RELEASE NODE B · PARTS

Boat 1 · A15 · v10.5 · small plastic box at the stern, near the drogue boxes · releases drogue boxes 1 and 2 by horn B

A



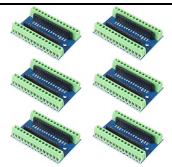
Box, QILIPSU plastic, with plate
Size not known. Drawn 7.9 x 5.9 x 3.9 in, a guess
1 · check size

B



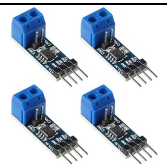
NUCLEO-G431KB
The node's brain. Solder links stay as shipped
1 · have; check it says G431KB

C



Nano screw carrier (AITRIP)
Nucleo plugs in; every pin on a screw. Staked
1 · have

D



CAN board SN65HVD230
House bus. Its 120 ohm snipped off with flush cutters
1 · have

E

4-pin plug on a short lead

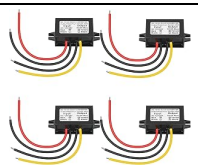
4-pin plug for the CAN board, 24 AWG
Grove cable, far plug cut off. On its header, zip-tied, a dab of silicone. Amazon B0DGGJKNTS
1 · buy

F



CAN surge part, Taidacent RS-12V/2S
Lies on a short rail stub, IN end at the left
1 · have

G



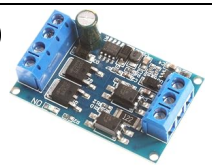
24 to 5 V converter, KInuoxj
Potted, wire leads, looks like the 24 to 12 V one. 5 V for the Nucleo
1 · have

H



Enable relay, HiLetgo 24 V 30 A, 1 ch
The only thing that puts 24 V on the release bus
1 · have

I



MOSFET modules, 600 W MOS
One per horn: the only way back to 0 V
2 · have

J



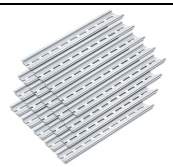
Surge diode 1.5KE33CA
Across 24 V and 0 V, at the feed
1 · have; check the bag

K



DIN screw terminals UK2.5B
14 blocks, bridge bars, 2 end stops
14 · have

L



DIN rail, 35 mm
About 3.5 in for the strip, one short stub
2 · have

M



Glands: PG7 x1, PG11 x2, PG11 or PG13.5 x1
All on the bottom wall. No vent. Sealant in the three oval-cable glands
4 · check; measure the 12/2

N



CAN drop: Micro-C cord, cut
From the house bus end tee (terminator there)
1 · check shelf

O

flat two-core cable

12/2 tinned duplex, line 2
24 V from its own 30 A breaker, backup-fed bar
1 · have (roll)

P

flat two-core cable

Release cable to each drogue box: 14/2 tinned duplex
Red +, black –. From the 14/2 roll
2 · have (roll)

