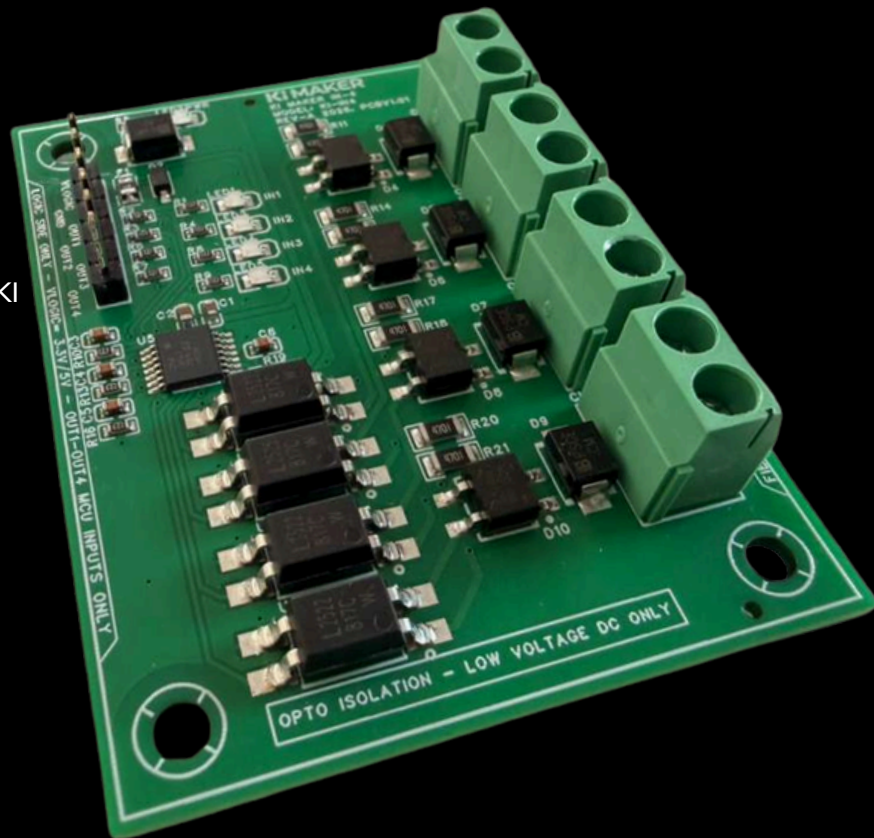


QUICK START GUIDE

IN-4

Protected Input Board

A practical first-use guide for safe wiring, first power-up, and a successful first test with the KI Maker IN-4 protected 9-30 VDC input board.



9-30 VDC INPUTS

4 CHANNELS · 12 V / 24 V

LOGIC 3.3 V / 5 V

NO AC MAINS | FIELD 9-30 VDC ONLY | NEVER LAND FIELD VOLTAGE ON H1 | LOGIC 3.3 V / 5 V

What This Guide Helps You Do

Power the board safely for the first time.

Wire logic first, then one field pair.

Avoid the most common misuse cases: AC on field inputs, field voltage on H1, and incorrect GPIO input configuration.

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 troubleshooting, please refer to the Owner's Manual at ki-maker.com/docs

Before You Start

You Need

A 9–30 VDC field source (12 V or 24 V nominal).

A controller at 3.3 V or 5 V for H1 VLOGIC. ESP32, Pi, Pico, STM32: 3.3 V. Arduino Uno/ Nano may use 5 V.

Insulated M3 standoffs for the four corner holes.

One dry contact or one 12/24 VDC field pair for the first channel.

⚠ CRITICAL RULES — READ BEFORE POWER-UP

Field inputs are 9–30 VDC only. No AC mains anywhere on the board.

Never land field voltage on H1. Logic header is 3.3 V / 5 V only.

OUTx is a digital logic output to a controller GPIO. OUTx does not drive loads.

IN-4 does not wet the contact. Dry contacts need that DC source in series.

INxA and INxB are interchangeable. Mix 12 V and 24 V as long as each pair stays 9–30 VDC.

