CURRENT SENSOR

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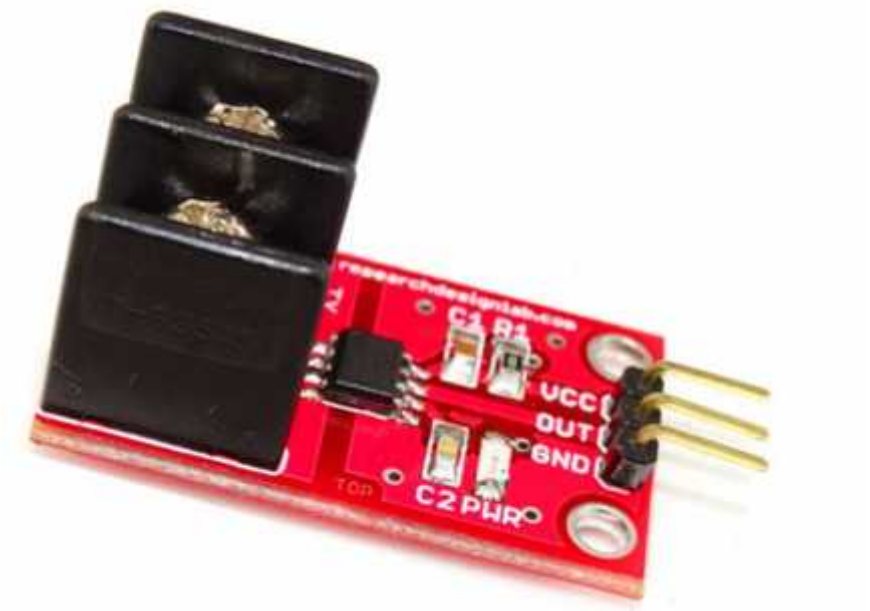
OVERVIEW

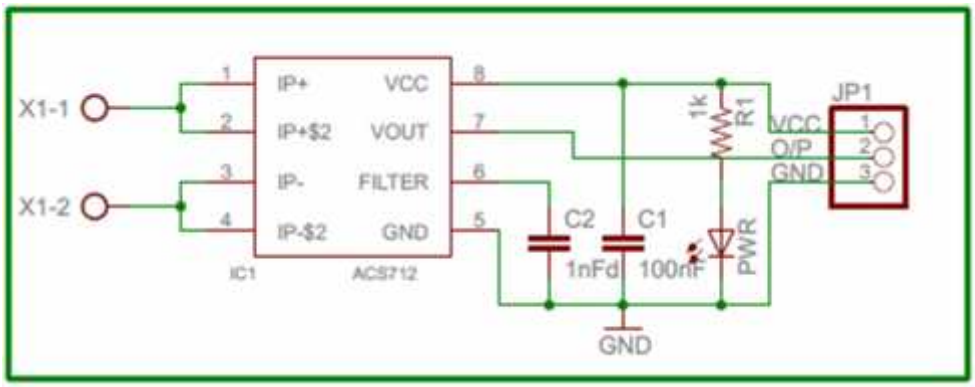
The ACS712 provides economical and precise solutions for AC or DC current sensing in industrial, commercial, and communications systems. The device package allows for easy implementation by the customer. Typical applications include motor control, load detection and management, switchmode power supplies, and overcurrent fault protection. The device is not intended for automotive applications.

FEATURES

- ACS712ELC-05A sensor chipset
- Powered by 5V power supply
- On-board power indicator
- Measures -20~+20A current, corresponding simulation output 100mV/A
- No test current through the output voltage is VCC / 2
- Low-noise analog signal path.
- 80 kHz bandwidth.
- 1.2 mΩ internal conductor resistance.
- 66 to 185 mV/A output sensitivity.
- Output voltage proportional to AC or DC currents.
- High quality screw connector.

