

'EFC-VSC'

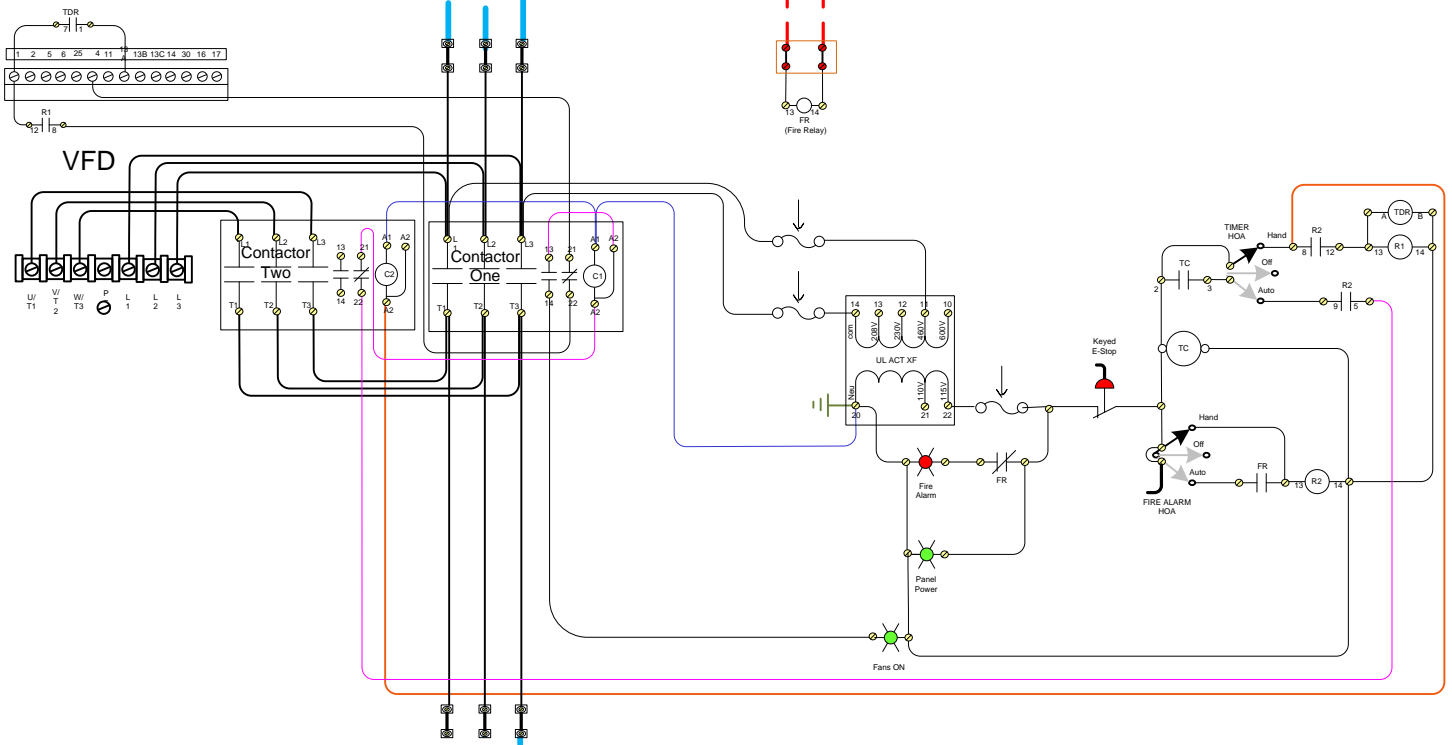
Emergency & Fire Control Variable Speed Control



