



Turn to the experts



FLOOR CEILING FAN COIL UNIT





Turn to the experts

Floor-Ceiling Fan Coil Unit



- Auto-swing in both directions
- Auto-cool-dry-heat-fan
- Compact design
- Left or right drain pipe connection
- 3 speed fan
- Wireless remote control
- Multi position
- On/off timer
- R410A /R22 refrigerant

Product Model			42KUE036N-1	42KUE060N-1
Power supply		V- Ph-Hz	220-230V,1Ph, 60Hz	220-230V,1Ph, 60Hz
Indoor fan motor	Model		YKSS-115-4-1-2	YKSS-85-4-1L-2
	Input	W	236.0	166.0
	Capacitor	uF	5	2.5
	Speed(Hi/Mi/Lo)	r/min	1263/1123/1000	1435/1295/1165
Indoor coil	Number of rows		2.0	3.0
	Tube pitch(a)x row pitch(b)	mm	21x13.37	21x13.37
	Fin spacing	mm	1.3	1.3
	Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia.and type	mm	Ø7,Inner groove tube	Ø7,Inner groove tube
	Coil length x height x width	mm	935x294x26.74	1300x294x40.11
	Number of circuits		6	10
Indoor air flow (Hi/Mi/Lo)		m3/h	1722/1459/1281	2548/2104/1790
Indoor noise level (Hi/Mi/Lo)		dB(A)	52.5/48.7/45.6	58.7/54.1/49.3
Indoor unit	Dimension(W*D*H)	mm	1285x675x235	1650/675/235
	Packing (W*D*H)	mm	1360x755x318	1725/755/318
	Net/Gross weight	kg	31.3/37	41.2/47.7
Drainage water pipe dia		mm	ODØ25mm	ODØ25mm
Qty'per 20' /40' /40'HQ		Indoor unit	92/188/213	72/147/167
Refrigerant piping	Liquid side/ Gas side	mm(inch)	9.52mm(3/8in)/19mm(3/4in)	9.52mm(3/8in)/19mm(3/4in)

24ABB3 Base™ 13 Air Conditioner with Puron® Refrigerant



Turn to the Experts™

Product Data



Carrier's Air Conditioners with Puron® refrigerant provide a collection of features unmatched by any other family of equipment. The 24ABB has been designed utilizing Carrier's Puron refrigerant. The environmentally sound refrigerant allows you to make a responsible decision in the protection of the earth's ozone layer.

As an Energy Star® Partner, Carrier Corporation has determined that this product meets the Energy Star® guidelines for energy efficiency. Refer to the combination ratings in the Product Data for system combinations that meet Energy Star® guidelines.

NOTE: Ratings contained in this document are subject to change at any time. Always refer to the AHRI directory (www.ahridirectory.org) for the most up-to-date ratings information.

INDUSTRY LEADING FEATURES / BENEFITS

Efficiency

- 13 - 14 SEER/10.55 - 12 EER
- Microtube Technology™ refrigeration system
- Indoor air quality accessories available

Sound

- Sound level as low as 75 dBA
- Sound level as low as 74 dBA with accessory sound blanket

Comfort

- System supports Edge® Thermidistat™ or standard thermostat controls

Reliability

- Puron® refrigerant - environmentally sound, won't deplete the ozone layer and low lifetime service cost.
- Scroll compressor
- Internal pressure relief valve
- Internal thermal overload
- Filter drier
- Balanced refrigeration system for maximum reliability

Durability

WeatherArmor™ protection package:

- Solid, durable sheet metal construction
- Dense wire coil guard available
- Baked-on, complete outer coverage, powder paint

Applications

- Long-line - up to 250 feet (76.20 m) total equivalent length, up to 200 feet (60.96 m) condenser above evaporator, or up to 80 ft. (24.38 m) evaporator above condenser (See Longline Guide for more information.)
- Low ambient (down to -20°F/-28.9°C) with accessory kit

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12	13
N	N	A	A	A/N	N	N	N	A/N	A/N	A/N	N	N
2	4	A	B	B	3	3	6	A	0	0	3	0
Product Series	Product Family	Tier	Major Series	SEER	Cooling Capacity	Grille Variations	Open	Open	Open	Voltage	Series	
24=AC	A=RES AC	B=Base	B=Puron	3=13 SEER		A = Dense W = Standard	0=Not Defined	0=Not Defined	3=208/230-1	0 = Original Series		



This product has been designed and manufactured to meet Energy Star® criteria for energy efficiency when matched with appropriate coil components. However, proper refrigerant charge and proper air flow are critical to achieve rated capacity and efficiency. Installation of this product should follow all manufacturing refrigerant charging and air flow instructions. **Failure to confirm proper charge and air flow may reduce energy efficiency and shorten equipment life.**

STANDARD FEATURES

Feature	18	24	30	36	42	48	60
Puron Refrigerant	X	X	X	X	X	X	X
Maximum SEER	14.50	14.25	15.0	14.0	14.0	14.0	13.5
Scroll Compressor	X	X	X	X	X	X	X
Field Installed Filter Drier	X	X	X	X	X	X	X
Front Seating Service Valves	X	X	X	X	X	X	X
Internal Pressure Relief Valve	X	X	X	X	X	X	X
Internal Thermal Overload	X	X	X	X	X	X	X
Long Line capability	X	X	X	X	X	X	X
Low Ambient capability with Kit	X	X	X	X	X	X	X

