|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Arduino | | ATMEL Chip pins | | | Project Function | Board Connectors | | Max Current |
| Pin | Function | DIP | AVR | TQFP | External Function | DIP Board | SMD Board |  |
| 0 | COM | 2 | PD0 | 30 | UART (FTDI TX) |  |  | 40 mA |
| 1 | COM | 3 | PD1 | 31 | UART (FTDI RX) |  |  | 40 mA |
| 2 | DO | 4 | PD2 | 32 | Solenoid Valve 3 MA |  |  | 40 mA |
| 3 | DO | 5 | PD3 | 1 | Solenoid Valve 4 MA |  |  | 40 mA |
| 4 | DO | 6 | PD4 | 2 | Solenoid Valve 5 O2 |  |  | 40 mA |
| 5 | DO | 11 | PD5 | 9 | Solenoid Valve 6 O2 |  |  | 40 mA |
| 6 | DO | 12 | PD6 | 10 | Solenoid Valve 7 O2 |  |  | 40 mA |
| 7 | DO | 13 | PD7 | 11 | Solenoid Valve 8 O2 |  |  | 40 mA |
| 8 | DO | 14 | PB0 | 12 | Solenoid Valve 9 Inspire |  |  | 40 mA |
| 9 | DO | 15 | PB1 | 13 | Solenoid Valve 10 Expire |  |  | 40 mA |
| 10 | DO | 16 | PB2 | 14 | Solenoid Valve 11 Assist |  |  | 40 mA |
| 11 | DI | 17 | PB3 | 15 | Start Switch |  |  | 40 mA |
| 12 | DO | 18 | PB4 | 16 | Solenoid Valve 1 MA |  |  | 40 mA |
| 13 | DO | 19 | PB5 | 17 | Solenoid Valve 2 MA |  |  | 40 mA |
| 14 | AI | 23 | PC0 | 23 | Inspire Time |  |  |  |
| 15 | AI | 24 | PC1 | 24 | Expire Time |  |  |  |
| 16 | AI | 25 | PC2 | 25 | Inspire Pressure |  |  |  |
| 17 | AI | 26 | PC3 | 26 | Expire Pressure |  |  |  |
| 18 | COM | 27 | PC4 | 27 | I2C SDA |  |  |  |
| 19 | COM | 28 | PC5 | 28 | I2C SCL |  |  |  |
|  |  | 7  20 | VCC  VCC  AVCC | 4  6  18 | VCC |  |  |  |
|  |  | 8  22 | GND  GND  GND | 3  5  21 | GND |  |  |  |
|  |  | 9  10 | PB6  PB7 | 7  8 | Oscillator circuit (XTAL) |  |  |  |
|  |  | 1 | PC6  Reset | 29 | Reset |  |  |  |
|  |  | 21 | AREF | 20 | Analog Ref |  |  |  |
|  |  | -- | ADC6 | 19 | Unusable via Arduino |  |  |  |
|  |  | -- | ADC7 | 22 | Unusable via Arduino |  |  |  |
|  | | | | | | | |  |
| MCP23008 | | 0x21 Address | | | Project Function | Board Connectors | |  |
| Pin | Function | DIP | Design | Pin | Function | DIP | AVR |  |
|  | DI | 10 | GP0 |  | Mask Vacuum Switch |  |  | 20 mA |
|  | DI | 11 | GP1 |  | 35% Oxygen select |  |  | 20 mA |
|  | DI | 12 | GP2 |  | 45% Oxygen select |  |  | 20 mA |
|  | DI | 13 | GP3 |  | 55% Oxygen select |  |  | 20 mA |
|  | DI | 14 | GP4 |  | 65% Oxygen select |  |  | 20 mA |
|  | DI | 15 | GP5 |  | 75% Oxygen select |  |  | 20 mA |
|  | DI | 16 | GP6 |  | 85% Oxygen select |  |  | 20 mA |
|  | DI | 17 | GP7 |  | 100% Oxygen select |  |  | 20 mA |
|  | COM | 1 | SCL |  | I2C SCL |  |  |  |
|  | COM | 2 | SDA |  | I2C SDA |  |  |  |
|  |  | 5  18  6 | A0  VDD  RESET |  | VCC |  |  |  |
|  |  | 4  3  9 | A1  A2  VSS |  | GND |  |  |  |
|  |  | 8 | INTA |  |  |  |  |  |
|  |  | 7 | NC |  | Unused |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | | | | | | | |  |
| MCP23017 | | 0x22 Address | | | Project Function | Board Connectors | |  |
| Pin | Function | DIP | Design | Pin | Function | DIP | AVR |  |
|  | DI | 21 | GPA0 | 0 | Differential Pressure Switch |  |  | 20 mA |
|  | DI | 22 | GPA1 | 1 | Select – Timer/Patient |  |  | 20 mA |
|  | DI | 23 | GPA2 | 2 | Charging power sensor |  |  | 20 mA |
|  | DI | 24 | GPA3 | 3 | Up (Button) |  |  | 20 mA |
|  | DI | 25 | GPA4 | 4 | Down (Button) |  |  | 20 mA |
|  | DI | 26 | GPA5 | 5 | Left (Button) |  |  | 20 mA |
|  | DI | 27 | GPA6 | 6 | Right (Button) |  |  | 20 mA |
|  | DI | 28 | GPA7 | 7 | Enter (Button) |  |  | 20 mA |
|  | DO | 1 | GPB0 | 8 | Power Failure Alarm |  |  | 20 mA |
|  | DO | 2 | GPB1 | 9 | Battery Low Alarm |  |  | 20 mA |
|  | DO | 3 | GPB2 | 10 | Expire Pressure Alarm |  |  | 20 mA |
|  | DO | 4 | GPB3 | 11 | Inspire Pressure Alarm |  |  | 20 mA |
|  | DO | 5 | GPB4 | 12 |  |  |  | 20 mA |
|  | DO | 6 | GPB5 | 13 |  |  |  | 20 mA |
|  | DO | 7 | GPB6 | 14 |  |  |  | 20 mA |
|  | DO | 8 | GPB7 | 15 |  |  |  | 20 mA |
|  | COM | 12 | SCL |  | I2C SCL |  |  |  |
|  | COM | 13 | SDA |  | I2C SDA |  |  |  |
|  |  | 16  9  18 | A1  VDD  RESET |  | VCC |  |  |  |
|  |  | 15  17  10 | A0  A2  VSS |  | GND |  |  |  |
|  |  | 20 | INTA |  | Unused |  |  |  |
|  |  | 19 | INTB |  | Unused |  |  |  |
|  |  | 11 | NC |  | Unused |  |  |  |
|  |  | 14 | NC |  | Unused |  |  |  |