Specifications

Electrical data

Nominal current	30 A AC peak or DC
Measuring range	30 mA to 30 A DC (accurate) 5 mA to 30 A DC (usable)
Overload capacity	500 A for 60 s
Output sensitivity	100 mV/A
Accuracy	±(2% of reading + 2 mA)
Resolution	1 mA DC after filtering
di/dt tracking capability	> 20 A/µs
Conductor position sensitivity	±1% relative to center
Temperature coefficient	0.1 × specified accuracy/°C (0 °C to 18 °C, 28 °C to 50 °C)
Frequency range	DC to 20 kHz (–0.5 dB)
Battery type	9 V PP3, MN 1604, 6F22, 6LR61
Battery life	100 hours typical (alkaline)
Min. load impedance	1 MΩ

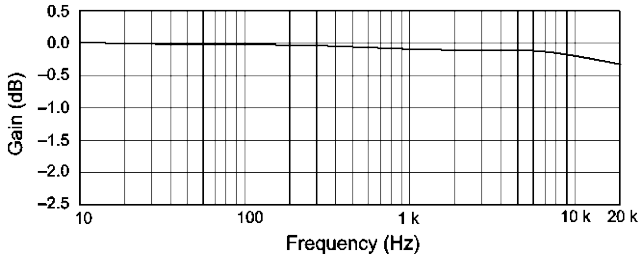
All accuracies stated at 23 °C ±5 °C, 70 %RH max.

General data

Max. conductor size	19 mm diameter
Output cable and connectors	2 m long coax. terminated with safety BNC connector
Operating temperature	+5 °C to +40 °C
Storage temperature (excluding battery)	–20 °C to +70 °C
Humidity	0 to 80 %RH
Altitude	0 to 2000 m
Weight	300 g
Dimensions (H x W x D)	200 mm x 72 mm x 38 mm
Pollution degree	2

Standards

Safety	EN 61010-1:2010 EN 61010-2-032:2012
Measurement category	CAT IV 600 V, CAT III 1000 V
EMC	EN 61326-1:2006 EN 61326-2-2:2006
RoHS	2011/65/EU
WEEE	2012/19/EU



Warranty

Your current clamp is guaranteed for one year from the date of purchase against defective material or workmanship. If the clamp fails during the warranty period, we shall, at our discretion, repair or replace it with a new or reconditioned unit provided we are satisfied that the failure is due to defective material or workmanship. To make a claim under warranty, return the clamp to us, postage prepaid, with a description of the defect. The use of a battery other than that specified invalidates this warranty.

Goods alleged by the buyer to be defective shall not form the subject of any claim for injury, loss, damage, or any expense howsoever incurred, whether arising directly or indirectly from such alleged defects other than death or personal injury resulting from the seller's negligence.

No condition is made or to be implied, nor is any warranty given or to be implied as to the life or wear of goods supplied or that they will be suitable for any particular purpose or for use under specific conditions, notwithstanding that such purpose or conditions may be made known to the seller.

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DO247-2

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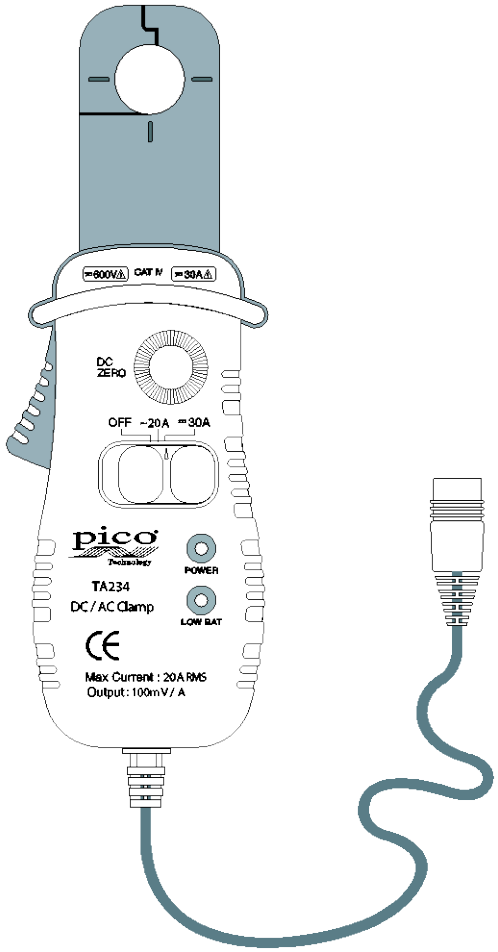
TA234

30 A current clamp



User's Guide

Introduction

The TA234 is a 30 A current clamp. It has extended measuring jaws that allow measurement in a confined space. When measuring DC, a simple thumbwheel on the clamp allows zero adjustment.

Safety information

To prevent possible electrical shock, fire, personal injury, or damage to the product, carefully read this safety information before attempting to install or use the clamp. In addition, follow all generally accepted safety practices and procedures for working with and near electricity.

The clamp has been designed and tested in accordance with the European standard publication EN 61010-1: 2010, and left the factory in a safe condition. The following safety descriptions are found throughout this guide:

A **WARNING** identifies conditions or practices that could result in injury or death.

