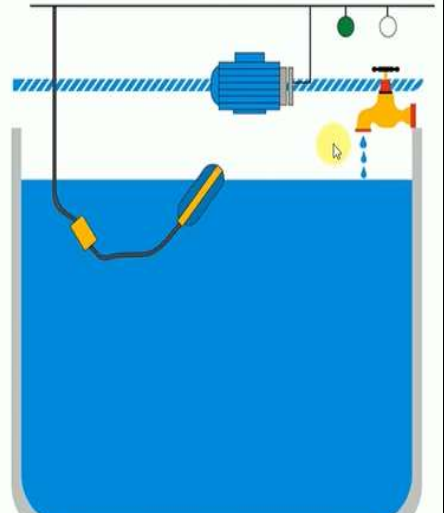
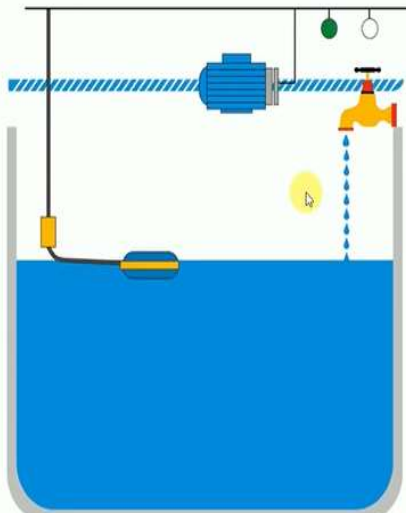
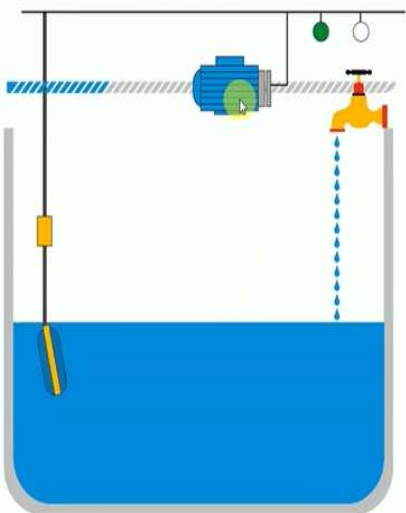
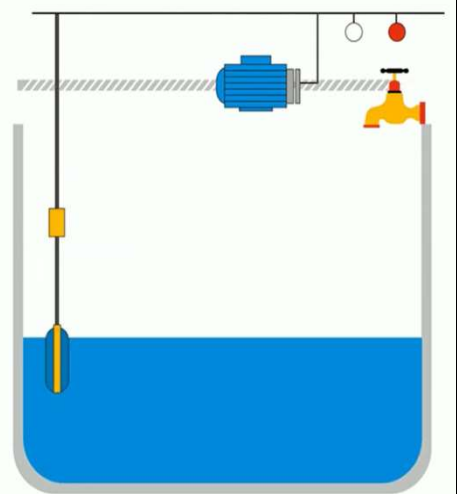
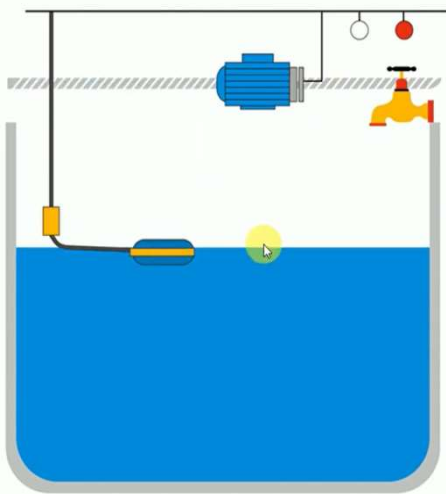
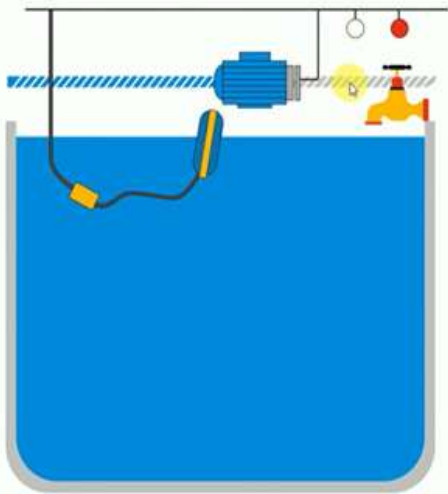


