

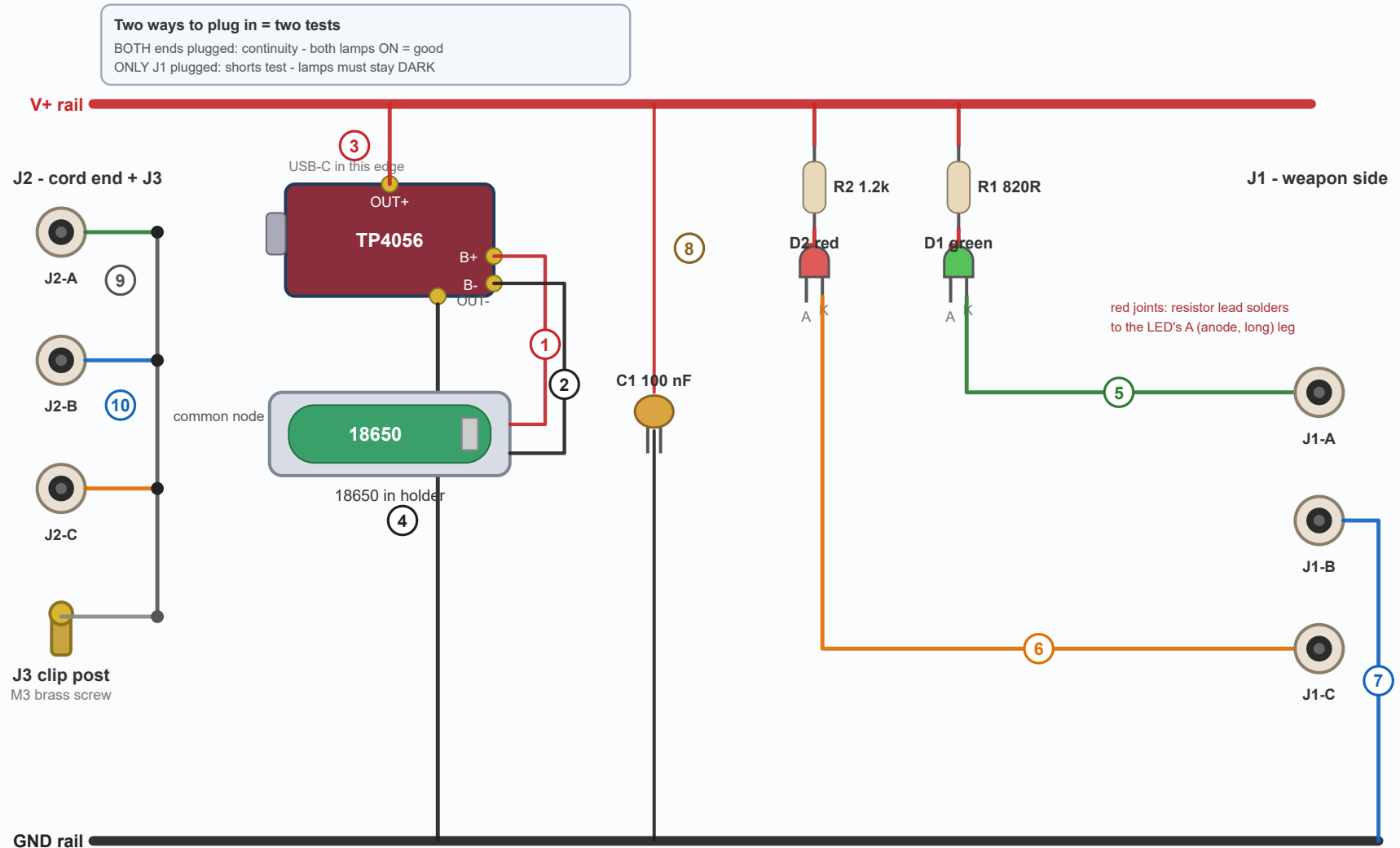
Fencing body cord and weapon tester

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

Pictorial wiring diagram

Doc 05 Rev A 2026-08-30

Same circuit as the Doc 01 schematic, drawn as the parts actually look on the bench. Trace any numbered wire here, then find the same number in the checklist on sheet 2.



Ladder layout: power flows from the top rail through each branch to the bottom rail. J2 + clip on the left, J1 on the right - no wire crosses another.
(Panel positions differ: on the printed box J1 is the top edge and J2 the front face - see Doc 02 for the physical drilling map. All jacks 4 mm.)

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Wire-by-wire checklist - do them in this order, tick as you go

#	From	To	Colour	Why
1	Cell holder red lead	TP4056 B+	red	Battery + into the charger board
2	Cell holder black lead	TP4056 B-	black	Battery return
3	TP4056 OUT+	V+ rail	red	Always live; with no cord plugged in, nothing draws
4	TP4056 OUT-	GND rail	black	The other rail
5	V+ rail → R1 (820 R) → D1 green anode; D1 cathode (flat side)	J1-A	green	Green loop: out the A jack, through the cord, back via B
6	V+ rail → R2 (1.2 k) → D2 red anode; D2 cathode	J1-C	orange	Red loop: out the C jack
7	J1-B	GND rail	blue	B is the shared return for both loops
8	C1 100 nF	across V+ and GND rails	-	Right at the rails, any orientation
9	J2-A, J2-C and J3 clip post	one common junction	green/orange/bare	Ties the far end of the cord together so the cord closes both loops
10	J2-B	the same common junction	blue	Rev F: wired direct - the shorts test is now done by unplugging the J2 end instead of a switch

Reading the schematic after this

Every pictorial part maps to one schematic symbol: the zigzag/box is a **resistor** (the beige cylinder here); the triangle-with-a-bar is an **LED**, bar = cathode = the flat side of the dome; the angled line is the **switch**; V+ and GND rails are the long red and black lines. Once these four click, Doc 01 reads like this page.

Sanity checks as you wire

After wire 4: plug USB in - the TP4056 lights, nothing else happens. After wire 7: jumper J1-A to J1-B with a paperclip and green alone lights; jumper B to C, red alone. After wire 10: a known good cord in both sockets lights both lamps; pull the J2 plug out and both must go dark (the shorts test).

LED polarity is the classic gotcha: the LONG leg is the anode (A) and goes toward the resistor / V+ side; the flat spot on the dome marks the cathode (K) toward the jack. If a lamp never lights, it is almost always in backwards - no harm done, just flip it.