



Product Information and Technical Guide

2004 Room Air Conditioners

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ATTENTION SERVICERS!

To get a helping hand, visit the
Frigidaire Web Site at:

<http://www.frigidaire.com>

User name: service

Password: tips

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SAFE SERVICING PRACTICES - ALL APPLIANCES

To avoid personal injury or property damage, it is important that **Safe Servicing Practices** be observed. The following are some limited examples of safe practices.

1. **DO NOT** attempt a product repair if you doubt your ability to complete it in a safe and satisfactory manner.
2. Before servicing or moving an appliance
 - Remove power cord from electrical outlet, trip circuit breaker to **OFF** position, or remove fuse
 - Turn off gas supply
 - Turn off water supply
3. Never interfere with the proper operation of any safety device.
4. **Use only OEM replacement parts cataloged for this appliance. Substitutions may defeat compliance with safety standards set for home appliances.**
5. **GROUNDING:** The standard color coding for safety ground wires is **GREEN**, or **GREEN** with **YELLOW STRIPES**. **DO NOT** use ground leads as current carrying conductors. It is **EXTREMELY** important that the service technician reestablish all safety grounds prior to completing service. Failure to do so will create an electrical hazard.
6. Prior to returning the product to service, ensure that
 - All electrical connections are correct and secure
 - All electrical leads are properly dressed and secured away from sharp edges, high-temperature components, and moving parts
 - All non-insulated electrical terminals, connectors, heaters, etc. are adequately spaced away from all metal parts and panels
 - All safety grounds (both internal and external) are correctly and securely connected
 - All panels are properly and securely reassembled

WARNING

This service manual is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. Electrolux Home Products Inc. cannot be responsible, nor assume any liability, for injury or damage of any kind arising from the use of this manual.

FRIGIDAIRE MODEL SPECIFICATIONS

Model	FAS156N1A	FAS184N2A	FAS185N2A	FAS186N2A	FAS226N2A
Chassis Type	Heavy Duty Top Control	Heavy Duty Top Control	Heavy Duty Top Control	Heavy Duty Top Control	Heavy Duty Top Control
Capacity Features					
BTU - Cooling	15100	18000/17800	18500/18200	18500/18200	22000/21600
BTU - Heating	-	-	-	-	-
Moisture Removal	3.5	5.3	5.5	5.5	6.5
EER	10.7	9.7	10.7	10.7	9.4
Electrical Information					
Voltage	115	230/208	230/208	230/208	230/208
Amps - Cooling	12.5	8.5/9.0	7.8/8.5	7.8/8.5	10.5/11.4
Amps - Heating	-	-	-	-	-
Watts - Cooling	1415	1860/1840	1730/1700	1730/1700	2340/2300
Watts - Heating	-	-	-	-	-
Fuse/Breaker (Amps)	15	15	15	15	15
Receptacle Code	A	C	C	C	C
Wiring Diagram	309902101	309902101	309902101	309902101	309902101
Page #	17	17	17	17	17
Air Flow System					
Capacitor- μ farads	10/370	6/440	6/450	6/450	7.5/450
Fan Motor Mfg.	Heshan	Heshan	Heshan	Heshan	Heshan
Fan Motor Number	309630615	309630613	309630613	309630613	309630614
RPM/CMP (EVAP)					
High	980/530	975/500	1000/480	1000/480	1115/550
Medium	-	-	-	-	-
Low	810/400	775/400	800/380	800/380	925/470
Heat Only	-	-	-	-	-
Refrigeration System					
Compressor Mfg.	LG	LG	LG	LG	LG
Compressor Number	QK191CAB	QJ258KAB	QJ250KBA-6A	QJ250KBA-6A	QP306KBA
Compressor Type	Rotary	Rotary	Rotary	Rotary	Rotary
Overload Protector	A363784	A363771	A363789	A363789	Internal
Capacitor- μ farads	60/370	25/440	35/450	35/450	40/450
Refrigerant Charge	42	31.75	36	36	38.5
Restrictor Tube	A112129	A112138	A112115	A112115	A112114
Thermostat Type	Electronic	Electronic	Electronic	Electronic	Electronic
Installation Instructions					
Kit Type	A	A	A	A	A
Part Number	309000906	309000906	309000906	309000906	309000906
Control Thermostat					
Location Diagram	Page 12	Page 12	Page 12	Page 12	Page 12
Condenser Fan and					
Evaporator Blower					
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FRIGIDAIRE MODEL SPECIFICATIONS

Model	FAS256N2A	FAS296N2A	FAH085N1T	FAH08EN1T	FAH105N1T
Chassis Type	Heavy Duty Top Control	Heavy Duty Top Control	Builder Line	Builder Line	Builder Line
Capacity Features BTU - Cooling BTU - Heating Moisture Removal EER	25000/24700 - 7.6 9.4	28500/28000 - 8.6 8.5	8000 - 1.8 9.4	8000 4200 1.8 9.4	10000 - 2.8 9.4
Electrical Information Voltage Amps - Cooling Amps - Heating Watts - Cooling Watts - Heating Fuse/Breaker (Amps) Receptacle Code Wiring Diagram Page #	230/208 12.0/13.0 - 2660/2630 - 20 D 309902101 17	230/208 15.0/16.3 - 3365/3300 - 30 E 309902101 17	115 7.5 - 850 - 15 A 309201101 16	115 7.5 12 850 1250 15 A 309201102 16	115 10 - 1065 - 15 A 309201101 16
Air Flow System Capacitor- μ farads Fan Motor Mfg. Fan Motor Number RPM/CMP (EVAP) High Medium Low Heat Only	7.5/450 Heshan 309630616 1145/590 - 925/470 -	7.5/450 Heshan 309630616 1145/570 - 960/475 -	10/370 Welling 309647503 1130/280 950/230 800/190 -	10/370 Welling 309647503 1130/280 950/230 800/190 -	10/370 Welling 309647503 1130/280 950/240 800/210 -
Refrigeration System Compressor Mfg. Compressor Number Compressor Type Overload Protector Capacitor- μ farads Refrigerant Charge Restrictor Tube Thermostat Type	LG QP348KBB Rotary Internal 40/450 40.5 A112153 Electronic	LG QP425KAA Rotary Internal 45/450 41.3 A112156/57-59 Electronic	Matsushita 2R11S3R126A6A Rotary 309205101 35/370 18.7 A112116 Electronic	Matsushita 2R11S3R126A6A Rotary 309205101 35/370 18.7 A112116 Electronic	LG QK141CCA Rotary A363785 50/370 20.5 A112129 Electronic
Installation Instructions Kit Type Part Number	A 309000906	A 309000906	T 309636002	T 309636002	T 309636002
Control Thermostat Location Diagram	Page 12	Page 12	Page 12	Page 12	Page 12
Condenser Fan and Evaporator Blower Location Diagram	Page 14	Page 14	Page 14	Page 14	Page 14

