Carrier®
HEATING & COOLING

50HJ024
Single-Package Cooling Units (380 V, 60 Hz, Export)

Installation Instructions Supplement

This book is a supplement to the 50HJ 60 Hz Installation, Start-Up and Service Instructions, and is to be used for 380-v 60 Hz export units.

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BASE UNIT 50HJ	V-PH-HZ	LABEL DIAGRAM NO.	SCHEMATIC FIG. NO.	COMPONENT ARRANGEMENT FIG. NO.
024	380-3-60	50DP507204	1	2

Table 1 — Physical Data

UNIT SIZE 50HJ	024
OPERATING WT (lb)	
Unit Al/Al*	2030
Al/Cu*	2160
Cu/Cu*	2270
Economizer	110
Roof Curb†	200
COMPRESSOR	06D824 Semi-Hermetic — 6 Cylinders
Number	2
Oil (oz)	152 ea
REFRIGERANT	
Charge (lb)** Sys 1, Sys 2	16.25, 16.25
REFRIGERANT METERING DEVICE	Capillary Tubes
Upper Circuit — No. ...Length (in.)...ID/OD	13...25 . 0 055/0.125
Lower Circuit — No. ...Length (in.)...ID/OD	13.. 25...0.055/0.125
CONDENSER COIL	Copper Tubes, Aluminum or Copper Plate Fins
Rows	4
Fins/in.	13.6 Al or 12.4 Cu
Total Face Area (sq ft)	22.2
CONDENSER FAN	Propeller Type, Direct Drive
Nominal Cfm	11,400
Number...Diameter (in.)	2 .26
Motor Hp (1075 Rpm)	1
Watts Input (Total)	3000
EVAPORATOR COIL	Copper Tubes, Aluminum or Copper Plate Fins
Rows	4
Fins/in.	14.4 Al or 13.1 Cu
Total Face Area (sq ft)	17.9
EVAPORATOR FAN	Centrifugal, Fixed Pitch Belt Drive
Quantity...Size (in.)	2. 12 x 12
Nominal Cfm	8000
Maximum Allowable Rpm	1500
Motor Pulley Pitch Diameter (in.)	5.1
Fan Pulley Pitch Diameter (in.)	8.40
Belt, Quantity...Type...Length (in.)	1. BX...50
Factory Speed Setting (Rpm)	1287
Motor Hp (Service Factor)	5 (1.155)
Motor Frame Size	184T
HIGH-PRESSURE SWITCH	
Cutout (psig)	426
Reset (psig)	320
LOW-PRESSURE SWITCH	
Cutout (psig)	7
Reset (psig)	22
AIR INLET SCREENS	
Economizer, Quantity...Size (in.)	2 . 20 x 25 x 1 1...20 x 20 x 1
RETURN-AIR FILTERS (TYPE)	10% Efficient — 2-in. Throwaway Fiberglass
Quantity...Size (in.)	4 ..20 x 20 x 2 4. .16 x 20 x 2

LEGEND

Al — Aluminum
Cu — Copper

*Evaporator coil fin material/condenser coil fin material.
†Weight of 14 in roof curb
**System 1 consists of the upper portion of condenser coil and intertwined evaporator coil, and System 2 consists of the lower portion of the condenser coil and intertwined evaporator coil.

NOTE: The 50HJ024 has one set (2) of fixed pulleys

BASE UNIT OPERATION

Cooling, Units Without Economizer — When thermostat calls for cooling, terminals G and Y1 are energized. The indoor (evaporator) fan contactor (IFC) and compressor contactor no. 1 (C1) are energized and evaporator-fan motor, compressor no. 1, and condenser fans start. The condenser-fan motors run continuously while unit is cooling. If the thermostat calls for a second stage of cooling by energizing Y2, compressor contactor no. 2 (C2) is energized and compressor no. 2 starts.

A freeze protection thermostat (FPT) is located on the evaporator coil. It detects frost buildup and turns off the compressors, allowing the coil to clear. Once frost has melted, the compressors can be reenergized by resetting the thermostat.