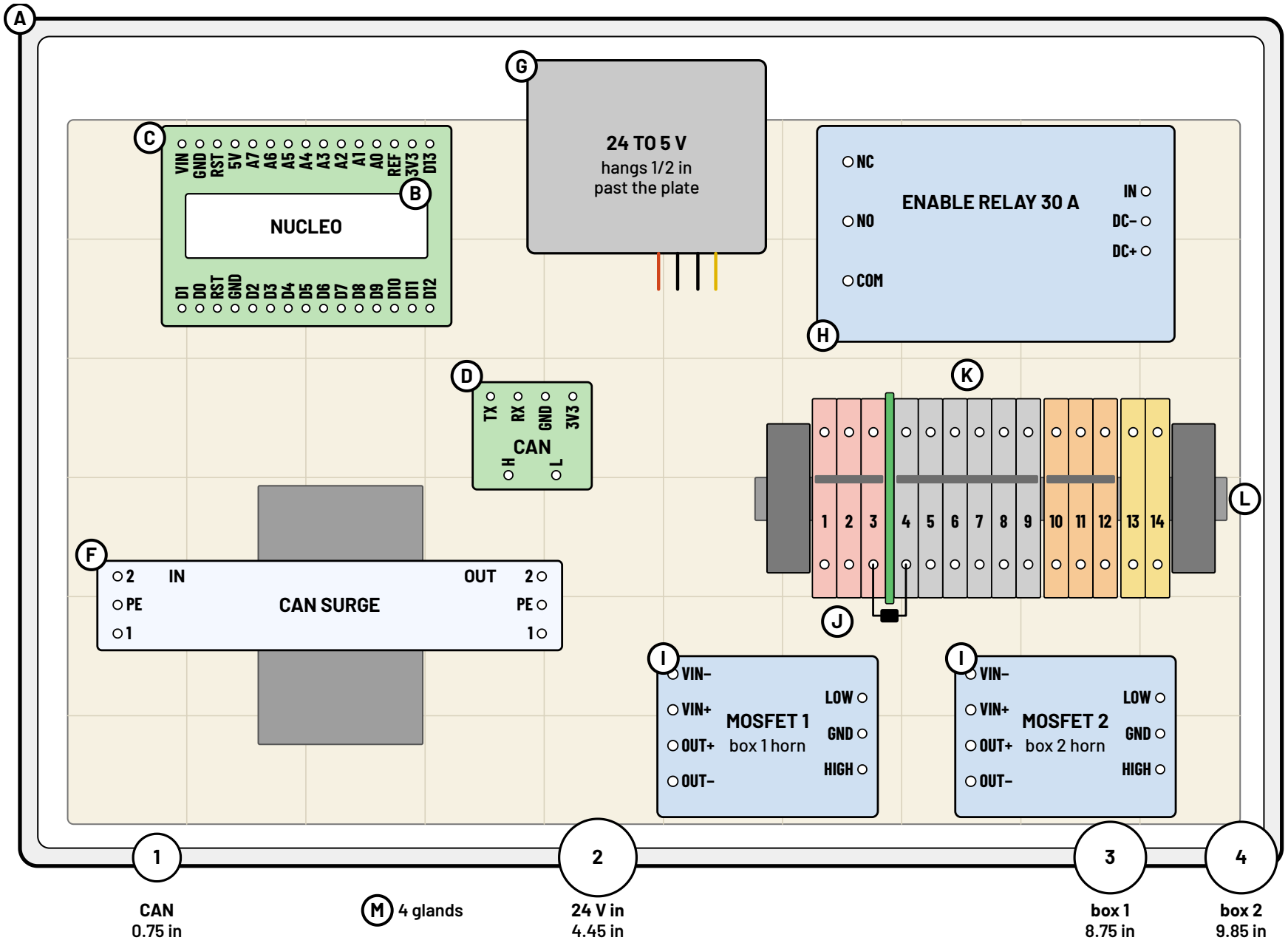
Q

wire, ferrules, heat shrink, sealant

Wire, ferrules, heat shrink, sealant
22 AWG kit; 14 AWG from the 14/2 or 14/4 on hand; Berkland 4000 UV
1 · have (kits)

RELEASE NODE B · LAYOUT

lid off, looking in · your plate photo turned sideways (photo top = right) · about to scale, 1 grid square = 1 in



STRIP

- **1-3** 24 V bar
- **4-9** 0 V bar
- **10-12** release bus
- **13, 14** horn returns

