Arduinos (beginners)

blue text is when the field is worded differently

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| --- | --- | --- | --- | --- | --- |
| Field \ Name | Leonardo | UNO | 101 | Pro | FIO |
| Microcontroller | ATmega32u4 | [ATmega328P](http://www.atmel.com/Images/Atmel-42735-8-bit-AVR-Microcontroller-ATmega328-328P_Datasheet.pdf) | Intel Curie | [ATmega328](http://www.atmel.com/Images/Atmel-42735-8-bit-AVR-Microcontroller-ATmega328-328P_Datasheet.pdf) | ATmega328P |
| Operating Voltage | 5V | 5V | 3.3V (5V tolerant I/O) | [Board Power Supply]  3.3V or 5V  (depending on model) | 3.3 V |
| Input Voltage (Recommended) | 7-12V | 7-12V | 7-12V |  | [Input Voltage]  3.35 -12 V |
| Input Voltage (limits) | 6-20V | 6-20V | 7-20V | 3.35 -12 V (3.3V model)  or 5 - 12 V (5V model) | [Input Voltage for charge]  3.7 - 7 V |
| Digital I/O Pins | 20 | 14 (of which 6 provide PWM output) | 14 (of which 4 provide PWM output) | 14 | 14 (of which 6 provide PWM output) |
| PWM Channels | 7 | [PWM Digital I/O Pins]  6 | [PWM Digital I/O Pins]  4 | [PWM Pins]  6 | [PWM Digital I/O Pins]  6 |
| Analog Input Channels | 12 | [Analog Input Pins]  6 | [Analog Input Pins]  6 | [Analog Input Pins]  6 | [Analog Input Pins]  8 |
| DC Current per I/O Pin | 40 mA | 20 mA | 20 mA | 40mA | 40 mA |
| DC Current for 3.3V Pin | 50 mA | 50 mA | N/A | N/A | N/A |
| Flash Memory | 32 KB (ATmega32u4) of which 4 KB used by bootloader | 32 KB (ATmega328P) of which 0.5 KB used by bootloader | 196 kB | 32KB of which 2KB used by bootloader | 32 KB (of which 2 KB used by bootloader) |
| SRAM | 2.5 KB (ATmega32u4) | 2 KB (ATmega328P) | 24 kB | 2KB | 2KB |
| EEPROM | 1 KB (ATmega32u4) | 1 KB (ATmega328P) | N/A | 1KB | 1KB |
| Clock Speed | 16 MHz | 16 MHz | 32MHz | 8MHz (3.3V versions) or 16MHz (5V versions) | 8MHz |
| Lenght | 68.6 mm | 68.6 mm | 68.6 mm | 2.05 in | 28 mm |
| Width | 53.3 mm | 53.4 mm | 53.4 mm | 2.10 in | 65 mm |
| Weight | 20 g | 25 g | 34 gr. | 0.8 ounces | 9 g |

Leonardo

* The Leonardo differs from all preceding boards in that the ATmega32u4 has built-in USB communication, eliminating the need for a secondary processor. This allows the Leonardo to appear to a connected computer as a mouse and keyboard, in addition to a virtual (CDC) serial / COM port. It also has other implications for the behavior of the board; these are detailed on the getting started page.

101

* Bluetooth LE, 6-axis accelerometer/gyro
* The 101 has some features in common with both UNO (connectors, available peripherals) and Zero (32bit microcontroller, 3.3V IO) but the low power Intel microcontroller, on-board BLE and motion sensors make it unique.
* Your 101 board might receive an update of the firmware from time to time.

UNO

* The Arduino/Genuino Uno has a resettable polyfuse that protects your computer's USB ports from shorts and overcurrent. Although most computers provide their own internal protection, the fuse provides an extra layer of protection. If more than 500 mA is applied to the USB port, the fuse will automatically break the connection until the short or overload is removed.
* The Uno differs from all preceding boards in that it does not use the FTDI USB-to-serial driver chip. Instead, it features the Atmega16U2 (Atmega8U2 up to version R2) programmed as a USB-to-serial converter.

PRO

* The Arduino Pro has a number of facilities for communicating with a computer, another Arduino, or other microcontrollers. The ATmega328 provides UART TTL serial communication, which is available on digital pins 0 (RX) and 1 (TX). The Arduino software includes a serial monitor which allows simple textual data to be sent to and from the Arduino board via a USB connection.
* A SoftwareSerial library allows for serial communication on any of the Pro's digital pins.

FIO

* The Arduino Fio has a number of facilities for communicating with a computer, another Arduino, or other microcontrollers. The ATmega328P provides UART TTL serial communication, which is available on digital pins 0 (RX) and 1 (TX). The Arduino software includes a serial monitor which allows simple textual data to be sent to and from the Arduino Fio board via an external serial connection. We recommend using an FTDI Basic or FTDI cable. The on board mini-USB connector is only used for charging and does not allow for serial communication.

NOTES:

The ATmega328 also supports I2C (TWI) and SPI communication. The Arduino software includes a Wire library to simplify use of the I2C bus; see the reference for details. To use the SPI communication, please see the ATmega328 datasheet.