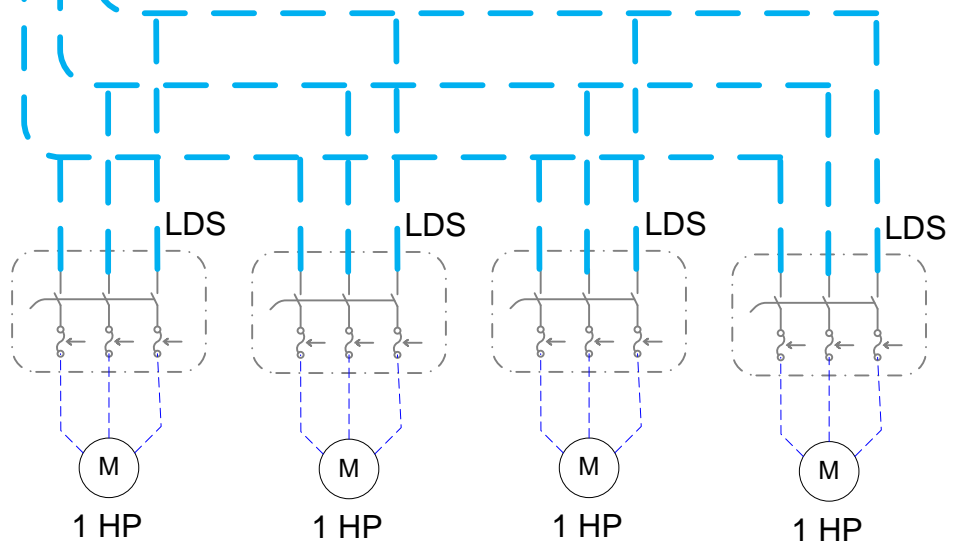
SonicAire

Power from Owners Power Panel

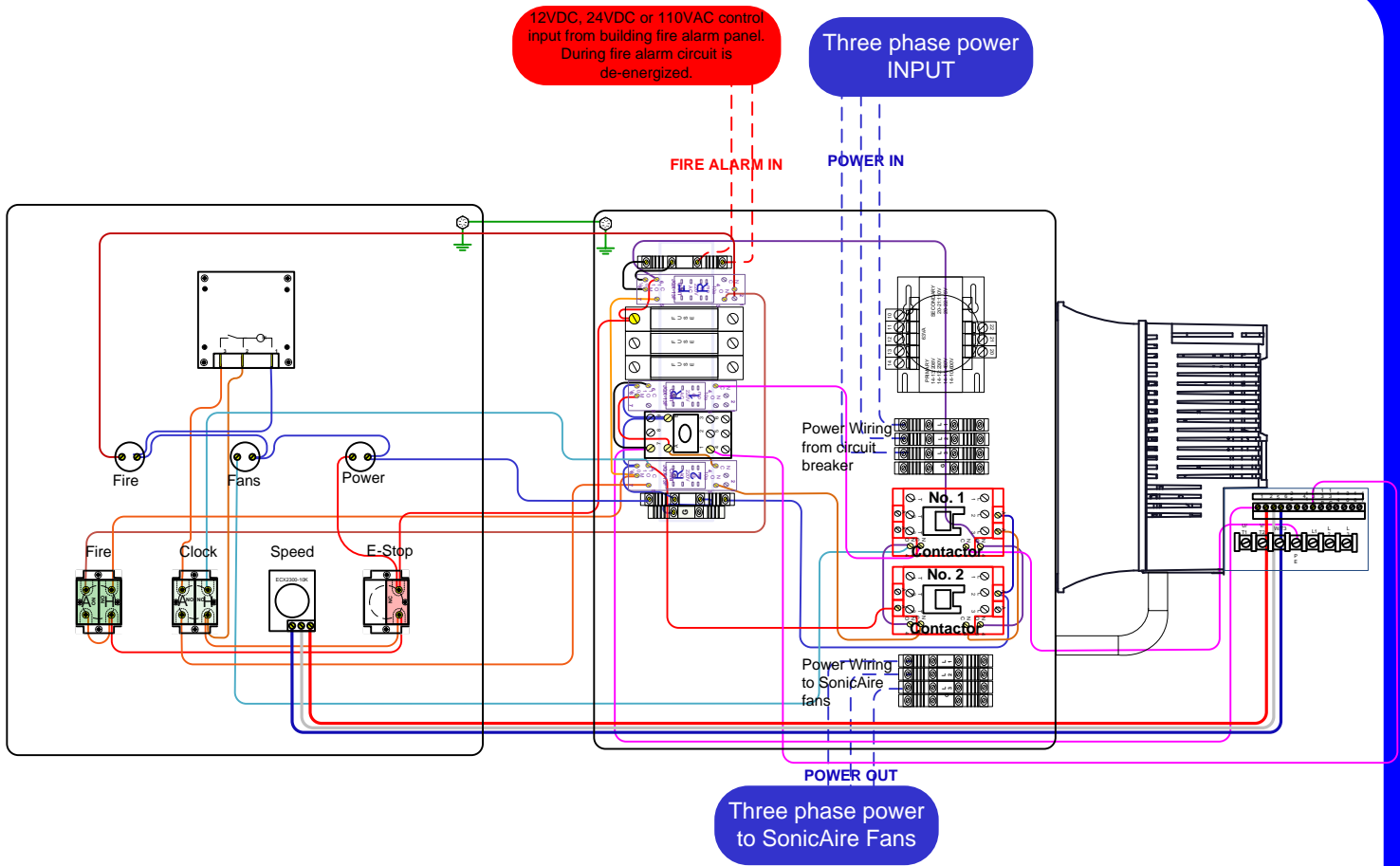
12VDC, 24VDC or 110VAC control
input from building fire alarm panel.
During fire alarm circuit is
de-energized.



