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CARRIER 52SQC312301AA Owner's Manual

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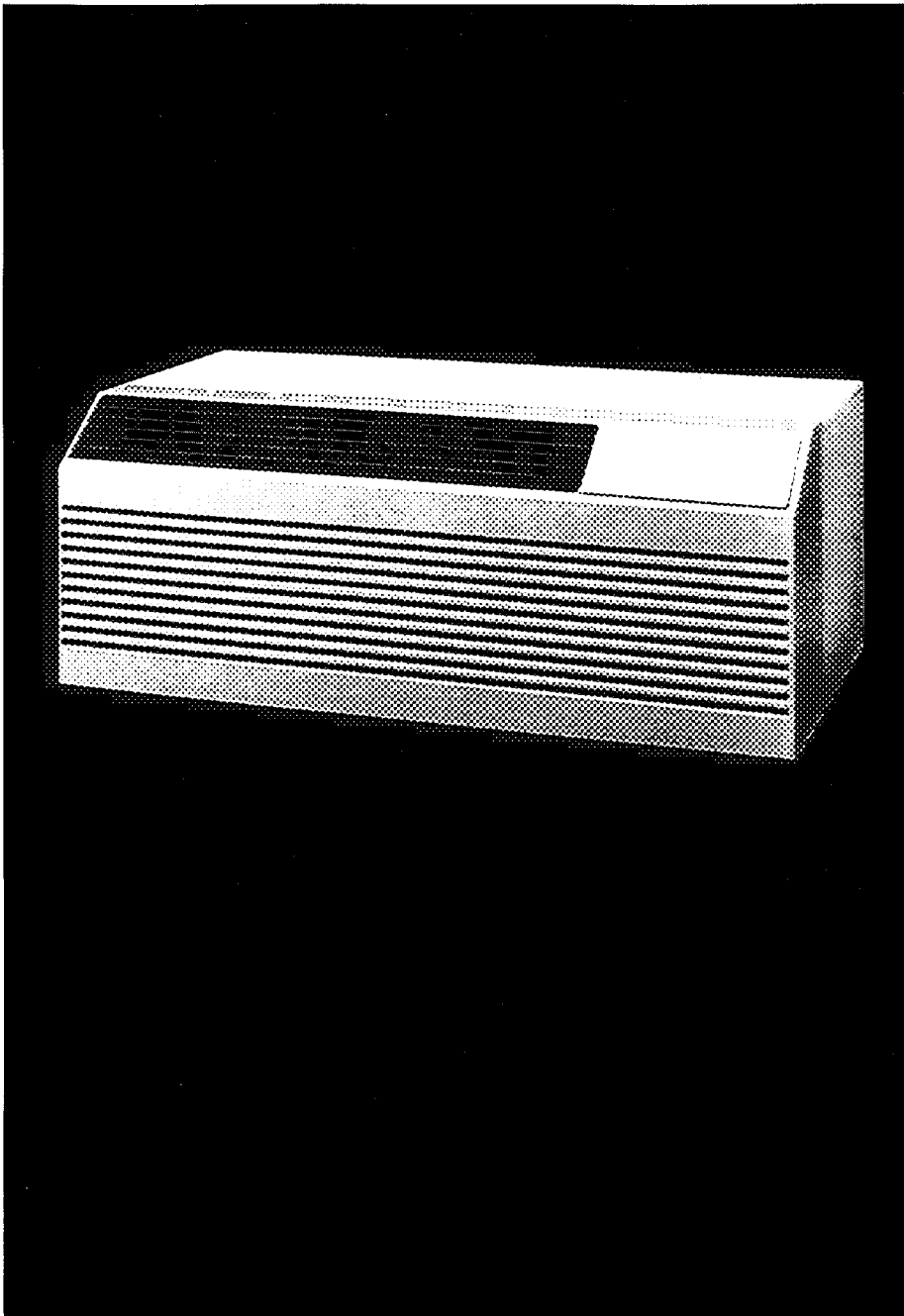
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Product Data

52S Packaged Terminal Air Conditioners and Heat Pumps

Cooling: 6,800 - 13,700 Btuh
Heating: Heat Pump — 6,000 - 11,000 Btuh
Electric — 6,400 - 17,000 Btuh



Single-Package, Thru-the-Wall Units
That Offer Easy Installation and
Years of Dependable Performance

- superquiet operation
- built for multi-room structures
- fixed wall sleeve, slide-out chassis
- attractive and durable
- chassis fits many other sleeves

Features/Benefits

**Single-package units for
heating and cooling rooms
in hotels, motels, offices,
apartments, condominiums,
and residential additions**

Performance satisfaction

The Model 52S Carrier air conditioners and heat pumps offer a cooling and heating capacity range to satisfy virtually every application need. They are aerodynamically designed to provide superquiet operation indoors and outdoors. Both occupants and neighbors are protected against any noise intrusion. Because they are built for peak efficiency for heating and cooling, multi-room building owners rely on the 52S for long-term savings in operating costs. The units require no bulky duct system, no separate equipment room, and no complex matchup of different system components. In addition, the units have less operating sensitivity to building orientation from such factors as sun, wind, or shade.

Lower operating costs

The 52SQ heat pump models offer substantial operating savings over conventional electric resistance heaters. As electric heating energy costs have



risen, heat pumps have continued to provide the user with an abundant supply of nature's own heat absorbed from the atmosphere. In cooling, the units offer exceptional EER's (Energy Efficiency Ratios) that meet 1992 requirements. Each unit operates independently of other units in the building. Each tenant can choose the degree of comfort and operating economy desired. Another time and money saver is the slide-out chassis that permits units to be rapidly serviced, reducing downtime, and enabling a chassis to be replaced in minutes without disrupting other building occupants' comfort.

Initial installation savings

Installation consists of only 2 components. This minimizes handling time

and possible installation problems. A weather-protected wall sleeve can be installed during building construction, with the main chassis and rear grille installed after building completion. No seasonal changeover is needed for cooling or heating periods. The units are completely self-contained comfort systems.

Increased comfort

The heat pump models have a 2-stage thermostat for quick temperature recovery while in the heat pump mode. This causes the heat pump to switch automatically from heat pump to electric heat when more heat is needed, then back to heat pump when heating requirement is satisfied. All models have a dual bulb thermostat that

makes it possible to control room temperature closer to the desired level.

Carrier warranty

Most comprehensive in the industry.

