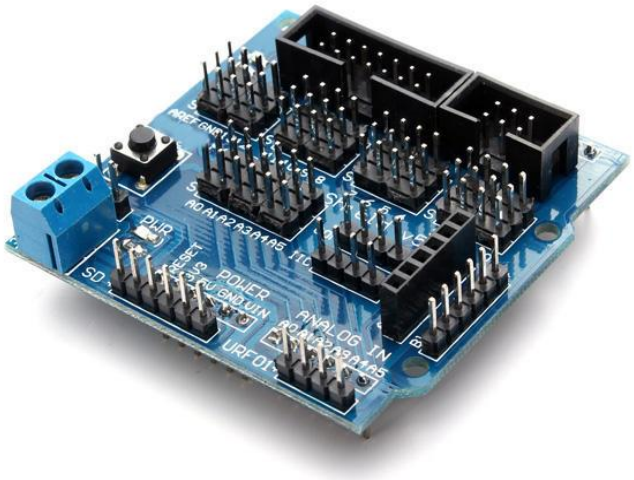
Sensor Shield for Arduino UNO



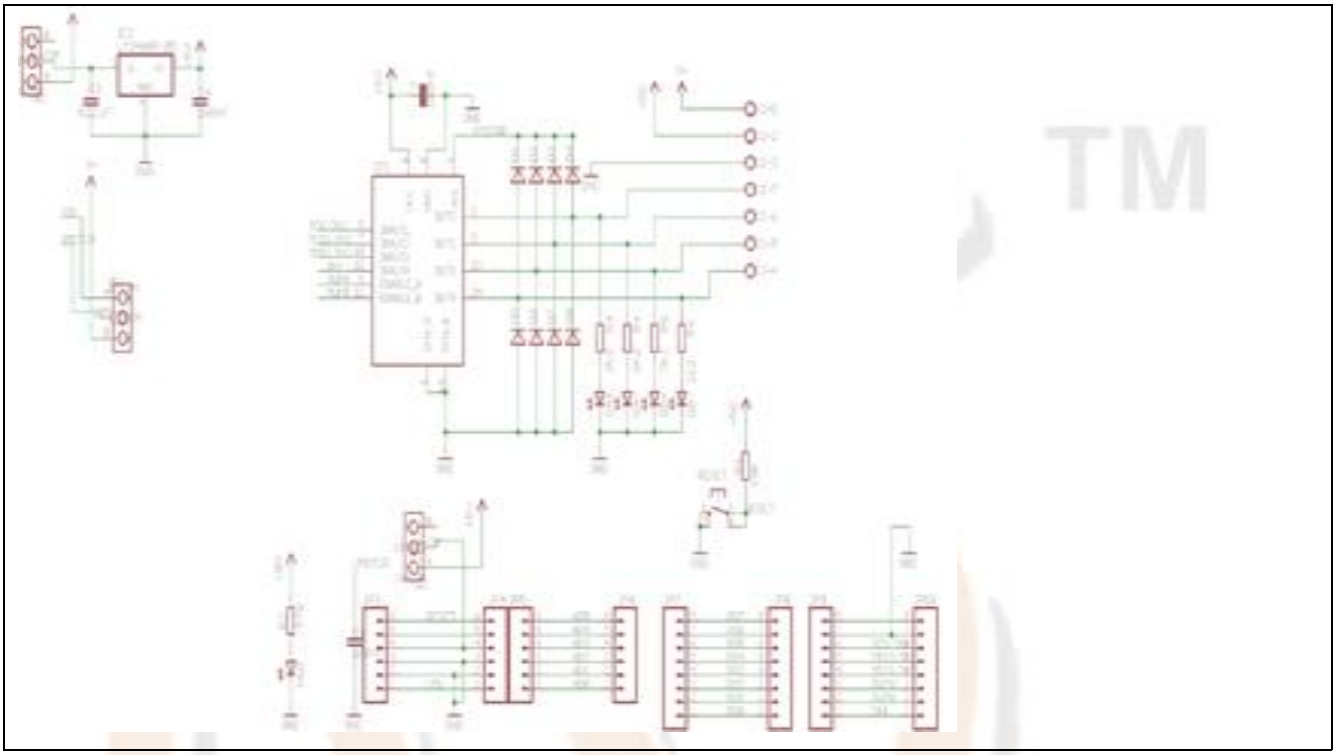
The Arduino sensor shield V 5.0 allows you to hoop up the sensors directly to Arduino Uno without the use of the breadboard. It allows plug and play connection to various modules like sensors, servos, relays, potentiometers and more.