Water Level Controller System using Float Switch Sensor

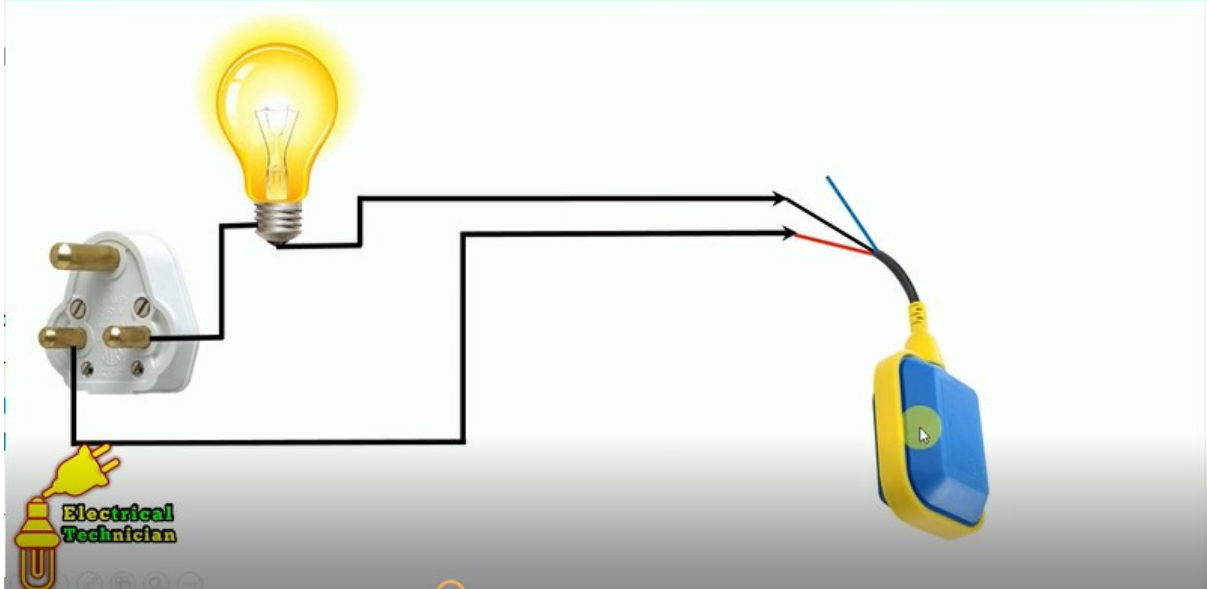
- **Aim:** To automatically manipulate the level of the water using float sensor switch
- ❖ **Components required:** Float switch sensor, three phase induction motor pump, tank, water source.
- ❖ **Theory :** Regularly households, buildings, offices use a pump to fill the tank mounted on the top of the building whenever there is lack of supply of water in the taps but someone has to invest time in monitoring the entire process and this has to be done every time the premises runs out of water making it one of the most tedious tasks ever possible. Hence automating the whole process will not only save the time but also is subject to save the wages behind the constant maintenance such a system demands from any organisation. Float Sensor is very dynamically useful in monitoring the water level in the tank and signalling the motor using a closed loop feedback system to get turned on every time a water shortage is encountered in the pipeline. A standard float sensor has three terminals amongst which there is a common terminal that keeps the switch Normally Open(NO) when the float sensor is flat parallel to the ground of the tank floating in the water generally when the tank is full and Normally Close(NC) whenever the water level of tank goes below certain level and the sensor body becomes perpendicular or 90° with the Horizontal axis of the ground surface of the water tank. When the float sensor is in the latter state, motor of the pump gets turned on and water gets supplied to the tank until the tank water reaches the adequate level to set the float sensor parallel or 0° angle with respect to the ground surface of the water tank. This entire process is based on the concept of closed loop control system where the amplitude of the output parameter(here the water level) gets sensed and compared with the desired or set value and an error signal gets fed back to the control system to make the actuator(here the three phase induction motor pump) work accordingly. Here the process variable is the water level and manipulated variable is the flow of water from the pump.
- **Observation:** Every time the water level is below the adequate level inside the tank ,the float switch gets turned on and the motor starts to pump the water to the tank until the water level gets to the paramount level and float switch turns off turning off the motor.
- **Results:** The float switch sensor makes quick response according to the water level change and activates the motor to make proper water supply to the tank until the tank is full again and turns off the float switch.



