

ALLNEC

Marking a new era in ground resistance measurements.

INSTRUCTION MANUAL

Model: TPA2000



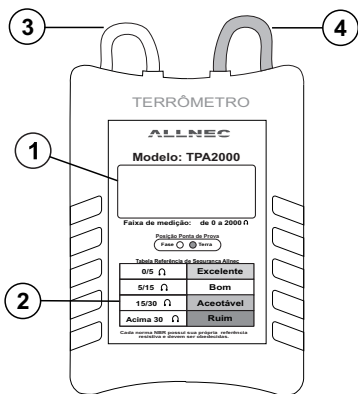
Brazilian technology

INTRODUCTION

With the unique technology used in this earth tester, it became possible to develop a product that is practical, versatile, precise, and, most importantly, eliminates the need for auxiliary stakes. Another significant advantage of this technology is that, being designed using a microcontroller where calculations are done through programming and not by an integrated circuit, it never loses calibration.

Just touch:

The TPA2000 Allnec digital earth tester is the only instrument on the market that measures the resistance of an earthing by simply touching the probe to any metal object grounded to the soil, without the need for auxiliary stakes. It can be used in various areas such as hospital equipment, general industrial automation, lightning protection systems, directly on electrical outlets, etc. Just touch.



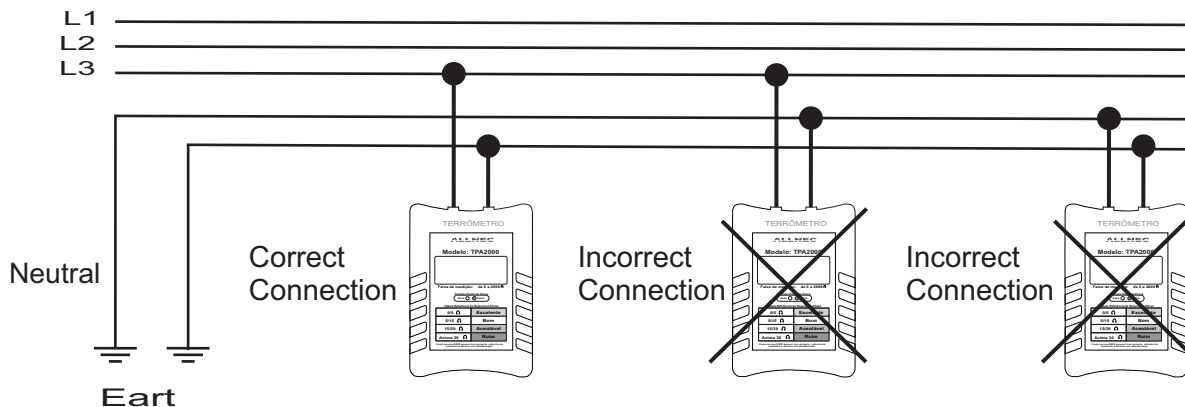
Nº	Nome	Functions
1	Display LCD	Display 4 digits
2	Tabela de Referência	Referência de segurança baseado apenas em dados científicos.
3	Ponta de Prova Cinza	Conecta a Fase Energizada da Concessionária.
4	Ponta de Prova Verde	Conectado ao Terra.

Important Detail:

The TPA Now-Pin technology does not use batteries or cells; it powers up by connecting to a phase with ground, neutral, or another phase. If the display does not turn on when connecting the test leads:

First, check if the used phase is not a neutral. Second, ensure there is a proper ground connection to the system.

If you want to check if the device is working, simply insert the two test leads into an electrical outlet. If it lights up, it means you used the neutral or there is no connection to 13,5the ground.



Observations: No ground meter device measures the ground with the neutral connected; they will always measure the lowest resistance, regardless of the device's model or manufacturer. If necessary, the ground should be disconnected from the neutral.

