

INSTALLATION AND MAINTENANCE



HM/HME/HL/HLE Series Hydronic Heater

DANGER

ELECTRIC SHOCK OR FIRE HAZARD

READ ALL WIRE SIZING, VOLTAGE REQUIREMENTS AND SAFETY DATA TO AVOID PROPERTY DAMAGE AND PERSONAL INJURY



SPECIFICATIONS	
Fan Switch	2 speed
Grill Colors	White, black or almond
Element	Copper Alloy 122 to ASTM B-75
Voltage	120
BTU	4960—27250



Coils are made of copper alloy 122 manufactured to ASTM B-75 specifications. Brazing alloy is AWS-BCUP2 for use with potable water systems. Electrical circuit size: 15 amp maximum.

King's Hydronic heating system concept redirects existing hot water rather than expend energy to create a new heat source. King's hydronic heating system uses hot water from your hot water tank (any hot water source—gas, electric, solar, etc.), passes it through highly efficient radiant heat plates, and returns the hot water to your tank. Inside the heater, a gentle fan draws room temperature air across the radiant plates where the air is warmed before being pushed back out into the room. But the real magic is in our thermostat system, which maintains consistent individual room temperatures while using the least amount of energy possible.

⚠ WARNING ⚠

READ CAREFULLY - Use the heater only as described in this manual. Any other use is not recommended and could result in fire, electric shock, and personal injury. Following these instructions will prevent difficulties that might occur during the installation and use of the heater. Please study the instructions first, as they may save considerable time and trouble during use addition to providing important safety information. Make sure to save these instructions for future use.

- ⚠ WARNING LOCATION:** If possible find a location that is not on an outside wall, this will maintain the insulation value of your home and reduce cold air leaks that come from gaps in the outside wall. Mount the heater in a location that will not have furniture blocking the front of the unit within 2 feet (a corner wall is ideal). Blowing heat towards the coldest part of the room (like a window) is best. To heat the room evenly warm air needs circulate freely without obstructions.
- ⚠ WARNING BEDROOMS:** A good location for a heater in a bedroom is just to the inside of the door of that room, blowing heat towards a cold glass window. The thermostat should be located just above the light switch, with the heater in a stud bay over from the thermostat. Many times this one stud bay ove is not possible due to very small bedrooms, where the thermostat will be in the same stud bay as the heater. Temperature control and accuracy will suffer in this instance due to the coils giving off convected heated air, the heated air moving up the wall where it will then effect the thermostat's sensors.
- ⚠ WARNING LIVING ROOMS:** Mount the heater in a location that will not have furniture blocking the front of the unit within 2 feet. Often, a corner wall is ideal because it is a traffic area with less chance of furniture placement. Blowing heat towards the coldest part of the room (like a large window area) is best. Mount thermostat near a light switch for that room if it is in an open area.
- ⚠ WARNING MOUNTING:** The heater should be located a minimum of 4 inches off a finished floor, although, to dramatically reduce the lint and dust intake, up to 10 inches off the floor. However, too high placement on a wall may change the visual appearance of the product. King further recommends placement 4 inches from any side wall longer than 18 inches, and 8 inches below a ceiling or shelf that protrudes more than 6 inches.
- ⚠ WARNING THERMOSTATS:** Only King model HB/HBP or HW/HWP/HWPT-120 thermostats are designed to control this heater. Any other line voltage electric heat thermostats will not control the pump and fan in a sequential preheat start up, nor have a definite off for both fan and pump. Standard bi-metal electric heat thermostats are not designed for, and should never be used for, control of hydronic fan heating. A King H series thermostat should not, when possible, be mounted above the fan coil heater, instead off to the side, where the convective heat from the coils will not effect the temperature sensing when the fan heater is off. For best performance, pipes running to the heater (if they enter into the thermostat's stud bay) should not have a total combined length (inlet/ outlet) of over 10 feet, and should not be closer than 16 inches in any direction the thermostat's junction box in that stud bay. If the thermostat must be in the stud bay with the heater the thermostat should be mounted on the left side of the stud bay as that side has no heat fins thereby having the least impact on the thermostats accuracy.



Smart Heating Solutions

INSTALLATION INSTRUCTIONS

! WARNING Disconnect power at main panel, make certain all wiring is in accordance with all local codes. Ensure units are properly grounded and heater voltage rating is the same as supply load.

