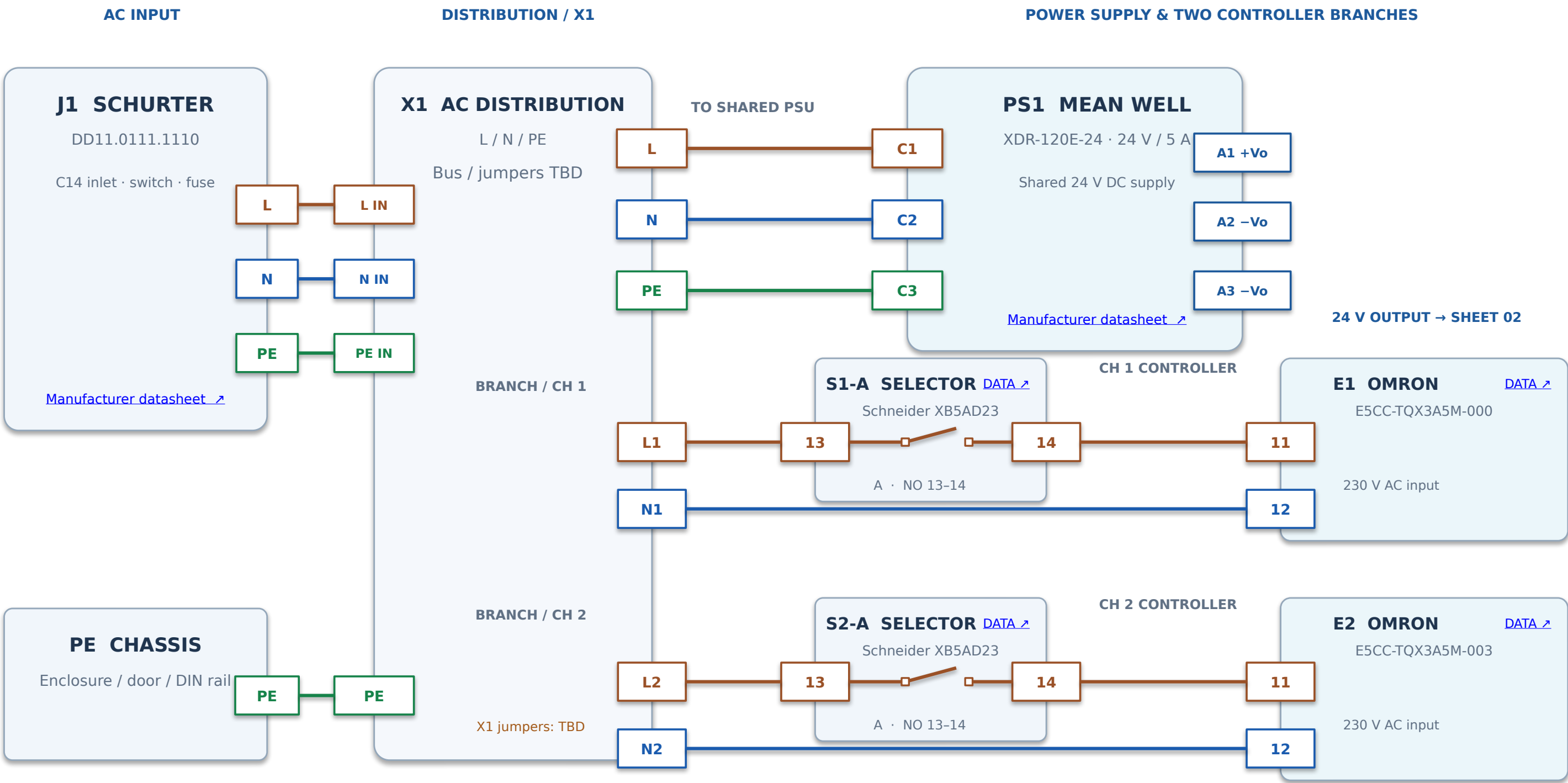


01 / MAINS SUPPLY & DISTRIBUTION

L N PE

Two independent Omron channels • Shared 24 V supply • Editable schematic



DESIGN REVIEW ONLY — Not approved for wiring / energising

X1: 3 outgoing L (PS1, S1-A input, S2-A input) and 3 outgoing N (PS1, E1, E2). Incoming L/N, selector outputs and PE bonds are additional wires.