IMPORTANT NOTES ON TN, TT, AND IT CONNECTIONS

Before starting measurements, make sure which grounding method was adopted in the installation. In the TN-C Method (the most common in the market), the utility's neutral is linked to the grounding in the BEP (equipotential bonding bar). Measurements in this configuration will be measuring the value of the neutral, not the ground. If you only want to measure ground resistance, you will need to uncouple the ground from the neutral.

STANDARDS THAT THIS DEVICE COMPLIES WITH IN BRAZIL

On page 46 of ABNT NBR15749:2009 in Annex G1, it legalizes alternative methods of grounding resistance measurements, providing conditions for low-frequency technology such as that used by Allnec.

OPERATING MODE

Look for an energized phase from the utility company; it cannot be a phase generated by wind systems, photovoltaic systems, diesel generators, etc.

Pull an extension cord to the location where measurements will be taken.

Then, insert the gray probe into the energized phase of the utility company, and with the green probe, firmly touch the point where you intend to measure.

Note: If the display does not turn on, it is because the phase used is not energized, or you caught the neutral, or the grounding is broken, or there is none.

BRANCHES EQUIPPED WITH RCCBs

There is a possibility that the device may trip the RCCBs when connecting the probes of the instrument to a Phase and the Earth terminal, as it will introduce an electric current interpreted by this device as a leakage current to the ground, triggering it. If this happens, the instrument probes should be inverted to prevent tripping. If it continues to trip even after inverting the probes, it indicates that there is a current leakage in the grounding system.

Reading of Results

The display will show the result as it really is, without the need to interpret! A comma will always appear until the value 099.0 (ninety-nine ohms). Above this value, the comma disappears.

Examples: Result 001.0 (one ohm).

010.0 (Ten ohms)

0100 (One hundred ohms), and so on.

Display

At the moment of contact with the test leads, the display will show the numeral 8888. To continue with the measurements, it will be necessary to use the phase before the RCCB, according to the figure below. After 6 seconds, the measurement result will appear.



INNOVATIVE FEATURES

- a. Does not require the use of auxiliary stakes.
- b. Portable, pocket-sized device.
- c. Immune to mains voltage. Small leakage currents do not interfere with readings.
- d. Does not use batteries. Powered by the energized phase and ground.
- e. Dual voltage (Bivolt).
- f. Detects current leaks in systems equipped with RCCBs.
- g. Tests RCCBs by tripping them.

OPERATING PRINCIPLE

The device is developed with a state-of-the-art microcontroller, enabling the execution of complex calculations and commands in seconds. The measurement of earth resistance is performed by checking the voltage drop ratio when applying a known load between a voltage source of known value (phase of the utility's electrical network) and the grounding circuit. The operating principle of the Allnec TPA earth resistance meter is based on voltage drop, like any other conventional earth resistance meter. Our differentiator: Allnec earth resistance meters require a reference for soil resistance. Conventional meters use auxiliary stakes for this purpose. In the case of Allnec's earth resistance meters, we obtain this resistive reference from the utility's phases, which universally have resistance close to zero.

WHEN TO CALIBRATE

Due to its microcontrolled technology, Allnec's TPA earth resistance meters never go out of calibration, remaining consistently accurate.

TECHNICAL SPECIFICATIONS

Reading Method:	Voltage drop.
Accuracy:	From 0.0Ω to 100Ω (0.2Ω), 101Ω to 300Ω (0.5Ω), 301Ω to 2000Ω(50Ω).
Measurement Pulse:	2.5rms in 100ms, approximately 1Hz. Alternating current.
Frequency:	50/60Hz. According to the local network.
Waveform:	Sinusoidal with square pulses (Burst).
Display:	Liquid Crystal Display (LCD) with 4 digits and decimals.
Operating Range:	90Vac to 240Vac.
Power Consumption:	1 Watt.
Scales:	From 000.0Ω to 99.9Ω with decimals. Above, the decimals disappear.
Reading Time:	6 seconds.
Operating Temperature:	From -15°C to 45°C.
Operating Humidity:	Up to 90% RH.
Dimensions:	67 x 25 x 10mm (L x H x W).
Weight:	110 grams.
Warranty:	5 years.