R.H
- ▶ Storage Temperature: 14°F to 140°F (-10°C to 60°C) at < 80% R.H
- ▶ Accuracy Temperature: Stated Accuracy at 73°F ± 41°F (23°C to ± 5°C) < 75% R.H
- ▶ Dimensions: 8.66x3.19x1.6in (220x81x41mm)
- ▶ Weight: about 0.70lbs. (318g) (battery installed)
- ▶ Certifications: CE, C-ETL-US
- ▶ Standards: IEC61010-1, IEC61010-2-032, Double Insulated
- ▶ Operating Category: 600V CAT III
- ▶ Pollution degree: 2.

BUTTON OPERATION

- NCV** **Non-Contact Voltage Detection** key, is used to detect power with a sensor located at the tip of the clamp head and indicates positive response with an audible alarm and visual LED indicator light just above the "NCV" button. See reverse side for instructions.
- SEL** **Selection** key, switches measurement functions that share a selector position. By pressing "SEL" key to toggle between AC and DC Volts, Diode, Continuity, Capacitance and Resistance.
- RAN** **Range** key, press "RAN" key; to toggle between Automatic Ranging and Manual Ranging. "Auto" icon will show on the display. Press and hold "RAN" to return to Auto Ranging.
- Hz%** **Frequency / Duty Ratio** selection key. Pressing this key can select Voltage / Frequency / Duty Ratio or Current / Frequency / Duty Ratio pending selector position.
- HOLD** **Hold** key, press "HOLD" key; the reading will be locked and "HOLD" icon will display on display. Press "HOLD" key again to release.
- ☀** **Backlight** key: Press and hold "Backlight" key for 2 seconds to turn on. Press and Hold again to turn off. The Worklight only turns on with the Backlight in AC Current mode.

ELECTRIC SYMBOLS & METER ICONS

	Important safety information		Ground wire
	Danger High Voltage		Protected for High Voltage
	AC (Alternating Current)		Double insulation protection
	DC (Direct Current)		Complies with EU Regulations
	AC or DC	AUTO	Auto Ranging
	Negative Polarity		Low Battery
	Resistance		Data Hold
	Diode		Backlight
	Continuity	O.L.	Overload: Range Exceeded
	Micro 10-6	k	Kilo 103
	Milli 10-3	M	Mega 106

WARRANTY

The UTL Digital Clamp-on Meter (UTL291) is warranted to be free from defects in materials and workmanship for a period of one year from the date of purchase. This warranty does not cover fuses, disposable batteries, or damage from drops, neglect, misuse, alteration, contamination, or abnormal conditions of operation or handling. Resellers are not authorized to extend any other warranty on behalf of UTL. To obtain service during the warranty period, contact your nearest UTL service center directly. For full warranty details visit us online www.utltest.net.



UTL Universal Trade Line
800-547-5740
www.utltest.net

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ELECTRICAL SPECIFICATIONS

DC VOLTAGE

Range	Resolution	Accuracy
600mV	0.1mV	
6V	1mV	± (0.8% + 2 dgts)
60V	10mV	
600V	1V	± (1.0% + 2 dgts)

Overload protection: 600V RMS

AC VOLTAGE

Range	Resolution	Accuracy
600mV		
6V	100mV	± (1.0% + 10 dgts)
60V		
600V	1V	± (1.2% + 10 dgts)

Overload protection: 600V RMS

Frequency Range: 50Hz ~ 60Hz

AC CURRENT

Range	Resolution	Accuracy
6A	0.001A	
60A	0.01A	± (2.5% + 10 dgts)
600A	0.1A	

Frequency Range: 50Hz ~ 60Hz

RESISTANCE

Range	Resolution	Accuracy
600Ω	0.1Ω	
6kΩ	1Ω	
60kΩ	10Ω	± (1.2% + 2 dgts)
600kΩ	100Ω	
6MΩ	1kΩ	
60MΩ	10kΩ	± (2.0% + 2 dgts)