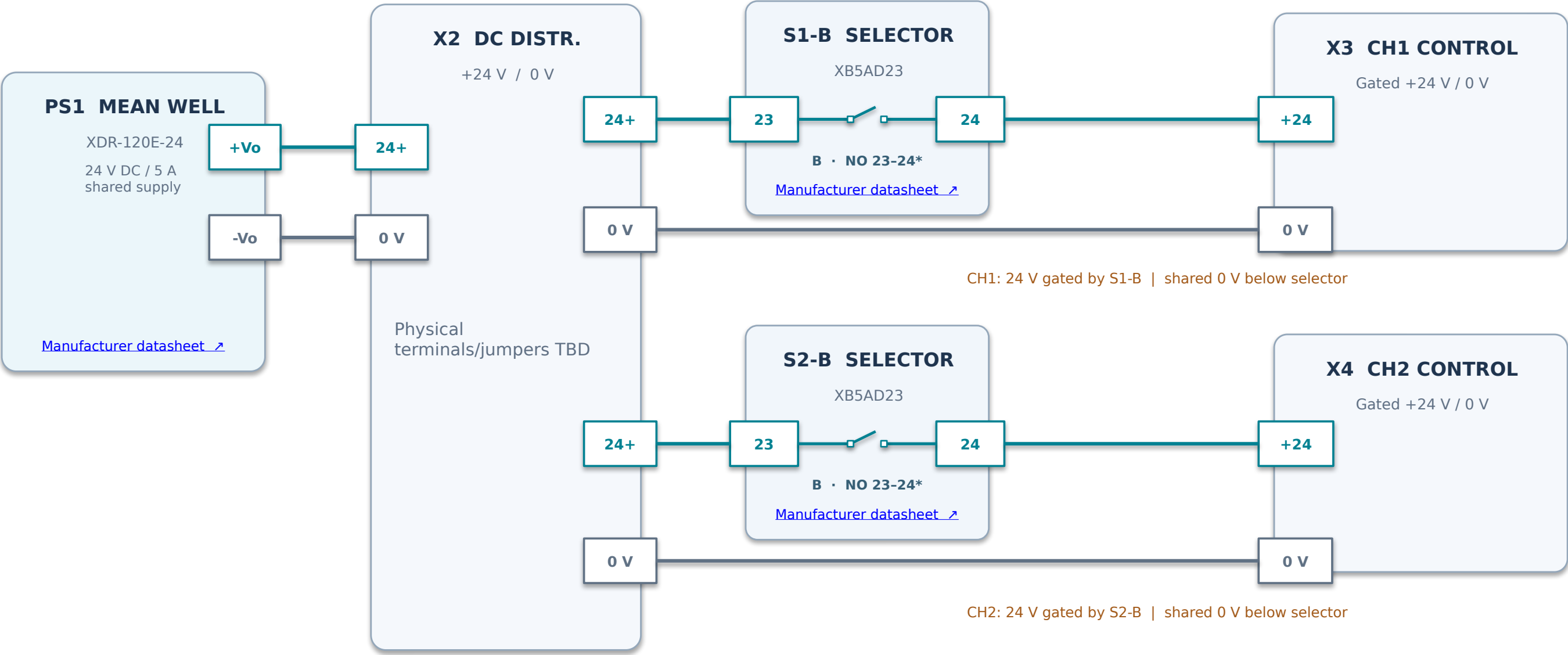
02 / SHARED 24 V DISTRIBUTION & CHANNEL INTERLOCKS

+24 V / gated

One shared Mean Well supply; S1-B and S2-B independently enable their respective 24 V branches.

0 V return

24 V DC DISTRIBUTION / CHANNEL 1 + CHANNEL 2



Selector A = mains NO 13-14; B = gated +24 V NO 23-24* (IEC proposed). Per channel THREE +24 V and THREE 0 V take-off positions are reported. Approved junctions may be necessary. Verify physical contact markings and supply feeds.

DESIGN REVIEW ONLY | Terminal references are proposed where physical hardware is unidentified. Not approved for wiring / energising.

