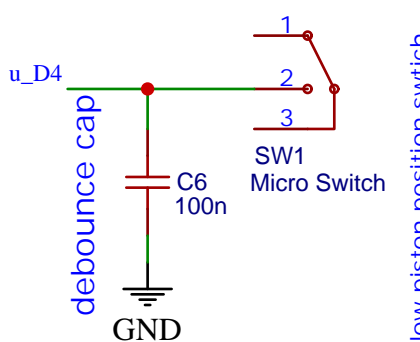
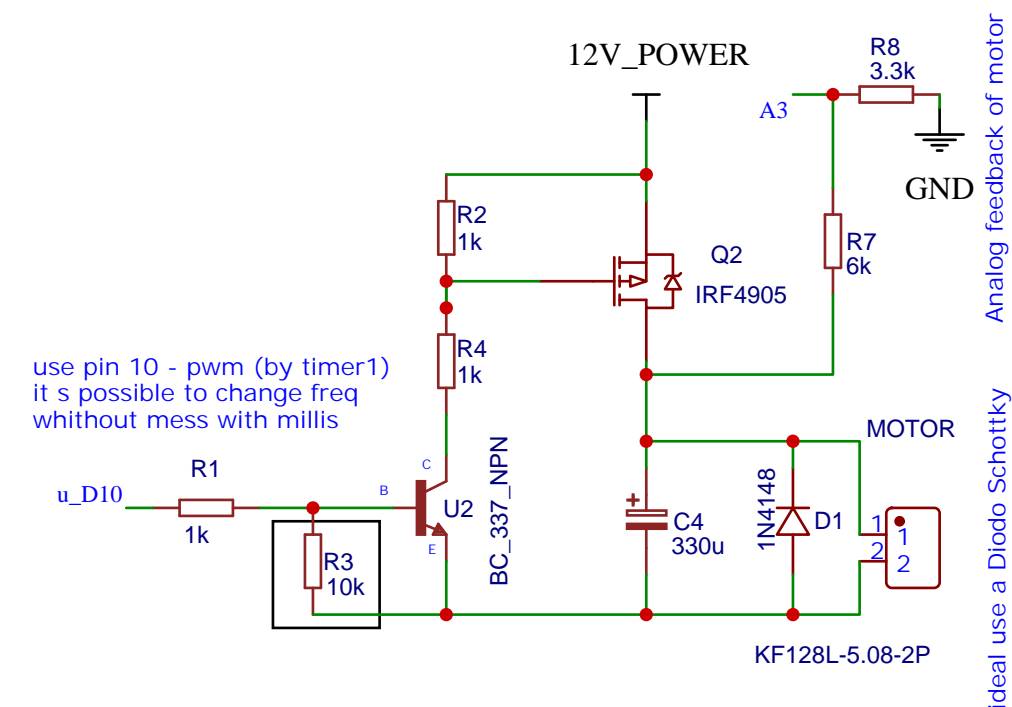


SAFE REQ: ADD WTG IN SOFTWARE  
SAFEREG: CHECK IF THE MOTOR MOVES AFTER COMAND IT AND THE DIF CMD X MEASURED

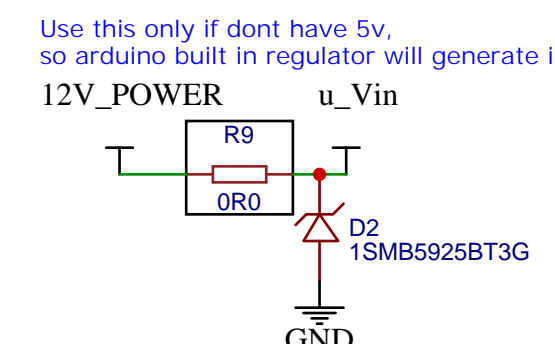
<https://etechnophiles.com/change-frequency-pwm-pins-arduino-uno/>

