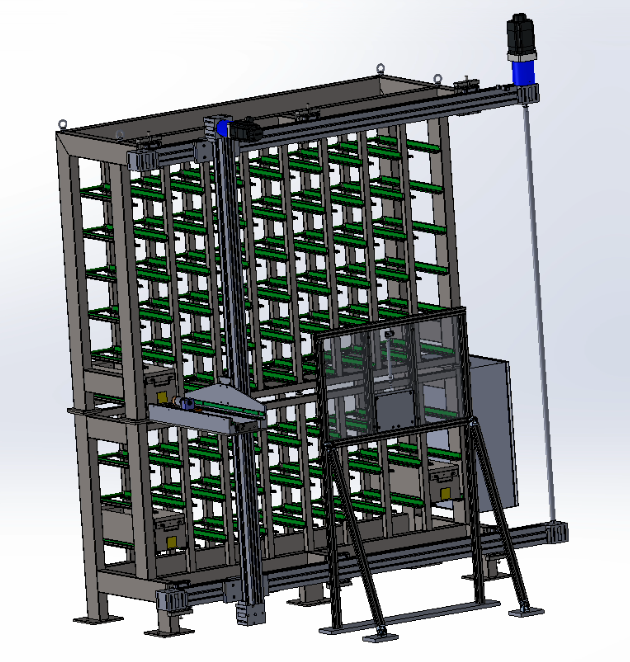
**Présentation**

Le système étudié est un magasin tampon automatique dont les caisses peuvent être stockées ou déstockées.

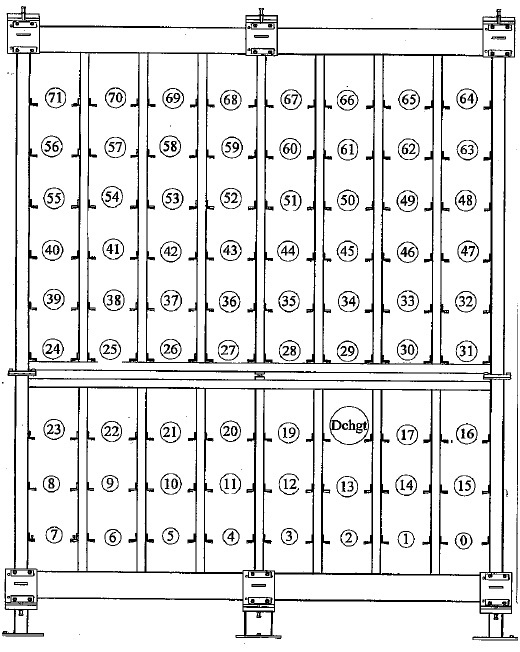
**Schéma architectural**



* Le magasin comporte 8 emplacements sur chacun des 9 étages.
* Les emplacements et les caisses associées sont codés de 0 à 71.
* La position de référence des axes en bas et à droite de la caisse 0.
* Le poste de déchargement correspond au code caisse 18.

**Plan de positionnement des caisses**

* La distance entre 2 étages est de 220mm et la distance entre 2 caisses sur le même étage est de 260mm. Il y a un espace de 110mm entre le bâti bas et le bâti haut.
* Les codeurs absolus permettant de connaitre la position de l’axe vertical et la position de l’axe horizontal ont une résolution de 2 mm/point.



(colonne8 ; Etage1)

(colonne1 ; Etage9)

Position de référence

(colonne1 ; Etage1)

260mm

220mm

110mm

**Affectation des variables : (Entier)**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Adresse** | **Commentaire** |
| Code\_caisse | %MW0 | Code de la caisse |
| Num\_etage | %MW1 | Numéro de l’étage de rangement de la caisse |
| Num\_colonne | %MW2 | Numéro de colonne de rangement de la caisse sur l’étagère |
| Pav | %MW3 | Position à atteindre par l’axe vertical |
| Pah | %MW4 | Position à atteindre par l’axe horizontal |

**Eléments de correction**

* 8 valeurs numériques Pah des positions à atteindre par l’axe horizontal, valeurs délivrées par le codeur de l’axe horizontal pour chacune des 8 colonnes (emplacements 1 à 8) sur un même étage.

