

Fencing body cord and weapon tester

Printed pocket build, 18650, 84 x 40 x 26 mm

Block 1 - Core circuit

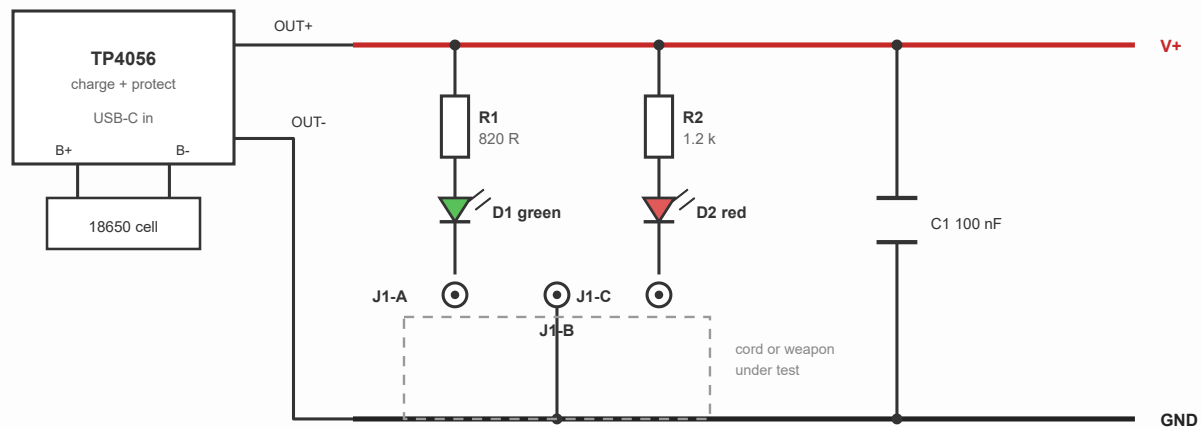
Doc 01 Rev D 2026-08-30

Purpose

The whole tester. The supply drives two indicator loops out of J1 and back through whatever is plugged in. J2 ties the far end of a body cord together so the cord itself closes both loops. **Rev D removes the switch entirely:** unplugging the cord is the off switch (nothing draws without one), and the shorts test is done by plugging in only the J1 end (Doc 03).

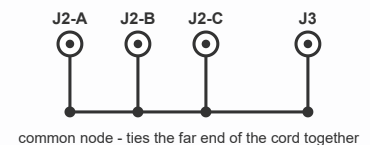
Take power from the module OUT+ and OUT- pads, never straight off the cell, so the protection circuit stays in the path and the tester still runs while charging.

Schematic



J1 row (top edge) faces the weapon side;
J2 row (front) + J3 clip tie to one common node.

Rev D: no switch anywhere - OUT+ feeds V+ directly.



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Wiring

From	To	Note
Cell	Module B+ and B-	Observe polarity; holder leads are not always coloured sanely
Module OUT+	V+ node	Rev D: direct - no switch in the power path
Module OUT-	GND node	
V+	R1 a, R2 a, C1 a	
R1 b	D1 anode, long lead	820 ohm, green
D1 cathode	J1 line A	
R2 b	D2 anode	1.2 k, red
D2 cathode	J1 line C	
J1 line B	GND node, C1 b	Line B is the return
J2 line A	J2 line B, J2 line C, J3 post	All four on one common node (Rev D: B included, no switch)

Why there is no power switch

Both lamp loops are only complete *through a plugged-in cord*. With the sockets empty the branches are open and the only battery drain is the protection circuit's few microamps - years of standby. The old ON-OFF-ON slide cost more than the battery and its two useful positions are replaced by how you plug in: both ends = continuity test, J1 only = shorts test. Just don't store the tester with a good cord attached (a plugged cord lights the lamps at about 4 mA - roughly three weeks of a 2000 mAh cell).

Build and verify

- ☐ Power up with nothing plugged in. Both lamps dark. A lamp lit on an empty socket means its LED is shorted or miswired to ground.
- ☐ Jumper J1 line A to J1 line B. Green alone lights. Jumper B to C, red alone lights. That proves the core with no cord at all.
- ☐ Plug a known good epee cord into both sockets. Both lamps steady and similar in brightness.
- ☐ Pull the J2 end out and let it hang. Both lamps dark. If either stays lit the cord has a short (or your J2 plug is touching something conductive).
- ☐ Plug in USB. The module status LED should be visible through the window in the left face, and the tester should keep working while charging.