#### MOTOR DRIVER WITH ANALOG FEEDBACK



#### VOLTAGE INPUT

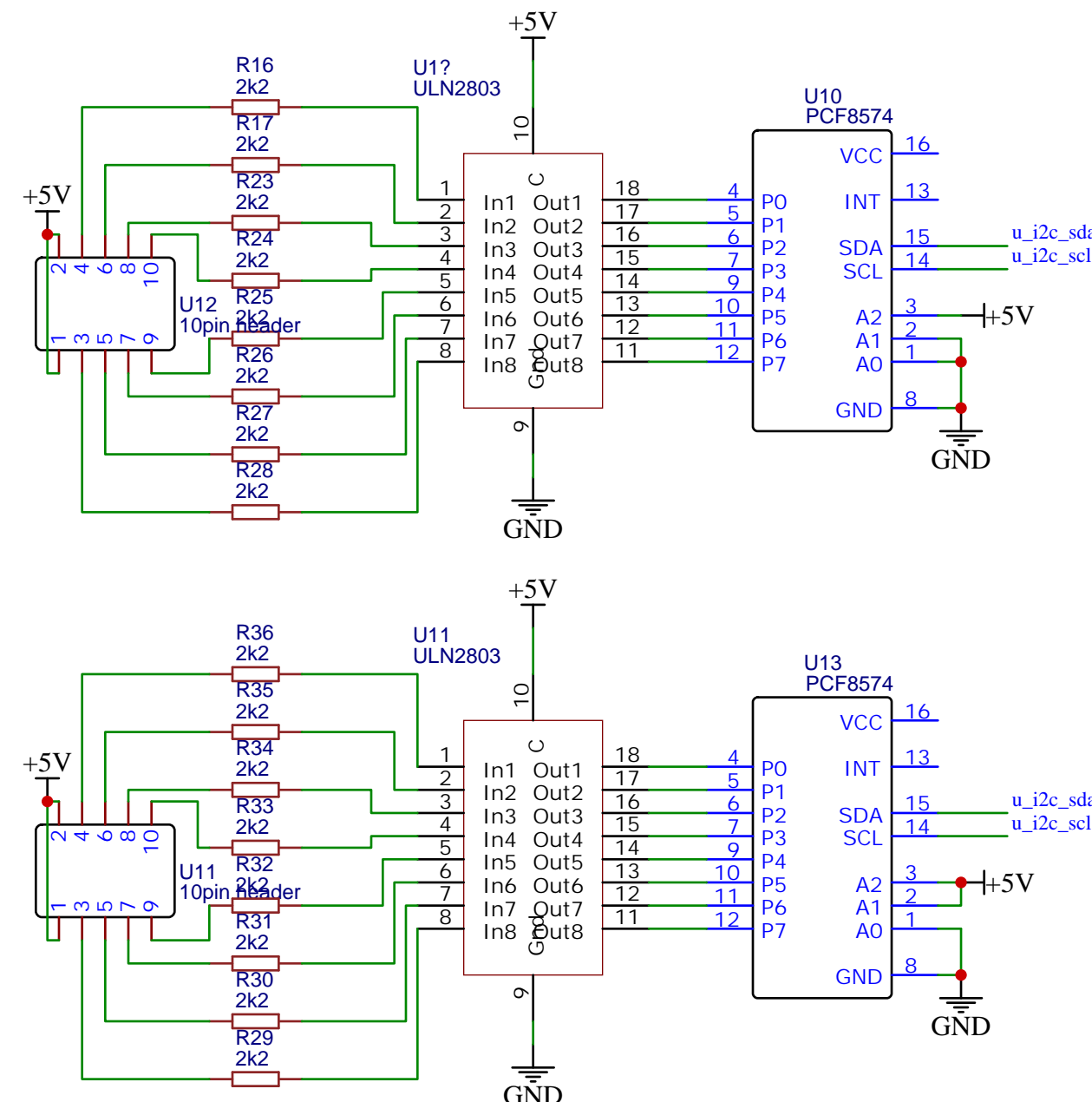
DC-5\_12\_VCC 12V\_POWER +5V



TITLE: GENERAL AND MOTOR CONTROL/SENSORS		REV: 0.1
Company:		Sheet: 1/6
Date: 2020-03-27	Drawn By: Henrique Nery	

