**COMPONENT SPECIFICATIONS**

**Note:** The specifications shown in here are given by the manufacturers.

1. **ARDUINO MEGA 2560**

* Microcontroller: ATmega2560
* Operating Voltage:5V
* Input Voltage (recommended):7-12V
* Input Voltage (limits):6-20V
* Digital I/O Pins:54 (of which 15 provide PWM output)
* Analog Input Pins:16
* DC Current per I/O Pin:40 mA
* DC Current for 3.3V Pin:50 mA
* Flash Memory:256 KB of which 8 KB used by bootloader
* SRAM:8 KB
* EEPROM:4 KB
* Clock Speed:16 MHz

1. **I2C 20x4 LCD**

* LCD display module with blue backlight.
* Wide viewing angle and high contrast.
* Built-in industry standard HD44780 equivalent LCD controller.
* LCM type: Characters
* Can display 4-lines X 20-characters.
* Voltage: 5V DC.
* Module dimension: 80mm x 35mm x 11mm.
* Viewing area size: 64.5mm x 16mm
* 1602 I2C interface 4-wire 1602 screen
* IO port of control board is only 20, so IO ports is not enough for many sensor, SD card, relay modules.
* The original 1602 screen need 7 IO ports to drive up, and this module can save 5 IO ports

1. **IRFZ44N**

* Mosfet Type : N-channel
* Current Rating : 49A
* Rds (On) : 17.5mΩ
* Voltage Rated : 55V

1. **Solenoid**

* Pressure：Medium Pressure
* Power Source：DC
* Standard or Nonstandard：Standard
* Power：electric
* Material：Alloy
* Model Number：0420
* Temperature of Media：Normal Temperature
* Type：Frame
* Voltage：DC 3V-12V
* Model：push-pull

1. **DS3231 Real Time Clock Module**

* Dimension: 38mm\*22mm\*14mm/1.49\*0.86\*0.55''
* Weight: 8g
* Working Voltage: 3.3-5.5V
* Clock Chip: High Precision Clock Chip DS3231
* Clock accuracy: 0-40℃ range, accuracy of 2 ppm, annual error of about 1 minute
* Type: with Battery, No Batter

1. **CNY70**

* Emitter Wavelength: 950nm
* Forward Current (Max): 50mA
* Forward Voltage: 1.25-1.6V
* Power Dissipation: 100mW
* Detector Type: Phototransistor
* Filter: Daylight Blocking
* Collector Current (Max): 50mA
* Power Dissipation: 100mW

1. **Tactile Switch (Push Button)**

* The rated range: 50mA 12 VDC
* Contact resistance: 50 m Ω Max (initial)
* The insulation resistance: 100 m Ω minDC (250 v)
* The compressive strength: AC250V (50/60 hz for 1 minute)
* Mechanical life: 100000 cycles
* The environment temperature: 25 ° ~ + 105 °
* The operating strength: 180/250 (plus or minus 30 gf)

1. **Piezo Buzzer**

* Power voltage: 3V or 5V DC.
* Resistance: 42Ω.
* The distance between two pins: 6.6mm.
* The height of buzzer: 8.2mm.
* The diameter of buzzer: 12mm.
* Active Buzzer x 5

1. **Boost Converter**

* Model: DSN6009 boost module
* Module Properties: Non-isolated boost (BOOST)
* Rectification: Non-Synchronous Rectification
* Input Range: 3V ~ 32V
* Output Range: 5V ~ 35V
* Input Current: 5A (max),
* Conversion efficiency: <94%
* Switching frequency: 400KHz
* Output Ripple: 50mV
* Load Regulation: +/-0.5%
* Voltage Regulation: +/-0.5%
* Operating Temperature: -40 degree to +85 degree
* Body Size: 43 x 20 x 12mm/1.7" x 0.8" x 0.47"(L\*W\*T)

1. **Li-Po Battery**

* 3.7V 500mAh 602535 Lithium Polymer
* Type：Li-polymer
* Size：6x25x35mm
* Nominal Capacity：500mAh
* Feature：Rechargeable Battery
* Voltage：3.7V
* Condition：100% Brand new
* Battery weight：10g

1. **TP4056 Charge Controller**

* Input Interface: Micro USB port
* Charging method: linear charge.
* A full charge voltage: 4.2V.
* Charge Current: 1A (default), modify the onboard resistor to adjust the charging current
* Charging accuracy: 1.5%.
* Charging indicator: Blue LED charging, Red LED full.
* Dimensions: 22 x 17mm.