

# WIRING DIAGRAM MANUAL

## Split System Air Conditioner

N4A3, R4A3, WCA3\*\*4, NXA4, R4A4, WCA4\*\*4  
N4A5, R4A5, WCA5\*\*4, N4A6, NXA6

### Safety Labeling and Signal Words

#### DANGER, WARNING, CAUTION, 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

<b>Wire Diagram 340085- 101</b>
All N4A3, All N4A5, All N4A6 (except 48 & 60 GKB), All NXA4, All NXA6, R4A424(A,G)KA, R4A518(A,G)KA, R4A524(A,G)KA, WCA4244GKA, WCA5184GKA, WCA5244GKA
<b>Wire Diagram 340086- 101</b>
All R4A3, All R4A4, except R4A424(A,G)KA, All R4A5 except R4A518(A,G)KA & R4A524(A,G)KA, All WCA3, All WCA4 except WCA4244GKA, All WCA5 except WCA5184GKA & WCA5244GKA
<b>Wire Diagram 342878- 101</b>
N4A648GKB, N4A660GKB

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.**

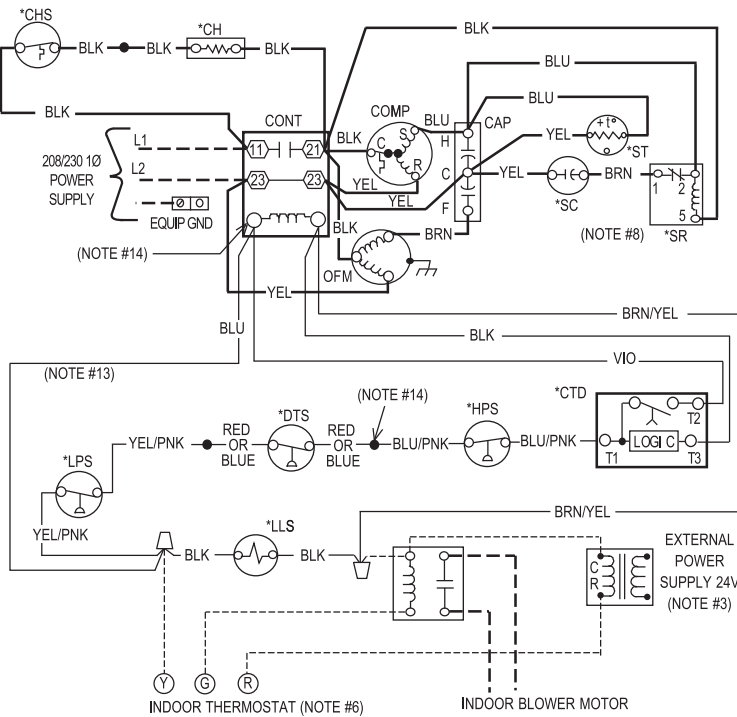
**Installation or repairs made by unqualified persons could result in equipment malfunction, property damage, personal injury and/or death.**

**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.**

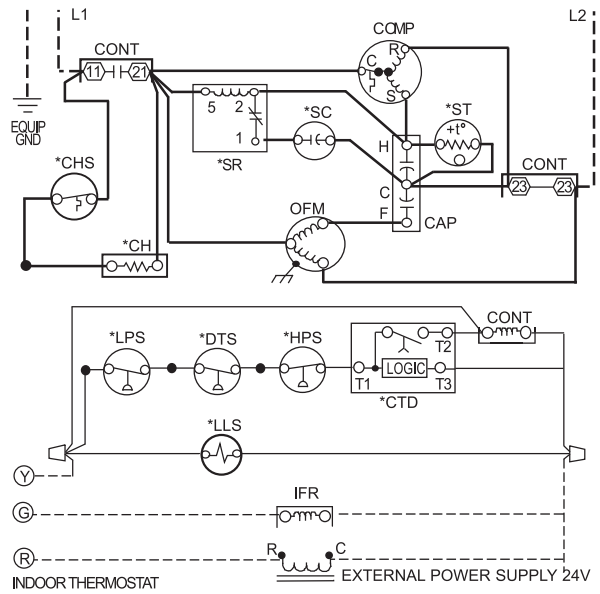
**Installation must conform with local building codes and with the National Electrical Code NFPA70 current edition or Canadian Electrical Code Part 1 CSA C.22.1.**

# 340085-101

## CONNECTION DIAGRAM



## SCHEMATIC DIAGRAM (LADDER FORM)



### CONDENSING UNIT CHARGING INSTRUCTIONS

For use with units using R-410A refrigerant

#### 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

#### COOLING ONLY CHARGING PROCEDURE

1. Only use sub cooling 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 thermometer 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.

