EMI AMERICA SERIES
MULTI-ZONE LIMITED RANGE HEAT PUMP
CONDENSING UNITS

S2HA HEAT PUMPS
Nominal Circuit Capacities:
9,000 & 12,000 Btuh units.

S2HA Multi-Zone
This manual is intended as an aid to a qualified service personnel for proper installation, operation, and maintenance of these EMI America Series multi-zone heat pump condensing units. Read the instructions thoroughly and carefully before attempting installation or operation. Failure to follow these instructions may result in improper installation, operation, service, or maintenance, possibly resulting in fire, electrical shock, property damage, personal injury, or death.

Shipping Damage MUST be Reported to the Carrier IMMEDIATELY!!!
Examine the carton for signs of damage if any is evident open packaging and check the unit for shipping damage.

TO THE INSTALLER

(1) Retain this manual and warranty for future reference.

(2) Before leaving the premises, review this manual to be sure the unit has been installed correctly and run the unit for one complete cycle to make sure it functions properly.

To obtain technical service or warranty assistance during or after the installation of this unit, check our website @ www.enviromaster.com or call your installing contractor or distributor. Our technical service department may be contacted at 1-800-228-9364.

When calling for assistance, please have the following information ready:

• Model Number____________________

• Serial Number____________________

• Date of installation________________

Tampering with the EMI America Series condenser is dangerous and may result in serious injury or death. Tampering voids all warranties. Do not attempt to modify or change this unit in any way.

SAFETY INSTRUCTIONS

Read all instructions before using the EMI America Series multi-zone heat pump condenser. Install or locate this unit only in accordance with these instructions. Use this unit only for its intended use as described in this manual.

Check the rating plate on the EMI America Series multi-zone heat pump condenser before installation to make certain the voltage shown is the same as the electric supply to the unit.

The EMI America Series multi-zone heat pump condenser must be connected only to a properly grounded electrical supply. Do not fail to properly ground this unit.

Turn off the electrical supply before servicing the EMI America Series multi-zone heat pump condenser.

Do not use the EMI America Series multi-zone heat pump condenser if it has damaged wiring, is not working properly, or has been damaged or dropped.

[Save These Instructions]
EMI AMERICA SERIES MULTI-ZONE HEAT PUMP CONDENSING UNITS

DESCRIPTION
EMI offers the finest dual zone heat pump outdoor units in the ductless split market, the S2HA Condensing Unit. The S2HA allows the installation of two circuits from a single outside location when space or aesthetic requirements limit the use of the number of cabinets outdoors. Each zone is independent so no mixing of refrigerant occurs.

When specifying heat pump(s), it is recommended that the matching indoor unit(s) be equipped with electric heat. The S2HA will operate down to 35°F outdoor temperature, at which point it will initiate change over to electric heat and shut down the condenser. All 9,000, and 12,000 Btuh circuit units are equipped with the Duratec Performance Package which include a large capacity suction accumulator with surge baffles and enhanced oil management, a factory installed solid core filter drier and loss of refrigerant charge protection.

NOTE: The crankcase heater is installed with 9,000 and 12,000 Btuh heat pumps.

INSTALLER SUPPLIED ITEMS

• Power wiring
• Low Volt wiring - 18 AWG minimum
• Secure mounting pad or foundation
• Refrigerant piping (if not supplied)
• Disconnect switch

ITEMS FOR CONSIDERATION

• Locate the unit as close to the indoor section as possible. Maximum length allowed is 100 equivalent feet.
• Avoid high traffic areas and prevailing wind locations.
• Surface must be level.
• Mount unit above typical snow levels.

Ensure free flow of air through the unit. Air must not recirculate from discharge to intake. Air is drawn through the coil with side, or top discharged through the fan grille. A minimum 48” clearance is necessary for the condenser discharge. Intake (coil side) clearance is 12” minimum. Consider how power will be run to the unit from the power source. Refrigerant piping must be a direct line to the indoor unit.

Heat pump units produce condensate in the heat pump mode. Water will drain from the unit at the base. Place the unit so as not to create a hazard for pedestrians.

