

The 4000W heating unit is installed in the foundation slab or intermediate floor, and contains a fan and four water/air-exchangers, with valves that are controlled by 1

- 4 external electric room thermostats. It is used together with heating unit box 4000A 100/100 (100 mm (4") spiral pipes) or with heating unit box 4000A 50/50 (50 mm (2") plastic pipes).

TECHNICAL DATA

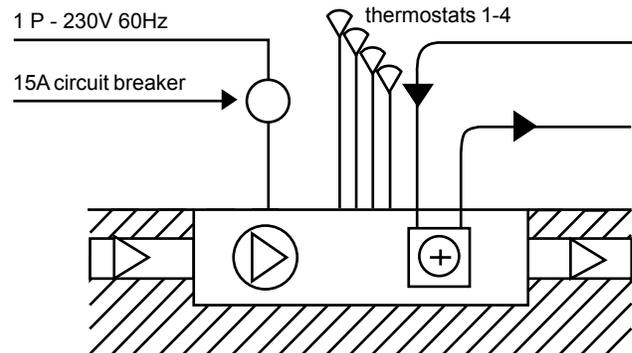
Operating voltage 1 P - 230V/24V 60Hz
 Fan motor power consumption 225W
 Breaker rating (GFI required) 15A
 Water-air exchanger output
 with 8 - 100 mm duct approx. 5 kW @ 55°C/130°F
 air flow approx. 900 m³/h / 530 CFM
 with 20 - 50 mm duct approx. 4 kW @ 55°C/130°F
 air flow approx. 750 m³/h / 440 CFM
 Air temperature range 30-55°C /85-130°F
 Connection, pipe lavatory style, 1/2" straight thread

Design data for all 4 exchangers and valves:
 Design flow 400 l/h / 1.75 USGPM
 Design pressure drop 21.5 kPa/7.2"/3.1 PSI
 Maximum full flow pressure drop (noise limited):
 35 kPa/11.2"/5.1 PSI
 Maximum zero flow pressure drop (i.e. maximum pump pressure, noise limited) 40 kPa/15"/7 PSI
 This data is generic. Each Legalett installation is unique. Refer to customized specifications on your installation design drawing for actual design parameters.

FUNCTION

The 4000W is controlled by one (single zone) to four (quad zone) external electric room thermostats. These external thermostats operate the control valves in the unit, opening the control valve when the room needs heat. A water temperature sensor built into the 4000W starts the fan motor when the inlet water temperature reaches 30°C (85°F) When the control valve is closed and the inlet water temperature decreases to approximately 27°C (80°F), the fan motor stops. The fan operation is independent of the position of the zone valve, and responds only to water temperature.

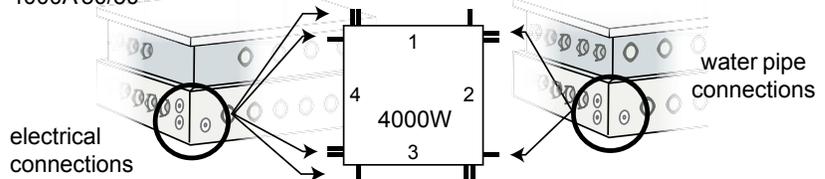
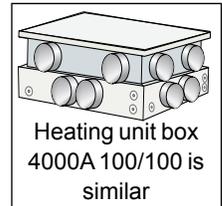
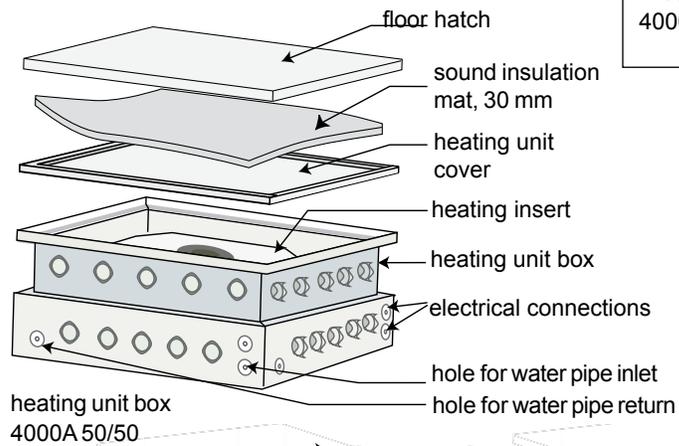
When controlled by a programmable thermostat, the 4000W can use two-tiered energy rates for night storage of less expensive energy in the LEGALETT heated floor.