Power Wiring by Owner



WIRING DIAGRAM



The EFC-VSC enables the owner/manager to automatically turn OFF the SonicAire fans whenever the fire alarm system detects a fire.

An E-Stop push button allows any worker in the plant to turn OFF the SonicAire fans in case of an emergency.

The FIRE switch allows a manager to bypass the fire alarm system during testing or maintenance of the fire alarm system.

The MODE switch is place in the CLEAN position for cleaning the plant with the fan at full speed. An electronic timer enables the owner to set the time for the fans to come ON and go OFF. A mode button on the face of the clock can be pressed to force the clock in the ON mode (a red light will come on when the clock is in the ON mode)

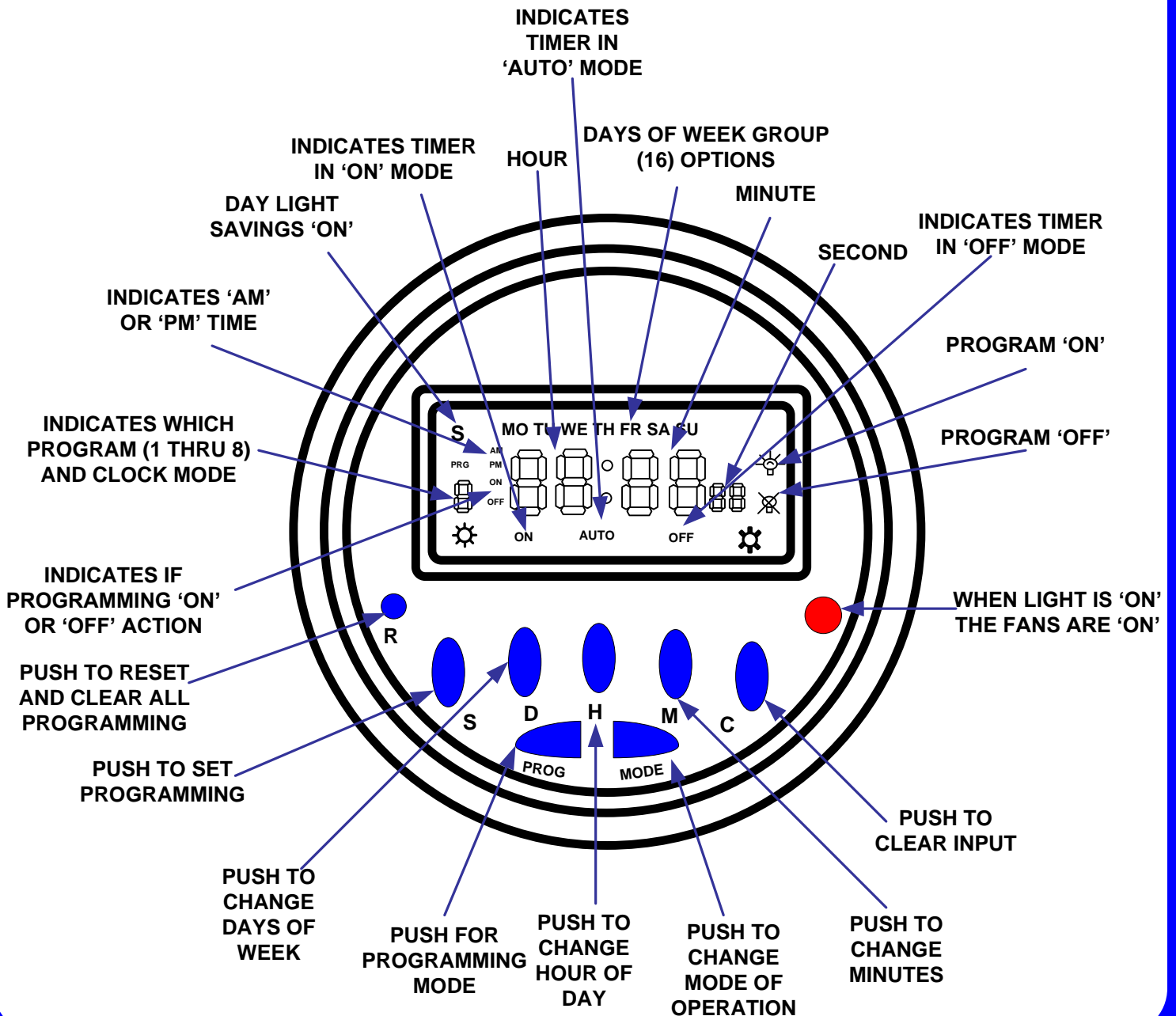
The MODE switch also enables the owner to turn the fans ON for COOLING (with variable speed control) and to set the reduce the fan speed down to the desired level (50% minimum speed).

