

## Pressure Gauge range 0 to 10kPa ( 0 to 1.75 psi)

The project presented here is a digital pressure Gauge using an OLED display. The measuring range of this unit is 0 to 10kPa (0 to 1.75 psi). Additionally, this compact open-source hardware is Arduino compatible. This board can be used for measuring low pressure up to 1.75psi with great accuracy. The board contains an MPXV5010DP analog pressure sensor, ATmega328 microcontroller, and 0.96 inch I2C OLED display. The board can also be connected to other high-pressure analog sensors from NXP. The operating power supply is 5V DC and it requires 25mA of current.

The output of the pressure sensor is 0.2V to 4.75V that is proportional to applied pressure. The analog output of the sensor is connected to the A0 analog pin of the ATmega328 chip. A 4 pin header connector is provided to mount the OLED display. A4, A5, VCC, and GND pins are used to interface the display. You can download the sample Arduino code to test the board.

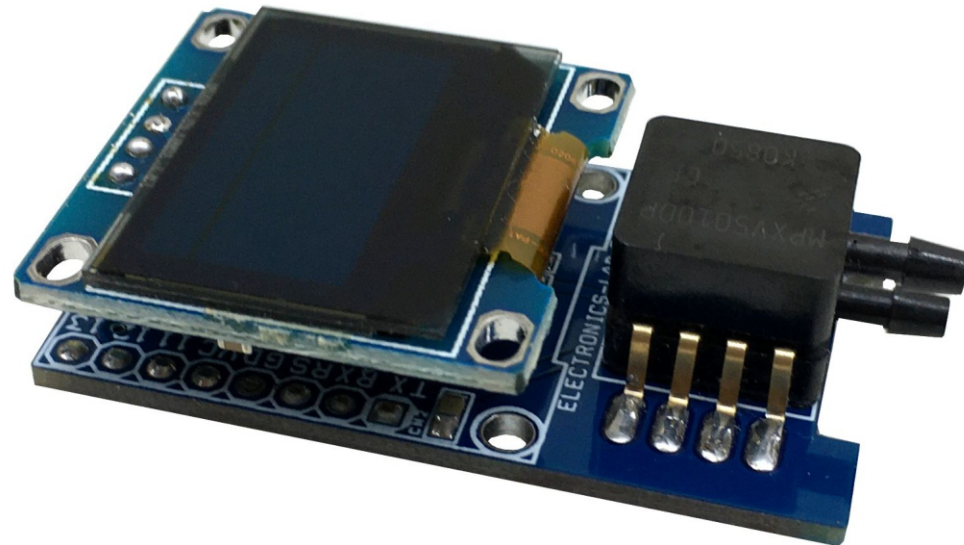
After assembly of the board, the ATmega328 chip will need boot-loader burning and Arduino code uploading. Refer to the wiring diagram for boot-loader burning and Arduino code uploading.

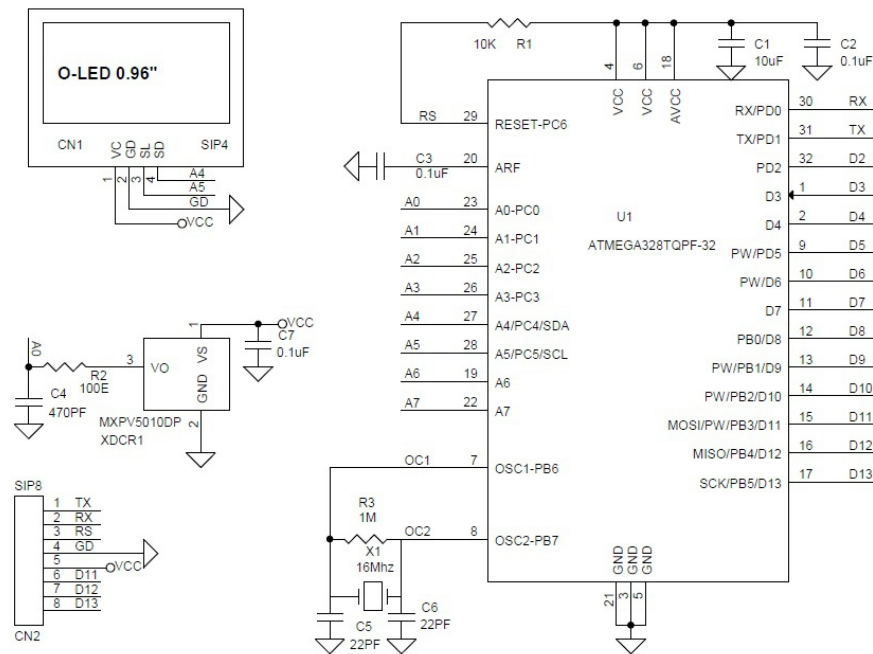
More info available here for Boot-loader/Arduino programming.

