

Smart Window

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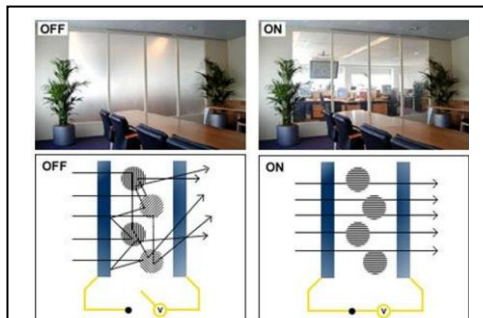
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Abstract

The Smart Window helps to regulate the amount of sunlight that passes through the windows of the house by using Electrochromatic (EC) glass. The system will darken the window if the temperature is high outside and clear when the temperature is low outside. The system also controls the position of the curtain depending on whether it is daytime or nighttime. In the nighttime position, the operation of the EC glass will be disabled.

The system contains a temperature sensor and a light sensor to measure the status of the weather outside the home. It operates in two modes depending on whether it is daytime or nighttime. A relay is used to switch on and off the EC glass whereas a dc motor is used to open and close the curtains. When the outside temperature reaches a level determined by the user, the EC glass will

darken. This in effect will cool the room down naturally by blocking the outside sunlight into the room, thus saving electricity. If the room gets exceedingly hot, then an air conditioning unit can be started if needed. At night, the glass operates in the clear state, therefore curtains will be closed by operating the motors to ensure privacy of the homeowner.



**Figure 1: Electrochromatic Glass
Theory of Operation**