

01 / DISTRIBUTION REQUIREMENTS / PTFIX REFERENCE

Terminal capacity for a complete two-channel installation. Every conductor gets its own connection position.

ELEVEN SEPARATE GROUPS / 48 OCCUPIED TERMINALS / 22 SPARE POSITIONS

GROUP	FUNCTION	REQUIRED CONNECTIONS	USED/PORTS	SPECIFIED DIN DISTRIBUTOR
X1-L	Mains L	1 inlet + 3 outgoing	4 / 6	6X2.5 NS35 BN · 3273010
X1-N	Mains N	1 inlet + 3 outgoing	4 / 6	6X2.5 NS35 BU · 3273002
X1-PE	Protective earth	Inlet, PSU, body, door	4 / 4	WAGO 2002-1407 (PE)
X2-24	Common +24 V	PSU + two selectors	3 / 6	6X2.5 NS35 RD · 3273004
X2-0V	Common 0 V	PSU + eight returns	9 / 12	12X2.5 NS35 GY · 3273022
X3-24G	CH1 gated +24	S1-B output + 3 loads	4 / 6	6X2.5 NS35 RD · 3273004
X3-EN1	CH1 enable +24	Finder 14 + 4 loads	5 / 6	6X2.5 NS35 OG · 3273018
X3-DRV1	CH1 drive return	Weidmüller 13 + 2 loads	3 / 6	6X2.5 NS35 VT · 3273016
X4-24G	CH2 gated +24	S2-B output + 3 loads	4 / 6	6X2.5 NS35 RD · 3273004
X4-EN2	CH2 enable +24	Finder 14 + 4 loads	5 / 6	6X2.5 NS35 OG · 3273018
X4-DRV2	CH2 drive return	Weidmüller 13 + 2 loads	3 / 6	6X2.5 NS35 VT · 3273016

SPECIFIED DISTRIBUTOR QUANTITIES PTFIX 6-way: BN ×1; BU ×1; RD ×3; OG ×2; VT ×2. PTFIX 12-way: GY ×1. WAGO PE 4-way: ×1.

Quantities are reference-design pieces, not supplier pack sizes. Separate mains, PE and 24 V wiring.

02 / TERMINAL ASSIGNMENTS / MAINS + COMMON DC

Logical identification for the specified DIN terminals. Wire labels are unique within each block.

X1 = MAINS / PE • X2 = COMMON CONTROL SUPPLY

X1-L / MAINS LIVE6 terminals, 4 used		X1-N / MAINS NEUTRAL6 terminals, 4 used	
L.1	J1 switched/fused AC live	N.1	J1 switched AC neutral
L.2	PS1:C1 (L)	N.2	PS1:C2 (N)
L.3	S1-A:13, Omron E1 feed	N.3	Omron E1:12
L.4	S2-A:13, Omron E2 feed	N.4	Omron E2:12
X1-PE / PROTECTIVE EARTH4 positions, 4 used		X2-24 / UNSWITCHED +24 V6 terminals, 3 used	
PE.1	J1 inlet PE	24.1	PS1:A1 (+Vo)
PE.2	PS1:C3 (PE)	24.2	S1-B:23 (CH1 selector)
PE.3	Cabinet metalwork bonding lead	24.3	S2-B:23 (CH2 selector)
PE.4	Flexible door bonding strap		
X2-0V / COMMON 0 V12 terminals, 9 used			
0V.1	PS1:A2 (–Vo)	0V.4	SB1:LED–
0V.2	K1:N/–	0V.5	W1:14(–)
0V.3	SK3:A2	0V.6	K2:N/–
		0V.7	SK4:A2
		0V.8	SB2:LED–
		0V.9	W2:14(–)

Spare: X1-L ×2, X1-N ×2, X2-24 ×3, X2-0V ×3. PE block is fully allocated.

03 / TERMINAL ASSIGNMENTS / BOTH CHANNELS

EN1/EN2 are the switched +24 V nets OUT of Finder 13.61 terminal 14 (K1/K2). They are NOT selector-gated +24 V.

X3 = CHANNEL 1 • X4 = CHANNEL 2 / SIX SPARE POSITIONS PER CHANNEL

GATED +24 V

PTFIX 6-way red / 3273004

One input from selector, three separate loads

X3-24G / CHANNEL 1

- 1. Selector S1-B:24
- 2. Finder K1:L/+
- 3. Finder K1:11
- 4. EAO SB1:C

X4-24G / CHANNEL 2

- 1. Selector S2-B:24
- 2. Finder K2:L/+
- 3. Finder K2:11
- 4. EAO SB2:C

HEATER ENABLE (EN)

PTFIX 6-way orange / 3273018

One input from Finder output, four loads

X3-EN1 / CHANNEL 1

- 1. Finder K1:14
- 2. Finder 62.31 SK3:A1
- 3. EAO SB1:LED+
- 4. Crydom SSR1:A1/+3
- 5. Activity HL1:+ (from K1:14 / EN1)

X4-EN2 / CHANNEL 2

- 1. Finder K2:14
- 2. Finder 62.31 SK4:A1
- 3. EAO SB2:LED+
- 4. Crydom SSR2:A1/+3
- 5. Activity HL2:+ (from K2:14 / EN2)

SWITCHED SSR RETURN (DRV)

PTFIX 6-way violet / 3273016

Weidmüller output terminal 13 and two load returns

X3-DRV1 / CHANNEL 1

- 1. Weidmüller W1:13(+)
- 2. Crydom SSR1:A2/−4
- 3. Activity HL1:−

X4-DRV2 / CHANNEL 2

- 1. Weidmüller W2:13(+)
- 2. Crydom SSR2:A2/−4
- 3. Activity HL2:−

DRV1/DRV2 are controlled returns through W1/W2; neither is a direct 0 V connection.