X = Standard

24ABB3

PHYSICAL DATA

UNIT SIZE – VOLTAGE, SERIES	18–31	24–31	30–31	36–31	42–30	48–31	60–31
Operating Weight lb (kg)	107 (48.5)	110 (49.9)	111 (50.3)	141 (64.0)	190 (86.2)	186 (84.4)	190 (86.2)
Shipping Weight lb (kg)	130 (59.0)	134 (60.8)	136 (61.7)	170 (77.1)	218 (98.9)	224 (101.6)	226 (102.5)
Compressor Type	Scroll						
REFRIGERANT	Puron® (R-410A)						
Control	TXV (Puron® Hard Shutoff)						
Charge lb (kg)	3.50 (1.59)	3.80 (1.72)	4.10 (1.86)	5.34 (2.42)	5.84 (2.65)	7.00 (3.18)	8.19 (3.71)
COND FAN	Propeller Type, Direct Drive						
Air Discharge	Vertical						
Air Qty (CFM)	1792	2218	2218	2954	3167	3365	3129
Motor HP	1/12	1/10	1/10	1/4	1/5	1/4	1/4
Motor RPM	1100	1100	1100	1100	1100	1100	800
COND COIL							
Face Area (Sq ft)	8.4	8.4	9.80	13.13	17.25	19.40	12.93
Fins per In.	20	25	25	25	25	25	20
Rows	1	1	1	1	1	1	2
Circuits	3	3	3	3	4	5	5
VALVE CONNECT. (In. ID)							
Vapor	3/4	3/4	3/4	7/8	7/8	7/8	7/8
Liquid	3/8						
REFRIGERANT TUBES (In. OD)							
Rated Vapor*	3/4	3/4	3/4	7/8	7/8	7/8	1–1/8
Max Liquid Line†	3/8						

* Units are rated with 25 ft (7.6 m) of lineset length. See Vapor Line Sizing and Cooling Capacity Loss table when using other sizes and lengths of lineset.

Note: See unit Installation Instruction for proper installation.

† See *Liquid Line Sizing For Cooling Only Systems with Puron Refrigerant* tables.

VAPOR LINE SIZING AND COOLING CAPACITY LOSS

LONG LINE APPLICATION: An application is considered "Long line" when the total equivalent tubing length exceeds 80 ft. (24.38 m) or when there is more than 20 ft. (6.09 m) vertical separation between indoor and outdoor units. These applications require additional accessories and system modifications for reliable system operation. The maximum allowable total equivalent length is up to 250 ft. (76.2 m). The maximum

vertical separation is 200 ft. (60.96 m) when outdoor unit is above indoor unit, and up to 80 ft. (24.38 m) when the outdoor unit is below the indoor unit. Refer to Accessory Usage Guideline below for required accessories. See Longline Application Guideline for required piping and system modifications. Also, refer to the table below for the vapor tube diameters based on the total length to minimize the cooling capacity loss.

Unit Nominal Size (Btuh)	Maximum Liquid Line Diameters (In. OD)	Vapor Line Diameters (In. OD)	Cooling Capacity Loss (%) Total Equivalent Line Length ft. (m)								
			Standard Application		Long Line Application Requires Accessories						
			26–50 (7.9–15.2)	51–80 (15.5–24.4)	81–100 (24.7–30.5)	101–125 (30.8–38.1)	126–150 (38.4–45.7)	151–175 (46.0–53.3)	176–200 (53.6–61.0)	201–225 (61.3–68.6)	226–250 (68.9–76.2)
18000 1 Stage Puron AC	3/8	1/2	1	2	3	5	6	7	8	9	11
		5/8	0	1	1	1	2	2	3	3	
		3/4	0	0	0	0	1	1	1	1	1
24000 1 Stage Puron AC	3/8	5/8	0	1	2	2	3	3	4	5	5
		3/4	0	0	1	1	1	1	1	2	2
		7/8	0	0	0	0	0	1	1	1	1
30000 1 Stage Puron AC	3/8	5/8	1	2	3	3	4	5	6	7	8
		3/4	0	0	1	1	1	2	2	2	3
		7/8	0	0	0	0	1	1	1	1	1
36000 1 Stage Puron AC	3/8	5/8	1	2	4	5	6	8	9	10	12
		3/4	0	1	1	2	2	3	3	4	4
		7/8	0	0	0	1	1	1	1	2	2
42000 1 Stage Puron AC	3/8	3/4	0	1	2	2	3	4	4	5	6
		7/8	0	0	1	1	1	2	2	2	3
		1 1/8	0	0	0	0	0	0	0	0	0
48000 1 Stage Puron AC	3/8	3/4	0	1	2	3	4	5	5	6	7
		7/8	0	0	1	1	2	2	2	3	3
		1 1/8	0	0	0	0	0	0	0	1	1
60000 1 Stage Puron AC	3/8	3/4	1	2	4	5	6	7	9	10	11
		7/8	0	1	2	2	3	4	4	5	5
		1 1/8	0	0	0	1	1	1	1	1	1

Applications in this area are long line. Accessories are required as shown recommended on Long Line Application Guidelines