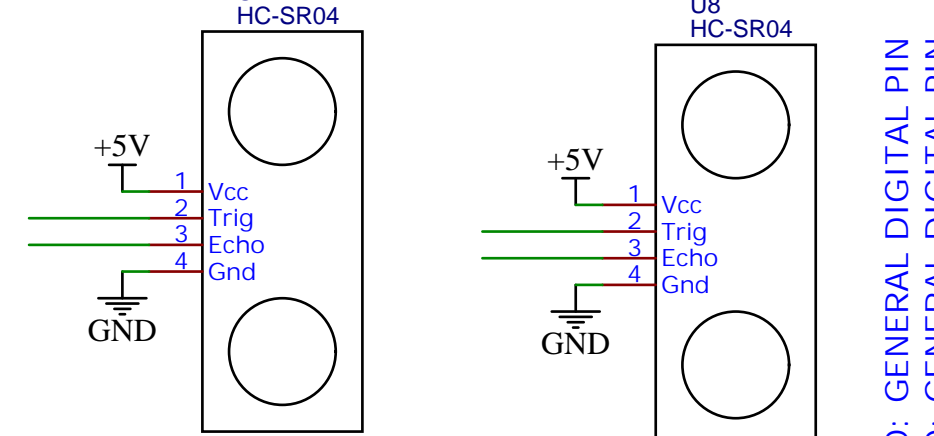
#### CHOOSE YOUR PRESSURE SENSORS - USE AT LEAST 2 FOR REDUNDANCY

##### rustic water level meter - pressure measurement op3



possible to use uin2003 leaving the top most pins untouched

##### ultrasonic water level meter - pressure measurement op1



TODO: GENERAL DIGITAL PIN  
TODO: GENERAL DIGITAL PIN

##### infrared distance water level meter - pressure measurement op2

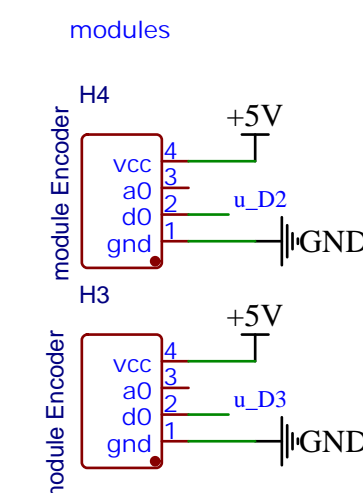
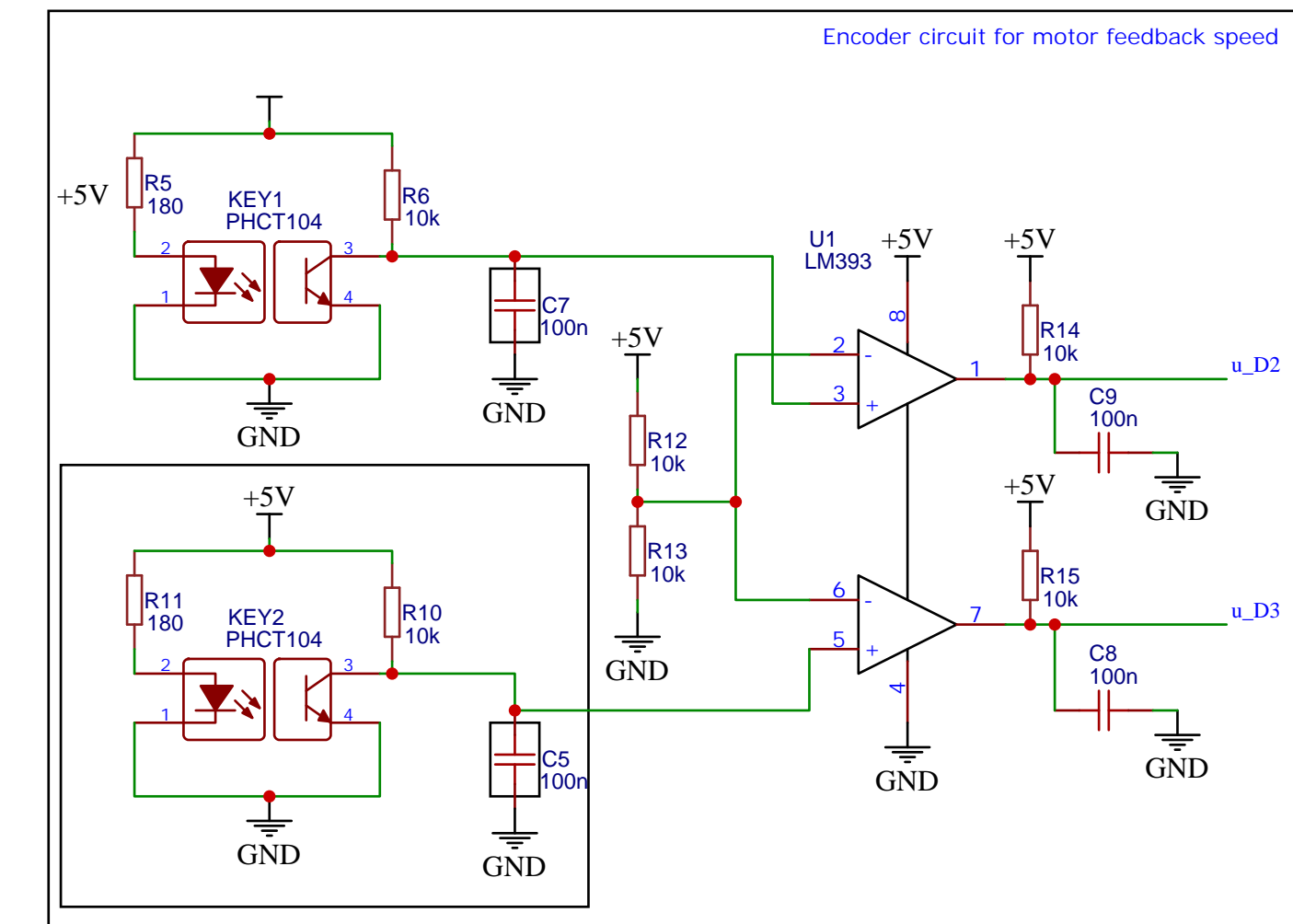