STOP IMMEDIATELY IF

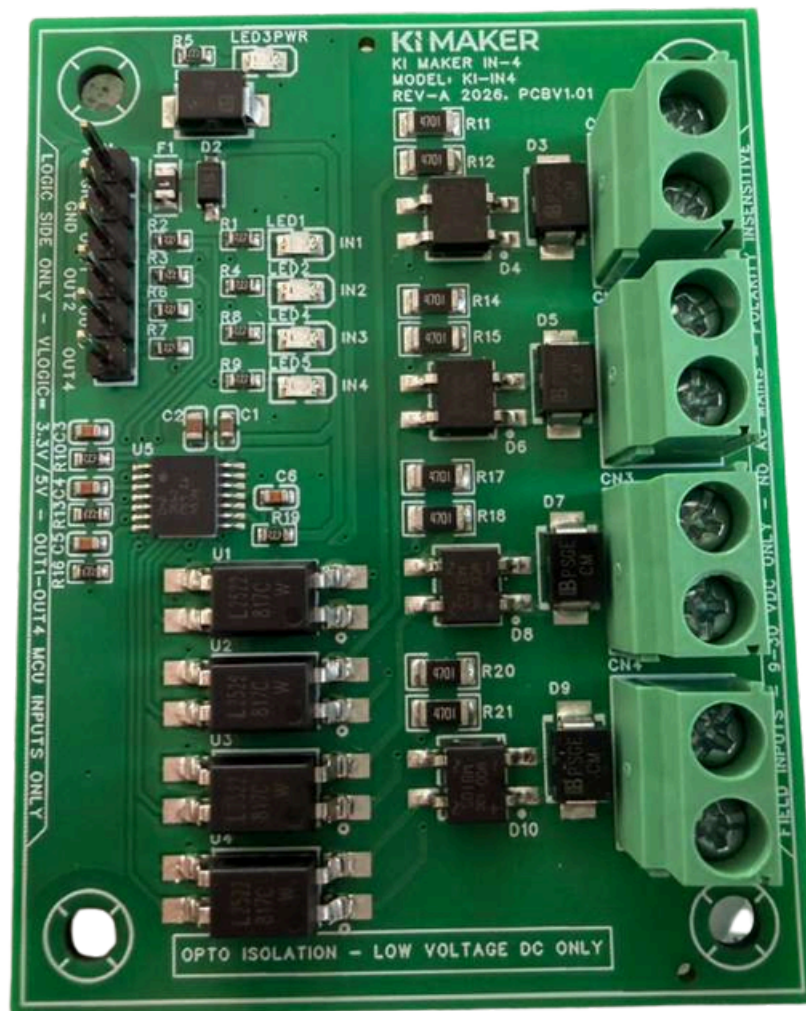
- LED3PWR does not light after H1 pin 1 (VLOGIC) and pin 2 (GND) are connected.
- You are about to land field voltage on H1.
- A component becomes unexpectedly hot, or an LED pattern does not match the steps in this guide.

Board Orientation

Use the board in your hand as the final authority. Field terminals are on the right (IN1A/B ... IN4A/B). Logic header H1 is on the left (VLOGIC, GND, OUT1–OUT4). Pin 1 is nearest LED3PWR.

