

SHURflo®

First in Fluid Innovation

Installation, Maintenance

And Troubleshooting

Instructions for

Polar-Aire I

Polar-Aire II

Polar-Aire III

&

Wall Control Units

Problems? Please consult your owners manual. Still have problems? Contact SHURflo (Western U.S. 800-854-3218) (Eastern U.S. 800-762-8094) www.shurflo.com

**POLAR~AIRE
INSTALLATION INSTRUCTIONS**

Required Tools:

- 1) Power drill and 3/8" drill bit
- 2) Hacksaw
- 3) #2 Philips screw driver
- 4) Scraper
- 5) Wire stripper/crimper
- 6) Keyhole saw (for wall control units)

Required Materials:

- 1) Butyl sealing tape (1/8" x 1" x 6')
- 2) 27 #8 x 3/4" Self-tapping screws
(Existing screws may be used.)
- 3) 18 Gauge or larger copper stranded wire
- 4) Insulated wire connectors
- 5) All weather Silicone sealant (Rubber roofs require EPDM Lap sealant.)

PREPARATION:

1. Roof thickness requirements. 1-1/2" to 4-1/4" (For roofs up to 6-1/4" use # 94-621-00 expansion ring kit)
2. Select fan location. **Warning!** This fan requires **12 VOLTS, DC** to operate. This should be kept in mind, when selecting a location.
3. Vent opening should be at least 13-7/8" X 13-7/8" and no more than 14-1/4" X 14-1/4".
4. Check inside ceiling assembly for proper fit, making sure there is adequate clearance from cabinets, doors, lights, etc.
Note! Position controls/dome hinge and dome knob towards front of coach.
5. Remove existing fan/vent and all sealant and gasket material from vent opening. Surface must be clean and dry to prevent leaks. It's best to cover the inside area with a tarp or blanket to catch debris that will fall from ceiling.
6. Pre-wire 18 gauge or larger, copper stranded wires to the front of the vent opening from a fused **12-VOLT** power source. **Warning!** When connecting to an existing fused circuit, check the fuse size at the panel. **A 10-amp fuse must be used. An approved in-line fuse holder may be installed if necessary.**
7. If you are installing a Polar~Aire equipped with "wall mounted control". You will need to choose a location that is away from heat and moisture to mount the control panel. (See "Wall Mount Control Mounting", below.) Run the 6-wire modular cable from the selected wall control location to the vent opening. (**Care must be taken when routing the cable to not break or damage the locking tang on the modular plugs.**) A 15 ft. cable is supplied. A 25 ft. cable may be ordered. **DO NOT attempt to modify the cable that is supplied.** If an extension is required, any standard 6 wire modular cable and 6-conductor coupler may be used to extend the length of the supplied cable. **Important!** In order for the Polar~Aire to work properly, the supplied cable **must** be used along with the extension cable. **Contact SHURflo at 800-854-3218 for assistance, or to order a 25 ft cable.**

EXTERIOR (ROOF) MOUNTING INSTRUCTIONS:

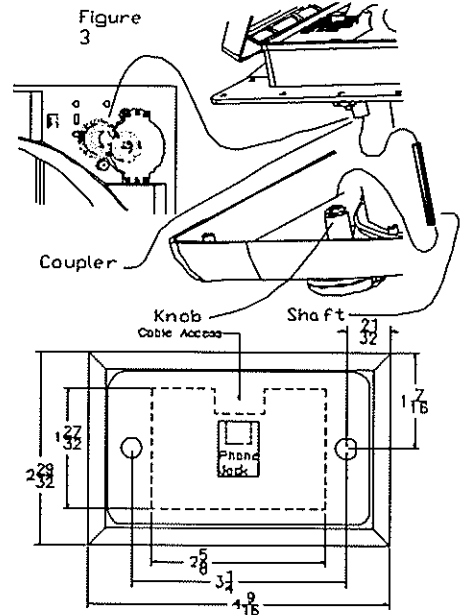
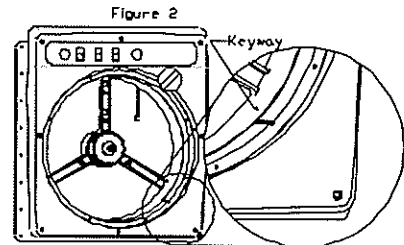
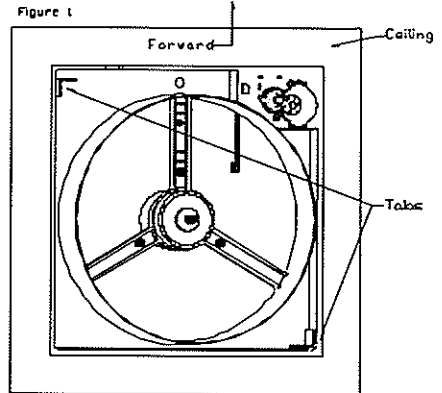
1. Apply Butyl sealing tape to the underside of the chassis flange, along the centerline of screw holes.
2. Position chassis assembly, with hinge end towards the front of the coach, into the roof opening. Check for proper fit and alignment. **Note:** there are two alignment tabs on the underside of chassis. These tabs must fit into the opening. (See fig. 1) Install the self-tapping screws previously removed, through the flange and into the roof to secure the chassis to the roof. Check for proper seal around entire flange.
3. Apply silicone sealant around the outer edge of flange and screw heads. For rubber roofs, use an EPDM compatible lap sealant. **DO NOT allow sealant to contact dome hinge or rain sensor (if equipped).** If this should happen, the sealant must be cleaned off immediately.

