KIT004 - DIY Automatic Contactless Alcohol Dispenser Kit User Guide

Overview:

This is an easy to build automatic and contactless alcohol dispenser kit.

- This kit does NOT require soldering.
- NO MCU/Arduino required!
- This DIY kit is expected to be manually assembled basing on the circuit diagram provided.

Unlike other similar kits, the circuit here is properly designed with the correct components included and with ease of assembly in mind.

User needs to add a container for the alcohol/liquid and provide power source (5V micro-USB Charger, >= 2.1A).

The kit should be powered from a microUSB charger ideally rated for 2.1A or larger. Some chargers rated 1A may not have sufficient power to drive the pump. Alternatively, the device may be powered from other sources such as a power bank.

The content of the kit are:

1x mini Pump

1x 30cm hose for the pump

1x mini breadboard

1x Layad Circuits IR sensor module

1x MOSFET Transistor,

N channel

1x 10K resistor (pull down for Gate circuit)

1x 1N4007 or 1N4001 (flyback protection)

1x terminal block (for pump terminals)

1x 30cm solid wire for breadboard connections

1x microUSB adapter with headers already soldered

Demo: youtu.be/Tbv0YC0MUkg

NOTES on orders: - Certain kit parts may have different colors or slightly different form. E.g. wire, breadboard and terminal block may have a different color - The hose may come to you already inserted on the pump outlet as other users may find it difficult to insert - Unlike similar kits, we test every single pump with the hose in distilled water. If the hose or pump reaches you with small amount of water in them, treat them as normal.

NOTES on Assembly/Operation: - Basic electronics knowledge may be required for the assembly of this kit. Ambient IR sources such as sunlight may affect the current threshold, you may adjust this using the onboard potentiometer on the sensor board. - Avoid use in direct sunlight - If your pump fails to perform, check the following: --- ensure a power source that can deliver continuous currents of up to 1A. A 2A or higher charger is recommended. --- ensure the pump is submerged in the liquid - As you assemble, check for the correct orientation and polarities. The diode, microUSB adapter, sensor, and transistor should be connected strictly following the circuit. - keep the diode as close as possible to the pump terminals - The breadboard is meant to help you connect the circuit without soldering, should you wish to solder, a double-sided PCB matrix board is recommended. - Since the resistor and/or diode may have smaller leads than the breadboard holes, you may want to either bend the legs over and twist for a thicker connection point or you could insert solid wire on the same hole as that of the resistor/diodes lead for better connectivity. - The circuit is designed to work with the specific components provided in this kit and may or may not work with other parts. We don't mind you copying the design2, just be careful when using other parts :) But of course, we would be happy to process your orders.