The MODE switch can be place in the OFF position to prevent the fans from running.

START UP INSTRUCTIONS

1. Always start up the SonicAire fans with the MODE switch in the 'CLEAN' position and E-Stop button out (ON). Place Fire switch in BYPASS position if the fire alarm interface is not yet installed, otherwise place it in the ACTIVE position (the Fire ALARM light should be OFF)
 - a. Turn the clock ON by pressing the mode button on the face of the clock until it is in the ON mode and the light on the clock is ON.
2. Always start up the system with all of the LDS switches in the OFF position (red button pressed in).
 - a. Turn the fans ON at each LDS one at a time. Check for the fan motor to be running properly and the gearmotor to be running properly. Is the fan moving air and is SonicAire rotating and oscillating up and down?
 - b. Note the rotation for the fan blades. If it is running backward (counter clockwise) then you will not feel any air coming out of the fan discharge.
 - i. If the majority of the fans are running the correct direction then you will need to change the direction of rotation for the fans running backwards by switching two of the three phase input lines to the respective LDS.
 - ii. If the majority of the fans are running backwards then you will need to change the direction of rotation for all the fans by switching two of the three phase input conductors in the INPUT terminal blocks in the control panel. Next you will need to change the direction of rotation for the fans running backwards by switching two of the three phase input lines to the respective LDS.
3. Once you have checked out each fan and set them all in the proper rotation it is time to check out the COOLING mode of operation.
 - a. Turn the SPEED switch to 50% speed.
 - b. Turn the MODE switch to the OFF position for 5 seconds and then turn it to the COOLING position.
 - i. All of the fans should slowly ramp up to the speed of 50hz and then after a few minutes they should ramp down to a speed of 30hz.
 - c. If the fan blades are rotating the wrong direction (no air flow out of the fan discharge) then you will need to switch two input conductors from the VFD to the number two contactor in the control panel.
4. If any of the LDS switches trip out when starting up a fan, then press in the E-Stop button and do not reset it until you have spoken with the factory.
5. If any of the above functions do not work properly contact the factory for assistance.

DESCRIPTION OF MICRO-PROCESSOR DISPLAY AND BUTTONS



TECHNICAL INFORMATION

SUMMARY:

The ACT programmable electronic timer has a micro-processor as a core element to automatically switch ON/OFF your SonicAire fans. In case of a power failure a nickel-hydrogen battery backup will keep your programming for up to 9 months.

TECHNICAL SPECIFICATIONS:

Voltage: 110v/1ph/60hz

Relay: NC SPST rated for 10 amps resistive

Operating Environment: -4Fdb (-20C) to 150Fdb (65C)

Time Accuracy: +/- (1) second per day

MODE:

The output switch may be set to one of three different modes; they are 'ON', 'AUTO' and 'OFF'. By pressing on the 'MODE' button you will toggle through the three options. The clock will operate in the mode you leave it in. If you toggle to the 'ON' mode and then to the 'AUTO' mode and leave it in the 'AUTO' mode, then it will remain 'ON' until the next programmed 'OFF' time. If you toggle to the 'OFF' mode and then to the 'AUTO' mode and leave it in the 'AUTO' mode, then it will remain 'OFF' until the next programmed 'ON' time.

RELAY POSITION:

When the clock is in the 'ON' mode the output SPST relay will be closed. When the clock is in the 'OFF' mode the SPST relay will be open. A red light on the face of the display will be ON when the relay output is closed and OFF when the relay output is open.