04 / MAINS SUPPLY & DISTRIBUTION

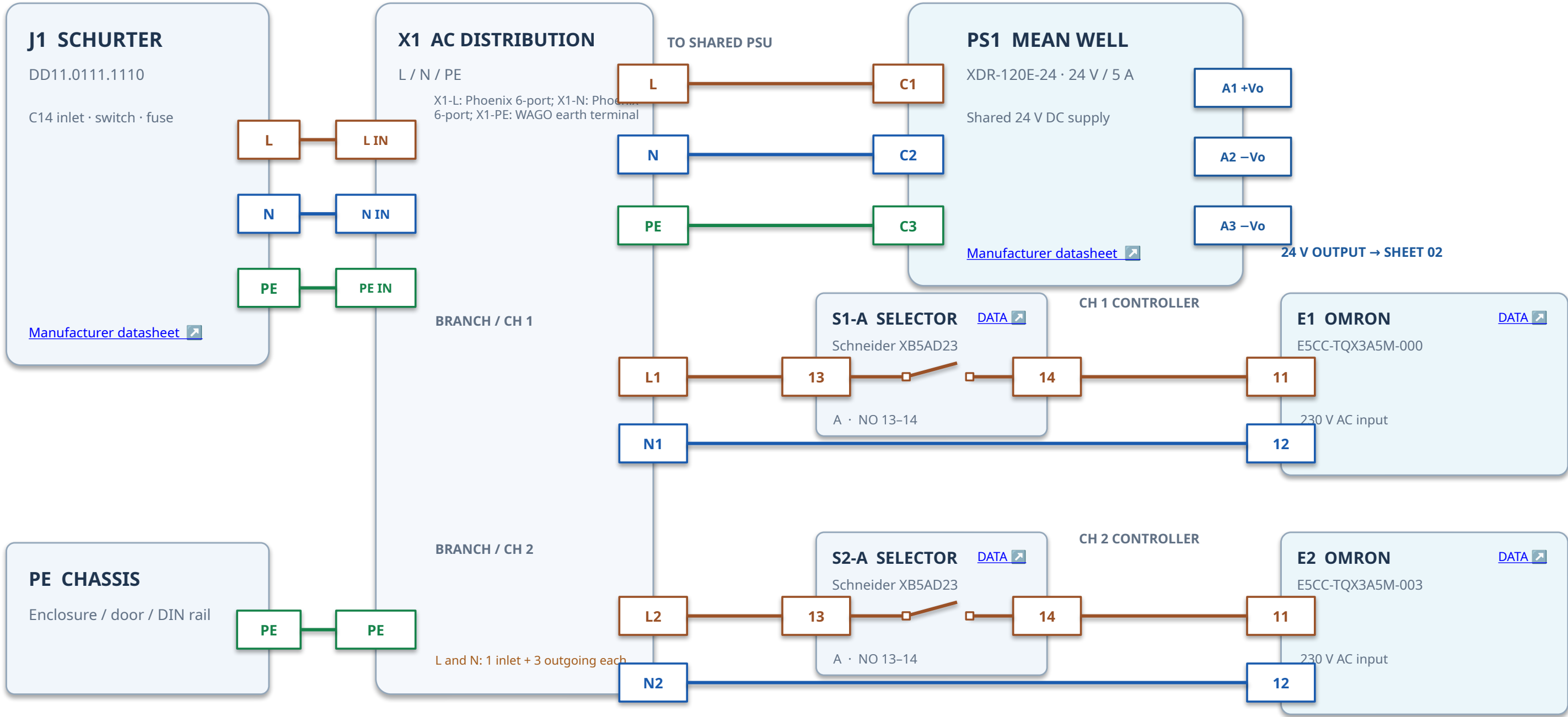
L N PE

AC supply divides into three L/N destinations: the shared 24 V supply and one Omron controller per channel.