FRIGIDAIRE MODEL SPECIFICATIONS

Model	FAH105N2T	FAH10EN2T	FAH124N2T	FAH12EN2T	FAK083N7V
Chassis Type	Builder Line	Builder Line	Builder Line	Builder Line	Slider Casement
Capacity Features BTU - Cooling BTU - Heating Moisture Removal EER	10000/9800 - 2.8 9.4	10000/9800 10600/8600 2.8 9.4	12000/11700 - 3.6 9	12000/11700 10600/8600 3.6 9	8000 - 2.2 10.5
Electrical Information Voltage Amps - Cooling Amps - Heating Watts - Cooling Watts - Heating Fuse/Breaker (Amps) Receptacle Code Wiring Diagram Page #	230/208 4.7/5.1 - 1060/1045 - 15 C 309201101 16	230/208 4.7/5.1 15.5/14 1060/1045 3450/2800 20 D 309201102 16	230/208 5.9/6.4 - 1335/1300 - 15 C 309201101 16	230/208 5.9/6.4 15.5/14 1335/1300 3450/2800 20 D 309201102 16	115 6.7 - 760 - 15 A A232012 15
Air Flow System Capacitor- μ farads Fan Motor Mfg. Fan Motor Number RPM/CMP (EVAP) High Medium Low Heat Only	6/450 Welling 309647501 1130/280 1010/240 880/210 -	6/450 Welling 309647501 1130/280 1010/240 880/210 -	7.5/450 Welling 309647502 1280/300 1130/260 975/230 -	7.5/450 Welling 309647502 1280/300 1130/260 975/230 -	5/370 Heshan 309646002 1120/240 1000/210 940/190 -
Refrigeration System Compressor Mfg. Compressor Number Compressor Type Overload Protector Capacitor- μ farads Refrigerant Charge Restrictor Tube Thermostat Type	LG QK141KBE Rotary A363786 30/450 18.4 A112145 Electronic	LG QK141KBE Rotary A363786 30/450 18.4 A112145 Electronic	LG QK164KBC Rotary A363788 30/450 22.6 A112119 Electronic	LG QK164KBC Rotary A363788 30/450 22.6 A112119 Electronic	Matsushita 2R11S3R126A2A Rotary 309205101 35/370 20.11 A112124 Bulb
Installation Instructions Kit Type Part Number	T 309636002	T 309636002	T 309636002	T 309636002	V 309625802
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FRIGIDAIRE MODEL SPECIFICATIONS

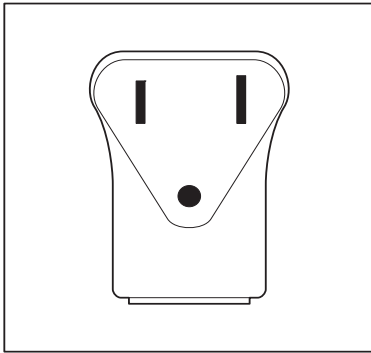
Model	FAK103N1V	FAK123N1V			
Chassis Type	Slider Casement	Slider Casement			
Capacity Features					
BTU - Cooling	10000	12000			
BTU - Heating	-	-			
Moisture Removal	2.8	3.6			
EER	9.5	9.5			
Electrical Information					
Voltage	115	115			
Amps - Cooling	9.6	11.5			
Amps - Heating	-	-			
Watts - Cooling	1050	1260			
Watts - Heating	-	-			
Fuse/Breaker (Amps)	15	15			
Receptacle Code	A	A			
Wiring Diagram	A232012	A232012			
Page #	15	15			
Air Flow System					
Capacitor- μ farads	15/370	15/370			
Fan Motor Mfg.	Heshan	Heshan			
Fan Motor Number	309646001	309646001			
RPM/CMP (EVAP)					
High	1400/305	1400/305			
Medium	1230/260	1230/260			
Low	1050/210	1050/210			
Heat Only	-	-			
Refrigeration System					
Compressor Mfg.	LG	LG			
Compressor Number	QK134CCA	QK164CCA			
Compressor Type	Rotary	Rotary			
Overload Protector	A363785	A363776			
Capacitor- μ farads	50/370	50/370			
Refrigerant Charge	20.46	23.28			
Restrictor Tube	A112137	A112104			
Thermostat Type	Bulb	Bulb			
Installation Instructions					
Kit Type	V	V			
Part Number	309625802	309625802			
Control Thermostat					
Location Diagram	Page 11	Page 11			
Condenser Fan and					
Evaporator Blower					
Location Diagram	Page 13	Page 13			

Compressor Overload Data						
Part#	Used With Compressor	Supplier Part#	Opening Temp C°± 5 C°	Closing Temp C°± 11 C°	Short Time Trip at 25 C°	
					Test Amp	Opening Time-Sec
309260303	2R11S3R126A6A	MRA98705				
A363785	QK134CCA	MRA12061-12056	150	61	50.5	6-16
A363785	QK141CCA	MRA12061-12056	150	61	50.5	6-16
A363776	QK164CCA	MRA12053-12057	150	61±9 C°	41.5	6-16
A363784	QK191CAB	MRA4720-12057	150	69	50.3	2-12
A363786	QK141KBE	MRA12054-12056	155±7 C°	69	14.5	6-16
A363788	QK164KBC	MRA12124-12056	155	69	19.0	6-16
A363771	QJ258KAB	MRA12044-12057	160	61	29.0	6-16
A363789	QJ250KBA	MRA12107-12057	150	69	27.3	6-16

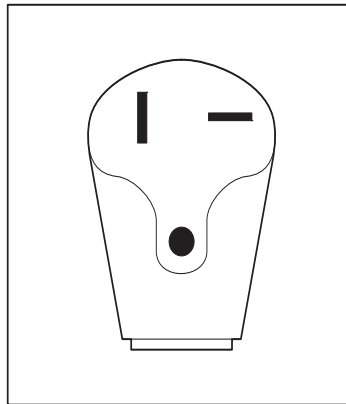
*Terminal to overload must withstand 10 pounds pull test.

Restrictor Tube Data							
Style#	Internal Diameter Color Code	Length	O.D.	I.D	PSIG	CFM Dry Air	
						Minimum	Maximum
A112114	Red	35.00	0.112	0.059	10	0.294	0.318
A112115	Red	40.00	0.112	0.059	10	0.274	0.296
A112129	Purple	45.00	0.097	0.046	25	0.261	0.283
A112138	Black	33.00	0.099	0.049	20	0.304	0.330
A112153	Blue	37.50	0.125	0.064	10	0.227	0.247
A112156	Black	38.19	0.099	0.049	20	0.352	0.382
A112157	Black	19.69	0.099	0.049	20	0.181	0.197
A112158	Black	23.62	0.099	0.049	20	0.218	0.236
A112159	Black	29.13	0.099	0.049	20	0.268	0.291
A112124	White	45.00	0.106	0.054	20	0.346	0.374
A112137	Purple	51.18	0.097	0.046	25	0.248	0.268
A112104	Black	45.00	0.099	0.049	20	0.258	0.280
A112116	White	40.00	0.106	0.054	20	0.366	0.396
A112129	Purple	45.00	0.097	0.046	25	0.261	0.283
A112145	Black	37.00	0.099	0.049	20	0.288	0.312
A112119	Black	35.00	0.099	0.049	20	0.296	0.320

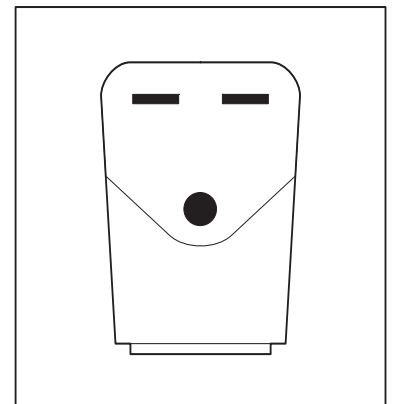
Receptacle Outlet Codes



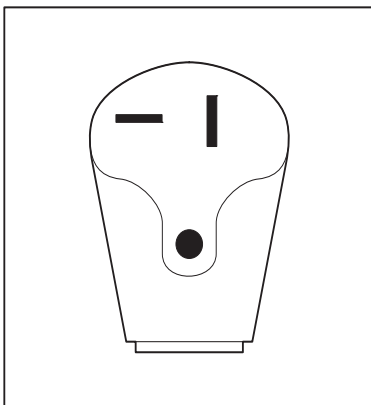
Code A
115 Volts - 15 Amps
NEMA 5 - 15 TYPE



