

DIGITAL WATTMETER

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1.Components required

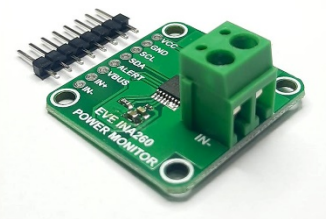
7Semi Nano ATmega328P Board With Header, USB-C CH340



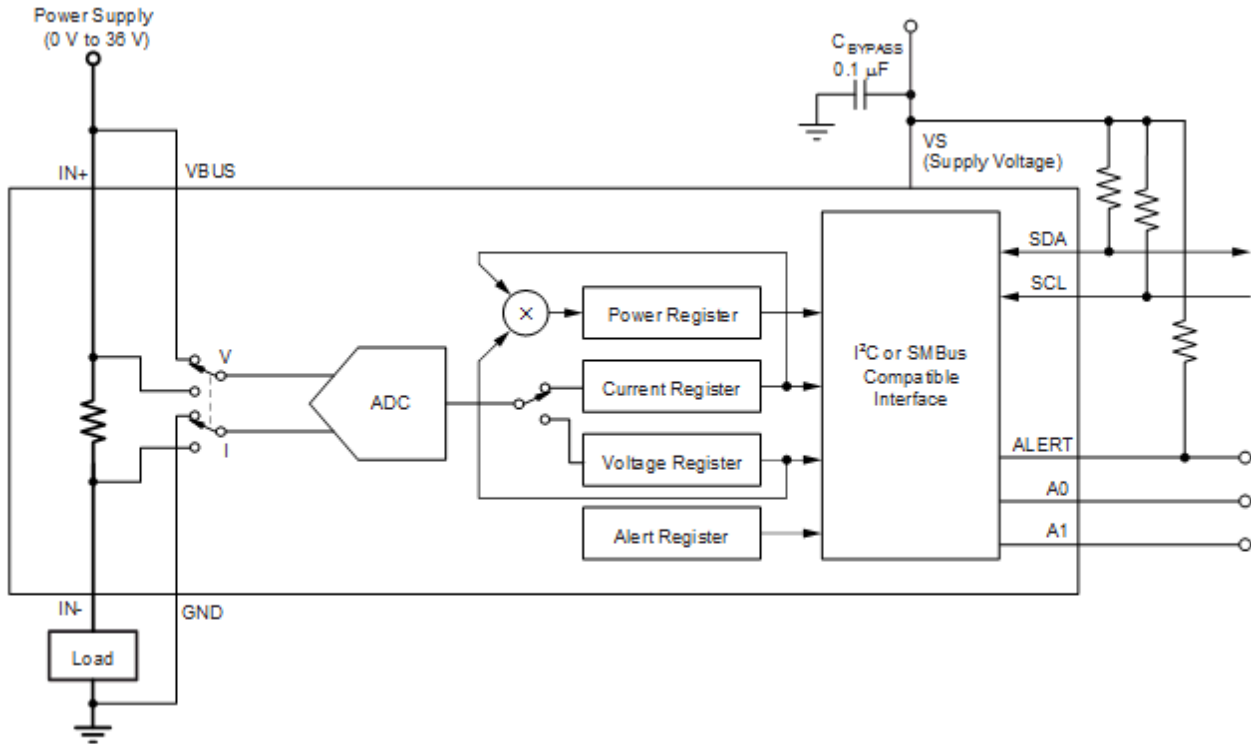
16x2 Character LCD Display I2C White Text Blue Background 3.3V/5V



7Semi INA260 Voltage, Current, Power Monitor Sensor Breakout I2C



2. INA260 Internal Circuit Diagram



3. Software requirements

Arduino IDE with necessary libraries

4. Connections

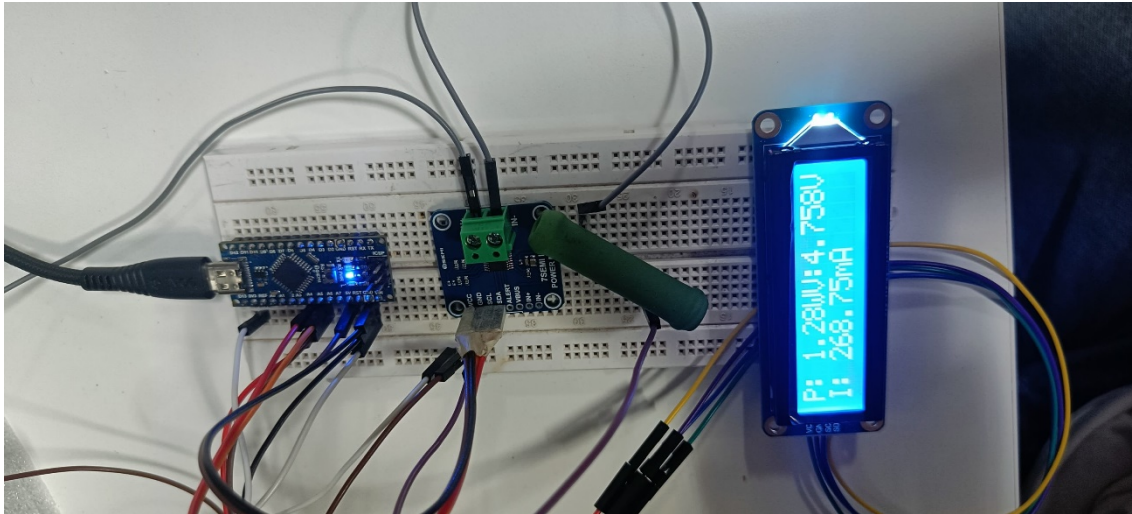
INA 260	Nano
Vcc	5 V
GND	GND
SDA	A4 (SDA)
SCL	A5 (SCL)

LCD 1602 I2C Module	Nano
Vcc	3.3/5 V
GND	GND
SDA	A4 (SDA)
SCL	A5 (SCL)

Power Source (+) ----> VIN+ (INA260)

Power Source (-) ----> GND (INA260)

VIN- (INA260) -----> Load (e.g., resistor, LED) ----> Power Source (-)



5. Calculations:

Given,

$R = 15\Omega$ (Any Load can be taken)

$V = 5 \text{ Volts}$

$$I = \frac{V}{R}$$

$$I = \frac{5}{15} = 0.333 \text{ A}$$

6. Code

6.1. Arduino Code

Search this link:

<https://drive.google.com/drive/folders/19I92cCQMhxBX4ouuwgv46unyOu0X4u-l?usp=sharing>

or Scan the QR Code below



7. Output



8. References

To buy:

<https://evelta.com/7semi-nano-atmega328p-board-with-header-usb-c-ch340/>

<https://evelta.com/16x2-character-lcd-display-i2c-white-text-blue-background-3-3v-5v/>

<https://evelta.com/evelta-ina260-voltage-current-power-monitor-sensor-breakout-i2c/>

datasheets:

https://www.waveshare.com/w/index.php?title=File:LCD1602_I2C_Module.pdf&oldid=54512

https://www.ti.com/lit/ds/symlink/ina260.pdf?ts=1623839489871&ref_url=https%253A%252F%252Fwww.ti.com%252Fproduct%252FINA260