FEATURES:

- Retain the merits of the V4.0 version
- Laminated design
- PCB immersion gold processing technology
- IIC interface
- Bluetooth module communication interface
- SD card module communication interface
- APC220 wireless rf modules communication interface
- RB URF v1.1 ultrasonic sensors interface
- 12864 LCD string of line and parallel interface
- 32 servo controller interface

- Dimension size: 58*56*20mm
- Weight: 20gm

SCHEMATIC DIAGRAM :

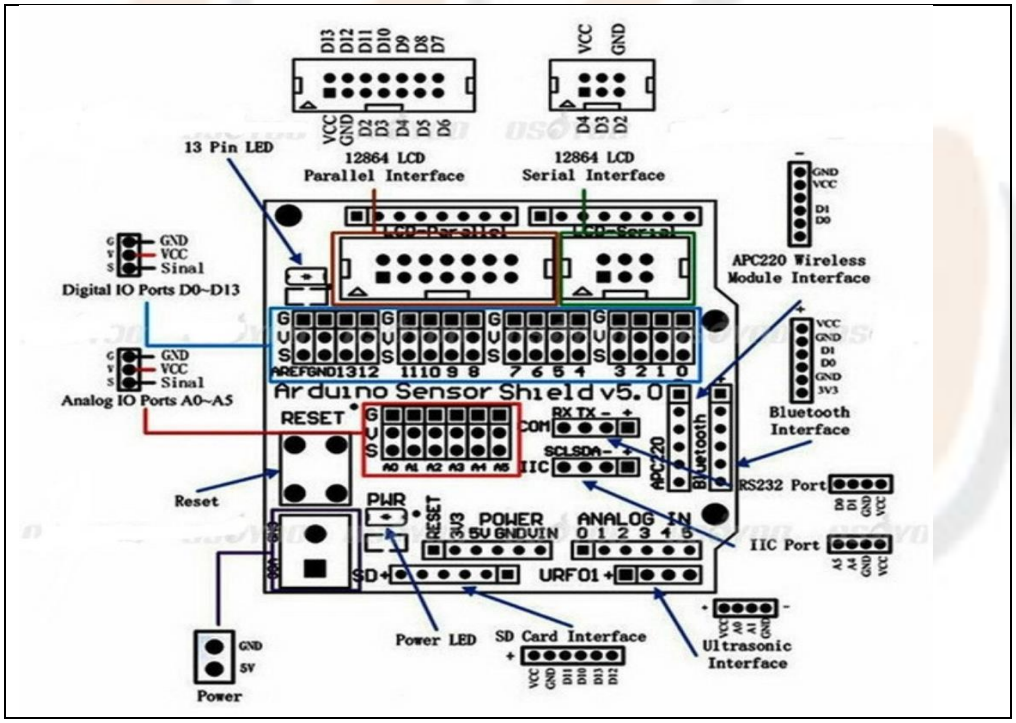


- The latest Sensor Shield V5 Expansion Board For Arduino is produced by ALSRobot. This Sensor Shield expansion board to retains the advantages of version V4.0 on the basis of stack design, PCB Immersion Gold processing technology. newly added many kinds of interface, for example, IIC interface, 32 channels servo motor interface, Bluetooth communication module interface, SD Card communication module interface and so on, more convenient.

- Sensor Shield allows you to connect to various modules like sensors, servos, relays, buttons, potentiometers and many more directly to your Arduino through this Sensor Shield.

- Each functional module has buckled port with VCC, GND, and Output, which has the corresponding port on the Sensor Shield, connected with a plain 2.54mm dual-female cable you may start playing already. Buckled brick cables are like cement for bricks, make the connections easier, secure and more professional looking.
- It can easily connect with usual analog sensors by using this expansion board, such as ray sensor. If you support by this expansion board and the corresponding circuit module, you only need to combine Arduino and sensors module by using special cables, because concrete circuit details achieve by corresponding sensors module, so you only need to consider that how to read data coming from the sensor by the program in Arduino.

PIN FUNCTION:



- **Digital Pins :** The pins are arranged in stacks of 3: Top = Gnd (0V)
  Middle = Vcc(+5V)
  Bottom = Signal (Arduino Digital Signal Pin No.)
  The pins are sequenced from right to left clearly marked on the board.

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The pins are sequenced from right to left clearly marked on the board:

G			Gnd	Gnd	Gnd	Gnd	Gnd	Gnd	Gnd	Gnd	Gnd	Gnd	Gnd	Gnd	Gnd	Gnd
V			Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc
S	Aref	Gnd	13	12	11	10	9	8	7	6	5	4	3	2	1	0

These pins are driven by the Arduino language instruction:

digitalWrite (Pin4,1);

and read by the Arduino language instruction:

digitalRead (Pin4);

- **Analog Pins :** The pins are arranged in stacks of 3: Top = Gnd (0V)

  Middle = Vcc(+5V)

  Bottom = Signal (Arduino Analog Signal Pin No.)

  The pins are sequenced from left to right clearly marked on the board:

G	Gnd	Gnd	Gnd	Gnd	Gnd	Gnd
V	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc
S	A0	A1	A2	A3	A4	A5

- **Connecting Sensors & Output-Devices :**

  When connecting sensors & output-devices to the Sensor Shield you must make sure to get the power pins the correct way round:

  G goes to G or Gnd or GND or 0V on the sensor

  V goes to V or Vcc or VCC or +5V on the sensor

  S goes to the signal pin - OUT or IN etc..

  Some sensors & output-devices will have 2 signal pins (or more) as well as 0V &

+5V. For these you just choose one of the signal pins to connect the Signal, 0V and +5V to (on the S, G and V pins) and use just the S pins of another port for the other signal connections.

Some simple sensors e.g. “Photo-resistor Sensor (4-wire)” use 2 wires for power, as above, but have two signal pins, one marked “A0” one marked “D0”. These are two versions of the same signal:

• The D0 signal is a digital representation of the light level, but it can only be two different states, logic-high (+5V) or logic-low (0V). The switchover level is set by the variable resistor on the sensor module. This can be adjusted to set the light dark switchover point. This
signal can be connected to a Digital Input on the Sensor Shield/Arduino. This can be read by a digitalRead instruction. The signal is 0 for light and 1 for dark. The LED monitor on the module is on for light and off for dark.

• The A0 signal is an analog representation of the light level, this is a voltage anywhere between 0V - maximum light, and 5V - dark. This signal can be connected to an Analog Input on the Sensor Shield/Arduino. This can be read by an analogRead instruction. The A0 signal will be read as a value of 0 for maximum light and 1023 for absolute dark.

```
int value = 0;
boolean level = 0;

void setup()
 {
 Serial.begin(9600);
 Serial.println("Starting");
 }

void loop()
 {
 value =  analogRead(A3);
 Serial.print(" Analog value = ");
 Serial.print(value);
 Serial.print("   Digital level = ");
 level =  digitalRead(3);
 Serial.println(level);
 }
```

NOTE the program above uses the Arduino IDE Serial Monitor. This can transmit information from inside you program back to a monitor window on your PC:
In the IDE: Tools menu>
Serial Monitor>
At the bottom right of the Serial Monitor window select the correct baud rate – in this case 9600.
Once you have finished with the Serial Monitor window close it before you disconnect your Arduino
from the PC as the IDE can get muddled up and lose the Arduino port connection.

- **Connecting Servos :** Servos come with a 3 way socket that plug straight onto the Sensor Shield

G goes to the Brown or Black wire

V goes to the (middle) Red wire

S goes to the Orange wire

The good news is as the +5V is in the middle, things will not blow up if you get it the wrong way round, the servo just will not work until you plug it in correctly.

PACKAGE INCLUDE:

1 x Sensor Shield V5 Expansion Board