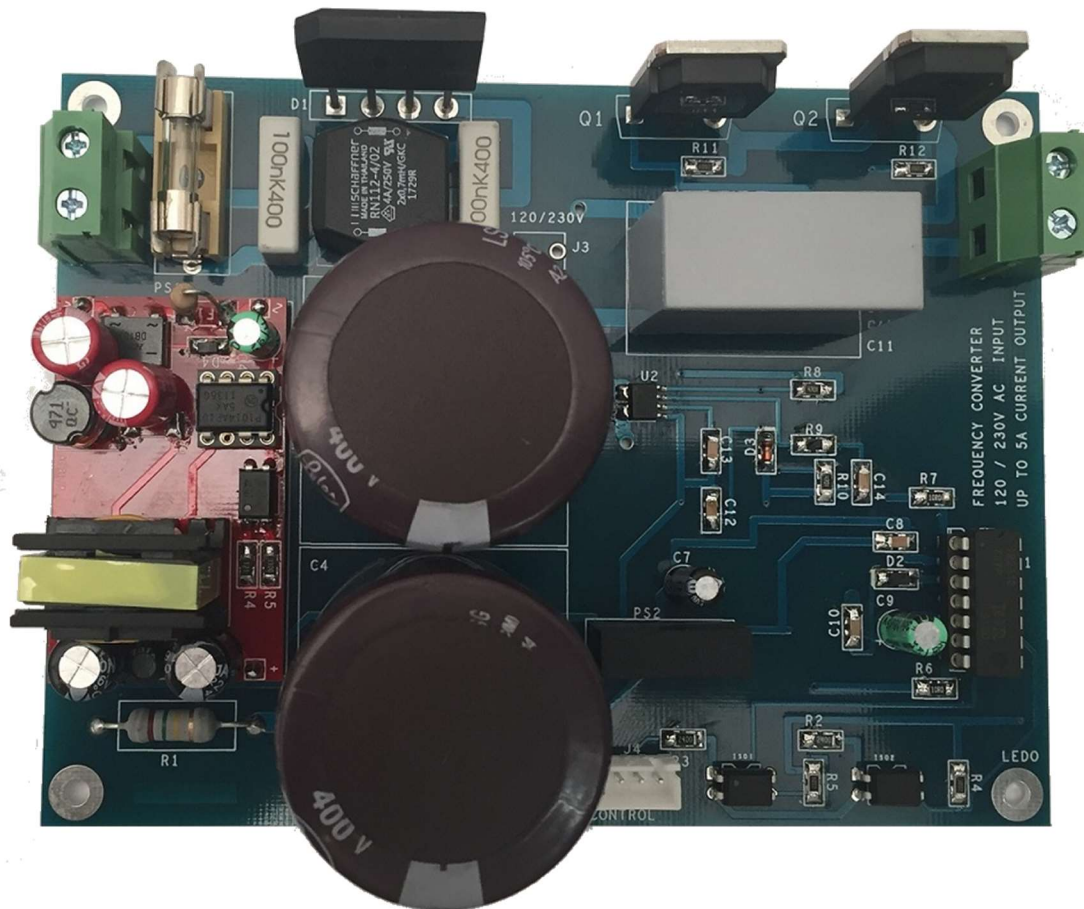


SINGLE PHASE FREQUENCY CONVERTER



- **110V / 230V AC Supply Voltage**
- **Up to 5 A Output Current**
- **Driver IR2110 on Board**
- **Current Protected**
- **High quality C Snubber**

The module contains all the power elements necessary for the implementation of an efficient and versatile single-phase frequency converter.

It has a line rectifier, which allows the supply voltage to be selected between 110V and 230V AC, to obtain a output rectified and filtered voltage of around 300V DC.

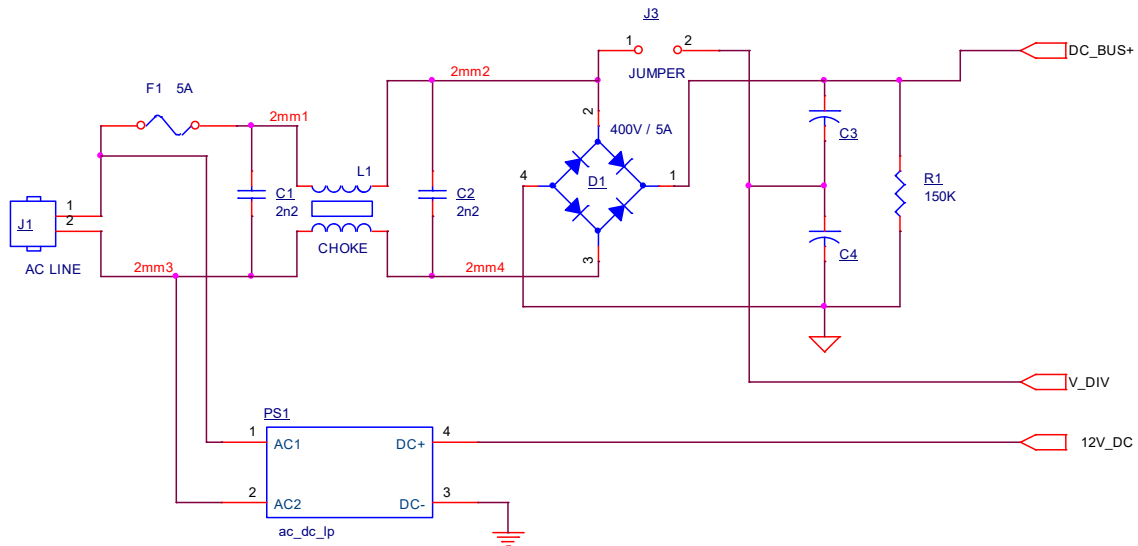


Fig.1. AC-DC Circuit.

