# DRV8256E Based Dual Motor Driver User Guide

Electronic Club - SLRC Branch

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Introduction

The DRV8256E based drivers are brushed motor drivers that operate from 4.5V to 30V supporting a wide range of output load currents for various types of motors and loads. The motor driver incorporates two DRV8256 ICs which enables controlling two motors using a single motor driver.
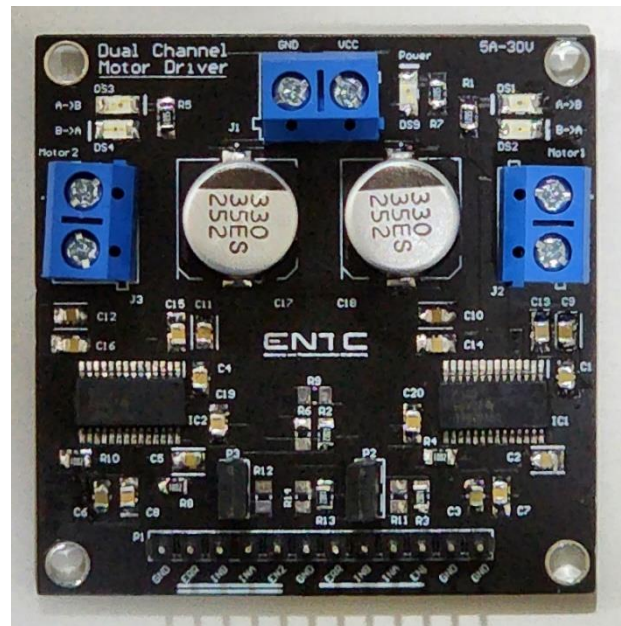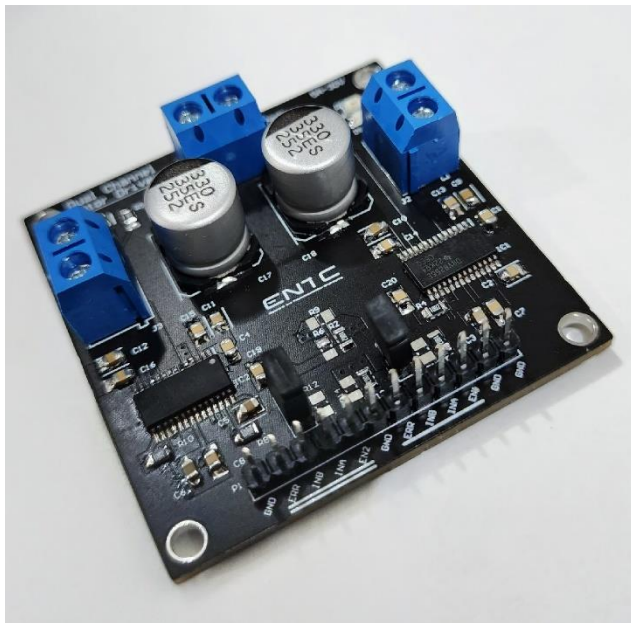
Features

The DRV8256E motor driver offers the following features:

- Dual H-bridge driver
- 4.5V to 30V operating voltage range
- 5 A maximum continuous current rating per motor
- Thermal shutdown and overcurrent protection
- Enabling and disabling two motors separately using jumpers

