Octotester Pro

Complete Product Manual · All Sections

DEVICE DIAGRAMS

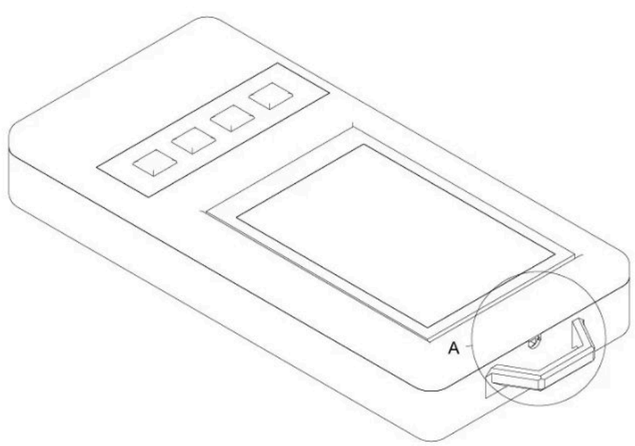


Fig. C — Case access point (Section 02, p. 02)

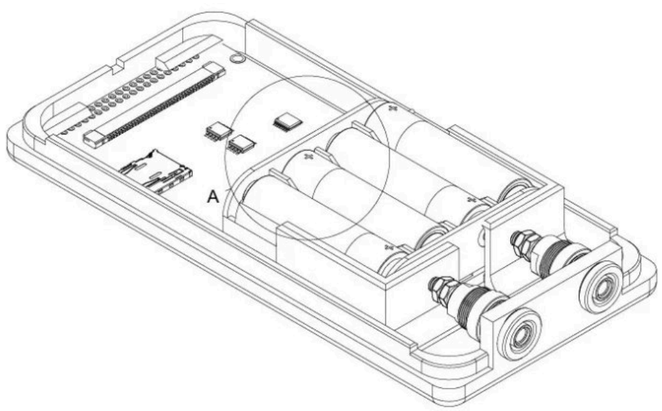


Fig. D — Battery compartment layout (Section 03, p. 03)

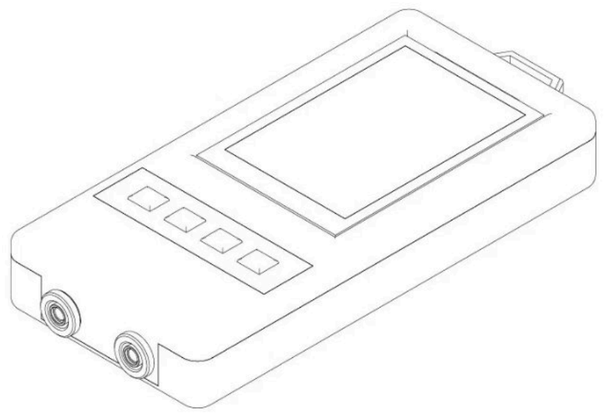


Fig. E — Isometric device overview

SECTION 01 — SAFETY WARNING

SAFETY WARNING

DO NOT USE ON ENERGIZED EQUIPMENT

This test equipment is designed for use on **de-energized circuits only.** Never use it on live or energized equipment, as it:

- Does not provide electrical isolation
- Is not rated for voltage or current protection
- May pose severe shock, arc flash, or explosion hazards

BEFORE TESTING — REQUIRED STEPS

- ✔ Ensure all power sources are **locked out / tagged out (LOTO)**
- ✔ Verify circuit is de-energized using a **properly rated voltage detector**
- ✔ Follow all applicable electrical safety standards and equipment manuals before use

Failure to comply may result in serious injury, death, or equipment damage.

For qualified personnel only. Always review equipment manuals and safety procedures before use.

⚠ Safety First — Zero Energy State Required ⚠

MENU STRUCTURE

NAVIGATION FLOWCHART — BUTTON FUNCTIONS & MENU TREE

Hold to Power Off	**Main Menu**	Profile (1–9)

Serial No.