SITE PREPARATION

Place the unit on a flat concrete surface or pad if on the ground. Roof mounting should use a build up platform. Piping is through the wall or roof directly to the unit. In areas of heavy snowfall, condensers should be set above the level of maximum anticipated snowfall (12” is usually adequate).

SYSTEM OPTIONS

• Sea Coast Style Coated Coils / Copper-Copper coils
• Wind Baffles - Louvers

CONTROLS AND COMPONENTS (FACTORY INSTALLED OR SUPPLIED)

• Compressor and Fan Motor Contactor
• Capacitor
• Loss of Charge Switch
• Low Voltage Connections
• Large Capacity Suction Accumulator
• High Pressure Control
• Solid Core Filter Drier
• Crankcase Heater
• Common suction pressure access point

MULTI-ZONE HEAT PUMP CONDENSING UNITS
Multi-zone Heat Pump Condensing Units www.enviromaster.com
INSTALLATION INSTRUCTIONS

UNIT MOUNTING SECTION

Side discharge unit allows for permanent mounting through the feet. *This is highly recommended due to the vertical design of the unit.*

1. Loosen the screws on left and right sides of the front panel. (Do not remove these screws.)

2. Remove the screws on the front of the panel.

3. To remove front panel:
   - Slide front panel forward to clear side screws and remove.

4. Insert lag bolts through the holes in the bottom of the unit and tighten to secure.

5. Insert lag bolts through the holes in the feet on the back of the unit and tighten to secure.

6. Replace the front panel, *do not* tighten the side screws at this time.
1. All electrical wiring must be run according to NEC and local codes.

2. Refer to the unit rating plate for voltage, minimum circuit ampacity and over current protection requirements.

3. Use only HACR type breakers or time delay fuses. Select the wire size according to the ampacity rating.

4. To access electrical connections and wiring diagram:
   a) Remove the screws on the side panel adjacent to the back panel.
   b) The screws adjacent to the front panel should already be loose (don’t remove them).
   c) Slide the side panel out to access the high/low electrical connections and wire diagram.

5. Power should be run to a weather proof disconnect box usually within 3 feet of the unit.

6. From the disconnect box, run the power through the 7/8" hole on the side of the unit and into the electrical box and anchor with the strain relief fitting.

7. Run wires to the high Volt pigtail in the control box and attach L1 and L2 connections. Also run green wire to ground wire.

The EMI America Series condensing unit must:
- Be connected to a properly grounded electrical supply with the proper voltage as stated on the rating plate.
- Have proper over current protection (i.e. time-delay fuse/HACR-Breaker) as listed on the Rating Plate.

Failure to follow these instructions can result in a fire, explosion, or electrical shock causing property damage, personal injury, or death.

Do not use the EMI America Series condensing unit with any electrical supply voltage other than the one listed on the rating plate.

Check the rating plate on the unit for the correct voltage rating. Failure to use the correct voltage may result in death, serious bodily injury or property damage. If you have any questions or doubts, consult the factory before installing this unit.

Note: Remove the plastic edge guards from the holes and replace with a watertight strain relief fitting (High V) and a split grommet fitting (Low V)
8. Check wiring diagram for the required number of low voltage wires to be run between indoor and outdoor sections.

9. Connect the 24 Volt wiring matching color to color. Refer to the wiring diagram on the inside panel of the condenser, and also refer to the wiring diagram on the indoor unit. Low Volt interconnect should be at least 18 awg.

10. To replace side panel slide the slotted holes of the panel onto the loosened screws of the front panel so that the edge of the front panel covers the edge of the side panel.

11. Fasten all remaining loose screws.
The system will support refrigerant runs to the inside unit of up to 100’ equivalent feet with a 35’ rise included. The units are furnished with sweat connections and are equipped with refrigerant valves and Schrader fittings for charging and taking pressure readings. The following precautions should be made:

**INTERCONNECTING TUBING SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Model</th>
<th>MAX. Length</th>
<th>Max. Lift</th>
<th>Liquid Line O.D.</th>
<th>Suction Line O.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9900</td>
<td>100’</td>
<td>35’</td>
<td>1/4”</td>
<td>1/2”</td>
</tr>
<tr>
<td>2200</td>
<td>100’</td>
<td>35’</td>
<td>1/4”</td>
<td>1/2”</td>
</tr>
<tr>
<td>9200</td>
<td>100’</td>
<td>35’</td>
<td>1/4”</td>
<td>1/2”</td>
</tr>
</tbody>
</table>

