# Window lifter requirements:

R0 Window lifter is the module responsible to control the window movement.

R1 Window lifter is controlled by two switches that indicate the direction of the window movement.

## Window behavior:

R2 For this purpose the window has to be emulated using a 10 led bar.

R3 The color of this led bar has to be RED.

R4 The movement of the window has to be simulated turning on/off the LEDS creating the animation of the window movement.

R5 The time between each transition shall be 400 msec.

R6 Window movement graphical description:

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CLOSED OPEN

R7 There are two possible window movements:

-Up

-Down

R8 Each window movement has to be indicated trough a led color. Depending on movement each led has to be turn on.

|  |  |
| --- | --- |
| Movement | LED indicator color |
| UP | BLUE |
| Down | GREEN |

## Button Behavior:

R9 In order to consider a validate button press; the button has to be pressed at least 10 msec.

R10 The module has to be able to detect fail button press. In that case the button press or button combination has to be considered as invalid.

R11 In case than a valid button press is detected the module has to follow the next behavior depending on the button pressed.

|  |  |  |
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| Button Press | Time | Action |
| UP | >500 msec | The window shall UP until get totally CLOSED while the button keep press. |
| DOWN | >500 msec | The window shall DOWN until get totally OPEN while the button keep press. |
| UP | <500 msec | The window shall UP until get totally CLOSED automatically. (Function one touch) |
| DOWN | <500 msec | The window shall DOWN until get totally OPEN automatically. (Function one touch) |

## Anti pinch functionality:

R12 Anti pinch is a feature than prevents accidents between window and some human body parts like arms, hands, head….

R13 In this case the signal than indicates to the module the detection of a pinch will be a push button.

R14 Anti pinch button press has to follow the same characteristics than UP and DOWN buttons for valid press.

R15 This signal just can be considered as valid when the movement is UP.

R16 If this signal is valid then the module has to stop the UP Movement and then DOWN the window until the window get totally OPEN.

R17 After window is totally OPEN the module has to ignore during 5 seconds all button press.

R18 After this time the module has to recognize every button press.