↓

Zoom → Off / 1/4 Zoom / Half Zoom / 3/4 Zoom / Max Zoom / Auto

↓

Rotate → Yes / No

↓

Frequency → 0–100

↓

Advanced Menu → Power Off Time / Adjust Width / Adjust Height / Menu Timeout / Logo Timeout / Factory Reset / Auto Power Off

↓

Save-Back

↓

Reset Profile

SECTION 02 — OPENING THE CASE

OPENING THE DEVICE CASE

⚠ **Read before opening:** The case is secured by friction clips around the perimeter. Only a **small flathead screwdriver or plastic pry tool** is needed. Apply **gentle, controlled pressure only.** If the case does not open easily, stop and recheck the insertion point. Excessive force will snap clips, crack the housing, or cause personal injury if the tool slips.

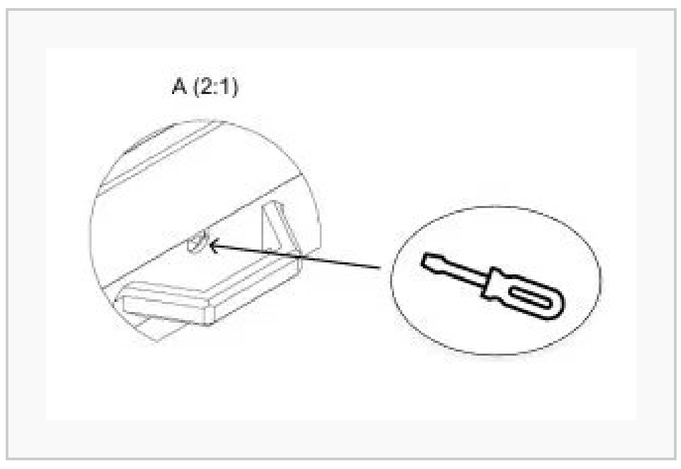


FIG. 1 — INSERTION POINT A (2:1 SCALE)

CASE DESIGN

The Octotester Pro consists of **two moulded halves** — a front panel and a rear cover — secured by internal friction clips running around the full perimeter.

There is a **dedicated insertion point (A)** at the base of the device, shown in Fig. 1 at 2:1 scale. This is the **only intended entry point** for a pry tool.

A **plastic pry tool** is strongly preferred — it reduces the risk of scratching the housing or slipping and causing injury.

STEP-BY-STEP — OPENING THE CASE

1. **Power off** the device completely. Hold Button 1 (far left) until the display confirms shutdown.
2. Place the device on a **clean, flat, stable surface** with the front panel facing down to protect the display.
3. Locate **insertion point A** at the base — the small notch in the seam between the two halves, as shown in Fig. 1.
4. Insert a **small flathead screwdriver or plastic pry tool** into point A at a shallow angle. Only the tip needs to engage the seam.
5. Apply **gentle lever pressure** — twist or rock the tool slightly. You should hear a soft click as the first clip releases. **If significant force is required, stop immediately.**
6. Work the tool **along the seam** around the perimeter, releasing each clip in turn with light pressure.
7. **Carefully lift the rear cover away.** The battery compartment is now accessible.

⚠ IF THE CASE WILL NOT OPEN

Stop immediately and reassess before applying more force. Confirm the tool is at insertion point A, working along the seam — not into the body of the device.

Excessive force can: **snap the internal clips, crack or deform the housing,** or cause **personal injury.** Do not use a large screwdriver, knife, or metal lever. Contact the manufacturer if in doubt.

CLOSING THE CASE

1. Ensure all four batteries are correctly fitted before closing (see Section 03).
2. Align the **front and rear halves** so all edges are flush and button cutouts line up correctly.
3. **Press firmly around the full perimeter** with your thumbs from the top downward until each clip clicks into place. No tools required.
4. Check the seam is **flush all the way around** with no gaps before powering on.

