



**Main Board firmware**

Both blower & sludge pump run on a 7 Hour timer cycle.

At the start of main loop timer cycle , the blower pump is turned off (Port RB1 = 0) and the sludge pump is turned on (Port RB1 = 1) for 2 mins and is then switched off (Port RB0 = 0) for the remainder of the timer cycle (6Hrs and 58Mins).

30 mins into the timer cycle the blower pump is turned on (Port RB1 = 1) and will remain on for 6Hrs and 30Mins.

During the main loop, if "No air" is detected via current sensing or air pressure switch, (Port RC1 = 0) is pulled LOW, entering an interrupt on change service routine. During the ISR, (Port RB2 = 1), turning on REL3 (if not, already on), (Port RA1 = 0), turning on LED2, RB3 = 1 (LA Alarm), 4KHz PWM is enabled on Port RB5, driving Q6 & PZ1 (if not, already on). If the blower pump is turned off (Port RB1 = 0), do not trigger an alarm ( Ignore Port RC1=0)

During the main loop, if "High water" is detected, (Port RC0 = 0) is pulled low with a float switch, entering an interrupt on change service routine. During the ISR, (Port RB2 = 1), turning on REL3 (if not, already on), (Port RA2 = 0), turning on LED3, turning on Q4, 4KHz PWM is enabled on (Port RB5), driving Q6 & PZ1 (if not, already on) & (Port RB4 = 1).

**Remote alarm circuit firmware**

If a "Low air" alarm is activated, LED8 & OPT01 are "ON", pulling Port RA4(U2) Low (if not already Low), enabling 4KHz PWM at Port RC2(U2), driving Q11 & PZ2.

If a "High water" alarm is activated, LED9 & OPT02 are "ON", pulling Port RA4(U2) Low (if not already Low), enabling 4KHz PWM at Port RC2(U2), driving Q11 & PZ2.

Both Alarms are muted by pressing SW2 for 2 secs. When pressed, this disables PWM on Port RC2(U2) and a 24Hrs timer is enabled. During the 24Hr period, Mute button SW2 is inactive.

If after 24Hrs and Port RA4(U2) is LOW (if not, keep PWM disabled), enable 4KHz PWM at Port RC2(U2) and activate mute button SW2 (re activate even if Port RA4(U2) is HIGH).