A **CAUTION** identifies conditions or practices that could result in damage to the product or equipment to which it is connected.

Symbols

These safety and electrical symbols may appear on the clamp or in this guide.

⎓	Direct current
~	Alternating current
⎓ ~	Both direct and alternating current
⧈	Equipment protected through double or reinforced insulation
⚡	Possibility of electric shock
⚠	Caution
CAT	IEC 61010 overvoltage category
	Do not dispose of this product as unsorted municipal waste. Contact a qualified recycler for disposal or return it to the manufacturer.

WARNING. To prevent injury or death use the clamp only as instructed. Protection provided by the product may be impaired if used other than in the manner specified.

CAUTION. To prevent damage, always use and store your current clamp in appropriate environments: see Specifications.

Maximum input ranges

Observe all ratings and warnings marked on the clamp.

The table below indicates the full-scale measurement and overcurrent protection ranges. The full-scale measurement ranges are the maximum currents that can be accurately measured by the clamp. The overcurrent protection range is the maximum current that will not damage the clamp.

Full-scale measurement range	Overcurrent protection range (current that will not damage)
0 to 20 A AC	500 A for 60 s
0 to 30 A DC	

WARNING. Signals exceeding the voltage limits in the table below are defined as "hazardous live" by EN 61010.

Signal voltage limits of EN61010		
± 70 V DC	33 V AC RMS	± 46.7 V pk max.

CAUTION. Exceeding the overcurrent protection range can cause permanent damage to the clamp and other connected equipment.

WARNING. To prevent electric shock:

- Do not attempt to measure currents outside the specified full-scale measurement ranges above.
- Take all necessary safety precautions when working on equipment where hazardous live voltages may be present.
- This product must be used only by qualified personnel practising applicable safety precautions.
- Do do not use the clamp if it appears to be damaged in any way, and stop using it immediately if you are concerned by any abnormal behavior.
- Always ensure that the clamp is removed from any live electrical circuit before removing the battery cover.
- Do not use in wet or damp conditions, or near explosive gas or vapor.
- Do not hold the clamp anywhere beyond the tactile barrier: see Fig. 1.

Operating instructions

Current measurement

1. Switch on the clamp using the **ON / OFF** switch and check that the green **POWER** LED is lit.
2. The red **LOW BAT** LED lights when the battery voltage is too low for normal operation. Follow the procedure described below for changing the battery.
3. Connect the output BNC connector to the oscilloscope.
4. Ensuring that the jaws are closed, but not clamped around or placed near a current-carrying conductor, turn the **DC ZERO** dial until the oscilloscope displays zero signal. Repeat this procedure whenever the zero point drifts due to temperature changes.
5. Clamp the jaws around the conductor, ensuring a good contact between the closing faces of the jaws.
6. Take measurements from the oscilloscope. If using PicoScope, select the “30 A current clamp” probe to display the current in amperes. For other oscilloscopes, apply a conversion factor of 100 mV/A. Positive output indicates that the current is in the direction of the arrow marked on the fixed jaw.

Remanence effect

When measuring DC current, a remanence effect can temporarily prevent zeroing of the clamp. If this happens, open and close the jaws several times and zero again.
If the jaws become magnetized by accidental exposure to a current greater than 30 A, fit the clamp around the conductor in the opposite direction to reverse the magnetization, then remove from the conductor and zero the clamp.

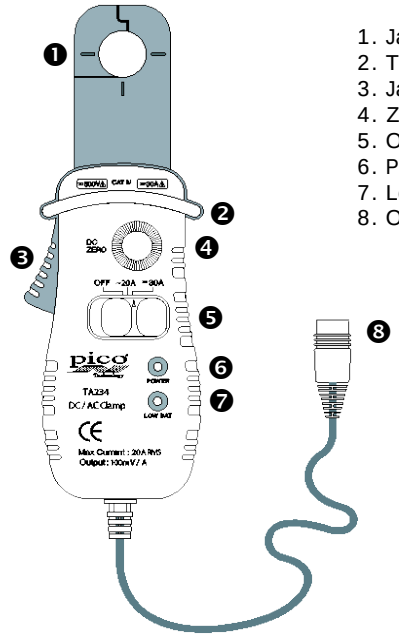
Care of the product

The product contains no user-serviceable parts. Repair, servicing and calibration require specialized test equipment and must be performed only by Pico Technology or an approved service provider. There may be a charge for these services unless covered by the warranty.
CAUTION. Do not tamper with or disassemble the clamp. Internal damage will affect performance.
WARNING. When cleaning the clamp, use a soft cloth and a solution of mild soap or detergent in water. To prevent electric shock, do not allow liquids to enter the casing as this will compromise the components inside.

Battery replacement

The red **LOW BAT** LED (Fig. 1) will light when the minimum battery voltage is approached. Use the following procedure to replace the battery:

1. Turn off the clamp using the **ON / OFF** switch and disconnect the output lead from external equipment.
2. Loosen the captive screw that secures the battery cover and lift off the cover. Replace the battery, refit the battery cover and fasten the screw.



1. Jaws
2. Tactile barrier
3. Jaw trigger
4. Zeroing thumbwheel
5. On/off/range switch
6. Power LED
7. Low battery LED
8. Output connector

Figure 1