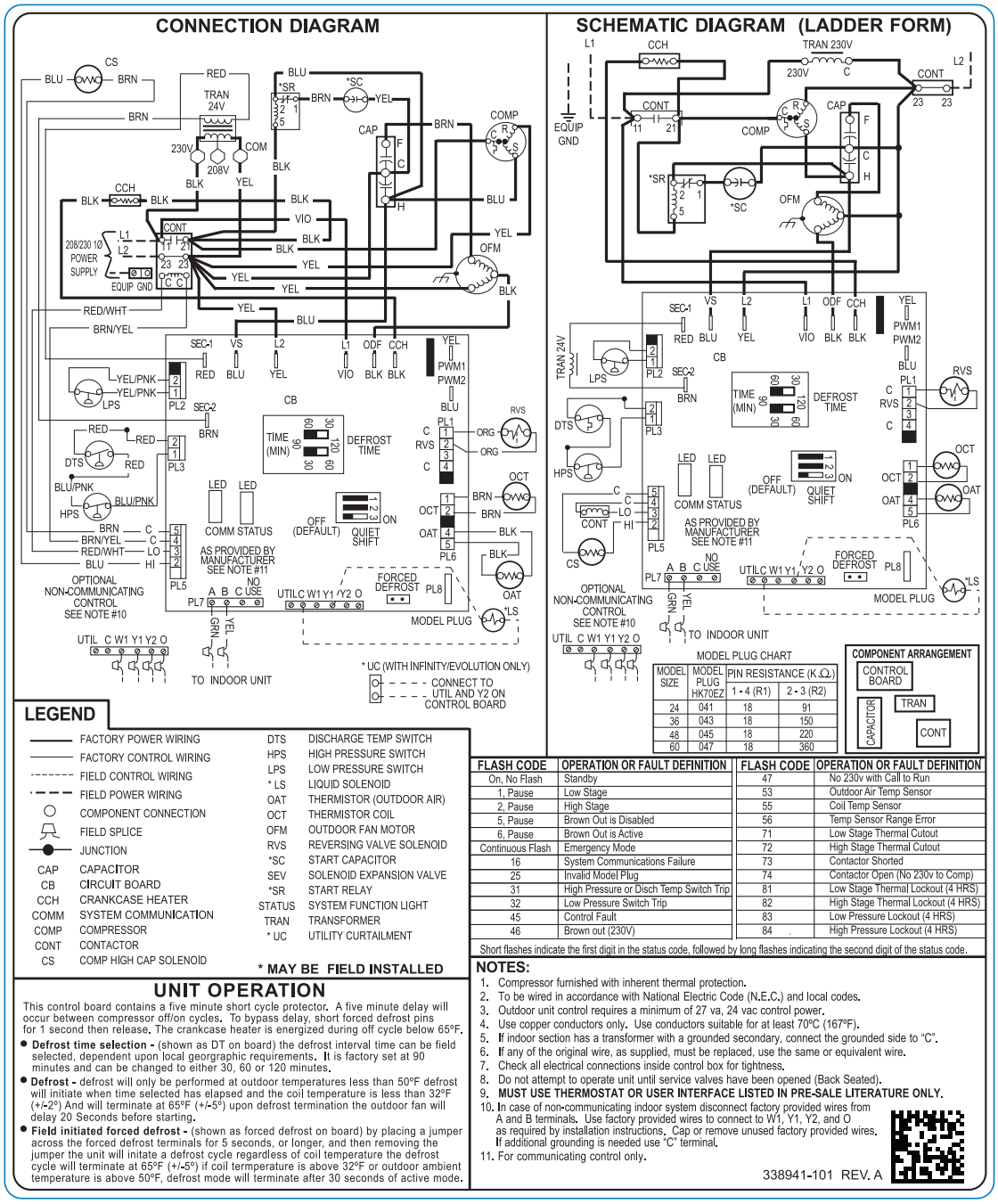
286B
EVOLUTION™ 16 2-STAGE HEAT PUMP
WITH PURON® REFRIGERANT
2 TO 5 TONS

bryant®

Wiring Diagram



MODEL SIZE	MODEL PLUG HK70EZ	PIN RESISTANCE (K.Ω.) 1 - 4 (R1)	2 - 3 (R2)
24	041	18	91
36	043	18	150
48	045	18	220
60	047	18	360

