DLFSFA and DLFLFA
Console Ductless System
Sizes 12 to 58

Product Data

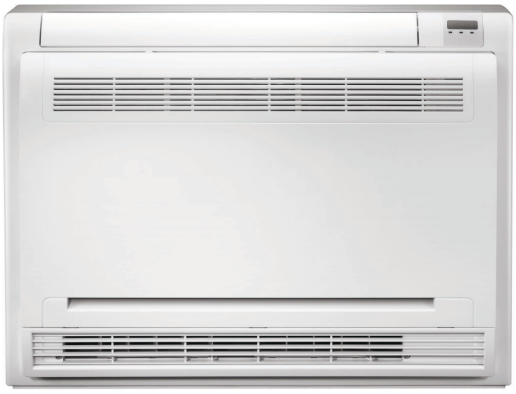


Fig. 1 —Size 12K

Fig. 2 —Sizes 18K-58K

NOTE: Images are for illustration purposes **only**. Actual models may differ slightly.

TABLE OF CONTENTS

INDUSTRY LEADING FEATURES / BENEFITS 1
BENEFITS.....2
MODEL NUMBER NOMENCLATURE.....3
STANDARD FEATURES AND ACCESSORIES 4
DIMENSIONS.....5
CLEARANCES 7
SPECIFICATIONS.....8
COMPATIBILITY 8
APPLICATION DATA 9
WIRING 10
CONTROL SYSTEM.....10
WIRELESS REMOTE CONTROLLER.....10
WIRED REMOTE CONTROL (OPTIONAL) 10
ELECTRICAL DATA.....12
FAN AND MOTOR SPECIFICATIONS 12
WIRING DIAGRAMS 13
GUIDE SPECIFICATIONS 18

INDUSTRY LEADING FEATURES / BENEFITS

A PERFECT BALANCE BETWEEN BUDGET LIMITS, ENERGY SAVINGS AND COMFORT

The console ductless system is a matched combination of an outdoor condensing unit and an indoor fan coil unit connected only by refrigerant tubing and wires.

The fan coil can be mounted on the floor, against the wall (all sizes 12-58) and mounted on the ceiling (only sizes 18-58). This selection of fan coils permits creative solutions to design problems such as:

- Add-ons to current space (an office or family room addition)
- Special space requirements
- Changes in the load that cannot be handled by the existing system
- Adding air conditioning to spaces that are heated by hydronic or electric heat and have no ductwork
- Historical renovations or any application where preserving the look of the original structure is essential.

The ideal compliment to your ducted system when it is impractical or prohibitively expensive to use ductwork.

These compact indoor fan coil units take up very little space in the room and do not obstruct windows. The fan coils are attractively styled to blend with most room decors. Advanced system components incorporate innovative technology to provide reliable cooling performance at low sound levels.

BENEFITS

LOW SOUND LEVELS

When noise is a concern, the ductless systems are the answer. The indoor units are whisper quiet. There are no compressors indoors, either in the conditioned space or directly over it, and there is none of the noise usually generated by air being forced through ductwork.

SECURE OPERATION

If security is an issue, the outdoor and indoor units are connected only by refrigerant piping and wiring to prevent intruders from crawling through ductwork. In addition, since outdoor units can be installed close to an outside wall, coils are protected from vandals and severe weather.

FAST INSTALLATION

This compact ductless system is simple to install. A mounting bracket is standard with the indoor units and only wire and piping need to be run between the indoor and outdoor units. These units are fast and easy to install ensuring minimal disruption to customers in the home or workplace. This makes the ductless systems the equipment of choice, especially in retrofit situations.

SIMPLE SERVICING AND MAINTENANCE

Removing the top panel on the outdoor units provides immediate access to the control compartment, providing a service technician access to check the unit's operation. In addition, the draw-thru design of the outdoor section means that dirt accumulates on the outside surface of the coil. Coils can be cleaned quickly from the inside using a pressure hose and detergent.

On all indoor units, service and maintenance expense is reduced due to easy-to-use cleanable filters. In addition, these console systems have extensive self-diagnostics to assist in troubleshooting.

BUILT-IN RELIABILITY

Ductless system indoor and outdoor units are designed to provide years of trouble-free operation.

The console indoor units include protection against freeze-up and high evaporator temperatures on heat pumps.

The condensing units on heat pumps are protected by a three minute time delay before the compressor starts the over-current protection and the high temperature protection.

INDIVIDUAL ROOM COMFORT

Maximum comfort is provided because each space can be controlled individually based on usage pattern. The air sweep feature provided permits optimal room air mixing to eliminate hot and cold spots for occupant comfort. In addition, year-round comfort can be provided with heat pumps.

ECONOMICAL OPERATION

The ductless system design allows individual room heating or cooling when required. There is no need to run large supply-air fans or chilled water pumps to handle a few spaces with unique load patterns. In addition, because air is moved only in the space required, no energy is wasted moving air through ducts.

EASY-TO-USE CONTROLS

The console units have microprocessor-based controls to provide the ultimate in comfort and efficiency. The user friendly wireless remote control provides the interface between user and the unit.

