Smith's ENVIRONMENTAL PRODUCTS

PROFILESERIES
PSU10, PSU15, PSU23, PSU30
PSU40

Installation
Operating
Maintenance

Pleasereadtheseinstructions thoroughly beforebeginning yourinstallation!

The Profile series fan convectors are designed for installation in a forced hot water (hydronic) heating system. They may also be used with conventional gas, oil, electric or solar powered water heaters.

IMPORTANT: BEFORE INSTALLING ANY HEATING TERMINAL UNIT TO A DOMESTIC WATER HEATER, CONSULT YOUR LOCAL PLUMBING CODES.

When installing fan convectors, an accurate heat loss calculation of the space is required. Match unit selection with BTUH output at system water temperature and flow rate. See the capacity chart below for output at various water temperatures and flow rates.

PERFORMANCE&SPECIFICATIONS

Capacities for the Profile fan convectors – BTU/hr @ 65ºF Entering air

Model	Fan Speed	Pres.Drop-ft	130º	140º	150º	160º	170º	180º	190º	200º	210º
PSU10	MAX	2.75	3307	4278	5325	6192	7024	7957	9081	9736	10598
	MIN		2315	2994	3727	4334	4915	5570	6350	6810	7415
PSU15	MAX	3.07	3983	5120	6255	7382	8933	10590	12250	14349	15430
	MIN		2788	3580	4375	5163	6250	7412	8575	10040	10800
PSU23	MAX	3.82	6645	8790	10932	13070	15210	17370	19500	21530	23820
	MIN		4650	6150	7651	9145	10645	12160	13645	15072	16675
PSU30	MAX	4.6	7550	10050	12750	15800	19150	22000	24900	27750	30450
	MIN		5300	7030	8900	11020	13380	15350	17400	19425	21310
PSU40	MAX	4.6	16500	19720	21384	23166	25300	29402	31600	35640	40700
	MIN		14204	17000	18250	20050	23008	25200	27055	29184	31040

Entering Water Temperature in degrees F – BTU/hr

1. Capacities for the PSU10, 15, 23 are based on 2 gpm. Correction factors for: .5 gpm = .80; 1.5 gpm = .96; 2.5 gpm = 1.07; 3.0 gpm = 1.12 and 5 gpm = 1.23.

2. Capacities for the PSU30 and PSU40 are based on 3 gpm. Correction factors for: 1.0 gpm = .85; 5 gpm = 1.18.

Note: All Smith's fan convectors include a low limit aquastat which shuts off power to the fan when water temperature falls to 90ºF. Power is restored when water temperature rises to 110ºF.

UnitInspection
Before starting the installation, carefully remove the fan convector from its box. Inspect for any damage that may have been caused in handling.

Locating thefanconvector
Profile series fan convectors are designed to give high BTUH capacities from a small cabinet. They should be installed as near to the area of greatest heat loss as possible. The removable skirt enables mounting flush to the floor or above the baseboard. Ensure adequate space to remove the cover for service and installation. Access to piping and electrical connections are through the back OR bottom of the unit.

Preparingthesite
Take off the outer cover by first removing the screws located on each side, then gently lifting the casing upward and away from the chassis. Determine the exact location of the unit and place the chassis against the wall. Mark the locations of the piping and electrical cutouts.

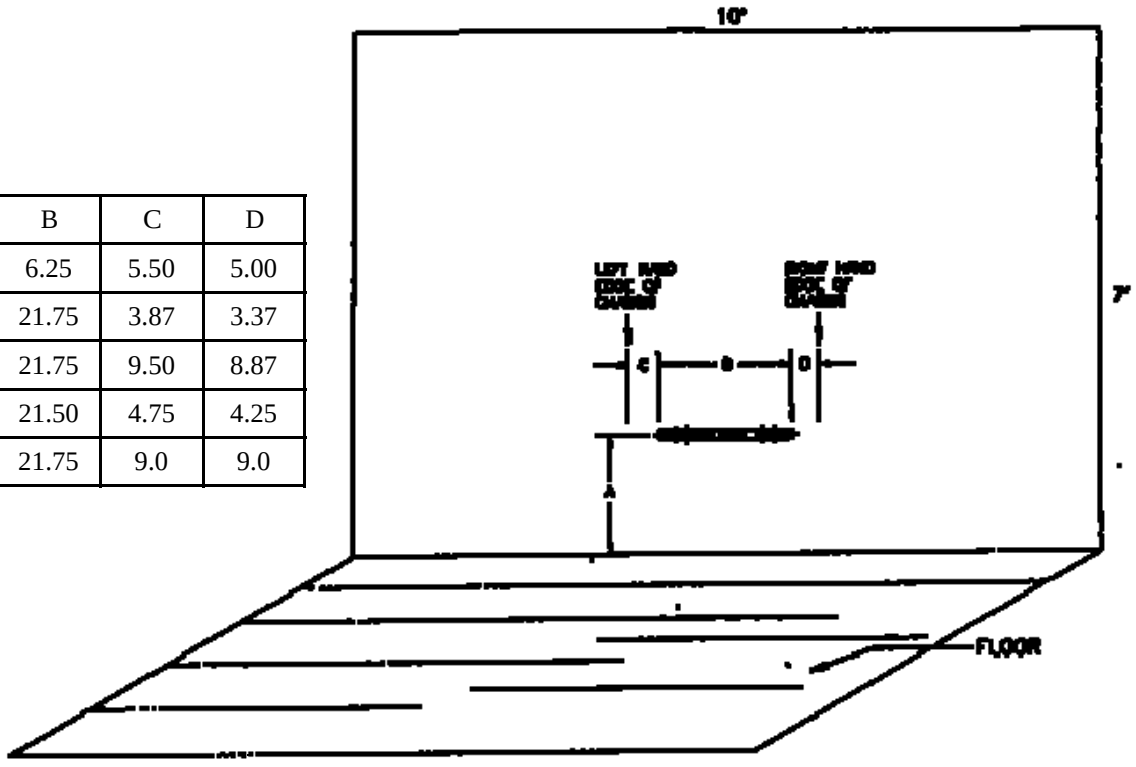
Note: The piping and electrical connections may be made through the back OR bottom of the unit.