- Be certain no burrs remain on the fittings.
- Use only clean refrigeration tubing.
- Use tube benders to guard against kinking.
- Avoid piping on wet and rainy days and **insulate suction line**. Be certain that plastic end caps remain in place when inserting through wall openings. Isolate tubing from transmitting vibration to the building or unit and avoid contact with sharp edges. Refrigeration valves should be wrapped with a wet rag "heat sink" to protect valves while brazing.

**P-TRAP INSTALLATION**

- A P-trap is recommended when the suction riser is equal to or greater than 20 feet in height.
- When the condenser is installed above the evaporator, the P-trap will help the return of oil back to the compressor.
- The placement of the P-trap should be at the halfway mark of the suction riser. For example if the suction riser is 30 feet tall then a P-trap is recommended at the 15 foot mark of the suction riser (see **Figure #1**).

- A P-trap may be fabricated using;
  (2) street elbows and (2) regular elbows. A prefabricated trap may be purchased from a Wholesaler or Distributor however the trap should be shallow as the:

(4) elbow configuration. Each elbow is approximately 2 equivalent feet. One P-trap is equal to approximately 8 equivalent feet.

- Be certain no burrs remain on the fittings.
- Use only clean refrigeration tubing.
- Use tube benders to guard against kinking.
- Avoid piping on wet and rainy days and **insulate suction line**. Be certain that plastic end caps remain in place when inserting through wall openings. Isolate tubing from transmitting vibration to the building or unit and avoid contact with sharp edges. Refrigeration valves should be wrapped with a wet rag "heat sink" to protect valves while brazing.

**Figure #1**
1. Clean the ends of tubing and insert into fittings.

2. Protect the valves by wrapping with a wet rag "heat sink" before brazing.

3. The use of a shield is recommend (one can be made from some scrap metal) to protect the paint.

4. Braze tubing into fittings.

5. Verify that the correct piston for the system match is in place, refer to the air handler Installation Instructions.

6. Refer to the indoor air handler Installation Instructions for any specific details regarding the connection of tubing. Connect and braze tubing into the indoor air handler.

7. Attach manifold set.

8. Evacuate line to 500 microns or less to ensure all moisture has been removed and there are no leaks.

**WARNING**

It is illegal to discharge refrigerant into the atmosphere. Use proper reclaiming methods & equipment when installing or servicing this unit.
9. Once certain of a good evacuation and leak free joints, back-seat the valves (counter-clockwise) to open and allow factory charge to fill lines and indoor unit.

10. Charge to proper weight, charge based on feet of interconnect (table on next page)

**Note:** Charging should be done with a dial-a-charge or weighed in with a scale.

11. Refer to *Field Charging Charts* to “fine tune” the refrigerant charge to meet your conditions.

**IMPORTANT:** All systems require field charge adjustments. Refer to the "Refrigerant Charge Tables" for proper weight charge and to the supplied "Field Charging Charts" for proper system pressures and temperature at different outdoor conditions. Superheat should be used for final system charge in cooling mode. Subcool should be used for final system charge in heating mode.

**RECAP OF COMPLETING PIPING CONNECTIONS**

Pressure test all field installed piping and the indoor air handler with nitrogen. Using a suitable vacuum pump, evacuate the tubing and indoor unit to 500 microns or less, with service values remaining front seated (closed).

Before releasing the refrigerant from the condenser, be sure the manifold gauge set is closed so as not to lose vacuum when shutting down the pump.

Release refrigerant from the condensing unit by back seating the service value. Allen wrenches are used to open the valve. Replace valve caps. Be Careful to not back seat the valves past the snap flanges that hold the valve core in place.