ACCESSORIES

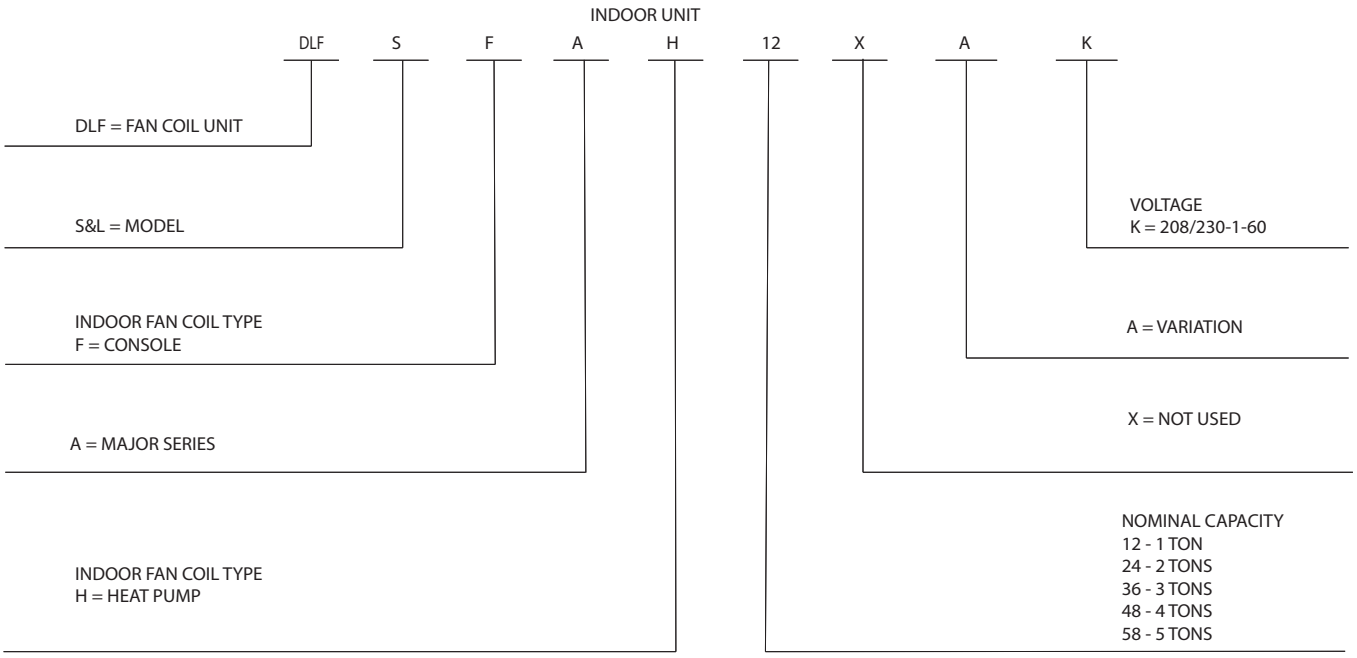
Customizing these ductless systems to your application is easily accomplished. Adding a condensate pump accessory to the console fan coil provides installation flexibility.

OPTIONAL WIRED CONTROLLER

AGENCY LISTINGS

All systems are listed with AHRI (Air Conditioning, Heating & Refrigeration Institute), and ETL.

MODEL NUMBER NOMENCLATURE



AHRI CERTIFIED
www.ahridirectory.org

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program For verification of certification for individual products, go to www.ahridirectory.org.

INTERTEK ETL LISTED C US

STANDARD FEATURES AND ACCESSORIES

Ease Of Installation	
Mounting Brackets	S
Floor Mounting Installation	S
Ceiling Installation (Sizes 18-58)	S
Low Voltage Controls	S
Comfort Features	
Microprocessor Controls	S
Wired Remote Control	A
Wireless Remote Control	S
Wi-Fi Remote Control (Sizes 18-58 Only)	A
Automatic Up-Down Air Sweep	S
Air Direction Control	S
Auto Restart Function	S
Cold Blow Protection On Heat Pumps	S
Freeze Protection Mode On Heat Pumps	S
Turbo Mode	S
Silence Mode	S
Auto Changeover On Heat Pumps	S
Follow Me	S
Energy Saving Features	
Sleep Mode	S
Stop/Start Timer	S
46° F Heating Mode (Heating Setback)	S
Safety And Reliability	
Indoor Coil Freeze Protection	S
Indoor Coil High Temp Protection in Heating Mode	S
Aluminum Golden Hydrophilic pre-coated fins	S
Ease Of Service And Maintenance	
Diagnostics	S
Cleanable Filters	S
Liquid Line Pressure Taps	S
Application Flexibility	
Condensate Pumps	A

Legend

S - Standard
A - Accessory

Accessories

ORDERING NO.	DESCRIPTION	FOR MODELS
KSACN0101AAA	Wired Remote Control	All Sizes
KSACN0401AAA	Wired Remote Control 7 Day Programmable	Size 12
KSACN0501AAA	Wired Remote Control 7 Day Programmable	Sizes 18-58
KSAIF0401AAA	Wi-Fi Kit	Sizes 18-58
KSAIC0401230	24V Interface Kit 230V	All Sizes*

NOTE: The 24V Interface is compatible with all sizes except 12K and 58K. Starting with serial number V1914V10001, the 12K and 58K units are shipped with a compatible control board.

