|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Current State** | **fsm\_in\_reset** | **fsm\_in\_sensors** | **fsm\_in\_pcount** | **Next State** |
| **(lsb : enterance, msb: exit)** |
| X | 1 | X | X | fsm\_empty\_state |
| fsm\_empty\_state | 1 | X | "0" | fsm\_empty\_state |
| fsm\_empty\_state | 0 | "01" | "0" | fsm\_inc\_dec\_state |
| fsm\_empty\_state | 0 | "10" | "0" | fsm\_empty\_state |
| fsm\_empty\_state | 0 | "11" or "00" | "0" | fsm\_empty\_state |
| fsm\_inc\_dec\_state | 1 | X | X | fsm\_empty\_state |
| fsm\_inc\_dec\_state | 0 | "01" | "1" to "5" | fsm\_inc\_dec\_state |
| fsm\_inc\_dec\_state | 0 | "01" | "6" or "7" | fsm\_full\_state |
| fsm\_inc\_dec\_state | 0 | "10" | "1" or "0" | fsm\_empty\_state |
| fsm\_inc\_dec\_state | 0 | "10" | "2" to "5" | fsm\_inc\_dec\_state |
| fsm\_inc\_dec\_state | 0 | "00" or "11" | "1" to "6" | fsm\_inc\_dec\_state |
| fsm\_full\_state | 1 | X | X | fsm\_empty\_state |
| fsm\_full\_state | 0 | "01" | "7" | fsm\_full\_state |
| fsm\_full\_state | 0 | "10" | "7" | fsm\_inc\_dec\_state |
| fsm\_full\_state | 0 | "11" or "00" | "7" | fsm\_inc\_dec\_state |