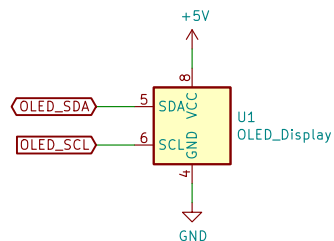


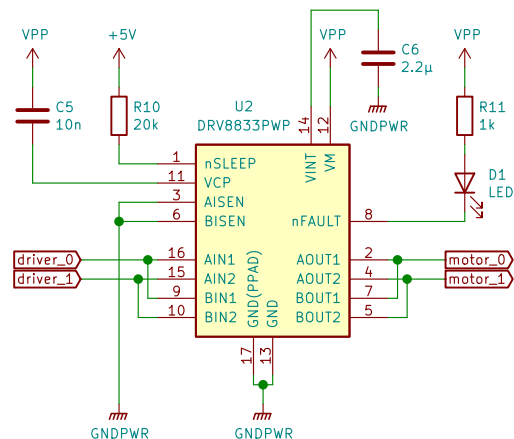
# OLED screen

The diagram shows a yellow rectangular component labeled 'U1 OLED\_Display'. It has four pins on its left side: pin 5 is labeled 'SDA' and is connected to a red box labeled 'OLED\_SDA'; pin 6 is labeled 'SCL' and is connected to a red box labeled 'OLED\_SCL'. The top pin is labeled '+5V' and is connected to a green arrow pointing up. The bottom pin is labeled 'GND' and is connected to a green arrow pointing down.



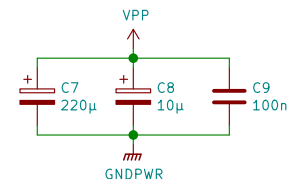
# Motor driver

The diagram shows a DRV8833PWP motor driver module. The central component is the DRV8833PWP IC (U2). It has two 5V power pins (14 and 12) connected to a +5V supply through a 10k resistor (R10). A 10nF capacitor (C5) is connected to the VPP pin (1). The IC has two ground pins (17 and 13) connected to GNDPWR. The IC has two sets of motor pins: AIN1, AIN2, BIN1, BIN2 (pins 16, 15, 9, 10) and AOUT1, AOUT2, BOUT1, BOUT2 (pins 2, 4, 7, 5). These are connected to two motor modules (motor\_0 and motor\_1). The IC also has two status pins: nFAULT (pin 8) connected to a 1k resistor (R11) and a red LED (D1), and VCP (pin 3) connected to a 10nF capacitor (C6). The IC has two more pins: nSLEEP (pin 11) and VCP (pin 3). The IC has two more pins: nSLEEP (pin 11) and VCP (pin 3). The IC has two more pins: nSLEEP (pin 11) and VCP (pin 3).

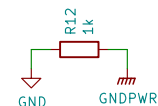


## Motor power decoupling

The diagram illustrates a parallel circuit for decoupling motor power. It features three capacitors, C7, C8, and C9, connected between a power supply line (VPP) and a ground line (GNDPWR). Capacitor C7 has a value of 220μF, C8 has a value of 10μF, and C9 has a value of 100nF. The capacitors are connected in parallel, with their positive terminals connected to VPP and their negative terminals connected to GNDPWR.



## Logic & power ground connexion



The motor board is soldered on the motor, It contains an optical encoder detailed bellow

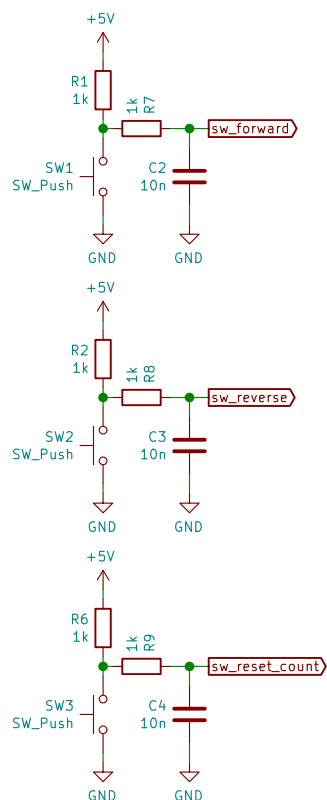
# Filtered buttons

The image displays three identical circuit diagrams, each representing a different button input: SW\_Fwd, SW\_Rev, and SW\_Reset. Each circuit consists of a 5V supply, a 1kΩ pull-up resistor (R1, R2, R6), a 1kΩ resistor (R7, R8, R9), a 10nF capacitor (C2, C3, C4), and a push-button switch (SW1, SW2, SW3). The output of each circuit is labeled as sw\_forward, sw\_reverse, and sw\_reset\_count respectively.