Heating, Units Without Economizer (If Accessory or Optional Heater is Installed) — Upon a call for heating through terminal W1, IFC and heater contactor no. 1 (HC1) are energized. When additional heat is needed, HC2 is energized through W2.

Cooling, Units With Economizer — Upon a call for cooling, when outdoor ambient temperature is above the outdoor-air temperature control setting, the evaporator and condenser fans and compressor energize. The economizer damper moves to VENT position.

Upon a first-stage call for cooling, when outdoor ambient temperature is below the temperature control setting, the evaporator fan starts and economizer damper modulates to maintain mixed-air temperature. The compressors remain off.

Upon a second-stage call for cooling, compressor no. 1 is energized and mechanical cooling is integrated with economizer cooling. Compressor no. 2 is locked out. If the outdoor-air temperature is below 50 F, a cooling lockout switch prevents the compressors from running.

When supply-air temperature drops below a fixed set point, the economizer damper modulates to maintain the temperature at the fixed set point.

Heating, Units With Economizer (If Accessory or Optional Heater is Installed) — The outdoor-air damper stays at VENT position while the evaporator fan is operating. Upon a call for heating through terminal W1, the indoor (evaporator) fan contactor (IFC) and heater contactor no. 1 (HC1) are energized. When additional heat is needed, HC2 is energized through W2.

Table 2 — Electrical Data

UNIT 50HJ	V-PH-HZ	VOLTAGE RANGE		COMPRESSOR No. 1		COMPRESSOR No. 2		CONDENSER FAN MOTOR		EVAPORATOR FAN MOTOR		ACCESSORY/OPTIONAL ELECTRIC HEATERS*		POWER SUPPLY	
		Min	Max	RLA	LRA	RLA	LRA	Qty	FLA	Hp	FLA	FLA	kW	MCA	MOCP†
024	380-3-60	342	418	24	93	24	93	2	3.9 (ea)	5	9 1	— 32 54	— 22 37	71 71 79	90 90 90

LEGEND

FLA — Full Load Amps, for fan motors
LRA — Locked Rotor Amps
MCA — Minimum Circuit Amps Complies with National Electrical Code (NEC) *Section* 430-24 (U S.A *Standard*)
MOCP — Maximum Overcurrent Protective Device (fuse only)
RLA — Rated Load Amps, for compressor motors

LEGEND

AHA — Adjustable Heat Anticipator
BRK W/AT — Breaks With Amp Turns
C — Contactor, Compressor
CB — Circuit Breaker
CC — Cooling Compensator
CH — Crankcase Heater
CLO — Compressor Lockout
CLS — Cooling Lockout Switch
COMP — Compressor Motor
CR — Control Relay
CT — Current Transformer
DM — Damper Motor
DU — Dummy Terminal
EQUIP — Equipment
FL — Fuse Link
FPT — Freeze Protection Thermostat
FU — Fuse
GND — Ground
HC — Heater Contactor
HPS — High-Pressure Switch
HTR — Heater
IFC — Indoor-Fan Contactor
IFCB — Indoor-Fan Circuit Breaker
IFM — Indoor-Fan Motor
IFR — Indoor-Fan Relay
IP — Internal Protector
L — Light
LPS — Low-Pressure Switch
LS — Limit Switch
MAT — Mixed-Air Thermostat
NEUT — Neutral
OAT — Outdoor-Air Thermostat
OFC — Outdoor-Fan Contactor
OFM — Outdoor-Fan Motor
OP — Overcurrent Protector
PL — Plug Assembly
PRI — Primary
TB — Terminal Block
TC — Thermostat Cooling
TH — Thermostat Heating
TRAN — Transformer
SW — Switch


Terminal (Marked)


Terminal (Unmarked)