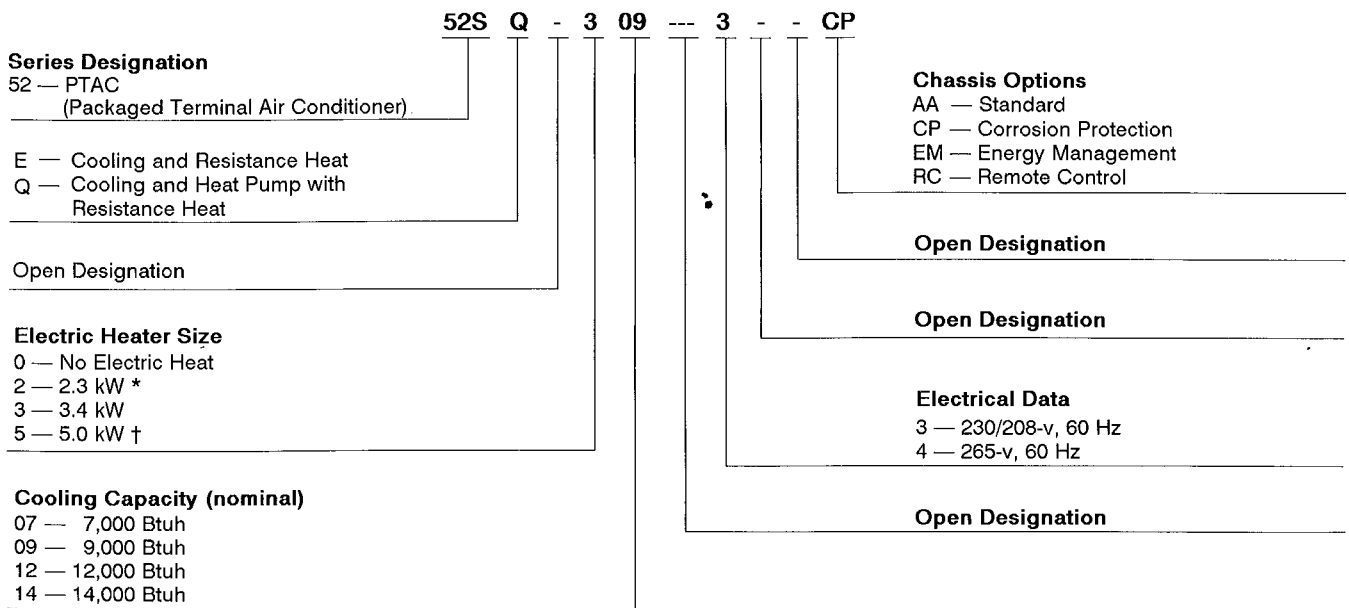
- Full 1 year
- Full 5 year on sealed refrigeration system
- Limited 2 - 5 year on all non-refrigeration system parts
- Optional 2 - 5 years labor (service) on non-refrigeration system

Optional service contract available through Warranty Administration, form no 530-053.

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Model number nomenclature



*Available on unit sizes 07 and 09 only
†Available on unit sizes 12 and 14 only.

Factory chassis options



Standard chassis

Includes chassis with front panel. The 230/208-v units are cord connected. The 265-v units require that either a hard wire kit or a cord-connected kit be ordered from the factory. (See Accessories)

Remote Control (RC)

Allows unit to operate from a field-supplied remote thermostat. Thermostat allows manual changeover from heat to

cool, plus fan cycling. Fan speed is controlled by switch located at side of control box.

Corrosion Protection (CP)

Provides additional corrosion protection. This special chassis option consists of: painted partition, painted control box, and thick flow coating of special paint on outdoor coil. Fan motor is totally enclosed with watertight seals for leads, and motor windings consist of special moisture resistant wire

Energy Management (EM) with Freeze Guard

Provides special chassis which permits individual units to be controlled from a central location, to save energy when rooms are unoccupied. Freeze guard protection (standard with EM) automatically maintains room temperature above 40 F to prevent costly freeze damage

Accessories (field-installed)

Wall sleeve — Made of long-lasting plastic material, sleeve is permanently installed through the wall. When chassis is installed, the sleeve provides a tight seal for the unit against wind and water infiltration

IMPORTANT: If other than a Carrier grille is desired for use with your Carrier unit(s), contact Syracuse Application Engineering or Marketing Department for approval.

Outdoor grille — A standard grille is available in aluminum. **Architectural** style grilles (aluminum or plastic) are available in 3 types: standard mount, flush mount and extended mount. In plastic, available finishes are champagne beige, light bronze, dark bronze, sandpiper beige, and dark brown.

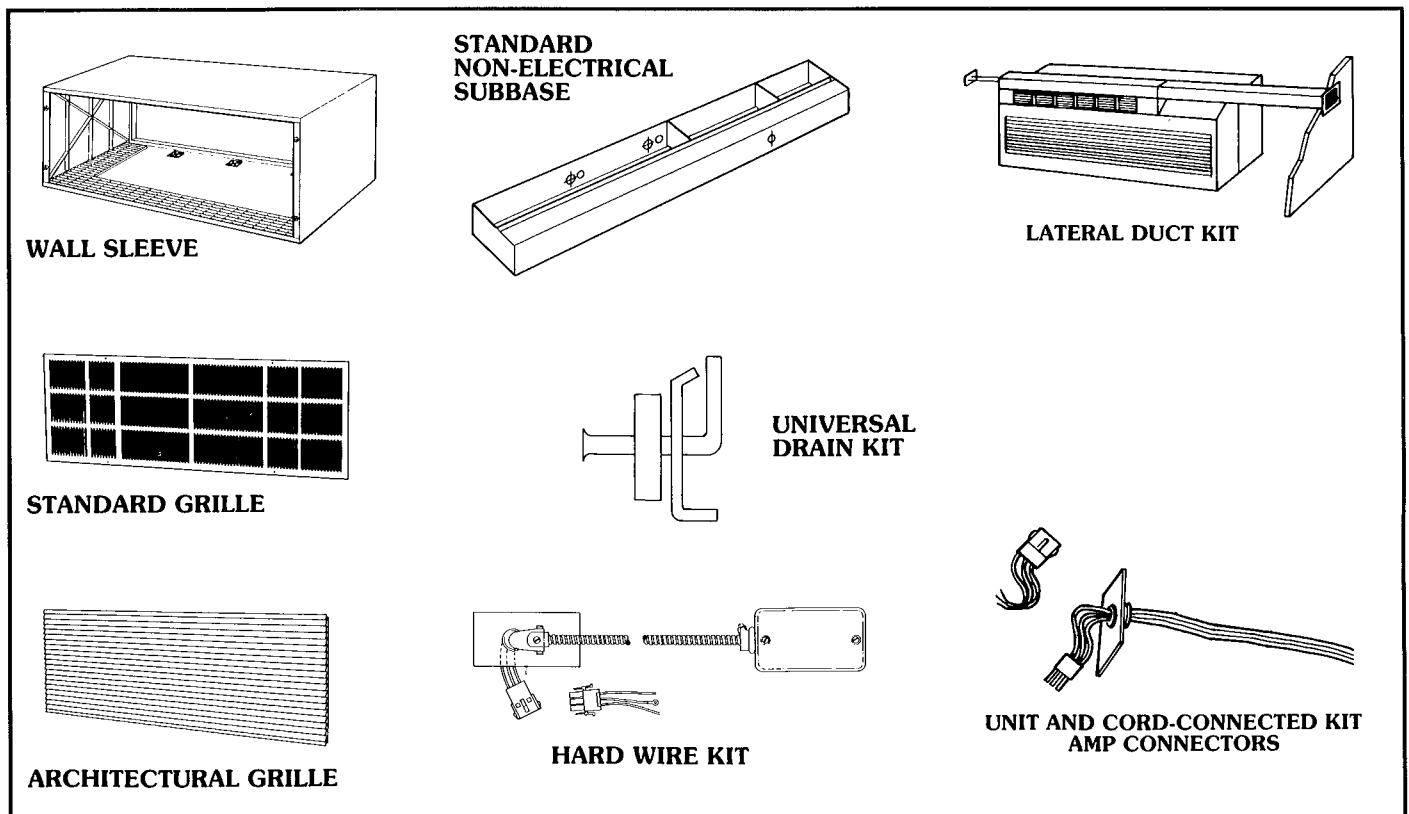
Standard non-electrical subbase — For curtain wall or custom installations. Supports unit, provides finished appearance (can be modified for electric application).