03 / CHANNEL 1 / MOMENTARY ENABLE & FINDER CONTROL

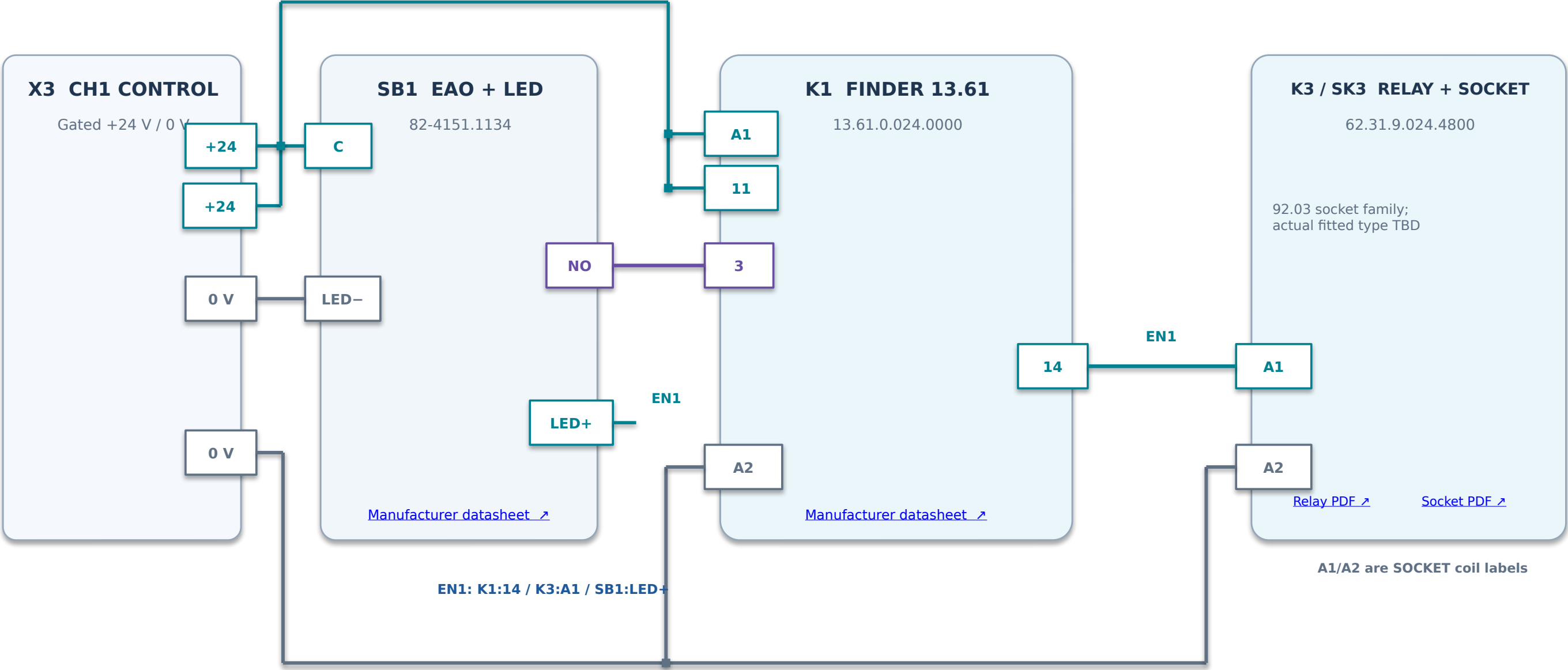
Gated +24 V

EAO button pulses the Finder 13.61; its output enables the existing Finder 62.31 heater relay (CH1).

0 V return

Momentary input

HEATER ENABLE CIRCUIT / 24 V DC



EN1 = K1:14 / K3:A1 / SB1:LED+; SB1 COM is a different gated +24 V node.

X3 gated +24 -> SB1 COM, K1:A1 & 11; SB1 NO -> K1:3; EN1(K1:14) -> K3:A1 & SB1 LED+; 0 V -> K1:A2,K3:A2,SB1 LED-.

DESIGN REVIEW ONLY | Terminal references are proposed where physical hardware is unidentified. Not approved for wiring / energising.

Proposed K1 mode RI (upper selector); orange T timer is only used in IT. Prove OFF on supply return and held ENABLE.