SECTION 03 — BATTERY FITTING

BATTERY INSTALLATION

ⓘ QUALIFIED PERSONNEL ONLY

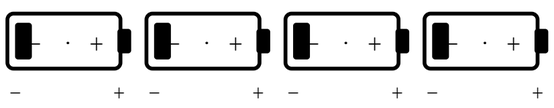
Battery installation must be carried out by a **competent person** familiar with the safe handling of batteries and low-voltage electrical equipment. Incorrect installation may result in equipment damage, leakage, or personal injury.

⚠ **Caution:** Always check battery orientation before closing. Reversed batteries will prevent operation and may cause permanent damage. This device requires **four (4) AA batteries.**

CORRECT BATTERY ORIENTATION

This device requires **four (4) AA batteries.** The **positive (+)** and **negative (−)** terminals are marked inside the compartment. Match each battery to the symbol beside its slot. If a battery does not sit flat and flush it is inserted incorrectly — remove and reinsert.

CORRECT ✓



Flat end **(−)** to the spring contact. Raised nub **(+)** to the solid plate. All four face the same direction.

INCORRECT ✗

Batteries reversed — device will not power on. Do not force the compartment closed.

STEP-BY-STEP FITTING INSTRUCTIONS

1. Ensure the device is **powered off** and the case is open (Section 02) before accessing the battery compartment.
2. Identify the **positive (+)** and **negative (−)** markings printed beside each battery slot.
3. Insert all **four AA batteries** — **flat (−) end** to the spring, **raised nub (+) end** to the solid plate.
4. Each battery must sit **flat and flush.** If it does not, it is the wrong way round — remove and reinsert.
5. Close and secure the case (Section 02 — Closing the Case) before powering on.

⚠ **Battery type:** Standard AA alkaline batteries only. Do not mix old and new batteries or different brands. Remove batteries during extended storage to prevent leakage.

SECTION 04 — SAFETY & LEGAL COMPLIANCE

SAFETY & LEGAL COMPLIANCE

⚠ LIVE WORKING PROHIBITION

This instrument is **strictly prohibited from use on energized or live electrical equipment.** It provides no electrical isolation and is not rated for use near hazardous voltages. Any use on live circuits may result in arc flash, electric shock, explosion, serious injury, or death.

Before use, confirm the circuit has been **isolated, locked out, and verified as de-energized** in accordance with local electrical safety legislation and your organisation's safe working procedures.

REGULATORY COMPLIANCE

STANDARD / REGULATION	DETAIL
Electrical Safety	Intended for use by competent persons under the Electricity at Work Regulations 1989 (UK) or equivalent national legislation.
LOTO Compliance	Lockout/Tagout procedures must be followed before use. Refer to BS EN ISO 50110 and your site-specific LOTO procedure.
CE / UKCA Marking	Conforms to applicable EU Directives and UK Statutory Instruments. Modifications void all compliance markings.
RoHS Compliance	Complies with RoHS 2011/65/EU and UK equivalent. Does not contain restricted hazardous materials above threshold levels.
EMC	Tested to EMC standards for measurement and test equipment. Avoid extreme RF interference environments.

DISPOSAL INSTRUCTIONS

WEEE — ELECTRICAL EQUIPMENT DISPOSAL

Subject to the WEEE Directive. **Do not dispose of in general household waste.** Return to an authorised WEEE collection point or contact the manufacturer at end of life.

1. **Remove all four batteries** before disposal. Recycle separately at a designated battery collection point.
2. **Do not incinerate** the device or batteries — may explode or release toxic gases under heat.
3. **Do not puncture or crush** batteries. Handle damaged batteries with gloves and dispose via a hazardous waste facility.
4. Contact your local authority or national WEEE register for the nearest approved collection facility.

POWERING ON & OFF

POWER ON

Press once to power on. The display illuminates and the start-up sequence begins. The serial number is shown briefly on boot.

POWER OFF

Press and hold Button 1 (far left) for longer than the pre-defined power-down duration. Set via **Advanced Menu → Power Off Time.** The display confirms shutdown before powering off.

Button 1 is the **far-left button** on the front panel. If the device does not respond, ensure all four batteries are correctly installed and sufficiently charged.