Hard wire kit — Provides permanent connection for all 265-v applications and any cord-connected unit

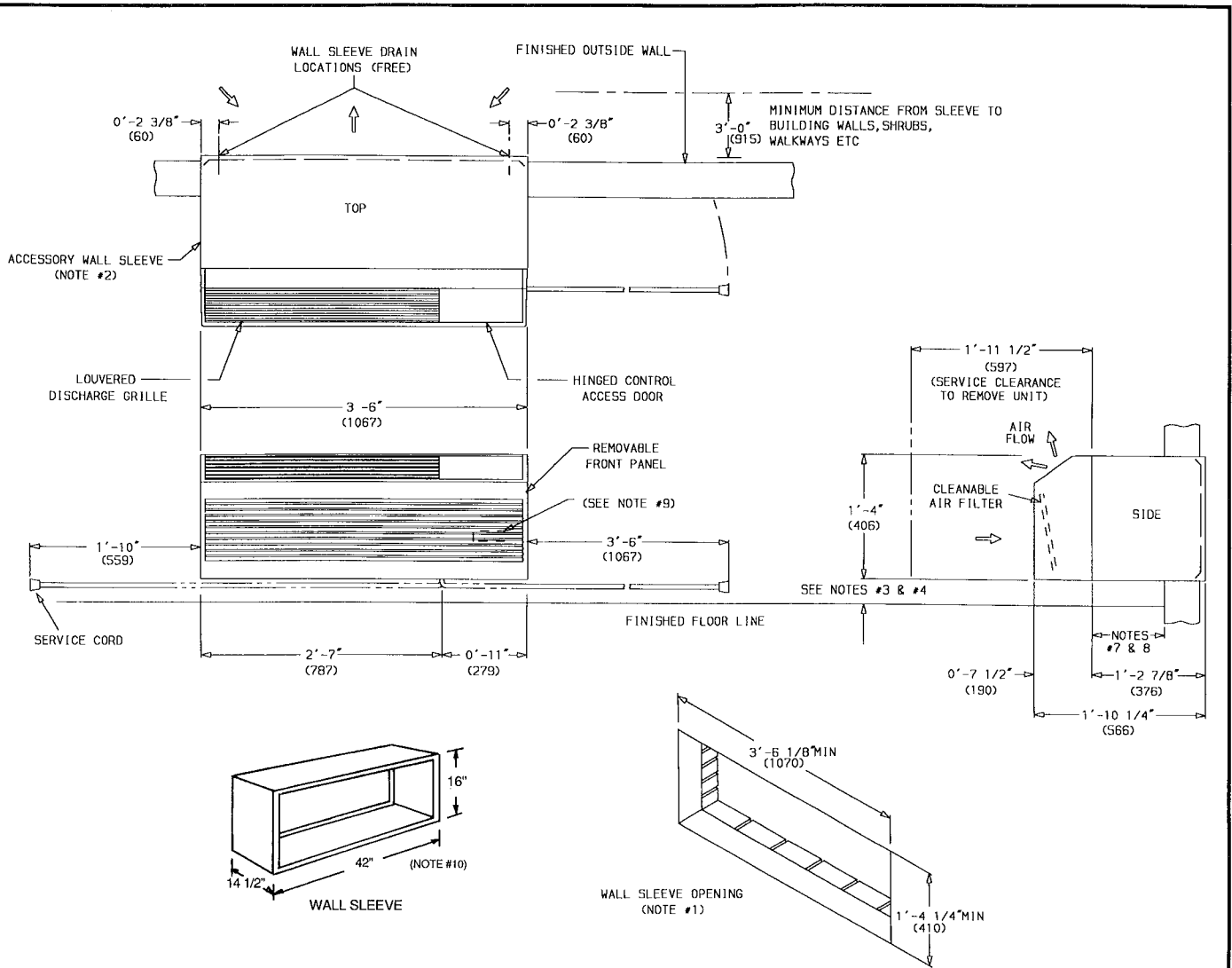
Universal drain kit — Attaches to sleeve to permit internal or external condensate drainage

Lateral duct kit — Consists of a plenum assembly and duct extension. When assembled to chassis and sleeve, permits conditioned air to be ducted into an adjacent room.

265-V cord connected kit — Kit provides use of electric plug and receptacle as an alternative to hard wire applications. Receptacles are field supplied and must be mounted in an accessory subbase.

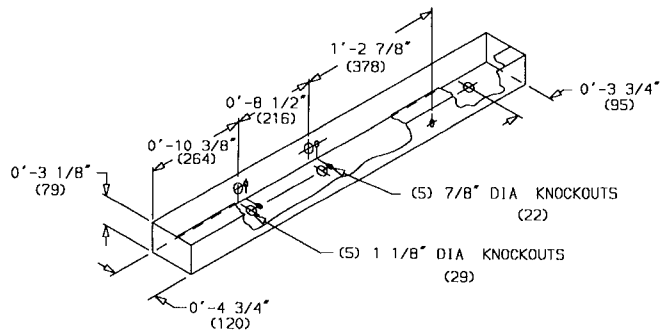
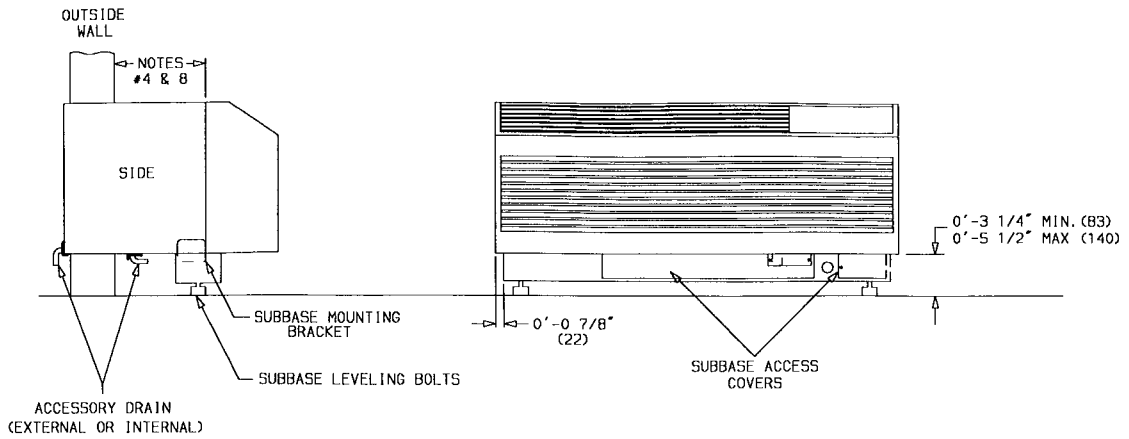