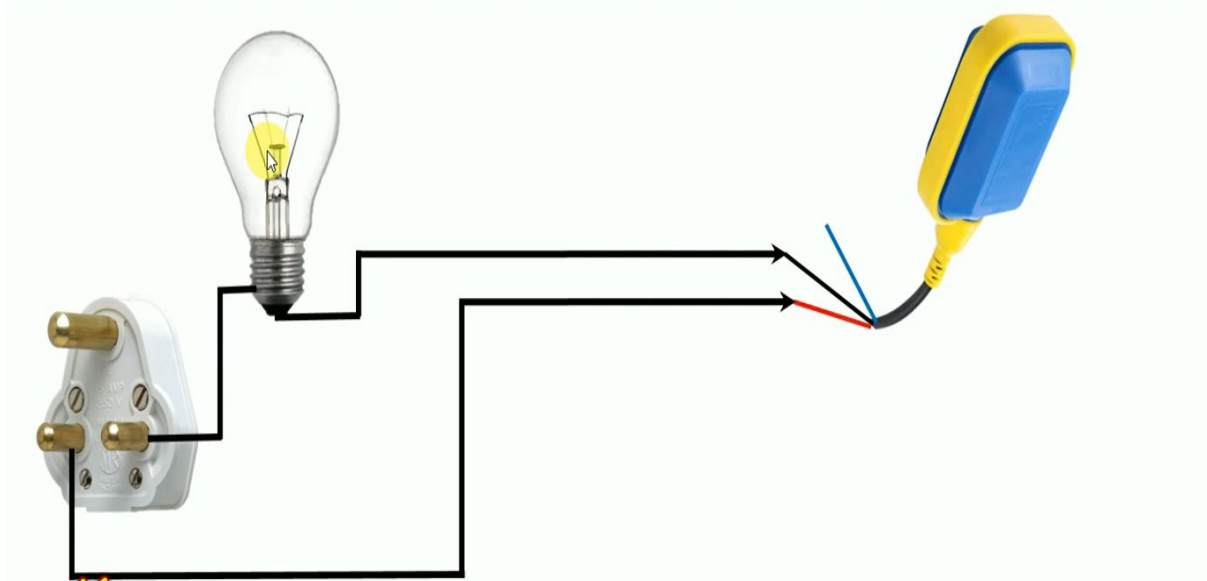
Initially the tank gets drained out and shortage of water leaves the float switch turned on that starts the motor

and the tank is again filled up until the float switch floats turning off the pump

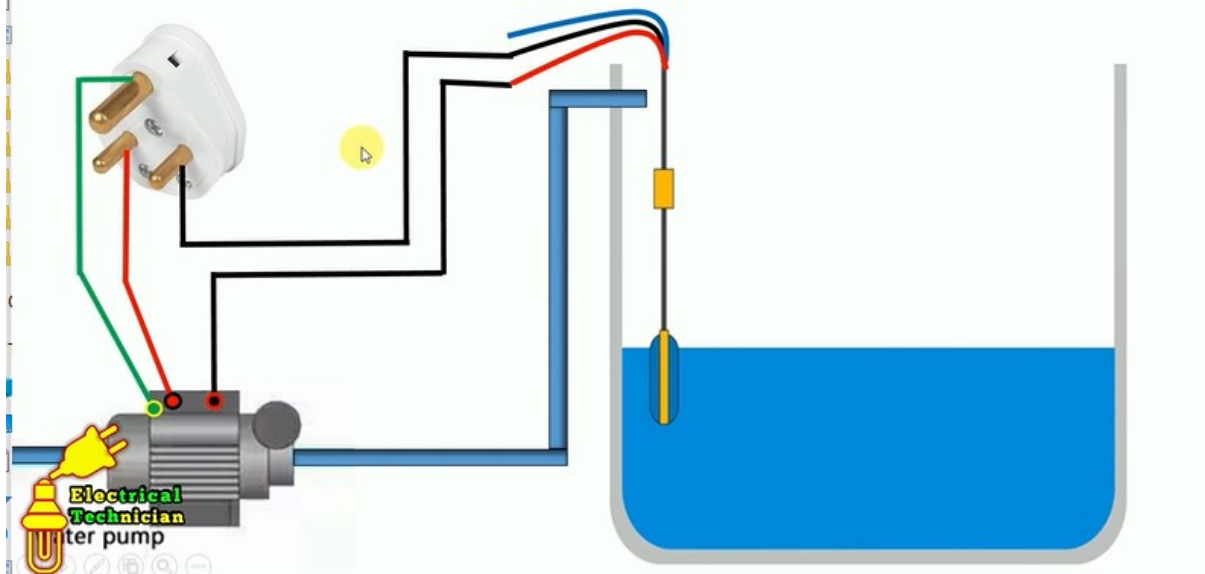
Motor **ON** when the **Water Level** is Low



Motor **ON** when the **Water Level** is Low



Motor **ON** when the **Water Level is Low**



✓ **Safety and Precautions:**

1. It is better to use the float switch across the neutral connection of the motor as using it across the phase line may endanger the user's life unless there is no leakage current across the tank's water.
2. The wiring should be done in a very careful manner.
3. The motor should be checked properly before connecting it with the float switch.
4. The float switch also should be checked whether it is in the proper working condition.