The units are delivered precharged with refrigerant for the condenser coil and the evaporator. Charging of the field installed piping is required. Refer to the refrigerant charge table for the proper amount to be added for the applications interconnect piping. Unit service valves are solid brass, for sweat connections.
**REFRIGERANT PIPING INSTALLATION SECTION**

**REFRIGERANT CHARGE TABLE FOR S2HA**

<table>
<thead>
<tr>
<th>CIRCUIT CAPACITY</th>
<th>EVAPORATOR PAIRING</th>
<th>LINE CHG/FT</th>
<th>LINE LENGTH</th>
<th>LINE ADJUST</th>
<th>FACTORY CHARGE</th>
<th>SYSTEM TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>9,000 Btuh</td>
<td>WLHA09, CAHB12 WLHA12, CAHB12</td>
<td>.25 OZ.</td>
<td>10</td>
<td>3 OZ.</td>
<td>25</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25</td>
<td>6 OZ.</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>13 OZ.</td>
<td></td>
<td>55</td>
</tr>
<tr>
<td>12,000 Btuh</td>
<td>WLHA12 CAHB12</td>
<td>.25 OZ.</td>
<td>10</td>
<td>3 OZ.</td>
<td>25</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25</td>
<td>6 OZ.</td>
<td></td>
<td>49</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>13 OZ.</td>
<td></td>
<td>52</td>
</tr>
</tbody>
</table>

**IMPORTANT NOTES:**

1. To find the charge adjustment and system charge for any evaporator and tubing length:
   
   - **Line Adjustment** = (Line Charge/FT) x Line Length
   - **System Total** = Factory Charge + Line Adjustment

2. Round to the nearest ounce and allow for gauges and hoses.

**FIELD CHARGING**

The use of the superheat method is highly recommended for field charging or checking the existing refrigerant charge in a system. Because each installation is different in terms of indoor air flow, refrigerant line length, etc., the factory charge may not be correct for every application. To assure the best performance from the air-conditioner, the refrigerant charge should be checked and adjusted, if need be, on each installation.

For proper superheat readings, a standard low-side refrigerant gauge and an accurate thermometer are needed. A mercury or stem-type thermometer is not adequate for suction-line temperatures. We recommend electric thermocouple thermometers (available at most refrigeration wholesalers); however an accurate remote-bulb thermometer can be used. When measuring the line temperature, be sure the thermometer is well insulated to assure accurate measurements. The chart below gives superheat values at various outdoor temperatures. Allow at least 5 minutes running time between charge adjustments for the unit to stabilize.

The S2HA has manifold access points on each of the service valves for the high and low pressures in cooling mode. There is an additional “common suction” access point above each service valve set to provide low pressure access in the heating mode as both service valves are at high side pressure.
Cooling Cycle
S2HA 9,000 Btuh circuit
with EMI's-WLHA09 or CAHA12 (R-22 Ref.)

- Room Temp. (°F)
- Relative Humidity 50%
- High Pressure (psig)
- Low Pressure (psig)
- Compressor Superheat (°F)

85 °F
80 °F
75 °F

Note: Minimum compressor superheat 5° F

Cooling Cycle
S2HA 12,000 Btuh circuit
with EMI's-WLHA09 or CAHB12 (R-22 Ref.)

- Room Temp. (°F)
- Relative Humidity 50%
- High Pressure (psig)
- Low Pressure (psig)
- Compressor Superheat (°F)

85 °F
80 °F
75 °F

Note: Minimum compressor superheat 5° F
Heat Cycle
S2HA 9,000 Btuh circuit
with EMI WLHA09 or CAHB12 (R-22 Ref.)

Heat Cycle
S2HA 12,000 Btuh circuit
with EMI WLHA12 or CAHB12 (R-22 Ref.)

- Room Temp. (°F)
- Shaded area is outside of the Limited Range Heating operation.
**NOTE:** If operating superheat is more than 5°F above the chart value, add refrigerant. If below the chart value remove refrigerant. If below the limit line, remove refrigerant.

**Example** (Using the 12,000 Btuh cooling chart):
1. Suction pressure is 65 psi. which equals 38°F on The R-22 Scale of the Low-Side Gauge.
2. Suction line temperature taken at the unit is 70°F. 70°F minus 38°F equals 32°F superheat.
3. Outdoor temperature is 90°F; indoor temperature is 80°F.
4. Intersection of the indoor-temperature and outdoor-temperature lines occur on the 12°F superheat line.
5. Add charge to obtain 12°F superheat.

