| **Module / Composant** | **Broche du module** | **Arduino Uno R3 Pin** | **Remarque** |
| --- | --- | --- | --- |
| **RFID RC522** | SDA (SS) | D10 | CS (SS) réservé au RFID |
|  | SCK | D13 | SPI |
|  | MOSI | D11 | SPI |
|  | MISO | D12 | SPI |
|  | RST | D9 |  |
|  | VCC | **3.3V** | ⚠ Jamais 5V |
|  | GND | GND |  |
| **Ethernet ENC28J60** | CS (SS) | **D8** | ✅ Pas en conflit |
|  | SCK, MISO, MOSI | D13, D12, D11 | SPI partagé |
|  | VCC | 3.3V **ou** 5V | Selon le régulateur du module |
|  | GND | GND |  |
| **RTC DS3231** | SDA | A4 | I2C |
|  | SCL | A5 | I2C |
|  | VCC | 5V | OK |
|  | GND | GND |  |
| **Servo moteur** | Signal | D6 | PWM |
|  | VCC / GND | 5V / GND |  |
| **Capteur PIR** | OUT | D2 | Digital input |
| **Bouton +** |  | **A0 (D14)** | INPUT\_PULLUP |
| **Bouton -** |  | **A1 (D15)** | INPUT\_PULLUP |
| **Moteur pas à pas** | IN1 | D3 | ULN2003 - Séquence 1 |
|  | IN2 | D4 | ULN2003 - Séquence 2 |
|  | IN3 | D5 | ULN2003 - Séquence 3 |
|  | IN4 | D6 | ULN2003 - Séquence 4 (partagé) ⚠ |
|  | VCC / GND | 5V / GND | Alimente ULN2003 |

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| Arduino UNO R3 |

| |

| [A0] <--- Bouton + --+ BTN\_INC\_PIN ✅

| [A1] <--- Bouton - --+ BTN\_DEC\_PIN ✅

| [A4] <--- SDA <------ RTC DS3231

| [A5] <--- SCL <------ RTC DS3231

| |

| [D2] <--- PIR -------+ OUT (signal)

| [D3] ---> ULN2003 ---+ IN1 (28BYJ-48)

| [D4] ---> ULN2003 ---+ IN2

| [D5] ---> ULN2003 ---+ IN3

| [D6] ---> ULN2003 ---+ IN4

| [D7] <-- libre | ✅ Réservé

| [D8] <--- Ethernet --+ CS ENC28J60

| [D9] <--- RFID ------+ RST

| [D10]<-- RFID -------+ CS (SS)

| [D11]<-- MOSI -------+ SPI partagé

| [D12]<-- MISO -------+ SPI partagé

| [D13]<-- SCK -------+ SPI partagé

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POWER & GND

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[3.3V] ---> RFID RC522

[5V] ---> RTC DS3231, PIR, Servo, ULN2003, ENC28J60 (\*si supporte\*)

[GND] ---> Tous les modules