Applications in this area may have height restrictions that limit allowable total equivalent length, when outdoor unit is below indoor unit. See Long Line Application Guidelines

24ABB3

LIQUID LINE SIZING FOR COOLING ONLY SYSTEMS WITH PURON

24ABB3

Size	Liquid Line Connection	Liquid Line Diam.	Puron – AC Maximum Total Equivalent Length: Outdoor unit BELOW Indoor Vertical Separation ft (m)								
			0–5 (0–1.5)	6–10 (1.8–3.0)	11–20 (3.4–6.1)	21–30 (6.4–9.1)	31–40 (9.4–12.2)	41–50 (12.5–15.2)	51–60 (15.5–18.3)	61–70 (18.6–21.3)	71–80 (21.6–24.4)
18000 Puron AC	3/8	1/4	150	150	125	100	100	75	50	---	---
		5/16	250*	250*	250*	250*	250*	250*	250*	225*	150
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
24000 Puron AC	3/8	1/4	75	75	75	50	50	---	---	---	---
		5/16	250*	250*	250*	250*	250*	225*	175	125	100
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
30000 Puron AC	3/8	1/4	30	---	---	---	---	---	---	---	---
		5/16	175	225*	200	175	125	100	75	---	---
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
36000 Puron AC	3/8	5/16	175	150	150	100	100	100	75	---	---
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
42000 Puron AC	3/8	5/16	125	100	100	75	75	50	---	---	---
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	150
48000 Puron AC	3/8	3/8	250*	250*	250*	250*	250*	250*	230	160	---
60000 Puron AC	3/8	3/8	250*	250*	250*	225*	190	150	110	---	---

* Maximum actual length not to exceed 200 ft (61 m)

Size	Liquid Line Connection	Liquid Line Diam.	Puron – AC Maximum Total Equivalent Length: Outdoor unit ABOVE Indoor Vertical Separation ft (m)							
			25 (7.6)	26–50 (7.9–15.2)	51–75 (15.5–22.9)	76–100 (23.2–30.5)	101–125 (30.8–38.1)	126–150 (38.4–45.7)	151–175 (46.0–53.3)	176–200 (53.6–61.0)
18000 Puron AC	3/8	1/4	175	250*	250*	250*	250*	250*	250*	250*
		5/16	250*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*
24000 Puron AC	3/8	1/4	100	125	175	200	225*	250*	250*	250*
		5/16	250*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*
30000 Puron AC	3/8	1/4	30	---	---	---	---	---	---	---
		5/16	250*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*
36000 Puron AC	3/8	5/16	225*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*
42000 Puron AC	3/8	5/16	175	200	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*
48000 Puron AC	3/8	3/8	250*	250*	250*	250*	250*	250*	250*	250*
60000 Puron AC	3/8	3/8	250*	250*	250*	250*	250*	250*	250*	250*

* Maximum actual length not to exceed 200 ft (61 m)

REFRIGERANT CHARGE ADJUSTMENTS

Liquid Line Size	Puron Charge oz/ft
3/8	0.60 (Factory charge for lineset = 9 oz)
5/16	0.40
1/4	0.27

Units are factory charged for 15 ft (4.6 m) of 3/8" liquid line. When using other length or diameter liquid lines, charge adjustments are required per the chart above.

Charging Formula:

[(Lineset oz/ft x total length) – (factory charge for lineset)] = charge adjustment

Example 1: System has 15 ft of line set using existing 1/4" liquid line. What charge adjustment is required?

Formula: (.27 oz/ft x 15ft) – (9 oz) = (-4.95) oz.

Net result is to remove 4.95 oz of refrigerant from the system

Example 2: System has 45 ft of existing 5/16" liquid line. What is the charge adjustment?

Formula: (.40 oz/ft. x 45ft) – (9 oz.) = 9 oz.

Net result is to add 9 oz of refrigerant to the system

ACCESSORY THERMOSTATS

THERMOSTAT / SUBBASE PKG.	DESCRIPTION
TP-PRH01-A	Programmable Thermostat
TP-NRH01-A	Non-programmable Thermostat
TP-PAC01	Performance Series Programmable AC Stat
TP-NAC01	Performance Series Non-programmable AC Stat
TC-PAC01	Comfort Series Programmable AC Stat
TC-NAC01	Comfort Series Non-programmable AC Stat
TB-PAC01	Base Series Programmable AC Stat
TB-NAC01	Base Series Non-programmable AC Stat
TSTATCCSEN01-B	Outdoor Air Temperature Sensor
TSTATXXBBP01	Backplate for Builder's Thermostat
TSTATXXNBP01	Backplate for Non-programmable Thermostat
TSTATXXBP01	Backplate for Programmable Thermostat
TSTATXXCNV10	Thermostat Conversion Kit (4 to 5 wires) - 10 Pack