RESET BUTTON: The small blue recessed button on the left side of the display with the letter 'R' below it may be pressed with a pen to clear all programming and reset the micro-processor memory.

SETTING CLOCK TIME AND DAY:

DAY: The day of week may be set by simultaneously pressing the 'S' set button and the 'D' day button. Continue to toggle the 'D' button until you get to correct day of the week then release both buttons.

HOUR: The hour of the day may be set by simultaneously pressing the 'S' set button and the 'H' hour button. Continue to toggle the 'H' button until you get to correct hour then release both buttons.

MINUTE: The minute of the hour may be set by simultaneously pressing the 'S' set button and the 'M' minute button. Continue to toggle the 'M' minute button until you get to correct minute then release both buttons.

12/24 HOUR CLOCK: The clock may be set to show military time (24 hour clock) or standard AM and PM 12 hour clock. To change from a 24 hour to a 12 hour clock simultaneously press the 'S' set and the 'PROG' program buttons simultaneously. When you get to the type of hourly display you want to see release both buttons.

DAYLIGHT SAVINGS TIME: The clock may be changed from/to day light savings by simultaneously press the 'S' set button and the 'MODE' mode button. When you get to the type of day you want release both buttons.

LOCKING PROGRAMMING: You can lock out others from all programming by pressing the 'S' set key and 'C' clear key at the same time for over three (3) seconds. The screen will display the **a** character on the left side when the programming is locked. You can unlock the programming by pressing the 'S' set key and the 'C' clear key at the same time for over three (3) seconds.

PROGRAMMING ON/OFF ACTIONS:

SCHEDULES: There are (8) eight ON schedules and (8) eight OFF schedules which can be programmed. Normally only one schedule will be used and it will turn the SonicAire fans ON at the same time and OFF at the same time each day of the week. Usually owners will run their SonicAire fans for one or two hours per day during the night when their plant is not occupied (such as from 1:00 am to 3:00 am).

To program a schedule you press the program 'PROG' button. The first time you press the button the screen will display 1^{on}. When you press the 'PROG' button again the screen will display 1^{off}. As you continue to press the 'PROG' button you will sequentially go through all eight ON and eight OFF schedules as shown: {1^{on}, 1^{off}, 2^{on}, 2^{off}, 3^{on}, 3^{off}, 4^{on}, 4^{off}, 5^{on}, 5^{off}, 6^{on}, 6^{off}, 7^{on}, 7^{off}, 8^{on}, 8^{off}}

Stop pressing the 'PROG' button when you get to the schedule you want to program.

DAYS OF THE WEEK GROUPS: While the display shows the schedule you want to program (such as 1^{on}) you will next program the group of days in the week you want your SonicAire fans to turn ON or OFF. As you sequentially press the day 'D' group button the display will show sixteen (16) different type of day groups. The groups are in the sequence as shown below:

Group 1: (Mo, Tu, We, Th, Fr, Sa, Su) [All days of the week.](#)

Group 2: (Mo)

Group 3: (Tu)

Group 4: (We)

Group 5: (Th)

Group 6: (Fr)

Group 7: (Sa)

Group 8: (Su)

Group 9: (Mo, Tu, We, Th, Fr) [5 day work week.](#)

Group 10: (Mo, Tu, We, Th, Fr, Sa) [6 day work week.](#)

Group 11: (Sa, Su) [2 day weekend.](#)

Group 12: (Mo, We, Fr)

Group 13: (Tu, Th, Sa)

Group 14: (Mo, Tu, We)

Group 15: (Th, Fr, Sa)

Group 16: (Mo, We, Fr, Su)

Stop pressing the 'D' day button when you get to the group of days you want to program.

HOUR OF THE DAY: Next you program the hour of the day you want your SonicAire fans to turn ON or OFF by pressing the 'H' hour button. As you sequentially press the 'H' hour button the time of day will go up by one (1) hour. [Note: You may use either a 24 hour clock display or a 12 hour (am/pm) display; see 12/24 HOUR CLOCK above.]

Stop pressing the 'H' hour button when you get to the hour of the hour you want to program.

MINUTE OF THE HOUR: Next you program the minute of the hour you want your SonicAire fans to turn ON or OFF by pressing the 'M' minute button. As you sequentially press the 'M' minute button the minute of the hour will go up by one (1) minute per press. [Note: If you hold the 'M' minute button down it will start to rapidly advance the minutes until you release the button.]

Stop pressing the 'M' minute button when you get to the minute of the hour you want to program.