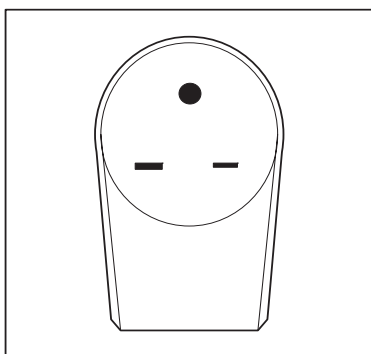
Code B
115 Volts - 20 Amps
NEMA 5 - 20 TYPE



Code C
230 Volts - 15 Amps
NEMA 6 - 20 TYPE

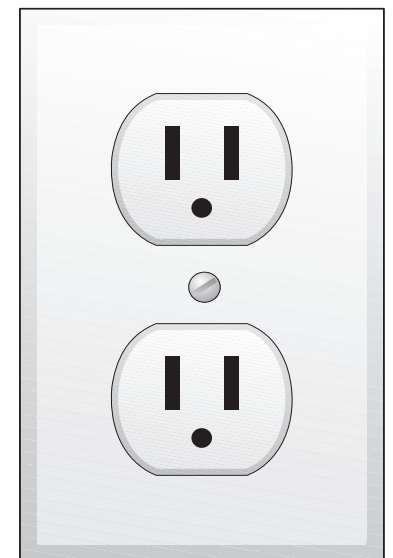
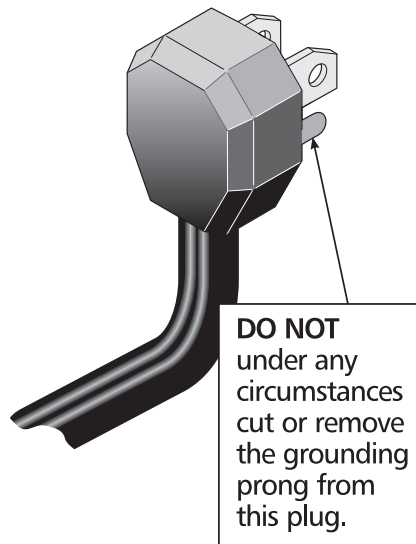


Code D
230 Volts - 20 Amps
NEMA 6 - 20 TYPE



Code E
230 Volts - 30 Amps
NEMA 6 - 30 TYPE

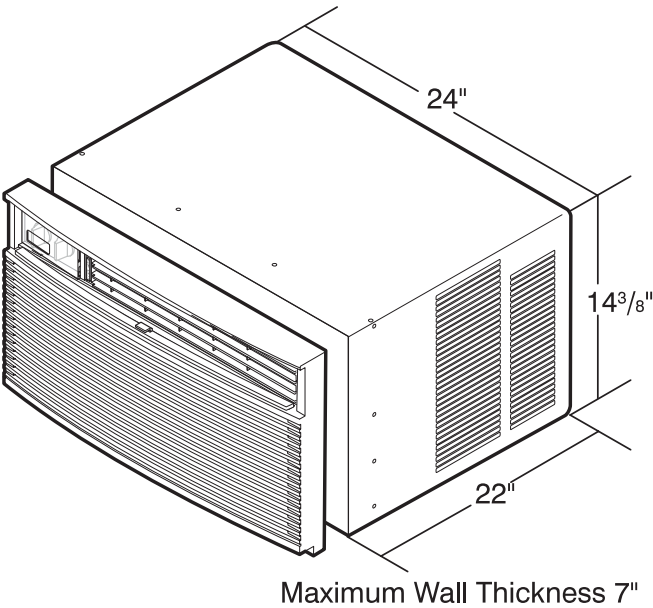
Power Supply Cord with
3-prong Grounding Plug