Pah colonne1  = 0

Pah colonne 2  = 1\*260/2 = 130

Pah  colonne 3  = 2\*260/2 = 260

Pah colonne 4  = 3\*260/2 = 390

Pah colonne 5  = 4\*260/2 = 520

Pah colonne 6  = 5\*260/2 = 650

Pah colonne 7  = 6\*260/2 =780

Pah colonne 8  = 7\*260/2 = 910

* expression de Pah en fonction du numéro de colonne.

Pah= (num\_colonne-1) \* 260/2 ou Pah= (num\_colonne-1) \* 130

* 9 valeurs numériques Pav des positions à atteindre par l’axe vertical, valeurs délivrées par le codeur de l’axe vertical pour chacun des 9 étages (étage 1 à 9).

Pav étage1  = 0

Pav étage2  = 1\*220/2 = 110

Pav étage3  = 2\*220/2 = 220

Pav étage4  = (3\*220 + 110)/2 = 385 (prise en compte de l’espace entre bâti bas et bâti haut)

Pav étage5  = (4\*220 + 110)/2 = 495

Pav étage6  = (5\*220 + 110)/2 = 605

Pav étage7  = (6\*220 + 110)/2 = 715

Pav étage8  = (7\*220 + 110)/2 = 825

Pav étage9  = (8\*220 + 110)/2 = 935

* expression de Pav en fonction du numéro de l’étage.