TODO: GENERAL DIGITAL PIN  
TODO: GENERAL DIGITAL PIN

TODO: CAPACITIVE SENSOR OPTION

TITLE: WATER COLUMN PRESSURE SENSOR		REV: 0.1
Company:		Sheet: 3/6
Date: 2020-03-27	Drawn By: Henrique Nery	

built-in circuit



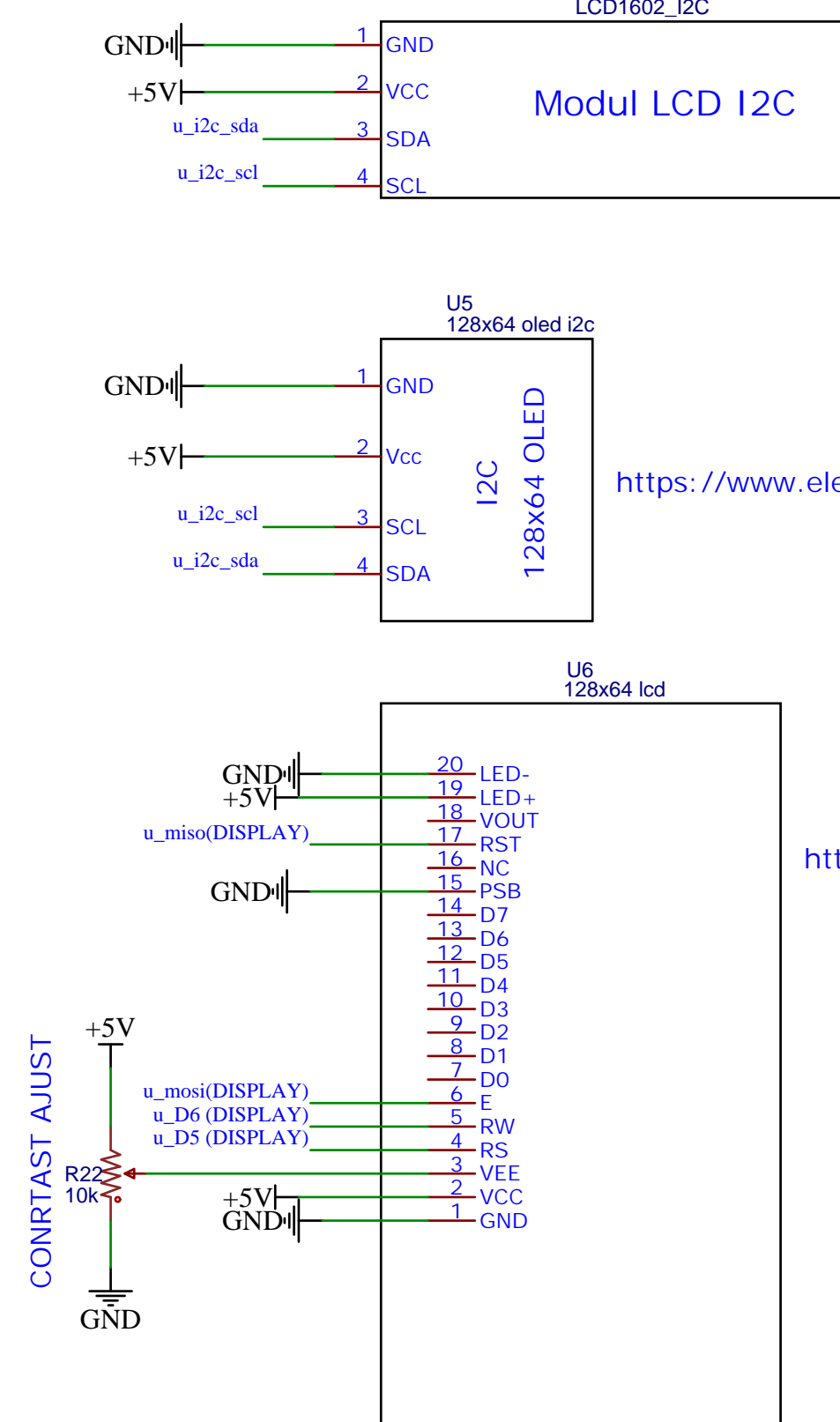
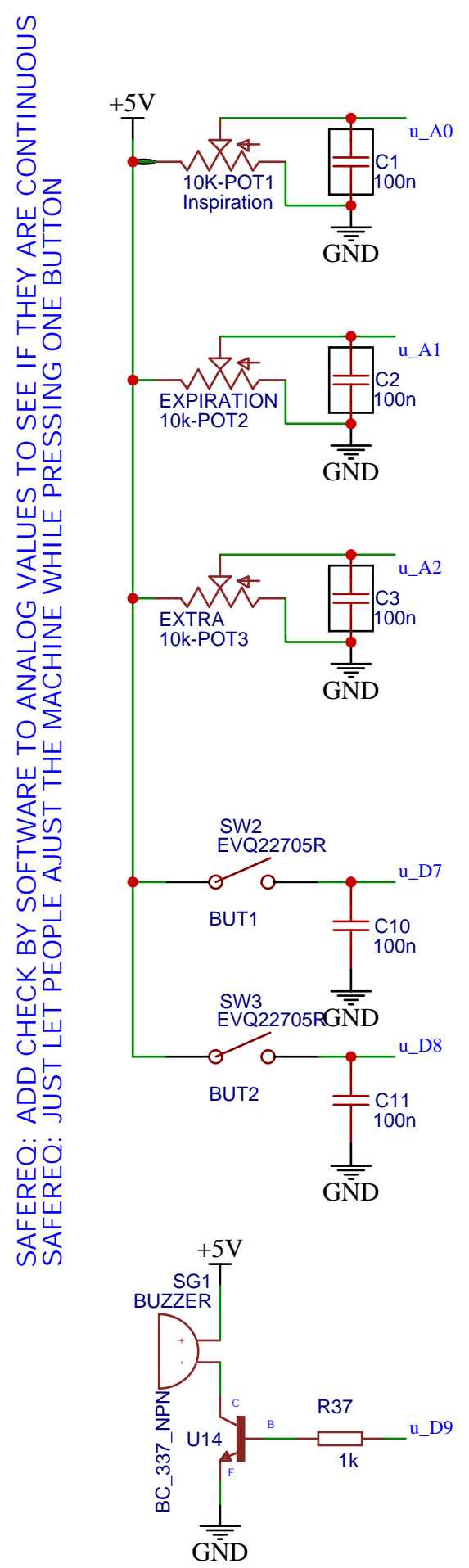
#### Notes about encoder circuit