Indoor Units

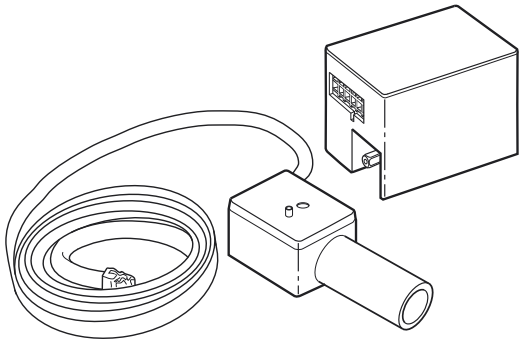
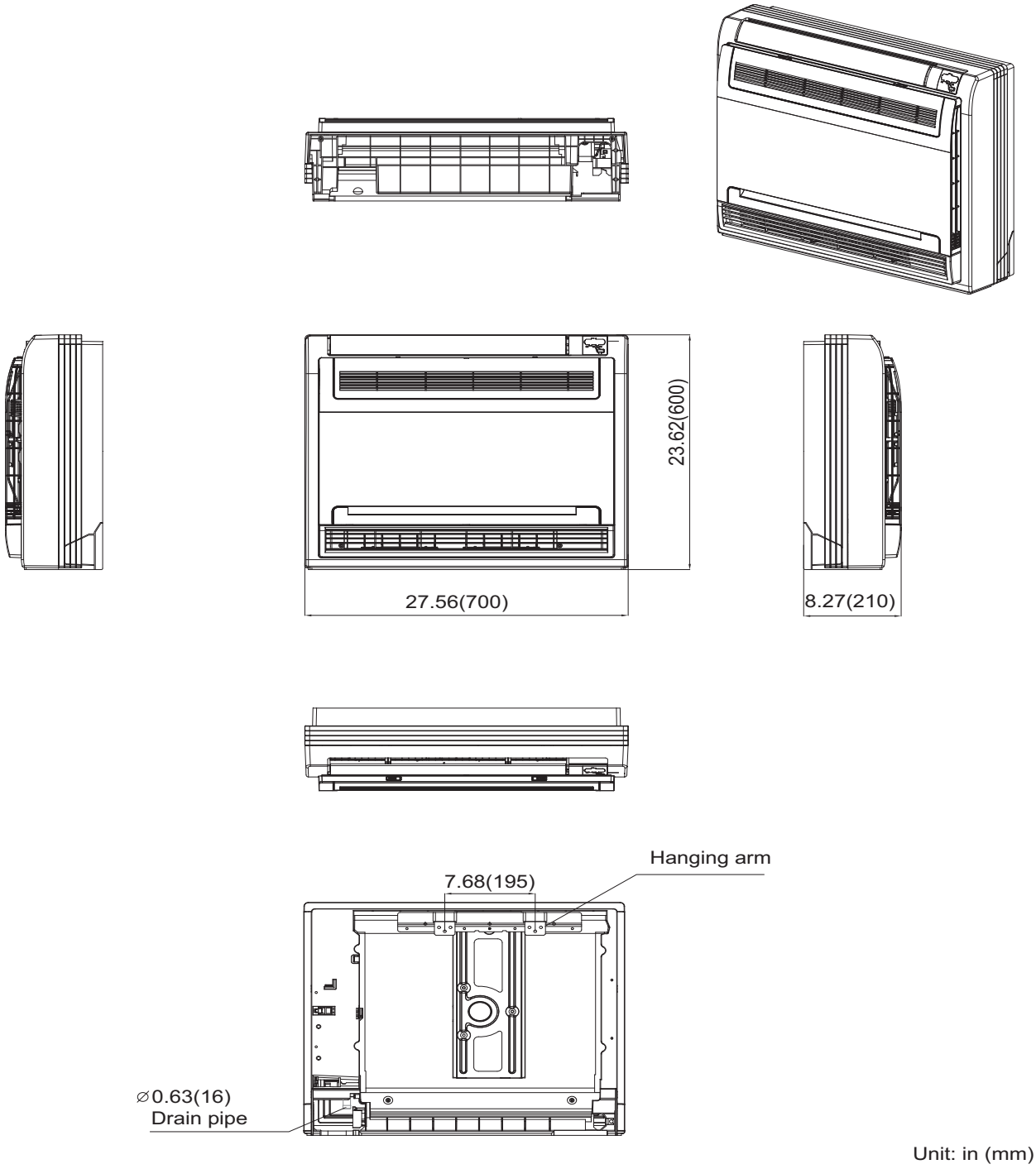


Fig. 3 —Condensate Pump Accessory

On the console fan coils, the condensate pump has a lift capability of 12 ft. (3.6 m) on the discharge side with the pump mounted in the fan coil or 6 ft. (1.8 m) on the suction side, if the pump is remote mounted.

The pump is recommended when an adequate drain line pitch cannot be provided, or when the condensate must move up to exit.

