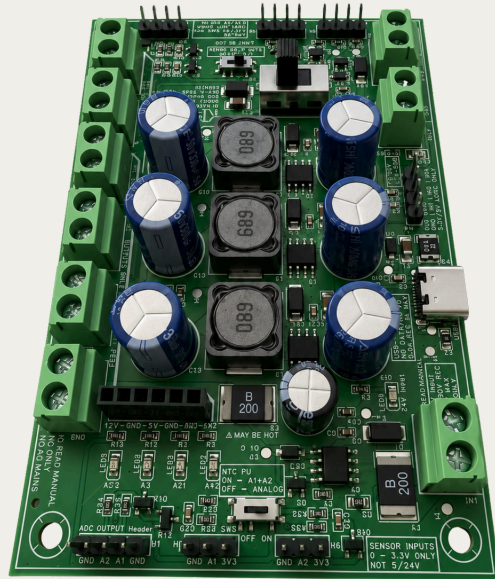


QUICK START GUIDE

PWR INTF

Protected Low-Voltage DC Power Interface Board

A practical first-use guide for safe wiring, first power-up, and a successful first test with the KI Maker protected low-voltage DC power interface board.



18-30 VDC INPUT

24 V / 12 V / 5 V / 3.3 V RAILS

USB-C 5 V OUTPUT ONLY

NO AC MAINS | USB-C 5 V OUTPUT ONLY | IN1/IN2 DRY-CONTACT ONLY | A1/A2 + SENSOR INPUTS 0-3.3 V ONLY

What This Guide Helps You Do

Power the board safely for the first time.

Verify the main rails before you connect controllers or loads.

Avoid the most common misuse cases: AC input, USB-C backfeed, wrong input type, and relay-style OUT1/OUT2 wiring.

Get to a successful first hookup before moving to the full owner's manual.

IMPORTANT

This Guide does not replace the Owner's Manual. For full wiring details, safety precautions, advanced examples and trouble shooting please refer to the Owner's manual at ki-maker.com/docs

Before You Start

You Need

- An 18-30 VDC supply with correct polarity. 24 V nominal is the expected use case.
- A multimeter to verify the rails before connecting sensitive electronics.
- A small screwdriver for terminals and insulated M3 standoffs for mounting.
- If testing outputs: one small DC load and, if needed, one dry-contact input or one 0-3.3 V sensor.

⚠ CRITICAL RULES — READ BEFORE POWER-UP

- Use 18-30 VDC input only. No AC mains anywhere on the board.
- USB-C is a 5 V output only. Do not power the board from USB-C.
- IN1 / IN2 are dry-contact / switch-to-ground inputs only. Do not apply external voltage.
- A1 / A2 and sensor inputs are 0-3.3 V only.
- OUT1 / OUT2 are low-side MOSFET outputs, not floating relay contacts

STOP IMMEDIATELY IF..