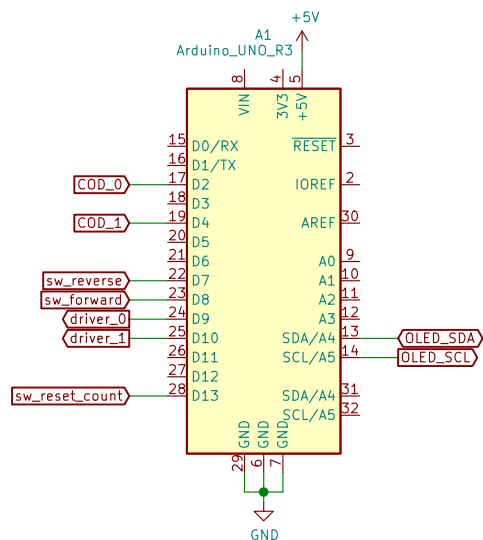
**SW\_Fwd Circuit:** A 5V supply is connected to a 1kΩ resistor (R1). The other end of R1 is connected to a 1kΩ resistor (R7) and a 10nF capacitor (C2). The other end of R7 is connected to the output pin labeled sw\_forward. The other end of C2 is connected to GND. A push-button switch (SW1) is connected between the output pin and GND. The switch is labeled SW\_Push.

**SW\_Rev Circuit:** A 5V supply is connected to a 1kΩ resistor (R2). The other end of R2 is connected to a 1kΩ resistor (R8) and a 10nF capacitor (C3). The other end of R8 is connected to the output pin labeled sw\_reverse. The other end of C3 is connected to GND. A push-button switch (SW2) is connected between the output pin and GND. The switch is labeled SW\_Push.

**SW\_Reset Circuit:** A 5V supply is connected to a 1kΩ resistor (R6). The other end of R6 is connected to a 1kΩ resistor (R9) and a 10nF capacitor (C4). The other end of R9 is connected to the output pin labeled sw\_reset\_count. The other end of C4 is connected to GND. A push-button switch (SW3) is connected between the output pin and GND. The switch is labeled SW\_Push.

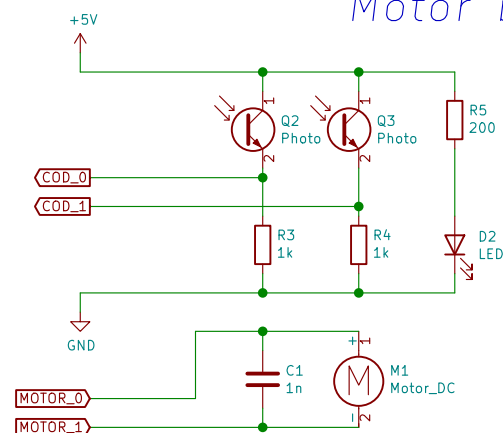


# Arduino Uno board



# Motor board

The diagram illustrates the internal circuitry of a Motor board. It is powered by a +5V supply and GND. The board includes two photo-transistors, Q2 and Q3, which are connected to COD\_0 and COD\_1 inputs. Q2 is connected to COD\_0 and Q3 to COD\_1. Both photo-transistors are connected to a common +5V supply line. A 200 ohm resistor (R5) is connected between the +5V supply and the common line. A 1k ohm resistor (R3) is connected between the common line and GND. A 1k ohm resistor (R4) is connected between the common line and GND. An LED (D2) is connected between the common line and GND. A DC motor (M1, Motor\_DC) is connected between the common line and GND. A 1nF capacitor (C1) is connected between the common line and GND.



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