04 / CHANNEL 2 / MOMENTARY ENABLE & FINDER CONTROL

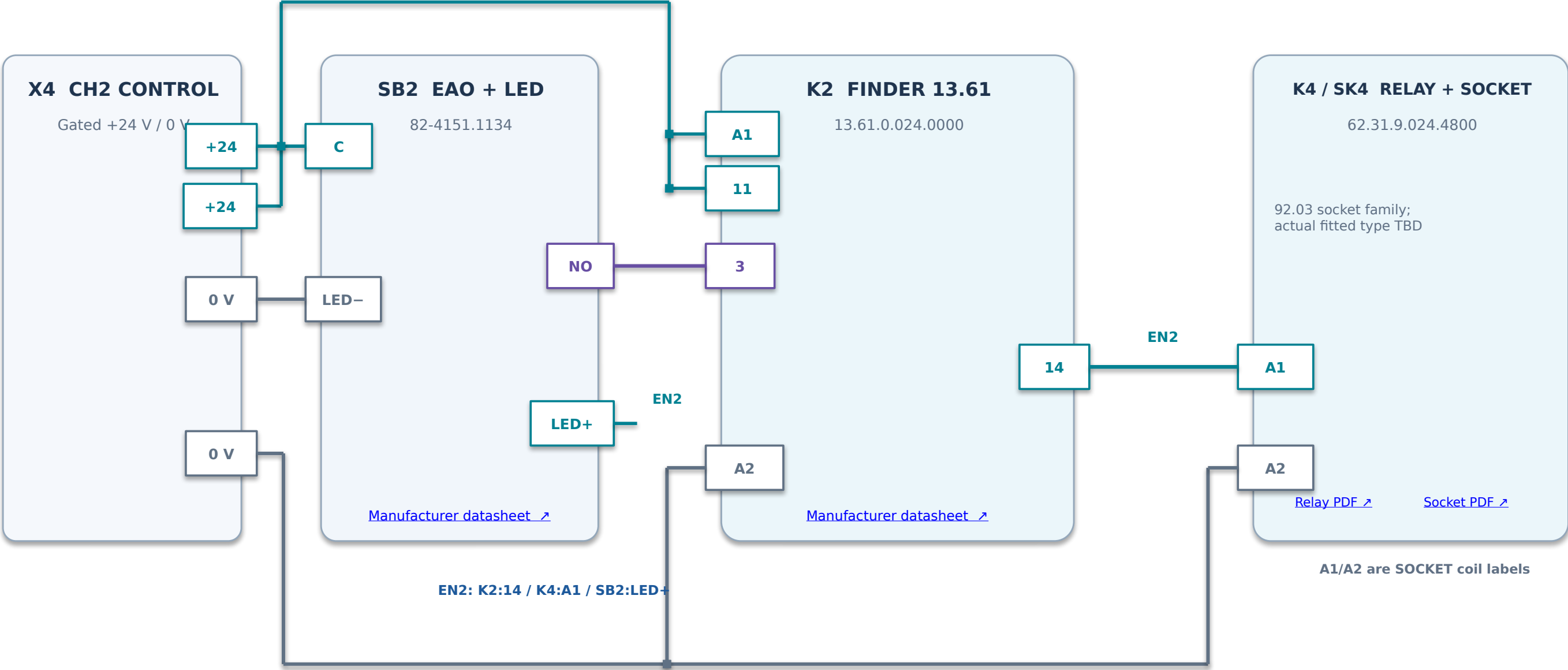
Gated +24 V

EAO button pulses the Finder 13.61; its output enables the existing Finder 62.31 heater relay (CH2).

0 V return

Momentary input

HEATER ENABLE CIRCUIT / 24 V DC



EN2 = K2:14 / K4:A1 / SB2:LED+; SB2 COM is a different gated +24 V node.

X4 gated +24 -> SB2 COM, K2:A1 & 11; SB2 NO -> K2:3; EN2(K2:14) -> K4:A1 & SB2 LED+; 0 V -> K2:A2,K4:A2,SB2 LED-.

DESIGN REVIEW ONLY | Terminal references are proposed where physical hardware is unidentified. Not approved for wiring / energising.

Proposed K2 mode RI (upper selector); orange T timer is only used in IT. Prove OFF on supply return and held ENABLE.