ACCESSORIES

KIT NUMBER	DESCRIPTION	Size - Voltage & Series						
		18-31	24-31	30-31	36-31	42-30	48-31	60-31
KAAFT0101AAA	FREEZE THERMOSTAT	X	X	X	X	X	X	X
KAATD0101TDR	TIME DELAY RELAY	X	X	X	X	X	X	X
KSALA0301410	LOW AMBIENT PSW	X	X	X	X	X	X	X
KSALA0601AAA†	MOTORMASTER 230V	X	X	X	X	X	X	X
HC32GE234	MOTOR FAN BALL BEARING	X						
HC34GE239	MOTOR FAN BALL BEARING		X	X				
HC40GE226	MOTOR FAN BALL BEARING				X		X	
HC38GE219	MOTOR FAN BALL BEARING					X		
HC40GE225	MOTOR FAN BALL BEARING							X
HC40GE228	MOTOR FAN BALL BEARING							
KSAHS1701AAA	HARD START (CAP / RELAY)	X	X	X	X	X	X	X
KSACY0101AAA	CYCLE PROTECTOR	X	X	X	X	X	X	X
KSASF0101AAA	SUPPORT FEET	X	X	X	X	X	X	X
KAACS0201PTC	START ASSIST PTC	X	X	X	X	X	X	X
KAALS0201LLS	LIQUID LINE SOLENOID	X	X	X	X	X	X	X
KAAWS0101AAA	WINTER START	X	X	X	X	X	X	X
KAACH1201AAA	CRANKCASE HTR					X	X	X
KAACH1401AAA	CRANKCASE HTR	X	X	X	X			
KSATX0201PUR	TXV PURON HSO	X	X	X				
KSATX0301PUR	TXV PURON HSO				X	X		
KSATX0401PUR	TXV PURON HSO						X	
KSATX0501PUR	TXV PURON HSO							X
KSASH0601COP	SOUND HOOD	X	X	X	X	X	X	
KSASH2101COP	SOUND HOOD							X
KAALP0401PUR	LOW PRESSURE SWITCH	X	X	X	X	X	X	X
KAHI0501PUR	HIGH PRESSURE SWITCH	X	X	X	X	X	X	X

† Required accessories include ball bearing fan motor, compressor start assist (CAP / Relay), crankcase heater, evaporator freeze stat, hard shut-off TXV.

X = Accessory

ACCESSORY USAGE GUIDELINE

ACCESSORY	REQUIRED FOR LOW-AMBI- ENT COOLING APPLICATIONS (Below 55°F/12.8°C)	REQUIRED FOR LONG LINE APPLICATIONS* (Over 80 ft./24.38 m)	REQUIRED FOR SEA COAST APPLICATIONS (Within 2 miles/3.22 km)
Ball Bearing Fan Motor	Yes†	No	No
Compressor Start Assist Capacitor and Relay	Yes	Yes	No
Crankcase Heater	Yes	Yes	No
Evaporator Freeze Thermostat	Yes	No	No
Hard Shut-Off TXV	Yes	Yes	Yes
Liquid Line Solenoid Valve	No	No	No
Motor Master® Control or Low-ambient Pressure Switch	Yes	No	No
Support Feet	Recommended	No	Recommended
Winter Start Control	Yes	No	No

* For tubing line sets between 80 and 200 ft. (24.38 and 60.96 m) and/or 20 ft. (6.09 m) vertical differential, refer to Residential Split-System Longline Application Guideline.

† Required for Low-Ambient Controller (full modulation feature) MotorMaster® Control.

Accessory Description and Usage (Listed Alphabetically)

1. Ball-Bearing Fan Motor

A fan motor with ball bearings which permits speed reduction while maintaining bearing lubrication.

Usage Guideline:

Required on all units when MotorMaster® is used.

2. Compressor Start Assist - Capacitor and Relay

Start capacitor and relay gives a "hard" boost to compressor motor at each start up.

Usage Guideline:

Required for reciprocating compressors in the following applications:

- Long line
- Low ambient cooling
- Hard shut off expansion valve on indoor coil
- Liquid line solenoid on indoor coil

Required for single-phase scroll compressors in the following applications:

- Long line
- Low ambient cooling

Suggested for all compressors in areas with a history of low voltage problems.

3. Compressor Start Assist — PTC Type

Solid state electrical device which gives a "soft" boost to the compressor at each start-up.

Usage Guideline:

Suggested in installations with marginal power supply.

4. Crankcase Heater

An electric resistance heater which mounts to the base of the compressor to keep the lubricant warm during off cycles. Improves compressor lubrication on restart and minimizes the chance of liquid slugging.

Usage Guideline:

- Required in low ambient cooling applications.
- Required in long line applications.
- Suggested in all commercial applications.

5. Cycle Protector

The cycle protector is designed to prevent compressor short cycling. This control provides an approximate 5-minute delay after power to the compressor has been interrupted for any reason, including power outage, protector control trip, thermostat jiggling, or normal cycling.

6. Evaporator Freeze Thermostat

An SPST temperature-actuated switch that stops unit operation when evaporator reaches freeze-up conditions.

Usage Guideline:

Required when low ambient kit has been added.

7. Low-Ambient Pressure Switch Kit

A long life pressure switch which is mounted to outdoor unit service valve. It is designed to cycle the outdoor fan motor in order to maintain head pressure within normal operating limits (approximately 100 psig to 225 psig). The control will maintain working head pressure at low-ambient temperatures down to 0°F (-18°C) when properly installed.

Usage Guideline:

A Low-Ambient Pressure Switch or MotorMaster® Low-Ambient Controller must be used when cooling operation is used at outdoor temperatures below 55°F (12.8°C).