INTERIOR (CEILING) MOUNTING INSTRUCTIONS:

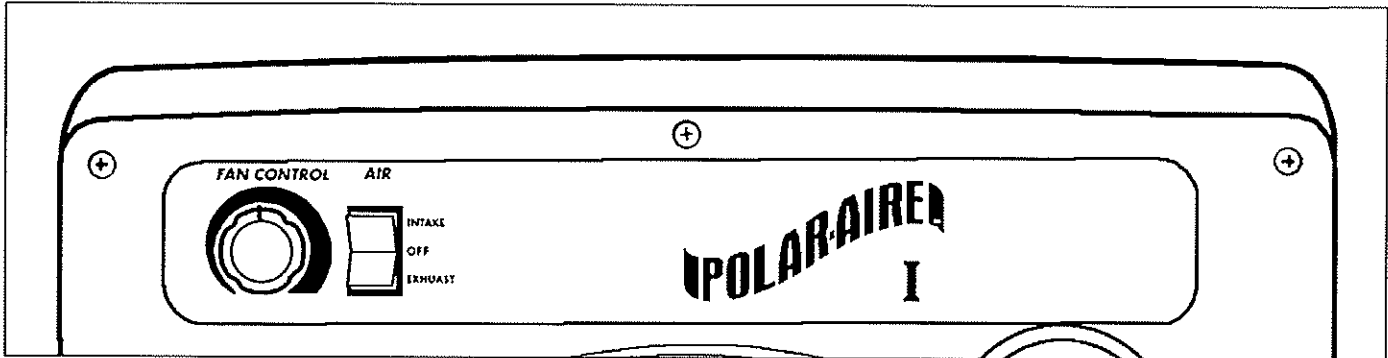
1. Using insulated connectors (not supplied) connect the **POSITIVE 12 VOLT** power lead from the coach, (refer to step # 6 preparation) to the **positive (Black)** wire from the Polar~Aire wire harness. Then connect the **NEGATIVE 12 VOLT** power lead from the coach, to the **negative (White)** wire from the Polar~Aire wire harness. **Note! Circuit board is polarity protected. The unit will not operate if power leads are reversed.**
2. Measure the roof thickness from the top of the roof to the bottom of the ceiling. The aluminum square shaft should be equal to this measurement **PLUS 1/2"**. Mark and cut the shaft to the correct size and de-burr (file) the cut end. Insert the cut square shaft into the square opening of the hand crank knob. (See fig. 3)
3. Connect the Molex plug between the chassis and ceiling assembly. Note! This plug is polarized, and can only be connected one way. (When Installing a Polar~Aire equipped with wall control, you must also connect the 6-pin modular cable to the modular socket on the circuit board). **Note!** Position the controls towards the front of the coach, making sure the duct alignment keys are engaged. (See fig. 2) Install the ceiling assembly making sure that the square shaft previously installed into the crank knob is properly aligned into the lift coupler on the chassis. (See fig. 3) Check all wires for interference. The ceiling assembly should fit flush against the ceiling and be parallel to the side walls of the vehicle without binding.
4. Secure the ceiling assembly to the ceiling with the 8 painted mounting screws supplied. **NOTE! There are two screw lengths.** (3) #8 x 1-1/2" screws must be installed at the shallow (rear) end of ceiling assembly.

WALL MOUNT CONTROL MOUNTING

1. If you are installing a wall mounted control panel, place the control in the desired location to check for interference with surrounding objects, before cutting the hole. 7/8" clearance is needed for the depth of the circuit board. After selecting a location, cut a hole 2-3/4" W X 2"H. Connect the 6-wire modular cable to the modular socket on the back of the control. Mount the panel with screws supplied. The other end of the cable will need to be plugged into the end of the ceiling circuit board.



POLAR~AIRE OPERATING INSTRUCTIONS
(Ceiling Mounted Controls)



Polar~Aire I

Intake/Off/Exhaust: ("Air" Switch)

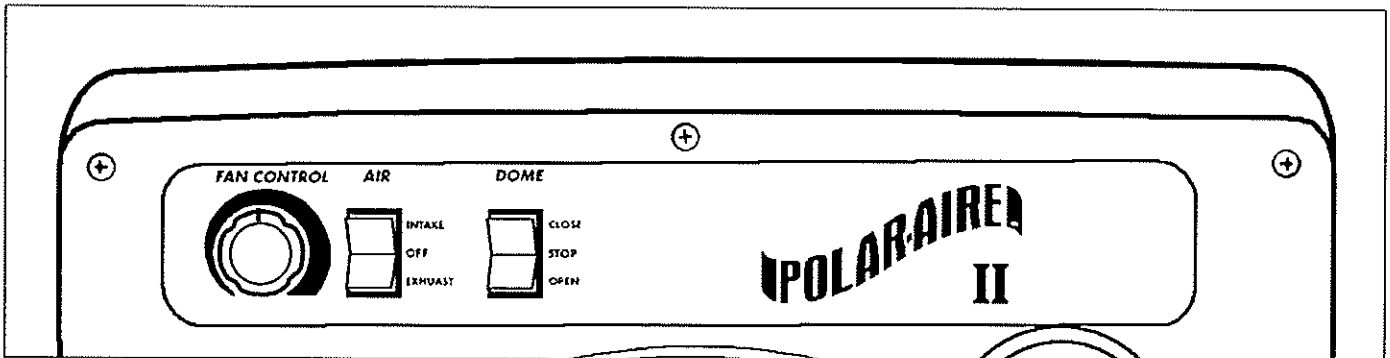
Select either, Intake or Exhaust to activate fan motor. (Always allow fan to stop, before changing direction)

Fan speed control:

Rotate "Fan Control" knob clockwise to increase/counterclockwise to decrease fan speed.