Set the chassis aside and prepare piping and electrical accordingly. To remove the bottom skirt, turn the chassis over and take out screws located in the underside.

Installing thefanconvector
Profile fan convectors are equipped with the E-Z hanger mounting strip to make installation simpler. Make a straight level line on the wall per the diagram below. Center the E-Z hanger strip on the line and secure with the screws provided.

Note: Make sure that the E-Z hanger strip is level. Mount the chassis by engaging the slots in the rear onto the E-Z hanger strip. Screw the bottom of the unit into the wall through the holes provided.

Model	A	B	C	D
PSU10	12.03	6.25	5.50	5.00
PSU15	12.03	21.75	3.87	3.37
PSU23	12.03	21.75	9.50	8.87
PSU30	19.19	21.50	4.75	4.25
PSU40	19.19	21.75	9.0	9.0



Make sure the fan convector is level and secure to the wall.

Piping

Water supply and return connections are 1/2" copper tube for the PSU10, 15, 23 and 3/4" for the PSU30 and 40. The water supply is fed at the bottom connection and the return is the top connection (with the built-in bleeder air vent). Check to see that both soldered connections are leak free.

Note: Isolation valves are recommended on both supply and return piping to allow for service and balancing if necessary.

After filling the fan convector with water, it will be necessary to remove the air from it. A built in bleeder air vent is located on the return pipe at the top left of the unit. This vent may be operated with a screwdriver. Be careful as some water may be bled along with air. Since air accumulates at the high points of a system, it may be necessary to repeat this step after initial operation.

See diagrams for recommended piping diagrams.

ElectricalConnections

ALL ELECTRICAL CONNECTIONS MUST COMPLY WITH LOCAL OR NATIONAL REGULATIONS. IF IN DOUBT, CONSULT A QUALIFIED ELECTRICIAN.

Smith's Profile fan convectors are UL approved.
Remove the electrical junction box cover through the screw provided. There are two knockouts in the back and side of the junction box. Select the most convenient and bring wiring through it. Supply conductors should be 14 AWG and protected by a 15 AMP over current protector. Connect line input to black lead, neutral to white lead and ground to pillar marked G inside the junction box. Refer to diagram below for complete wiring instructions.

Operation

Before replacing the outer cover, ensure that the fan convector is operating properly. Activate the system thermostat and place speed switch in position I. Because of the low limit aquastat, it may be several minutes before the fan comes on. When it does come on, make sure that the switch is operational by moving to Off then II. Best results are obtained by leaving the switch in position I and reserving II for quick heat up or extreme conditions. If the unit is not operating, see the troubleshooting tips at the end of the manual.

Unitmaintenance

The Profile series fan convectors are designed for years of trouble free operation with very little maintenance. It is recommended however, that the unit be vacuumed occasionally through the front grille. This is especially important in areas with lots of dust, pet hair and dirt.

If servicing is required beyond this, contact the installing contractor or

Smith's Environmental Products
Customer Service
300 Pond St
Randolph, MA 02368
(781) 986 – 2525

TroubleshootingTips

If the fan convector does not operate:

⇒ Verify that supply voltage is 120 VAC, all wires are connected and fan switch is in Min or Max position.
⇒ Verify that hot water is going to and through the unit at 130ºF or above. Both supply and return pipes should be hot. An air bound coil will prevent the fan from operating. Bleed air from the coil if necessary.
⇒ By pass the low limit aquastat using a jumper wire. If the fan now runs, replace the aquastat.
⇒ If the fan does not run while the aquastat is jumped, replace the motor assembly.

Diagramofmodeland partnumbers

Item	Description	PSU10	PSU15	PSU23	PSU30	PSU40
1 & 3	Fan motor (single) & Assembly	S10029	NA	S10029	S10029	S10029
1A & 3A	Fan motor (double) & Assembly	NA	S06-0006	S06-0006	S06-0006	S06-0006
2	Outboard bearing	S10010	S10010	S10010 (3)	S10010 (3)	S10010 (3)
4	Rocker switch	S10051	S10051	S10051	S10051	S10051
5	Coil	S10052/53	S10052/53	S10054	S10107	S02-0006
6	LTCO 110-130º Optional	S10028	S10028	S10028	S10028	S10028
6A	LTCO 90-110º Standard	S10046	S10046	S10046	S10046	S10046