05 / CHANNEL 1 / SSR DRIVE + HEATER ACTIVITY LED

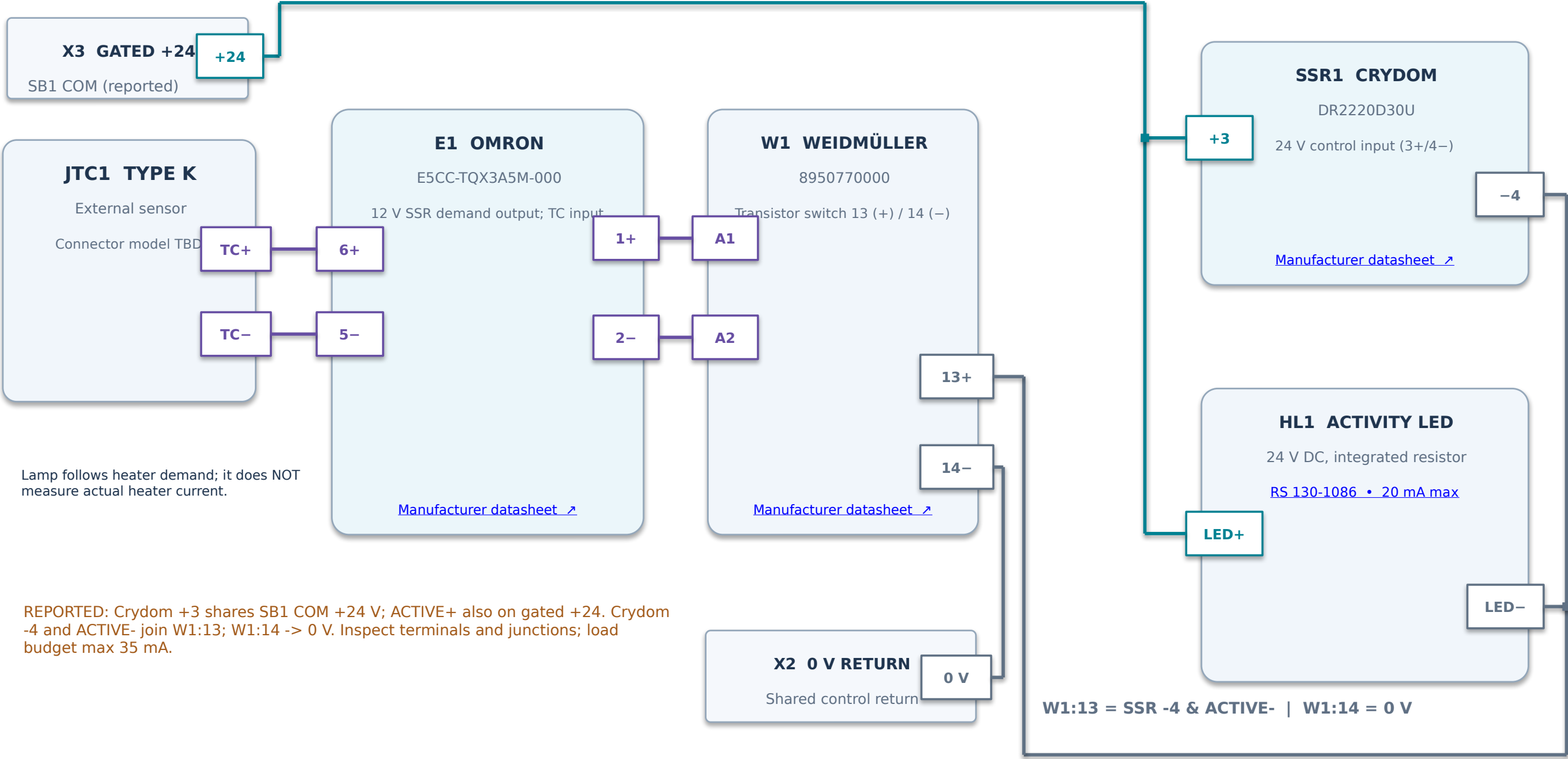
TC / 12 V demand

Omron 12 V SSR demand controls an isolated Weidmüller interface switching both Crydom input and activity LED.

24 V to both loads

Switched return

THERMOCOUPLE / PULSE INTERFACE / TWO PARALLEL 24 V LOADS



Lamp follows heater demand; it does NOT measure actual heater current.

REPORTED: Crydom +3 shares SB1 COM +24 V; ACTIVE+ also on gated +24. Crydom -4 and ACTIVE- join W1:13; W1:14 -> 0 V. Inspect terminals and junctions; load budget max 35 mA.

DESIGN REVIEW ONLY | Terminal references are proposed where physical hardware is unidentified. Not approved for wiring / energising.

ACTIVE+ shares Crydom +3 / SB1 COM gated +24 V. ENABLE LED+ instead comes from Finder K1:14 (EN1).

