INSTRUCTIONS FOR

20A/80A AC/DC CURRENT CLAMP - 12MM
40A/400A AC/DC CURRENT CLAMP - 28MM

MODEL NO: **TA310 & TA311**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.

Refer to instruction manual

Electrical Shock Hazard

1. SAFETY

1.1. **GENERAL SAFETY**

The warnings, cautions and instructions referred to in this manual cannot cover all possible conditions and situations that may occur. It must be understood that common sense and caution are factors which cannot be built into this product, but must be applied by the operator.

- ❑ **WARNING!** To avoid physical injury never take measurements on bare conductors, bare or frayed cable.
- ❑ **WARNING! USE EXTREME CAUTION** when working with high voltages.
- ❑ **WARNING!** Engines produce carbon monoxide which is odourless and causes slower reaction time which could lead to serious injury. An engine which is operating should be in a well ventilated area, or the vehicle's exhaust should be connected to an adequate fume removal system.
- × **DO NOT** use leads of current clamp or multimeter if damaged or if the wire is bared in any way.
- × **DO NOT** use the current clamp adaptor if it has been damaged.
- × **DO NOT** clamp to conductors with voltages equal to or exceeding 300V DC or 240V rms AC
- ▲ Exceeding the electrical limits of this current clamp meter is dangerous and will expose you to serious or possibly fatal injury. Carefully read and understand the specification limits and cautions in this safety section.
- ✓ Familiarise yourself with the application and limitations of the current clamp and multimeter (see multimeter manual) as well as the potential hazards.

IF IN ANY DOUBT CONSULT A QUALIFIED ELECTRICIAN.

- ✓ When working on a vehicle which is being tested or repaired ensure that the handbrake is on and the front wheels are chocked to avoid the vehicle moving and causing injury.
- ✓ Wear suitable eye protection when testing or repairing a vehicle.
- ✓ Avoid measurement errors from outside interference. Keep the meter away from spark plug and coil wires.
- ✓ When using a current clamp please observe all normal safety rules concerning protection against the dangers of electrical current and protect the current clamp against misuse.
- ✓ Before commencing testing, follow instructions below and select the correct input sockets, function and range on the multimeter.
- ✓ Always take care when working with voltages above 35V DC or 25V AC rms. These voltages are considered a shock hazard.
- ✓ Always keep fingers behind the probe barriers whilst measuring and **DO NOT** use when hands are wet.
- ✓ If any abnormal readings are observed, the multimeter must be checked out by an authorised technician.
- ✓ When not in use, store the current clamp carefully in a safe, dry, childproof location out of direct sunlight. If storing for a long period of time, remove the battery. Storage temperature range: -15°C to 50°C.

1.2. REPLACING THE BATTERY (See fig.1)

1.2.1. When the battery becomes exhausted or drops below the operating voltage, the red LED battery symbol will be illuminated.

1.2.2. Open the battery cover by loosening the screw using a small cross head screwdriver.
Remove the old battery and insert the new one, observing the correct polarity clearly shown inside the compartment.

1.2.3. Replace the battery cover and secure with the screw.

1.2.4. Dispose of batteries according to local authority guidelines.

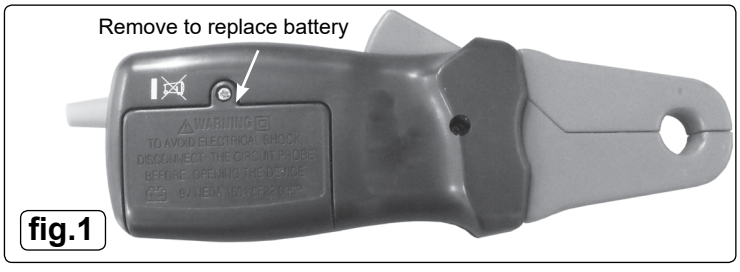


fig.1

Underside battery compartment. ***Read the warning on the battery compartment cover before opening.***

2. INTRODUCTION

Designed for use with a standard multimeter and measures current draw from vehicle components, in situ, without the need to break into the circuit. Suitable for measuring both AC and DC current. Fitted with 4mm banana elbow connectors and supplied in a storage pouch. Powered by a 9V battery (supplied). The current clamp adaptor can also be used with an oscilloscope, using a suitable BNC conversion adaptor.