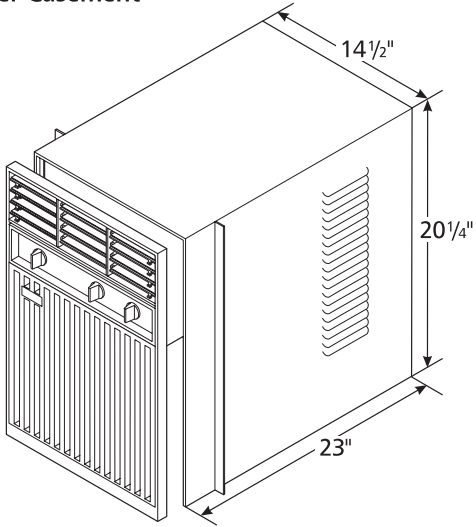
Grounding Type
Wall Receptacle

Product Dimensions

22" Top Control Intermediate

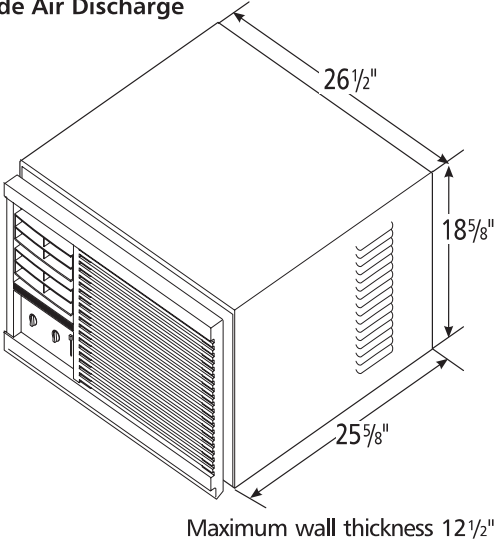


Slider Casement

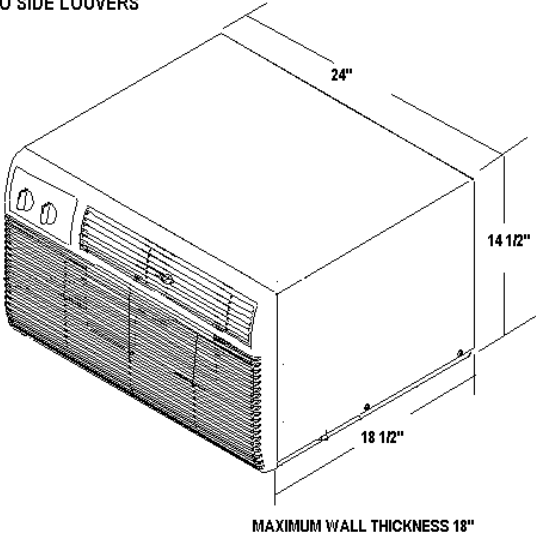


Heavy Duty Slide Out Top Control

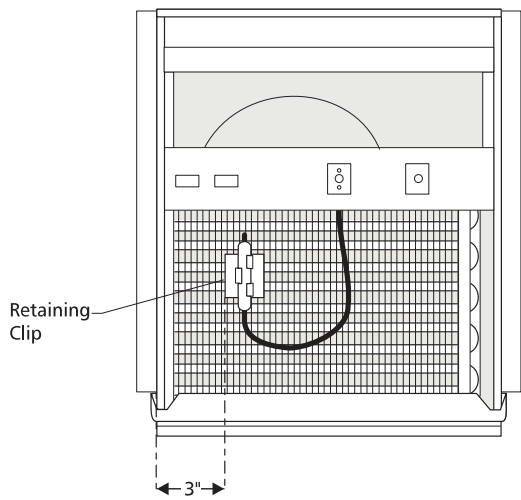
Heavy Duty Slide Out
Side Air Discharge



18.5" --NO SIDE LOUVERS

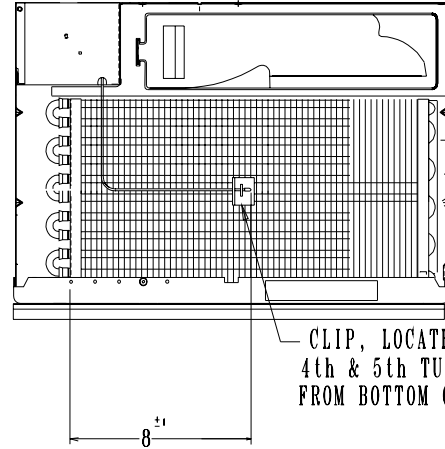
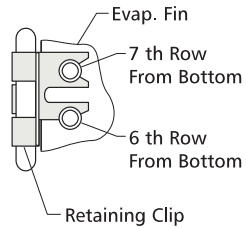