06 / CHANNEL 2 / SSR DRIVE + HEATER ACTIVITY LED

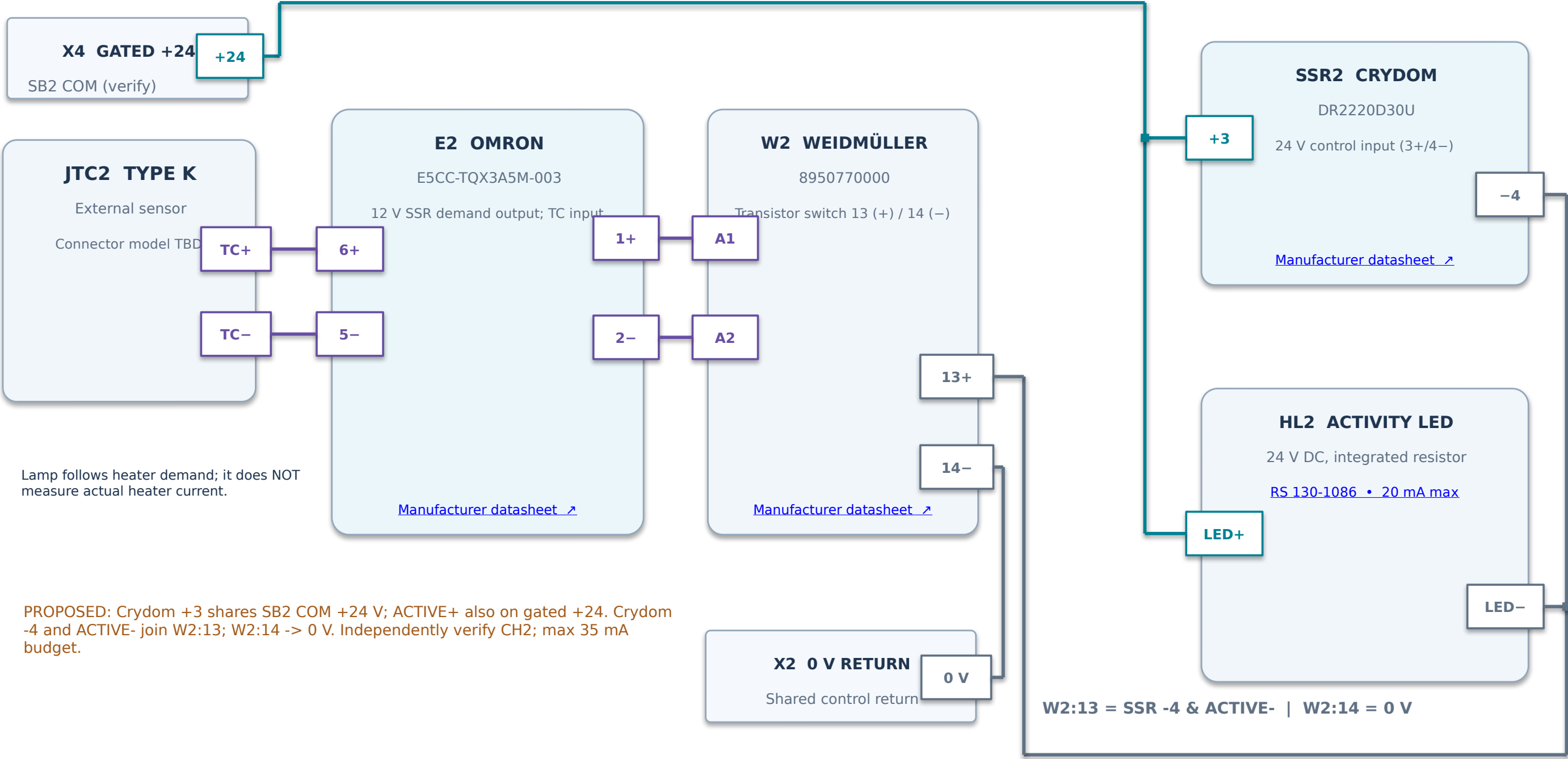
TC / 12 V demand

Omron 12 V SSR demand controls an isolated Weidmüller interface switching both Crydom input and activity LED.

24 V to both loads

Switched return

THERMOCOUPLE / PULSE INTERFACE / TWO PARALLEL 24 V LOADS



Lamp follows heater demand; it does NOT measure actual heater current.

PROPOSED: Crydom +3 shares SB2 COM +24 V; ACTIVE+ also on gated +24. Crydom -4 and ACTIVE- join W2:13; W2:14 -> 0 V. Independently verify CH2; max 35 mA budget.

DESIGN REVIEW ONLY | Terminal references are proposed where physical hardware is unidentified. Not approved for wiring / energising.

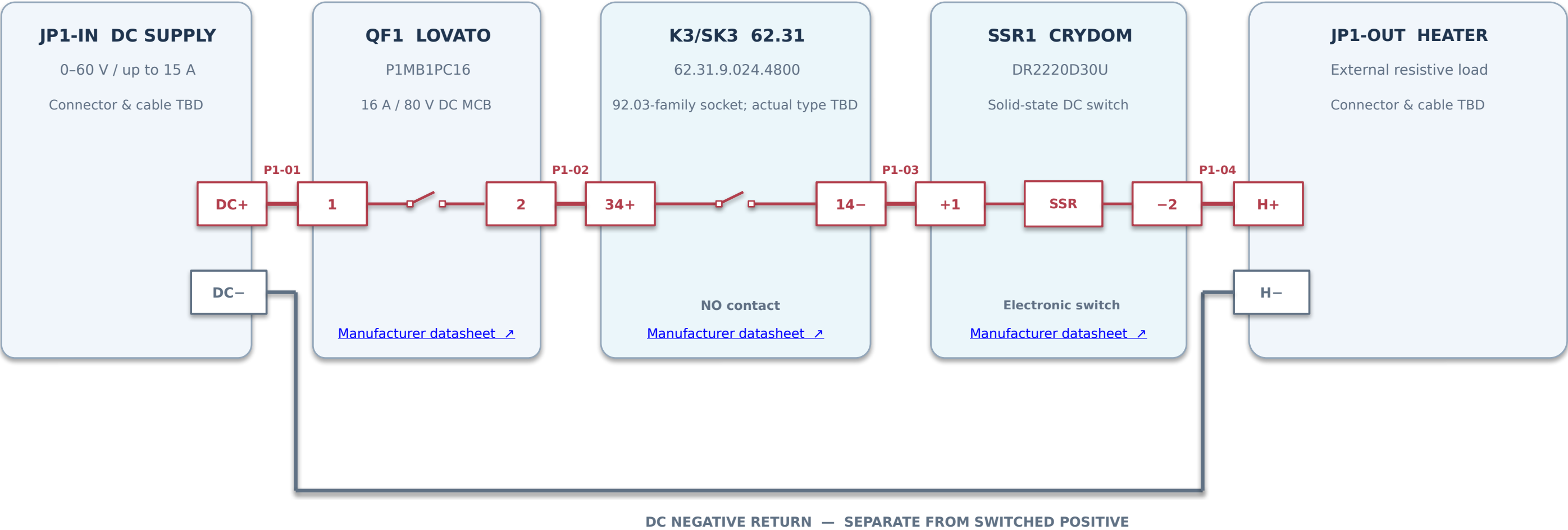
ACTIVE+ shares Crydom +3 / SB2 COM gated +24 V. ENABLE LED+ instead comes from Finder K2:14 (EN2).

07 / CHANNEL 1 / COMPLETE DC HEATER POWER LOOP

External 0-60 V DC supply, breaker, polarity-sensitive Finder DC relay, Crydom SSR and direct return.