Manual Dome Knob:

Using the retractable lever, rotate the knob clockwise to open/counterclockwise to close. (Note! Fan will operate with dome in any position; however, airflow efficiency will be greatly reduced if dome is not opened fully)



Polar~Aire II

Intake/Off/Exhaust: ("Air" Switch)

Select either, Intake or Exhaust to activate fan motor. (Always allow fan to stop, before changing direction)

Fan speed control:

Rotate "Fan Control" knob clockwise to increase/counterclockwise to decrease fan speed.

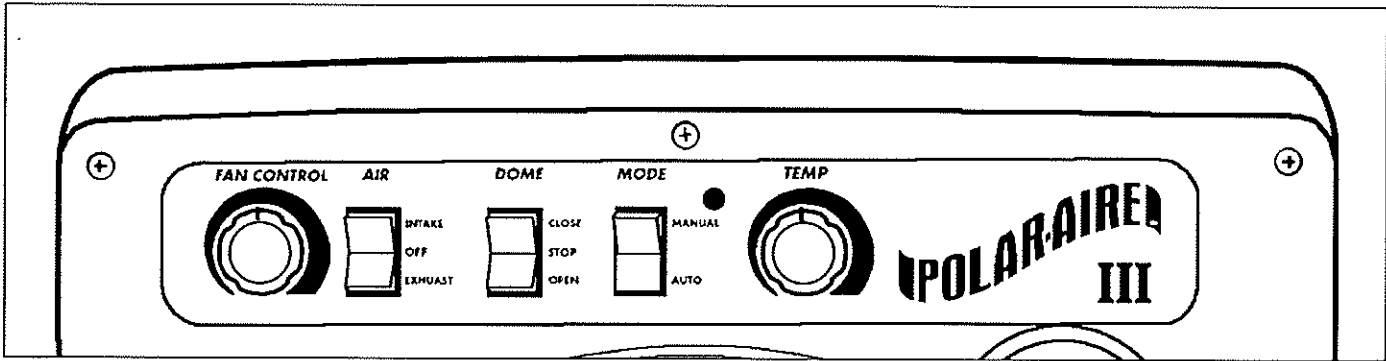
Dome Control:

This unit is equipped with a motorized dome motor. To operate, the "Air" switch must be turned to either intake or exhaust, then simply select "open" or "close", using the "Dome" switch, to raise or lower the dome. **NOTE!** During dome operation the fan motor will not operate. At the end of open/close cycle the dome motor will automatically shut off and the fan will operate. The dome may be stopped in any position, by simply returning the "Dome" switch to the "Stop" position, when desired. (Note! Fan will operate with dome in any position; however, airflow efficiency will be greatly reduced if dome is not opened fully)

Manual Dome Knob:

The manual dome knob is intended for emergency use only. Using the retractable lever, rotate the knob counterclockwise to close.

DO NOT attempt to hand crank while dome is automatically opening/closing



Polar-Aire III

Intake/Off/Exhaust: (Air Switch)

Select either, Intake or Exhaust to activate fan motor. (Always allow fan to stop, before changing direction)

Fan speed control:

Rotate "Fan Control" knob clockwise to increase/counterclockwise to decrease fan speed.

Manual Operation:

In the manual mode, you determine the configuration of the system. To operate, the "Air" switch must be turned to either intake or exhaust.

"Manual/Auto" switch must be turned to manual. Then simply select "open" or "close", using the "Dome" switch, to raise or lower the dome. **NOTE!**

During dome operation the fan motor will not operate. At the end of open/close cycle the dome motor will automatically shut off and fan will operate.

The dome may be stopped in any position, by simply returning the "Dome" switch to the "Stop" position, when desired. **(Note! Fan will operate with dome in any position; however, airflow efficiency will be greatly reduced if dome is not opened fully)**

Automatic Operation:

In the automatic mode, the dome automatically opens/closes based on temperature setting. Once the dome is open the fan will begin to operate in the selected direction and speed. **(Note! Fan will not operate in "Auto" mode when dome is closed)** If fan operation is desired, select Manual.

NOTICE: DO NOT LEAVE FAN SYSTEM IN AUTOMATIC POSITION WHILE VEHICLE IS IN STORAGE OR UNATTENDED FOR LONG PERIODS. FAILURE TO TURN SYSTEM OFF MAY RESULT IN BATTERY DISCHARGE AND/OR WATER DAMAGE.