ASSEMBLY

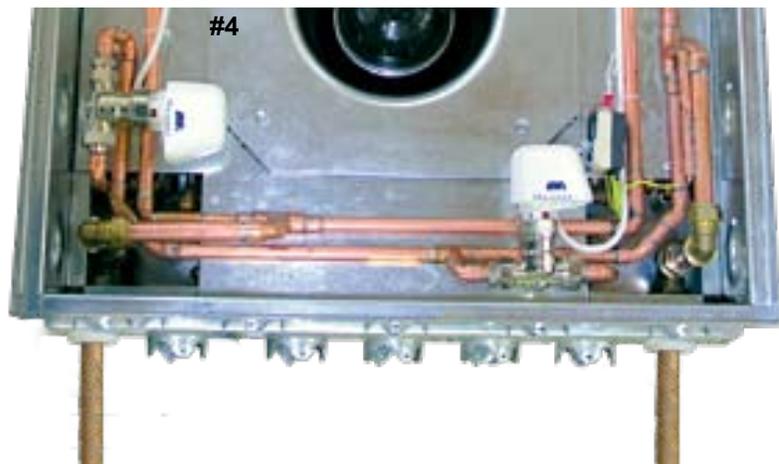
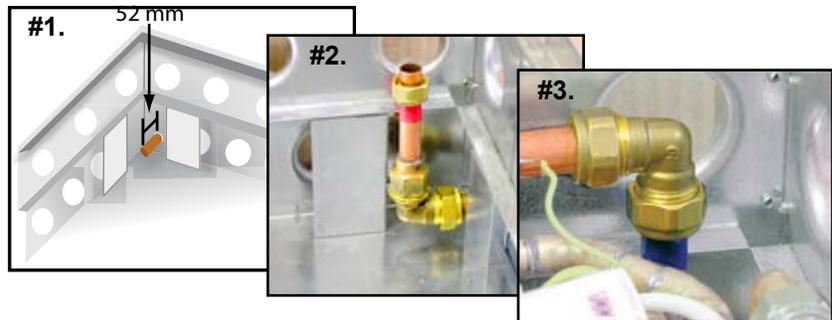
Install the heating unit boxes in the correct location, with the height adjusted so that the lid is flush with the concrete surface, before pouring the concrete. Refer to the instructions on the box cover.

1. Run conduit from one of the cable inlets on the box to the local disconnect for 230V power. Run conduits from the remaining cable inlets to a convenient location above the slab for each of the 24V thermostats, external 24V transformer (not supplied) and optional signal wiring to the boiler.
2. Connect the sleeves for the inlet and outlet water pipes to the water pipe connections of the furnace box. Install the water pipes, and make sure they extend at least 100 mm (4") into the box.
3. After the concrete has dried sufficiently with the construction heater, prepare the box for the heating unit according to the steps below, which are performed by an authorized electrician and plumber.
4. Clean the furnace box carefully. No water or dampness should be in the box or pipe system when installing the permanent insert.



HOT WATER CONNECTIONS

1. Install threaded adaptors with integral gasket for 1/2" NPSM (lavatory-style straight threaded) on water pipe, and adjust pipe to length so that the end of the fittings stick 52 mm (2") inside the box as shown in picture 1.
2. Loosen the two vertical pipes with their elbow connections, which are loosely mounted on the heating unit for mounting of inlet and return water pipes. Then mount the lower elbow connections to the water pipes, as shown in picture 2.
3. Mount the heating insert, so that the vertical pipes stick into the elbow connection above and tighten the joints. See pictures 3 and 4.
4. Turn on water and check for leaks.
5. Once the electrical connections have been completed, bleed any air from the system after a test run.