Base unit dimensions

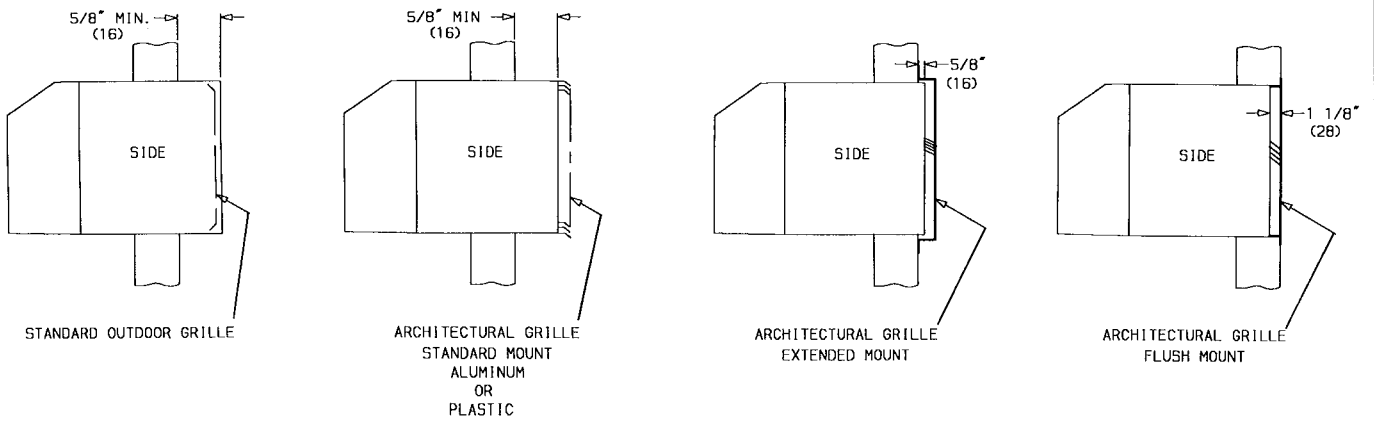


NOTES:

- 1 Minimum opening sizes apply to all wall openings.
- 2 Installed wall sleeve must be level from side to side and front to back
- 3 Sleeve can be flush mounted to floor, but front panel may have to be notched to accommodate service cord (except for units with subbase, see Note 4)
- 4 For all applications with an accessory subbase, wall sleeve must extend into room 3/4 in. minimum and 3/4 in minimum from floor
- 5 All applications with lateral duct kit must be a permanent installation per UL (Underwriters' Laboratories) requirements
- 6 Dimensions in parenthesis are in millimeters
- 7 For all applications with an accessory lateral duct, sleeve must extend into the room 1 in minimum
- 8 If wall sleeve extends into room more than 8 in , an accessory subbase or field-fabricated front support should be used
- 9 Low-voltage connections (24 volt) on remote control and energy management units
- 10 Front panel of unit extends 7 in beyond sleeve Sleeve weighs 24 lbs.

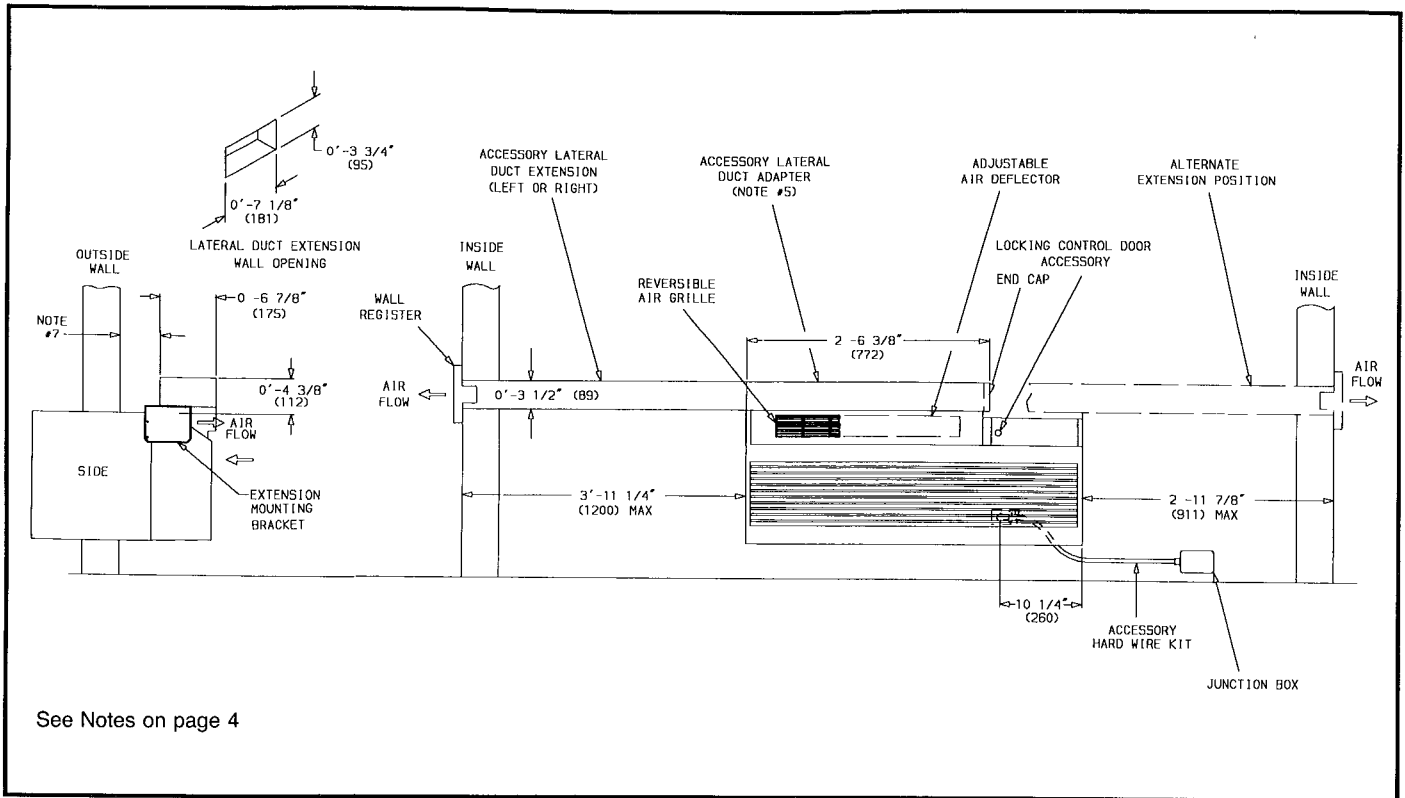


ACCESSORY SUBBASE ELECTRICAL CONNECTIONS



WALL SLEEVE MOUNTING DIMENSIONS FOR DIFFERENT GRILLES

Base unit dimensions (cont)