Temperature control:

The inside temperature control, has an operating range from 60° F to 100° F. Adjust the knob to achieve a comfortable setting. **(Note! If operation is desired and the inside temperature is not within the 60° F to 100° F range, simply select "Manual" mode.)**

Rain Sensor:

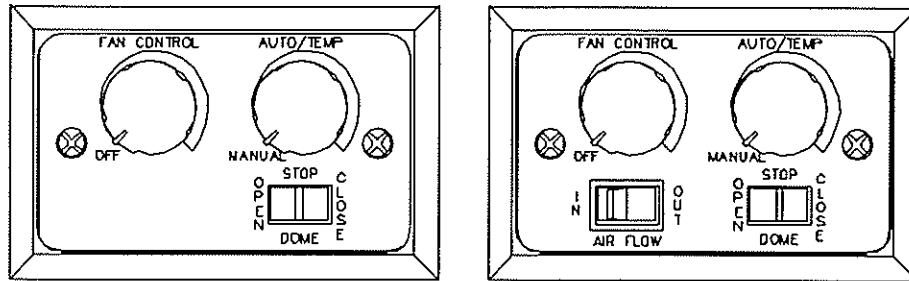
Operates only when in the AUTOMATIC MODE. When the rain sensor becomes wet, the dome will close automatically and the fan motor will shut off. When the rain sensor dries off automatic operation will resume.

Manual Dome Knob:

The dome knob is intended for emergency use only. Using the retractable lever, rotate the knob counterclockwise to close.

DO NOT attempt to hand crank while dome is automatically opening/closing

POLAR~AIRE OPERATING INSTRUCTIONS (Wall Controls)



Manual Operation:

In the manual mode, you determine the configuration of the system. Rotate "Fan Control" knob clockwise to turn the unit on. Rotate the "Auto/Temp" switch counterclockwise to the "Manual" position. Then simply select "open" or "close", using the "Dome" switch, to raise or lower the dome. **Note!** During dome operation the fan motor will not operate. At the end of "open"/"close" cycle the dome motor will automatically shut off. Return the "Dome" switch to the "Stop" position, and the fan will operate. Rotate the "Fan Control" knob clockwise to achieve the desired fan speed. The dome may be stopped at any time, in any position, by simply returning the "Dome" switch to the "Stop" position. On bi-directional models, the direction of the airflow may also be controlled by selecting "In" (for Intake) or "Out" (for Exhaust). On non bi-directional models, the fan will only operate in the "Out" (Exhaust) direction.

(Fan will operate with dome in any position; however, airflow efficiency will be greatly reduced if dome is not opened fully)

Automatic Operation:

NOTICE: DO NOT LEAVE FAN SYSTEM IN AUTOMATIC POSITION WHILE VEHICLE IS IN STORAGE OR UNATTENDED FOR LONG PERIODS. FAILURE TO TURN SYSTEM OFF MAY RESULT IN BATTERY DISCHARGE AND/OR WATER DAMAGE.

Rotate "Fan Control" knob clockwise to turn unit on. Rotate the "Auto/Temp" knob clockwise to put in "Auto" mode. The dome automatically opens/closes based on temperature setting. Once the dome is open the fan will begin to operate. On bi-directional models, the direction of the airflow may also be controlled by selecting "In" (for Intake) or "Out" (for Exhaust). On non bi-directional models, the fan will only operate in the "Out" (Exhaust) direction. Rotate the "Fan Control" knob clockwise to achieve the desired fan speed. **(Note: Fan will not operate in "Auto" mode when dome is closed. If fan operation is desired when the dome is closed, the "Auto/Temp" knob must be in the "Manual" position, and the "Dome" switch must be in the "Stop" position.)**

Temperature control:

The inside temperature control, has an operating range from 60° F to 100° F. Adjust the "Auto/Temp" knob to achieve a comfortable setting.

(Note: If operation is desired and the inside temperature is not within the 60° F to 100° F range, simply select "Manual" mode.)

Rain Sensor (If equipped):

Operates only when in the AUTOMATIC MODE. When the rain sensor becomes wet, the dome will close automatically and the fan motor will shut off. When the rain sensor dries off automatic operation will resume.

Manual Dome Knob:

The dome knob is intended for **emergency** use only. Using the retractable lever, rotate the knob counterclockwise to close. **DO NOT** attempt to hand crank while dome is automatically opening/closing.

Operating tips: Your Polar-Aire ventilation system will provide the best air exchange, if windows furthest away from the vent are opened. Air circulation can be regulated by adjusting the window opening or fan speed. All other vents should be closed. Open/close the front or rear windows to direct the airflow. A unique feature of your Polar-Aire ventilation system is the ability to circulate air with the dome closed, during inclement weather. The fan blade is designed similar to a home-style ceiling fan, which will draw air into the center and circulate it to the outer edges. With the dome closed, select exhaust (on bi-directional models) and adjust fan speed as desired.