Terminal Block


Splice

Factory Wiring

Field Wiring

To indicate common potential only, not to represent wiring

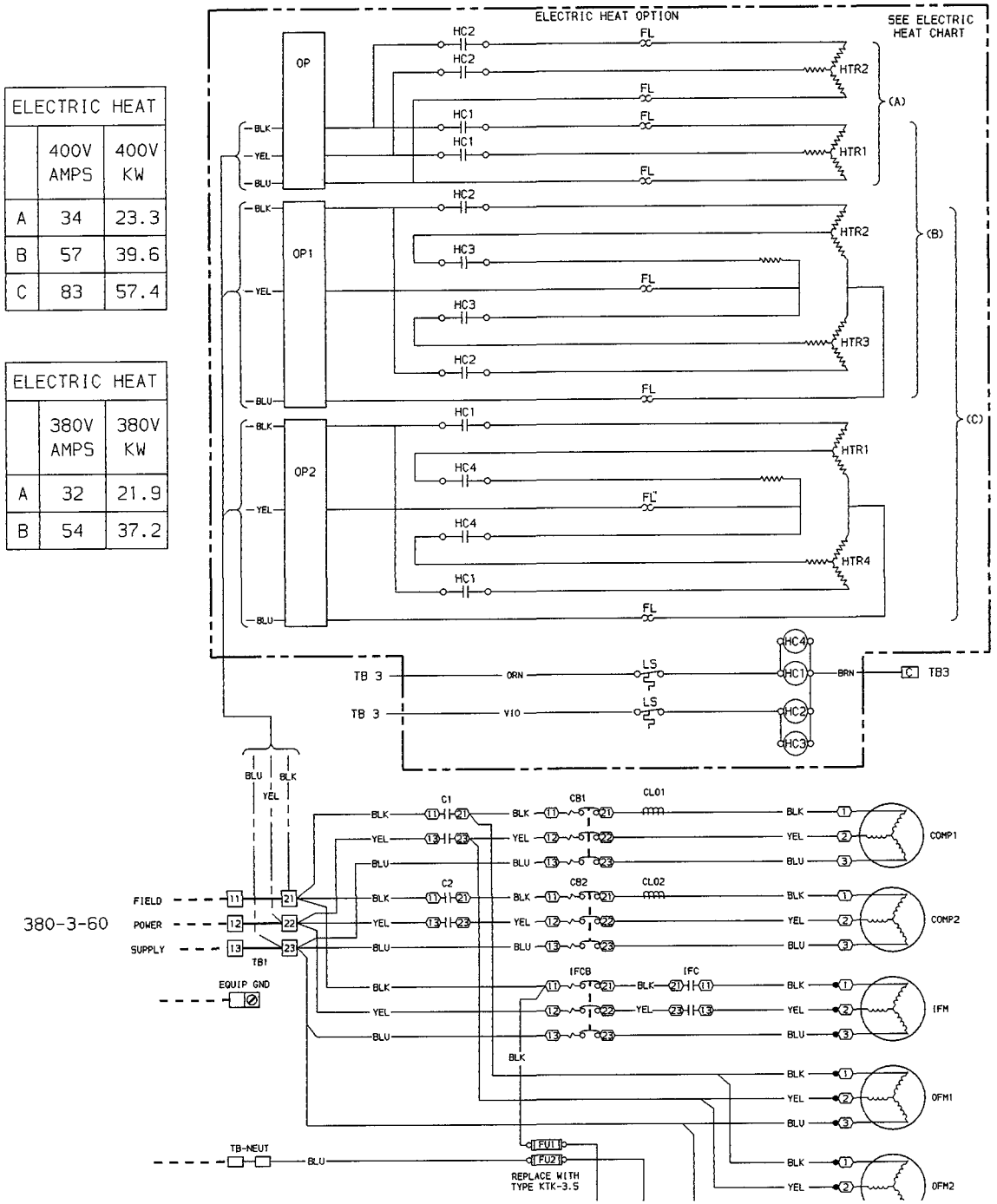
Option/Accessory Wiring

NOTES

1. Compressor and/or fan motors are thermally protected. Three-phase motors are protected against primary single phasing conditions
2. If any of the original wire furnished must be replaced, it must be replaced with Type 90° C wire or its equivalent.
3. Jumpers are omitted when unit is equipped with economizer
4. CB1 and 2 Must Trip Amps are equal to or less than 156% FLA.
5. The CLO locks out the compressor to prevent short cycling on compressor overload and safety devices Before replacing CLO, check these devices