Control Thermostat Location Diagrams

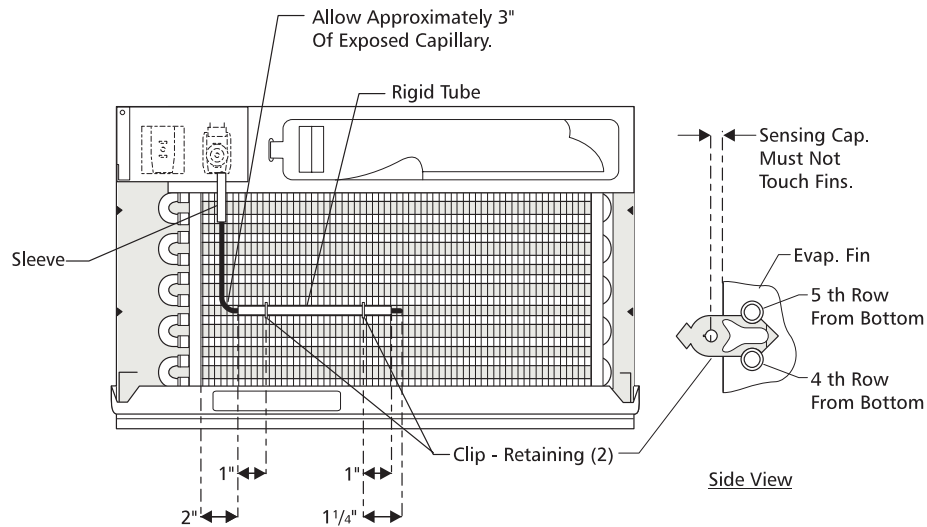


Slider Casement

Side View

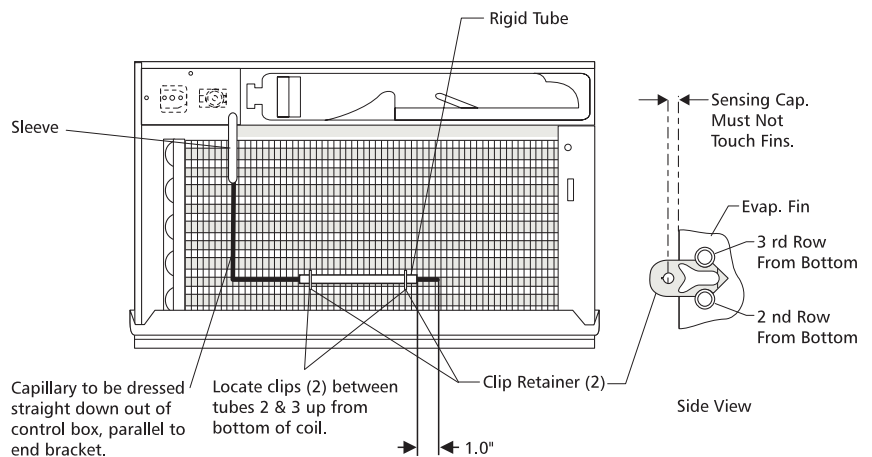


Compact Electronic Control



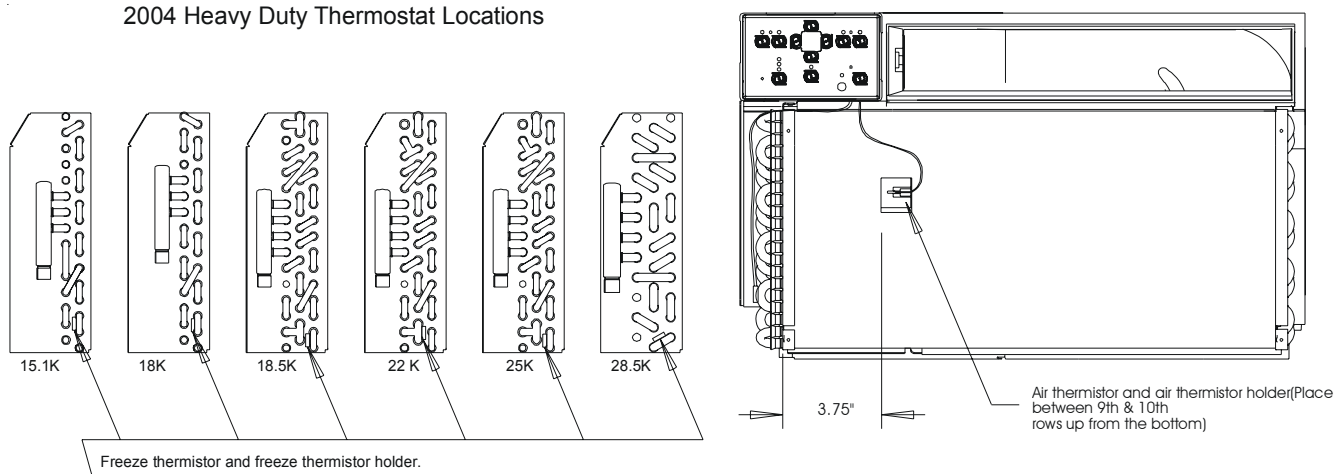
Compact Rotary Control

Intermediate Rotary Top Control

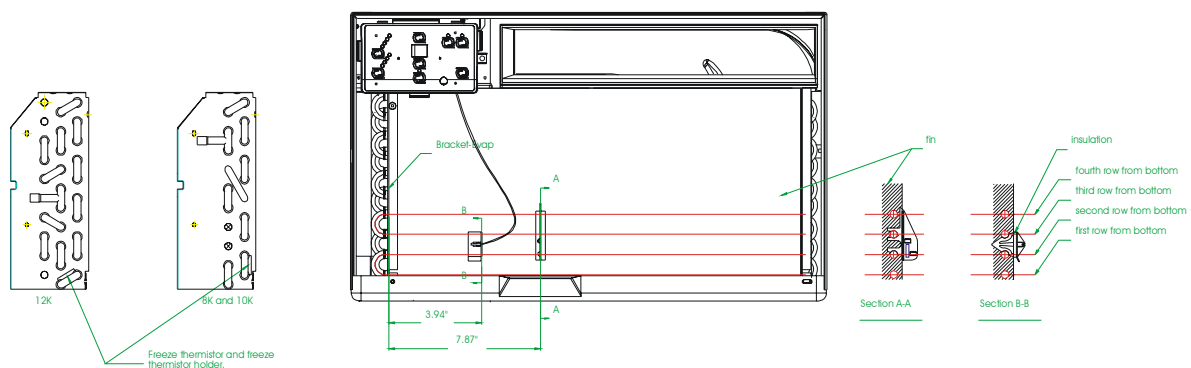


Control Thermostat Location Diagrams

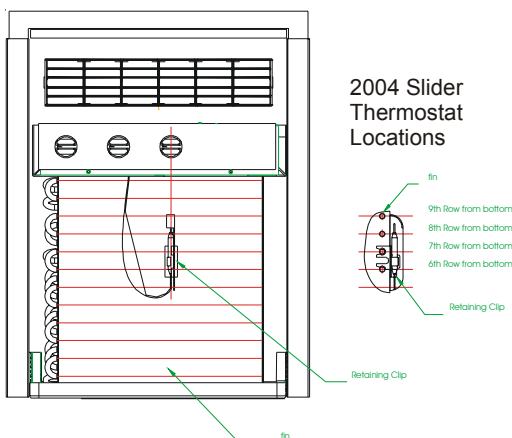
2004 Heavy Duty Thermostat Locations



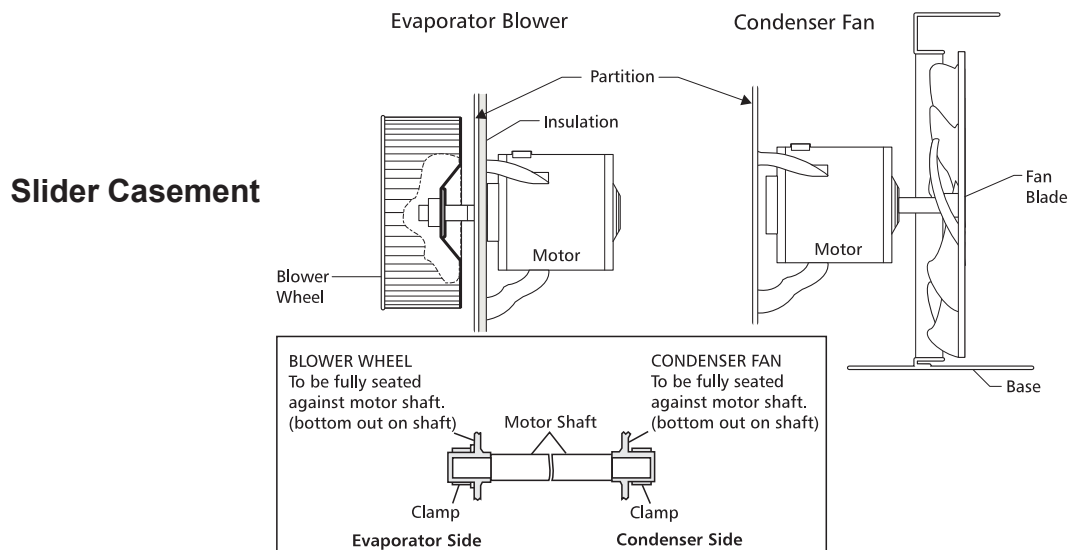
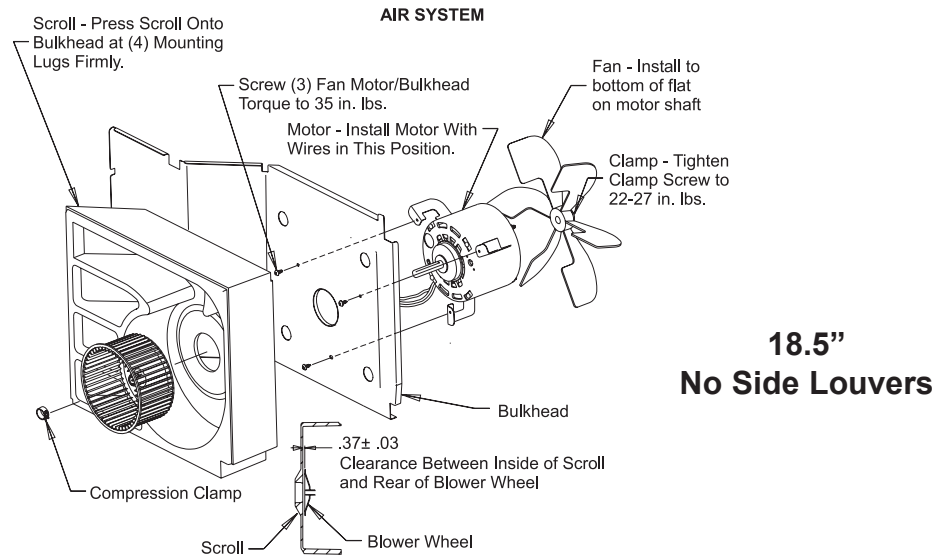
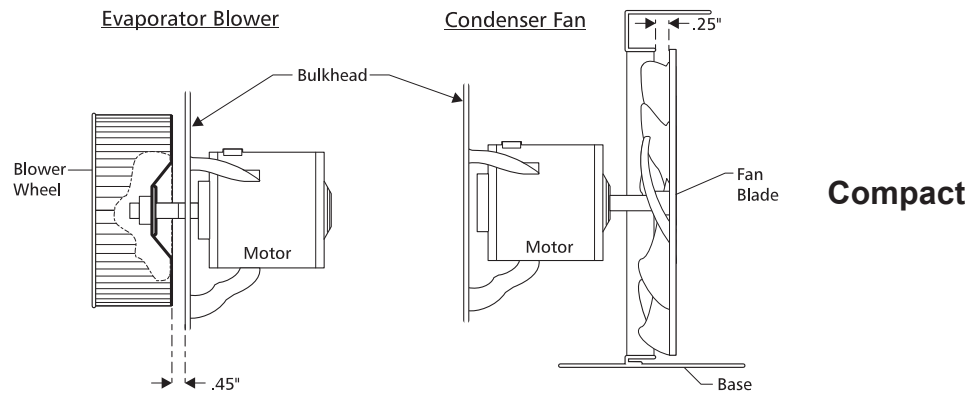
2004 Builder Thermostat Locations



