

CW Electronx Four Channel SmartFET Driver Board with Current Sensing

- Four Channel SmartFET, VNQ5027
- 5-36 VDC, 5A, 3.3V/5V compatible logic inputs
- Screw terminal connectors, 4 mounting holes designed for 3mm screws
- Current sense disable
- Proportional load current sense
- Undervoltage shut-down
- Overvoltage clamp
- Thermal shutdown
- Very low standby current
- Protection against loss of ground and loss of VCC
- Very low electromagnetic susceptibility
- Optimized electromagnetic emission
- Reverse battery protection



Real Life Applications:

- Proportional Solenoid Valve Control
- LED Dimmer Control
- PWM Drive

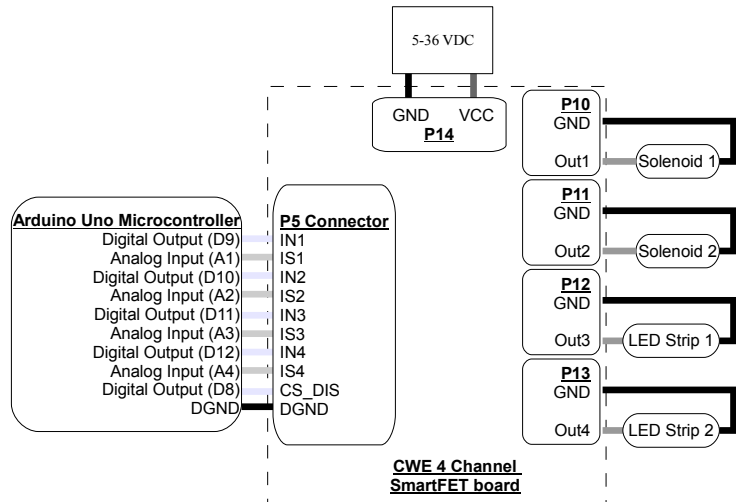


Diagram: Board Overview/Layout

Code Example: Turn Output 1 ON/OFF with Current Sensing

/*

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*/

```
int CS_DIS = 8;
```

```
int IN1 = 9;
int IN2 = 10;
int IN3 = 11;
int IN4 = 12;
```

```
int sensorValue_IS1;
float voltage_IS1;
float currentA_IS1;
```

// the setup routine runs once when you press reset:

```
void setup()
```

```
{
  // initialize serial communication at 38400 bits per second:
  Serial.begin(38400);
```

```
  // initialize the digital pin as an output.
  pinMode(CS_DIS, OUTPUT);
  pinMode(IN1, OUTPUT);
  //pinMode(IN2, OUTPUT);
  //pinMode(IN3, OUTPUT);
  //pinMode(IN4, OUTPUT);
}
```

// the loop routine runs over and over again forever:

```
void loop()
```

```
{
  //Analog Pin Enable Pin Set High to DISABLE Current Sensing pins
  //digitalWrite(CS_DIS,HIGH);
```

```
  //Request Output1 to be ON
  // turn the LED on (HIGH is the voltage level)
  digitalWrite(IN1, HIGH);
  // wait for a second
  delay(1000);
```

```
  //Read the current sensing
  Serial.println("Output 1 ON");
  // read the input on analog pin 1
  sensorValue_IS1 = analogRead(A1);
  // Convert the analog reading (which goes from 0 - 1023) to a (0 - 5V):
  voltage_IS1 = sensorValue_IS1 * (5.0 / 1023.0);
  // IL = V*Is*IRatio/ Rs → IL = 5V * 3000A/mA * Is / 1k2
  currentA_IS1 = voltage_IS1 / 1200.0 * 1000 * 3;
  Serial.print("Out 1: ");
  Serial.print(currentA_IS1);
  Serial.println(" Amps");
```

```
  //Request Output1 to be OFF
  // turn the LED off by making the voltage LOW
  digitalWrite(IN1, LOW);
  // wait for a second
  delay(500);
}
```