AC INPUT

DISTRIBUTION / X1

POWER SUPPLY & TWO CONTROLLER BRANCHES

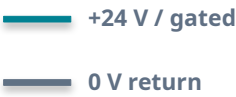


MAINS DISTRIBUTION / X1-L, X1-N AND X1-PE ARE THREE SEPARATE GROUPS

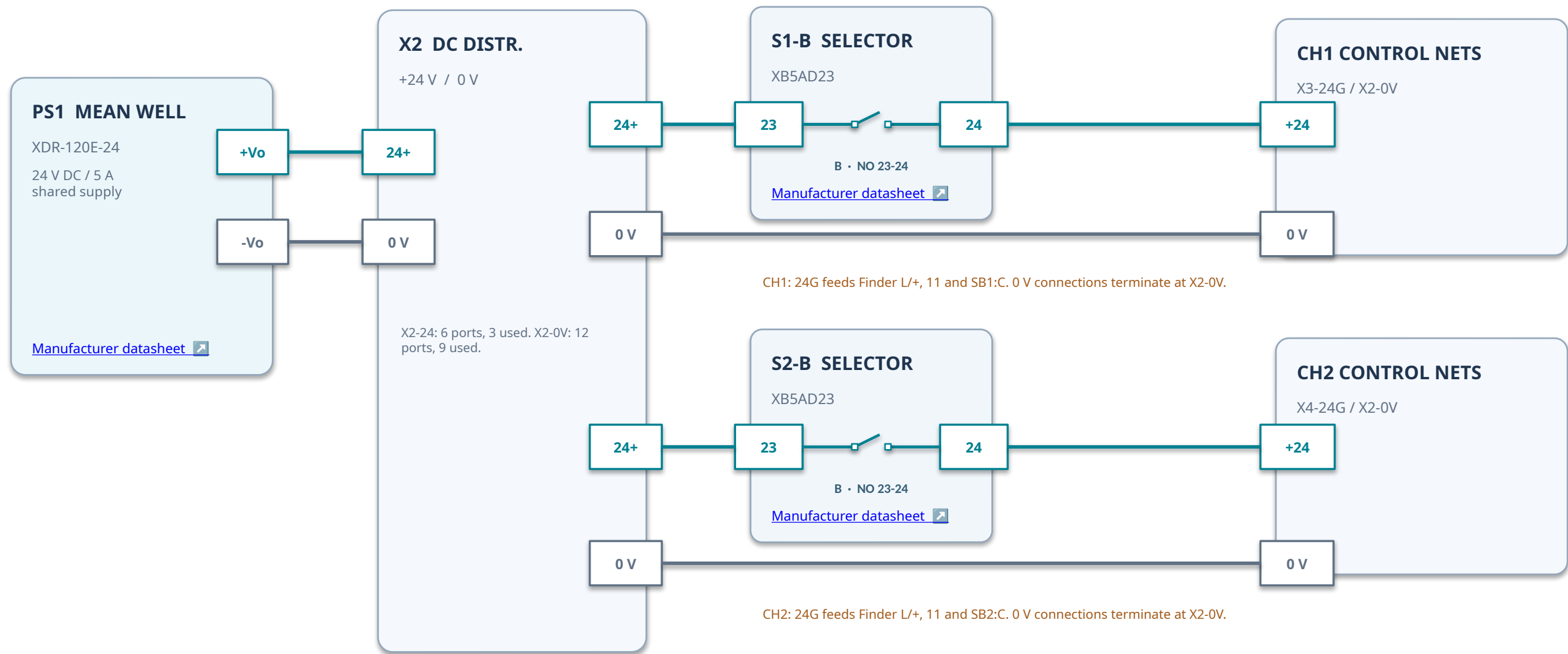
L/N destinations: PS1, E1 and E2. PE bonds the power supply, cabinet body and door; do not join N to PE.

05 / SHARED 24 V DISTRIBUTION & CHANNEL INTERLOCKS

Shared +24 V feeds two selector inputs. Shared 0 V serves four return circuits per channel.



24 V DC DISTRIBUTION / CHANNEL 1 + CHANNEL 2



Each selector: contact A (13-14) switches the Omron mains live; contact B (23-24) gates the channel +24 V. EN1/EN2 come from Finder 13.61 terminal 14.

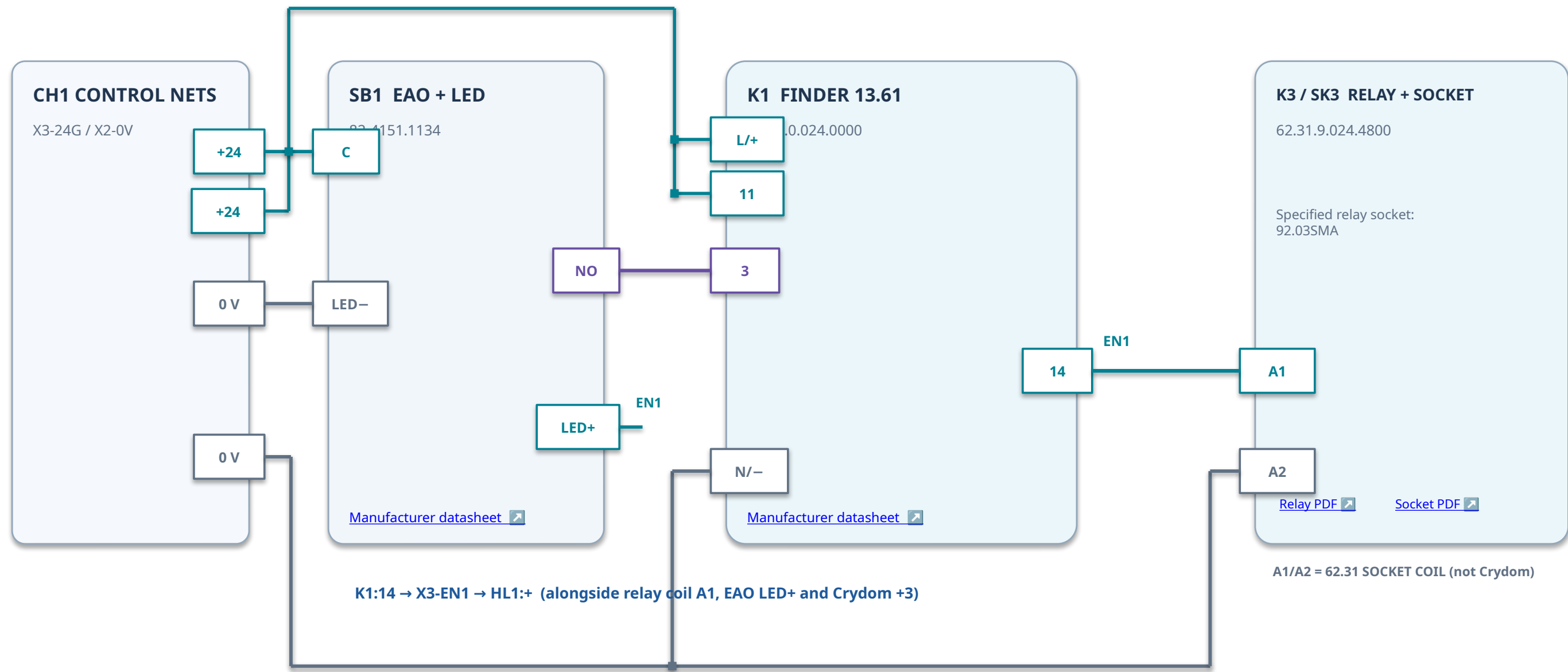
REFERENCE WIRING / 230 V AC CONTROL SUPPLY • 24 V DC CONTROLS • 0-60 V DC HEATER CIRCUITS