**Instructions:**
1. Measure suction pressure and determine evaporator-refrigerant temperature on R-22 scale of low-side gauge.
2. Measure suction-line temperature on suction line of the unit.
3. Measure outdoor and indoor temperatures.
4. Determine from the table what the superheat should be for the indoor and outdoor temperatures. (Example indicates 12°F superheat.)
5. Adjust charge if needed. Be sure unit is running at stabilized condition.

**NOTE:** For installation of the indoor unit and start-up of the system, please refer to the appropriate installation manual for your indoor product to complete the installation.

**STARTING THE UNIT**

- Before starting the unit in cool weather, power the system 24 hours before attempting to start.

- Do a final system check using the superheat/subcooling method. Record results on Test Unit Performance Data sheet (next page).

  - Cooling mode superheat is set with a proper sized piston and charge, using the field charging charts.

  - Heating mode superheat is set with a TXV and should be 5°F. When charging a system in heat mode, use the subcool method field charging charts.

- Remove gauge set. Mount all access panels and make sure they are properly secured.

- Make final visual inspection and repair any deficiencies.

(Proceed to the Sequence Of Operation on the following pages)
The Test Unit Performance Data sheet below is provided for use by a qualified service professional. In order for our Technical Service Department to better serve you, please complete and have this information ready when calling. Make sure to include the Model Number, Serial Number, Date of Installation.

Call our Technical Support Department @ 1-800-228-9364.

### Test Unit Performance Data

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Serial Number</th>
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#### Indoor Section

<p>| | |</p>
<table>
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<tr>
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<tbody>
<tr>
<td>Evaporator Entering Air - DB</td>
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<tr>
<td>Evaporator Entering Air - WB</td>
<td></td>
</tr>
<tr>
<td>Evaporator Leaving Air - DB</td>
<td></td>
</tr>
<tr>
<td>Evaporator Leaving Air - WB</td>
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#### Outdoor Section

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<tbody>
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<td>Entering Air</td>
<td></td>
</tr>
<tr>
<td>Leaving Air</td>
<td></td>
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<tr>
<td>Temperature Split</td>
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</table>

#### Operating Pressures

<p>| | |</p>
<table>
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<tr>
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<tbody>
<tr>
<td>Compressor Suction - PSIG</td>
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<tr>
<td>Compressor Discharge - PSIG</td>
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#### Power Input

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<table>
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<tbody>
<tr>
<td>Compressor - Volts</td>
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<tr>
<td>Compressor - Amps</td>
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<tr>
<td>OD Fan Motor - Volts</td>
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<tr>
<td>OD Fan Motor - Amps</td>
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<tr>
<td>ID Fan Motor - Volts</td>
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<td>ID Fan Motor - Amps</td>
<td></td>
</tr>
<tr>
<td>Total Volts</td>
<td></td>
</tr>
<tr>
<td>Total Amps</td>
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</table>

#### Temperatures - Degrees F°

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<tbody>
<tr>
<td>Compressor Suction</td>
<td></td>
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<tr>
<td>Compressor Discharge</td>
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<tr>
<td>Liquid Out Cond.</td>
<td></td>
</tr>
<tr>
<td>Liquid before Expansion</td>
<td></td>
</tr>
<tr>
<td>Suction out Evaporator</td>
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#### Capacity Calculations

<p>| | |</p>
<table>
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<tbody>
<tr>
<td>DB - Temp Split at evap.</td>
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</tbody>
</table>

#### Test Summary

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Compressor Superheat</td>
<td></td>
</tr>
<tr>
<td>Sub Cooling</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Rotary compressors are critically charged systems, do not over charge. Refer to the Charge Table specific to the unit being installed or call the factory. Anti-short cycle protection should be used on systems that use a conventional thermostat.

Save this information for future servicing. In the event there is a problem with the unit. Perform the test again (if possible) and have both sets of data ready when calling for assistance.
EMI America Series multi-zone heat pump condensers are designed to operate with EMI America Series indoor air handlers. Both the condenser (outdoor unit) and evaporator (indoor unit) have a high Volt service connection. Each is to be independently connected to the electrical service panel. (See the unit name plate for the correct breaker type and size). The outdoor and indoor units are also connected to each other through a low Volt interconnect wiring. A 24V transformer located in the indoor unit provides the low Volt power source.