3. SPECIFICATION

Model Number:.....**TA310**
Captured Conductor Size:.....Ø8mm maximum
Low Battery Indicator:.....LED red
Operating Temperature:.....0°C to 50°C.
Storage Temperature:.....-15°C to 50°C.
Battery Type:.....9V DC
Typical Battery Life:.....80hrs (alkaline)
Weight:.....240g
Dimensions (H X W X D):.....190mm x 70mm x 38mm
Output Connection:.....Banana plugs (red & black)

Effective Measurement Range
20A (output: 100mV/A=1mV/10mA): <2A use DC or rms AC for 200mV range of the multimeter, >2A use DC or rms AC for 2V range of the multimeter.
80A (output: 10mV/A): DC or rms AC for 200mV range of the multimeter.

Accuracy
DCA range: 10mA~20A
(output: 100mV/A=1mV/10mA) ± (3% ±5mA)

DC range: 100mA~80A **100mA~40A ± (3% ±0.3A)**
(output: 1mV/A) **40A~80A ± (4% ±0.3A)**

ACA range: 10mA~20A (output: 100mAV/A= 1mV/10mA)

10mA~20A (40Hz~2kHz) ± (3% ±5mA)
10mA~20A (2kHz~10kHz) ± (4% ±30mA)
10mA~20A (10kHz~20kHz) ± (6% ±30mA)
10A~20A (40Hz~20kHz) ± (8% ±30mA)

AC range 100mA~80A (output: 1mV/A)

100mA~80A (40Hz~2kHz) ± (8% ±30mA)
100mA~80A (1kHz~2kHz) ± (4% ±30mA)
100mA~80A (3kHz~5kHz) ± (6% ±30mA)
40A~80A (40Hz~5kHz) ± (8% ±0.30A)

Load Resistance: 10Ω typical

Model Number:.....**TA311**
Captured Conductor Size:.....Ø20mm maximum
Low Battery Indicator:.....LED red
Operating Temperature:.....0°C to 50°C.
Storage Temperature:.....-15°C to 50°C.
Battery Type:.....9V DC
Typical Battery Life:.....80hrs (alkaline)
Weight:.....240g
Dimensions (H X W X D):.....175mm x 70mm x 38mm
Output Connection:.....Banana plugs (red & black)

Effective Measurement Range
40A (output: 10mV/A): DC or rms AC for 200mV or 400mV range of the multimeter.
400A (output: 1mV/A): DC or rms AC for 400mV range of the multimeter.

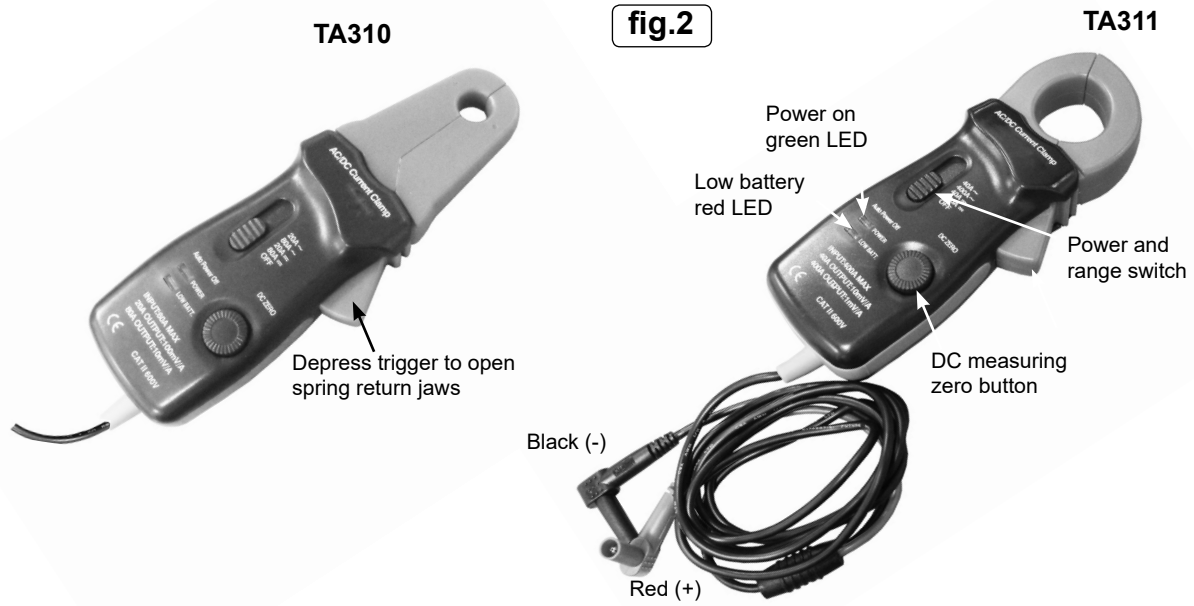
Accuracy
DCA range: 40A
0~20.00ADC: ± (3.5% + 6 digits)
20.00~40.00ADC: ± (4% + 10 digits)