06 / CHANNEL 1 / MOMENTARY ENABLE & FINDER CONTROL

CH1: Finder 13.61 K1:14 is the EN1 switched +24 V output supplying ACTIVE LED+.

- Gated +24 V
- 0 V return
- Momentary input

HEATER ENABLE / EN1 SHARED SWITCHED +24 V NODE



EN1 = K1:14 switched output; terminal group X3-EN1 distributes this to four loads including HL1:+.

X3-24G → SB1:C, K1:L/+, K1:11 | SB1:NO → K1:3 | X3-EN1 → SK3:A1, SB1:LED+, SSR1:A1/+3, HL1:+ | X2-0V → K1:N/-, SK3:A2, SB1:LED -, W1:14(-)

REFERENCE WIRING / 230 V AC CONTROL SUPPLY • 24 V DC CONTROLS • 0-60 V DC HEATER CIRCUITS

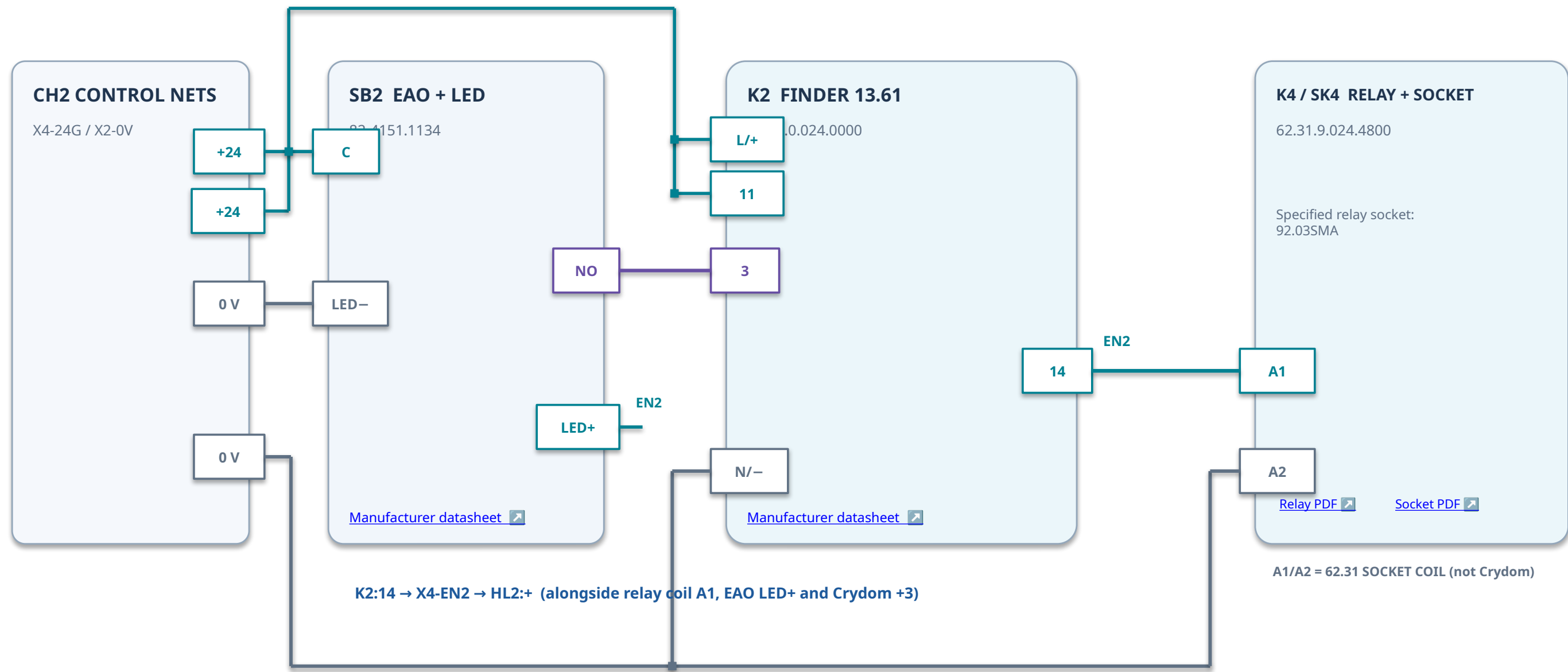
Finder 13.61: RI step mode; each valid momentary press changes heater-enable state.