The board incorporates the PS1 power module, manufactured by Ledoelectronics, which produces 12V DC isolated from the AC line, for powering the control system.

The control system is not included on the converter board. This should generate the two excitation signals for the IGBTs. Low power signals, and 180 ° out of phase, that are applied to the inputs of the gate amplifier based on the IC IR2110, which is present on the converter board.

The control system must also read the analog current signal, which is provided by the board mounted ACS723 Hall Sensor.

To control the converter, any microcontroller based system can be used. Its logic is compatible with the 3.3V, 5.0V and 12V platforms. All control signals are duly isolated from the line potential using optocouplers.

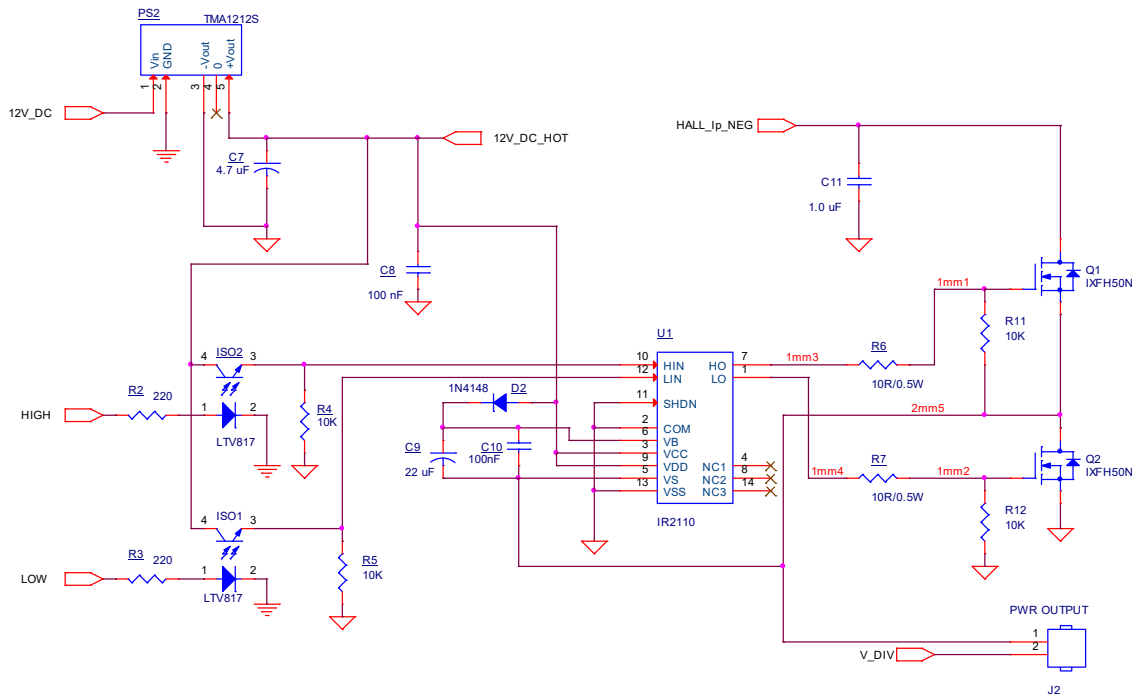


Fig.2. DC-AC Circuit.

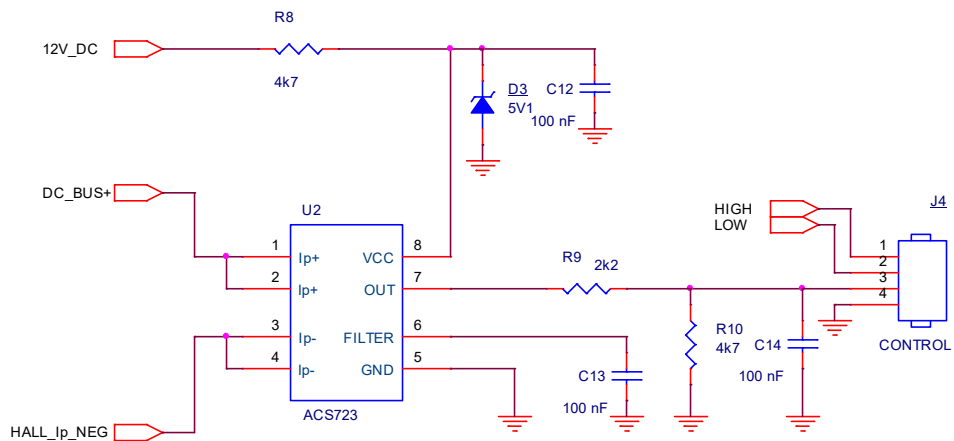


Fig.3. Hall Sensor and signal Inputs.

The converter has been designed for the excitation of the electromagnet of a commercial sieve shaker, which requires working frequencies between 18 Hz and 40 Hz with a current consumption of 2 amps.

It can be used in various domestic and industrial applications or as a study medium for students.