**Product 1 - Convenience Smart Panel**

**Hardware Required**

**Parts Needed**

**NodeMcu Lua WIFI Internet of Things development board based on ESP8266-- 1 ( MCU and WIFI capability)**

[*http://www.seeedstudio.com/depot/NodeMCU-v2-Lua-based-ESP8266-development-kit-p-2415.html*](http://www.seeedstudio.com/depot/NodeMCU-v2-Lua-based-ESP8266-development-kit-p-2415.html)

**LDR -- 1**

[*https://www.adafruit.com/product/161*](https://www.adafruit.com/product/161)

**2 channel relay module with opto isolation supports high and low trigger 5V--- 1**

[*http://www.aliexpress.com/item/5V-9V-12V-24V-2-Channel-Relay-Module-With-Opto-Isolation-Support-High-Level-Triggered-For/32430837952.html*](http://www.aliexpress.com/item/5V-9V-12V-24V-2-Channel-Relay-Module-With-Opto-Isolation-Support-High-Level-Triggered-For/32430837952.html)

**12V1A \ 5V1A fully isolated switching power supply / AC-DC modules / 220V switch 12v 5v lose-lose (C4B1) -- 1**

[*http://www.aliexpress.com/store/product/2PCS-LOT-12V1A-5V-1A-fully-isolated-switching-power-supply-AC-DC-modules-220V-switch-12v/639111\_32227692682.html*](http://www.aliexpress.com/store/product/2PCS-LOT-12V1A-5V-1A-fully-isolated-switching-power-supply-AC-DC-modules-220V-switch-12v/639111_32227692682.html)

**Generic PCB with bus lines ---- 1**

[*http://www.amazon.com/Solderable-BreadBoard-matches-tie-point-breadboards/dp/B0040Z3012/ref=pd\_sim\_328\_2?ie=UTF8&dpID=61oLmBfSgYL&dpSrc=sims&preST=\_AC\_UL160\_SR160%2C160\_&refRID=1TRKGBX4YJ9BD19Z3KWE*](http://www.amazon.com/Solderable-BreadBoard-matches-tie-point-breadboards/dp/B0040Z3012/ref=pd_sim_328_2?ie=UTF8&dpID=61oLmBfSgYL&dpSrc=sims&preST=_AC_UL160_SR160%2C160_&refRID=1TRKGBX4YJ9BD19Z3KWE)

**Casing -- 1**

<http://www.budind.com/view/NEMA+Boxes/Blue+Transparent+NEMA+4X>

**Soldering KIT**

[*http://www.homedepot.com/p/Weller-25-Watt-Standard-Duty-Soldering-Iron-Kit-SP25NKUS/204195328*](http://www.homedepot.com/p/Weller-25-Watt-Standard-Duty-Soldering-Iron-Kit-SP25NKUS/204195328)

**Resistors 220 ohms --- A few**

**Insulation TAPE -- 1**

**Mini USB for loading and testing -- 1**

**Wires for Connections**