- 1- For speed control with more robustness and without know the motor intrinsic parameter we need an encoder
- 2- These circuit can be bought all mounted and just plug it  
<https://www.filipeflop.com/produto/sensor-de-velocidade-encoder/>
- 3- Maybe its possible to mount it without the lm393 and resistors R14 R15  
I think it helps with stability of the signal during edges  
you can try built it without just making a short between pins 2,3,1 for enc1  
and 5,6,7 for enc2
- 4- Also Capacitors C7 and C5 are there to help in the edges
- 5- The second encoder, it was put there just as enhancement for redundancy
- 6- Implementation much more robust with interrupt pins

TITLE: MOTOR ENCODERS		REV: 0.1
Company:		Sheet: 5/6
Date: 2020-03-27	Drawn By: Henrique Nery	

[https://www.best-microcontroller-projects.com/easy\\_switch\\_debounce.html](https://www.best-microcontroller-projects.com/easy_switch_debounce.html)

<https://www.arduinoocia.com.br/modulo-i2c-display-16x2-arduino/>

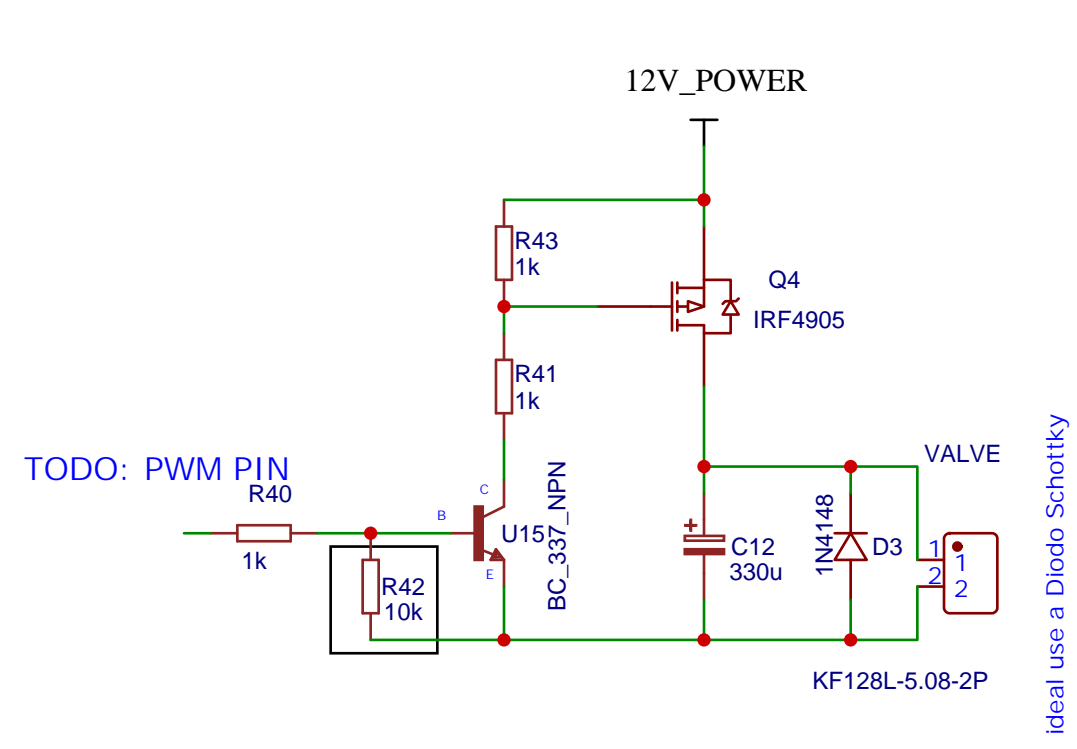


TITLE: USER INTERFACE		REV: 0.1
Company:		Sheet: 2/6
Date: 2020-03-27	Drawn By: Henrique Nery	