The S2HA is a limited range heat pump that will provide comfort cooling or heat pump operation operate at an outdoor temperature range between 35°F and 115°F for cooling, 35°F and 75°F for (heat pump) heating. The outdoor unit is equipped with a thermostat that will switch off the condenser when temperature falls below 35°F. For heat pump mode the condenser operation will cease and then switch on the indoor electric heat. For cooling mode, condenser operation will cease.

The S2HA limited range heat pump condensers are designed to operate as a single stage cooling, two stage heating unit. For full operation the unit should be matched with an appropriate EMI indoor unit with electric heat and unit mounted controls or a wall mounted thermostat.

For two stage heating operation the indoor unit must be equipped with an electric strip heater.

See the instruction manual for the indoor unit on the selection of the proper thermostat for the system.

▲ Cooling operation, Multi-zone Heat Pump:

Cooling mode operation requires that the control (either unit mount or remote wall mount thermostat) make a connection between low-Volt terminals “R” and “Y” along with “R” and “O”. When the indoor control is placed in cooling mode, with the set point temperature below the room temperature, the reversing valve will energize (R & O) along with the compressor and outdoor fan (R & Y). When the indoor control is satisfied and the room temperature falls below the set temperature, the compressor and fan will de-energize. The EMI indoor unit is equipped with an anti-short cycle timer (ASCT) will prevent the compressor from re-starting for three minutes.

When the outdoor temperature falls below 35°F, compressor operation will cease.

▲ Heating operation, Multi-zone Heat Pump:

Heating mode operation requires that the control (either unit mount or remote wall mount thermostat) make a connection between low-Volt terminals “R” and “Y” only. When the indoor control is placed in heating mode, with the set point temperature above room temperature, the compressor and outdoor fan (R & Y) will energize. When the indoor control is satisfied and the room temperature rises above the set temperature, the compressor and fan will de-energize. The EMI indoor unit is equipped with an anti-short cycle timer (ASCT) will prevent the compressor from re-starting for three minutes.
When the outdoor temperature falls below 35°F, compressor operation will cease. At that point the unit will switch on the indoor units electric heater to assume the heating demand, (second stage of heat).

**Note:** For full operation the indoor unit must have an electric heater.

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**OPERATION AND MAINTENANCE**

The EMI America Series outdoor section is the compressor bearing unit of the system. It operates at the command of the indoor section or room thermostat. Therefore, the operation will be described in the manual pertaining to the indoor section. The S2HA will cease compressor operation at 35°F outdoor temperature. If in heating mode, the electric heat will take over when the compressor ceases operation.

EMI units are designed and constructed for reliability and long life with minimal maintenance. You can assure peak operating efficiency by regularly inspecting for free air passage into and through the coil. If debris collect on the air coil, it should be cleaned by “back-flushing” with a spray of water or vacuuming. **TURN OFF POWER SUPPLY FIRST.**

Outdoor units may be cleaned or waxed if desired. Use a non-abrasive car wax.

Panels should remain on the unit at all times. Service should be performed by a **QUALIFIED** service agency only.

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**SPECIFIC CHANGES**

All EMI products are subject to ongoing development programs so design and specifications may change without notice. Please consult the factory for more information.

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**GENERAL RECOMMENDATIONS**

Do not charge the **straight cool** units on cold days unless weighing in the charge. The **heat pump** systems may be charged in heat cycle between 35 and 75°F. **These units use a heat cycle TXV and cannot be charged to superheat; use weight or subcooling method only.**

Charging should be done with a dial-charge or weighed in with a scale.

**NOTE:** For more information, please visit our web-site at [www.enviromaster.com](http://www.enviromaster.com) or call 1-800-228-9364.
### S2HA DIMENSIONS AND SPECIFICATIONS

**NOTE:** All EMI products are subject to ongoing development programs so design and specifications may change without notice.

