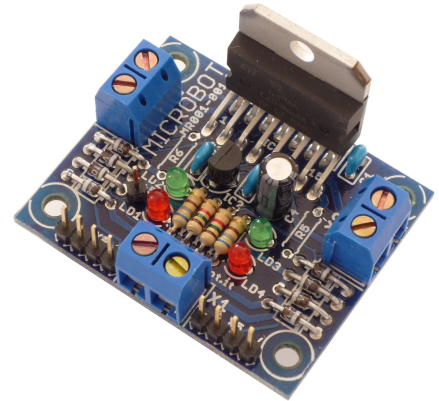


Name: **DC Dual Motor Driver 30V 4A**
Code: **MR001-001.1**



When you need to independently drive two DC motors, controlling both velocity and direction, this board is what you need.

It is based on the famous integrated circuit L298, produced by STMicroelectronics; the L298 is an integrated monolithic circuit in a 15-lead Multiwatt package. It is a high voltage, high current dual full-bridge driver designed to accept standard TTL logic levels and drive inductive loads such as relays, solenoids, DC and stepping motors.

Normally for this kind of applications the minimum supply voltage allowed is about 8 or 9V. Instead in our driver you can use also small batteries at 6V; this is very important to select the power source and the kind of DC motors, due to dimension, weight and consumption specifications requested by the application you are developing. The maximum supply voltage supported by this board is 30V.

To enable or disable each channel independently of the input signals there are provided two enable inputs (*Enable1*, *Enable2*) positioned on the front of the board.

On the same strip connector there is the sense output that allows the current monitoring. The current that flows through the load comes out from the bridge at the sense output : an external resistor (R5, R6) allows to detect the intensity of this current. The sense output voltage can be used to control the current amplitude by chopping the inputs, or to provide overcurrent protection by switching low the enable input. If you don't need this information you have to solder a jumper instead of these resistors.

This board also provides direction LED indicators for both channels; this is very usefull during setup stage to verify the firmware behaviour (also without applying a real motor to the output).

INSTRUCTIONS

Connectors X2 and X3 (two vias terminal blocks) are the two outputs for motors (MOT1 and MOT2). The two strip connectors (X4, X5) next to the power connector (the X1 two vias terminal block) are used to control the 2 channels of this DC Dual Motor Driver.

Each of them has 4 pins for the signals as reported on table 1.

Channel 1		Channel 2	
Name	Function	Name	Function
Input1a	Input A of ch.1 (TTL input)	Input2a	Input A of ch.2 (TTL input)
Input1b	Input B of ch.1 (TTL input)	Input2b	Input B of ch.2 (TTL input)
Enable1	Enabling ch.1 (TTL input)	Enable2	Enabling ch.2 (TTL input)
Sense1	Current sense on ch.1	Sense2	Current sense on ch.2

Tab.1 - Connections

To understand the meaning of these signals and their use you can read the following table (Tab.2), where all conditions are reported. Note that there are reported only the conditions for channel 1 because conditions for channel 2 are just alike them.

Inputs			MOT1-1 and MOT1-2 output
Enable1	Input 1a	Input 1b	
1	1	1	HIGH state for both output (motor stopped)
1	0	0	LOW state for both uotput (motor stopped)
1	1	0	Current flows from M1-1 to M1-2 (direction 1)
1	0	1	Current floes from M1-2 to M1-1 (direction 2)
0	X	X	High impedance (motor is in free running)

Tab.2 - Conditions

About the *EnableX* signals, they have pull-up resistors so in some applications you don't need to drive them and to control a motor you need just 2 or 3 signals (2 if you are not interested in monitoring the current flow).

SPECIFICATIONS

Supply voltage	6 - 30V
Supply current (logic)	24mA typ. (36mA max.)
Output current	4A (2A for each channel)
Data I/O voltage	TTL standard
Dimensions	46x37x25mm (connector, pins and IC included)
Weight	20g / 0,70oz
Operating temperature	-25 - 130°C

