



INSTRUCTIONS FOR USE.

Socket tester with 30 mA RCD tripping feature and earth electrode resistance measuring.

- For 230 V AC “Schuko” single-phase power sockets and TT earthing system.
- OK / not OK threshold : 100 Ω.
- Compatible with 30 mA~ RCD.
- 30 mA~ RCD tripping.
- Rotating plug.
- Self-powered.

“Schuko” and 100 ohms.

Tohm-e
by electro-RJP

Made in France.

QUICK START.

Grasp Tohm-e.

Connect it to the selected power socket.

Observe the indications displayed by Tohm-e to identify the wiring of the power socket, the phase-neutral voltage and the resistance of the earth electrode of the installation.

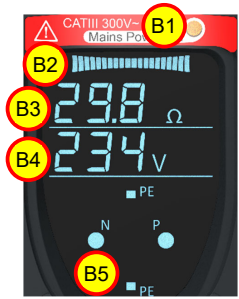
By pushing and holding the left black button, trip the 30 mA~ RCD of the power socket.
 caution, this turns off the power.

A - CONNECTING.

- Grasp Tohm-e in one hand, avoiding the left black button. If necessary, rotate the plug.
- Connect Tohm-e in the selected power socket.
- Tohm-e initializes for a short moment.
- Tohm-e displays the information below. If necessary, rotate the plug.

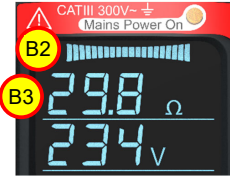
B - INDICATIONS OF TOHM-E.

- B1 - LED indicator showing voltage in the power socket. If on then caution, voltage is present in the power socket, even if the other indications are off.
- B2 - Measurement timer of earth electrode resistance.
- B3 - Earth electrode resistance.
- B4 - Phase - neutral voltage (true RMS value).
- B5 - Drawing of the power socket contacts.



If the indications are red, then there is a fault.

C – EARTH ELECTRODE RESISTANCE :

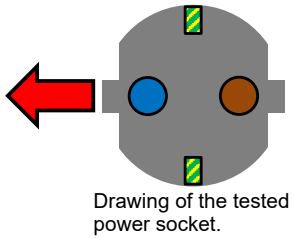


A short moment after connecting, if the power socket is fault-free then Tohm-e indicates a first earth electrode resistance value (B3) and displays the complete timer (B2). Then the timer (B2) counts down every second over a cycle of approximately 20 seconds. During the cycle Tohm-e carries out several measurements and regularly updates the value of the earth electrode resistance (B3).

Once Tohm-e has reached the end of the cycle, it starts a new cycle with new measurements. The most reliable value of the earth electrode resistance (B3) is indicated when the timer (B2) has disappeared.

Tohm-e measures the earth electrode resistance with a current of 18 mA~ approximately between phase and PE. Its measuring method does not trip the RCD with sensitivity of 30 mA~ and higher. And it complies with EN / IEC 61557-1 and EN / IEC 61557-3 standards.

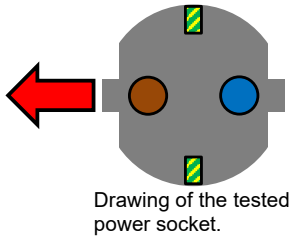
D1 – POWER SOCKET AND EARTH OK.



Indications of Tohm-e.

- Caution, voltage in the power socket.
- Earth electrode resistance OK, 29,8 Ω (< 100 Ω).
- Phase-neutral voltage OK, 234 V~ (> 195 V~ and < 253 V~).
- Power socket OK, correctly wired, the phase contact is on the right, the neutral contact is on the left.

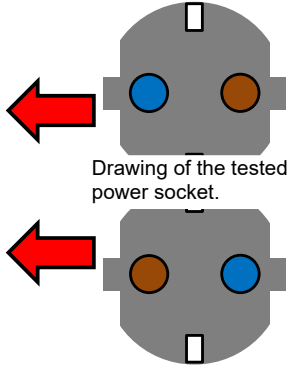
D2 – POWER SOCKET AND EARTH OK.



Indications of Tohm-e.