Gray bar = bridged
Green = partition

Letters = page 1

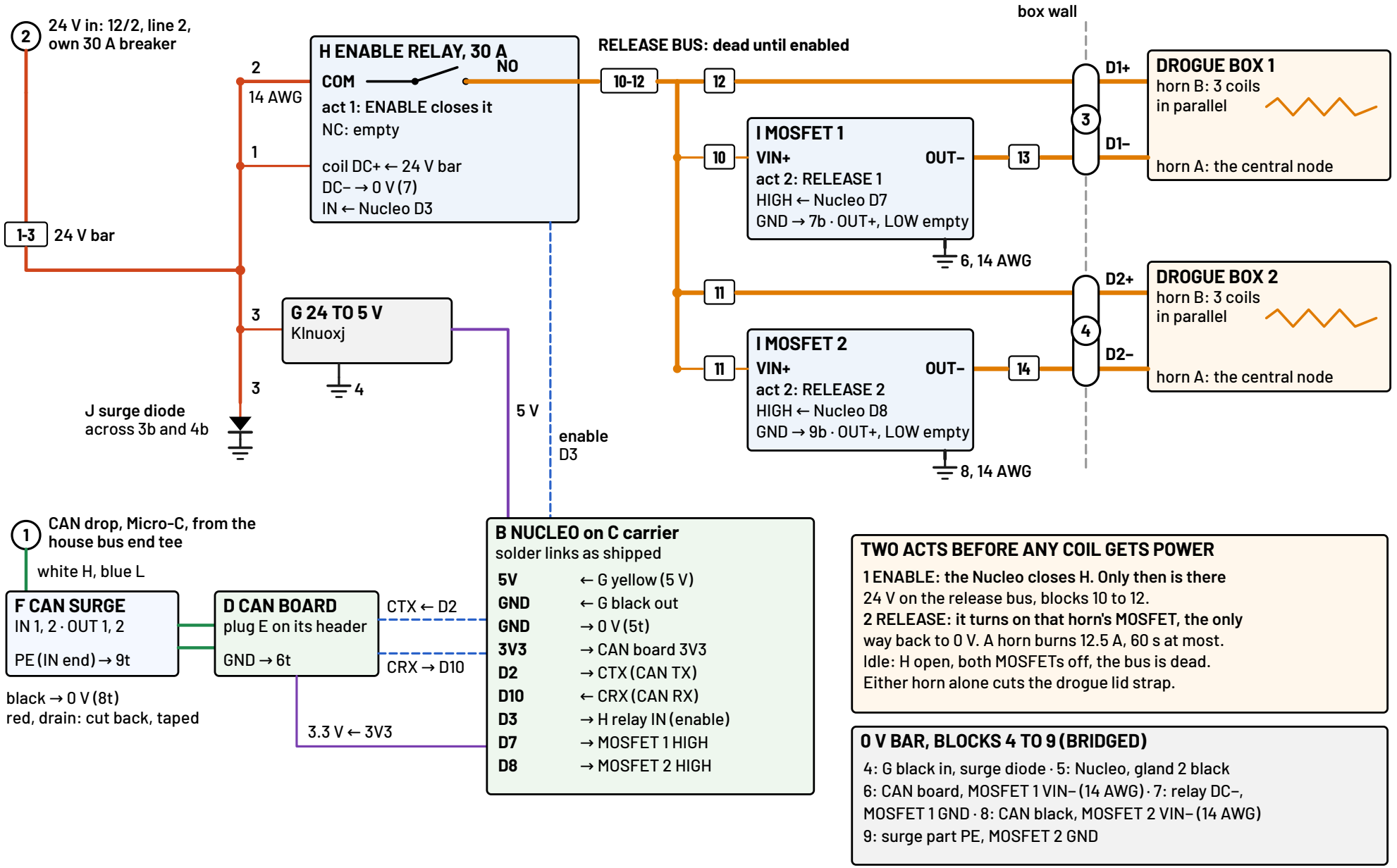
CAN board D: not in the photo; spot is Claude's

Box size: not known

Holes: in the bottom wall; inches from the left end of the plate. Hole 2: PG11 or PG13.5; 3, 4: PG11, 3/4 in; 1: PG7, 1/2 in.

RELEASE NODE B · WIRING

how it connects · numbers in boxes = strip blocks, numbers in circles = glands · not to scale



TWO ACTS BEFORE ANY COIL GETS POWER

1 ENABLE: the Nucleo closes H. Only then is there 24 V on the release bus, blocks 10 to 12.
2 RELEASE: it turns on that horn's MOSFET, the only way back to 0 V. A horn burns 12.5 A, 60 s at most.
Idle: H open, both MOSFETs off, the bus is dead.
Either horn alone cuts the drogue lid strap.

0 V BAR, BLOCKS 4 TO 9 (BRIDGED)

4: G black in, surge diode · 5: Nucleo, gland 2 black
6: CAN board, MOSFET 1 VIN– (14 AWG) · 7: relay DC–,
MOSFET 1 GND · 8: CAN black, MOSFET 2 VIN– (14 AWG)
9: surge part PE, MOSFET 2 GND

24 V · release path · 0 V · 5 V, 3.3 V · CAN · logic · dashed = logic from the Nucleo

RELEASE NODE B · EVERY WIRE

strip blocks 1 to 14 left to right as on page 2

THE STRIP, BLOCK BY BLOCK

t = top screw (relay side), b = bottom screw (MOSFET side). One wire per screw.