Switched positive
Separate DC- return

INDEPENDENT HEATER SUPPLY / 15 A MAX DESIGN



Finder 62.31 contact 14(-) and Crydom load -2 BOTH remain on switched DC POSITIVE, not DC negative. Verify 15 A contact/socket, breaker and SSR thermal ratings.

DESIGN REVIEW ONLY | Terminal references are proposed where physical hardware is unidentified. Not approved for wiring / energising.

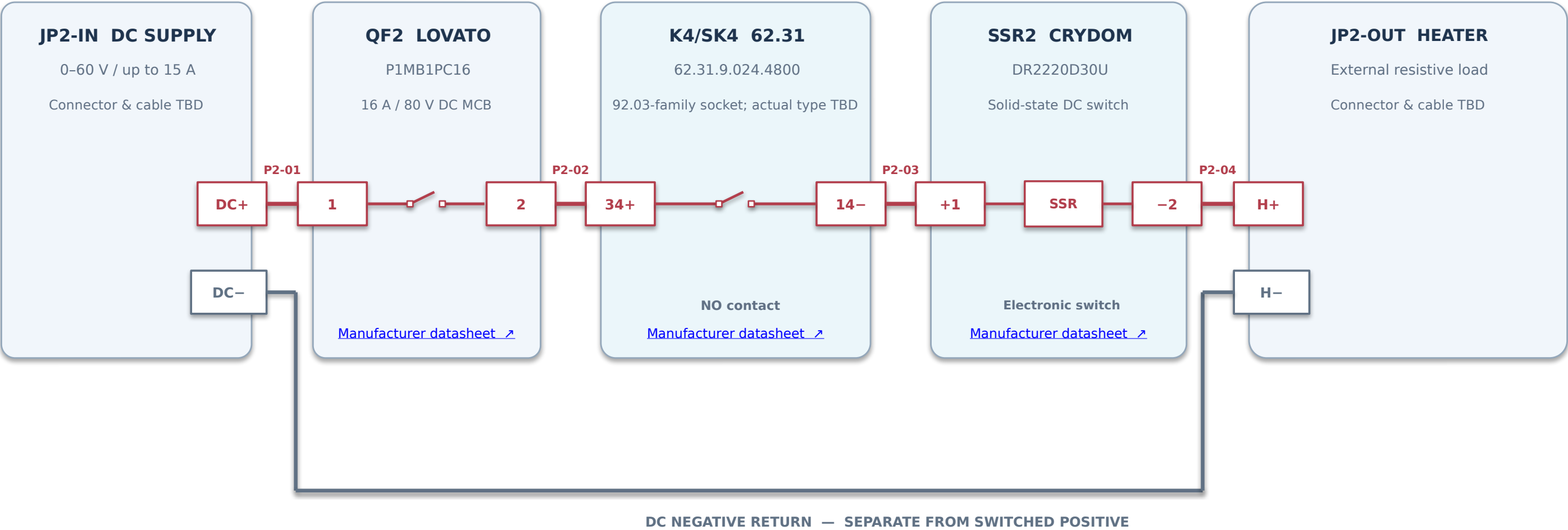
Finder contact 34 (+) → 14 (-) and SSR load +1 → -2 are both in the POSITIVE current path.

08 / CHANNEL 2 / COMPLETE DC HEATER POWER LOOP

External 0-60 V DC supply, breaker, polarity-sensitive Finder DC relay, Crydom SSR and direct return.

Switched positive
Separate DC- return

INDEPENDENT HEATER SUPPLY / 15 A MAX DESIGN



Finder 62.31 contact 14(-) and Crydom load -2 BOTH remain on switched DC POSITIVE, not DC negative. Verify 15 A contact/socket, breaker and SSR thermal ratings.

DESIGN REVIEW ONLY | Terminal references are proposed where physical hardware is unidentified. Not approved for wiring / energising.

Finder contact 34 (+) → 14 (-) and SSR load +1 → -2 are both in the POSITIVE current path.

09 / CONNECTION SCHEDULE / MAINS + 24 V DISTRIBUTION

Functional point-to-point net destinations for the component-port diagrams (not a physical ferrule/cable schedule).

TERMINAL-LEVEL REFERENCE / MAINS AND 24 V

■	AC01	J1 switched fused L	→	X1:L bus
■	AC02	J1 switched N	→	X1:N bus
■	AC03	J1:PE	→	X1:PE + chassis bonds
■	AC04	X1:L / X1:N / PE (3 paths)	→	PS1:C1 (L) / C2 (N) / C3 (FG)
■	AC05	X1:L -> S1-A 13 -> S1-A 14	→	E1:11 (L); 2 physical wires
■	AC06	X1:N bus	→	E1:12 (N)
■	AC07	X1:L -> S2-A 13 -> S2-A 14	→	E2:11 (L); 2 physical wires
■	AC08	X1:N bus	→	E2:12 (N)
■	DC01	PS1:A1 +Vo	→	X2:+24 V shared
■	DC02	PS1:A2/A3 –Vo	→	X2:0 V shared
■	DC03	X2:+24 → S1-B:23/24*	→	X3:CH1 gated +24
■	DC04	X2:+24 → S2-B:23/24*	→	X4:CH2 gated +24
■	DC05	X2:0 V shared	→	X3 / X4 returns

Verify 3 L / 3 N X1 outgoing taps, all incoming conductors, selector NO markings, PE bonding, X1-X4 terminal blocks and approved ferrules.