DIMENSIONS



Unit: in (mm)

Fig. 4 — Indoor Unit

DIMENSIONS SIZE 12

UNIT SIZE		12
Height	in (mm)	23.62 (600)
Width	in (mm)	27.56 (700)
Depth	in (mm)	8.27 (210)
Weight-Net	Lb (kg.)	32.41 (14.7)

DIMENSIONS

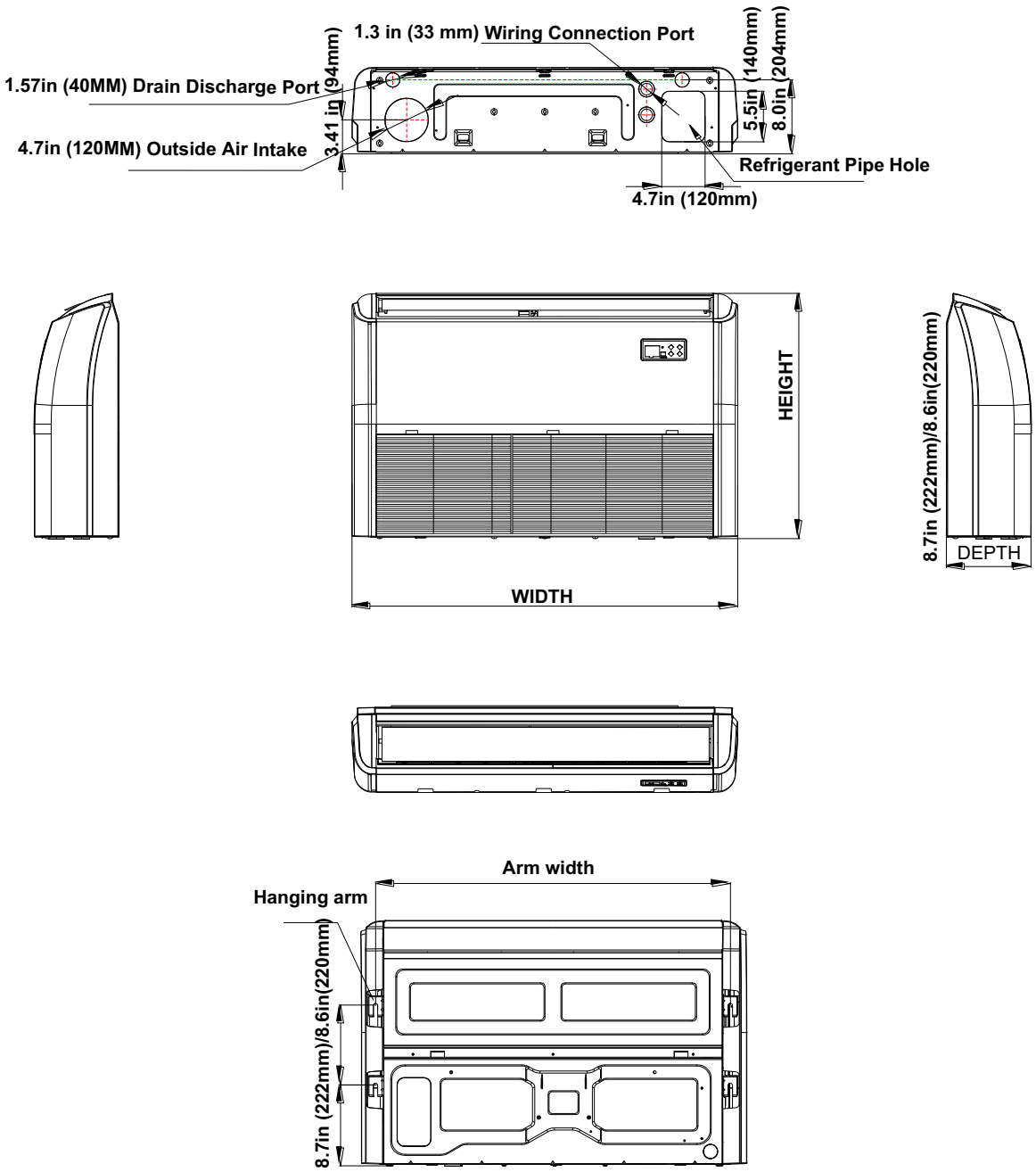


Fig. 5 — Indoor Unit

DIMENSIONS SIZES 18K-58K

UNIT SIZE		18K	24K	36K	48K	58K
Height	in (mm)	9.25 (235)	9.25 (235)	9.25 (235)	9.25 (235)	9.25 (235)
Width	in (mm)	42.05 (1068)	42.05 (1068)	50.59 (1285)	64.96 (1650)	64.96 (1650)
Depth	in (mm)	26.57 (675)	26.57 (675)	26.57 (675)	26.57 (675)	26.57 (675)
Weight-Net	lbs (kg)	55.12 (25)	58.42 (26.5)	69 (31.3)	83.78 (38)	110 (50)