#### 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.



340085-101 REV. A

### LEGEND

- FACTORY POWER WIRING
- FACTORY CONTROL WIRING
- FIELD CONTROL WIRING
- - - - - FIELD POWER WIRING
- COMPONENT CONNECTION
- ⊕ FIELD SPLICE
- JUNCTION
- CONT CONTACTOR
- CAP CAPACITOR (DUAL RUN)
- \*CH CRANKCASE HEATER
- \*CHS CRANKCASE HEATER SWITCH
- COMP COMPRESSOR
- \*CTD COMPRESSOR TIME DELAY
- \*DTS DISCHARGE TEMPERATURE SWITCH
- \*HPS HIGH PRESSURE SWITCH
- IFR INDOOR FAN RELAY
- \*LLS LIQUID LINE SOLENOID VALVE
- \*LPS LOW PRESSURE SWITCH
- OFM OUTDOOR FAN MOTOR
- \*SC START CAPACITOR
- \*SR START RELAY
- \*ST START THERMISTOR

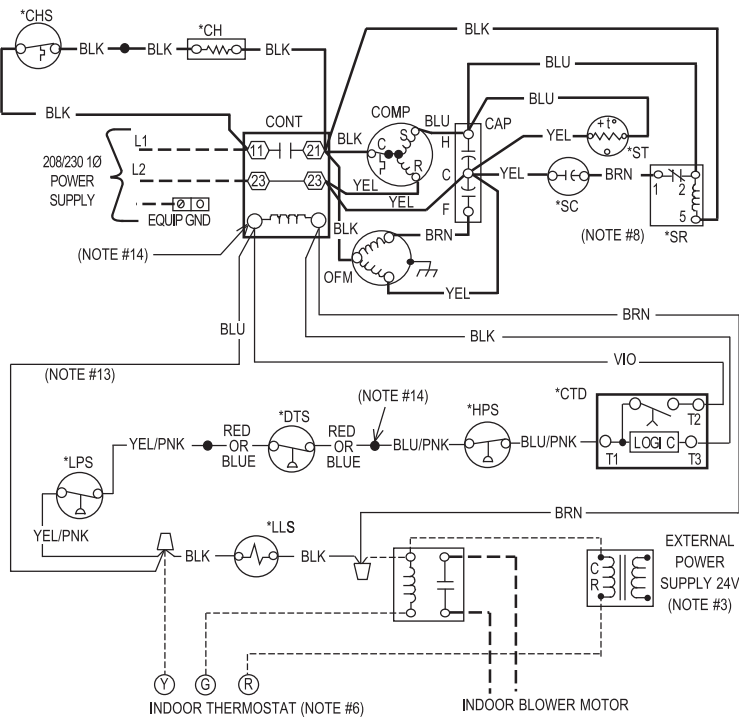
\* MAY BE FACTORY OR FIELD INSTALLED

### NOTES:

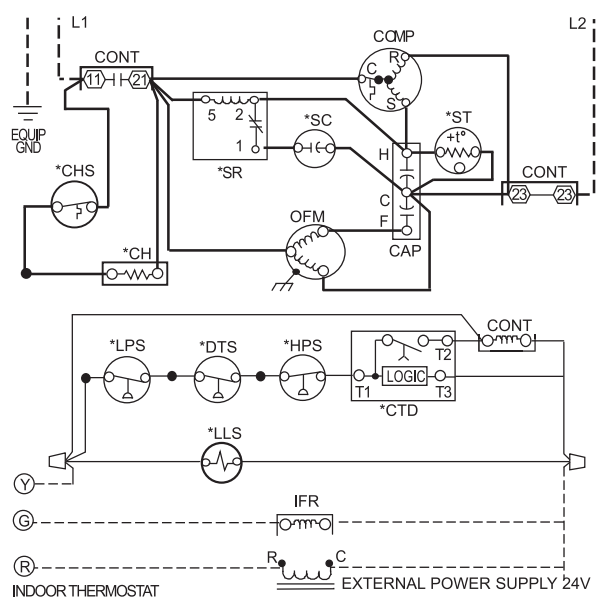
1. Symbols are electrical representation only.
2. Compressor and fan motor furnished with inherent thermal protection.
3. To be wired in accordance with National Electric N.E.C. and local codes.
4. N.E.C. class 2, 24 V circuit, min. 40 VA required, 60 VA on units installed with LLS.
5. Use copper conductors only. Use conductors suitable for at least 75°C (167°F).
6. Connection for typical cooling only thermostat. For other arrangements see installation Instructions.
7. If indoor section has a transformer with a grounded secondary, connect the grounded side to the BRN/YEL lead.
8. When start relay and start capacitor are installed, start thermistor is not used.
9. If any of the original wire, as supplied must be replaced, use the same or equivalent wire.
10. Check all electrical connections inside control box for tightness.
11. Do not attempt to operate unit until service valves have been opened.
12. Do not rapid cycle compressor. Compressor must be off 3 minutes to allow pressures to equalize between high and low side before starting.
13. Wire not present if LPS, DTS, HPS and/or CTD are used.
14. BLU or RED wire connected to contactor coil when DTS used and LPS, HTS, CTD not used.