07 / CHANNEL 2 / MOMENTARY ENABLE & FINDER CONTROL

CH2: Finder 13.61 K2:14 is the EN2 switched +24 V output supplying ACTIVE LED+.

- Gated +24 V
- 0 V return
- Momentary input

HEATER ENABLE / EN2 SHARED SWITCHED +24 V NODE



EN2 = K2:14 switched output; terminal group X4-EN2 distributes this to four loads including HL2:+.

X4-24G → SB2:C, K2:L/+, K2:11 | SB2:NO → K2:3 | X4-EN2 → SK4:A1, SB2:LED+, SSR2:A1/+3, HL2:+ | X2-0V → K2:N/- , SK4:A2, SB2:LED -, W2:14(-)

REFERENCE WIRING / 230 V AC CONTROL SUPPLY • 24 V DC CONTROLS • 0-60 V DC HEATER CIRCUITS

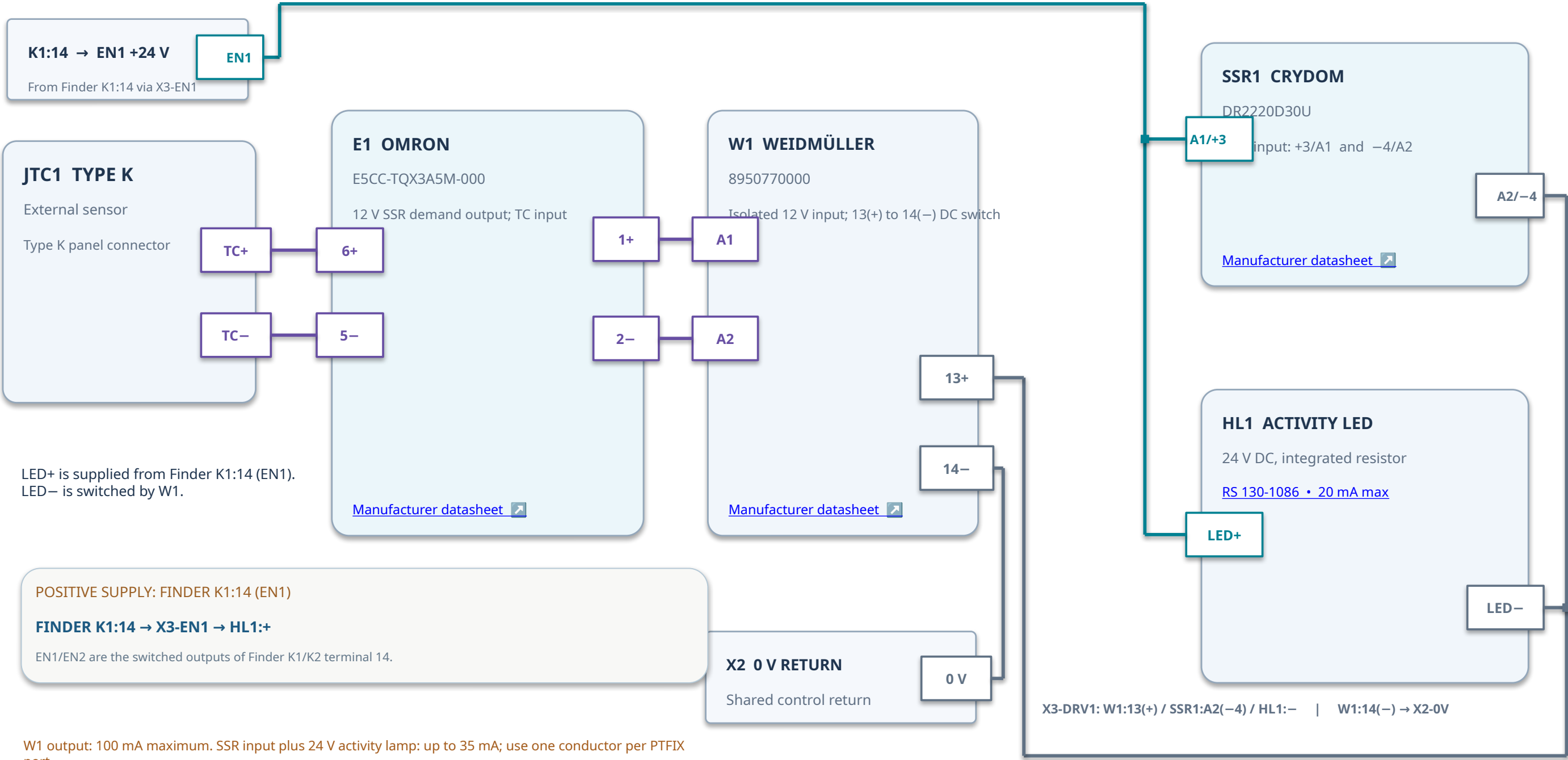
Finder 13.61: RI step mode; each valid momentary press changes heater-enable state.

08 / CHANNEL 1 / ENABLE-GATED SSR DRIVE + ACTIVITY LED

CH1 ACTIVE LED+ supply: Finder K1:14 K1:14 → EN1 → HL1:+. LED— stays on W1-switched return.