Performance and electrical data



UNIT 52SE

VOLTS (Single Ph, 60 Hz)	UNIT SIZE	CAPACITY* (Btuh)		EER	AMPS		WATTS		EVAP FAN CFM (High Speed)	MAX FUSE SIZE AMPS	RECEPTACLE TYPE††	CHASSIS WEIGHT-lb (Approx)	
		Cool- ing	Electric Heat		Cool- ing	Electric Heating**	Cool- ing	Heating				Ship- ping	Operat- ing
230/208	2073†	7,100/ 7,100	7,800/ 6,400	11.0/11.3	2.8/3.0	10.6/ 9.6	645/ 628	2440/ 2025	280	15	A	116	103
	3073†	7,100/ 7,100	11,600/ 9,500	11.0/11.3	2.8/3.0	15.4/14.2	645/ 628	3540/ 2990	280	20	B	116	103
	2093†	8,800/ 8,600	7,800/ 6,400	9.5/ 9.5	4.1/4.4	10.6/ 9.6	925/ 905	2440/ 2025	280	15	A	126	113
	3093†	8,800/ 8,600	11,600/ 9,500	9.5/ 9.5	4.1/4.4	15.4/14.2	925/ 905	3540/ 2975	280	20	B	126	103
	3123†	11,500/ 11,300	11,600/ 9,500	8.7/ 8.7	5.9/6.4	15.5/14.3	1320/ 1300	3585/ 3005	350	20	B	128	115
	5123†	11,500/ 11,300	16,900/ 13,600	8.7/ 8.7	5.9/6.4	22.4/19.8	1320/ 1300	5185/ 4155	350	30	C	128	115
	3143†	13,500/ 13,200	11,600/ 9,500	8.8/ 8.8	6.8/7.3	15.7/14.4	1530/ 1500	3600/ 3025	350	20	B	130	117
	5143†	13,500/ 13,200	16,900/ 13,600	8.8/ 8.8	6.8/7.3	22.6/19.9	1530/ 1500	5200/ 4175	350	20	B	130	117
265	2074	7,100	7,800	11.0	2.7	9.3	645	2435	280	15	D	116	103
	3074	7,100	11,600	11.0	2.7	13.4	645	3535	280	20	D	116	103
	2094	8,800	7,800	9.5	3.6	9.3	925	2435	280	15	D	126	113
	3094	8,800	11,600	9.5	3.6	13.4	925	3535	280	20	D	126	113
	3124†	11,500	11,600	8.7	5.0	13.5	1320	3590	350	20	D	128	115
	5124	11,500	17,000	8.7	5.0	19.6	1320	5190	350	30	E	128	115
	3144	13,700	11,600	9.0	5.9	13.6	1522	3605	350	20	D	130	117
	5144	13,700	17,000	9.0	5.9	19.7	1522	5205	350	25	E	130	117

LEGEND

ARI — Air Conditioning & Refrigeration Institute
EER — Energy Efficiency Ratio

*Rated in accordance with ARI Standard 310/380-93

†Standard units which are in Carrier inventory. Other models are special order and require 90 days for delivery. Consult representative. Order wall sleeve and rear grille accessories separately. See page 3

**Electric resistance heater power and fan motor power.

††Requires use of accessory cord-connects kit for 265-v units. Accessory hard wire kit and accessory cord-connected kit are available. See Accessories on page 3.



RECEPTACLES AND FUSE TYPES

UNIT VOLTAGE 230/208

MAXIMUM NAMEPLATE AMPS	12	16	24
OUTLET BLADE CONFIGURATION			
	A	B	C
MFG PART NO.			
Hubbelf	5661	5461	9330
P & S	5661	5871	5930
GE	GE4069-1	GE4182-1	GE4139-3
Arrow-Hart	5661	5861	5700
TIME-DELAY FUSE OR HACR CIRCUIT BREAKER (Amps)	15	20*	30

LEGEND

HACR — Heating, Air Conditioning, Refrigeration

*May be used for 15-amp applications if fused for 15 amp

UNIT VOLTAGE 265

AMPS	20	30
OUTLET BLADE CONFIGURATION		
	D	E
MFG PART NO.		
Hubbelle	—	9315
Eagle	834B-BOX	—
TIME-DELAY FUSE OR HACR CIRCUIT BREAKER (Amps)	20*	30

LEGEND

HACR — Heating, Air Conditioning, Refrigeration

*May be used for 15-amp applications if fused for 15 amp

Performance and electrical data (cont)



UNIT 52SQ

VOLTS (1 Ph, 60 Hz)	UNIT SIZE	CAPACITY* (Btuh)		EER	COP	AMPS		WATTS		INDOOR FAN CFM (High Speed)	MAX FUSE SIZE AMPS	RECEPTACLE TYPE††	CHASSIS WEIGHT-lb (Approx)	
		Cool- ing	Heating			Cool- ing	Electric Heating**	Cool- ing	Heating				Ship- ping	Operat- ing
230/208	2073†	7,100/ 6,900	6,100/ 6,000	10.7/ 10.7	3.1/3.2	2.5/ 3.1	10.6/ 9.6	663/ 644	2440/ 2040	280	15	A	125	112
	3073†	7,100/ 6,900	6,100/ 6,000	10.7/ 10.7	3.1/3.2	2.5/ 3.1	15.4/ 14.2	663/ 644	3540/ 2990	280	20	B	125	112
	2093†	8,800/ 8,600	8,000/ 7,800	9.5/ 9.5	2.8/2.8	4.1/ 4.4	10.6/ 9.6	925/ 905	2440/ 2025	280	15	A	129	116
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	3123†	11,500/ 11,300	11,000/ 10,700	8.7/ 8.7	2.6/2.6	5.9/ 6.4	15.5/ 14.3	1320/ 1300	3585/ 3005	350	20	B	132	119
	5123†	11,500/ 11,300	11,000/ 10,700	8.7/ 8.7	2.6/2.6	5.9/ 6.4	22.4/ 19.8	1320/ 1300	5185/ 4155	350	30	C	132	119
	3143†	13,500/ 13,200	11,000/ 11,000	8.8/ 8.8	2.6/2.6	6.8/ 7.3	15.7/ 14.4	1530/ 1500	3600/ 3025	350	20	B	140	127
	5143†	13,500/ 13,200	11,000/ 11,000	8.8/ 8.8	2.6/2.6	6.8/ 7.3	22.6/ 19.9	1530/ 1500	5200/ 4175	350	30	C	140	127
265	2074	7,100	6,100	10.7	3.1	2.7	9.3	663	2435	280	15	D	125	112
	3074	7,100	6,100	10.7	3.1	2.7	13.4	663	3535	280	20	D	125	112
	2094	8,800	7,900	9.4	2.7	3.6	9.3	935	2435	280	15	D	129	116
	3094	8,800	7,900	9.4	2.7	3.6	13.4	935	3535	280	20	D	129	116
	3124†	11,500	11,000	8.7	2.5	5.2	13.5	1320	3590	350	20	D	132	119
	5124	11,500	11,000	8.7	2.5	5.2	19.6	1320	5190	350	30	E	132	119
	3144	13,500	11,000	8.8	2.7	5.9	13.6	1535	3605	350	20	D	140	127
	5144	13,500	11,000	8.8	2.7	5.9	19.7	1535	5205	350	25	E	150	127