Overload protection: 250V RMS

DIODE

Range	Test Current	Open Test Circuit
0.5 to 0.7V	1.2mA	2.7V

Overload protection: 250V RMS

DUTY CYCLE

Range	Resolution	Accuracy
0.5 to 99%	0.10%	± (1.5% + 15 dgts)

CONTINUITY

Audible Threshold	Open Test Circuit	Resolution
≤ 50Ω	1.0V	0.1Ω

Overload protection: 250V RMS

FREQUENCY

Range	Resolution	Accuracy
9.99Hz	0.001Hz	
99.99Hz	0.01Hz	
999.9Hz	0.1Hz	
9.999kHz	0.001kHz	± (0.5% + 5 dgts)
99.99kHz	0.01kHz	
999.9kHz	0.1kHz	
9.999MHz	0.001MHz	

Overload protection: 250V RMS

CAPACITANCE

Range	Resolution	Accuracy
10nF	0.001nF	
100nF	0.01nF	
1μF	0.1nF	
10μF	0.001μF	± (3.0% + 10 dgts)
100μF	0.01μF	
1mF	0.1μF	
10mF	0.001mF	
60mF	0.01mF	± (4.0% + 10 dgts)

Overload protection: 250V RMS

TEMPERATURE

Range	Resolution	Accuracy
-20°C to 1000°C	1°C	± (2.0% + 2 dgts)
-4°F to 1832°F	1°F	± (2.0% + 4 dgts)


AUTOMATIC POWER-OFF

The meter will automatically enter sleep mode after 30 minutes of no activity. To disable auto power-off, press and hold "SEL" while turning the meter on.

GENERAL MAINTENANCE

Warning ⚠ To avoid personal injury or damage to the meter, DO NOT wet the inner parts of the meter. Clean the meter case with damp (not wet) cloth and a small amount of detergent. Do not use abrasives or chemical solvents.

REPLACE BATTERIES

Warning ⚠ To avoid incorrect readings and possible electric shock or personal injury, when "  " appears on the display, replace the battery immediately. Turn off the meter and disconnect the test probe from the meter before opening the back cover to replace batteries. Gain access to batteries by using a screwdriver to loosen the battery cover screw on the back of the meter and removing the cover.

WARNING ⚠

To avoid electric shock or personal injury, please read SAFETY INSTRUCTIONS, WARNINGS and CAUTIONS carefully before use.


SAFETY INSTRUCTIONS: Read Before Use


The UTL291 digital clamp-on meter has been designed and evaluated according to International Electro Safety Standard IEC-1010 (61010-1@IEC: 2001) concerning safety requirements for electronic measuring instruments and hand-held digital multimeters. It meets the requirements for CAT III 600V of IEC1010 & pollution degree 2.

- ▶ Users should use the meter strictly according to the provisions of this manual. Otherwise, the warranty for the meter may become invalid.
- ▶ In the user guide, **WARNING** ⚠ indicates possible dangerous conditions for the user.
- ▶ In the user guide, **CAUTION** ⚡ indicates possible damage to the meter could occur.

WARNING ⚠

To avoid possible electric shock or personal injury as well as damage to the meter or measured objects, please use the meter according to the following procedure methods:

- ▶ Check the case before using the meter. Don't use the meter when the case is damaged. Check to see if the case is cracked or lacks plastic parts. Please pay special attention to joint insulating layer.
- ▶ Check to see if the test leads have insulation damage or exposed bare metal. Check test lead continuity. If the test leads are damaged, please replace them with a new set before using the meter.
- ▶ Measure known voltage with the meter to verify that the meter is working properly. If the meter is working abnormally, stop using it immediately. A protective device may be damaged. If there is any doubt, please have the meter inspected by a qualified technician.
- ▶ Do not test voltage exceeding rated voltage marked on the meter.
- ▶ When testing voltage exceeding 30v AC voltage RMS, 42v AC peak or 60v DC, be particularly careful to avoid electric shock.
- ▶ When measuring, use correct jack, function and measuring range.
- ▶ Do not use the meter in explosive gas, vapor or dusty environments.
- ▶ When using the probe, fingers should be behind the probe protection guard device.
- ▶ When connecting circuits, please connect the common test line first, then connect the charged test line. When disconnecting circuits, please disconnect the charged test line first, then disconnect the common test line.
- ▶ When measuring do not touch unused input jacks, exposed bare wires, connectors or circuits being measured.
- ▶ If the meter is not used in accordance with the instructions, the meter's safety protection function may become invalid.
- ▶ When the battery low voltage indicator "  " displays, replace the battery at once. A low battery will cause meter reading errors and may result in electric shock or personal injury.
- ▶ Before opening case or battery cover, remove the test leads from the meter.