- Caution, voltage in the power socket.
- Earth electrode resistance OK, 29,8 Ω (< 100 Ω).
- Phase-neutral voltage OK, 234 V~ (> 195 V~ and < 253 V~).
- Power socket OK, correctly wired, the phase contact is on the left, the neutral contact is on the right.

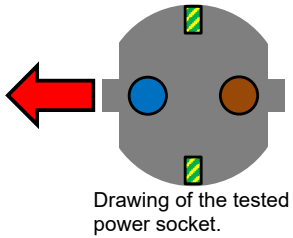
D3 – NOT WIRED TO EARTH.



Indications of Tohm-e.

- Caution, voltage in the power socket.
- Earth electrode fault, PE broken (or earth electrode resistance very high).
- Phase-neutral voltage OK, 234 V~ (> 195 V~ and < 253 V~).
- Power socket fault, no PE.

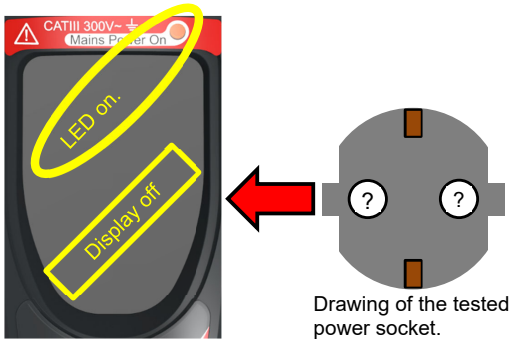
D4 – EARTH NOT CORRECT.



Indications of Tohm-e.

- Caution, voltage in the power socket.
- Earth electrode resistance fault, 579 Ω (> 100 Ω).
- Phase-neutral voltage OK, 234 V~ (> 195 V~ and < 253 V~).
- Power socket OK, correctly wired.

D5 – DANGER. NOT CORRECTLY WIRED.



Indications of Tohm-e.

- Caution, voltage in the power socket.
- The power socket is not correctly wired. In principle phase and PE reversed. EXERCISE CAUTION. THERE IS A HAZARD BECAUSE THE PHASE CAN BE TOUCHED on the PE contacts of the power socket.
- Take all the usual precautions before working on the installation or the power socket.

F3 – Tohm-e stays off. It does not turn on.

- Only the phase is wired to the power socket.
⚠ caution, electrical hazard, I take all the usual precautions before working on the installation or the power socket.
- The power socket is not wired at all.
- Tohm-e failure. I check Tohm-e on other power sockets and if it still stays off too then I bring it back to the store.

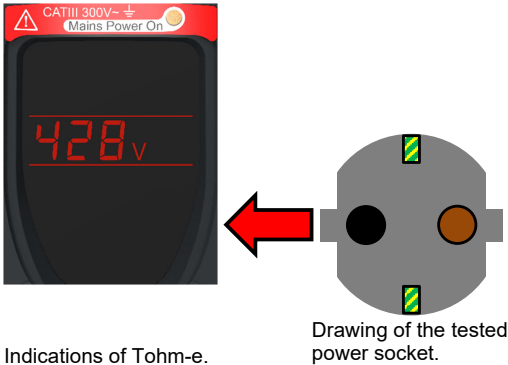
F4 – The 30 mA~ RCD does not trip when I push and hold the button.

- I do not hold the button long enough. I must push and hold the button for 1 second at least to trip the RCD.
- No 30 mA~ RCD or faulty 30 mA~ RCD.
- Tohm-e failure. I check Tohm-e on other power sockets and if the 30 mA~ RCD do not trip then I bring Tohm-e back to the store.

F5 – Do I need Tohm-e to be verified ?

- Tohm-e is recommended to be checked every year (like any other measuring device) and got a new verification certificate. I bring Tohm-e back to the store and ask an Electro-PJP's verification part number EtaElec Tohm-e.

D6 – TWO PHASES ON THE POWER SOCKET.



Indications of Tohm-e.

- Caution, voltage in the power socket.
- Voltage fault, 428 V~ (> 253 V~), probably a second phase instead of neutral.
- Take all the usual precautions before working on the installation or the power socket.

G – SAFETY AND SPECIFICATIONS.