Maintenance:

The chassis, dome, ceiling assembly, screen and rain sensor can be cleaned with a mild soap and water solution. The screen can be removed by removing the 8 mounting screws. **(Caution! Turn the switch off, before cleaning. When cleaning around the controls, be careful not to spray into the rocker switches. If circuit board becomes wet, allow it to dry thoroughly before turning on)**

TROUBLE SHOOTING GUIDE

<i>PROBLEM</i>	<i>CAUSE</i>	<i>SOLUTION</i>
No operation	(1) Low voltage	Correct power supply - 10.5 VDC minimum is required to operate
	(2) Reverse polarity	Correct wire connections to the Polar-Aire. White wire (ground) Black wire (positive), or Black wire (ground) Red wire (positive)
	(3) Blown fuse	Replace with appropriate 10 amp fuse
	(4) Loose plug connection	Remove ceiling assy. Check plug and pin connections between the circuit board and upper unit.
	(5) 6-wire modular cable (Wall control models only.)	Check modular cable connections. See modular cable assembly, paragraph 5A
No fan motor operation	(1) Fan motor / Circuit board	See paragraph 2A, "Fan Motor"
	(2) Wall control / 6-wire modular cable	See paragraph 2B, "Fan Motor"
Fan runs in one direction only (Bi-directional models, only)	(1) Selector switch	Replace circuit board
Fan speed control: (Low speed only)	(1) Low voltage	Correct power supply - 10.5 VDC minimum is required to operate
	(2) Motor / Circuit board	See fan speed control, paragraph 3A
	(3) Wall control / 6-wire modular cable	Check modular cable connections. See modular cable assembly, paragraph 5A.
Fan speed control (High speed only)	(1) Circuit board / Fan transistor	See fan speed control, paragraph 3B
	(2) Wall control / 6-wire modular cable	Check modular cable connections. See modular cable assembly, paragraph 5A
No Manual dome operation	(1) Broken hand crank knob	Replace crank knob.
	(2) Broken coupler gear	Replace coupler gear.
	(3) Broken worm / worm gear	Replace worm gear.
	(4) Lift arm	Replace lift arm assembly
No dome motor operation (Polar-Aire II, III & Wall Control series)	(1) Loose plug connection	Remove ceiling assy. Check plug and pin connections between the circuit board and upper unit.
	(2) Dome motor /Circuit board	See dome motor, paragraph 1A.
	(3) Wall control series	Check modular cable connections. See dome motor, paragraph 1B
Dome motor runs (Lid will not open or close)	(1) Broken gear (s)	Replace gear (s)
	(2) Lift arm	Replace lift arm
Fan will not operate in AUTO (Polar-Aire III & Wall Control series)	(1) Thermostat is set too high	Lower thermostat setting
	(2) Inside coach temperature below 60°F	Thermostat will not operate fan below 60° F. Switch selector to manual if operation is desired
	(3) Rain sensor	Wet or very dirty. Allow to dry or clean
	(4) Wall control series	Check modular cable connections. See modular cable assembly, paragraph 5A
Fan runs all the time in AUTO (Polar-Aire III & Wall Control series)	(1) Thermostat is set too low	Raise thermostat setting
	(2) Inside coach temperature above 100° F	Fan will operate continuously if temperature is 100° F or higher. Switch selector to manual if operation is not desired.

Note! The service procedures listed below, must be performed using a Volt Ohm Meter. Voltage readings may vary, depending on battery condition or power source.

1. DOME MOTOR:

A. **Polar~Aire II & III.** Remove ceiling assembly. (a) For the following tests, the circuit board must be plugged into the upper unit. (b) The 6-pin modular cable must be connected to the modular receptacle of the upper circuit board and wall control circuit board. (c) Check for voltage to the dome motor, as follows. (*NOTE! The dome motor is electronically controlled and will shut off when lid is fully opened or closed.*) (b) (If lid is closed) connect the - (ground) lead from your meter to the back of pin # 8 (Brown wire), on the chassis side of the Molex plug. Connect the + (positive) lead from your meter to the back of pin # 9 (Red wire), on the chassis side of the Molex plug. (c) Turn the "Air" switch to exhaust and select open with the "Dome" switch. (**On Polar-Aire III, the AUTO / Manual switch must also be in the manual position**) There should be a voltage reading of 6 to 8 volts DC. (d) Reverse your test leads if lid is open and select "Close" with the "Dome" switch. If voltage is present, replace the dome motor. (e) If no voltage, connect test leads to the backs of the same pins on the circuit board side of the Molex plug, to insure pin and wire connections between the plugs. If you still do not have a voltage reading, replace the circuit board.

B. Polar~Aire with Wall Control

The following should be done only after you have completed "No operation" step # 5. Remove ceiling assembly. (a) With the circuit board plugged into the upper unit. Check for voltage to the dome motor, as follows. *NOTE! The dome motor is electronically controlled and will shut off when lid is fully opened or closed.* (b) (If lid is closed) connect the - (ground) lead from your meter to the back of pin # 8 (Brown wire), on the chassis side of the Molex plug. Connect the + (positive) lead from your meter to the back of pin # 9 (Red wire), on the chassis side of the Molex plug. (c) Rotate "Fan control switch clockwise to turn on. (d) Rotate Auto/Temp knob counterclockwise to "Manual" (e) Select open with the "Dome" switch. There should be a voltage reading of 6 to 8 volts DC. (f) Reverse your test leads if lid is open and select "Close" with the "Dome" switch. (g) If no voltage is present, connect the - (ground) lead from your meter to pin # 5 (Yellow wire) on the circuit board. Connect the + (positive) lead from your meter to pin # 6 (Orange wire) on the circuit board. If voltage is present, the problem is in the plug connection or circuit board harness. (h) If no voltage is present, check the 6-wire modular cable. (See **Modular Cable Assembly, paragraph 5A**)