LEGEND

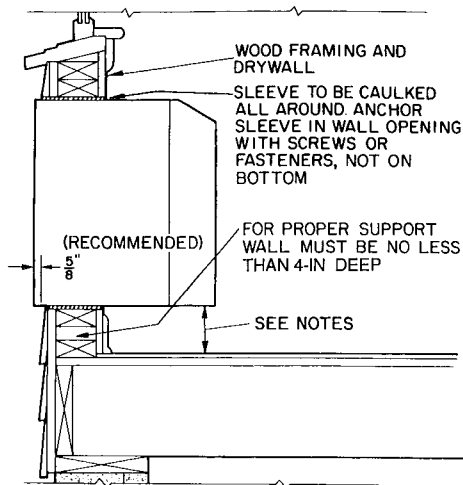
- ARI** — Air Conditioning & Refrigeration Institute
COP — Coefficient of Performance at 47 F outdoor ambient temperature
EER — Energy Efficiency Ratio

*Rated in accordance with ARI Standard 310/380-93.
 †Standard units are in Carrier inventory. Other models are special order and require 90 days for delivery. Consult representative. Order wall sleeve and rear grille accessories separately. See page 3.
 **Electric resistance heater power and fan motor power.

††Requires use of accessory cord-connects kit for 265-v units. Accessory hard wire kit and accessory cord-connected kit are available. See Accessories on page 3.



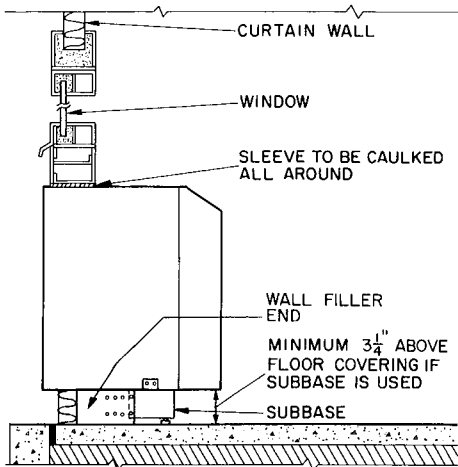
Typical wall installations



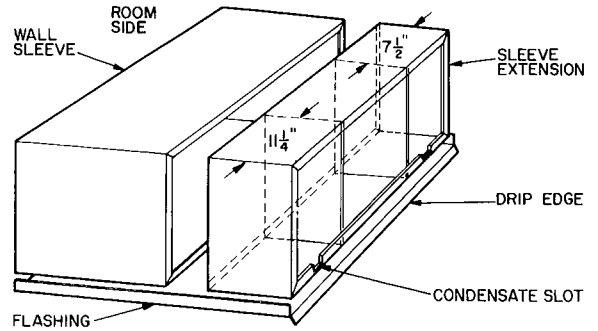
TYPICAL WALL INSTALLATION

NOTES:

1. Sleeve may be flush mounted to floor, and front panel may have to be notched to accommodate service cord.
2. If more than 8 in. of sleeve projects into room, or wall is less than 4 in. deep, an accessory subbase or field-fabricated front support must be used.



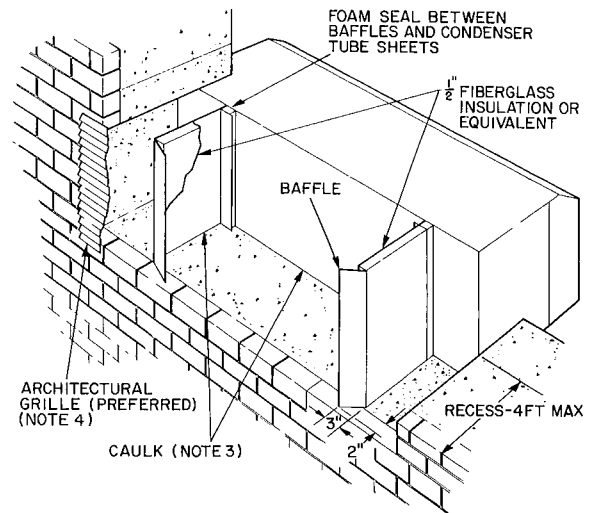
TYPICAL CURTAIN WALL INSTALLATION



WALL SLEEVE AND SLEEVE EXTENSION
(Field Fabricated)

NOTES:

1. Unit sleeve and sleeve extension (field fabricated) should be connected before installing in wall opening
2. Sleeve extension is water bearing. It must be watertight when installed against wall sleeve. Use quality grade sealant on all butting flanges. Attach both sections with bolts and nuts or self-tapping screws installed from wall sleeve to extension. Cut drain slots in front and rear flanges of extension to line up with drain openings in wall sleeve.
3. Install 2 center baffles, if required, inside sleeve extension to prevent recirculation of outdoor air circuit
4. Leave 3/8-in. roomside projection of extension and 1/4-in. outdoor projection of sleeve. This allows for wall sleeve clearance to finished wall plus ample edging to apply weather sealant between wall sleeve/extension assembly and wall opening.
5. Paint sleeve extension and seal corner and lap joints; clear all drain holes of excess sealant, paint, etc., to permit free drainage
6. Install quality flashing under wall sleeve and extension using quality sealant between flashing and wall.
7. Install unit wall sleeve extension assembly following standard practices. Seal assembly to wall on all 4 sides, indoors and outdoors.
8. If required, make provision for a condensate drain extension tube for routing excess condensate from the wall sleeve through the sleeve extension to the building exterior



TYPICAL DEEP WALL INSTALLATION
(Baffles are Field Fabricated)

NOTES:

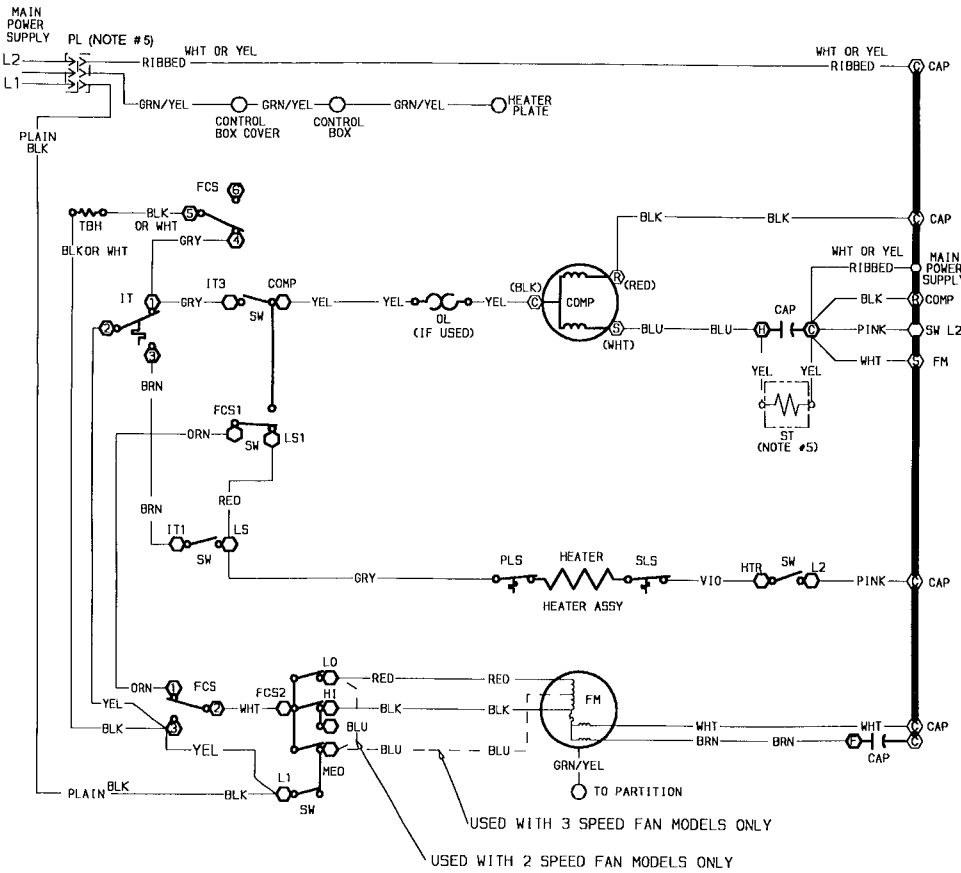
1. To permit outdoor grille to be attached to and supported by wall sleeve, fabricate a sleeve extension (see separate diagram) so wall sleeve and baffles can reach outdoor grille. Be sure to provide flashing for proper condensate runoff to avoid water damage to room interior. Internal or external drain system may be required.
2. Baffles may be part of the sleeve extension or fixed directly to condenser coil tube sheets.
3. Caulk all joints between sleeve or baffles and opening in wall.
4. If grille is used on outdoor wall opening, *do not* install an additional outdoor grille on wall sleeve.

Typical wiring

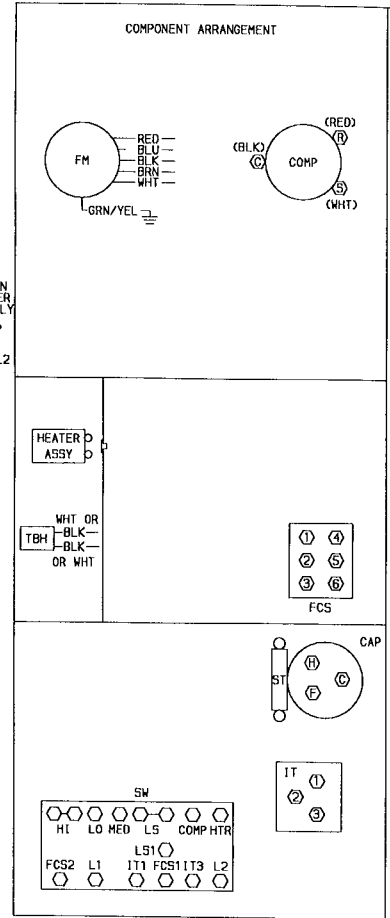


52SE 230/208 V AND 265 V – STANDARD CHASSIS AND CORROSION PROTECTION UNITS

SCHEMATIC DIAGRAM



COMPONENT ARRANGEMENT



LEGEND

- CAP** — Capacitor
- COMP** — Compressor
- FM** — Fan Motor
- FCS** — Fan Cycle Switch
- HTR** — Heater
- IT** — Indoor Thermostat
- LS** — Limit Switch
- OL** — Overload
- PL** — Plug
- PLS** — Primary Limit Switch
- SLS** — Secondary Limit Switch
- ST** — Start Thermistor
- SW** — Switch
- TBH** — Thermostat Bulb Heater

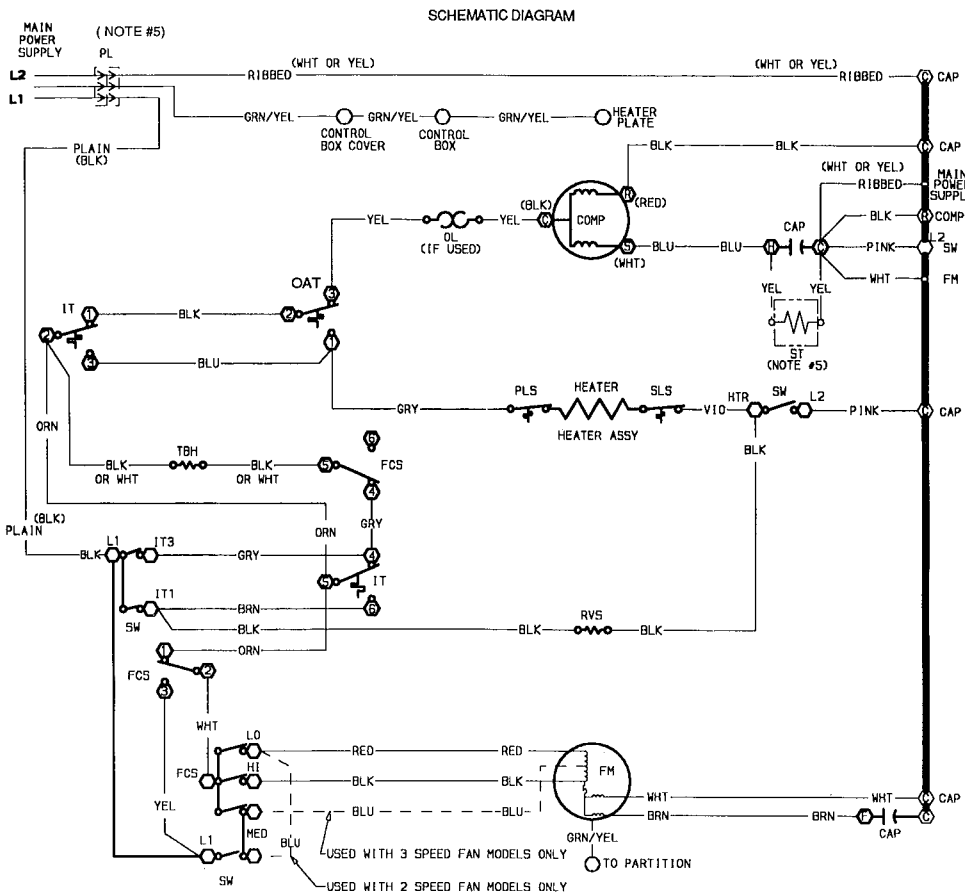
- Component Connection (Marked)
- Component Connection (Unmarked)
- Accessory or Optional Wiring
- To indicate common potential only; not to represent wire.