# 340086-101

## CONNECTION DIAGRAM



## SCHEMATIC DIAGRAM (LADDER FORM)



### CONDENSING UNIT CHARGING INSTRUCTIONS

For use with units using R-410A refrigerant

#### REQUIRED LIQUID LINE TEMPERATURE

Liquid Pressure at Service Valve (psig)	Required Subcooling Temperature (°F)					
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1. Only use sub cooling 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.
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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.

#### 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.

### LEGEND

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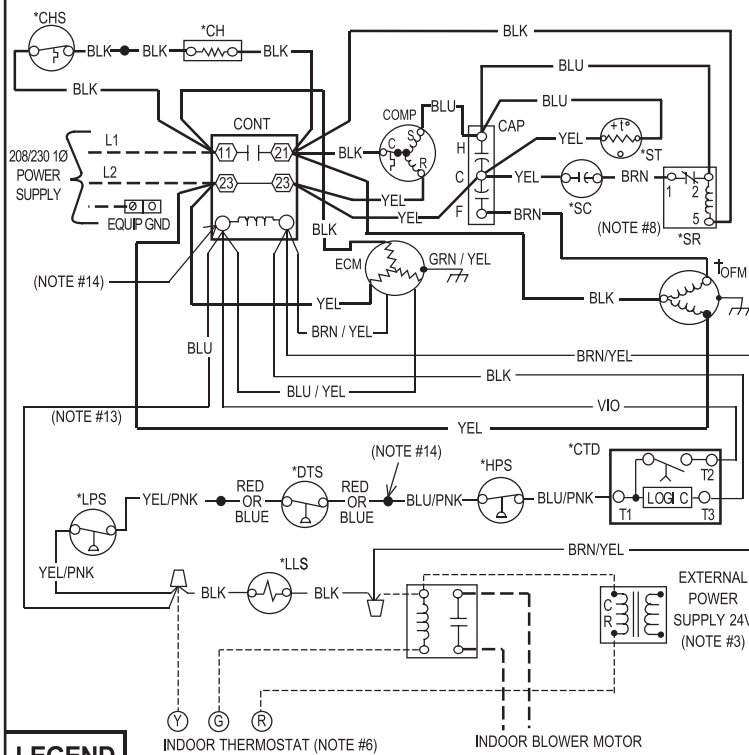
340086-101 REV. A



340086-101 REV. A

# 342878-101

## CONNECTION DIAGRAM



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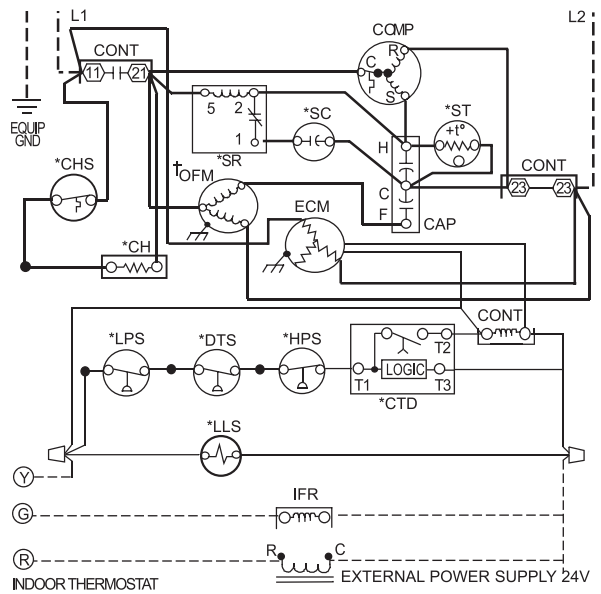
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- \*LLS LIQUID LINE SOLENOID VALVE
- \*LPS LOW PRESSURE SWITCH
- †OFM OUTDOOR FAN MOTOR (ACCESSORY PSC)
- \*SC START CAPACITOR
- \*SR START RELAY
- \*ST START THERMISTOR
- ECM ELECTRONICALLY COMMUTATED MOTOR

\* MAY BE FACTORY OR FIELD INSTALLED  
 † FIELD INSTALLED MOTOR FOR LOW AMBIENT KIT (REPLACES ECM)

