WIRING DIAGRAM MANUAL
Split System Heat Pump
N4H4, R4H4, WCH4

Safety Labeling and Signal Words

DANGER, WARNING, CAUTION, and NOTE

The signal words DANGER, WARNING, CAUTION, and NOTE are used to identify levels of hazard seriousness. The signal word DANGER is only used on product labels to signify an immediate hazard. The signal words WARNING, CAUTION, and NOTE will be used on product labels and throughout this manual and other manuals that may apply to the product.

DANGER – Immediate hazards which will result in severe personal injury or death.

WARNING – Hazards or unsafe practices which could result in severe personal injury or death.

CAUTION – Hazards or unsafe practices which may result in minor personal injury or product or property damage.

NOTE – Used to highlight suggestions which will result in enhanced installation, reliability, or operation.

Signal Words in Manuals

The signal word WARNING is used throughout this manual in the following manner:

⚠️ WARNING

The signal word CAUTION is used throughout this manual in the following manner:

⚠️ CAUTION

Signal Words on Product Labeling

Signal words are used in combination with colors and/or pictures on product labels.

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MODELS

208/230–1–60

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⚠️ WARNING

DEATH, PERSONAL INJURY, AND/OR PROPERTY DAMAGE HAZARD

Failure to carefully read and follow this warning could result in equipment malfunction, property damage, personal injury and/or death.

Installation or repairs made by unqualified persons could result in equipment malfunction, property damage, personal injury and/or death.

The information contained in this manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.

Installation must conform with local building codes and with the National Electrical Code NFPA70 current edition or Canadian Electrical Code Part 1 CSA C.22.1.
1-Phase 339697-101

**WIRING DIAGRAM MANUAL** Split System Heat Pump

**CONNECTION DIAGRAM**

**SCHEMATIC DIAGRAM (LADDER FORM)**

**REQUIRED LIQUID LINE TEMPERATURE**

<table>
<thead>
<tr>
<th>Pressure at Service Valve (psi)</th>
<th>Required Subcooling Temperature (°F)</th>
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**COOLING ONLY CHARGING PROCEDURE**

1. Only use sub-cooling charging method when O2 ambient is greater than 70°F and less than 100°F, indoor temp is greater than 70°F and less than 90°F, and line set is less than 60 ft.
2. Operate unit a minimum of 10 minutes before checking the charge.
3. Measure liquid service valve pressure by attaching an accurate gauge to the service port.
4. Measure the liquid line temperature by attaching an accurate thermometer type or electronic thermometer to the liquid line near the outdoor coil.
5. Refer to unit rating plate for required subcooling temperature.
6. Find the point where the required subcooling temperature intersects the measured liquid service valve pressure.
7. To obtain the required subcooling temperature at specific liquid line pressure, add refrigerant if liquid line temperature is higher than indicated.
8. When adding refrigerant, charge in liquid form using a flow restricting device into suction service port.
9. Recover refrigerant if temperature is best. Allow a tolerance of ±3°F.

**NOTES:**

1. Symbols are electrical representation only.
2. Compressor and fan motor furnished with inherent thermal protection.
3. To be wired in accordance with National Electric N.E.C. and local codes.
4. N.E.C. class 2, 24 V circuit, min. 40 VA required, 60 VA on units installed with L.S.
5. Use copper conductors only. Use conductors suitable for at least 75°C (167°F).
6. Must use thermostat and sub-base as stated in pre-sale literature.
7. If indoor section has a transformer with a grounded secondary, connect the grounded side to "C" on the circuit board.
8. If any of the original wire, as supplied, must be replaced, use the same or equivalent wire.
9. Check all electrical connections inside control box for tightness.
10. Do not attempt to operate unit until service valves have been opened.
11. Use conductors suitable for at least 75°C (167°F).

**CAUTION**

1. Compressor damage may occur if system is over charged.
2. This unit is factory charged with R-410A in accordance with the amount shown on the rating plate. The charge is adequate for most systems using matched coils and tubing not over 15 feet long. Check refrigerant charge for maximum efficiency. See Product Data Literature for required Indoor airflow Ranges and for use of line lengths over 15 feet.
3. Release pressure and recover all refrigerant before system repair or final disposal. Use all service ports and open all flow control devices, including solenoid valves.
4. Never vent refrigerant to atmosphere. Use approved recovery equipment.
1-Phase 339701-101

Connecting Diagram

Specifications subject to change without notice.

Condensing Unit Charging Instructions
For use with units using R-410A refrigerant.

CAUTION
1. Compressor damage may occur if system is overcharged.
2. This unit is factory-charged with R-410A in accordance with the amount shown on the rating plate. The charge is adequate for most systems using matched coils and tubing not over 15 feet long. Check refrigerant charge for maximum efficiency. See Product Data Literature for required indoor air flow rates and for use of line lengths over 15 feet.
3. Allow pressure and recover all refrigerant before system repair or final disposal. Use all service ports and open all flow-control devices, including solenoid valves.
4. Never vent refrigerant to atmosphere. Use approved recovery equipment.

Cooling Only Charging Procedure
1. Operate unit a minimum of 10 minutes before charging.
2. Measure suction pressure by attaching an accurate gauge to suction valve service port.
3. Measure suction temperature by attaching an accurate thermometer to suction line at service valve.
4. Measure outdoor air dry-bulb temperature with a thermometer.
5. Measure indoor air (entering indoor coil) wet-bulb temperature with a sling psychrometer.
6. Refer to Table 1. Find outdoor temperature and evaporator entering air dry-bulb temperature. At this intersection, note suction line temperature. Where a dash (-) appears on table do not attempt to charge system under these conditions or refrigerant-misting may occur. Charge must be weighed in. Note: Superheat "F" is a low-side service port, allow a tolerance of + - 50 F. Indoor dry-bulb between 70 F and 80 F, outdoor wet-bulb indoor conditions (AC & Heat Conditions).

Table 1: Required Suction Tube Temperature "F" (Measured at Low-Side Service Port)

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<tr>
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Legend:
- FACTORY-POWER WIRING
- FIELD POWER WIRING
- FACTORY CONTROL WIRING
- FIELD CONTROL WIRING
- CONDUCTOR ON CIRCUIT BOARD
- COMPONENT CONNECTION
- 1/4-IN QUICK CONNECT TERMINALS
- FIELD SPICE
- JUNCTION
- CAP CAPACITOR
- CH CRANKCASE HEATER
- CHS CRANKCASE HEAT SWITCH
- COMP COMPRESSOR
- CONT CONTACTOR
- CS CIRCUIT BOARD
- DFT DEFROST THERMOSTAT
- DR DEFROST RELAY & CIRCUITRY
- DTS DISCHARGE TEMP SWITCH
- HPS HIGH PRESSURE SWITCH
- LSS LIQUID LINE SOLENOID VALVE
- LPS LOW PRESSURE SWITCH
- OPM OUTDOOR FAN MOTOR
- RVS REVERSING VALVE SOLENOID
- SC START CAPACITOR
- SR START RELAY
- ST START THERMISTOR
- MAY BE FACTORY OR FIELD INSTALLED
## EXPANDED TABLE

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