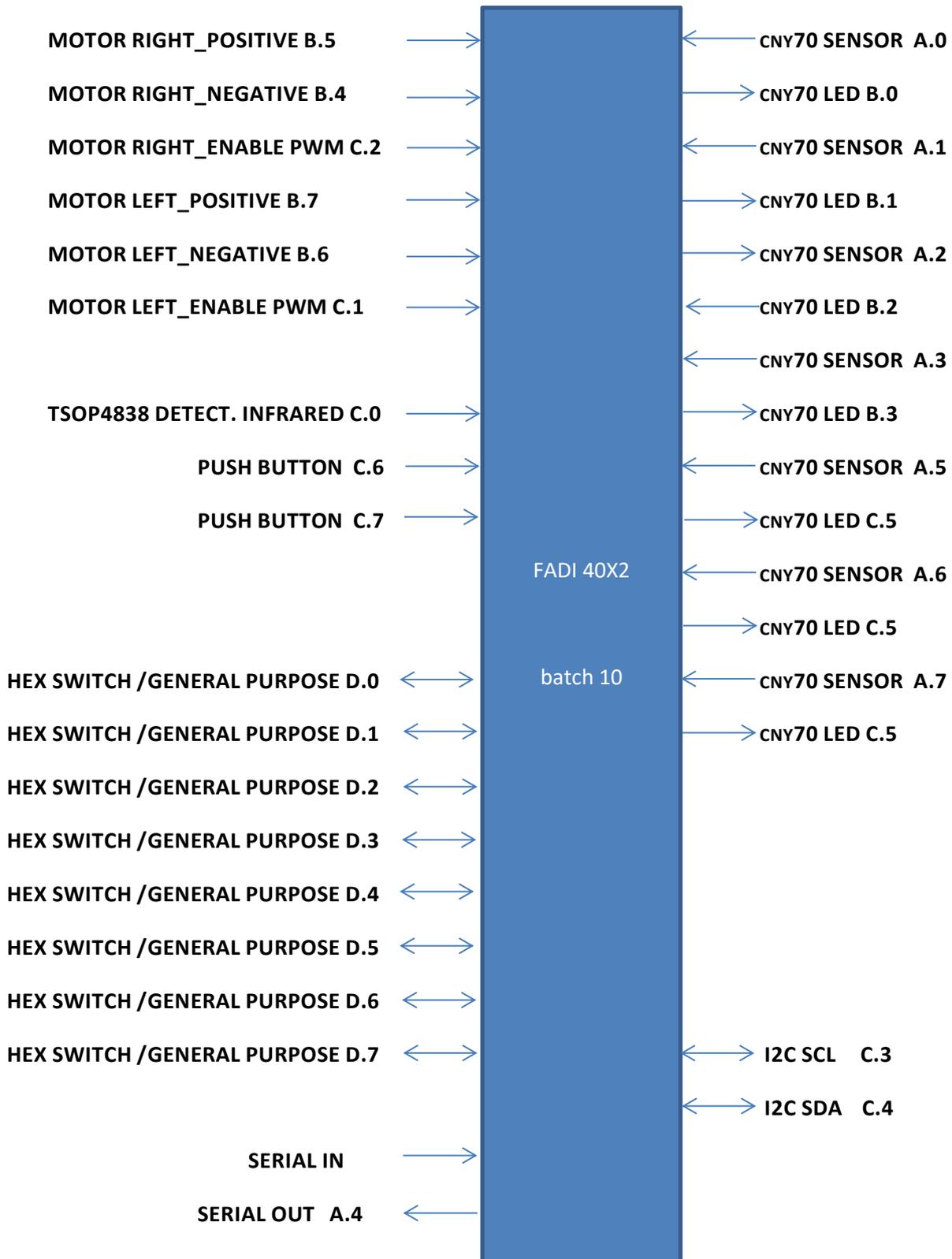


FUNCTIONAL BLOCK SHIELD PICAXE FADI_40X2 (BATCH 1.0)



There are basic programs for configuring and operating the shield fadi40x2. With them you can choose from a basic configuration to a more complex configuration such as the I2C master or I2C slave configuration.

Port D is of general purpose are designed to input the I2C address of the board by means of rotary switches. They support an 8x strip of pull-up or pull-down resistors. Can be used for other uses apart from rotary switches.

Serial IN and serial OUT, are independent terminals that allow programming and debugging of programs regardless of the other inputs or outputs.

There are 2 push button inputs C.6 and C.7 which can also be connected to a small slider to maintain the state. They are connected to port C to enable interruptions.

The C.0 input is connected to an infrared TSOP4838 remote control sensor and can send codes with the keypad. It is also connected to port C to enable instantaneously answered interruptions.

There are 7 connectors designed to connect CNY 70 sensors. The transistor manifold is directly connected to the VCC. The phototransistor emitter is connected to a pull down resistor to GND. The resistance value may vary for and adjust the sensitivity. We have tested values between 3k6 and 9k1 but other values could be valid. The anode of the emitter LED of the CNY70 is connected by means of an external transistor BC547 to VCC through a resistance of 220 Ohms, avoiding to overload the outputs of the microcontroller. This resistance value can be changed. The maximum current that can cross the LED is limited to 100mW and the $V_f = 1.25v-1.6v$ about 50mA. The idea of controlling the LED by means of an output is to save consumption, it is only connected at the moment of the measurement. When programming consider that the LED on is not instantaneous, use a pause between on and reading about 200mS. You can use each connector for other uses than CNY70 by bridging the 220 series resistor will reach a powerful output of about 100mA.

The bridge is a classic H designed to support the L293 or SN754410. You can control 2 motors or 4 outputs with a PWM control mechanism connected to C.1 and C.2. The bridge power can be bridged directly to + 5v supplied with an 800mA LD1117V50 controller or the Jack's Vin input.

There is a BUS for connecting I2C communication cables. In this design there is no possibility of connecting the two pull up resistors of the wiring.

There is a + 5v power input and a power switch on VCC and Vin simultaneously.

Also this card supports connecting other shields of the type PICAXE 401 or arduino UNO so that it can work with several compatible shields UNO or 401 and with the power and versatility that offers the microcontroller 40x2.