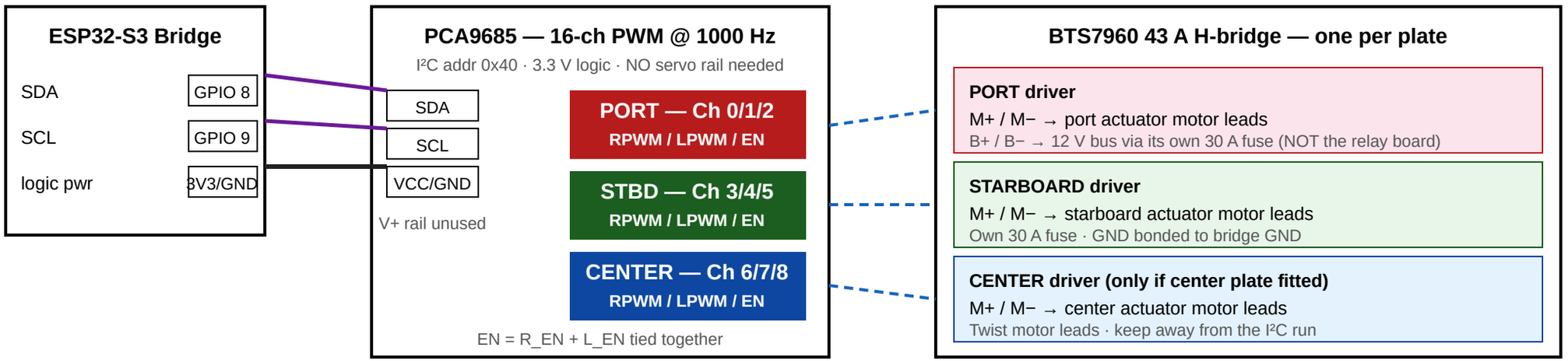
Surf Wizard — Surf-Plate Linear Actuator Wiring

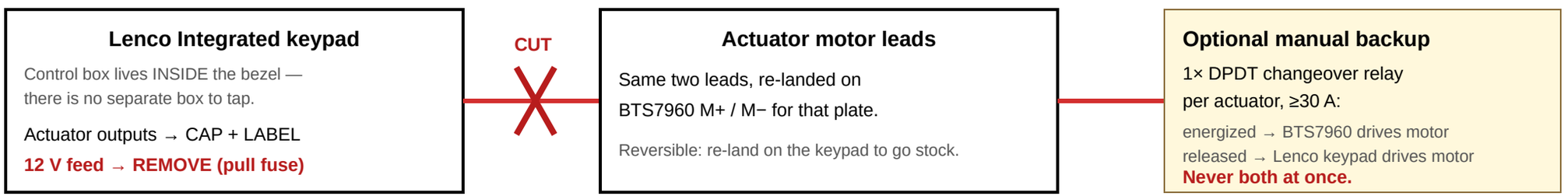
Matches INSTALLATION_RETROFIT.md §3d. Option A is the standard build. Pick ONE per boat.

OPTION A (recommended) — BTS7960 H-bridge per actuator, all control off the PCA9685

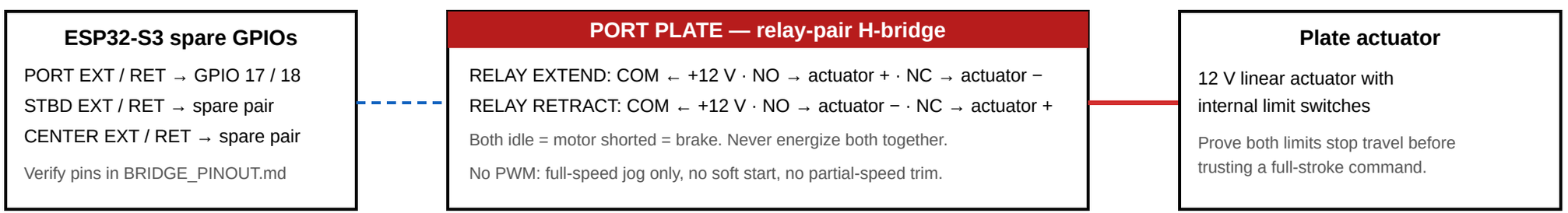


Direction wrong on a plate? Swap M+ and M− at that BTS7960 — never correct it in software.

Replacing a Lenco Integrated Trim Tab Switch Kit



OPTION B — Relay-pair H-bridge (2 relays per plate, uses the actuator's internal limit switches)



Common to both options

- E-Stop drops R_EN / L_EN (Option A) or opens both relays (Option B) — the actuator free-wheels. Prove it on the trailer first.
- Never drive extend and retract together. Firmware enforces a ≥150 ms coast before any direction change; fuse each actuator individually.
- Bond every ground (bridge, PCA9685, BTS7960, actuator return) to the boat's common bus, and label both ends of every wire.

Print at A3 or Letter landscape. Cross-reference docs/BRIDGE_PINOUT.md for exact channel assignments.