



# TA019 AC/DC CURRENT CLAMP USER'S GUIDE

## INTRODUCTION

The TA019 AC/DC Current Clamp is an accessory that allows your oscilloscope to measure electrical current up to 600 A AC or DC with a frequency response up to 400 Hz. When measuring current with this clamp, there is no need to break the circuit or disturb the insulation.

## APPLICATION PROCEDURE

1. Connect the BNC plug to an oscilloscope or other measuring instrument with an input impedance of at least 10 k $\Omega$ .
2. Slide the power switch from OFF to ON. The green LED will light to indicate that the clamp is switched on. For current measurement below 200 A, set the oscilloscope range to 200 mV AC for AC current measurements or 200 mV DC for DC current measurements. The scale in millivolts can be read as amperes. For current measurements above 200 A, set the oscilloscope range to 2 V AC or DC, depending on whether measuring AC or DC current. The scale in volts can be read directly as amperes.
3. Turn the zero adjustment knob on the clamp until the oscilloscope reads zero.
4. Clamp the jaws around the current-carrying conductor and interpret the reading according to Step 2 above.

## APPLICATION NOTES

1. In the case of DC current, the output is positive when the current flows from the upside to the underside of the clamp.
2. In the case of DC current measurement, a hysteresis effect can occur so that it is impossible to zero the clamp properly. To eliminate this effect, open and close the jaws several times and then zero again.

3. When there is a strong stray magnetic field, it is best to zero the clamp approximately 50 to 100 mm (2 to 4 inches) from the conductor to be measured. The conductor itself will have no influence at this distance. Then clamp the jaws around the conductor and measure the current.
4. A good practice for measuring low currents is to loop an appropriate number of turns of the conductor through the jaws. The actual current is the measured value divided by the number of turns.

## **BATTERY REPLACEMENT**

Remove the screw on the back side, remove the battery, and replace with a 9-volt battery, NEDA 1604 type.

## **SPECIFICATIONS**

### **GENERAL**

Captured conductor size: 30 mm maximum.

Low battery indicator: red LED lighting.

Operating temperature: 0°C to 50°C, 70% R.H.

Storage temperature: -20°C +70°C, 80% R.H.

Weight: 290 g typical

Dimensions: 178 mm (H) × 70 mm (W) × 33 mm (D).

### **ELECTRICAL** (at 23 ±5°C, 70% R.H. maximum)

Accuracy:

DC current

0 to 600 A, ±(2% reading + 2 A)

AC current (50 Hz to 400 Hz)

0 to 400 A, ±(2% reading + 2 A)

400 A to 500 A, ±(3% reading + 2 A)

500 A to 600 A, ±(6% reading + 2 A)

Load resistance: 10 kΩ typical.

Rate output: 0 to 600 mV (AC and DC) for 0 to 600 A.