8. MotorMaster® Low-Ambient Controller

A fan-speed control device activated by a temperature sensor, designed to control condenser fan motor speed in response to the saturated, condensing temperature during operation in cooling mode only. For outdoor temperatures down to -20°F (-28.9°C), it maintains condensing temperature at 100°F ±10°F (37.8°C ± 5.5°C).

Usage Guideline:

A MotorMaster® Low Ambient Controller or Low-Ambient Pressure Switch must be used when cooling operation is used at outdoor temperatures below 55°F (12.8°C).

Suggested for all commercial applications.

9. Outdoor Air Temperature Sensor

Designed for use with Carrier Thermostats listed in this publication. This device enables the thermostat to display the outdoor temperature. This device also

is required to enable special thermostat features such as auxiliary heat lock out.

Usage Guideline:

Suggested for all Carrier thermostats listed in this publication.

Accessory Description and Usage (Listed Alphabetically) (Continued)

10. Sound Hood

Wraparound sound reducing cover for the compressor. Reduces the sound level by about 2 dBA.

Usage Guideline:

Suggested when unit is installed closer than 15 ft (4.57 m) to quiet areas, bedrooms, etc.

Suggested when unit is installed between two houses less than 10 ft (3.05 m) apart.

11. Support Feet

Four stick-on plastic feet that raise the unit 4 in. (101.6 mm) above the mounting pad. This allows sand, dirt, and other debris to be flushed from the unit base, minimizing corrosion.

Usage Guideline:

Suggested in the following applications:

Coastal installations.

Windy areas or where debris is normally circulating.

Rooftop installations.

For improved sound ratings.

12. Thermostatic Expansion Valve (TXV)

A modulating flow-control valve which meters refrigerant liquid flow rate into the evaporator in response to the superheat of the refrigerant gas leaving the evaporator.

Kit includes valve, adapter tubes, and external equalizer tube. Hard shut off types are available.

NOTE: When using a hard shut off TXV with single phase reciprocating compressors, a Compressor Start Assist Capacitor and Relay is required.

Usage Guideline:

Required to achieve ARI ratings in certain equipment combinations. Refer to combination ratings.

Hard shut off TXV or LLS required in air conditioner long line applications.

Required for use on all zoning systems.

13. Time-Delay Relay

An SPST delay relay which briefly continues operation of indoor blower motor to provide additional cooling after the compressor cycles off.

NOTE: Most indoor unit controls include this feature. For those that do not, use the guideline below.

Usage Guideline:

For improved efficiency ratings for certain combinations of indoor and outdoor units. Refer to ARI Unitary Directory.

14. Winter Start Control

This control is designed to alleviate nuisance opening of the low-pressure switch by bypassing it for the first 3 minutes of operation.

ELECTRICAL DATA

UNIT SIZE – VOLTAGE, SERIES	V/PH	OPER VOLTS*		COMPR		FAN	MCA	MIN WIRE SIZE†	MIN WIRE SIZE†	MAX LENGTH ft. (m)‡	MAX LENGTH ft. (m)‡	MAX FUSE** or CKT BRK AMPS
		MAX	MIN	LRA	RLA	FLA		60° C	75° C	60° C	75° C	
18–31	208/230/1	253	197	48.0	9.0	0.5	11.8	14	14	66 (20.1)	63 (21.0)	15
24–31				58.3	13.5	0.75	17.6	14	14	44 (13.4)	42 (12.8)	25
30–31				64.0	12.8	1.4	16.8	14	14	46 (14.0)	44 (13.4)	25
36–31				77.0	14.1	1.4	20.5	12	12	61 (18.6)	58 (17.7)	30
42–30				112.0	17.9	1.1	23.5	12	12	53 (16.2)	51 (15.5)	40
48–31				109.0	19.9	1.4	26.2	10	10	76 (23.2)	72 (22.2)	40
60–31				134.0	26.4	1.2	34.2	8	10	62 (18.9)	55 (16.8)	50

* Permissible limits of the voltage range at which the unit will operate satisfactorily

† If wire is applied at ambient greater than 30°C, consult table 310–16 of the NEC (NFPA 70). The ampacity of non-metallic-sheathed cable (NM), trade name ROMEX, shall be that of 60°C conditions, per the NEC (NFPA 70) Article 336–26. If other than uncoated (no-plated), 60 or 75°C insulation, copper wire (solid wire for 10 AWG or smaller, stranded wire for larger than 10 AWG) is used, consult applicable tables of the NEC (NFPA 70).

‡ Length shown is as measured one way along wire path between unit and service panel for voltage drop not to exceed 2%.

** Time-Delay fuse.

FLA – Full Load Amps

LRA – Locked Rotor Amps

MCA – Minimum Circuit Amps

RLA – Rated Load Amps

NOTE: Control circuit is 24–V on all units and requires external power source. Copper wire must be used from service disconnect to unit.

All motors/compressors contain internal overload protection.