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EXPANDED TABLE					
340085- 101	340085- 101	340086- 101	340086- 101	340086- 101	342878- 101
N4A318AKC100	N4A530GKC101	R4A318AKC100	R4A436AKA100	WCA3184GKC100	N4A648GKB101
N4A318AKN100	N4A536AKC101	R4A318AKN100	R4A436GKA100	WCA3184GKN100	N4A660GKB101
N4A318CKA100	N4A536GKC101	R4A318GKC100	R4A442AKA100	WCA3244GKC100	
N4A318CKN100	N4A542AKC101	R4A318GKN100	R4A442GKA100	WCA3244GKN100	
N4A318GKC100	N4A542GKC101	R4A324AKC100	R4A448AKA100	WCA3304GKA2	
N4A318GKN100	N4A548AKC101	R4A324AKN100	R4A448GKA100	WCA3304GKN200	
N4A324AKC100	N4A548GKC101	R4A324GKC100	R4A460AKA100	WCA3364GKA2	
N4A324AKN100	N4A560AKC101	R4A324GKN100	R4A460GKA100	WCA3364GKC100	
N4A324CKA100	N4A560GKC101	R4A330AKA200	R4A518AKA100	WCA3364GKN100	
N4A324CKN100	N4A618GKA101	R4A330AKN200	R4A518GKA100	WCA3364GKN200	
N4A324GKC100	N4A624GKA101	R4A330GKA200	R4A524AKA100	WCA3424GKA2	
N4A324GKN100	N4A630GKA101	R4A330GKN200	R4A524GKA100	WCA3424GKC100	
N4A330AKC200	N4A636GKA101	R4A336AKA200	R4A530AKA100	WCA3424GKN100	
N4A330AKN200	N4A642GKA101	R4A336AKC100	R4A530GKA100	WCA3424GKN200	
N4A330CKA100	N4A648GKA101	R4A336AKN100	R4A536AKA100	WCA3484GKA3	
N4A330CKN100	N4A660GKA101	R4A336AKN200	R4A536GKA100	WCA3484GKC100	
N4A330GKC200	N4A618GKB101	R4A336GKA200	R4A542AKA100	WCA3484GKN100	
N4A330GKN200	N4A624GKB101	R4A336GKC100	R4A542GKA100	WCA3484GKN300	
N4A336AKB200	N4A630GKB101	R4A336GKN100	R4A548AKA100	WCA3604GKA2	
N4A336AKB300	N4A636GKB101	R4A336GKN200	R4A548GKA100	WCA3604GKC100	
N4A336AKN300	N4A642GKB101	R4A342AKA200	R4A560AKA100	WCA3604GKN100	
N4A336CKA100	NXA418AKC101	R4A342AKC100	R4A560GKA100	WCA3604GKN200	
N4A336CKN100	NXA418GKC101	R4A342AKN100		WCA4184GKA100	
N4A336GKB200	NXA424AKC101	R4A342AKN200		WCA4244GKA100	
N4A336GKB300	NXA424GKC101	R4A342GKA200		WCA4304GKA100	
N4A336GKN300	NXA430AKC101	R4A342GKC100		WCA4364GKA100	
N4A342AKA300	NXA430GKC101	R4A342GKN100		WCA4424GKA100	
N4A342AKN300	NXA436AKC101	R4A342GKN200		WCA4484GKA100	
N4A342CKA100	NXA436GKC101	R4A348AKA300		WCA4604GKA100	
N4A342CKN100	NXA442AKC101	R4A348AKC100		WCA5184GKA100	
N4A342GKA300	NXA442GKC101	R4A348AKN100		WCA5244GKA100	
N4A342GKN300	NXA448AKC101	R4A348AKN300		WCA5304GKA100	
N4A348AKB200	NXA448GKC101	R4A348GKA300		WCA5364GKA100	
N4A348AKB300	NXA460AKC101	R4A348GKC100		WCA5424GKA100	
N4A348AKN300	NXA460GKC101	R4A348GKN100		WCA5484GKA100	
N4A348CKA100	NXA618GKA100	R4A348GKN300		WCA5604GKA100	
N4A348CKN100	NXA624GKA100	R4A360AKA200			
N4A348GKB200	NXA630GKA100	R4A360AKC100			
N4A348GKB300	NXA636GKA100	R4A360AKN100			
N4A348GKN300	NXA642GKA100	R4A360AKN200			
N4A360AKC300	NXA648GKA100	R4A360GKA200			
N4A360AKC400	NXA649GKA100	R4A360GKC100			
N4A360AKN400	NXA660GKA100	R4A360GKN100			
N4A360CKA100	NXA661GKA100	R4A360GKN200			
N4A360CKN100	R4A424AKA101	R4A418AKA100			
N4A360GKC300	R4A424GKA101	R4A418GKA100			
N4A360GKC400	R4A518AKA101	R4A424AKA100			
N4A360GKN400	R4A518GKA101	R4A424GKA100			
N4A518AKC101	R4A524AKA101	R4A430AKA100			
N4A518GKC101	R4A524GKA101	R4A430GKA100			
N4A524AKC101	WCA4244GKA101				
N4A524GKC101	WCA5184GKA101				
N4A530AKC101	WCA5244GKA101				