Logic
header H1
3.3 V / 5 V

OUT 1 to 4



IN 1

IN 2

IN 3

IN 4

H1 Pin Table

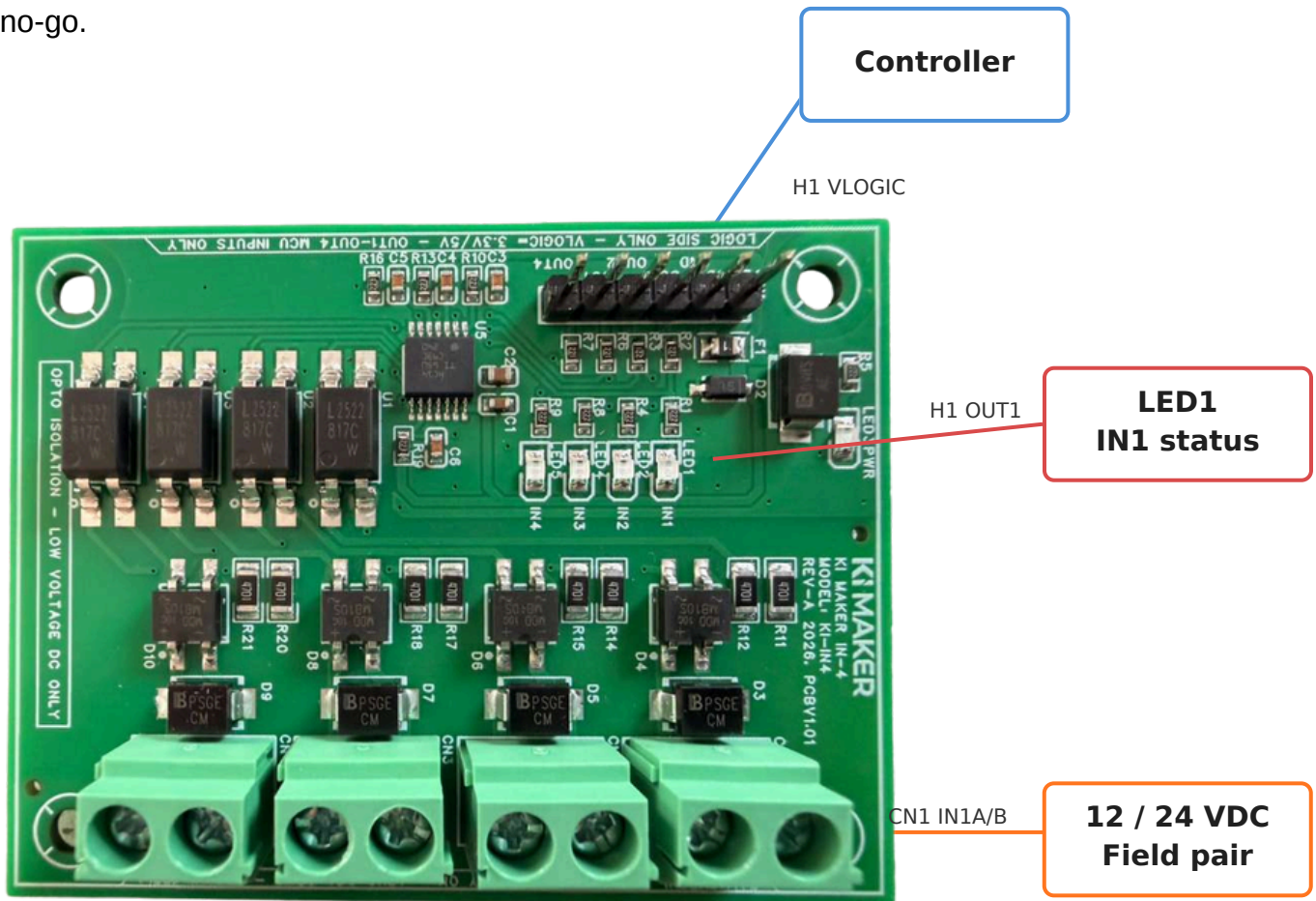
Pin / Silkscreen	Quick Use Note
1, VLogic	Connect to controller 3.3 V or 5 V logic supply. Powers the IN-4 logic side.
2, GND	Connect to controller logic ground.
3, OUT 1	Channel 1 digital logic output. Connect to a controller GPIO / digital input.
4, OUT 2	Channel 2 digital logic output. Connect to a controller GPIO / digital input.
5, OUT 3	Channel 3 digital logic output. Connect to a controller GPIO / digital input.
6, OUT 4	Channel 4 digital logic output. Connect to a controller GPIO / digital input.

Field Input Terminals

Connector / Channel	Quick Use Note
CN1 / IN1A / IN1B	Channel 1 field input. Apply 9–30 VDC across the pair. Polarity insensitive.
CN2 / IN2A / IN2B	Channel 2 field input. Apply 9–30 VDC across the pair. Polarity insensitive.
CN3 / IN3A / IN3B	Channel 3 field input. Apply 9–30 VDC across the pair. Polarity insensitive.
CN4 / IN4A / IN4B	Channel 4 field input. Apply 9–30 VDC across the pair. Polarity insensitive.

A Basic First Hookup

The safest first build is one controller on H1, one 12 V or 24 V field pair on CN1, and LED1 as the go/no-go.



Always verify connector labels on the physical board before wiring.

12 / 24 VDC Field 9-30 VDC across IN1A and IN1B

Dry contact + DC A/B interchangeable. Does not wet the contact.

Dry Contact External DC in series. No wetting.

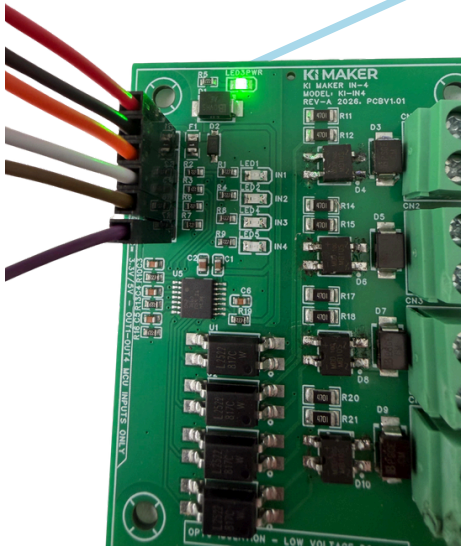
H1 OUT1 To GPIO Digital input Pull-up/down off

MOST IMPORTANT WIRING RULE

Never land field voltage on H1.
OUTx is a logic output to a GPIO. OUTx does not drive loads.
Dry contacts need an external 12 V or 24 V DC source in series.