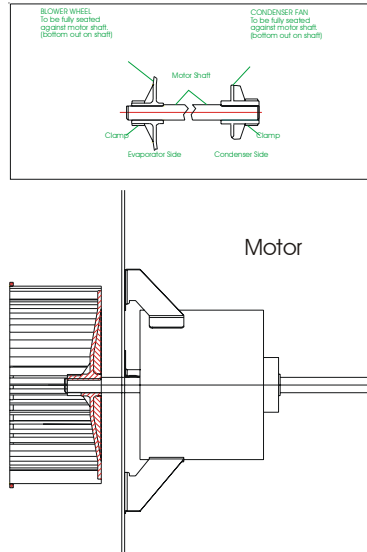
2004 Slider Thermostat Locations



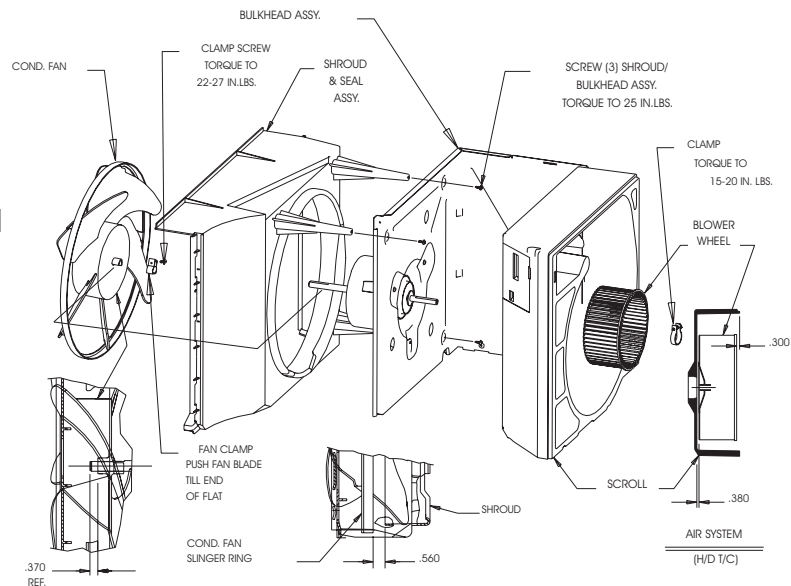
Fan and Blower Location Diagrams



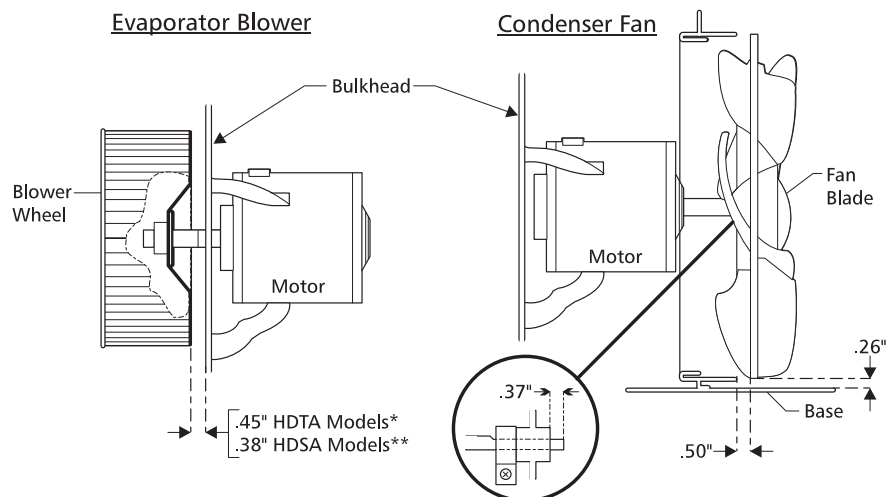