SWITCH POSITION	CONTACTS MADE
OFF	FCS1 TO LS1
FAN	L1 TO MED, FCS1 TO LS1
LO HEAT	FCS2 TO MED, IT1 TO LS, L2 TO HTR, FCS1 TO LS1
HI HEAT	FCS2 TO HI, IT1 TO LS, L2 TO HTR, FCS1 TO LS1
LO COOL	FCS2 TO LO, COMP TO FCS1, COMP TO IT3
HI COOL	FCS2 TO HI, COMP TO FCS1, COMP TO IT3

NOTES:

- 1 Recommended for use on grounded power supply only.
- 2 Compressor and fan motor thermally protected.
- 3 Use copper conductors only.
- 4 All wiring must conform with NEC (National Electrical Code) and local codes
- 5 Dashed lines indicate components when used.

52SQ 230/208 V AND 265 V – STANDARD CHASSIS AND CORROSION PROTECTION UNITS



LEGEND

- CAP** — Capacitor
 - COMP** — Compressor
 - FM** — Fan Motor
 - FCS** — Fan Cycle Switch
 - HTR** — Heater
 - IT** — Indoor Thermostat
 - LS** — Limit Switch
 - OAT** — Outdoor-Air Thermostat
 - OL** — Overload
 - PL** — Plug
 - PLS** — Primary Limit Switch
 - RVS** — Reversing Valve Solenoid
 - SLS** — Secondary Limit Switch
 - ST** — Start Thermistor
 - SW** — Switch
 - TBH** — Thermostat Bulb Heater
- Component Connection (Marked)
 - Component Connection (Unmarked)
 - Accessory or Optional Wiring
 - To indicate common potential only; not to represent wire.

SWITCH POSITION	CONTACTS MADE
OFF	NONE
FAN	L1 TO MED
LO HEAT	L1 TO IT1, FCS TO MED, L2 TO HTR
HI HEAT	L1 TO IT1, FCS TO HI, L2 TO HTR
LO COOL	L1 TO IT3, FCS TO LO
HI COOL	L1 TO IT3, FCS TO HI

NOTES.

1. Recommended for use on grounded power supply only
2. Compressor and fan motor thermally protected.
3. Use copper conductors only
4. All wiring must conform with NEC (National Electrical Code) and local codes
5. Dashed lines indicate components when used

Guide specifications



Packaged Terminal Cooling Unit with Heat Pump or Electric Heating

HVAC Guide Specifications

Size Range: Cooling: 6,800 to 13,700 Btuh
Heating: 6,000 to 11,000 Btuh Heat Pump
6,400 to 17,000 Btuh Electric

Carrier Model Numbers: 52SE Electric Heat
52SQ Heat Pump

Part 1 — General

1.01 SYSTEM DESCRIPTION

Single piece, thru-the-wall electrically controlled unit using hermetic rotary compressor for cooling and heat pump or electric resistance heat, as shown on the contract drawings.

1.02 QUALITY ASSURANCE

Unit shall be rated in accordance with ARI Standard 310/380-93 and certified by UL and CSA.

1.03 DELIVERY, STORAGE AND HANDLING

Unit shall be stored and handled per manufacturer's recommendations.

Part 2 — Products

2.01 EQUIPMENT

A. General:

Factory-assembled single piece, heating and cooling unit. Contained within the unit enclosure shall be compressor, coils, fans and fan motor, heating means, controls, all wiring and piping, and a full refrigerant charge (HCFC-22).

B. Front Panel (supplied with unit) and Wall Sleeve:

Wall sleeve and front panel shall be of plastic material. Front panel to have louvers in front surface

C. Fans and Motor:

1. Evaporator (indoor) fan shall be a single-inlet squirrel cage blower with a corrosion resistant finish, discharging air upwards. Fan shall be dynamically balanced
2. Condenser (outdoor) fan shall be a propeller type with corrosion resistant finish, discharging air out the rear of the unit, and shall be dynamically balanced.
3. Motor shall be totally enclosed, permanently lubricated and multiple speed.

D. Compressor

The compressor shall be fully-hermetic with internal and external vibration isolation

E. Coils

The coils shall have aluminum plate fins mechanically bonded to seamless copper tubes internally enhanced (grooved) with all joints brazed.

F. Refrigerant Components:

All piping, compressor, and expansion devices shall be included.

G. Controls and Safeties:

1. Controls shall consist of pushbutton OFF/FAN/HEAT/COOL selector switch, adjustable thermostat with upper and lower limits, VENT OPEN/CLOSE and FAN CYCLE switches. Additional controls for heat pumps include outdoor coil defrost thermostat and adjustable outdoor temperature thermostat.
2. Safeties shall consist of automatic reset overtemperature and overcurrent protection for compressor; inherent, automatic reset overtemperature protection for fan motor, 2 overtemperature protectors for heater.

H. Operating Characteristics:

Unit shall be capable of starting and running at 115 F ambient outdoor temperature per maximum load criteria of ARI Standard 310. Compressor with standard controls shall be capable of operation down to 25 F ambient outdoor temperature for heat pump and 55 F ambient outdoor temperature for cooling.

I. Electrical Requirements.

230/208 volt shall be prewired with one plug to use with appropriate wall receptacle as specified on unit nameplate.

265-volt shall be hard wired.

J. Filter:

One-piece cleanable type that filters supply air

K. Special Features:

Certain standard features are not applicable when the features designated * are specified. Contact your local Carrier Sales Office for amending specifications.

1. Factory-installed electric heater for use with heat pump or heat/cool units.
- * 2. EM — Energy management permits units to be controlled from a central location.
- * 3. RC — Remote control permits unit control from remote thermostat.
- * 4. CP — Corrosion protection provides for extra paint on control box partition and exterior coil
5. Standard grille (aluminum).
6. Architectural grille (plastic or aluminum).
7. Hard wire kit.
8. Drain kit.
9. Subbase.
10. Wall sleeve.
11. Lateral duct kit.
12. Cord-connected kit (265 v units).