- TC / 12 V demand
- EN1 from Finder K1:14
- SSR1:A2 + HL1:— → X3-DRV1 → W1:13; W1:14 → X2-0V

THERMOCOUPLE / 12 V PULSE INTERFACE / EN1 ENABLED 24 V BRANCH



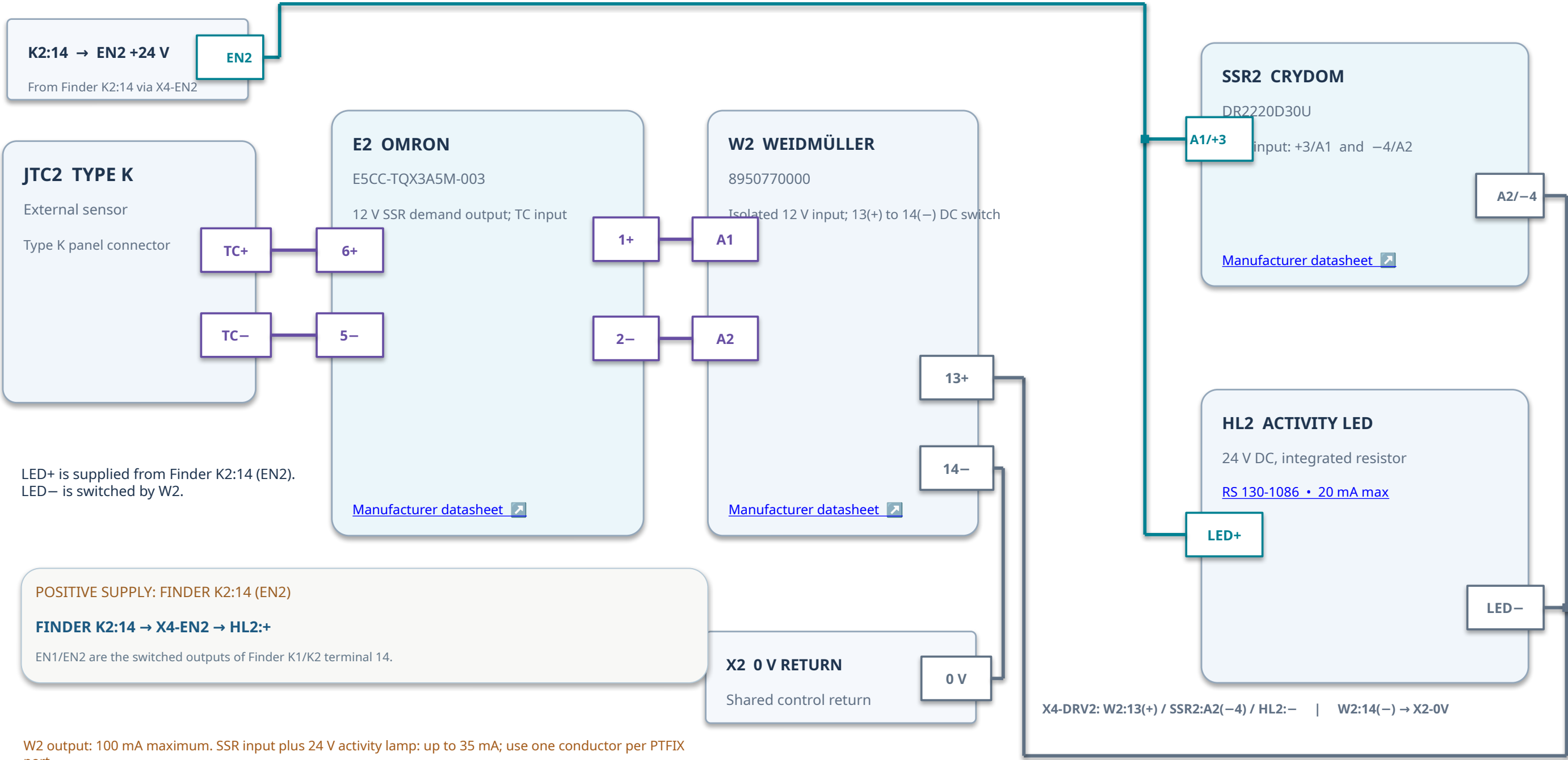
REFERENCE WIRING / 230 V AC CONTROL SUPPLY • 24 V DC CONTROLS • 0-60 V DC HEATER CIRCUITS

09 / CHANNEL 2 / ENABLE-GATED SSR DRIVE + ACTIVITY LED

CH2 ACTIVE LED+ supply: Finder 13.61 K2:14 → EN2 → HL2:+. LED— stays on W2-switched return.

- TC / 12 V demand
- EN2 from Finder K2:14
- SSR2:A2 + HL2:— → X4-DRV2 → W2:13; W2:14 → X2-0V