2. FAN MOTOR:

A. Polar~Aire I, II & III

The following should be done only after you have completed "No operation" steps 1 through 4. (a) For the following tests, the circuit board must be plugged into the upper unit, (b) the power switch to exhaust and fan speed control turned clockwise to high. (c) Check for voltage to the fan motor by connecting the - (ground) lead from your meter to into the back of pin # 4 (White or yellow wire) on the chassis side of the Molex plug. Connect the + (positive) lead from your meter to the back of pin #5 (Black or orange wire) on the chassis side of the Molex plug. There should be 10.5 to 14 volts DC. If voltage is present, replace fan motor. (d) If no voltage is present, connect the - (ground) lead from your meter to the back of pin # 4 (Yellow wire) on the circuit board side of the Molex plug. (e) Connect the + (positive) lead from your meter to the back of pin #5 (Orange wire) on the circuit board side of the Molex plug. If voltage is present, the problem is in the plug connection. (f) If you still do not have a voltage reading, you will need to check the (Fan Transistor). (See **Fan Transistor, paragraph 4A**)

B. Polar~Aire with Wall Control

The following should be done only after you have completed "No operation" steps 1 through 5, above. (a) For the following tests, the circuit board must be plugged into the upper unit. (b) The 6-pin modular cable must be connected to the modular receptacle of the upper circuit board and wall control circuit board. (c) Select, manual and place dome switch in the stop position. (d) Turn fan speed control clockwise to high. (e) Check for voltage to the fan motor by connecting the - (ground) lead from your meter to into the back of pin # 4 (White or yellow wire) on the chassis side of the Molex plug. Connect the + (positive) lead from your meter to the back of pin #5 (Black or orange wire) on the chassis side of the Molex plug. There should be 10.5 to 14 volts DC. If voltage is present, replace fan motor. (f) If no voltage is present, connect the - (ground) lead from your meter to pin # 5 (Yellow wire) on the circuit board. Connect the + (positive) lead from your meter to pin # 6 (Orange wire) on the circuit board. If voltage is present, the problem is in the plug connection or circuit board harness. (g) If no voltage is present, check the 6-wire modular cable. (See **Modular Cable Assembly, paragraph 5**).

3. FAN SPEED CONTROL: Polar~Aire I, II & III

A. (low speed only)

The following should be done only after you have completed "No operation", step 1. Remove ceiling assy. (a) With the circuit board plugged into the upper unit, turn the power switch to exhaust and fan speed control clockwise to high. (b) Check for voltage to the fan motor by connecting the - (ground) lead from your meter to the back of pin # 4 (White or Yellow wire), on the chassis side of the Molex plug. Connect the + (positive) lead from your meter to the back of pin #5 (Black or Orange wire), on the chassis side of the Molex plug. When the fan speed knob is turned clockwise, to high, there should be 10.5 to 14 volts DC. (c) When the fan speed control turned counterclockwise, to low, the voltage reading should be 2.0 to 3.5 volts DC. If voltage readings are correct and fan motor is still running at low speed, replace fan motor. (d) If the voltage reading is below 9 volts DC with the fan speed control turned to high, replace the circuit board.

B. (high speed only)

Remove ceiling assy. (a) With the circuit board plugged into the upper unit, turn the power switch to exhaust and fan speed control counterclockwise, to low. (b) Check voltage to the fan motor by connecting the - (ground) lead from your meter to the back of pin # 4 (White or Yellow wire), on the chassis side of the Molex plug. Connect the + (positive) lead from your meter to the back of pin #5 (Black or Orange wire), on the chassis side of the Molex plug. There should be 2.0 to 3.5 volts DC. If voltage reading is 10.5 to 14 volts DC you will need to check the fan transistor. (c) Connect the - (ground) test lead from your meter into the back of pin #6 (white ground wire) on the circuit board side of the Molex plug. Connect the + (positive) test lead of your meter into the back of pin # 3 (violet wire) on the circuit board side of the Molex plug. If no voltage is present, replace the circuit board. (d) If voltage is present move the - (ground) test lead to pin # 1 (green wire) and check voltage between pin # 1 & pin # 3. With the fan control turned to high you should have 10 to 14 volts DC. If no voltage, replace the circuit board. (e) If voltage is present, replace the fan transistor, located on the bottom of the fan motor support.

4. FAN TRANSISTOR: (if equipped)

A. Remove ceiling assembly (a) Connect the - (ground) test lead from your meter to the back of pin #6 (white ground wire) on the circuit board side of the Molex plug. Connect the + (positive) test lead of your meter to the back of pin # 3 (violet wire) on the circuit board side of the Molex plug. If no voltage is present, replace the circuit board. (b) If voltage is present, move the - (ground) test lead to pin # 1 (green wire) and check voltage between pin # 1 & pin # 3. If no voltage, replace circuit board. (c) If voltage is present, connect the - (ground) lead from your meter to the back of pin #3 (Violet wire), on the circuit board side of the Molex plug. Connect the + (positive) lead from your meter to the back of pin #2 (Grey wire), on the circuit board side of the Molex plug. With the fan control turned to high you should have 10 to 14 volts DC. If no voltage, replace the fan transistor, located on the bottom of the fan motor support. If you find proper voltage, replace the circuit board.

