



TESSERACT
ROBOTICS

User's Manual REY 20- V1.1

TESSERACT ROBOTICS

REY20-V1.1 DC Motor Driver



User's Manual V1.1



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Introduction

REY 20 V1.1 is designed to drive medium to high power DC brushed motors providing up to 120 A peak and 30A continuous current at PWM signal up to 20 KHz. Motor drivers can be interfaced with both 3.3V and 5V logic levels. It is suitable for high-performance robots, Robocon, Robo-cup, US First, Battle robots and many more robotics applications.

Features:

- Bi-directional control for brushed DC motor.
- Motor Voltage: 5V - 24V.
- Maximum Current: 120 A peak (1 second), 30A continuously.
- 3.3V and 5V logic level input.
- Speed control PWM frequency up to 20KHz.

Product Specifications:

Absolute Maximum Rating

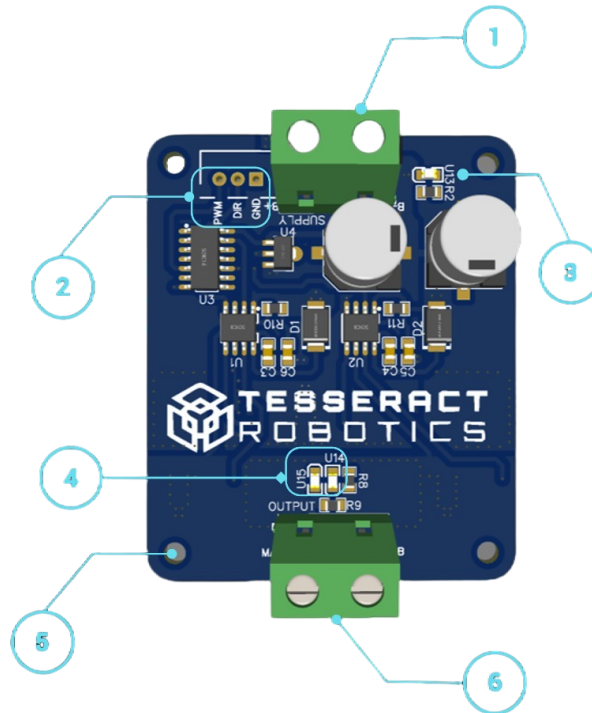
Parameter	Min	Typical	Max	Unit
Power Input Voltage (Motor supply voltage)	7	12	24	V
I _{MAX} (Maximum Continuous Motor Current)	-	-	30	A
I _{PEAK} (Peak Motor Current)*	-	-	120	A
I _{IDLE} (Idle Current)	-	-	25	mA
V _{IOH} (Logic Input-High Level)	3	-	5.3	V
V _{IOL} (Logic Input - Low Level)	0	-	0.5	V
Maximum PWM Frequency**	-	-	20	KHz

Package contains:

- Motor driver module
- Connector
- User manual
- Stickers



Board layout:



1. Power Terminal Block

Connect to the power source. For high current applications, please solder the wire directly to the pad at the bottom layer.

2. Input

Pin No.	Pin Name	Description
1	GND	Ground
2	PWM	PWM input
3	DIR	Direction Input.

3. Red Power LED

Turns on when the REY20-V1 is powered up.

4. Directions LEDs

Green LED A.

Turns ON when output B is low, and output A is high. Indicates the current flows from output A to B.



Green LED B.

Turns ON when output A is low, and output B is high. Indicates the current flows from output B to A.

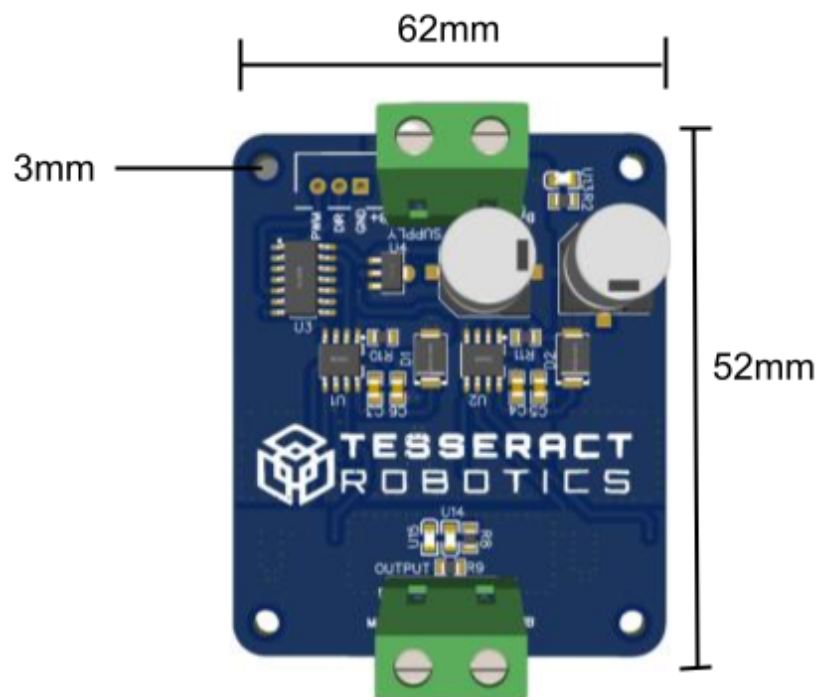
5. Mounting Hole

There are four mounting holes of 3mm diameter for mechanical mounting of the motor driver.

6. Motor Terminal Block

Connect to the motor. For high current applications, please solder the wire directly to the pad at the bottom layer.

Dimensions:





Input Logic:

The following truth table shows the logic input to operate a DC brushed motor using the Rey20_v1.1 motor driver.

Truth table for the control logic:

PWM	DIR	Output A	Output B	Motor State
0	Don't care	0	0	Brake
1	0	1	0	CW
1	1	0	1	CCW

Precaution: NO REVERSE POLARITY PROTECTION IS PROVIDED

Interfacing with Microcontroller:

