

## LCDduino , ARDUINO COMPATIBLE 16x2 LCD MODULE

The LCDduino board enables users to create many applications/projects that require a 16x2 LCD display and Arduino. The board has the exact size of 16x2 LCD and can be installed on the backside of the LCD. This is a low-cost solution that has onboard Arduino + LCD so no extra Arduino Nano or Arduino board is required. The Arduino compatible hardware includes onboard programming and boot-loader connectors, Atmega328 microcontroller, and 16x2 LCD interface. Each Arduino I/O Pin including the VCC and GND is exposed to the connectors for easy connection with sensors and other devices. The board enables the easy interface of many devices and sensors. The operating power supply is 7 to 15V DC.

### Key features of this project

- Arduino Compatible Hardware
- Operating Power Supply 7 to 15V DC (VDD-GND Pins) Or 5V DC (VCC-GND Pins)
- Arduino Digital Pin D2, D3, D4, D5, D11, D12 Connected to 16X2 LCD
- Arduino Digital Pin D6, D7, D8, D9, D10, D13, D0, D1 I/O Pins are available for external Interface
- Arduino Analog Pin A0, A1, A2, A3, A4, A5, A6, A7 Pins are available for external interface
- Each Digital and Analog Pin includes VCC and GND for easy interface to external sensor and device
- On Board 5V Regulator
- On Board Trimmer Potentiometer to set the Contrast of LCD
- On Board Current Limiting Resistor R2/R3 for LCD Back Light
- On Board Reset Switch
- On Board Bootloader Burning Connector for New ATmega328 Micro-controller (D10, D11, D12, D13, VCC and GND Pins)
- On Board Arduino IDE Programming Connector (RX, TX, Reset, VCC and GND Pins)
- 4 X Mounting Holes 3.2MM Diameters
- PCB Dimensions 80MM X35.72MM



After the board assembly, the brand new Atmega328 microcontroller requires burning the bootloader before it can be programmed using Arduino IDE. Refer to the connection diagram and follow the links below to learn more about bootloader and Arduino IDE programming.

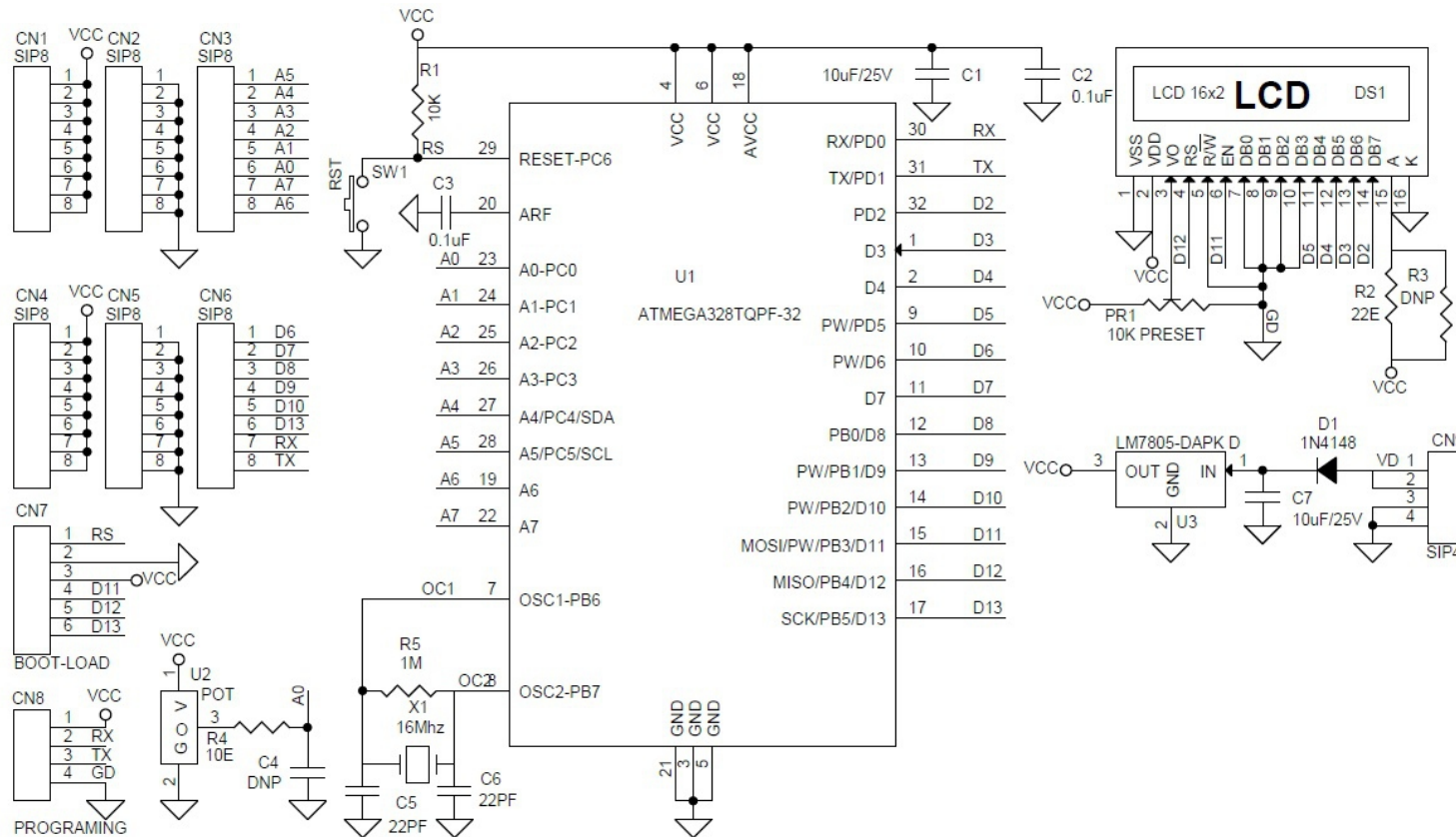
<https://www.arduino.cc/en/Tutorial/BuiltInExamples/ArduinoToBreadboard>