5. MODULAR CABLE ASSEMBLY:

A. Remove ceiling assembly and wall mounted control. (a) Carefully inspect the 6-wire modular cable connections, making sure they are correctly inserted into the receptacles of the upper circuit board and wall control panel. (b) If both of the connections are good, and the unit fails to operate properly, you will need to check continuity of the 6-wire modular cable. *Note!* The contacts of the modular plugs are recessed. Make sure that the ends of your test leads are making contact with the pins. If you have continuity problems, replace the cable ends and/or cable assembly. If there are no continuity problems, proceed to the next step. (c) Check the wire orientation. The orientation can be checked visually by removing the modular plugs from the circuit board and wall control. (d) Hold the cable with the modular connector facing away from you and the locking tang facing up, check the wiring sequence. (e) The wiring sequence from left to right is (blue, yellow, green, red, black, white) *Note! Both plug ends must be wired the same.* If the cable is wired correctly, go to paragraph 5B. If the cable is wired incorrectly, go to paragraph 5B, step E.

B. Reconnect the 6-wire modular plug to the ceiling assembly circuit board; do not reconnect the cable to wall control. *Note!* The ceiling assembly must be plugged into the 12 pin connector of the chassis to power the circuit board (a) Using a volt ohm meter, check for line voltage (10.5 to 14.0 VDC) from the circuit board to the modular plug at the wall control. (b) Connect the + (positive) lead from your meter to the (white wire) of modular plug. Using the - (ground) lead from meter, check for voltage at the black, red, green, yellow & blue wires. *Note!* The contacts of the modular plugs are recessed; make sure that the ends of your test leads are making contact with the pins. (c) If voltage is present between (white) and black, red, green, yellow & blue wires, replace the wall control.

If voltage is not present between (white) and black, red, green, yellow & blue wires, you will need to check continuity of the modular cable assembly, from end to end. (d) Damaged plug, lack of continuity between any wire or incorrect wire orientation could indicate a problem with the modular plug or cable assembly. (e) If the wire sequence is reversed, replace the RJ-11 (6-position) modular plugs making sure to correctly orient the cable, and re-check continuity. If the wires are randomly out of sequence, the cable must be replaced. (f) If no problem is found in the modular cable assembly, replace the upper circuit board.

Lack of continuity or proper voltage in the 6-wire modular cable, or a bad connection between the upper circuit board and wall mounted control will cause the following operation problems.

Quick reference guide	6-Wire Modular Cable
Operation Problem (Wall Control Series)	No Continuity or open circuit
(1) No operation	White wire
(2) Erratic fan operation; will operate on low fan speed only. No Auto function	Black wire
(3) High fan speed only in Manual & Auto	Red wire
(4) No Auto function regardless of temperature setting the dome will close if open. In Manual the fan will operate properly if dome is fully opened or closed. Erratic fan operation with the Dome partially opened.	Green wire
(5) Manual operation only. No Auto function.	Yellow wire
(6) No Dome switch functions in Manual. All Auto/Temp functions work correctly	Blue wire

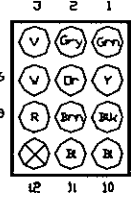
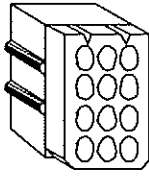
Polar-Aire Wiring Diagram Ceiling Mount Series

CIRCUIT BOARD PLUG,
VIEWED FROM "FRONT"
SIDE

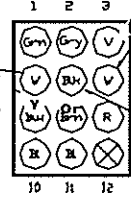
CIRCUIT BOARD PLUG,
VIEWED FROM "REAR"
SIDE

CHASSIS PLUG,
VIEWED FROM "REAR"
SIDE

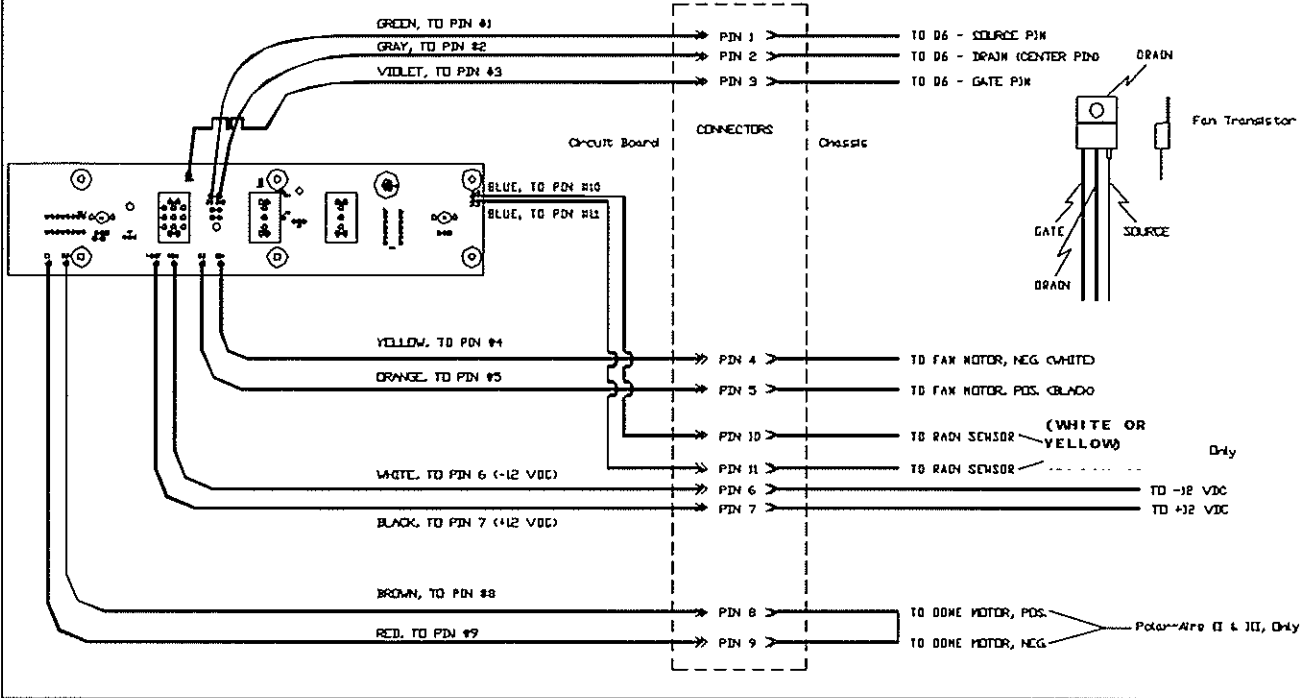
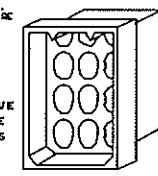
CHASSIS PLUG,
VIEWED FROM "FRONT"
SIDE



