

WIRING DIAGRAM MANUAL

Split System Air Conditioner

(H,C,T)CA924-60GKA200

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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339621-101 Wiring Diagram (All *KA200 models) . . . 2

MODELS

(H,C,T)CA924GKA

(H,C,T)CA936GKA

(H,C,T)CA948GKA

(H,C,T)CA960GKA



WARNING

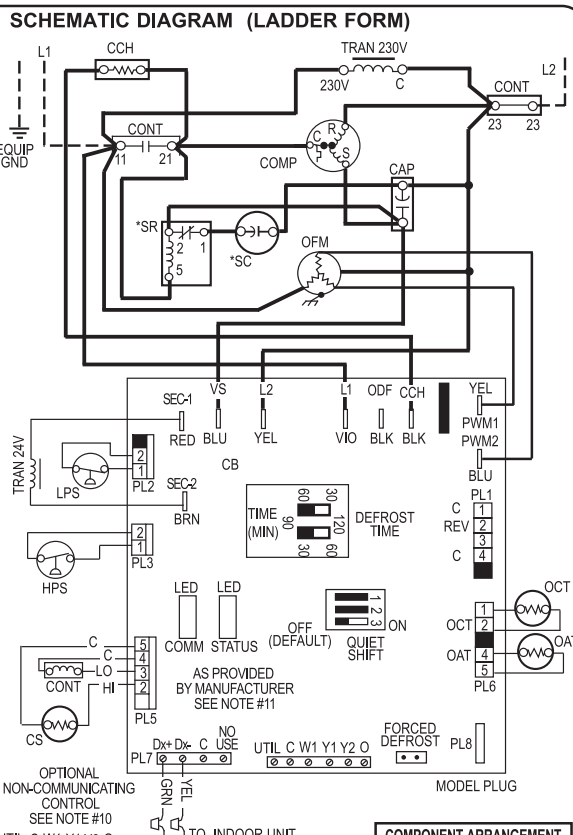
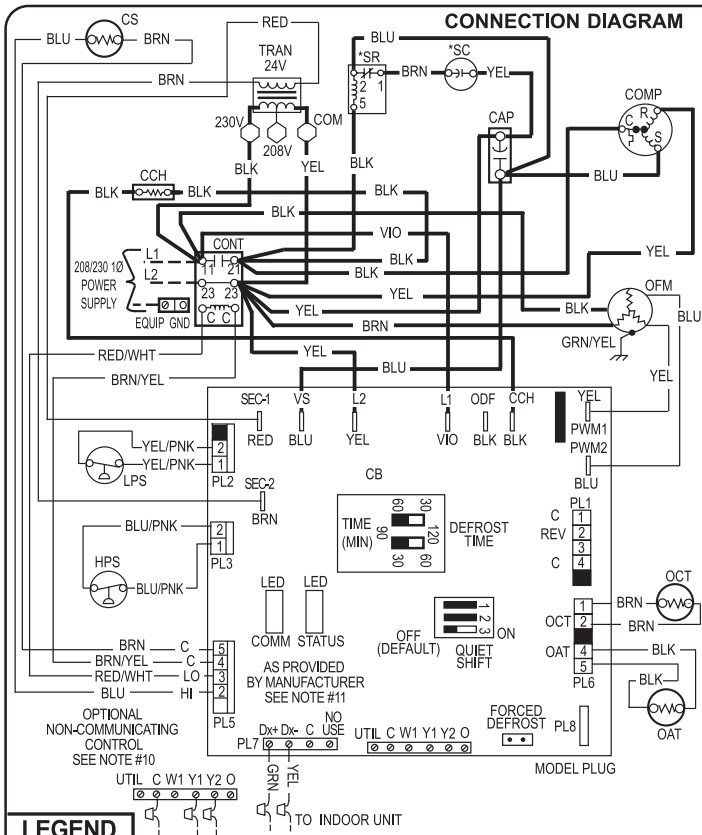
DEATH, PERSONAL INJURY, AND/OR PROPERTY DAMAGE HAZARD

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.