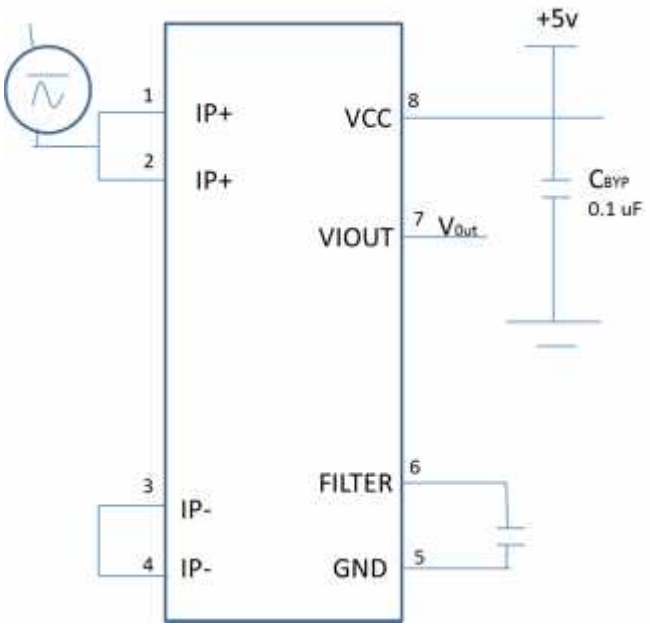


Circuit diagram

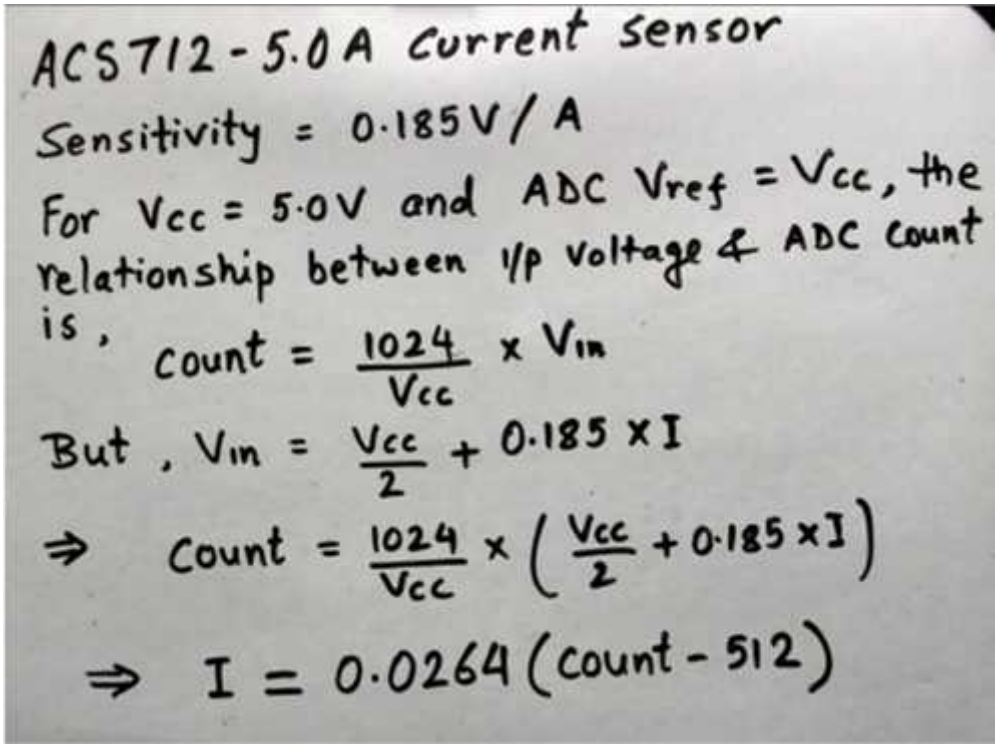


ACS712ELC-05A

- 80 kHz bandwidth
- 1.2 mΩ internal conductor resistance
- 5.0 V, single supply operation
- Low-noise analog signal path
- Nearly zero magnetic hysteresis