#### S2HA ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODEL (1)</th>
<th>VOLTS/HZ/PHASE</th>
<th>FAN</th>
<th>COMPRESSOR 1</th>
<th>COMPRESSOR 2</th>
<th>TOTAL AMPS</th>
<th>MIN. CIR. AMPS (2)</th>
<th>HACR BRKR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>RLA</td>
<td>HP</td>
<td>RLA</td>
<td>LRA</td>
<td>RLA</td>
<td>LRA</td>
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<tr>
<td>9900</td>
<td>208-230/60/1</td>
<td>1.8</td>
<td>0.33</td>
<td>3.4</td>
<td>23</td>
<td>3.4</td>
<td>23</td>
</tr>
<tr>
<td>2200</td>
<td>208-230/60/1</td>
<td>1.8</td>
<td>0.33</td>
<td>4.3</td>
<td>27</td>
<td>4.3</td>
<td>27</td>
</tr>
<tr>
<td>9200</td>
<td>208-230/60/1</td>
<td>1.8</td>
<td>0.33</td>
<td>3.4</td>
<td>23</td>
<td>4.3</td>
<td>27</td>
</tr>
</tbody>
</table>

(1) Circuit Designators: 9 = 9,000 Btuh • 2 = 12,000 Btuh (ex. - Model 9200 consists of one 9,000 Btuh compressor and one 12,000 Btuh compressor)

(2) Always refer to the rating plate for Minimum Circuit Ampacity on all multiple compressor units.

#### S2HA PIPING SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model#</th>
<th>Line Sizes</th>
<th>SOUND DATA</th>
<th>SHIPPING WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Liquid</td>
<td>Suction</td>
<td>dBA</td>
</tr>
<tr>
<td>9900</td>
<td>1/4&quot;</td>
<td>1/2&quot;</td>
<td>64</td>
</tr>
<tr>
<td>2200</td>
<td>1/4&quot;</td>
<td>1/2&quot;</td>
<td>65</td>
</tr>
<tr>
<td>9200</td>
<td>1/4&quot;</td>
<td>1/2&quot;</td>
<td>65</td>
</tr>
</tbody>
</table>

Easy access interconnects on back of unit.

Electrical connections.

1/2" Diameter Lag Holes.

4.63" 28.74" 4.63" 3.00" 12.44"

(38"

Front of unit.

www.enviromaster.com
### S2HA SYSTEM PERFORMANCE

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### S2HA / WLHA SYSTEM PERFORMANCE

<table>
<thead>
<tr>
<th>S2HA (Outdoor)</th>
<th>Indoor Units</th>
<th>Btuh</th>
<th>SEER</th>
<th>SHR</th>
<th>EER</th>
<th>Btuh</th>
<th>C.O.P.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9900</td>
<td>WLHA09 + WLHA09</td>
<td>18,600</td>
<td>13.0</td>
<td>.80</td>
<td>12.2</td>
<td>16,000</td>
<td>3.3</td>
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<tr>
<td>2200</td>
<td>WLHA12 + WLHA12</td>
<td>22,600</td>
<td>13.0</td>
<td>.72</td>
<td>11.9</td>
<td>20,400</td>
<td>3.3</td>
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<tr>
<td>9200</td>
<td>WLHA09 + WLHA12</td>
<td>20,600</td>
<td>13.0</td>
<td>.76</td>
<td>12.0</td>
<td>18,200</td>
<td>3.3</td>
</tr>
</tbody>
</table>

### S2HA / CAHB SYSTEM PERFORMANCE

<table>
<thead>
<tr>
<th>S2HA (Outdoor)</th>
<th>Indoor Units</th>
<th>Btuh</th>
<th>SEER</th>
<th>SHR</th>
<th>EER</th>
<th>Btuh</th>
<th>C.O.P.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9900</td>
<td>CAHB12 + CAHB12</td>
<td>18,600</td>
<td>13.0</td>
<td>.79</td>
<td>11.7</td>
<td>15,700</td>
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<td>2200</td>
<td>CAHB12 + CAHB12</td>
<td>22,600</td>
<td>13.0</td>
<td>.75</td>
<td>11.6</td>
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<tr>
<td>9200</td>
<td>CAHB12 + CAHB12</td>
<td>20,600</td>
<td>13.0</td>
<td>.77</td>
<td>11.6</td>
<td>18,000</td>
<td>3.1</td>
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