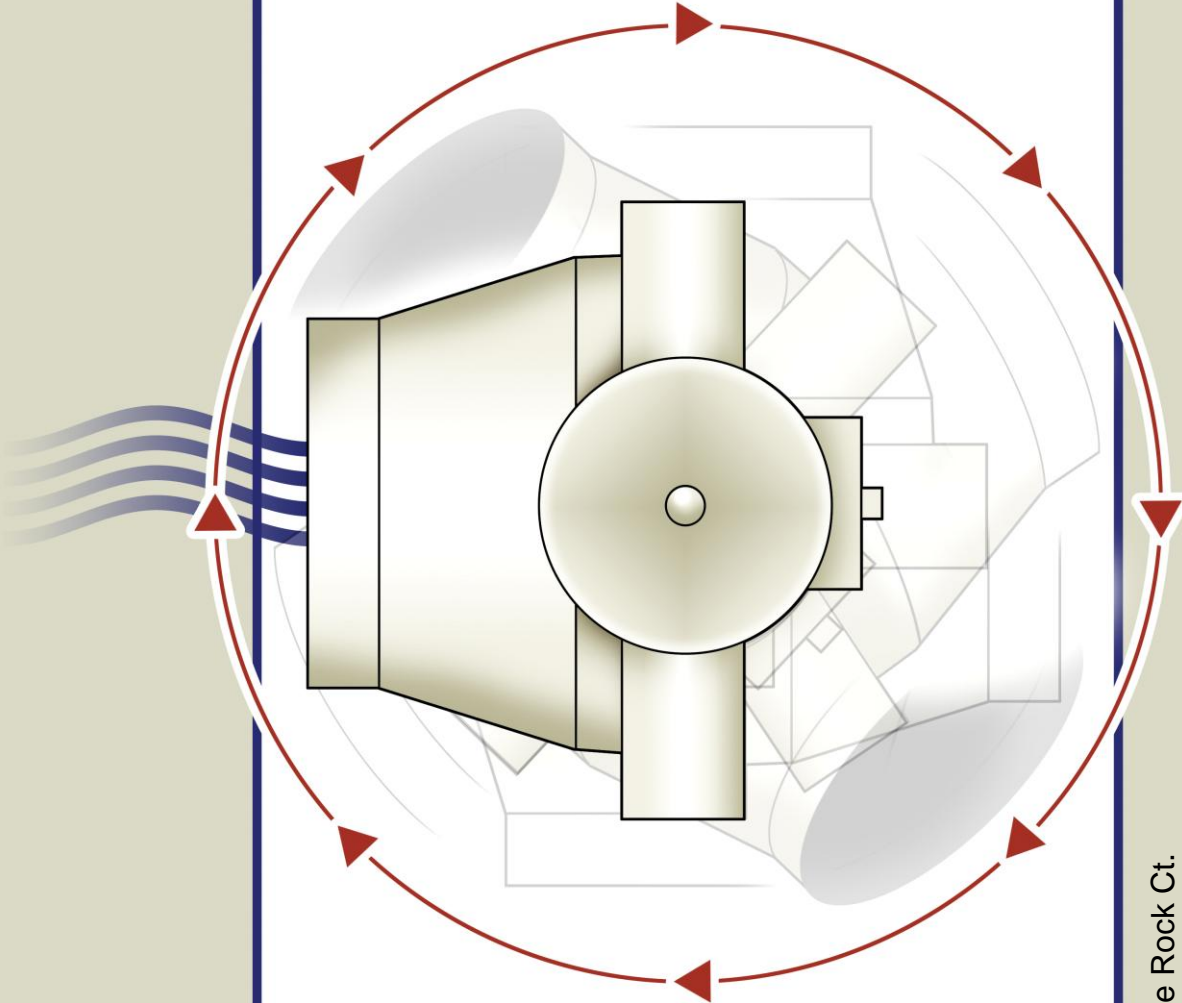
CLEARING A SCHEDULE: You can clear a schedule if you press the 'C' clear button while in the programming mode and the display shows the schedule {1^{on}, 1^{off}, etc.} you want to clear.

SETTING A SCHEDULE: Once you have programmed all the scheduled times during the week that you want to turn your SonicAire fans ON and OFF you can set the schedule and exit the programming mode by pressing the 'S' set button. {Note: If you stop pressing programming buttons for over 15 seconds the micro-processor will automatically set all of the programming you have done and exit from the programming mode}



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top view illustration

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