

DC Motor

Actuators / Continuous motion

Direction, speed and the difference between running and stall current.

01 Drive circuit

Never direct

GPIO drives a driver input, not the motor. Use a MOSFET for one direction or H-bridge for both.

Direction

An H-bridge reverses motor terminal polarity.

Speed

PWM switches the driver; duty cycle changes average applied voltage.

02 Electrical sizing

Stall current

Select driver, supply, wires and fuse for stall/startup current, not just no-load current.

Flyback

Inductive current needs a safe recirculation path. Check driver protection; add a diode for a simple low-side switch.

Noise

Use short motor leads, suitable suppression and decoupling near the driver.

03 First test

Unloaded

Raise wheels, start at low duty, confirm direction and check temperature.

Reverse

Ramp down before reversing; avoid sudden high-current direction changes.

Ground

Connect logic and driver grounds; keep high-current return paths out of signal wiring.

Before you power on

A stopped or jammed motor can still draw its maximum current. Remove power if it stalls.

DC Motor / continued

Actuators / Continuous motion

Datasheets & further reading

ST L298 datasheet

<https://www.st.com/resource/en/datasheet/l298.pdf>