To Measure	Safety Warnings and Cautions	Rotate Dial To	"SEL" Select Button Operation	Connect Leads to Input Jacks	
				COM	INPUT
AC/DC Voltage	WARNING ⚠ : Don't measure any RMS voltage higher than 600V DC or AC, to prevent injury or damage to meter and equipment. • Display shows voltage polarity (connected with red test probe) when measuring DC voltage. • When you can't determine the size range of signal to be tested, please switch the function measuring range to the maximum position, then gradually select lower ranges until the correct range is found.	$V \approx$	Toggles between AC (\approx) & DC (---) Voltage	BLACK LEAD	RED LEAD
AC Current 600A	WARNING ⚠ : To prevent injury or damage to meter or equipment, do not make current measurements if voltage exceeds 600V. • Use trigger to open clamp head. Measure one lead/wire at a time. Measuring multiple wire will cause invalid readings. Align in the center of the clamp head for accurate readings.	$A \approx 600$		OPEN	OPEN
AC Current 6A to 60A	• When you can't determine the size range of signal to be tested, please switch the function measuring range to the maximum position, then gradually select lower ranges until the correct range is found.	$A \approx 6/60$		OPEN	OPEN
Resistance	WARNING ⚠ : When measuring resistance or circuit continuity, to avoid injury or meter damage, turn off the power to circuit and discharge all capacitors. • The resistance measured on a circuit is usually different from the rated value of resistance. This is because the test current of the meter will flow through all possible channels between test probes. • When measuring the resistance more than 1M Ω , the reading will be stable after several seconds. This is normal for high resistance measuring. • When there is no input (for example, open circuit), the display will show "OL", which means that the measured value is out of range.	Ω		BLACK LEAD	RED LEAD
Capactiance	WARNING ⚠ : When measuring capacitance, to avoid injury or meter damage, turn off the power to the circuit to be measured discharge all capacitors. • When measuring bulk capacitors with this meter, readings will stabilize after a few seconds.	---	Toggles between Resistance (Ω) Capactiance (---)	BLACK LEAD	RED LEAD
Diode	WARNING ⚠ : When measuring diodes, to avoid injury or meter damage, turn off the power to the circuit to be measured discharge all capacitors. • Insert red probe to "INPUT" and insert black probe to "COM" jack. At this time, red probe polarity is "+". • Red probe connects to the anode of diode and black probe is connects to the cathode of diode. Display will display forward voltage drop.	\rightarrow	Diode (\rightarrow) Continuity (\bullet)	BLACK LEAD	RED LEAD
Continuity	WARNING ⚠ : When measuring resistance or circuit continuity, to avoid injury or meter damage, turn off the power to the circuit to be measured and discharge all capacitors. • Connect probe to two points of circuit. • If the measured circuit resistance is less than about 50 Ω , the buzzer will sound continuously. Between 50 Ω to 90 Ω the buzzer may sound. Over 90 Ω there will be no audible tone.	\bullet)		BLACK LEAD	RED LEAD
Non-Contact Voltage	• Do not use non-contact voltage detector to determine if there is voltage in the wire. Detection operation could be affected by socket design, insulation thickness, type and other factors. • Voltage indicator light may also light when voltage is present on the meter's input jack or from external interference sources such as motors, flashlights etc.	PRESS 		OPEN	OPEN
Temperature Fahrenheit		$^{\circ}F$		- Temp LEAD	+ Temp LEAD
Temperature Celsius	WARNING ⚠ : Don't input voltage higher than 30V in temperature measurement position, to prevent electric shock or meter damage.	$^{\circ}C$		- Temp LEAD	+ Temp LEAD