WET LAB BOX (A18): THE PARTS

Every part inside the box. Photos from the seller listings; two show the same kind of part in another brand or size, as marked. Layout and wiring: Wet_Lab_Box_Layout_2026-10-15. Status: order tracker, Oct 14.

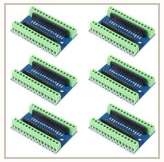


NUCLEO-G431KB

Does: The box's small computer. Takes orders from Pi A over CAN, runs the relays, reads the sensors.

Looks: White board about 2 x 0.7 in, USB socket at one end, "Nucleo" and the ST logo.

Qty 1 · **BUY one (both on hand are used)**

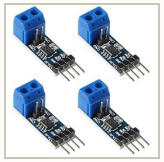


Nano screw carrier (AITRIP)

Does: The Nucleo plugs into it, so every wire lands under a screw, no loose pins.

Looks: Green board, two rows of green screw terminals, about 2.8 x 2 in.

Qty 1 · On hand (4 spare)



CAN board (SN65HVD230)

Does: Joins the Nucleo to the boat's CAN data wire.

Looks: Small blue board, blue 2-screw terminal, 4 pins. About 1.2 x 0.9 in.

Qty 1 · On hand (2 spare)

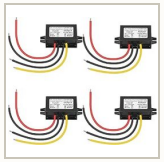


CAN surge module (Taidacent RS-12V/2S)

Does: Soaks up surges on the CAN wire where it comes in.

Looks: Narrow white block that clips on the DIN rail, screw terminals top and bottom.

Qty 1 · Coming, Oct 21 or later

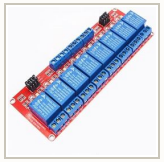


24 to 5 V converter (Klnuoxj)

Does: Makes 5 V for the Nucleo and the pressure sensor.

Looks: Small black sealed block with wire leads.

Qty 1 · On the shelf? 8 shipped, 3 used



8-relay board, 24 V (HiLetgo)

Does: Eight switches. Six turn the pumps and valves on and off; two spare.

Looks: Red board, 8 blue relay cans, screw terminals on one edge. About 5.4 x 2.2 in.

Qty 1 · On the shelf? 2 spare of 4

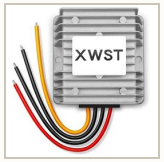


8-input board (Fafeicy)

Does: Reads the 24 V flow pulses and valve open/shut wires and passes them to the Nucleo at 3.3 V, with no wire between the two sides.

Looks: Blue board, a row of 8 small black chips, screw terminals on both sides. (Photo: same kind, other brand.)

Qty 1 · On hand (4 spare)



24 V steady converter (XWST)

Does: Holds the wet lab at a steady 24 V whatever the battery does. 10 A.

Looks: Finned aluminum block, 4 wires out one end.

Qty 1 · On hand



DIN fuse holders

Does: One per group of loads: Gulper 5 A, pumps 2 A, valves 2 A, science sensors 1 A, node 1 A.

Looks: Black block that snaps on the DIN rail; small glass fuse inside its flip-up lid.

Qty 5 · Count; fuses on hand (QBGTFAK kit)



DIN screw terminals

Does: Every wire from outside lands on one first.

Looks: Gray blocks that snap side by side on the rail, a screw on each end.

Qty About 30 · Count (Erayco and MELIFE kits)



1N5408 diodes

Does: One across each pump's two terminals, so the relay contacts do not spark when a pump stops.

Looks: Black body, wire legs, silver stripe. Stripe goes to plus.

Qty 3 · On hand



Surge diode (1.5KE33CA)

Does: Clamps voltage spikes on the 24 V.

Looks: Looks like the 1N5408 but printed 1.5KE33CA. Goes either way round.

Qty 1 · On hand (check the bag)



Resistors

Does: 10k and 18k drop the pressure signal from 4.5 V to 2.9 V for the Nucleo. Two 4.7k on the temperature probe's data wires.

Looks: Small striped resistors from the MelkTemn kit.

Qty 4 · On hand



The box

Does: Holds it all. IP67 plastic with a mounting plate inside.

Looks: About 12 x 8 x 5 in. (Photo: same maker, other size.)

Qty 1 · Use the TICONN box of Oct 3 if that big, else buy



Cable glands

Does: Seal each cable where it comes in, all on the bottom face.

Looks: Black nylon nut with a rubber insert. PG7 takes a 1/2 in hole, PG9 a 5/8 in hole.

Qty PG7 x10, PG9 x4 · Count



Breather vent

Does: Lets the box breathe without letting water in.

Looks: Black screw plug, M12, 1/2 in hole.

Qty 1 · On hand (8-pack, Sep 16)