LEGEND

- FACTORY POWER WIRING
 - FACTORY CONTROL WIRING
 - FIELD CONTROL WIRING
 - - - - FIELD POWER WIRING
 - COMPONENT CONNECTION
 - FIELD SPLICE
 - JUNCTION
 - CAP CAPACITOR
 - CB CONTROL BOARD
 - CCH CRANKCASE HEATER
 - COMM SYSTEM COMMUNICATION
 - COMP COMPRESSOR
 - CONT CONTACTOR
 - CS COMP HIGH CAP SOLENOID
 - HPS HIGH PRESSURE SWITCH
 - LPS LOW PRESSURE SWITCH
 - OAT THERMISTOR (OUTDOOR AIR)
 - OCT THERMISTOR COIL
 - OFM OUTDOOR FAN MOTOR
 - OFM OUTDOOR FAN MOTOR
 - SR START CAPACITOR
 - SEV SOLENOID EXPANSION VALVE
 - *SR START RELAY
 - STATUS SYSTEM FUNCTION LIGHT
 - TRAN TRANSFORMER
- * MAY BE FIELD INSTALLED

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 70°C (167°F).
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.
9. **IN CASE OF COMMUNICATING INDOOR SYSTEM MUST USE OBSERVER WALL CONTROL LISTED IN PRE-SALE LITERATURE ONLY.**
10. In case of non-communicating indoor system disconnect factory provided wires from Dx+ and Dx- terminals. Use factory provided wires to connect to Y1, Y2, and C as required by installation instructions. Cap or remove unused factory provided wires.
11. For communicating control only.
12. N.E.C. class 2, 24 V circuit, min. 40 VA required, 60 VA on units installed with LLS.

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
16	System Communications Failure	72	High Stage Thermal Cutout
25	Invalid Model Plug	73	Contactors Shorted
31	High Pressure Switch Trip	74	Contactors Open (No 230v to Comp)
32	Low Pressure Switch Trip	81	Low Stage Thermal Lockout (4 HRS)
45	Control Board Fault	82	High Stage Thermal Lockout (4 HRS)
46	Brown out (230V)	83	Low Pressure Lockout (4 HRS)
		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.

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 Air Flow Rates and for use of line lengths over 15 feet.
3. Relieve 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.

MODEL PLUG CHART

MODEL SIZE	MODEL PLUG	PIN RESISTANCE (K Ω)	1 - 4 (R1)	2 - 3 (R2)
24	009	5.1	91	
36	011	5.1	150	
48	013	5.1	220	
60	015	5.1	360	

CONDENSING UNIT CHARGING INSTRUCTIONS
For use with units using R-410A refrigerant

Liquid Pressure at Service Valve (psig)	Required Subcooling Temperature (°F)					
	6	8	10	12	14	16
251	78	76	74	72	70	68
259	80	78	76	74	72	70
266	82	80	78	76	74	72
274	84	82	80	78	76	74
283	86	84	82	80	78	76
291	88	86	84	82	80	78
299	90	88	86	84	82	80
308	92	90	88	86	84	82
317	94	92	90	88	86	84
326	96	94	92	90	88	86
335	98	96	94	92	90	88
345	100	98	96	94	92	90
354	102	100	98	96	94	92
364	104	102	100	98	96	94
374	106	104	102	100	98	96
384	108	106	104	102	100	98
395	110	108	106	104	102	100
406	112	110	108	106	104	102
416	114	112	110	108	106	104
427	116	114	112	110	108	106
439	118	116	114	112	110	108
450	120	118	116	114	112	110
462	122	120	118	116	114	112
474	124	122	120	118	116	114

COOLING ONLY CHARGING PROCEDURE

1. Only use subcooling charging method when OD ambient is greater than 70°F and less than 100°F, indoor temp is greater than 70°F and less than 80°F, and line set is less than 80 ft.
2. Operate unit a minimum of 15 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 thermistor 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. When adding refrigerant, charge in liquid form using a flow restricting device into suction service port. Recover refrigerant if temperature is lower. Allow a tolerance of +/- 3°F.

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. See Installation Instructions for further information on crankcase heater activation.

