

Arduino Nano

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Specifications

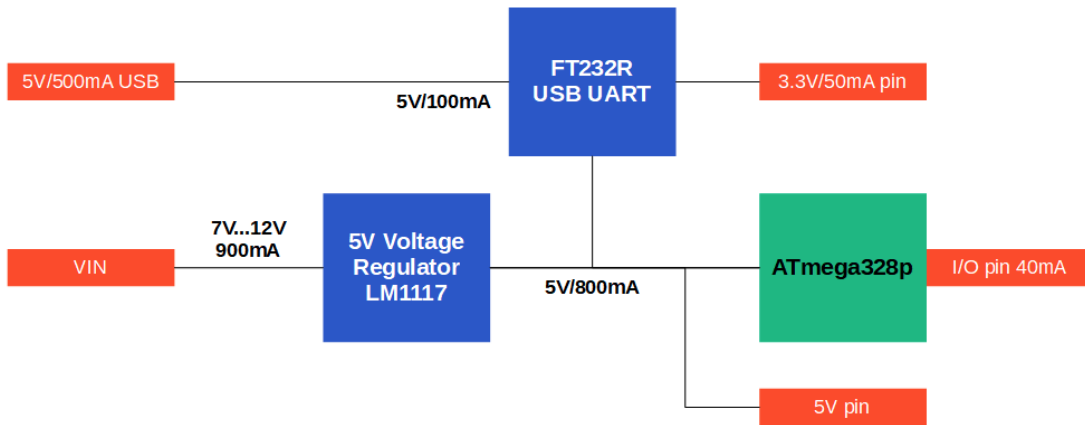
The following table contains the datasheet of the Arduino Nano R3 microcontroller board:

Board	Arduino NANO 3
Microcontroller	ATmega328p
Processor	AVR 8-bit
Operating Voltage	5V
Minimum Operating Voltage	2.7V
Maximum Operating Voltage	6V
Arduino IDE Board	Arduino Nano
Power Supply via VIN,VCC	7V...12V
Digital I/O Pins (with PWM)	14 (6)
Analog Input Pins	8
Resolution ADC	10 bit (0...1023)
Analog Output Pins	0
SPI/I2C/I2S/UART	1/1/0/1
Max DC Current per I/O Pin	40 mA
Max DC Current per 3V Pin	50 mA
Flash Memory	32 KB
SRAM	2 KB
EEPROM	1024 bytes
Clock Speed	16 MHz
Length x Width	45mm x 18mm
Fits on standard breadboard	yes
WIFI	no
Bluetooth	no
Touch sensor	no
CAN	no
Ethernet MAC Interface	no
Temperature Sensor	no

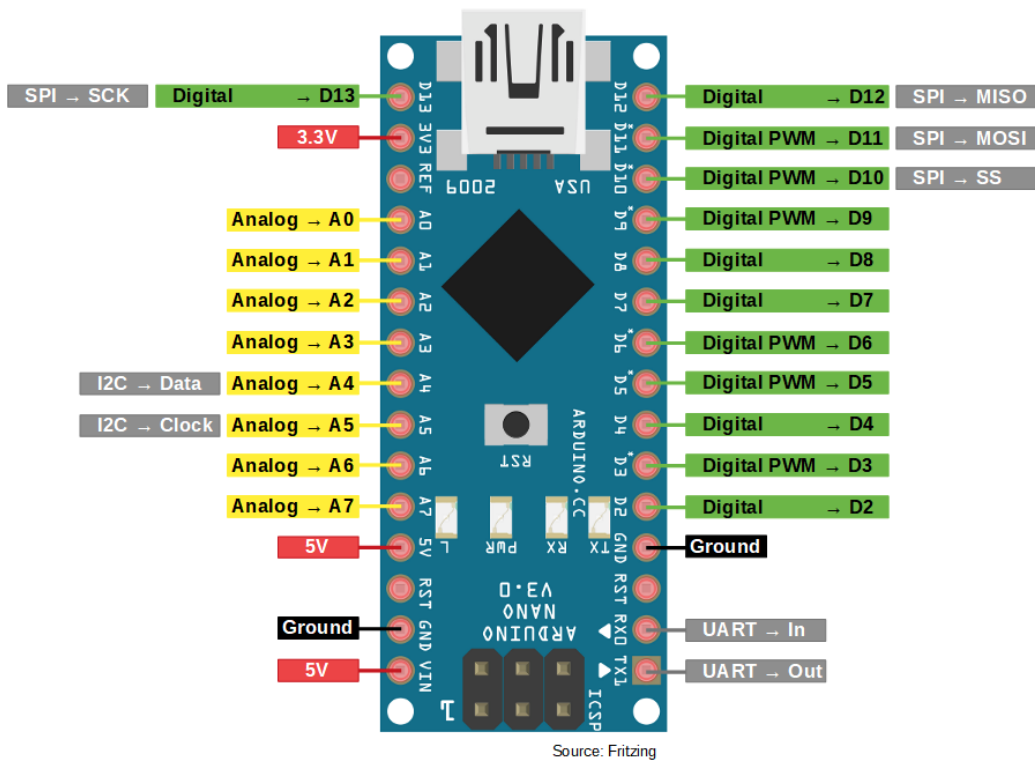
Hall effect sensor	no
Power jack	no
USB connection	yes
Battery Connection	no
Programmable	Arduino IDE
5V Voltage Regulator	LM1117IMPX-5.0
Output Voltage	5V
Maximum Input Voltage	20V
Minimum Input Voltage	7V
Maximum Output Current	800mA
Maximum Voltage Dropout	1.2V @ 800mA
Typical Quiescent Current	5mA
3.3V Voltage Regulator	FT232R USB UART
Output Voltage	3.3V
Maximum Input Voltage	5.25V
Minimum Input Voltage	4.35V
Maximum Output Current	100mA
Typical Quiescent Current	2.5mA
Power Consumption @ 9V	
Reference Empty Script [mA]	22.5
Reduce Clock Speed [mA]	18.5
Low Power Mode [mA]	4.83
Power Consumption @ 3.3V	
Reduce Clock Speed [mA]	3.41
Low Power Mode [mA]	3.42