Complies with 2007 requirements of ASHRAE Standards 90.1

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A-WEIGHTED SOUND POWER LEVEL

UNIT SIZE – VOLTAGE, SERIES	STANDARD RATING (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dBA, without tone adjustment)						
		125	250	500	1000	2000	4000	8000
18–31	72	53.5	59.5	63.5	67.0	63.5	59.0	52.5
24–31	76	55.0	61.5	67.0	71.5	69.0	61.0	55.0
30–31	74	55.0	63.5	68.5	68.5	65.5	61.0	54.0
36–31	75	59.5	63.0	68.5	70.0	65.5	61.5	53.5
42–30	78	57.5	65.0	71.0	73.0	70.5	67.5	62.5
48–31	80	58.5	67.5	73.5	75.0	70.5	67.5	64.5
60–31	78	59.0	67.5	71.5	73.5	69.0	66.0	63.5

NOTE: Tested in accordance with ARI Standard 270–95 (not listed in ARI).

A-WEIGHTED SOUND POWER LEVEL WITH SOUND SHIELD

UNIT SIZE – VOLTAGE, SERIES	STANDARD RATING (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dBA, without tone adjustment)						
		125	250	500	1000	2000	4000	8000
18–31	71	55.5	60.5	64.0	66.0	63.0	58.5	52.0
24–31	74	55.5	60.5	68.5	70.0	67.0	61.0	53.6
30–31	73	55.5	64.0	68.0	67.0	64.0	60.0	52.5
36–31	74	59.5	63.0	68.0	69.5	65.0	60.5	50.5
42–30	77	57.5	65.0	70.5	72.0	70.0	67.0	62.0
48–31	79	60.5	67.5	73.5	74.5	71.0	68.0	63.5
60–31	78	59.0	68.0	70.5	72.5	68.0	67.0	63.0

NOTE: Tested in accordance with ARI Standard 270–95 (not listed in ARI).

CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

UNIT SIZE – VOLTAGE & SERIES	REQUIRED SUBCOOLING °F (°C)
18–31	10 (5.6)
24–31	10 (5.6)
30–31	10 (5.6)
36–31	14 (7.8)
42–30	10 (5.6)
48–31	15 (8.3)
60–31	13 (7.2)

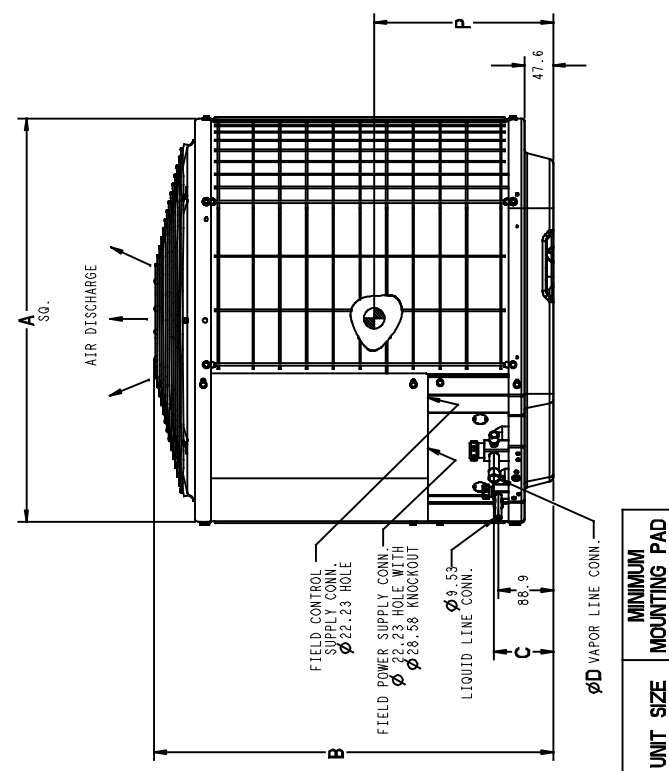
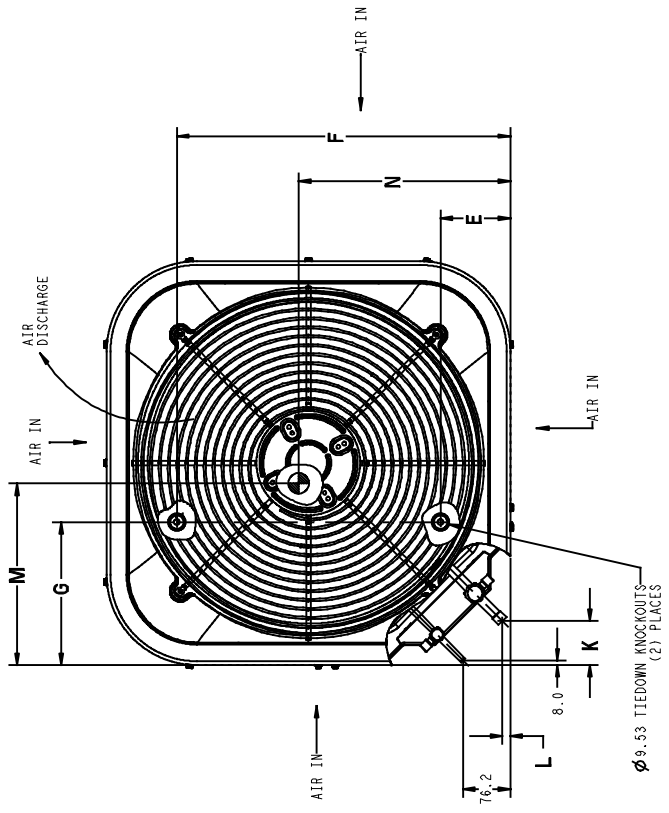
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DIMENSIONS - SI