DEVICE OVERVIEW

WHAT IS THE OCTOTESTER PRO?

The Octotester Pro gives a **visual representation of circuit electrical impedance**, enabling fast component fault detection without complex equipment or specialist knowledge.

Connect the two test probes across a component and the device generates a characteristic trace on the display. The shape identifies what you are looking at — a short, open circuit, resistor, capacitor, diode, or faulty component. Testing that might previously have taken significant time can be completed in seconds.

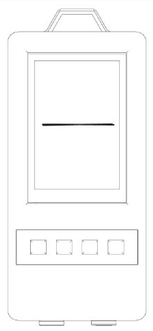
Suitable for: **resistors, capacitors, diodes, transistors, short circuits,** and **open circuits.** Used to diagnose faults in variable speed drives, PCBs, control panels, and other de-energized assemblies.

Must only be used on **de-energized, isolated circuits** by a **competent person.**

READING THE DISPLAY TRACE

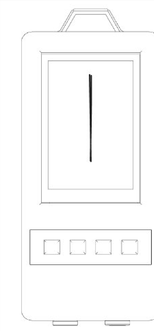
Connect the probes across the component under test and compare the live trace to the reference patterns below.

OPEN CIRCUIT — ✓ HEALTHY



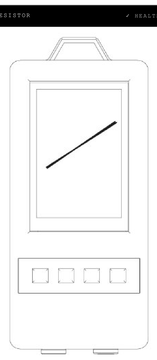
A **horizontal line** across the display. No connection between probes — zero current flows. Expected when probes are unconnected or testing across a genuine open circuit.

SHORT CIRCUIT — ✓ HEALTHY



A **vertical line** on the display. Direct connection — zero impedance. Expected across a wire link. Seen unexpectedly, it indicates a short-circuit fault.

RESISTOR — ✓ HEALTHY



A **diagonal line.** Steeper angle = lower resistance. Shallower = higher resistance. A clean straight diagonal confirms a healthy resistive component.

DIODE — HEALTHY — ✓ HEALTHY

An **asymmetric L-curve.** Flat in reverse bias, then a sharp knee and rising current in forward bias. A healthy diode shows a consistent, clearly asymmetric pattern. Reverse probes to confirm polarity.

ZENER DIODE — HEALTHY — ✓ HEALTHY

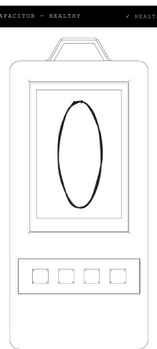
A Zener diode trace shows the **characteristic Z-shape**: a forward-bias knee on one side (like a normal diode), and a distinct **Zener breakdown knee** on the reverse side.

Unlike a standard diode which blocks in reverse, the Zener conducts in reverse once the breakdown voltage is reached. This creates the symmetric double-knee trace.

Note: The breakdown knee is only visible if the tester voltage range is set high enough to exceed the Zener voltage. Use a higher range setting if the left side appears flat.

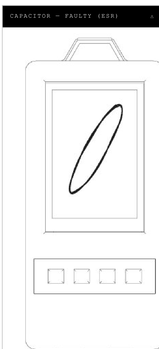
A **double-knee Z-curve.** Forward conduction on one side, Zener breakdown on the other. Compare against a known-good reference Zener of the same voltage rating. A flat trace on both sides indicates an open circuit.

CAPACITOR — HEALTHY — ✓ HEALTHY



A **symmetrical upright oval.** The capacitor is charging and discharging evenly. The rounder and more symmetrical, the healthier. Larger oval = greater capacitance.

CAPACITOR — FAULTY (ESR) — ✗ FAULT



A **tilted or rotated oval.** The capacitor has developed **Equivalent Series Resistance (ESR).** Greater tilt = more degraded. Replace the component.

Always ensure the circuit is **fully de-energized and discharged** before connecting probes. Large capacitors may retain dangerous residual charge even after isolation. Verify with a rated voltage detector before contact.

