|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Open door | Close door | At set temperature | Above set temperature |
| Door closed; Light off | Door open; Light on | Door closed; Light off | Door closed; Light off | Cooling |
| Door open; Light on | Door open; Light on | Door closed; Light off | Door open; Light on | Cooling |
| Cooling | Cooling | Cooling | Idle | Cooling |
| Idle | Idle | Idle | Idle | Cooling |

One part that we will need to discuss is how a fridge behaves when the door is left open. In my experience, some fridges will turn on while open and begin cooling, while others fridges instead recognize that the door is open, and thus remain idle in order to conserve electricity. I made the above state table under the assumption that we will have the fridge still operate while the door is left open.

If you are wondering what “light on/off” means, it is simply the indicator light that turns on anytime a fridge door is open, and vice versa. I believe this should be the minimal diagram, but as always make any changes you deem necessary.