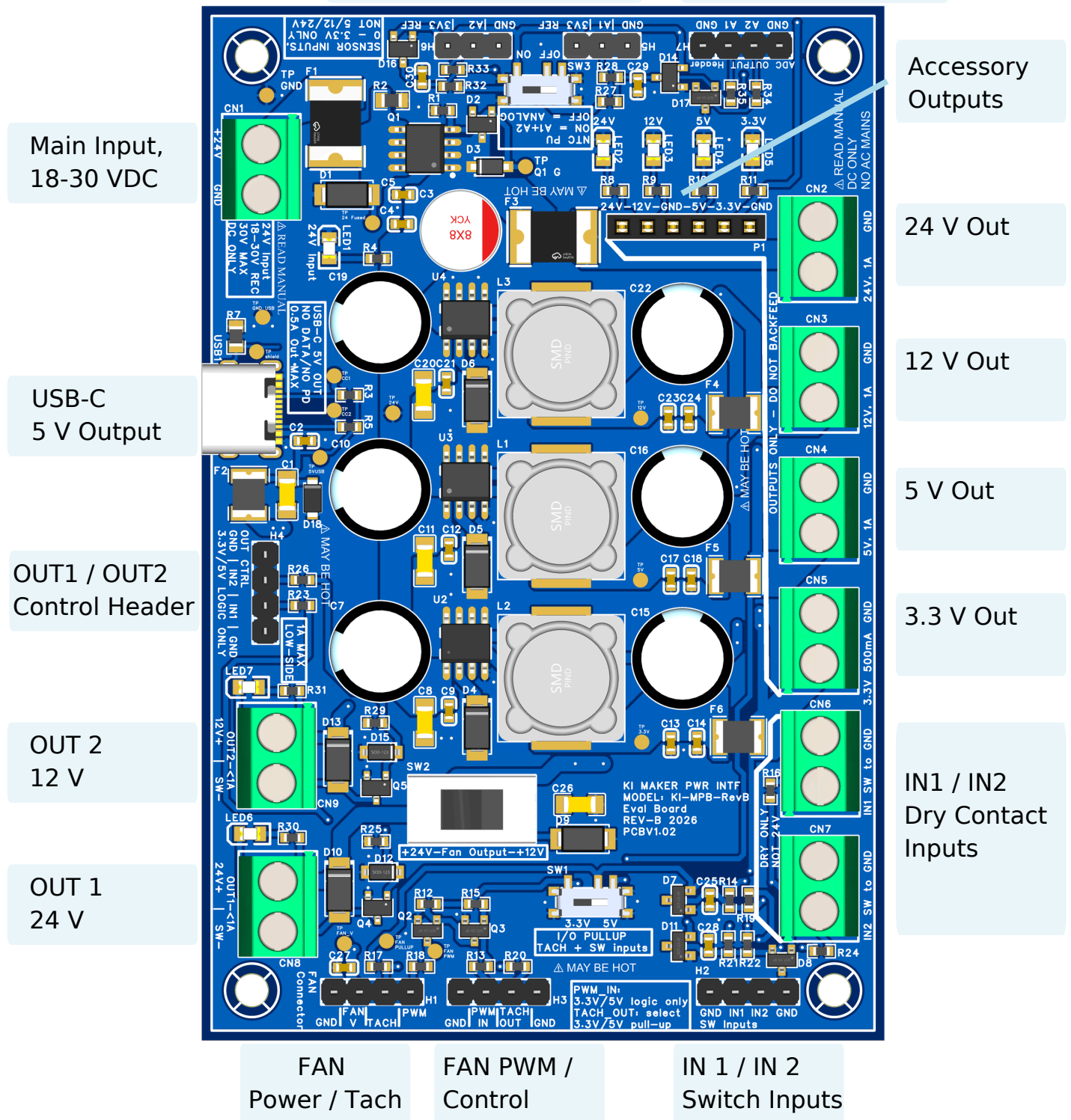
- You are not sure about polarity, connector identity, or whether a signal is dry-contact or voltage-based.
- A rail reads incorrectly, an LED pattern seems wrong, or a component becomes unexpectedly hot.
- You are about to connect 5 V, 12 V, 24 V, FAN_V, VIN, or USB-C VBUS into A1, A2, IN1, IN2, or the sensor header.

Find the Right Connector First

Use the board in your hand as the final authority, but this map helps you quickly identify the main groups before wiring.

H5 / H6 Analog / Sensor
Inputs (0-3.3 V only)