CLEARANCES

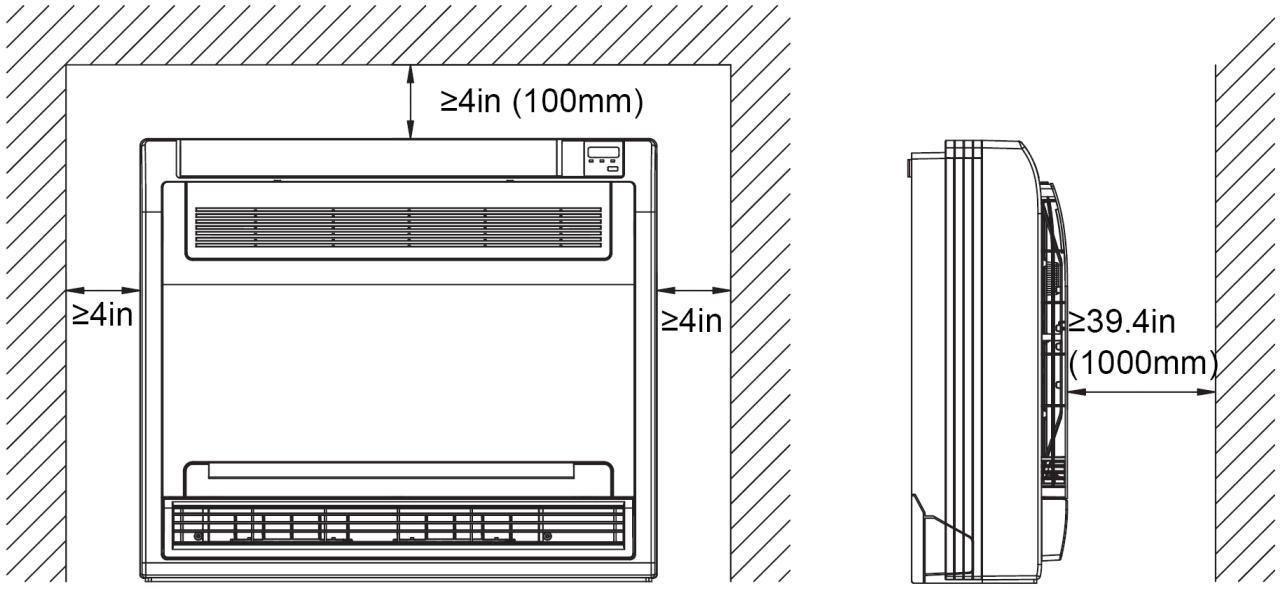


Fig. 6 — Indoor Unit Clearance Size 12K

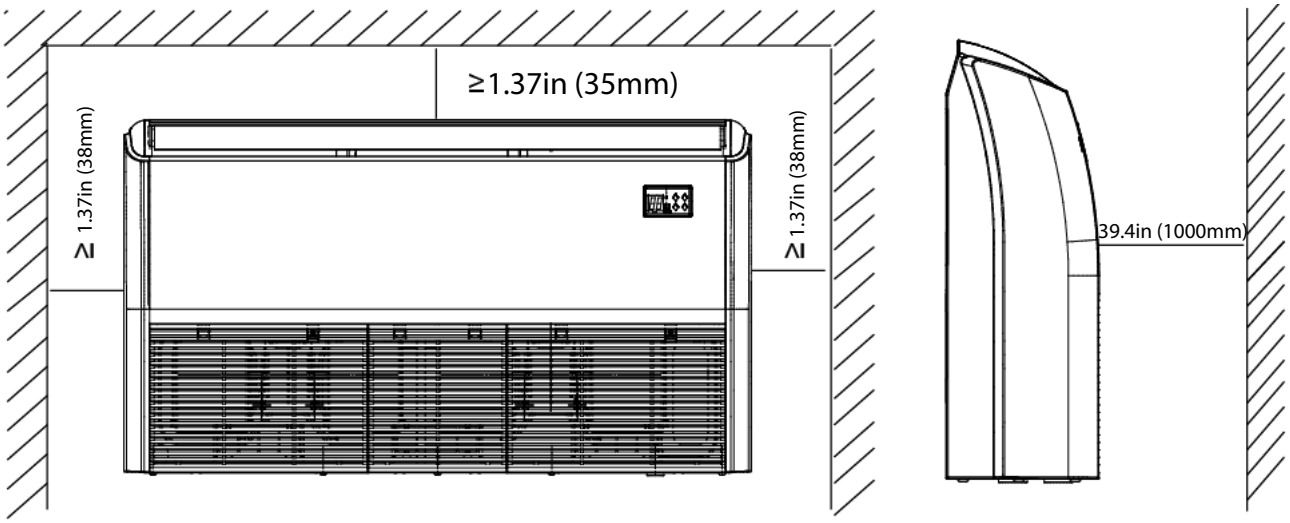


Fig. 7 — Indoor Unit Clearance Sizes 18K - 58K

SPECIFICATIONS

HEAT PUMP								
SYSTEM	**SIZE**		**12K**	**18K**	**24K**	**36K**	**48K**	**58K**
	Indoor Model		**DLFSFAH12XAK**	**DLFSFAH18XAK**	**DLFSFAH24XAK**	**DLFLFAH36XAK**	**DLFLFAH48XAK**	**DLFLFAH58XAK**
ELECTRICAL	Voltage, Phase, Cycle	V/Ph/ Hz	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60
	Power Supply		Indoor unit powered from outdoor unit					
	MCA	A.	0.3	1.0	1.0	1.23	0.85	1.48
CONTROLS	Wireless Remote Controller (°F/°C Convertible)		Standard	Standard	Standard	Standard	Standard	Standard
	Wired Remote Controller (°F/°C Convertible)		Optional	Optional	Optional	Standard	Standard	Standard
OPERATING RANGE	Cooling Indoor DB Min - Max	°F (°C)	62~ 90 (17~ 32)	62~ 90 (17~ 32)	62~ 90 (17~ 32)	~ 90 (17~ 32)	63~ 90 (17~ 32)	63~ 90 (17~ 32)
	Heating Indoor DB Min - Max	°F (°C)	32~ 86 (0~ 30)	32~ 86 (0~ 30)	32~ 86 (0~ 30)	32~ 86 (0~ 30)	32~ 86 (0~ 30)	32~ 86 (0~ 30)
PIPING	Pipe Connection Size-Liquid	in (mm)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Pipe Connection Size-Suction	in (mm)	1/2 (12.7)	1/2 (12.7)	5/8 (16)	5/8 (16)	5/8 (16)	3/4 (19.1)
INDOOR COIL	Face Area (sq. ft.)	Sq. Ft.	2.1	2.1	2.5	3.2	4.1	8.1
	No. Rows		2	2	3	3	3	4
	Fins per inch		19	19	19	19	19	19
	Circuits		2	2	7	9	8	12
INDOOR	Unit Width	in (mm)	27.56 (700)	42.05 (1068)	42.05 (1068)	50.59 (1285)	64.96 (1650)	64.96 (1650)
	Unit Height	in (mm)	23.62 (600)	26.57 (675)	26.57 (675)	9.25 (235)	9.25 (235)	9.25 (235)
	Unit Depth	in (mm)	8.27 (210)	9.25 (235)	9.25 (235)	26.57 (675)	26.57 (675)	26.57 (675)
	Net Weight	lbs (kg)	32.41 (14.7)	55.12 (25)	58.42 (26.5)	69 (31.3)	83.78 (38)	110 (50)
	Number of Fan Speeds		3	3	3	3	3	3
	Airflow (lowest to highest)	CFM	250/320/360	420/485/550	600/710/760	638/917/1037	1000/1120/1350	796/1029/1385
	Sound Pressure (lowest to highest)	dB(A)	34/41/45	39/44/47	46/50/52	43/49/54	52/54/57	46/49/55
	Air throw Data	ft (m)	23 (7)	26 (8)	26 (8)	33 (10)	39 (12)	39 (12)
	Moisture Removal	Pint/h (L/h)	2.64 (1.25)	2.96 (1.4)	4.44 (2.1)	8.03 (3.8)	12.05 (5.7)	12.47 (5.9)
	Field Drain Pipe Size O.D.	in (mm)	1 (25.4)	1 (25.4)	1 (25.4)	1 (25.4)	1 (25.4)	1 (25.4)

Performance may vary based on the compatible outdoor units. See respective pages for performance data.