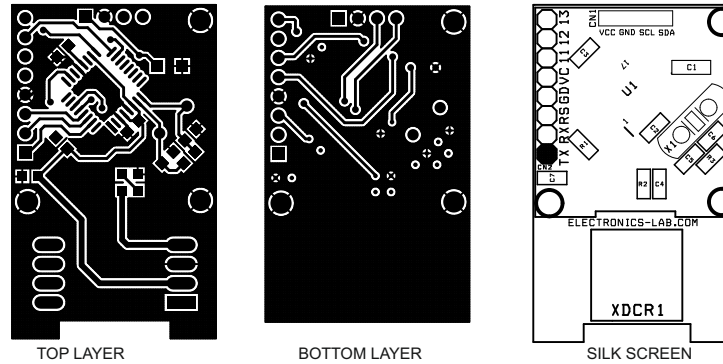
<https://www.arduino.cc/en/Tutorial/BuiltInExamples/ArduinoToBreadboard>

### Features

- Operating Supply 5V DC @ 25mA
- Measuring range 0 to 10kPa (0 to 1.75 PSI)
- PCB Dimensions 44.61MM X 27.31MM

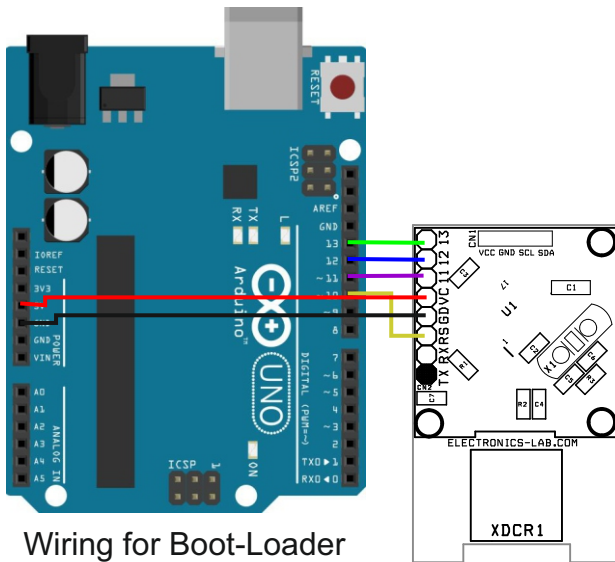




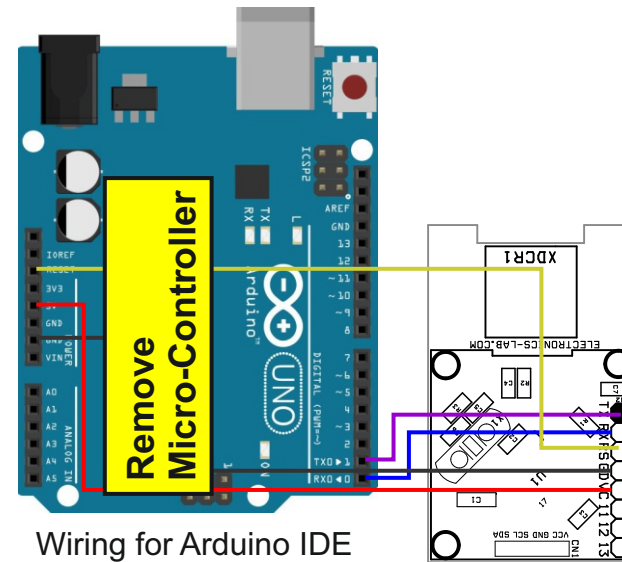


PCB DIMENSIONS 44.61MM X 27.31MM

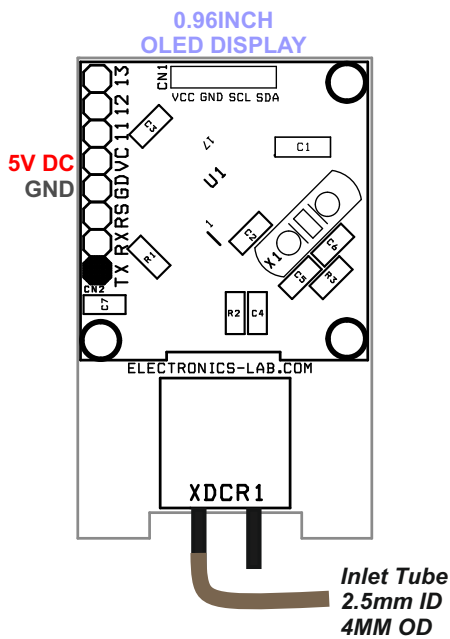
BOM				
SR.	QNTY.	REF.	DESC.	VENDOR/DIGIKEY/MOUSER
1	1	CN1	4 Pin Male Header Connector 2.54MM Pitch	DIGIKEY S1011EC-40-ND
2	1	CN2	8 Pin Male Header Connector 2.54 mm Pitch	DIGIKEY S1011EC-40-ND
3	1	C1	10uF/16V SMD SIZE 1206	YAGEO
4	3	C2,C3,C7	0.1uF/50V SMD SIZE 0805	YAGEO
5	1	C4	470PF/50V SMD SIZE 0805	YAGEO
6	2	C5,C6	22PF/50V SMD SIZE 0805	YAGEO
7	1	R1	10K 5% SMD SIZE 0805	YAGEO
8	1	R2	100E 5% SMD SIZE 0805	YAGEO
9	1	R3	1M 5% SMD SIZE 0805	YAGEO
10	1	U1	ATMEGA328TQPF-32	DIGIKEY 1611-ATMEGA88V-15ATCT-ND
11	1	XDCR1	MXPV5010DP	DIGIKEY MPXV5010DP-ND
12	1	X1	16Mhz CRYSTAL	DIGIKEY X1103-ND
13	DS	DS	0.96 INCH OLED	ALIEXPRESS
14	1	DS	4 Pin Male Header Connector 2.54MM Pitch	DIGIKEY S1011EC-40-ND



Wiring for Boot-Loader



Wiring for Arduino IDE Programming



Inlet Tube  
2.5mm ID  
4MM OD

