



must be connected to the common. The best results are obtained using the two signals (one inverted in relation to the other), this allows a more efficient use of the T1 pulse transformer.

The duty cycle of the PWM signal can vary between 0 and 0.98, which guarantees a wide range of motor speed regulation.

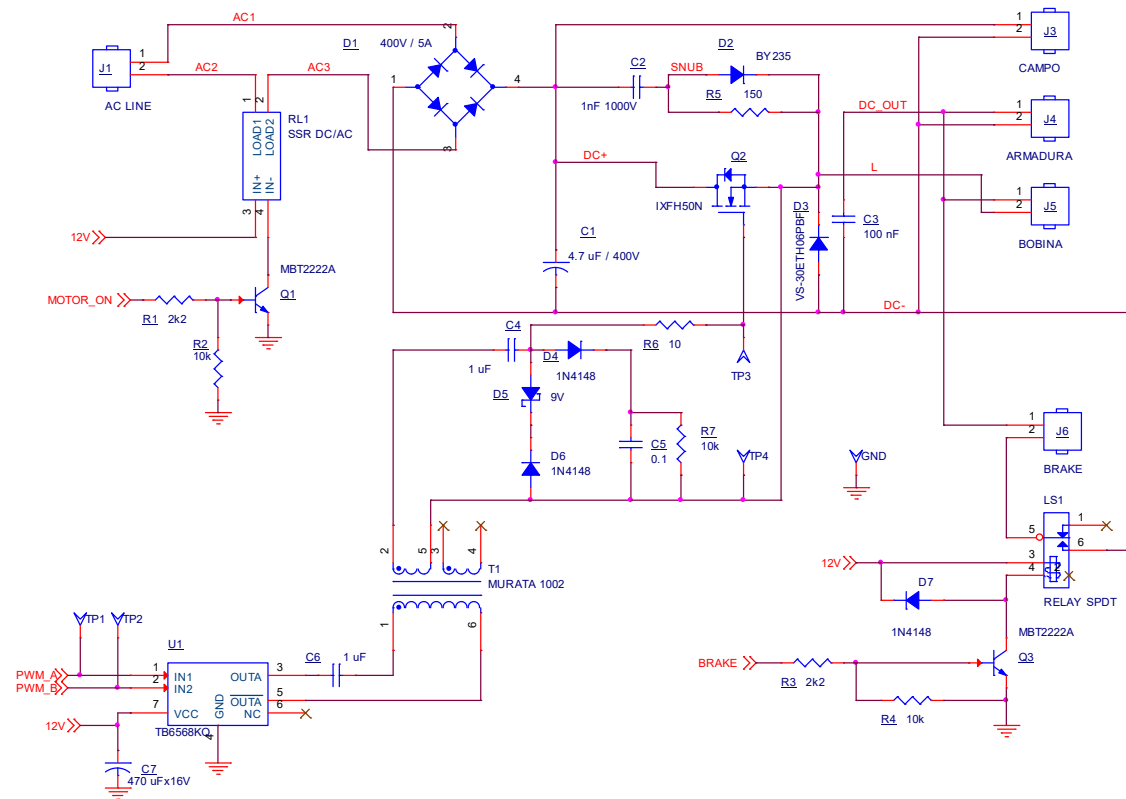


Fig.1. Converter Electrical Circuit.

In the J5 connector, we can connect a coil to improve the filtering of the motor current. The circuit can work without it, if we place a bridge between the pins of this connector, but in that case, the regulation could be affected at very low revolutions.

The braking resistor must be connected to connector J6. Its value and power depend on the type of engine, and the requirements of the braking time. During the tests, we used a 33 Ohm 25 W for a 220 V DC and 1.0 A motor.

The DC voltage at connector J3 is not regulated, and is intended to connect the motor field coil, although this coil can also be connected in parallel or in series with the main winding.

In the download area of the ledoelectronics.com website, you can find sample usage code for this converter, for the Atmega168a and for the ATSAM4E-16C.

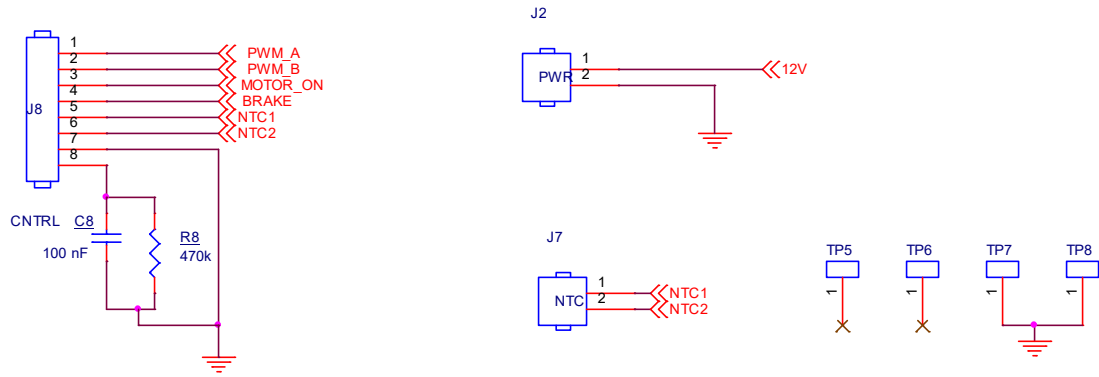


Fig.2. Control Connectors.

It is recommended to mount transistor Q2 and diode D3 on a heat sink whose area is consistent with the power of the motor used. Both must be electrically insulated from the metal heatsink.

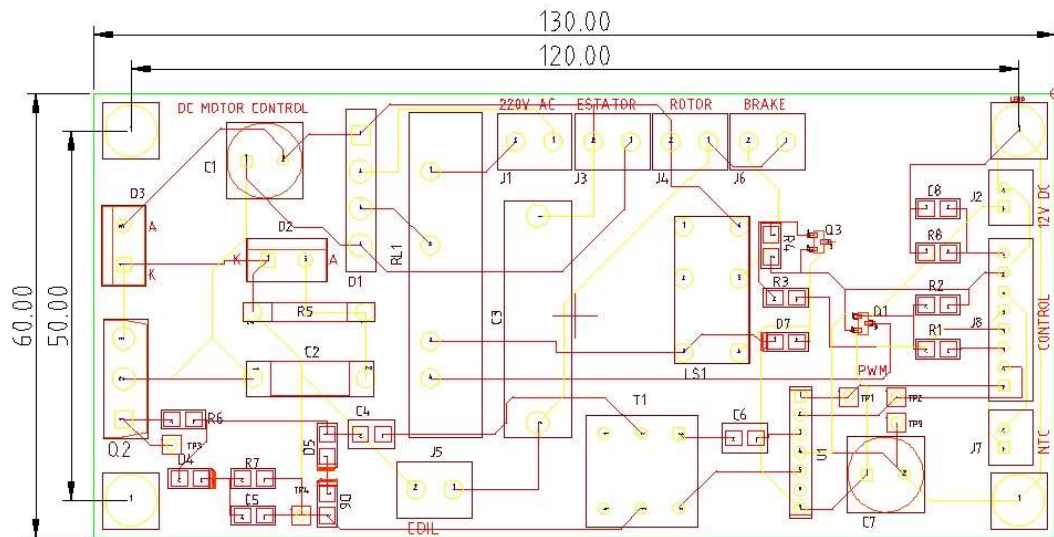


Fig.3. Board outlines.