

# WIRING DIAGRAM MANUAL

## Split System Heat Pump

### CVH8, HVH8, TVH8

#### 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:



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



##### Signal Words on Product Labeling

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

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#### MODELS

Wiring Diagram	Size
341821-101	24
341822-101	25, 36, 37, 48, 60

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.

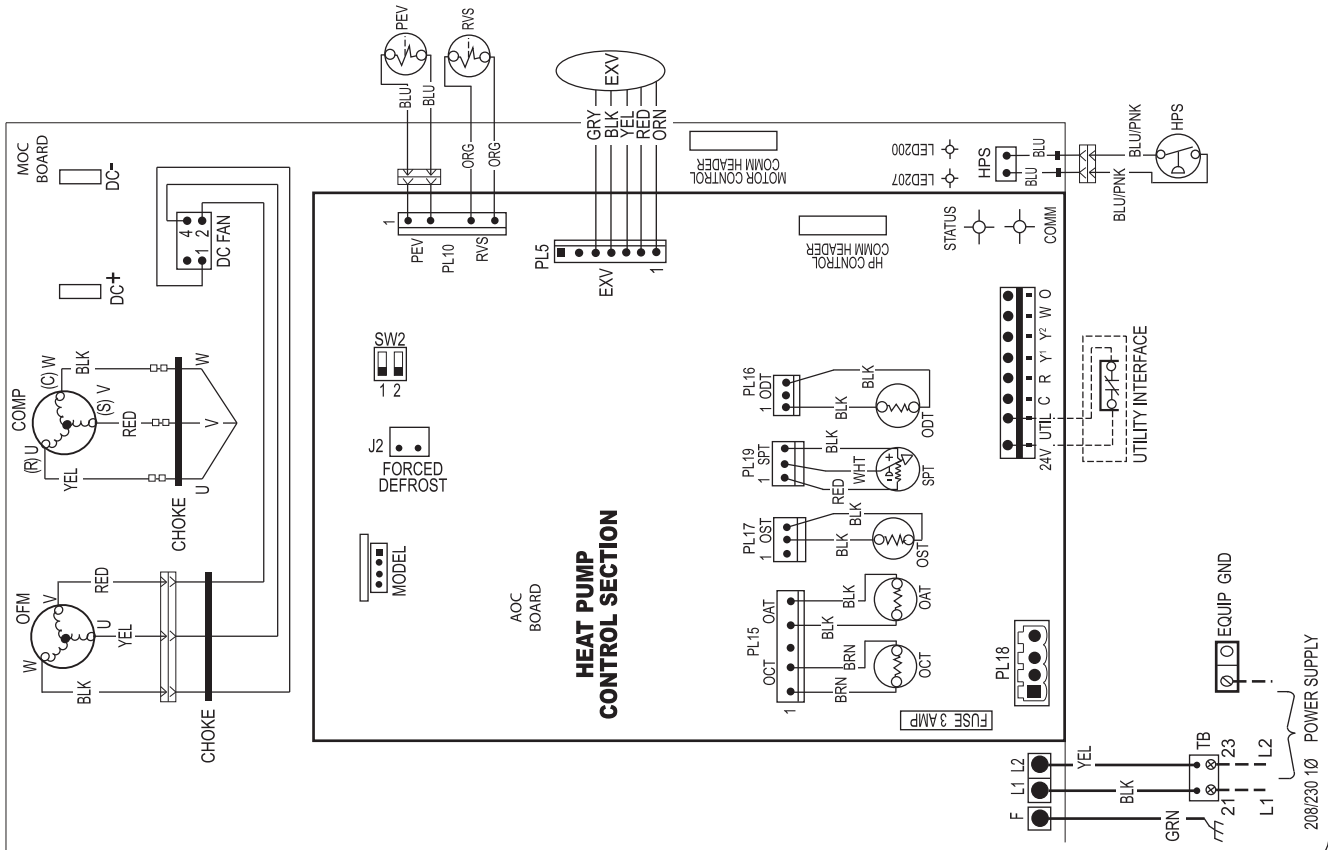
Installation or repairs made by unqualified persons could result in equipment malfunction, property damage, personal injury and/or death.

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.

# 341821-101

## CONNECTION DIAGRAM



## UNIT OPERATION

This control board contains a 3.5 minute short cycle protector. A 3.5 minute delay will occur between compressor off/on cycles. To bypass delay, short forced defrost pins for 1 second then release. However, there is an additional 2.5 minutes delay upon expiration of the 3.5 minute short cycle delay to ensure the high and low side pressures are equalized. This is important for long term rotary compressor reliability. It is a delay that cannot and must not be bypassed. The internal crankcase heater is energized during off cycle as needed.