LEGEND

FACTORY POWER WIRING	
FACTORY CONTROL WIRING	
FIELD CONTROL WIRING	
FIELD POWER WIRING	
COMPONENT CONNECTION	
FIELD SPLICE	
JUNCTION	
CAP	CAPACITOR
CB	CIRCUIT BOARD
CCH	CRANKCASE HEATER
COMM	SYSTEM COMMUNICATION
COMP	COMPRESSOR
CONT	CONTACTOR
CS	COMP HIGH CAP SOLENOID
DTS	DISCHARGE TEMP SWITCH
HPS	HIGH PRESSURE SWITCH
LPS	LOW PRESSURE SWITCH
* LS	LIQUID SOLENOID
OAT	THERMISTOR (OUTDOOR AIR)
OCT	THERMISTOR COIL
OFM	OUTDOOR FAN MOTOR
RVS	REVERSING VALVE SOLENOID
*SC	START CAPACITOR
SEV	SOLENOID EXPANSION VALVE
*SR	START RELAY
STATUS	SYSTEM FUNCTION LIGHT
TRAN	TRANSFORMER
* UC	UTILITY CURTAILMENT

*** MAY BE FIELD INSTALLED**

UNIT OPERATION

This control board contains a five minute short cycle protector. A five minute delay will occur between compressor off/on cycles. To bypass delay, short forced defrost pins for 1 second then release. The crankcase heater is energized during off cycle below 65°F.

- **Defrost time selection -** (shown as DT on board) the defrost interval time can be field selected, dependent upon local georgraphic requirements. It is factory set at 90 minutes and can be changed to either 30, 60 or 120 minutes.
- **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°) And will terminate at 65°F (+/-5°) upon defrost termination the outdoor fan will delay 20 Seconds before starting.
- **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 initate a defrost cycle regardless of coil temperature the defrost cycle will terminate at 65°F (+/-5°) 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.

FLASH CODE	OPERATION OR FAULT DEFINITION	FLASH CODE	OPERATION OR FAULT DEFINITION
On, No Flash	Standby	47	No 230v with Call to Run
1, Pause	Low Stage	53	Outdoor Air Temp Sensor
2, Pause	High Stage	55	Coil Temp Sensor
5, Pause	Brown Out is Disabled	56	Temp Sensor Range Error
6, Pause	Brown Out is Active	71	Low Stage Thermal Cutout
Continuous Flash	Emergency Mode	72	High Stage Thermal Cutout
16	System Communications Failure	73	Contactor Shorted
25	Invalid Model Plug	74	Contactor Open (No 230v to Comp)
31	High Pressure or Disch Temp Switch Trip	81	Low Stage Thermal Lockout (4 HRS)
32	Low Pressure Switch Trip	82	High Stage Thermal Lockout (4 HRS)
45	Control Fault	83	Low Pressure Lockout (4 HRS)
46	Brown out (230V)	84	High Pressure Lockout (4 HRS)

Short flashes indicate the first digit in the status code, followed by long flashes indicating the second digit of the status code.

NOTES:

1. Compressor furnished with inherent thermal protection.
2. To be wired in accordance with National Electric Code (N.E.C.) and local codes.
3. Outdoor unit control requires a minimum of 27 va, 24 vac control power.
4. Use copper conductors only. Use conductors suitable for at least 70ºC (167ºF).
5. If indoor section has a transformer with a grounded secondary, connect the grounded side to "C".
6. If any of the original wire, as supplied, must be replaced, use the same or equivalent wire.
7. Check all electrical connections inside control box for tightness.
8. Do not attempt to operate unit until service valves have been opened (Back Seated).
9. **MUST USE THERMOSTAT OR USER INTERFACE LISTED IN PRE-SALE LITERATURE ONLY.**
10. In case of non-communicating indoor system disconnect factory provided wires from A and B terminals. Use factory provided wires to connect to W1, Y1, Y2, and O as required by installation instructions. Cap or remove unused factory provided wires. If additional grounding is needed use "C" terminal.
11. For communicating control only.

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Fig. 1 – Wiring Diagram — Model size 2 - 5 tons, 208/230-1

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Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

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