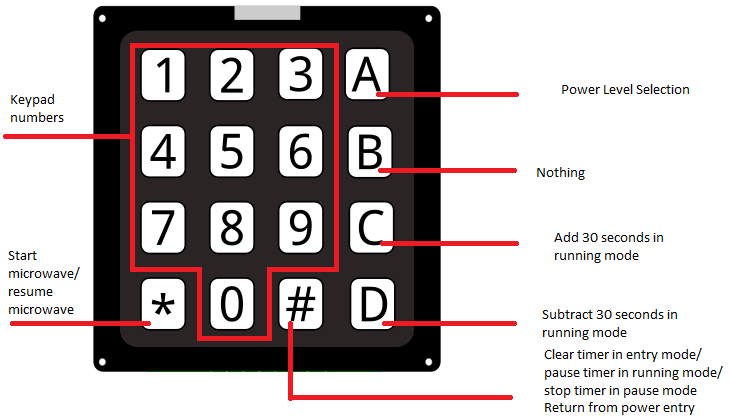
Group A1 User Manual

Lab Board wirings DOUBLECHECK

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| --- | --- | --- | --- |
|  |  |  |  |
| Port Group | Pin | Port Group | Pin |
| PORT F | PF0 | LCD\_DATA | D0 |
| PORT F | PF1 | LCD\_DATA | D1 |
| PORT F | PF2 | LCD\_DATA | D2 |
| PORT F | PF3 | LCD\_DATA | D3 |
| PORT F | PF4 | LCD\_DATA | D4 |
| PORT F | PF5 | LCD\_DATA | D5 |
| PORT F | PF6 | LCD\_DATA | D6 |
| PORT F | PF7 | LCD\_DATA | D7 |
| MOTOR | Mot | INPUTS | POT |
| PORT K | PK9 | INPUTS | LDR |
| PORT K | PK10 | AUDIO | MiO |
| PORT E | PE5 | LCD\_CTRL | BL |
| PORT E | PE3 | AUDIO | Ain |
| PORT D | TDX2 | MOTOR | OpO |
| PORT D | RDX3 | INPUTS | PB1 |
| PORT D | RDX4 | INPUTS | PB0 |
| PORT A | PA2 | LED\_BAR | LED0 |
| PORT A | PA3 | MOTOR | LED |
| PORT A | PA4 | LCD\_CTRL | BE |
| PORT A | PA5 | LCD\_CTRL | RW |
| PORT A | PA6 | LCD\_CTRL | E |
| PORT A | PA7 | LCD\_CTRL | RS |
| PORT C | PC0 | LED\_BAR | LED2 |
| PORT C | PC1 | LED\_BAR | LED3 |
| PORT C | PC2 | LED\_BAR | LED4 |
| PORT C | PC3 | LED\_BAR | LED5 |
| PORT C | PC4 | LED\_BAR | LED6 |
| PORT C | PC5 | LED\_BAR | LED7 |
| PORT C | PC6 | LED\_BAR | LED8 |
| PORT C | PC7 | LED\_BAR | LED9 |
| PORT G | PG0 | - | - |
| PORT G | PG1 | AUDIO | ASD |
| PORT G | PG2 | - | - |
| PORT G | PG3 | LED\_BAR | LED1 |
| PORT L | PL0 | KEYPAD | C3 |
| PORT L | PL1 | KEYPAD | C2 |
| PORT L | PL2 | KEYPAD | C1 |
| PORT L | PL3 | KEYPAD | C0 |
| PORT L | PL4 | KEYPAD | R3 |
| PORT L | PL5 | KEYPAD | R2 |
| PORT L | PL6 | KEYPAD | R1 |
| PORT L | PL7 | KEYPAD | R0 |
| P11 | +5V | MOTOR | OpE |

# Keypad

The keypad is set up to work as defined in the spec. A picture for reference can be found below:



This manual will go into key usage in more detail further below. It should also be noted that

# Push buttons

There are two green push buttons above the keypad. The one on the left (PB1) will open the microwave window and the one on the right (PB0) will close it.

# Modes

The microwave is set up to operate in one of four modes:

* Entry
* Running
* Paused
* Finished

## Entry Mode

Entry mode is the default mode that the microwave starts up in. In this mode, cooking time can be entered and the power level of the microwave can be changed. In the bottom left corner you will also be able to see our group name.

### Microwave Power Level

The microwave has three power levels, letting it work at 100%, 50% or 25%. To change the power level of the microwave, make sure you are in Entry Mode and then press the ‘A’ key. The LCD should then display ‘Set Power 1/2/3’. Press 1,2 or 3 to choose a power level of 100%, 50% or 25%. You may also press the ‘#’ button to go back to entry mode.

### Time Entry

To enter in the time you want the microwave to operate for, simply start keying in your desired time. The microwave has a maximum limit of 99 minutes and 99 seconds. To clear a time you have entered, press the ‘#’ key. To start the microwave, press the ‘\*’ key. Pressing the ‘\*’ key when the time is 00:00 will cause the microwave to automatically set a time of 1 minute and begin operation. When the microwave is in operation, it transitions into running mode. Note that if the door is open all keypad inputs are ignored. Holding down a number key will have no effect.

## Running Mode

When in running mode, the turntable will start rotating (the orientation of the turntable can be observed in the top right-hand corner of the LCD screen) and the microwave will cook your food at the desired power level. It is possible to adjust the time while the microwave is running via the C and D buttons, which will add and subtract 30 seconds from the time respectively. The ‘\*’ button will also add 1 minute to the microwave’s current cooking time. Finally, opening the door or pressing the ‘#’ key will pause operation and put the microwave into pause mode.

## Pause Mode

In this mode, the turntable and the timer will both pause. You cannot exit this mode while the door is open. When it is closed, you can exit it by pressing the ‘\*’ key and continuing operation, or by pressing the ‘#’ key and returning to entry mode.

## Finished Mode

When finished, the microwave simply displays ‘Done’ on the first line and ‘Remove food’ on the second. It will stay in this mode until either of the push buttons is pressed. When that happens, the microwave goes back to entry mode.