L298 H-Bridge Dual Bidirectional Motor Driver (2 x 2A)

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This dual bidirectional motor driver is based on the very popular L298 Dual H-Bridge Motor Driver Integrated Circuit. The circuit will allow you to easily and independently control two motors of up to 2A each in both directions.

It is ideal for robotic applications and well suited for connection to a microcontroller requiring just a couple of control lines per motor. It can also be interfaced with simple manual switches, TTL logic gates, relays, etc.

The circuit incorporates 4 direction LEDs (2 per motor), a heat sink, screw-terminals, as well as eight Schottky EMF-protection diodes. Two high-power current sense resistors are also incorporated which allow monitoring of the current drawn on each motor through your microcontroller.

An onboard user-accessible 5V regulator is also incorporated which can also be used to supply any additional circuits requiring a regulated 5V DC supply of up to about 1A.

The circuit also offers a bridged mode of operation allowing bidirectional control of a single motor of up to about 4A.

4. To "coast" (i.e. let freely run) a particular motor, simply set "ENA" or "ENB" to Low. When the enable of a particular motor is set to Low, the corresponding motor "coasts".

5. The circuit also incorporates two current sense outputs, "CSA" and "CSB" for each motor which expose the corresponding current sense outputs of the L298 IC and incorporate the required high-power resistors. You can use these outputs to monitor the current draw of each motor and detect stall conditions and take appropriate action. For more information on how to use these, you may refer to the L298 Datasheet which can be found at:

http://www.canakit.com/Media/Datasheets/L298.pdf

Operating Instructions

1. The circuit can be supplied in two different ways. Since the circuit incorporates an onboard 5V DC regulator, the required supply voltage for the operation of the L298 Integrated Circuit can be tapped off of the motor supply voltage itself. Furthermore, this 5V DC regulated voltage is also available for any other circuitry you may want to drive. The jumper setting and wiring diagram for this way of supplying the circuit is indicated in Wiring Diagram 1. **This is the recommended way of supplying the circuit.**

   Alternatively, if you would like to keep the motor supply voltage completely independent and isolated from the L298 5V supply voltage, then you would need to provide your own 5V DC regulated voltage to supply the L298 IC. The jumper setting and wiring diagram for this way of supplying the circuit is indicated in Wiring Diagram 2.

2. Each motor is controlled by setting to High "ENA" or "ENB" for the corresponding motor. You can then control the direction of each motor by enabling "IN1" or "IN2" for motor "A" and "IN3" or "IN4" for motor "B".

3. To "brake" a particular motor, you will need to set "ENA" or "ENB" to High and then set both direction pins to either High or Low.