Fan and Blower Location Diagrams



Heavy Duty Top Control

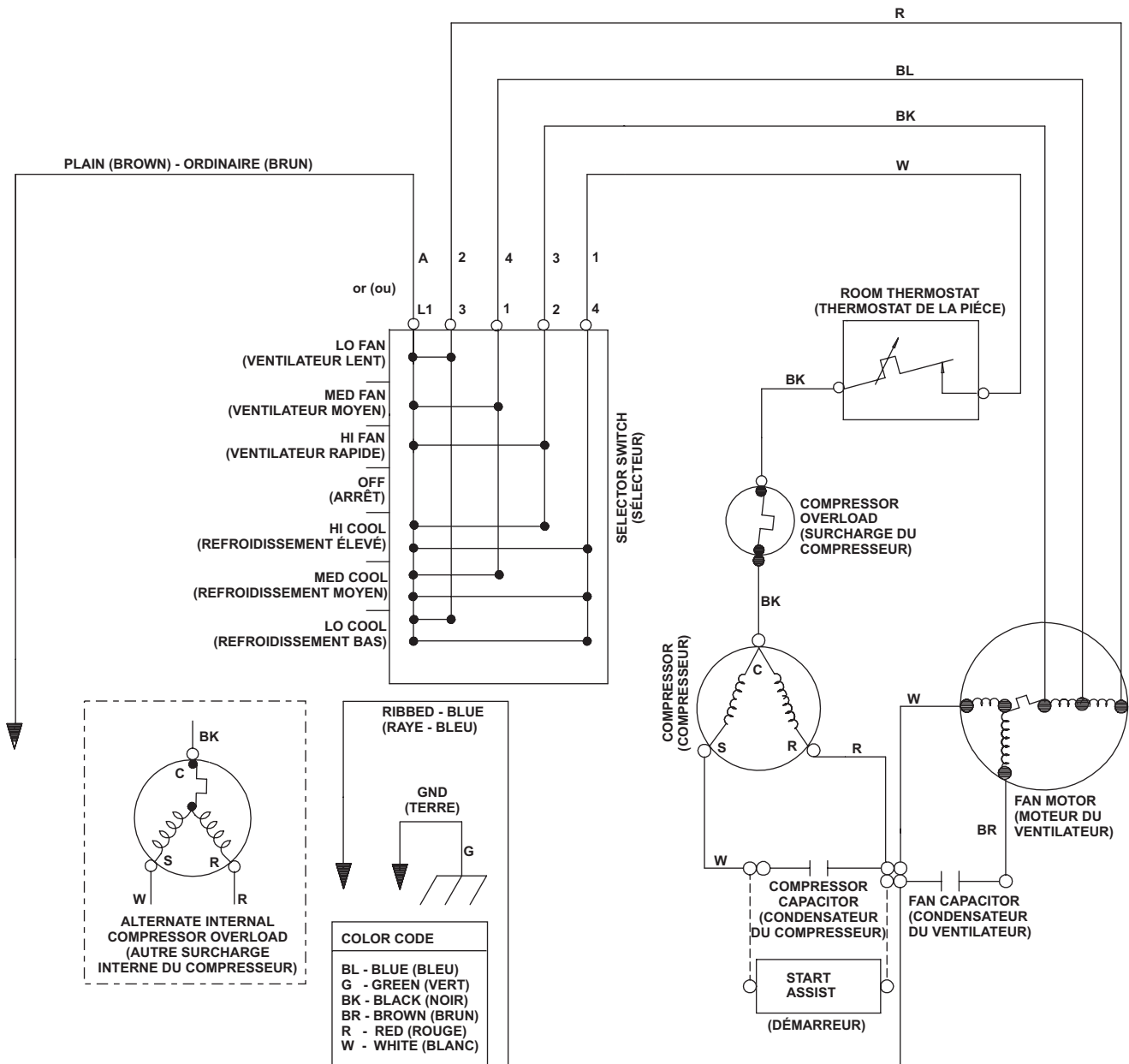


Heavy Duty Side Discharge

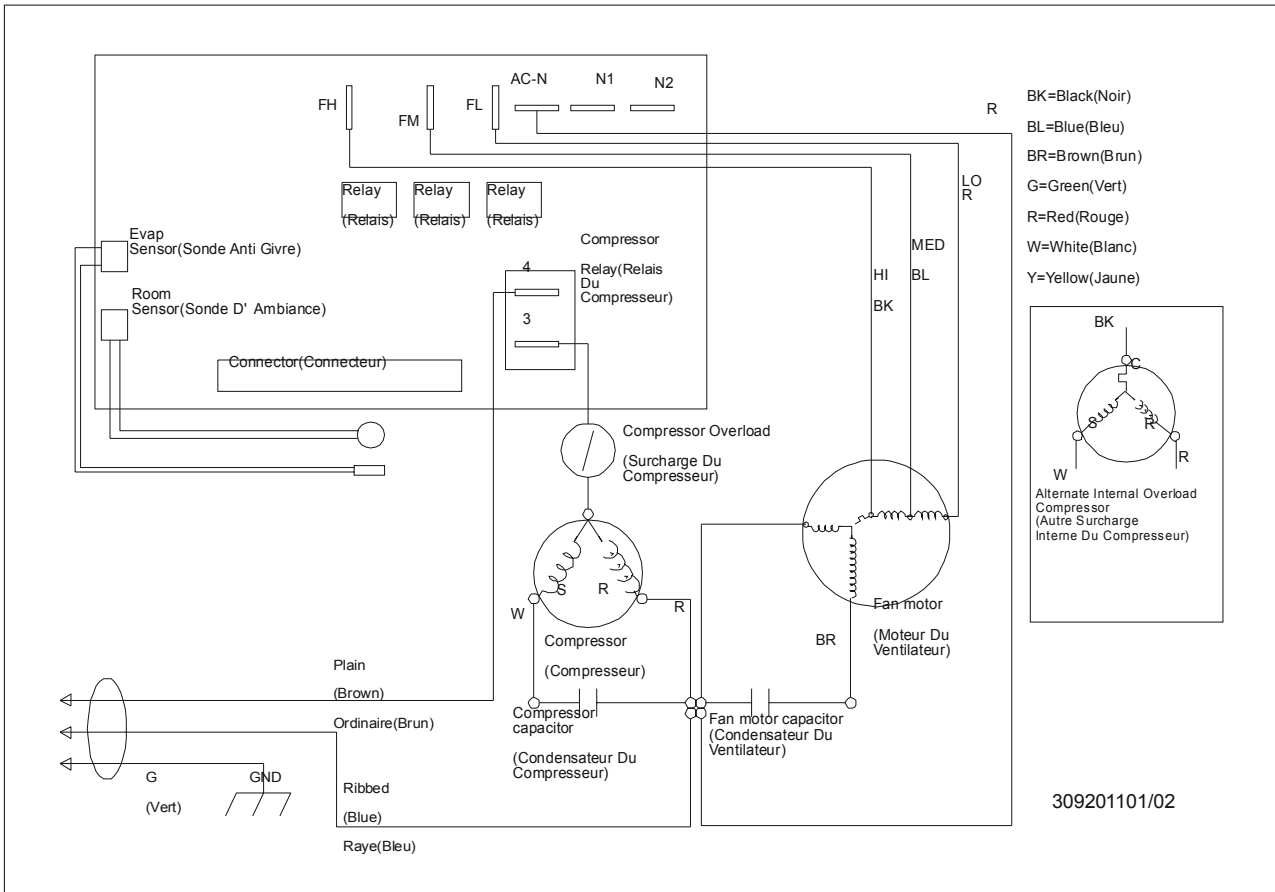
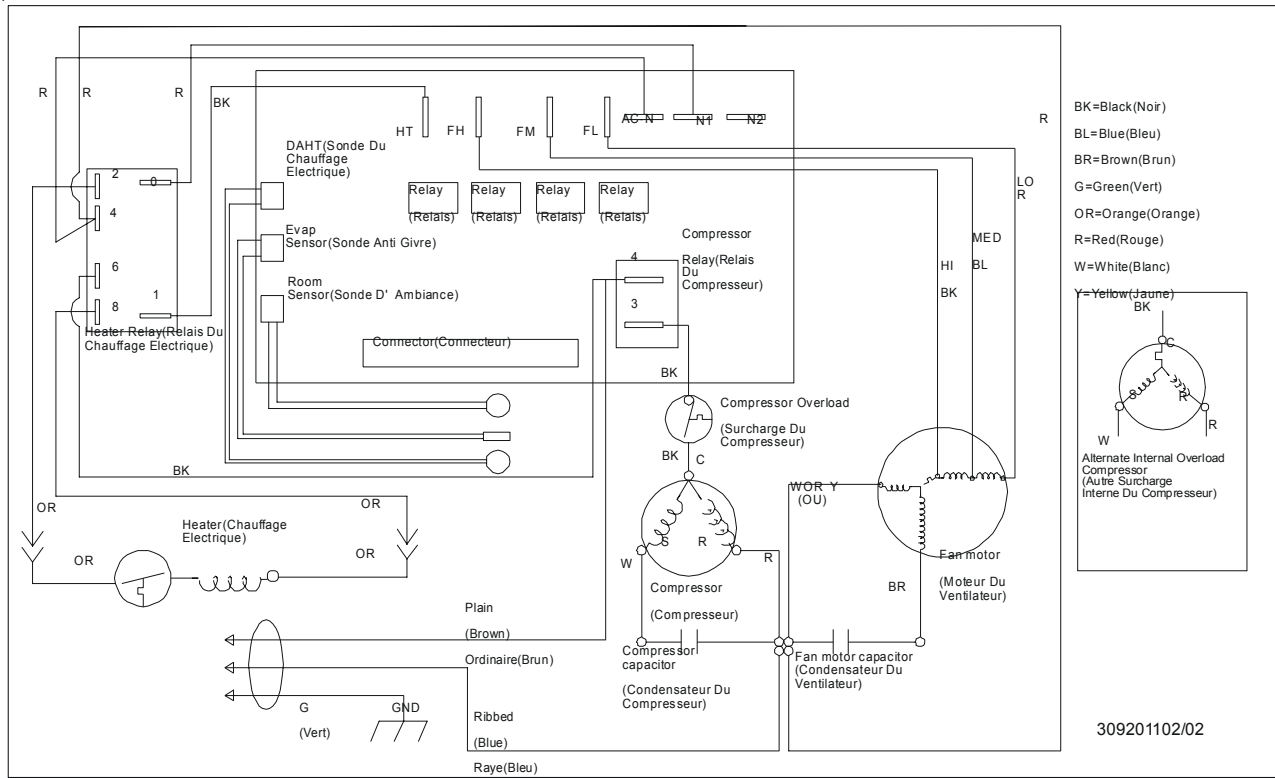