Si étage <4 Pav= (num\_etage-1) \* 220/2 ou Pav= (num\_etage-1) \*110

Si étage >= 4 Pav= ((num\_etage-1) \* 220 +110)/2

Ou Pav= ((num\_etage-1) \* 110) +55

**Document réponse**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Code caisse**   |  |  |  | | --- | --- | --- | | **Code caisse** | **Mots constants** | **Valeurs** | | 36 | %KW36 | 5 | | 37 | %KW37 | 5 | | 38 | %KW38 | 5 | | 39 | %KW39 | 5 | | 40 | %KW40 | 6 | | 41 | %KW41 | 6 | | 42 | %KW42 | 6 | | 43 | %KW43 | 6 | | 44 | %KW44 | 6 | | 45 | %KW45 | 6 | | 46 | %KW46 | 6 | | 47 | %KW47 | 6 | | 48 | %KW48 | 7 | | 49 | %KW49 | 7 | | 50 | %KW50 | 7 | | 51 | %KW51 | 7 | | 52 | %KW52 | 7 | | 53 | %KW53 | 7 | | 54 | %KW54 | 7 | | 55 | %KW55 | 7 | | 56 | %KW56 | 8 | | 57 | %KW57 | 8 | | 58 | %KW58 | 8 | | 59 | %KW59 | 8 | | 60 | %KW60 | 8 | | 61 | %KW61 | 8 | | 62 | %KW62 | 8 | | 63 | %KW63 | 8 | | 64 | %KW64 | 9 | | 65 | %KW65 | 9 | | 66 | %KW66 | 9 | | 67 | %KW67 | 9 | | 68 | %KW68 | 9 | | 69 | %KW69 | 9 | | 70 | %KW70 | 9 | | 71 | %KW71 | 9 |  |  |  |  | | --- | --- | --- | | **Code caisse** | **Mots constants** | **Valeurs** | | 36 | %KW136 | 5 | | 37 | %KW137 | 6 | | 38 | %KW138 | 7 | | 39 | %KW139 | 8 | | 40 | %KW140 | 8 | | 41 | %KW141 | 7 | | 42 | %KW142 | 6 | | 43 | %KW143 | 5 | | 44 | %KW144 | 4 | | 45 | %KW145 | 3 | | 46 | %KW146 | 2 | | 47 | %KW147 | 1 | | 48 | %KW148 | 1 | | 49 | %KW149 | 2 | | 50 | %KW150 | 3 | | 51 | %KW151 | 4 | | 52 | %KW152 | 5 | | 53 | %KW153 | 6 | | 54 | %KW154 | 7 | | 55 | %KW155 | 8 | | 56 | %KW156 | 8 | | 57 | %KW157 | 7 | | 58 | %KW158 | 6 | | 59 | %KW159 | 5 | | 60 | %KW160 | 4 | | 61 | %KW161 | 3 | | 62 | %KW162 | 2 | | 63 | %KW163 | 1 | | 64 | %KW164 | 1 | | 65 | %KW165 | 2 | | 66 | %KW166 | 3 | | 67 | %KW167 | 4 | | 68 | %KW168 | 5 | | 69 | %KW169 | 6 | | 70 | %KW170 | 7 | | 71 | %KW171 | 8 |  |  |  |  | | --- | --- | --- | | **Code caisse** | **Mots constants** | **Valeurs** | | 0 | %KW100 | 1 | | 1 | %KW101 | 2 | | 2 | %KW102 | 3 | | 3 | %KW103 | 4 | | 4 | %KW104 | 5 | | 5 | %KW105 | 6 | | 6 | %KW106 | 7 | | 7 | %KW107 | 8 | | 8 | %KW108 | 8 | | 9 | %KW109 | 7 | | 10 | %KW110 | 6 | | 11 | %KW111 | 5 | | 12 | %KW112 | 4 | | 13 | %KW113 | 3 | | 14 | %KW114 | 2 | | 15 | %KW115 | 1 | | 16 | %KW116 | 1 | | 17 | %KW117 | 2 | | 18 | %KW118 | 3 | | 19 | %KW119 | 4 | | 20 | %KW120 | 5 | | 21 | %KW121 | 6 | | 22 | %KW122 | 7 | | 23 | %KW123 | 8 | | 24 | %KW124 | 8 | | 25 | %KW125 | 7 | | 26 | %KW126 | 6 | | 27 | %KW127 | 5 | | 28 | %KW128 | 4 | | 29 | %KW129 | 3 | | 30 | %KW130 | 2 | | 31 | %KW131 | 1 | | 32 | %KW132 | 1 | | 33 | %KW133 | 2 | | 34 | %KW134 | 3 | | 35 | %KW135 | 4 | | **Mots constants** | **Valeurs** |
| 0 | %KW0 | 1 |
| 1 | %KW1 | 1 |
| 2 | %KW2 | 1 |
| 3 | %KW3 | 1 |
| 4 | %KW4 | 1 |
| 5 | %KW5 | 1 |
| 6 | %KW6 | 1 |
| 7 | %KW7 | 1 |
| 8 | %KW8 | 2 |
| 9 | %KW9 | 2 |
| 10 | %KW10 | 2 |
| 11 | %KW11 | 2 |
| 12 | %KW12 | 2 |
| 13 | %KW13 | 2 |
| 14 | %KW14 | 2 |
| 15 | %KW15 | 2 |
| 16 | %KW16 | 3 |
| 17 | %KW17 | 3 |
| 18 | %KW18 | 3 |
| 19 | %KW19 | 3 |
| 20 | %KW20 | 3 |
| 21 | %KW21 | 3 |
| 22 | %KW22 | 3 |
| 23 | %KW23 | 3 |
| 24 | %KW24 | 4 |
| 25 | %KW25 | 4 |
| 26 | %KW26 | 4 |
| 27 | %KW27 | 4 |
| 28 | %KW28 | 4 |
| 29 | %KW29 | 4 |
| 30 | %KW30 | 4 |
| 31 | %KW31 | 4 |
| 32 | %KW32 | 5 |
| 33 | %KW33 | 5 |
| 34 | %KW34 | 5 |
| 35 | %KW35 | 5 |

* Programme