The protection is compromised if the instructions are not followed.

Safety : 300 V~ CAT III, reinforced insulation, class 2, pollution degree 2, according to EN / CEI 61010-1. IP2X according to EN / CEI 60529.

"~" means, alternating current (AC).
"P", "N", and "PE" mean Phase, Neutral and Protective Earth respectively.

⚠ means caution, please refer to these instructions.

Pollution degree 2. Only non-conductive pollution occurs except that occasionally a temporary conductivity caused by condensation is expected. The normal environment is in pollution degree 2.

Operator : person operating equipment for its intended purpose.

Responsible body : individual or group responsible for the safe use and maintenance of equipment.

CAT III (overvoltage category III). This is the environment of building wiring installations including socket outlets, fuse panels, ... Tohm-e can support the mains supply overvoltages.

Environmental conditions : pollution degree 2 (normal environment) ; storage and operating temperature range, from -20 °C to +40 °C ; maximum relative humidity 80 % for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 40 °C ; altitude up to 2000 m ; don't submerge the device ; indoor use only ; do not use it in wet or explosive atmospheres.

Power supply : power supply from tested power socket (no cell, accumulator or battery).

Mains supply voltage fluctuation : -15 % / + 10 % (230 V~ - 240 V~).

Compliance with standards EN / IEC 61010-1, EN / IEC 61010-2-030, EN / IEC 61557-1, EN / IEC 61557-3, EN / IEC 62262,

E – 30 MA~ RCD TRIPPING.

After connecting Tohm-e to the power socket, at any time a long press (longer than 1 second) on the left black button trips the upstream 30 mA~ RCD of the power socket. (An accidental press on the button cannot trip the RCD and turn off the power.)

F – FREQUENTLY ASKED QUESTIONS.

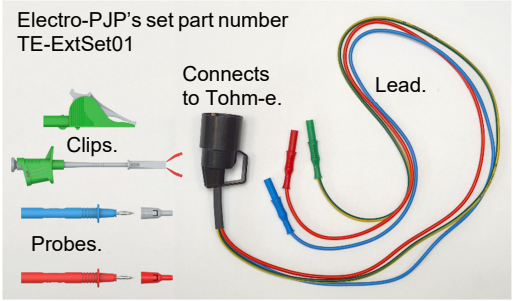
The following points can explain the situation faced.

F1 – The power turns off when I connect Tohm-e in the power socket, why ?

- "The straw that broke the camel's back". There are already some electrical leakages to earth, and the phase – PE current generated by Tohm-e adds to them. The sum of these currents is high enough to trip the RCD, and this turns the power off.
- Neutral – PE reversal on the power socket. I take all the usual precautions before working on the installation or the power socket.
- Tohm-e failure. I check Tohm-e on other power sockets and if power turns off too then I bring Tohm-e back to the store.

F2 – There is not any power socket to measure earth electrode, how to do ?

- I ask Electro-PJP's set part number TE-ExtSet01. I connect the lead to Tohm-e. I connect the three connectors to the probes and clip. I connect the clip to a ground contact. I connect the probes to some phase and neutral contacts. Tohm-e measures the earth electrode resistance.



moistened with water and detergent solution after fully disconnecting Tohm-e. Dry the parts fully before energizing.

Tohm-e is a socket and earth loop tester. It is a portable device that is connected directly. It is designed for use by an operator. A responsible authority must take responsibility for its maintenance and use. See the previous pages on instructions for use.

The operator uses it to test power sockets, measure the resistance of earth electrodes, measure the phase - neutral voltage, and trip the 30 mA RCD. The operator holds it in the hand and connects it to a power socket. The electrical installations are live when the operator carries out tests and measurements with Tohm-e.

Tohm-e must be used by a qualified operator who can recognize the hazardous situations, and who is trained in the necessary safety conditions for avoiding injury during use.

Tohm-e trips the 30 mA~ RCD but it must not be used to check RCD. Tohm-e is not a voltage detector, do not use it for that purpose. Checking electrical continuity before testing power sockets and measuring earth electrode resistance is highly recommended.

Electro PJP
13 rue de Madrid
39500 Tavaux
FRANCE
www.electro-pjp.com