- The heater should be located a minimum of 4 inches off a finished floor, although, to dramatically reduce the lint and dust intake, mount up to 10 inches of the floor. However, too high of placement on a wall may change the visual appearance of the product. King further recommends placement of 4 inches from any side wall longer than 18 inches, and 8 inches below a ceiling or shelf that protrudes more than 6 inches. Screws or nails can be used to secure the can to the studs. The wall can should take up the room of a standard 2 x 4 stud cavity. If deeper than a 2 x 4 stud wall make sure the can reveals itself outside the finished wall by 3/4". Make sure the "UP" sticker is clearly observed in the can and on the grill.
- Feed the power to the center bottom of the can, with a maximum of 15 Amp circuit protection. Provide a 1/2" strain relief and follow all local and national electrical codes for wire sizing and proper connection. Aluminum wire will require special connectors and preparation to the connections for a safe operation.
- Feed both the water lines to the upper left corner of the can. Bare copper tubes are provided to apply your preferred connector. If you have a FS model then the fan speed is selectable by the switch, just apply power to the black and white leads
- Complete piping and bleed air out of coil for 5 minutes with system pump operating at maximum flow rate or garden hose connection to system.
- Copper coils are manufactured to be used with potable water and pressures up to 125 psi. Copper tubing used in the coil is Alloy 122 made to ASTM-B-75 specifications. This is the same Copper used in homes for drinking water.
- Connect the electrical power and brazing compounds to the motor leads selecting the speed required for the application. The white wire is the common lead, black is high speed and red is low speed. Use only two leads, white and black for high speed, or white and red for low speed. Connect the green ground wire to the bare ground wire.
- A proper thermostat per heater should be used to maintain and provide the best comfort and energy efficiency from your King heaters. King recommends the use of King models HW120, HWP120, and one timer thermostat per system, the HWPT120, as they were specifically designed for use with the heater in potable water applications. King thermostat models HB and HBP are also approved for use. In closed loop systems use best practices.
- Test fan coil for motor operation and check for leaks at pipe connections. Re-check for leak after system has been heated.
- Place grill on, using the 2 screws provided. Do not over tighten.

WATER TEMPERATURE AND AIR FLOW RATES

Model Number	Volts	Can Size				Grill Size		
HM & HME 812 & 1012—All versions	120	21 3/4" H x 14 1/4" W x 4 3/4" D				23 1/4" H x 15 1/2" W x 3/4" D		
Unit Bearing Motor	FT. OF WATER PRESSURE DROP @ 2 GPM	120°F 48°C	140°F* 60°C	160°F* 71°C	180°F 82°C	Motor Hi/Lo CFM	Decibels at 3-ft distance	Hi/Lo: Amps Hi/Lo: Watts
HM	HM812-8/11	.72	4800 Btu 3300 Btu	6250 Btu 4900 Btu	9500 Btu 7100 Btu	13700 Btu 11000 Btu	3 watt output 250/150 CFM	Hi 55 dba Lo 52 dba .30/.29 Amps 36/34.8 Watts
		.72	6000 Btu 4800 Btu	8550 Btu 7100 Btu	11200 Btu 8000 Btu	14800 Btu 11000 Btu	5 watt output 375/220 CFM	Hi 62 dba Lo 58 dba .42/.38 Amps 50.4/45.6 Watts
	HM1012-10/13	.90	7500 Btu 5500 Btu	10000 Btu 7900 Btu	13500 Btu 9750 Btu	16600 Btu 12000 Btu	3 watt output 250/150 CFM	Hi 55 dba Lo 52 dba .30/.29 Amps 36/34.8 Watts
		.90	8812 Btu 6600 Btu	11700 Btu 8800 Btu	15500 Btu 11600 Btu	18700 Btu 14000 Btu	5 watt output 375/220 CFM	Hi 62 dba Lo 58 dba .42/.38 Amps 50.4/45.6 Watts
HME	HME812-8/11	.72	6000 Btu 4800 Btu	8550 Btu 7100 Btu	11200 Btu 8000 Btu	14800 Btu 11000 Btu	150 to 375 High 150 to 250 Low	Hi 57/54 dba Lo 54/51 dba .06/.04 Amps 7.2/4.8 Watts
		.90	8812 Btu 6600 Btu	11700 Btu 8800 Btu	15500 Btu 11600 Btu	18700 Btu 14000 Btu	150 to 375 High 150 to 250 Low	Hi 63/60 dba Lo 54/51 dba .09/.06 Amps 10.8/7.2 Watts
	HME1012-11/15	.90	8812 Btu 6600 Btu	11700 Btu 8800 Btu	15500 Btu 11600 Btu	18700 Btu 14000 Btu	150 to 375 High 150 to 250 Low	Hi 63/60 dba Lo 54/51 dba .09/.06 Amps 10.8/7.2 Watts