<https://support.arduino.cc/hc/en-us/articles/360012048100-How-to-burn-the-bootloader-in-an-Arduino-Nano-using-an-Arduino-UNO>

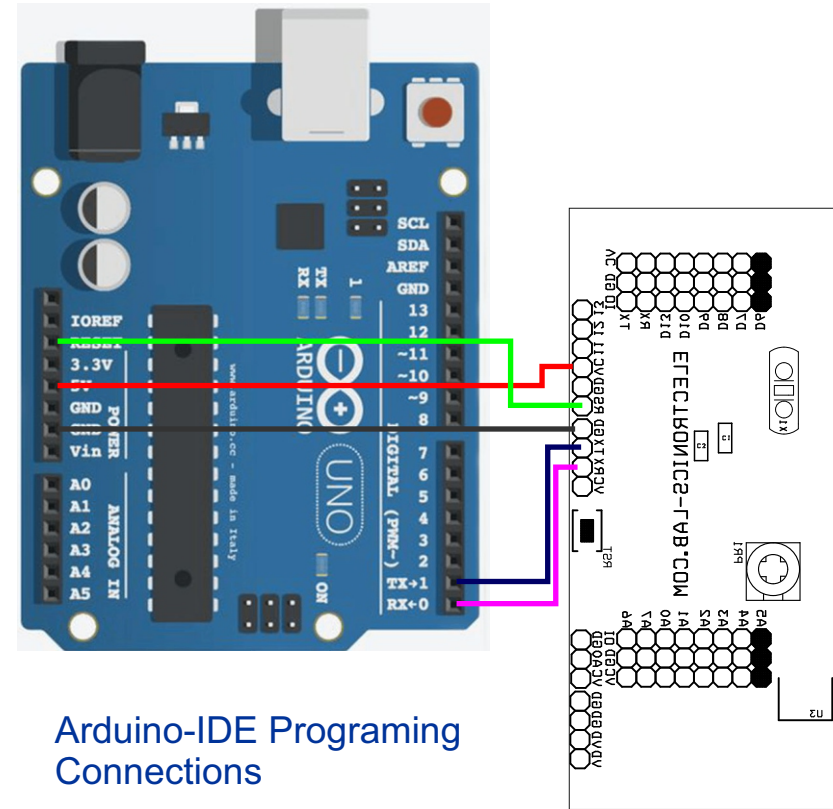
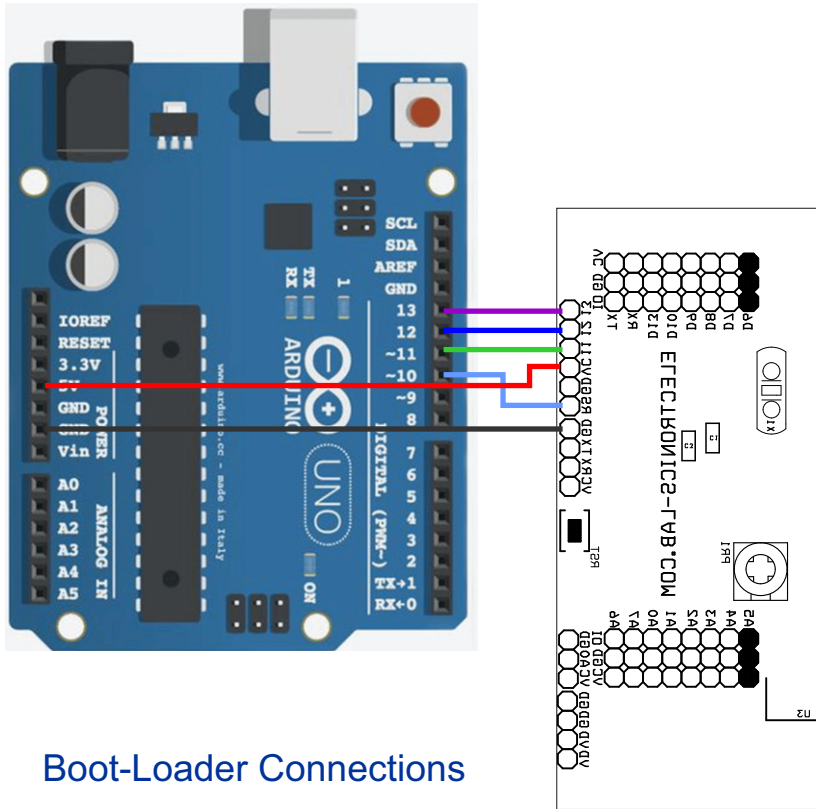
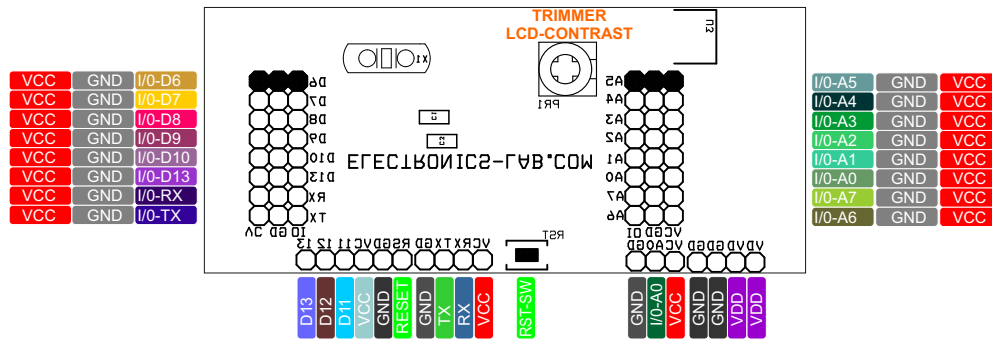
Arduino example code is provided below to test the project. This code will help you to convert this board into a 0 to 5V Voltmeter. Just connect the DC source at analog in A0 to measure the DC voltage.

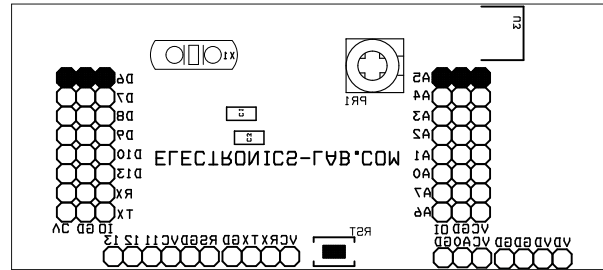
**More Info on 16X2 LCD** - <https://www.adafruit.com/product/181>