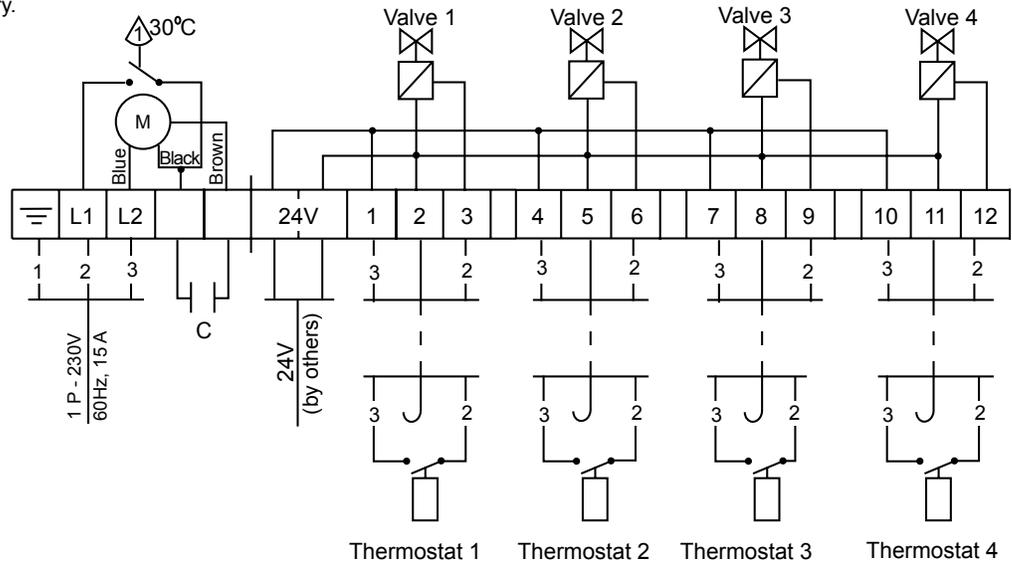


ELECTRICAL CONNECTIONS (Danfoss Thermostat model RET B)

1. Check the electrical data on the unit so that other installation materials are compatible. The installation must be performed by an authorized electrician.
2. Install a properly sized two-pole local disconnect to enable total isolation. GFI protection is recommended.
3. Use properly sized copper wire for connection to the panel.
4. Connect thermostats.
5. Seal the conduits which run into the unit using a duct sealing compound for both water and electrical, after the water and electrical connections have been made, for sound attenuation.
6. Install the heating unit inner cover. Test run for 1 hour and then open for a check. If necessary clean, check for dryness, and test run again. If moisture is still present, re-install construction heater and run until the system is dry.
7. Apply the adhesive backed pouch to the top of the inner lid and place this manual inside for future reference.
8. Install the sound insulating foam-rubber mat between the heating unit cover and the floor hatch.
9. Install the floor hatch. If desired, use standard transition trim between the hatch and the floor.

If 1 - 3 thermostats are used, install a jumper between the connection blocks 3 and 6, 9 and 12 as required.

Refer to the floor plan for thermostat locations.



ELECTRICAL CONNECTIONS (Thermostat model TH115) only

1. Check the electrical data on the unit so that other installation materials are compatible. The installation must be performed by an authorized electrician.
2. Install a properly sized two-pole local disconnect to enable total isolation. GFI protection is required.
3. Use properly sized copper wire for connection to the panel.
4. Connect thermostats.
5. Seal the conduits which run into the unit using a duct sealing compound for both water and electrical, after the water and electrical connections have been made, for sound attenuation.
6. Install the heating unit inner cover. Test run for 1 hour and then open for a check. If necessary clean, check for dryness, and test run again. If moisture is still present, re-install construction heater and run until the system is dry.
7. Apply the adhesive backed pouch to the top of the inner lid and place this manual inside for future reference.
8. Install the sound insulating foam-rubber mat between the heating unit cover and the floor hatch.
9. Install the floor hatch. If desired, use standard transition trim between the hatch and the floor.

If 1 - 3 thermostats are used, or if more than one thermostat is installed in the same room, install a jumper between the connection blocks 3 and 6, 9 and 12 as required.

Refer to the floor plan for thermostat locations.