* Most common operating temperatures

TECHNICAL DATA

WATER TEMPERATURE AND AIR FLOW RATES CONTINUED

Model Number	Volts	Can Size				Grill Size		
HL & HLE 1012 & 1412—all versions	120	24 3/4" H x 14 1/4" W x 4 3/4" D				26 1/4" H x 15 1/2" W x 3/4" D		
Unit Bearing Motor	FT. OF WATER PRESSURE DROP @ 2 GPM	120°F 48°C	140°F* 60°C	160°F* 71°C	180°F 82°C	Motor Hi/Lo CFM	Decibels at 3-ft distance	Hi/Lo: Amps Hi/Lo: Watts
HL	HL1012-8/11	.90	6000 BTU 4700 BTU	8550 BTU 6200 BTU	11100 BTU 8000 BTU	14800 BTU 11000 BTU	3 watt output 250/150 CFM	Hi 57/55 dba Lo 54/52 dba .30/.29 Amps 36/34.8 Watts
		.90	7500 BTU 5500 BTU	10000 BTU 8000 BTU	13500 BTU 9750 BTU	16600 BTU 12000 BTU	3 watt output 250/150 CFM	Hi 57/55 dba Lo 54/52 dba .30/.29 Amps 36/34.8 Watts
	HL1012-11/15	.90	8812 BTU 6600 BTU	11700 BTU 8800 BTU	15500 BTU 11600 BTU	18700 BTU 14000 BTU	5 watt output 375/220 CFM	Hi 64/62 dba Lo 60/58 dba .42/.38 Amps 50.4/45.6 Watts
		1.2	10600 BTU 7400 BTU	15500 BTU 11600 BTU	20000 BTU 15000 BTU	26000 BTU 19500 BTU	5 watt output 375/220 CFM	Hi 64/62 dba Lo 60/58 dba .42/.38 Amps 50.4/45.6 Watts
	HL1412-20/25	1.2	17000 BTU 13000 BTU	20000 BTU 16800 BTU	24050 BTU 19100 BTU	27250 BTU 22500 BTU	9 watt output 375/220 CFM	Hi 64/62 dba Lo 60/58 dba .42/.38 Amps 50.4/45.6 Watts
HLE	ECM Motor	.90	8812 BTU 6600 BTU	11700 BTU 8800 BTU	15500 BTU 11600 BTU	18700 BTU 14000 BTU	150 to 375 High 150 to 250 Low	Hi 57/55 dba Lo 54/52 dba 0.6/0.4 Amps 7.2/4.8 Watts
			1.2	10600 BTU 8812 BTU	15500 BTU 11700 BTU	20000 BTU 15500 BTU	26000 BTU 18700 BTU	150 to 375 High 150 to 250 Low
	ECM Motor	FT. OF WATER PRESSURE DROP @ 2 GPM	120°F 48°C	140°F* 60°C	160°F* 71°C	180°F 82°C	Progressive CFM	Run/Start Energy Saver

HYDRONIC THERMOSTATS

ELECTRONIC LINE POWERED 2-STEP HYDRONIC FAN COIL THERMOSTATS		
UPC # 093319	MODEL NUMBER	DESCRIPTION
19048	HW120	120V 12A ELECTRONIC, 2 STEP—3 WIRE
19047	HWP120	120V 12A 2 STEP—3 WIRE
19049	HWPT120	120V 12A ELECTRONIC 2 STEP, WITH PUMP TIMER
ELECTRONIC BATTERY POWERED 2 STEP HYDRONIC FAN COIL THERMOSTATS		
UPC # 093319	MODEL NUMBER	DESCRIPTION
19050	HB	240/208V 12A SINGLE POLE, 2 STEP HYDRONIC—3 WIRE
19051	HBP	120/208/240V SINGLE POLE, 7-DAY PROGRAMMABLE THERMOSTAT