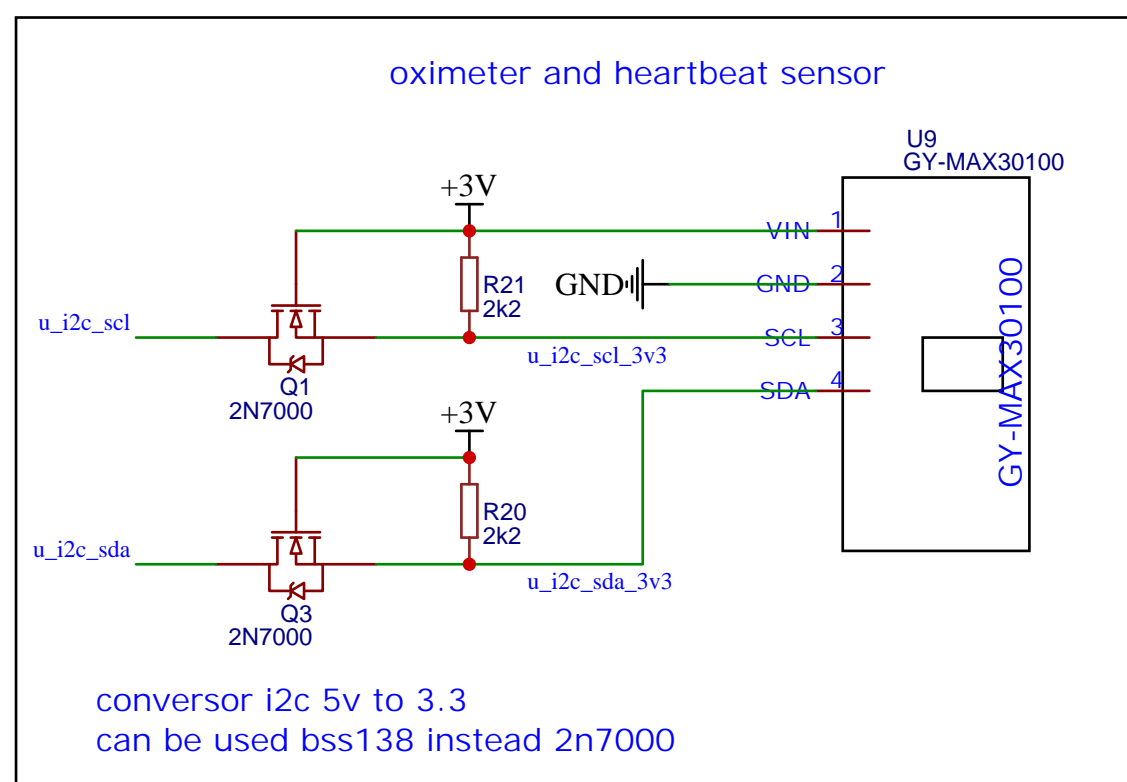
#### TODO: SOLVE QUESTIOS

- WHAT TO DO IF SOMETHING GOES WRONG?
- IF MOTOR OR DRIVER CIRCUIT BREAK?
- IF PISTON END SWITCH BREAK?
- IF VALVE CIRCUIT BREAK?
- IF PRESSURE MEASUREMENT SHOW DISCORDANCE?
- POWER SUPPLY FAILURE?
- MOTOR SPEED X COMAND DIFFERS TOO MUCH?

