# Table de vérité

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Cmd\_BLE\_ouverture | Cmd\_BLE\_fermeture | Cmd\_BLE\_Arret | Cmd\_BLE\_Arret |  |  |
| OU | OU | OU | OU |  |  |
| BP\_ouverture | BP\_fermeture | fdc\_haut | fdc\_bas | IR | Sortie |
| 0 | 0 | 0 | 0 | 0 | Arreter |
| 0 | 0 | 0 | 0 | 1 | Arreter |
| 0 | 0 | 0 | 1 | 0 | Arreter |
| 0 | 0 | 0 | 1 | 1 | Arreter |
| 0 | 0 | 1 | 0 | 0 | Arreter |
| 0 | 0 | 1 | 0 | 1 | Arreter |
| 0 | 0 | 1 | 1 | 0 | Arreter |
| 0 | 0 | 1 | 1 | 1 | Arreter |
| 0 | 1 | 0 | 0 | 0 | Fermeture |
| 0 | 1 | 0 | 0 | 1 | Presence\_Obstacle\_ouverture |
| 0 | 1 | 0 | 1 | 0 | Arreter |
| 0 | 1 | 0 | 1 | 1 | Presence\_Obstacle\_arret |
| 0 | 1 | 1 | 0 | 0 | Fermeture |
| 0 | 1 | 1 | 0 | 1 | Arreter |
| 0 | 1 | 1 | 1 | 0 | Arreter |
| 0 | 1 | 1 | 1 | 1 | Arreter |
| 1 | 0 | 0 | 0 | 0 | Ouverture |
| 1 | 0 | 0 | 0 | 1 | Ouverture |
| 1 | 0 | 0 | 1 | 0 | Ouverture |
| 1 | 0 | 0 | 1 | 1 | Ouverture |
| 1 | 0 | 1 | 0 | 0 | Arreter |
| 1 | 0 | 1 | 0 | 1 | Arreter |
| 1 | 0 | 1 | 1 | 0 | Arreter |
| 1 | 0 | 1 | 1 | 1 | Arreter |
| 1 | 1 | 0 | 0 | 0 | Arreter |
| 1 | 1 | 0 | 0 | 1 | Arreter |
| 1 | 1 | 0 | 1 | 0 | Arreter |
| 1 | 1 | 0 | 1 | 1 | Arreter |
| 1 | 1 | 1 | 0 | 0 | Arreter |
| 1 | 1 | 1 | 0 | 1 | Arreter |
| 1 | 1 | 1 | 1 | 0 | Arreter |
| 1 | 1 | 1 | 1 | 1 | Arreter |

# Table de Karnaugh

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ouverture | | H.B.I | | | | | | | |
| 000 | 001 | 011 | 010 | 110 | 111 | 101 | 100 |
| O.F | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Obstacle  Ouverture | | H.B.I | | | | | | | |
| 000 | 001 | 011 | 010 | 110 | 111 | 101 | 100 |
| O.F | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Obstacle Arrêt | | H.B.I | | | | | | | |
| 000 | 001 | 011 | 010 | 110 | 111 | 101 | 100 |
| O.F | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fermeture | | H.B.I | | | | | | | |
| 000 | 001 | 011 | 010 | 110 | 111 | 101 | 100 |
| O.F | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Arreter | | H.B.I | | | | | | | |
| 000 | 001 | 011 | 010 | 110 | 111 | 101 | 100 |
| O.F | 00 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 01 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| 11 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |

# Simplification

# Transcription condition

|  |  |
| --- | --- |
| Algorithme | Logique |
| Si Ouverture alors  Action d’ouverture  Si Sinon Fermeture avec présence obstacle  Si capteur pas de fin de course bas  Action d’ouverture  Sinon  Action d’arrêt  Si Sinon Fermeture  Action de fermeture  Si Sinon Arrêt  Action d’arrêt  Sinon  Erreur critique | Si ()  Si Sinon ()  Si( )  Sinon  Si Sinon ()  Si Sinon ()  Sinon |

# Equation Prog

|  |  |
| --- | --- |
|  | Langage Arduino |
|  | Ouverture=(BP\_ouverture||Cmd\_BLE\_ouverture) && !(fdc\_haut) |
|  | Fermeture=(BP\_fermeture || Cmd\_BLE\_fermeture) && !(fdc\_bas) |
|  | Presence\_Obstacle\_ouverture=IR&&!(fdc\_haut)&&!(fdc\_bas) |
|  | Presence\_Obstacle\_arret=IR&&!(fdc\_haut)&&fdc\_bas |
|  | Arreter =cmd\_BLE\_arret ||fdc\_haut||fct\_bas |