Manufactured by:
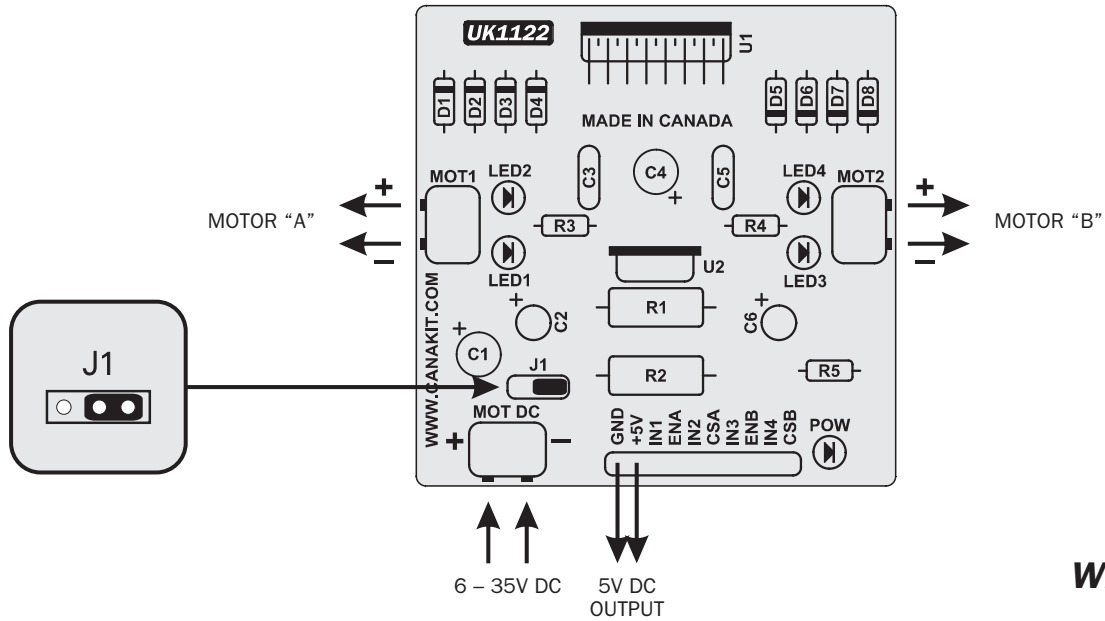**Cana Kit Corporation**
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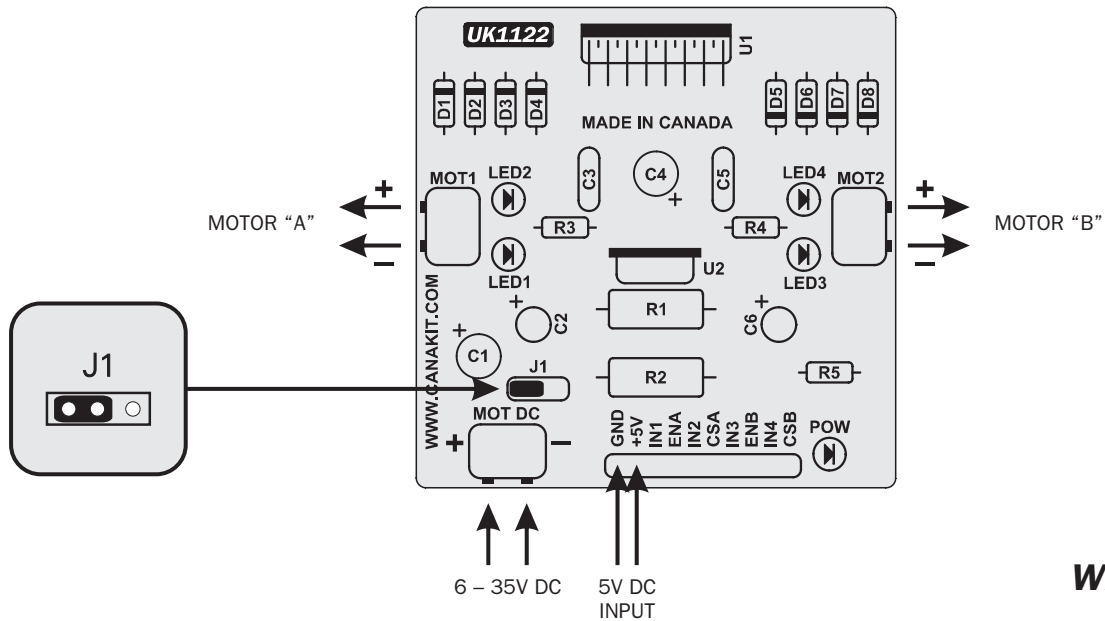Email: info@canakit.com
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USING THE MOTOR SUPPLY VOLTAGE FOR THE L298 SUPPLY VOLTAGE (RECOMMENDED)

UK1122

MADE IN CANADA

MOTOR "A"

MOTOR "B"

J1

6 – 35V DC

5V DC
OUTPUT

Wiring Diagram 1

USING AN INDEPENDENT SUPPLY VOLTAGE FOR L298 SUPPLY VOLTAGE
(NOTE: IN THIS MODE THE ONBOARD 5V DC REGULATOR IS DISABLED)

UK1122

MADE IN CANADA

MOTOR "A"

MOTOR "B"

J1

6 – 35V DC

5V DC
INPUT

Wiring Diagram 2

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Schematic Diagram