DC range: 400A
0~300.0ADC: ± (3.5% + 10 digits)
300.0~400.0ADC: ± (4.5% + 10 digits)

ACA range: 40A (50Hz/60Hz)
0~20.00AAC: ± (4.0% + 10 digits)
20.00~40.00AAC: ± (5.0% + 10 digits)

ACA range: 400A (50Hz/60Hz)
0~300.0AAC: ± (4.5% + 10 digits)
300.0~400.0AAC: ± (5.0% + 10 digits)

fig.2



Original Language Version

4. OPERATION

4.1. SAFETY INFORMATION

4.1.1. This instrument complies with class II, overvoltage CAT II-600V of the EN 61010-1 and EN 61010-2-032 standards.

4.1.2. Pollution degree 2 in accordance with IEC 664 indoor use.

4.1.3. If the equipment is used in a manner not specified, the protection provided by the equipment may be impaired.

× **DO NOT** clamp around conductors with voltages equal to or exceeding 300V DC or 240V rms AC.

× **DO NOT** clamp to bare or damaged conductors, to avoid possible physical injury.

4.2. PROCEDURE FOR MEASURING THE CURRENT IN AC AND DC CIRCUITS.

4.2.1. Insert the black banana plug into the COM socket and the red banana plug into the VΩmA socket of your multimeter (with a minimum input impedance of 10k ohms).

4.2.2. Set the power switch from “OFF” to the desired range, 40A (output: 1mV/A) or 400A (1mV/A) position. The green LED will illuminate to indicate the current clamp is switched on.

4.2.3. For current measurement below 40A, set the unit to the 40A range and set the multimeter to 200mV or 400mV range for AC current measurements. Alternatively set the multimeter to 200mV or 400mV DC range for DC current measurements. If the measured current exceeds 40A, set the unit to the 400A range.

4.2.4. When performing *DC current measurements, always press the “DC ZERO” button on the current clamp until the multimeter reads zero. Clamp the jaws around the current carrying conductor and interpret the reading according to the settings in 4.2.3.

4.2.5. When the 40A range is selected the measured current value (A) can be calculated using this example. If the multimeter reads 100mV, the measured current is 100mV divided by (10mV/A) = 10A. If the 400A range is selected, the measured current value (A) can be calculated using this example. If the multimeter reads 50mV, the measured current is 50mV divided by (1mV/A) = 50A.

4.3. NOTES ON DC CURRENT MEASUREMENT

4.3.1. In a DC circuit the output is positive when the current flows from the top face to the underside of the current clamp. Hysteresis can occur making it difficult to zero the current clamp. When this happens, open and close the jaws several times together with pressing the “DC ZERO” button to eliminate this effect.

4.4. MAINTENANCE

❑ **WARNING! DO NOT** attempt to repair or service unless you are qualified to do so and have the relevant calibration, performance test, and service information. To avoid electrical shock or damage to the meter do not get water inside the case.

4.4.1. Periodically wipe the casing and jaws with a damp cloth and mild detergent. **DO NOT** use solvents.

4.4.2. Turn off when not in use and remove the battery if stored for a long period of time.

× **DO NOT** store in a place of high humidity or high temperature.

4.5. REPLACING THE BATTERY (fig.1)

❑ **WARNING!** To avoid electric shock, disconnect the 4mm banana connectors from any equipment before removing the battery cover.

4.5.1. When the battery becomes exhausted or drops below the operating voltage, the red LED battery symbol will be illuminated.

4.5.2. Open the battery cover by loosening the screw using a small cross head screwdriver.

4.5.3. Remove the old battery and insert the new one, observing the correct polarity clearly shown inside the compartment.

4.5.4. Replace the battery cover and secure with the screw.

4.5.5. Dispose of batteries according to local authority guidelines.

ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

WEEE REGULATIONS

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.

BATTERY REMOVAL - REFER TO SECTION 1.2

Under the Waste Batteries and Accumulators Regulations 2009, Jack Sealey Ltd are required to inform potential purchasers of products containing batteries (as defined within these regulations), that they are registered with Valpak’s registered compliance scheme. Jack Sealey Ltd Batteries Producer Registration Number (BPRN) is BPRN00705.

Note: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

Important: No Liability is accepted for incorrect use of this product.

Warranty: Guarantee is 12 months from purchase date, proof of which is required for any claim.

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