COMPATIBILITY

INDOOR UNIT	DLFSFAH12XAK	DLFSFAH18XAK	DLFSFAH24XAK	DLFLFAH36XAK	DLFLFAH48XAK	DLFLFAH58XAK
OUTDOOR UNIT SINGLE ZONE	DLCSRAH12AAK	DLCSRAH18AAK	DLCSRAH24AAK	DLCLRAH36AAK	DLCLRAH48AAK	DLCLRAH58AAK
OUTDOOR UNIT MULTI-ZONE	DLCMRAH18BAK					
	DLCMRAH27CAK					
	DLCMRAH36DAK					
	DLCMRAH48EAK					

APPLICATION DATA

UNIT SELECTION

Select equipment that either matches or supports slightly more than the anticipated peak load. This provides better humidity control, fewer unit cycles, and a lower part-load operation.

For units used in spaces with high sensible loads, base equipment selection on unit sensible load, not on total anticipated load. Adjust for anticipated room wet bulb temperature to avoid undersizing the equipment.

UNIT MOUNTING (INDOOR)

Refer to the unit's installation instructions for further details.

Unit leveling - For reliable operation, units should be level in all planes.

Clearance - Provide adequate clearance for airflow (See Fig. 6 — on page 7 and See Fig. 7 — on page 7).

Unit location - Select a location which provides the best air circulation for the room.

These units should be positioned on the floor, against the wall for the best air circulation or on the ceiling (sizes 18K-58K). The unit return and discharge should not be obstructed by furniture, curtains, or anything which may cause unit short cycling or air recirculation. Place the unit towards the middle of the selected wall (if possible). Use an outside wall, if available, to make piping easier, and place the unit so it faces the normal location of room occupants.

UNIT MOUNTING (OUTDOOR)

Refer to the unit's installation instructions for further details.

Do not install the indoor or outdoor units in a location with special environmental conditions. For those applications, contact your ductless representative.

MOUNTING TEMPLATE

Refer to the unit's installation instructions for further details.

The fan coil units are furnished with mounting to mark the location of the wiring, and the refrigeration line hole locations.

SUPPORT

Adequate support must be provided to support the weight of all the fan coils. See "SPECIFICATIONS" on page 8 (Physical Data section) for fan coil weights, and the base unit dimensional drawings for the mounting bracket locations.