#### VALVE DRIVER



TODO: PWM PIN



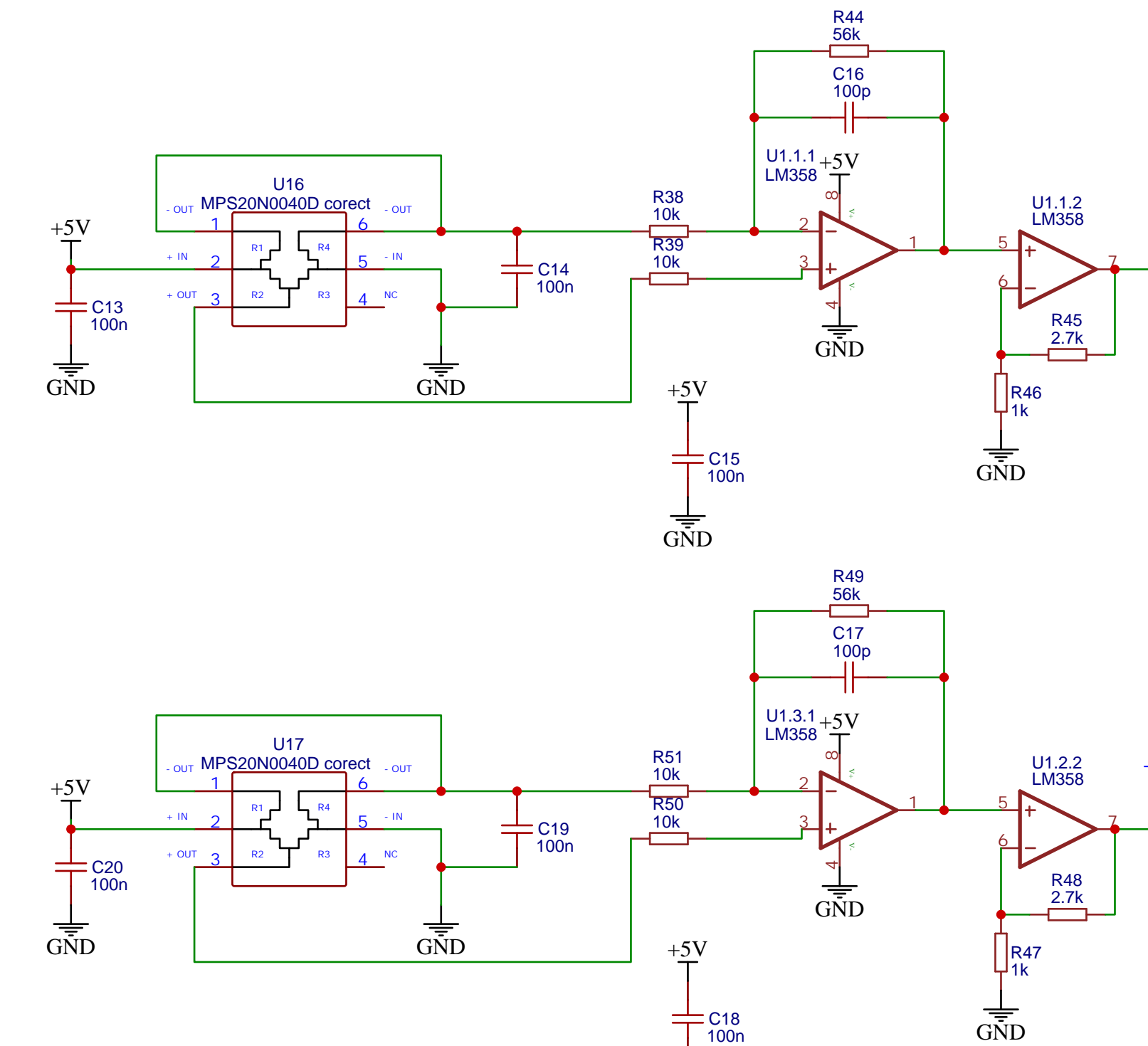
converter i2c 5v to 3.3  
can be used bss138 instead 2n7000

TITLE: OXIMETER/HEARTBEAT SEN AND VALVE DRIVE		REV: 0.1
Company:		Sheet: 6/6
Date: 2020-03-27	Drawn By: Henrique Nery	

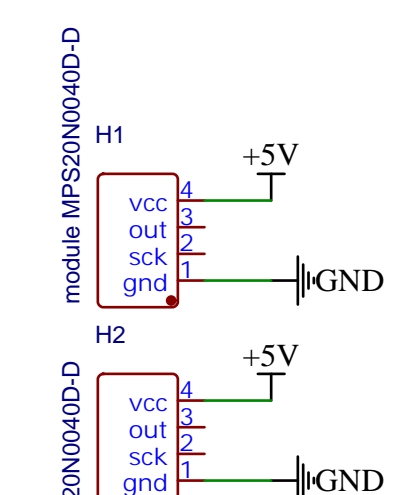
<https://langster1980.blogspot.com/2014/11/how-to-use-pressure-sensor-with.html>

<http://www.icstation.com/digital-barometric-pressure-sensor-module-liquid-water-level-controller-board-module-40kpa-p-12272.html>

ORIGINAL MODULE USE HX711 TO MEASURE DE H BRIDGE



use modules



TITLE: DIGITAL PRESSURE SENSOR		REV: 0.1
Company:		Sheet: 4/6
Date: 2020-03-27	Drawn By: Henrique Nery	