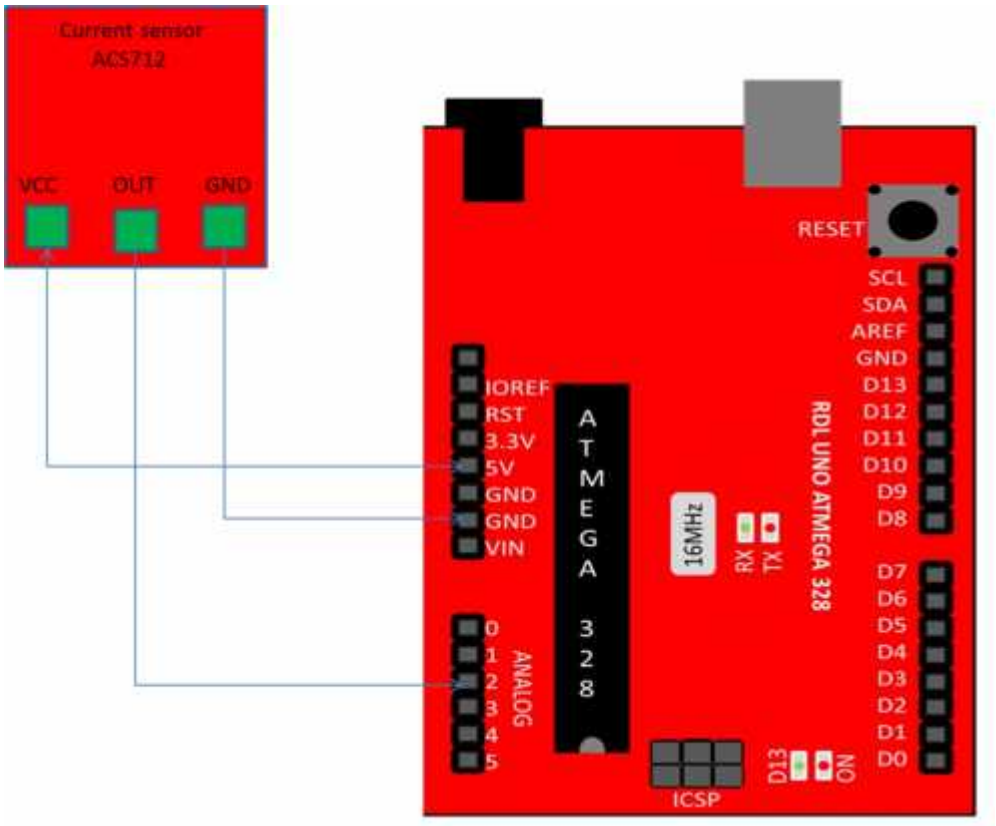


RELATIONSHIP BETWEEN I/P VOLTAGE AND ADC COUNT



APPLICATION INTERFACE

1. With arduino



CODE

```
const int sensorPin = A2;//analog pin where the sensor is
attach

double Current = 0; //initialize variable for current
double OutputSensorVoltage = 0; //initialize variable for
sensor output voltage

void setup()
{
  //initialize serial communication
  Serial.begin(9600);
}

void loop()
{
  //read the analog in valve;
  OutputSensorVoltage = analogRead(sensorPin)*5.0/1023.0;
  //calibrate to get actual current valve
  Current = (OutputSensorVoltage - 2.5 )/0.185;

  //print the result to the serial monitor:
  Serial.print("Current = " );
  Serial.print(Current);
  Serial.print("\n");

  //wait for 2 millisecond before the next loop

  delay(2);
}
```

Other Products

Ultrasonic Obstacle Sensor

Carbon Monoxide Sensor

8 Channel Analog Data Logger

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