First Power-Up

LED3PWR: VLOGIC on



IN-4 first power-up: logic first.

This is the fastest safe path to confirm IN-4 is alive before you land all four channels.

1. Mount the board on insulated standoffs. Field terminals on the right (IN1A/B ... IN4A/B). Logic header on the left (VLOGIC, GND, OUT1–OUT4).
2. Wire logic first. H1 pin 1 (nearest LED3PWR) to 3.3 V or 5 V. Pin 2 to controller GND. LED3PWR should light. If it does not, stop.
3. Connect one field pair: 12 V or 24 V DC across CN1 IN1A and IN1B. INxA and INxB are interchangeable.
4. Watch LED1. Valid field voltage present → LED1 (IN1) on, OUT1 HIGH. Field voltage removed → LED1 off, OUT1 LOW.
5. Land OUT1 on a GPIO. Configure the GPIO as a standard digital input with internal pull-up and pull-down resistors disabled.
6. Repeat CN2–CN4. Mix 12 V and 24 V as long as each pair stays 9–30 VDC.

EXPECTED FIRST-USE RESULT

LED3 PWR lights when VLOGIC is applied.

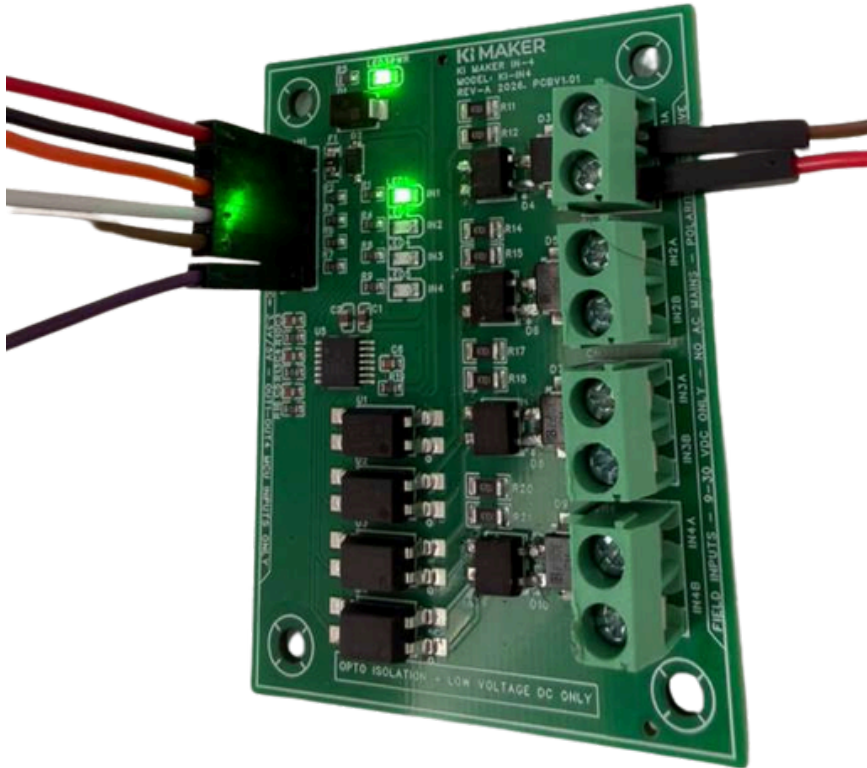
A valid 9–30 VDC field input lights the corresponding channel LED and drives OUTx HIGH.

Removing the field voltage turns the channel LED off and returns OUTx LOW.

No component should become unexpectedly hot during the first check.

One Correct Wiring

Dry contact with external
24 VDC



NO + / - ORIENTATION REQUIRED

IN-4 does not wet the contact. A dry contact needs an external 12 V or 24 V DC source in series. INxA and INxB may be reversed. Each input is polarity independent. Reverse the two field wires — the channel still works.

- If Something Looks Wrong
- Remove power immediately if wiring is uncertain, LED3PWR does not light, or a component becomes unexpectedly hot. Confirm you did not land field voltage on H1. Return to logic-only power before reconnecting any field pair.
- 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.