LC-KIT004

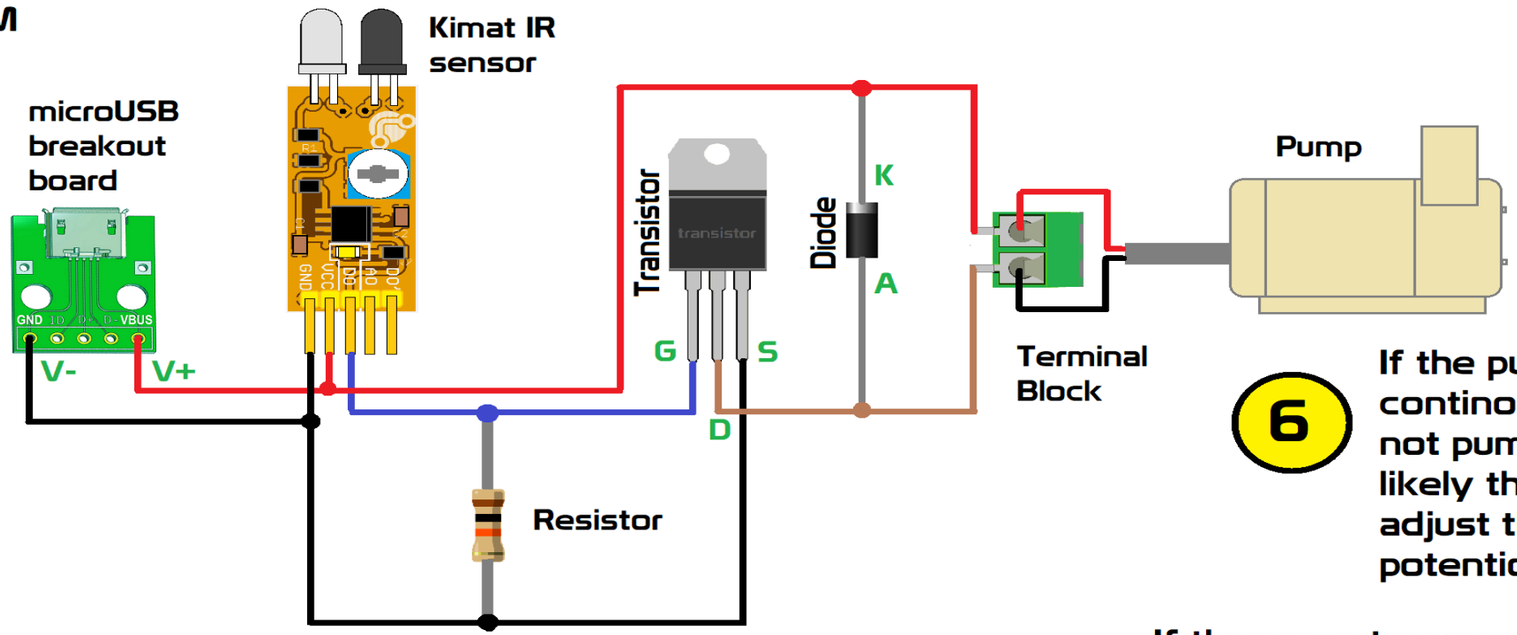
SETTING UP and TROUBLESHOOTING GUIDE

1 Check that all connections follow the diagram

2 Before powering, check using a DMM/VOM that there is no connection (short) between VBUS and GND

3 Apply power by inserting a charger or power bank with 5V output with minimum 2A current rating.

4 Calibrate sensor:
[1] Slowly rotate sensitivity adjustment potentiometer until the builtin LED is ON from an OFF state.
[2] Rotate the potentiometer in the opposite direction until the point at which the LED starts to turn OFF.
[3] Wave your hand in front of the sensor element. The LED will turn on when the hand is successfully detected.

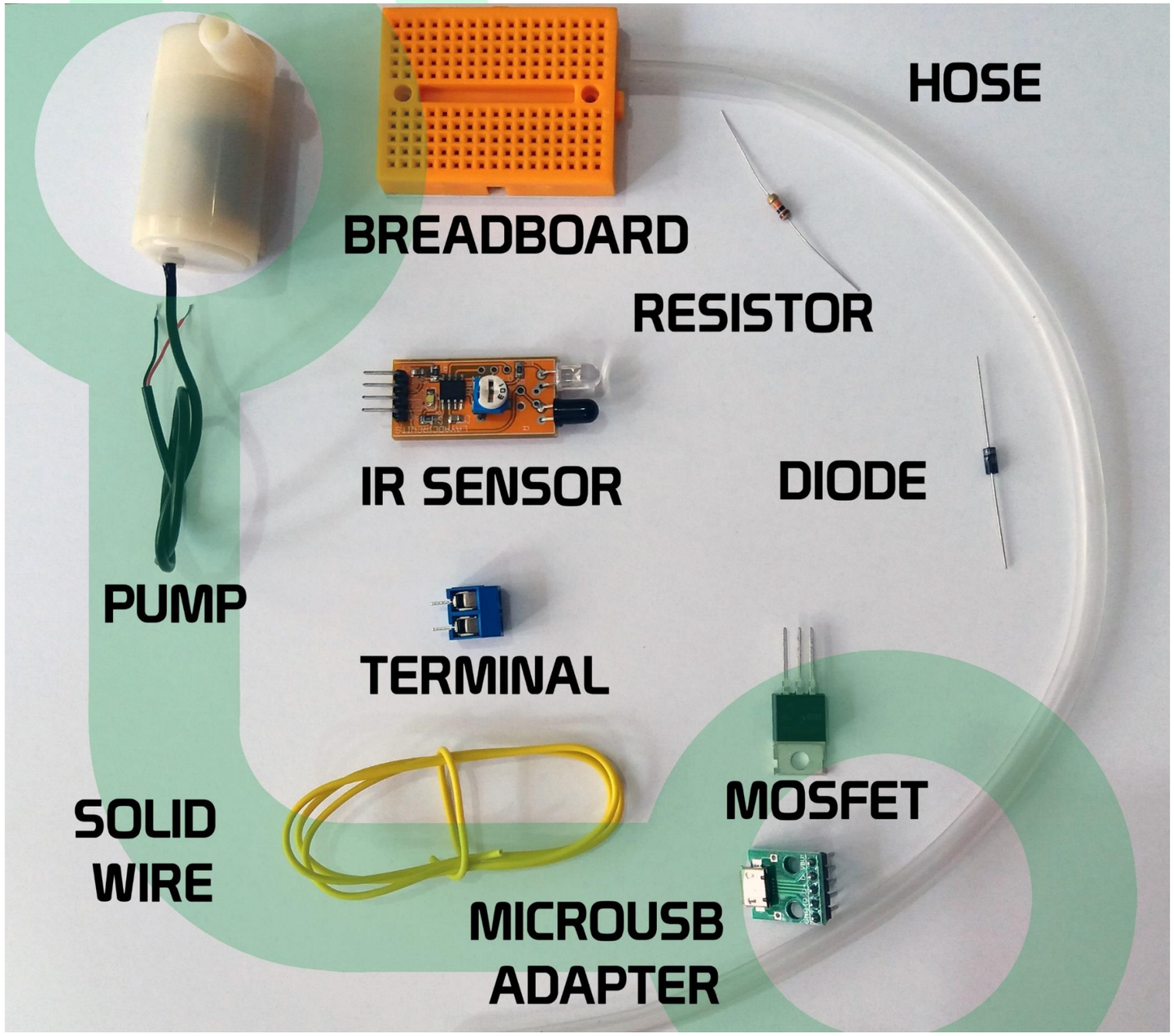


5 When hand is detected, you should be able to measure close to 5V at the blue wire with respect to the ground wire (V-).

6 If the pump is either continously ON or if not pumping out, it is likely that you need to adjust the sensitivity potentiometer

7 If the pump turns on correctly but suddenly turns off then back on again, replace your power source and ensure it meets the requirements (5V >=2A)

KIT CONTENTS (certain parts may have color variations)



BREAD BOARD CONNECTION

Below is one possible connection you can build on the breadboard