ELECTRIC HEAT		
	400V AMPS	400V KW
A	34	23.3
B	57	39.6
C	83	57.4

ELECTRIC HEAT		
	380V AMPS	380V KW
A	32	21.9
B	54	37.2



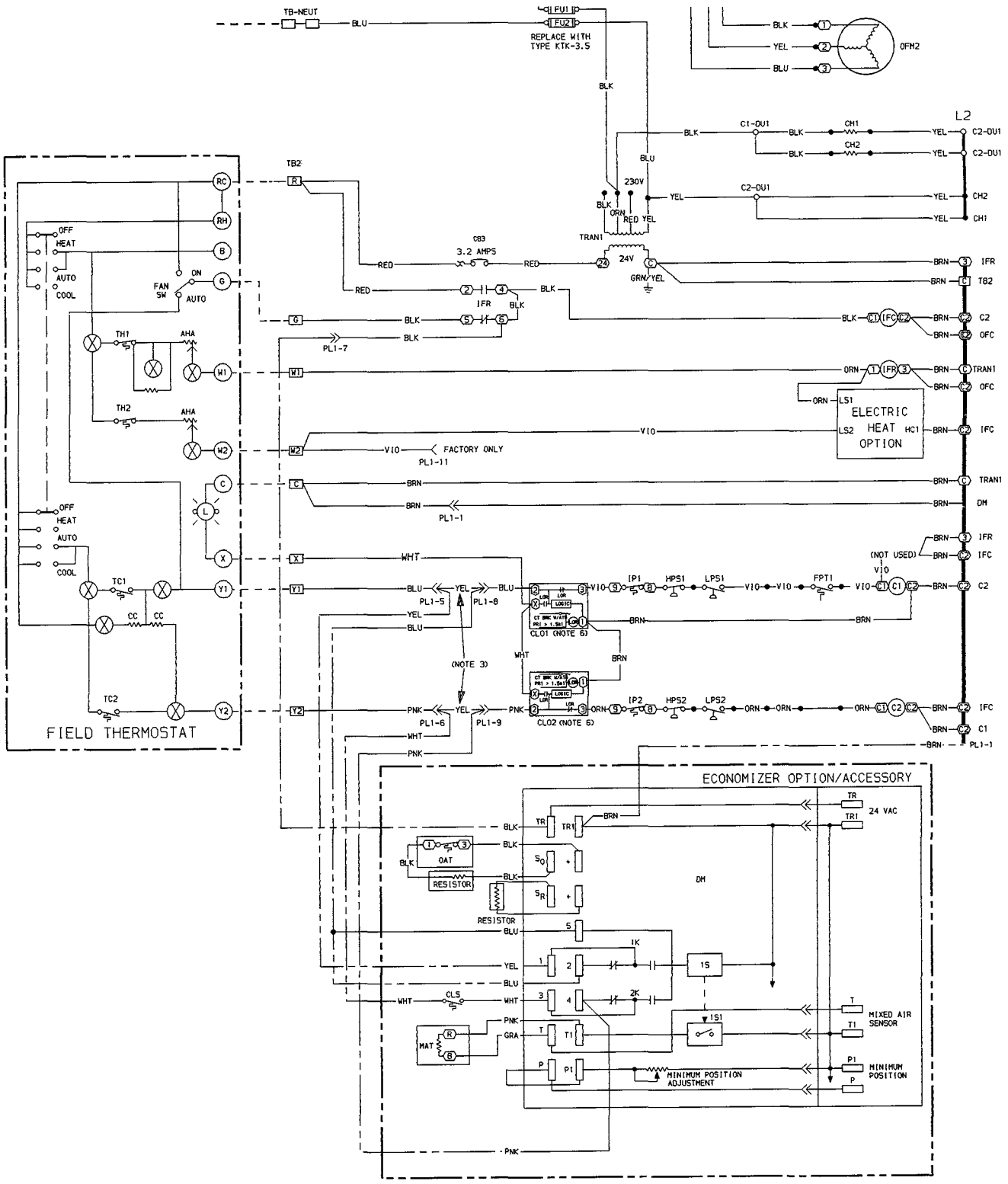


Fig. 1 — Wiring Schematic

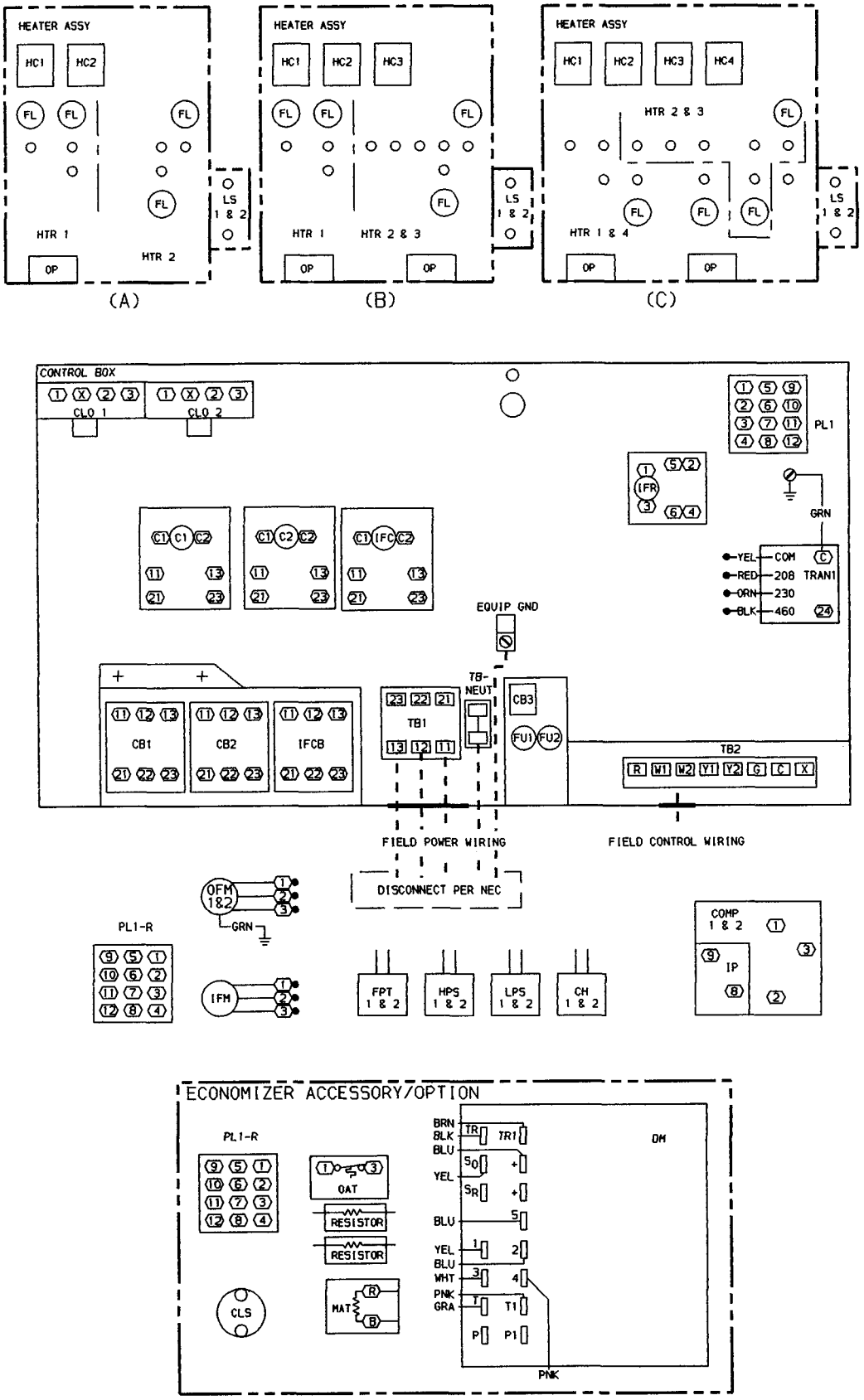


Fig. 2 — Component Arrangement