THERMOCOUPLE / 12 V PULSE INTERFACE / EN2 ENABLED 24 V BRANCH



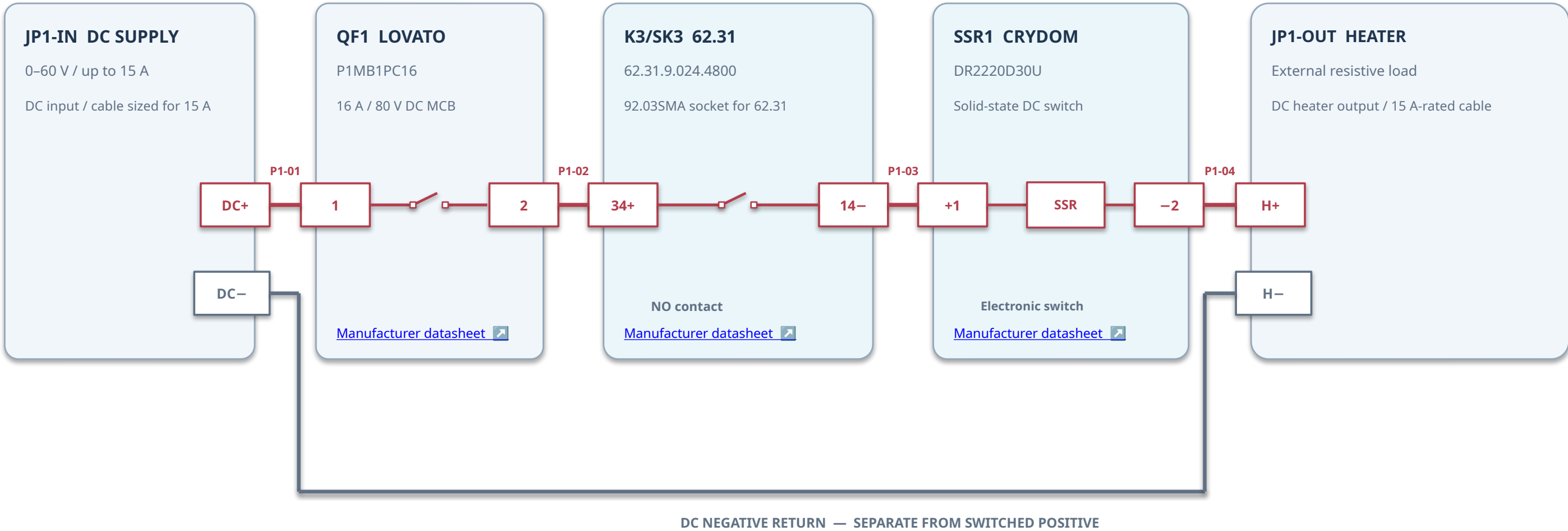
REFERENCE WIRING / 230 V AC CONTROL SUPPLY • 24 V DC CONTROLS • 0-60 V DC HEATER CIRCUITS

10 / 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 14(–) and SSR –2 belong to the switched POSITIVE conductor, not DC negative. | Size the protective breaker, relay/socket, output connector, cable and SSR heat sink for the operating duty.

REFERENCE WIRING / 230 V AC CONTROL SUPPLY • 24 V DC CONTROLS • 0–60 V DC HEATER CIRCUITS

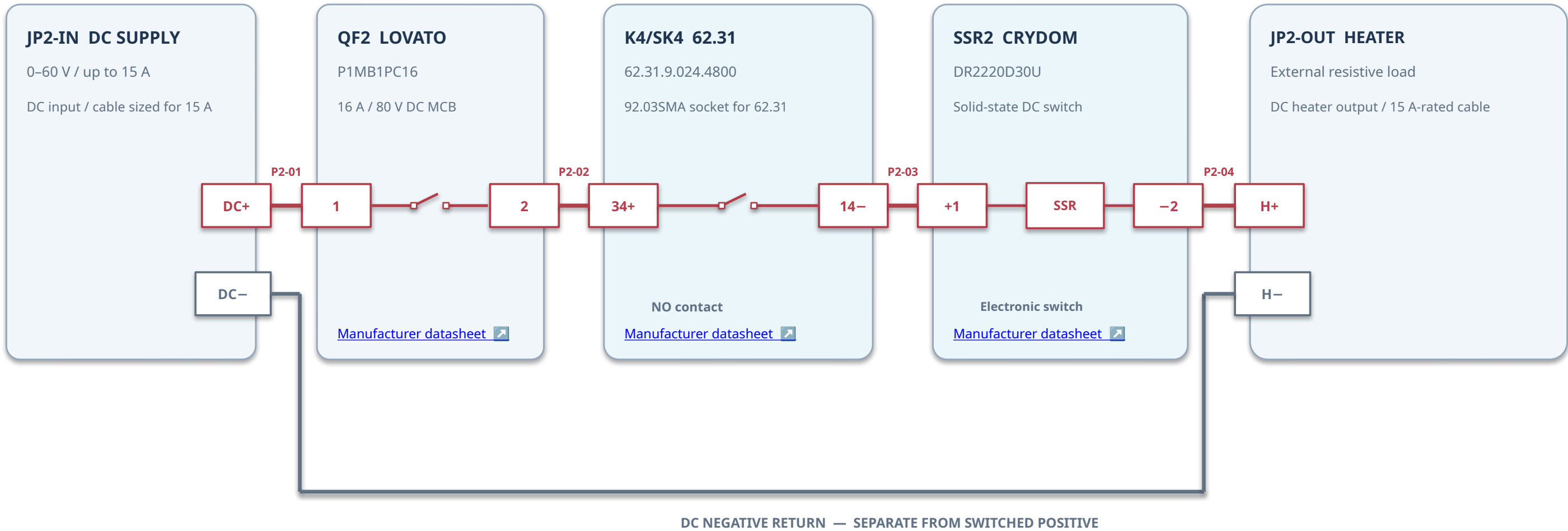
Finder 62.31 34(+) $\rightarrow$ 14(–) and Crydom load +1 $\rightarrow$ –2 are in SWITCHED DC+; neither terminal is DC–.