SYSTEM OPERATING CONDITIONS

OPERATING RANGE MIN / MAX °F (°C)		
	COOLING	**HEATING**
INDOOR DB	63 / 90 (17 / 32)	32 / 86 (0 / 30)
OUTDOOR WB	59 / 84 (15 / 29)	

NOTE: Reference the product installation instructions for more information.

DRAIN CONNECTIONS

Install drains to meet the local sanitation codes. If adequate gravity drainage cannot be provided, the unit should be equipped with an accessory condensate pump. The high wall fan coil unit condensate pumps have a maximum lift of 10' (3.05 m) for 12K units.

See "DIMENSIONS SIZE 12" on page 5 and See "DIMENSIONS SIZES 18K-58K" on page 6 for the drain sizes.

NOTE: Console fan coil units have internal condensate traps. A trap is NOT required.

REFRIGERANT LINES

General Refrigerant Line Sizing:

1. The outdoor units are shipped with a full charge of R410A refrigerant.
2. Refrigerant lines should not be buried in the ground. If it is necessary to bury the lines, do not bury more than 36-in (914 mm). Provide a minimum 6-in (152 mm) vertical rise to the service valves to prevent refrigerant migration.
3. Both lines must be insulated. Use a minimum of 1/2-in. (12.7 mm) thick insulation. Closed-cell insulation is recommended in all long-line applications.
4. Special consideration should be given to isolating the interconnecting tubing from the building structure. Isolate the tubing so that vibration or noise is not transmitted into the structure.

WIRING

All wires must be sized per NEC (National Electrical Code) or CEC (Canadian Electrical Code) and local codes. See the rating plate and/or the installation instructions of the compatible outdoor unit for MCA (minimum circuit amps) and MOCP (maximum over current protection) to correctly size the wires and the disconnect fuse or breakers respectively.

Recommended Connection Method for Power and Communication Wiring

Power and Communication Wiring: (12K through 24K)

The main power is supplied to the outdoor unit. The field supplied 14/3 power/communication wiring from the outdoor unit to the indoor unit consists of four (4) wires and provides the power for the indoor unit. Two wires are high voltage AC power, one is communication wiring and the other is a ground wire.

To minimize communication interference: If installed in a high Electromagnetic field (EMF) area and communication issues exist, a 14/2 stranded shielded wire can be used to replace L2 and (S) between outdoor unit and indoor unit-landing the shield onto ground in the outdoor unit only.

Recommended Connection Method for Power and Communication Wiring (36K through 58K)

a) Power Wiring:

The main power is supplied to the outdoor unit. The field supplied power wiring from the outdoor unit to the indoor unit consists of three (3) wires and provides the power for the indoor unit. Two wires are high voltage AC power and one is a ground wire. To minimize voltage drop, the factory-recommended wire size is 14/2 stranded with a ground.

b) Communication Wiring:

A separate shielded stranded copper conductor only, with a 600 volt rating and double insulated copper wire, must be used as the communication wire from the outdoor unit to the indoor unit. Please use a separate shielded 16GA stranded control wire.

⚠ CAUTION

ELECTRICAL SHOCK HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Wires should be sized based on NEC and local codes.

⚠ CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Be sure to comply with local codes while running wire from the indoor unit to the outdoor unit.

Every wire must be connected firmly. Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also exist. Ensure all wiring is tightly connected.

No wire should touch the refrigerant tubing, compressor or any moving parts.

Disconnecting means must be provided and shall be located within sight and readily accessible from the air conditioner.

Connecting cable with conduit shall be routed through the hole in the conduit panel.

CONTROL SYSTEM

The indoor unit is equipped with a microprocessor control to perform two functions:

1. Provide safety for the system
2. Control the system and provide optimum levels of comfort and efficiency.

The main microprocessor is located on the control board of the fan coil unit (outdoor units also have a microprocessor) with thermistors located in the fan coil air inlet and on the indoor coil.

Heat pump units have a thermistor on the outdoor coil. These thermistors monitor the system operation to maintain the unit within acceptable parameters and controls the operating mode.

WIRELESS REMOTE CONTROLLER

Fig. 8 — Wireless Remote Control

1. A wireless remote control is supplied for system operation of all the high wall units.
2. Each battery operated wireless (infrared) remote control may be used to control more than one unit.

WIRED REMOTE CONTROL (OPTIONAL)

Part Numbers (P/N)

- •KSACN0101AAA (All Sizes)
- •KSACN0401AAA (Size 12)
- •KSACN0501AAA (Sizes 18-58)

1. Optional wired remote controller used for system operation of all console units.
2. The kit includes a wired remote controller and a connecting cable.

NOTE: Extension wire available through Replacement Components (KSACN0101AAA Part Number: 17401204001601; KSACN0401AAA & KSACN0501AAA Part Number: 17401204000769)

3. Connect with the wire terminal between the remote controller and the indoor unit.
4. Display in °F or °C and temperature increments every 1°F or every 1°C.

Fig. 9 — KSACN0101AAA (Timer Function)

Fig. 10 — KSACN0401AAA & KSACN0501AAA (7 Day Programmable)

24 INTERFACE

KSAIC0401230 for 208-230V models

Allows a third party thermostat to control the ductless system.

NOTE: The 24V Interface is compatible with all the sizes except 12K and 58K. Starting with serial number V1914V10001, the 12K and 58K units are shipped with the compatible control board.