UNIT	SERIES	ELECTRICAL CHARACTERISTICS	A	B	C	D	E	F	G	K	L	M	N	P	OPERATING WEIGHT (Kgs)	SHIPPING WEIGHT (Kgs)	SHIPPING DIMENSIONS (L x W x H)
24ABB318	1	X 0 0 0	596.9	643.0	95.2	19.0	112.7	458.8	198.4	71.4	12.7	419.1	381.0	304.8	48.5	59.0	616.0 X 695.3 X 850.9
24ABB324	1	X 0 0 0	596.9	643.0	95.2	19.0	112.7	458.8	198.4	71.4	12.7	419.1	381.0	304.8	49.9	60.8	616.0 X 695.3 X 850.9
24ABB330	1	X 0 0 0	596.9	728.7	95.2	19.0	112.7	458.8	198.4	71.4	12.7	419.1	381.0	355.6	50.3	61.7	616.0 X 695.3 X 850.9
24ABB336	1	X 0 0 0	654.0	820.8	98.4	22.2	112.7	539.8	231.8	74.6	15.9	362.0	266.7	408.4	64.0	77.1	682.6 X 763.6 X 912.8
24ABB342	0	X 0 0 0	782.2	820.8	98.4	22.2	166.7	627.1	231.8	74.6	15.9	400.0	412.8	349.2	86.2	98.9	822.3 X 901.7 X 912.8
24ABB348	1	X 0 0 0	792.2	908.0	98.4	22.2	166.7	627.1	231.8	74.6	15.9	415.9	390.5	381.4	84.4	101.6	822.3 X 901.7 X 1000.1
24ABB360	1, 2	X 0 0 0	792.2	647.7	98.4	22.2	166.7	627.1	231.8	74.6	15.9	358.8	390.5	288.9	86.2	102.5	822.3 X 901.7 X 827.1