11 / 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 14(–) and SSR –2 belong to the switched POSITIVE conductor, not DC negative. | Size the protective breaker, relay/socket, output connector, cable and SSR heat sink for the operating duty.

REFERENCE WIRING / 230 V AC CONTROL SUPPLY • 24 V DC CONTROLS • 0–60 V DC HEATER CIRCUITS

Finder 62.31 34(+)→14(–) and Crydom load +1→–2 are in SWITCHED DC+; neither terminal is DC–.

12 / CONNECTION SCHEDULE / MAINS + 24 V DISTRIBUTION

Terminal references for the three mains destinations, the 24 V supply and two independent control channels.

TERMINAL-LEVEL REFERENCE / MAINS AND 24 V

AC01	J1 switched fused L	→	X1-L: mains live (brown block)
AC02	J1 switched N	→	X1-N: mains neutral (blue block)
AC03	J1:PE	→	X1-PE: cabinet protective earth
AC04	X1:L / N / PE	→	PS1:C1 (L), C2 (N), C3 (PE)
AC05	X1:L → S1-A:13→14	→	E1:11 (L)
AC06	X1:N bus	→	E1:12 (N)
AC07	X1:L → S2-A:13→14	→	E2:11 (L)
AC08	X1:N bus	→	E2:12 (N)
DC01	PS1:A1 +Vo	→	X2-24 common +24 V
DC02	PS1:A2/A3 –Vo	→	X2-0V common return
DC03	X2:+24 → S1-B:23/24*	→	X3-24G gated +24 V
DC04	X2:+24 → S2-B:23/24*	→	X4-24G gated +24 V
DC05	X2:0 V shared	→	K1/K2, SK3/SK4, SB1/SB2 and W1/W2

Mains: one inlet and three outgoing circuits for L and N. Common +24 V: one in and two out. Common 0 V: one in and eight out.

REFERENCE WIRING / 230 V AC CONTROL SUPPLY • 24 V DC CONTROLS • 0-60 V DC HEATER CIRCUITS

Terminal positions on X1/X2 and X3/X4 are assigned individually on Sheets 02 and 03.

13 / CONNECTION SCHEDULE / CONTROLS + HEATER

Functional point-to-point schedule for both control channels and the 0–60 V DC heater power circuits.

TERMINAL-LEVEL REFERENCE / CHANNELS 1 AND 2

ENABLE / EACH CH	X3-24G / X4-24G → Finder L/+, 11 and button C. X2-0V → Finder N/–, 62.31 coil A2, EAO LED– and Weidmüller 14(–).
MOMENTARY INPUT	EAO NO → Finder 13.61 terminal 3; EAO C is fed by its channel gated +24 V distribution group.
FINDER OUTPUT	CH1: Finder 13.61 K1:14 → X3-EN1 → HL1:+; CH2: Finder K2:14 → X4-EN2 → HL2:+. EN also supplies 62.31 coil, EAO LED and SSR input.
THERMOCOUPLE	Type K sensor (+) → E1/E2:6; sensor (–) → E1/E2:5.
OMRON / WEIDMÜLLER	Omron E1/E2 SSR demand 1(+), 2(–) → Weidmüller W1/W2 A1(+), A2(–): isolated 12 V control.
WEID / SSR DRIVE	EN1 = K1:14; EN2 = K2:14. HL1/HL2 positives are EN loads (NOT selector 24G); negatives via X3/X4-DRV → W1/W2:13 → W:14 → X2-0V.
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	62.31 socket A1/A2 is the 24 V DC relay coil; Crydom A1/A2 is SSR control, NOT the power contact.

Mains, control +24, 0 V, driver returns, and external DC heater power are separate circuits.

REFERENCE WIRING / 230 V AC CONTROL SUPPLY • 24 V DC CONTROLS • 0–60 V DC HEATER CIRCUITS

All multiway nets are assigned to their own distribution groups; one conductor uses one terminal position.

14 / COMPONENT REFERENCES & MAINTENANCE

PTFIX-based distribution and independent two-channel control: functional and terminal reference.

COMPONENT REGISTER / WIRING & SERVICE INFORMATION

Schurter DD11.0111.1110	Datasheet
Schneider XB5AD23 ×2	Datasheet
EAO 82-4151.1134 ×2	Datasheet
Finder 62.31.9.024.4800 ×2	Datasheet
Crydom DR2220D30U ×2	Datasheet

Mean Well XDR-120E-24	Datasheet
Omron E5CC-TQX3A5M-000 / -003	Datasheet
Finder 13.61.0.024.0000 ×2	Datasheet
Weidmüller 8950770000 ×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.

INSTALLATION & MAINTENANCE ESSENTIALS

- 01

Protective earth: J1 inlet, PS1, enclosure body and door bond all connect to X1-PE.
- 02

Mains distribution: PSU, Omron E1 and Omron E2 each have their own live and neutral branch.
- 03

Control: common +24 V and 0 V; plus separate gated +24, EN and SSR driver-return nodes per channel.
- 04

ACTIVE LED+: Finder K1/K2:14 → EN1/EN2 → HL1/HL2+. LED – is switched via W1/W2.
- 05

Before servicing: isolate mains AND both external DC supplies; check PE, connectors, wiring and SSR cooling.

[Finder 92.03SMA relay socket datasheet](#)

REFERENCE WIRING / 230 V AC CONTROL SUPPLY • 24 V DC CONTROLS • 0-60 V DC HEATER CIRCUITS