H7 A1 / A2 ADC
Outputs to Controller

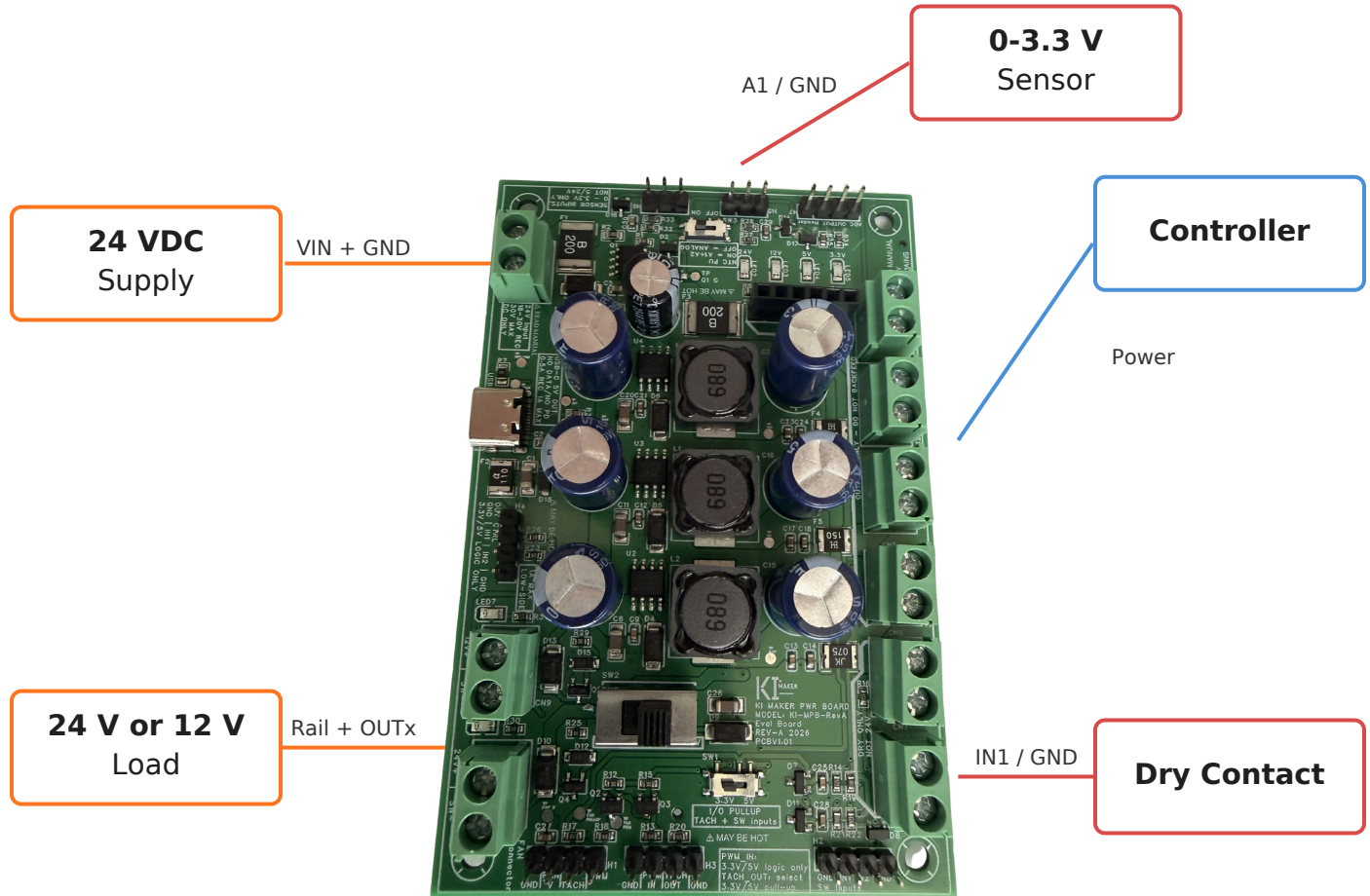


Connector Group Table

Connector Group	Quick Use Note
Main input	18-30 VDC only. Check polarity before power-up.
24 V / OUT1 / IN1	24 V accessory path and low-side switched OUT1.
12 V / OUT2 / IN2	12 V rail and low-side switched OUT2. OUT2 shares the 12 V rail
5 V / 3.3 V	Controller and logic/sensor supply rails within the published
24 V DC Out	upto 1 A max continous output
12 V DC Out	upto 1 A max continous output
USB-C	5 V service/accessory output only. Not a power input, not data, and not USB-PD.
IN1 / IN2 SW	Dry-contact / switch-to-ground inputs only.
A1 / A2 / Sensor	0-3.3 V analog or passive sensor/NTC use only.
Fan header	Selectable 12 V / 24 V fan power with PWM / TACH-related
Switches	Quick Use Note, Select Switches prior to power UP
Fan Selector	12V or 24V fan Power output Switch
I/O PullUP	Tach and SW inputs Pullup 3.3V or 5V selectable
Analog	On/Off Switch, On = A1+A2 Off = Analog

A Basic First Hookup

The safest first build is one supply, one controller, one switched load, and either one dry-contact input or one 0-3.3 V sensor.



Always verify connector labels on the physical board before wiring.