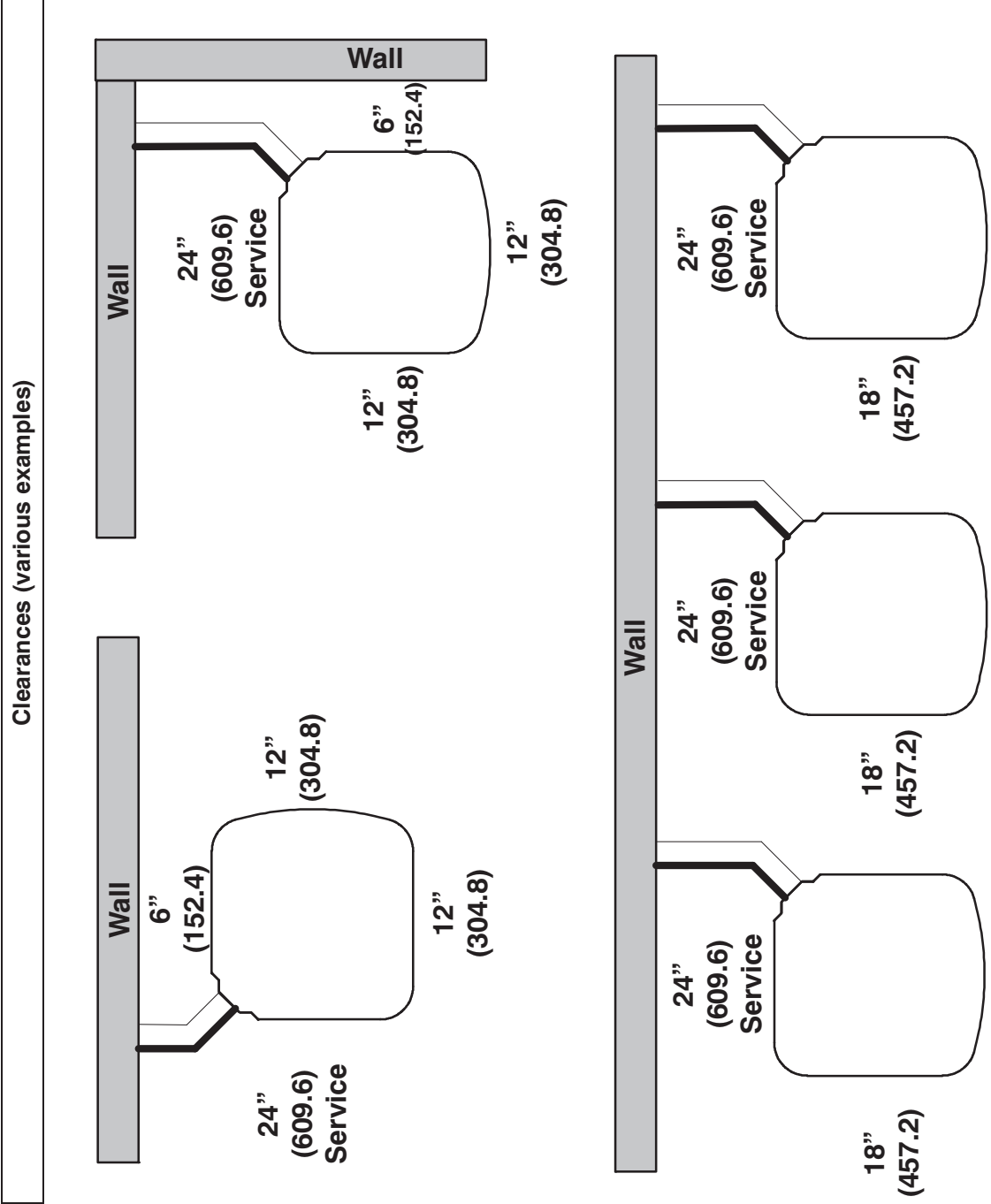
X = YES
0 = NO

- NOTES:
- ALLOW 762.0 CLEARANCE TO SERVICE SIDE OF UNIT, 1219.2 ABOVE UNIT, 152.4 ON ONE SIDE, 304.8 ON REMAINING SIDE, AND 609.6 BETWEEN UNITS FOR PROPER AIRFLOW.
 - MINIMUM OUTDOOR OPERATING AMBIENT IN COOLING MODE IS 13°C, MAX. 52°C.
 - SERIES DESIGNATION IS THE 13TH POSITION OF THE UNIT MODEL NUMBER.
 - CENTER OF GRAVITY
 - ALL DIMENSIONS ARE IN "MM" UNLESS NOTED.



UNIT SIZE	MINIMUM MOUNTING PAD DIMENSIONS
18, 24, 30	596.9 X 596.9
36	660.4 X 660.4
42, 48, 60	800.1 X 800.1
-	889.0 X 889.0

CLEARANCES



Note: Numbers in () = mm

IMPORTANT: When installing multiple units in an alcove, roof well, or partially enclosed area, ensure there is adequate ventilation to prevent re-circulation of discharge air.

GUIDE SPECIFICATIONS

GENERAL

System Description

Outdoor-mounted, air-cooled, split-system air conditioner unit suitable for ground or rooftop installation. Unit consists of a hermetic compressor, an air-cooled coil, propeller-type condenser fan, and a control box. Unit will discharge supply air upward as shown on contract drawings. Unit will be used in a refrigeration circuit to match up to a packaged fan coil or coil unit.

Quality Assurance

- Unit will be rated in accordance with the latest edition of AHRI Standard 210.
- Unit will be certified for capacity and efficiency, and listed in the latest AHRI directory.
- Unit construction will comply with latest edition of ANSI/ASHRAE and with NEC.
- Unit will be constructed in accordance with UL standards and will carry the UL label of approval. Unit will have c-UL-us approval.
- Unit cabinet will be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 500-hr salt spray test.
- Air-cooled condenser coils will be leak tested at 150 psig and pressure tested at 450 psig.
- Unit constructed in ISO9001 approved facility.

Delivery, Storage, and Handling

- Unit will be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

Warranty (for inclusion by specifying engineer)

- U.S. and Canada only.

PRODUCTS

Equipment

Factory assembled, single piece, air-cooled air conditioner unit. Contained within the unit enclosure is all factory wiring, piping, controls, compressor, refrigerant charge Puron® (R-410A), and special features required prior to field start-up.

Unit Cabinet

- Unit cabinet will be constructed of galvanized steel, bonderized, and coated with a powder coat paint.

AIR-COOLED, SPLIT-SYSTEM AIR CONDITIONER

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1-1/2 TO 5 NOMINAL TONS

Fans

- Condenser fan will be direct-drive propeller type, discharging air upward.
- Condenser fan motors will be totally enclosed, 1-phase type with class B insulation and permanently lubricated bearings. Shafts will be corrosion resistant.
- Fan blades will be statically and dynamically balanced.
- Condenser fan openings will be equipped with coated steel wire safety guards.

Compressor

- Compressor will be hermetically sealed.
- Compressor will be mounted on rubber vibration isolators.

Condenser Coil

- Condenser coil will be air cooled.
- Coil will be constructed of aluminum fins mechanically bonded to copper tubes which are then cleaned, dehydrated, and sealed.

Refrigeration Components

- Refrigeration circuit components will include liquid-line shutoff valve with sweat connections, vapor-line shutoff valve with sweat connections, system charge of Puron® (R-410A) refrigerant, and compressor oil.
- Unit will be equipped with high-pressure switch, low pressure switch and filter drier for Puron refrigerant.

Operating Characteristics

- The capacity of the unit will meet or exceed _____ Btuh at a suction temperature of _____ °F/°C. The power consumption at full load will not exceed _____ kW.
- Combination of the unit and the evaporator or fan coil unit will have a total net cooling capacity of _____ Btuh or greater at conditions of _____ CFM entering air temperature at the evaporator at _____ °F/°C wet bulb and _____ °F/°C dry bulb, and air entering the unit at _____ °F/°C.
- The system will have a SEER of _____ Btuh/watt or greater at DOE conditions.

Electrical Requirements

- Nominal unit electrical characteristics will be _____ v, single phase, 60 hz. The unit will be capable of satisfactory operation within voltage limits of _____ v to _____ v.
- Unit electrical power will be single point connection.
- Control circuit will be 24v.

Special Features

- Refer to section of this literature identifying accessories and descriptions for specific features and available enhancements.

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