Wiring Diagrams

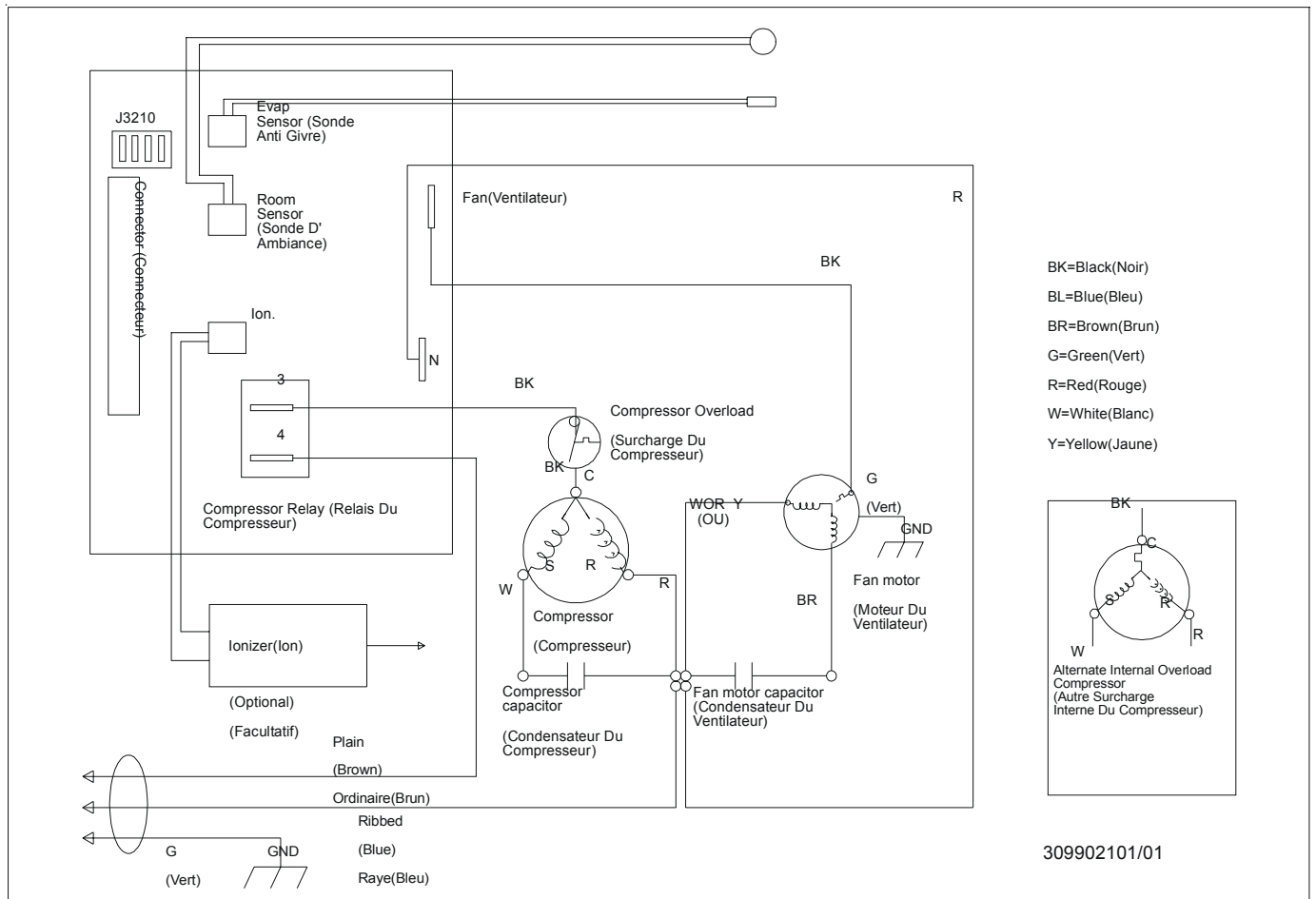
A232012



Wiring Diagrams



Wiring Diagrams



ROOM AIR CONDITIONERS TROUBLESHOOTING

CAUTION: Review Safe Servicing Practices in the front of this manual before attempting diagnostic procedures and repairs.

AIR CONDITIONER VOLTAGE LIMITS

NAMEPLATE RATING	MINIMUM	MAXIMUM
115 VAC	103.5 VAC	126.5 VAC
230 VAC	207 VAC	253 VAC
208/230	197.5 VAC	253 VAC

AIR CONDITIONER VOLTAGE LIMITS

Low voltage is a common cause of trouble in the operation of any room air conditioner.

Improper voltage may cause one or more of the following problems:

1. Unit will not start.
2. Compressor motor cycling on motor protector.
3. Premature failure of motor protector.
4. Blown fuses.
5. Premature failure of compressor or fan motor.
6. Noticable dimming of lights when air conditioner is running.
7. Evaporator icing. Low voltage may reduce fan speed resulting in inadequate air flow over evaporator, thereby allowing it to ice up.

Low voltage can also be the direct result of inadequately wired circuits, extension cords, or loose fuses and connections to the power supply. Voltage may also be a general condition in the area (a responsibility of the power company).

All units will start and run on the minimum voltage stated in the chart to the left, and will perform satisfactorily if the voltage remains constant. Low voltage caused by defective wiring will not remain constant under load.

To test for low voltage, use a reliable meter with sufficient capacity to measure the required voltage. Take measurements at the electric power entry point and at the electric outlet serving the air conditioner. Take readings with the unit off, while the unit is starting, and again while the unit is running. The lowest reading should not drop below the lowest value listed in the chart.

HIGH VOLTAGE

High voltage can be equally troublesome, causing motors to overheat, cycle on their protectors, or break down electrically. This problem can only be solved by the power company.

ELECTRONIC CONTROL

This control is not repairable. If any component in the control is defective, the entire control must be replaced.

IMPORTANT NOTICE: Repair or replace any malfunctioning line voltage component before testing or replacing the electronic control. **DO NOT** assume a service problem is directly caused by the electronic control system. A line voltage component (including power cord and wiring) that has opened, shorted, grounded or otherwise malfunctioned, may have created a service problem.

SYMPTON

Fan motor will not run.

POSSIBLE CAUSE

1. No power.
2. Power supply cord.
3. Selector switch.
4. Energy saving switch (if applicable).
5. Electronic control (if applicable).
6. Wire disconnected or connection loose.
7. Capacitor. (Discharge capacitor before testing.)
8. Defective fan motor windings.
9. Will not rotate. Fan blade hitting shroud or blower wheel hitting scroll. (Motor cycles on overload.)

Fan motor runs intermittently.

1. Cycle on motor protector.

SYMPTON

POSSIBLE CAUSE

Fan motor noisy.

1. Condenser fan blade or evaporator blower wheel.
2. Loose power clamp or set screw.
3. Worn bearings.
4. Grommets (if applicable).

Compressor will not run, but fan motor runs.

1. Voltage.
2. Wiring.
3. Selector switch.
4. Temperature control.
5. Capacitor. (Discharge capacitor before testing.)
6. Compressor.
7. Motor protector (external).
8. Motor protector (internal).
9. Electronic control (if applicable).
10. Hard starting.

Compressor cycles on motor protector.

1. Voltage.
2. Motor protector (external).
3. Motor protector (internal).
4. Fan motor.
5. Condenser air flow restriction.
6. Condenser fins damaged.
7. Capacitor.
8. Wiring.
9. Refrigerant system.

Insufficient cooling.

1. Low capacity.
2. Air filter.
3. Exhaust door open.
4. Unit undersized.

Excessive noise.

1. Evaporator blower wheel.
2. Condenser wheel.
3. Copper tubing.
4. Compressor internal noise.
5. Fan motor.

Excessive water or condensation.

1. Unit operating under extremely high humidity conditions.

No cooling.

1. Refrigerant leak.

Unit is cooling but room is not cool.

1. Amps and watts.
2. Sealed refrigeration system.

Wattage decreases slowly until abnormally low.

1. Undercharged, restricted strainer or plugged restrictor tube.

Wattage decreases immediately.

1. No refrigerant.
2. Compressor defective.

Wattage continuously high.

1. Refrigerant overcharge.

SYMPTON

POSSIBLE CAUSE

Evaporator coil partially frosted.

1. System low on refrigerant.

Evaporator completely iced.

1. Low outside temperature.

No heat.

1. No power.
2. Selector switch position.
3. Temperature control position.
4. Fan motor.
5. Heating element.
6. Selector switch.
7. Temperature control.
8. Terminals and connectors.

Fan motor will not rotate during heat cycle.
(Heat/Cool models only.)

1. Thermostatic drain valve. (Water level control, if applicable.)