Block	Job	Wires
1	24 V bar, 1-3 bridged	t: relay H DC+. b: gland 2 red (12 AWG)
2	24 V bar	t: relay H COM (14 AWG). b: spare
3	24 V bar	t: converter G red in. b: surge diode J
4	0 V bar, 4-9 bridged	t: converter G black in. b: surge diode J
5	0 V	t: Nucleo GND. b: gland 2 black (12 AWG)
6	0 V	t: CAN board D GND. b: MOSFET 1 VIN– (14 AWG)
7	0 V	t: relay H DC–. b: MOSFET 1 GND
8	0 V	t: gland 1 black (CAN). b: MOSFET 2 VIN– (14 AWG)
9	0 V	t: surge part F PE. b: MOSFET 2 GND
10	release bus, 10-12 bridged	t: relay H NO (14 AWG). b: MOSFET 1 VIN+
11	release bus	t: gland 4 + core (D2+). b: MOSFET 2 VIN+
12	release bus	t: gland 3 + core (D1+). b: spare
13	horn 1 return	t: gland 3 – core (D1–). b: MOSFET 1 OUT– (14 AWG)
14	horn 2 return	t: gland 4 – core (D2–). b: MOSFET 2 OUT– (14 AWG)

OFF THE STRIP

Part	Wires
Relay H	COM ← 2t, NO → 10t (both 14 AWG). DC+ ← 1t, DC– → 7t. IN ← Nucleo D3. NC empty
MOSFET 1 (I), left	VIN+ ← 10b. OUT– → 13b. VIN– → 6b. HIGH ← Nucleo D7. GND → 7b. OUT+, LOW empty
MOSFET 2 (I), right	VIN+ ← 11b. OUT– → 14b. VIN– → 8b. HIGH ← Nucleo D8. GND → 9b. OUT+, LOW empty
Converter G	Own leads: red in ← 3t, black in → 4t, 5 V out → Nucleo 5V, black out → Nucleo GND. Read the colors off its label
Surge diode J	3b to 4b, either way round, across the green partition. Legs short and sleeved
Nucleo B on C	5V ← G 5 V out. GND ← G black out. Other GND → 5t. 3V3 → plug E red. D2 → plug E yellow (CAN TX). D10 ← plug E white (CAN RX). D3 → H IN, D7 → MOSFET 1 HIGH, D8 → MOSFET 2 HIGH (the central node's pins for the same jobs)
CAN board D	Screws: CANH → F OUT 1, CANL → F OUT 2. Plug E leads: red 3.3V ← Nucleo 3V3, black GND → 6t, yellow CAN TX ← D2, white CAN RX → D10
Surge part F	IN 1 ← gland 1 white. IN 2 ← gland 1 blue. PE (IN end) → 9t. OUT 1 → CANH, OUT 2 → CANL. OUT end PE empty

CABLES IN, BY GLAND

Gland	Cable	Cores
1	CAN drop	white → F IN 1, blue → F IN 2, black → 8t. Red and drain: cut back, taped
2	24 V, 12/2	red → 1b, black → 5b. Gland filled with sealant (oval jacket)
3	box 1 release cable, 14/2	red → 12t, black → 13t. Label D1+, D1– at both ends. Gland filled with sealant (oval jacket)
4	box 2 release cable, 14/2	red → 11t, black → 14t. Label D2+, D2–. Sealant, as gland 3

BEFORE WIRING

Nucleo: check it says G431KB; every solder link stays as shipped. CAN board: snip its 120 ohm resistor off with flush cutters; its header stays: plug E on it, zip-tied lengthwise, a dab of silicone, a paint dot at pin 1 on plug and board. Relay H: set the trigger jumper, hold it with a dab of removable silicone (which way, H or L, is not written). Measure the 12/2 jacket, then PG11 or PG13.5 for gland 2. At the stern, feed dead: battery switch and backup converter off, or lift the feeder's lug at line 2's breaker.

