

WIRING DIAGRAM MANUAL

Split System Air Conditioner

(C/H/T)SA5

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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338440-101 Wiring Diagram 2

MODELS

208/230-1-60
CSA5
HSA5
TSA5



WARNING

DEATH, PERSONAL INJURY, AND/OR PROPERTY DAMAGE HAZARD

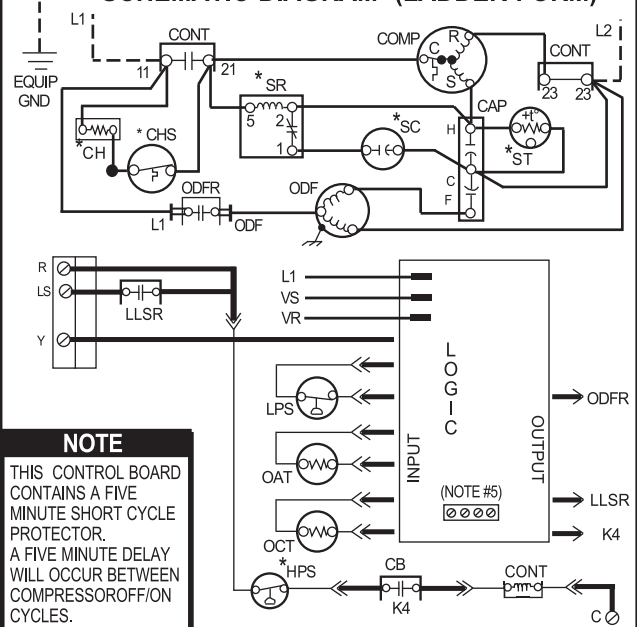
Failure to carefully read and follow this warning could result in equipment malfunction, property damage, personal injury and/or death.

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.

SCHEMATIC DIAGRAM (LADDER FORM)



REQUIRED LIQUID LINE TEMPERATURE

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

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 sub-cooling 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 $\pm 3^{\circ}\text{F}$.

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.



338440-101 REV. A

	FACTORY POWER WIRING	*CH	CRANKCASE HEATER
	FACTORY CONTROL WIRING	*CHS	CRANKCASE HEATER SWITCH
	FIELD CONTROL WIRING	COMP	COMPRESSOR
	FIELD POWER WIRING	CONT	CONTACTOR
	CONDUCTOR ON CIRCUIT BOARD	*HPS	HIGH PRESSURE SWITCH
	COMPONENT CONNECTION	*LPS	LOW PRESSURE SWITCH
	1/4 - INCH QUICK CONNECT TERMINALS	OAT	THERMISTOR (OUTDOOR AIR)
	FIELD SPLICE	OCT	THERMISTOR COIL
	JUNCTION	ODFR	OUTDOOR FAN RELAY
	PLUG RECEPTACLE	ODF	OUTDOOR FAN
	CAPACITOR (DUAL RUN)	*SC	START CAPACITOR
	CIRCUIT BOARD	*SR	START RELAY
		*ST	START THERMISTOR

*** MAY BE FACTORY OR FIELD INSTALLED**

1. Compressor and fan motor furnished with inherent thermal protection.
2. To be wired in accordance with National Electric Code (N.E.C.) and local codes.
3. N.E.C. Class 2, 24V circuit, min. 40VA required, 60VA on units installed with LLS.
4. Use copper conductors only from disconnect to unit suitable for at least 75°C (167°F).
5. For communicating control only.
6. If indoor section has a transformer with a grounded secondary, connect the grounded side to "C" on the circuit board.
7. If any of the original wire, as supplied, must be replaced, use the same or equivalent wire.
8. Check all electrical connections inside control box for tightness.
9. Do not attempt to operate unit until service valves have been opened.
10. Symbols are electrical representation only.
11. When start relay and start capacitor are installed, start thermistor is not used.
12. In case of non-communicating Indoor system, disconnect factory provided wires from DX+, DX-, C and R terminals. Using factory provided wires, connect to R, C and/or Y Terminals per installation instructions. Connect field 24V wires to factory provided wires, cap or remove unused factory provided wires.