- DEFROST TIME SELECTION** - The Defrost Interval Time Can Be Field Selected. Dependent Upon Local Geographic Requirements. It Is Factory Set At 90 Minutes And Can Be Changed To Either 30, 60 Or 120 Minutes Via The User Interface or Dip Switches. However, if changed at outdoor temperature less than 37 °F, the Defrost Interval will be 60 minute maximum unless 30 minute is selected. User Interface Defaults to "AUTO".
- DEFROST** - Defrost Will Only Be Performed At Outdoor Temperatures Less Than 50°F. Defrost Will Initiate When Time Selected Has Elapsed And The Coil Temperature Is Less Than 32°F (+/-2°F). It Will Terminate At 65°F, 50°F, or 45°F (+/-5°F), As Needed Based On OAT. At Defrost Termination The Outdoor Fan Will Turn On 15 Seconds Before Switching The Reversing Valve...
- FIELD INITIATED FORCED DEFROST** - (Shown As Forced Defrost On Board) By Placing A Jumper Across The Forced Defrost Terminals For 5 Seconds, Or Longer, And Then Removing The Jumper The Unit Will Initiate A Defrost Cycle Regardless Of Coil Temperature. The Defrost Cycle Will Terminate At 65°F (+/-5°F) If Coil Temperature Is Above 32°F Or Outdoor Ambient Temperature Is Above 50°F. Defrost Mode Will Terminate After 30 Seconds Of Active Mode.

## NOTES:

- To Be Wired In Accordance With National Electric Code (N.E.C.) And Local Codes.
- Use Copper Conductors Only. Use Conductors Suitable For At Least 75°C (167°F).
- Two Wire A and B Required For Communication. If Outdoor Unit Improperly Grounded, Connect Indoor Ground To "C" Terminal.
- If Any Of The Original Wire, As Supplied, Must Be Replaced, Use The Same Or Equivalent Wire.
- Check All Electrical Connections Inside Control Box For Tightness.
- Do Not Attempt To Operate Unit Until Service Valves Have Been Opened.
- If Communicating, Must Use With Observer User Interface Listed In Pre-sale Literature Only.**
- For Non-Communicating Thermostats, 24VAC To Be Provided To R Connection. N.E.C. class 2, 24 V circuit, min. 40 VA required, 60 VA on units installed with LLS.

## -LEGEND-

FACTORY POWER WIRING	MODEL	MODEL PLUG
FIELD POWER WIRING	OAT	OUTDOOR AIR THERMISTOR
FACTORY CONTROL WIRING	ODT	OUTDOOR COIL THERMISTOR
FIELD CONTROL WIRING	ODT	OUTDOOR DISCHARGE THERMISTOR
COMPONENT CONNECTION	OFM	OUTDOOR FAN MOTOR
JUNCTION	OST	OUTDOOR SUCTION THERMISTOR
FIELD SPLICE	PEV	PRESSURE EQUALIZER VALVE
FIELD CONNECTION	RVS	REVERSING VALVE SOLENOID
SYSTEM COMMUNICATION	SPT	SUCTION PRESSURE
COMPRESSOR	STATUS	STATUS
ELECTRONIC EXPANSION VALVE	SW2	SYSTEM FUNCTION LIGHT
HIGH VOLTAGE INDICATOR LED	TB	DEFROST TIME SELECT
HIGH PRESSURE SWITCH	UTIL	TERMINAL BLOCK
LOW VOLTAGE CHOKE HARNESS	24V	UTILITY CURTALLMENT
		24V

MODEL PLUG CHART

MODEL SIZE	MODEL PLUG	PIN RESISTANCE (K.Ω)
24	040	1 - 4 (R1) 2 - 3 (R2) 18K 75K

\*MAY BE FACTORY OR FIELD INSTALLED



341821-101 REV. A

# 341822-101

## UNIT OPERATION

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4. Check All Electrical Connections Inside Control Box For Tightness.
5. Do Not Attempt To Operate Unit Until Service Valves Have Been Opened.
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-----	FIELD CONTROL WIRING	MODEL	OFM	OUTDOOR FAN MOTOR
○	COMPONENT CONNECTION	MODEL	OST	OUTDOOR SUCTION THERMISTOR
⊕	FIELD SPLICE	MODEL	PEV	PRESSURE EQUALIZER VALVE
←←	PLUG CONNECTION	MODEL	RVS	REVERSING VALVE SOLENOID
COMM	SYSTEM COMMUNICATION	MODEL	SPT	SUCTION PRESSURE TRANSDUCER
COMP	COMPRESSOR	MODEL	STATUS	SYSTEM FUNCTION LIGHT
EXV	ELECTRONIC EXPANSION VALVE	MODEL	SW2	DEFROST TIME SELECT
LD1	HIGH VOLTAGE INDICATOR LED	MODEL	TB	TERMINAL BLOCK
HPS	HIGH PRESSURE SWITCH	MODEL	UTIL	UTILITY CURTAINMENT
LVCH	LOW VOLTAGE CHOKE HARNESS	MODEL	24V	24 VOLTS DC

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341822-101 REV.A

## CONNECTION DIAGRAM