The Nano has one 3.3V and two 5V power pins of which one is the VIN pin. With the VIN pin you can supply the Arduino Nano with a voltage between 7V-12V to run the microcontroller on battery for example. All three power pins provide a maximum current of 50 mA. You can close the circuit with two ground pins.

Power Supply



Pinout



Power

The Arduino Nano can be powered via the Mini-B USB connection, 6-20V unregulated external power supply (pin 30), or 5V regulated external power supply (pin 27). The power source is automatically selected to the highest voltage source.

Memory

The ATmega328 has 32 KB, (also with 2 KB used for the bootloader). The ATmega328 has 2 KB of SRAM and 1 KB of EEPROM.

Input and Output

Each of the 14 digital pins on the Nano can be used as an input or output, using `pinMode()`, `digitalWrite()`, and `digitalRead()` functions. They **operate at 5 volts**. Each pin can provide or receive a maximum of 40 mA and has an internal pull-up resistor (disconnected by default) of 20-50 kOhms. In addition, some pins have specialized functions:

- Serial: 0 (RX) and 1 (TX). Used to receive (RX) and transmit (TX) TTL serial data. These pins are connected to the corresponding pins of the FTDI USB-to-TTL Serial chip.
- External Interrupts: 2 and 3. These pins can be configured to trigger an interrupt on a low value, a rising or falling edge, or a change in value. See the `attachInterrupt()` function for details.
- PWM: 3, 5, 6, 9, 10, and 11. Provide 8-bit PWM output with the `analogWrite()` function.
- SPI: 10 (SS), 11 (MOSI), 12 (MISO), 13 (SCK). These pins support SPI communication, which, although provided by the underlying hardware, is not currently included in the Arduino language.
- LED: 13. There is a built-in LED connected to digital pin 13. When the pin is HIGH value, the LED is on, when the pin is LOW, it's off.

The Nano has 8 analog inputs, each of which provide 10 bits of resolution (i.e. 1024 different values). By default they measure from ground to 5 volts, though is it possible to change the upper end of their range using the `analogReference()` function. Analog pins 6 and 7 cannot be used as digital pins. Additionally, some pins have specialized functionality:

- I2C: A4 (SDA) and A5 (SCL). Support I2C (TWI) communication using the `Wire` library (documentation on the Wiring website).

There are a couple of other pins on the board:

- AREF. Reference voltage for the analog inputs. Used with `analogReference()`.
- Reset. Bring this line LOW to reset the microcontroller. Typically used to add a reset button to shields which block the one on the board.

References

Reference	URL
Arduino Nano Tutorial [Pinout]	https://diyi0t.com/arduino-nano-tutorial/
Arduino Nano	https://store-usa.arduino.cc/products/arduino-nano