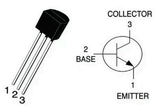
TRANSISTOR TESTING — REFERENCE GUIDE

When testing a BJT transistor with the Octotester, place the probes across two of the three terminals at a time. A healthy transistor shows a characteristic diode-style asymmetric L-curve across the **Collector–Emitter** and **Emitter–Base** junctions. The **Collector–Base** junction also produces a similar diode curve. An open or flat line indicates a blown junction. A symmetric curve on all junctions may indicate a short.

The reference images below correspond to the NPN transistor diagram (pins 1 = Emitter, 2 = Base, 3 = Collector). For PNP types, the curve polarity is mirrored.

COMPONENT REFERENCE — NPN TRANSISTOR

PHYSICAL COMPONENT & SCHEMATIC SYMBOL



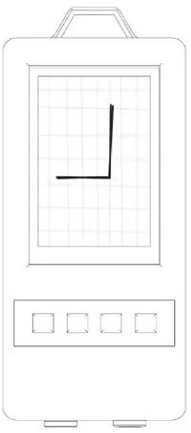
PIN IDENTIFICATION (NPN)

Pin	Label	Function
1	**Emitter**	Emits current carriers. Arrow on schematic symbol points here.
2	**Base**	Control terminal. Small base current switches larger collector current.
3	**Collector**	Collects current carriers. Typically connected to load / supply.

COLLECTOR - EMITTER JUNCTION

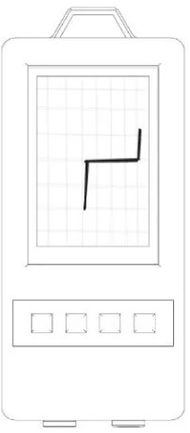
Place probes across **pin 3 (Collector)** and **pin 1 (Emitter)**. A healthy NPN transistor shows an asymmetric bent trace — the characteristic diode L-curve of a forward-biased junction. A flat horizontal line indicates an open collector-emitter.

COLLECTOR-EMITTER — HEALTHY (A) ✓ HEALTHY



Asymmetric **bent L-curve** showing one-way junction conduction. The sharp knee indicates a healthy forward-bias response. Consistent with a good NPN transistor junction.

COLLECTOR-EMITTER — HEALTHY (B) ✓ HEALTHY

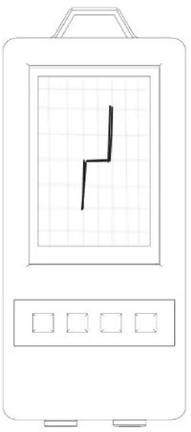


Alternative view of the **Collector–Emitter** junction showing the asymmetric trace at a different probe orientation. Both polarities should show one conducting and one non-conducting half.

EMITTER - BASE JUNCTION

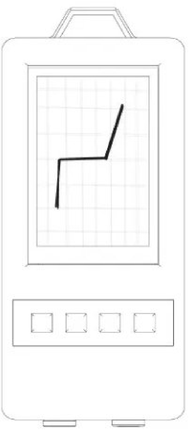
Place probes across **pin 1 (Emitter)** and **pin 2 (Base)**. This junction behaves like a standard diode. A healthy trace shows the same characteristic asymmetric L-curve. A symmetric or straight trace indicates a leaky or damaged base-emitter junction.

EMITTER-BASE — HEALTHY (A) ✓ HEALTHY



The **Emitter–Base** junction conducts forward current at a lower threshold. A clear asymmetric L-curve confirms the junction is intact and polarised correctly.

EMITTER-BASE — HEALTHY (B) ✓ HEALTHY



Alternate orientation of the **Emitter–Base** junction. Note the slight difference in curve angle compared to the Collector–Emitter — this is normal and expected for a good NPN transistor.

⚠ Always test with the circuit **fully de-energized**. All three junction pairs (C–E, E–B, C–B) should be tested and compared against a known-good reference transistor. Symmetrical or open traces on any junction indicate a fault. Replace and re-test.