GND   VCC

Output motor 2

Output motor 1

P2 and P3 jumpers
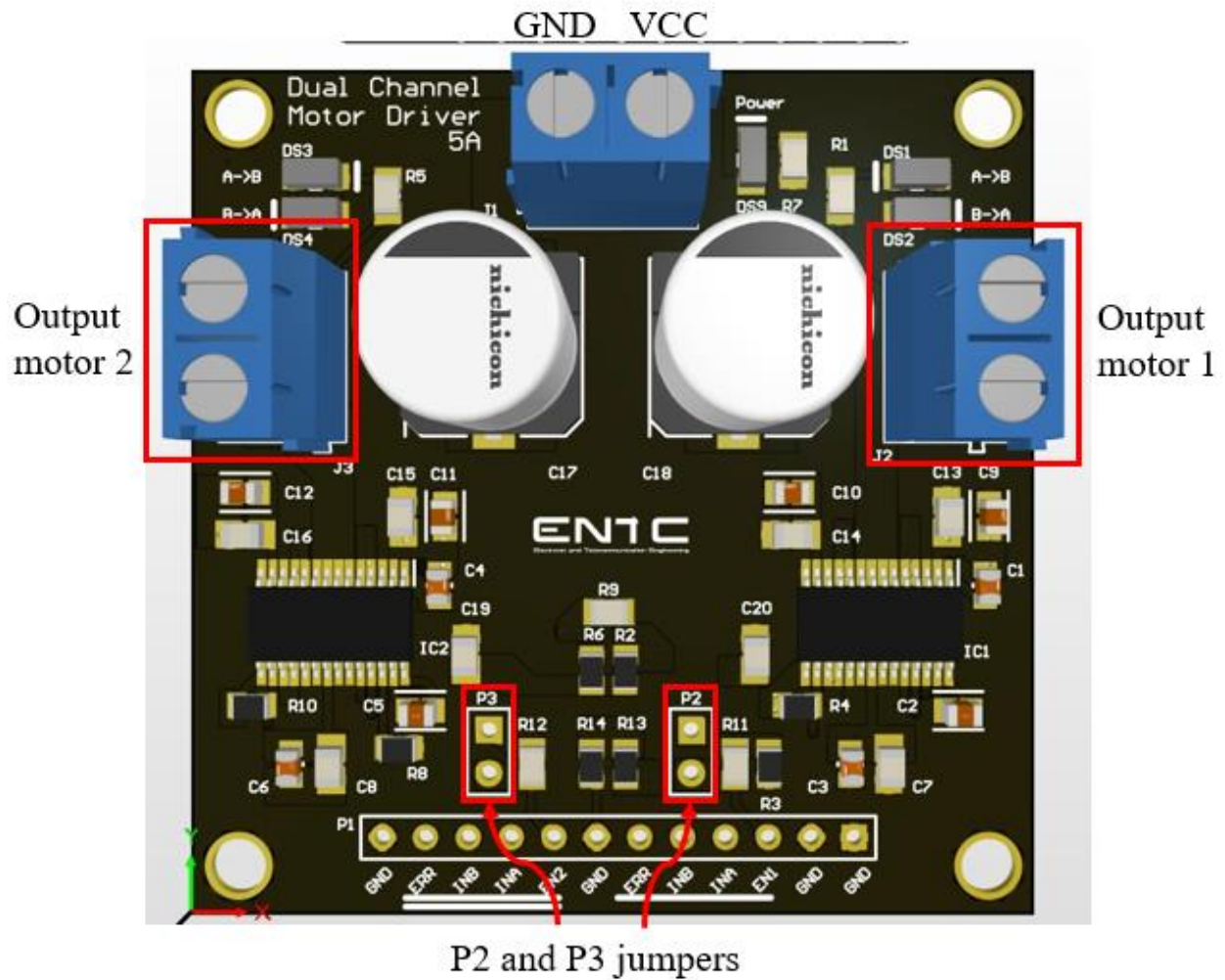
Pinout

Pin name	Description
VCC	External power for motors.
GND	Ground pin.
ERR	Fault indication pin. Can detect if there is any error in the circuit. No need to connect it to operate the motor driver.
INA	Speed control pin. Give a PWM signal to control the speed of the motor
INB	Phase control pin. Motor rotating direction is controlled.
EN1,EN2	Enable pins. Give logic level 1 (5V) to activate the motors

Bridge control

Direction as well as the speed of the motor can be controlled by giving the following inputs to each motor pins of the motor driver. Note that the motor driver will not support break option and the motors will be working in drive/coast operation.

EN	INA	INB	OUT1	OUT2	Description
0	X	X	Hi-Z	Hi-Z	Sleep mode: H-bridge disabled
1	0	X	Hi-Z	Hi-Z	H-bridge disabled
1	1	0	Low	High	Reverse mode
1	1	1	High	Low	Forward mode

Speed of the motor can be controlled by giving a PWM signal to INA pin.

Separate motor control feature

P2 and P3 jumpers connect the Enable signals for the two motors to the driver ICs on the PCB. The jumpers should be ON and the EN1 and EN2 pins should be high for the two motors to be enabled.

You can remove P2 or P3 to manually disable the motors while debugging.

Please be aware of the following points when operating the motor driver.

- Ensure the current passing through the motor driver is less than the maximum current mentioned. Exceeding the maximum current will cause the motor driver to be damaged.
- As the motor driver does not support braking operation, you can break by changing the direction of motors(by rotating the wheels in the opposite direction for a small time until they stop). However, this will generate heat and can damage both the motor driver and the motor. If you are going to use this fast-breaking option, be mindful of the heat generated.

DO NOT remove the QR code on the back of the motor driver.