24 VDC Supply 18-30 VDC
Correct Polarity

Dry Contact Wire to IN1 +
GND No Voltage

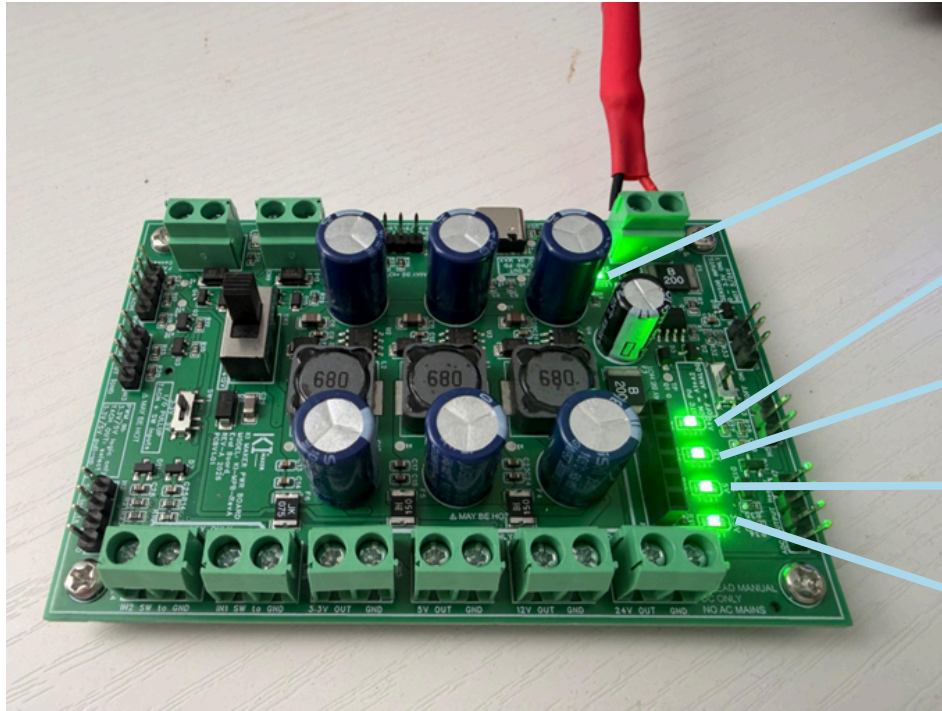
24 V or 12 V Load + 24 / 12 V
Load - to SW -

0-3.3 V Sensor Output - A1
No 5 / 12 / 24 V

MOST IMPORTANT WIRING RULE

For OUT1 / OUT2, connect the load positive wire to the matching positive rail and the load negative wire to OUT1 or OUT2.
Do not wire OUT1 / OUT2 like floating relay contacts.
Do not backfeed any rail from another power source

5-Minute First Power-Up



LED 1: 24 V Input

LED 2: 24 V Fused OUT

LED 3: 12 V Rail

LED 4: 5 V Rail

LED 5: 3.3 V Rail

PWR INTF PCB powered from 24 VDC input.

This is the fastest safe path to confirm the board is alive and its rails are present before you attach more wiring.

1. Mount the board on insulated standoffs and keep the bottom side away from conductive surfaces, loose hardware, and debris.
2. Leave controllers, sensors, and loads disconnected for the first power-up.
3. If you will use a fan later, set the 12 V / 24 V fan selector before power-up.
4. Connect the 18-30 VDC supply to the main input with correct polarity.
5. Apply power and check that the rail LEDs behave normally.
6. Measure the 24 V, 12 V, 5 V, and 3.3 V rails before connecting anything else.
7. Add one controller signal or one load at a time and re-check voltage and temperature after each addition

EXPECTED FIRST-USE RESULT

No unusual smell, noise, or hot spot during the first no-load check.

Rail LEDs indicate the board is powered and the output rails are present.

Measured rails are present before any controller or load is attached.

You can now move to one basic hookup rather than wiring everything at once.

Released Limits and Next Steps

Released Ratings

Rail / Output	Limit (Continuous, Open Air)
Main input	18-30 VDC only (24 V nominal expected)
OUT1 / 24 V path	Up to 1.0 A continuous
OUT2 / 12 V path	Up to 1.0 A continuous (shares 12 V rail budget)
5 V rail	1.0 A continuous
3.3 V rail	0.5 A continuous
USB-C output	5 V output only, 0.5 A max

THERMAL / AIRFLOW NOTE

Do not assume all rails and outputs can be used at maximum at the same time. For OUT1 / OUT2 loads above 500 mA, verify board temperature during first use. Cooling / airflow is recommended near maximum current, especially in enclosed or elevated-ambient installations.

If Something Looks Wrong

Remove power immediately if wiring is uncertain, a rail reads incorrectly, or a component becomes unexpectedly hot. Verify input polarity, connector choice, and fan selector position before repowering. Return to no-load rail measurements before reconnecting controller or load wiring.

What to Read Next

- **Owner's Manual:** Full wiring rules, feature details, and troubleshooting.
- **Specification Sheet:** Released customer ratings and use boundaries.
- **Mechanical Overview:** Mounting pattern, board outline, and enclosure planning.