DESIGN REVIEW ONLY | Terminal references are proposed where physical hardware is unidentified. Not approved for wiring / energising.

Cabinet TOTAL: X1 supplies 3 outgoing L and 3 outgoing N. Incoming L/N, selector-to-Omron Live wires and protective earth are ADDITIONAL.

10 / CONNECTION SCHEDULE / CONTROLS + HEATER

Both channels follow equivalent functional nets; this summary complements the illustrated component-port sheets.

TERMINAL-LEVEL REFERENCE / CHANNELS 1 AND 2

ENABLE / EACH CH	X3/4 gated +24 -> Finder K1/2:A1 and 11; EAO SB1/2 COM. 0 V -> K1/2:A2, K3/4:A2 and ENABLE LED-.
MOMENTARY INPUT	EAO SB1/2:NO -> Finder K1/2:3; EAO COM = gated +24 V, but actual central contact marking must be checked.
FINDER OUTPUT	K1/2:14 (NO) → Finder 62.31 SOCKET SK3/4:A1 and EAO LED+; 11 COM fed from gated +24 V.
THERMOCOUPLE	Type K sensor (+) → E1/E2:6; sensor (–) → E1/E2:5.
OMRON / WEIDMÜLLER	E1/E2 SSR pulse terminals 1 (+),2 (–) → W1/W2 A1 (+),A2 (–).
WEID / SSR DRIVE	Gated +24 shared at EAO COM -> Crydom +3 and ACTIVE+; Crydom -4 and ACTIVE- -> W:13; W:14 -> 0 V.
DC POSITIVE	Supply DC+ → Lovato 1→2 → Finder 62.31 contact 34 (+)→14 (–) → SSR +1→–2 → heater+.
DC RETURN	Heater– → matching external DC supply–; Finder 14 and SSR –2 are NOT DC–.
DC COIL	Finder 62.31 uses socket SK3/4: coil A1/A2, contact 34(+)/14(–). Actual 92.03 suffix and suppressor TBD.

Only 3 available +24 V and 3 common 0 V take-off positions per channel reported. All junctions and real wire IDs require independent check.

DESIGN REVIEW ONLY | Terminal references are proposed where physical hardware is unidentified. Not approved for wiring / energising.

K1/K2 RI step mode proposed; orange timer applies only to IT; hardware return-to-OFF is unverified.

11 / MANUFACTURER DOCUMENTS & RELEASE CHECKS

Clickable component documents are embedded inside each named component block throughout the PowerPoint.

COMPONENT REGISTER / TECHNICAL REVIEW

Schurter DD11.0111.1110	Datasheet ↗	Mean Well XDR-120E-24	Datasheet ↗
Schneider XB5AD23 ×2	Datasheet ↗	Omron E5CC-TQX3A5M-000 / -003	Datasheet ↗
EAO 82-4151.1134 ×2	Datasheet ↗	Finder 13.61.0.024.0000 ×2	Datasheet ↗
Finder 62.31.9.024.4800 ×2	Datasheet ↗	Weidmüller 8950770000 ×2	Datasheet ↗
Crydom DR2220D30U ×2	Datasheet ↗	Lovato P1MB1PC16 ×2	Datasheet ↗

[HL1/HL2 specified: RS PRO 130-1086 yellow LED, 24 V DC, max 20 mA, IP67; 14 mm mounting hole.](#)

REMAINING DESIGN-RELEASE BLOCKERS

- 01 K1/K2: RI proposed (white selector); 0.5-20 min orange timer only for IT. Check 24 V return, dips and held ENABLE.
- 02 Check 3 L and 3 N outgoing mains taps, PSU/inlet, selectors, distribution blocks, jumpers and protective earth.
- 03 Inspect 15 A DC path: socket ratings, relay/SSR polarity, fault protection, conductor sizing and heat dissipation.
- 04 Inspect EAO COM vs LED+; Crydom+3 & ACTIVE+ = gated +24; Crydom-4 & ACTIVE- to W:13; W:14 to 0 V.
- 05 Independent checker: continuity, isolation, PE, protection, start/stop, no auto-restart; record deviations and sign off.

[Finder 92.03-series socket datasheet \(actual fitted socket still unverified\) ↗](#)

DESIGN REVIEW ONLY | Terminal references are proposed where physical hardware is unidentified. Not approved for wiring / energising.

D13 remains a design/inspection draft. Verify actual parts, physical terminals and OFF after power restoration.