WIRE AND ENDS

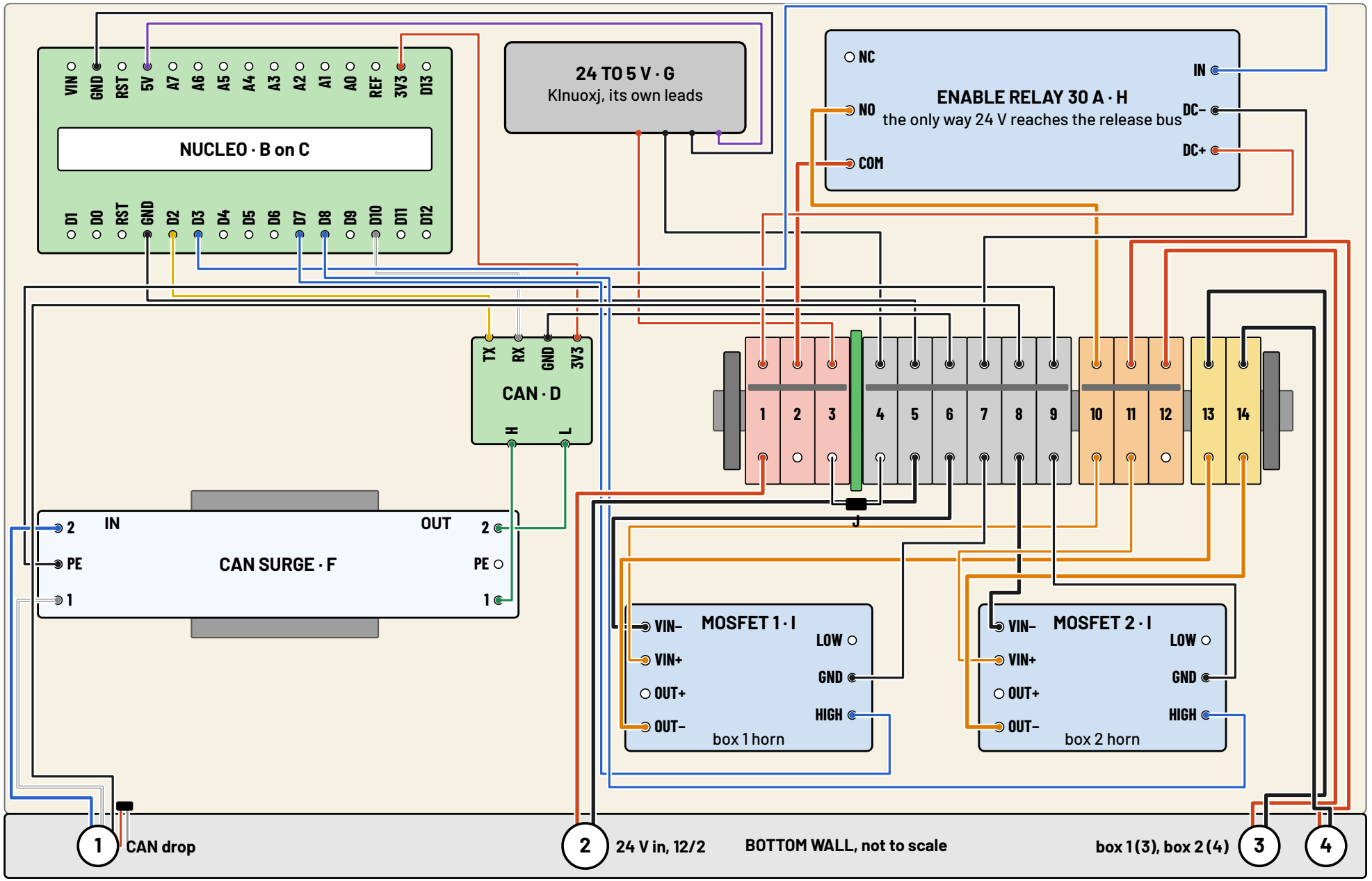
14 AWG red and black, 105°C marine wire, from the 14/2 or 14/4 on hand, for the burn current: 2 to H COM, H NO to 10, 13 and 14 to the MOSFET OUT– screws, the MOSFET VIN– leads to 6 and 8. Keep these short. Red for COM and NO; black for VIN– and OUT–, each OUT– wire labeled HORN 1 RETURN or HORN 2 RETURN at both ends (it is not 0 V while the MOSFET is off). The CAN board's plug E keeps its own lead colors: red 3.3 V, black GND, white CAN RX, yellow CAN TX. All other inside wires 22 AWG: red 24 V, black 0 V, blue logic, white CAN H, blue CAN L (as the drop cord). Ferrule on every stranded end. Label both ends. Drip loop on every cable. Nothing goes to the lightning copper.

STILL OPEN

The box size. Both horns every time, or this node's horn only if the first does not open the lid: Mike's pick.

RELEASE NODE B · WIRES ON THE LAYOUT

every wire drawn in · as on page 2, pulled apart, not to scale



24 V · release path · 0 V · 5 V, 3.3 V · CAN · logic

Thick = the 12/2 feed and the 14 AWG burn-current wires. Cables (12/2 and both 14/2 release cables: red +, black −) and the CAN board's plug E leads in their own colors. Where lines cross, the top one has a white edge; crossing lines never join. MOSFET OUT+ and LOW, relay NC: empty.