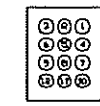
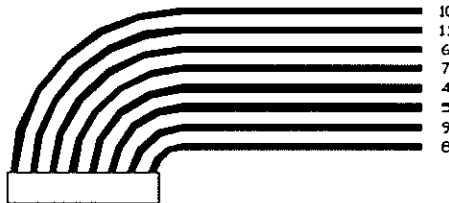
FAN MOTOR
NEGATIVE.
4 YELLOW
WIRE (MAY
HAVE WHITE
WIRE)



FAN MOTOR
POSITIVE
WIRE, 5
(MAY
HAVE
BLACK

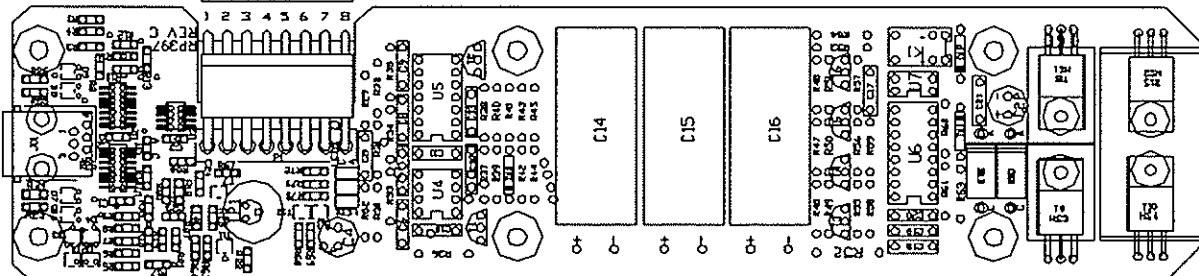


Polar-Aire Wiring Diagram Wall Mount Series



Back of
the Plug

Flat Conn. Pin Number	Wire Color	Function	Square Conn. Pin Number
1	Blue	Rain Sensor	10
2	Blue	Rain Sensor	11
3	White	-12 VDC	6
4	Black	+12 VDC	7
5	Yellow	Fan Motor	4
6	Orange	Fan Motor	5



Limited Warranty Information

SHURflo Pump Manufacturing Co. (SHURflo) warrants this product to be free from defects in material or workmanship to the original owner for personal or family use, for a period of 1 year, *5 years warranty on exterior Dome and Screen* from original date purchase. This product is warranted for 90 days from original date of purchase when used for commercial or business application. The warranty may provide for repair, including labor or exchange or replacement of unit, or parts as necessary.

An owner having a part or unit believed to be defective should contact a local RV dealer, or contact the nearest SHURflo office.

1. SHURflo will not accept the return of parts or units, will not send out parts or units or allow for the repair or replacement of parts or units under this warranty without giving their prior expressed authorization and without proof of date of purchase.
2. If SHURflo finds the unit or part to be defective and is the subject of a valid warranty claim, SHURflo will pay the dealer a labor allowance and supply repair part(s) or a replacement unit as applicable.
3. This warranty does not extend to parts or units which if, in the judgment of SHURflo, have been damaged or rendered defective by misuse, negligence, accident, improper installation, unreasonable use or if the unit or part has been tampered with or altered in any manner.
4. In no event, whether as a result of breach of contract, tort (including negligence) or otherwise, shall SHURflo be liable to any owner of a unit for any special damages arising out of the use, or inability to use that unit, nor for any claim against the owner by another party. Some states and provinces do not allow limitations on how long an implied warranty shall last or do not allow the exclusion or limitation of incidental or consequential damages. So the above limitation or exclusion may not apply to you.
5. This warranty gives you specific legal rights, and you may also have other rights that may vary from state to state.



★ISO Certified Facility

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First in Fluid Innovation

SHURflo reserves the right to update specifications, prices, or make substitutions.

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