**Download 16X2 LCD Data Sheet** - <https://www.sparkfun.com/datasheets/LCD/ADM1602K-NSW-FBS-3.3v.pdf>

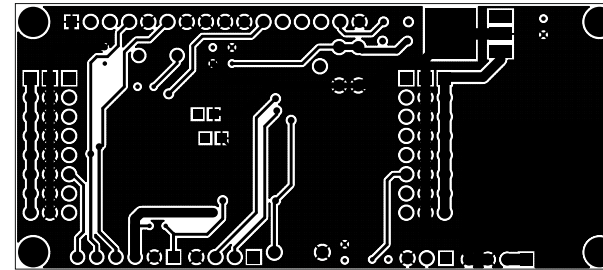


<b>BOM</b>						
<b>NO</b>	<b>QNTY</b>	<b>REF.</b>	<b>DESC.</b>	<b>MANUFACTURER</b>	<b>SUPPLIER</b>	<b>SUPPLIER'S PART NO</b>
1	6	CN1-CN6	8 PIN MALE HEADER 2.54MM PITCH	WURTH	DIGIKEY	732-5321-ND
2	1	CN7	6 PIN MALE HEADER 2.54MM PITCH	WURTH	DIGIKEY	732-5319-ND
3	1	CN8	4 PIN MALE HEADER 2.54MM PITCH	WURTH	DIGIKEY	732-5317-ND
4	1	CN9	4 PIN MALE HEADER 2.54MM PITCH	WURTH	DIGIKEY	732-5317-ND
5	2	C1,C7	10uF/25V SMD SIZE 0805	MURATA/YAGEO	MOUSER	
6	2	C2,C3	0.1uF/50V SMD SIZE 0805	MURATA/YAGEO	MOUSER	
7	2	R3,C4	DNP			
8	2	C5,C6	22PF/50V SMD SIZE 0805	MURATA/YAGEO	MOUSER	
9	1	DS1	LCD 16x2	DISPLAYTECH	MOUSER	758-162JBABW
10	1	D1	1N4148 SMD	MICROCHIP	DIGIKEY	1086-15170-ND
11	1	PR1	10K PRESET/TRIMMER	BOURNS	DIGIKEY	3362P-103LF-ND
12	1	R1	10K 5% SMD SIZE 0805	MURATA/YAGEO		
13	1	R2	22E 5% SMD SIZE 0805	MURATA/YAGEO		
14	1	R4	10E 5% SMD SIZE 0805	MURATA/YAGEO		
15	1	R5	1M 5% SMD SIZE 0805	MURATA/YAGEO		
16	1	SW1	TACTILE SWITCH	E-SWITCH	DIGIKEY	EG2513-ND
17	1	U1	ATMEGA328TQPF-32	MICROCHIP	DIGIKEY	ATMEGA328P-AURCT-ND
18	1	U2	3 PIN MALE HEADER 2.54MM PITCH	WURTH	DIGIKEY	732-5316-ND
19	1	U3	LM7805-DAPK D	ON SEMI	DIGIKEY	MC78M05CDTGOS-ND
20	1	X1	16Mhz	ECS INC	DIGIKEY	X1103-ND
21	1	SCK	LCD SOCKET 16PIN MALE 2.54MM	ADAM TECH	DIGIKEY	2057-PH1-16-UA-ND

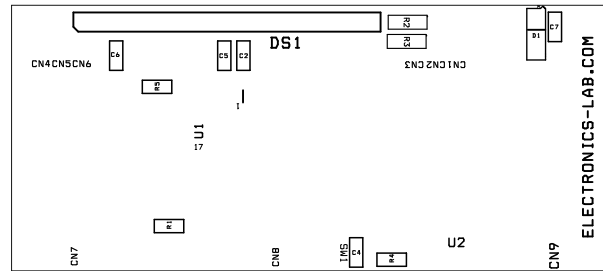




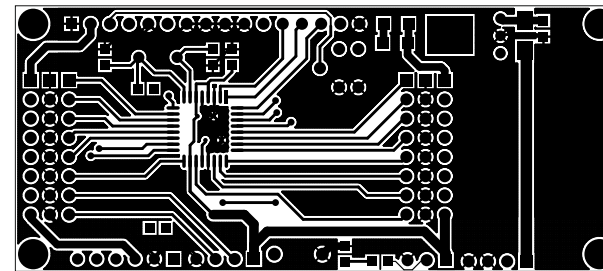
SILK SCREEN BOTTOM



BOTTOM LAYER



SILK SCREEN TOP



TOP LAYER