AIR FLOW DATA

SYSTEM SIZES		12K	18K	24K	36K	48K	58K
		(208/230V)	(208/230V)	(208/230V)	(208/230V)	(208/230V)	(208/230V)
INDOOR (CFM)	HIGH	360	550	760	1037	1350	1385
	MEDIUM	320	485	710	917	1120	1029
	LOW	250	420	600	638	1000	796

SOUND PRESSURE

SYSTEM SIZES		12K	18K	24K	36K	48K	58K
COOLING OPERATION INDOOR SOUND PRESSURE	dB(A) (L/M/H)	34/41/45	39/44/47	46/50/52	43/49/54	52/54/57	46/49/55
HEATING OPERATION INDOOR SOUND PRESSURE	dB(A) (L/M/H)	34/41/45	37.8/41.3/44.4	41.4/46.1/50.2	43.3/46.5/49.6	42.3/49.6/53.4	38/44/51

SOUND PRESSURE TESTING METHOD

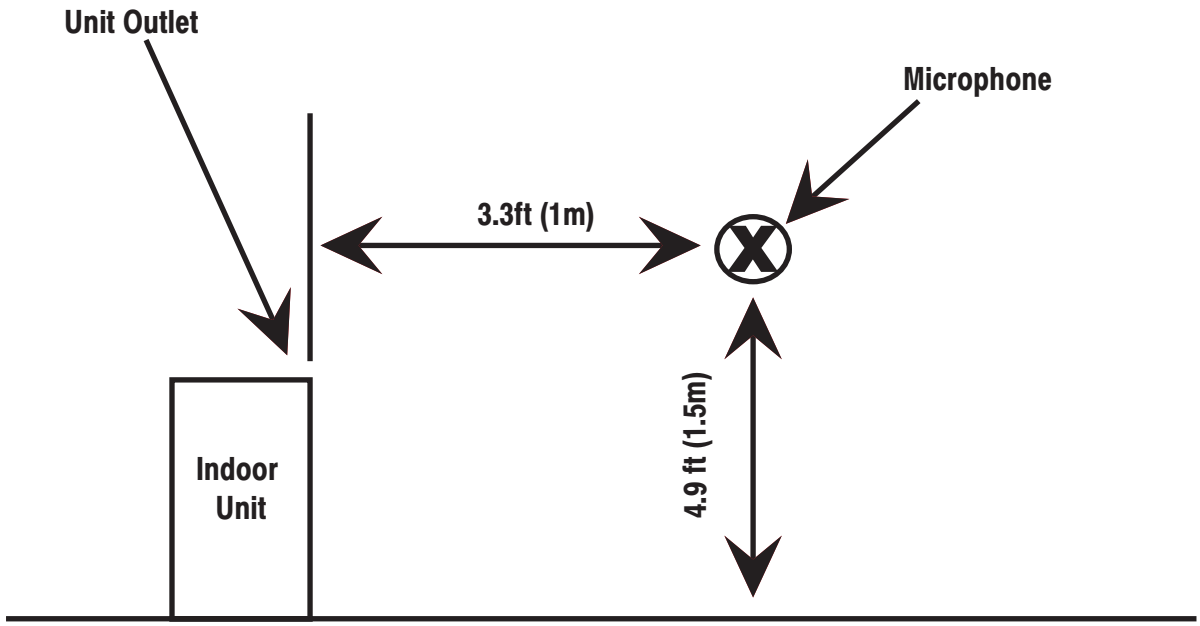


Fig. 11 — Sound Pressure Testing Method

ELECTRICAL DATA

CONSOLE SIZES		12K	18K	24K	36K	48K	58K
		(208/230V)	(208/230V)	(208/230V)	(208/230V)	(208/230V)	(208/230V)
FLA		0.21	1.11	1.11	1.36	0.94	1.2
INPUT	W	66.6	100	100	130	98	210
RATED HP	HP	0.027	0.075	0.075	0.156	0.122	0.218

*Permissible limits of the voltage range at which the unit operates satisfactorily.

LEGEND

FLA - Full Load Amps

FAN AND MOTOR SPECIFICATIONS

CONSOLE SIZES 12K-18K

SYSTEM SIZES		12K	18K
MATERIAL	--	AS	ABS
TYPE		LX-370*80*8-7JN	LX-154*162*12-41J
DIAMETER	INCH (MM)	1.21 (370)	0.51 (154)
HEIGHT	INCH (MM)	0.26 (80)	0.53 (162)
MODEL	--	RD-280-20-8A	ZKFN-55-8-1
TYPE	--	DC	DC
PHASE	--	3	3
FLA	--	0.21	1.11
INSULATION CLASS	--	E	E
SAFE CLASS	--	IPX0	IPX0
INPUT	W	66.6	100
OUTPUT	W	20	55
RANGE OF CURRENT	AMPS	0.21±10%	1±10%
RATED CURRENT	AMPS	0.21	1
CAPACITOR	MF	/	/
RATED HP	HP	0.027	0.075
SPEED	REV/MIN	730/680/580/520	950/850/750
RATED RPM	REV/MIN	1062	1300
MAX. INPUT	W	66.6	130

CONSOLE SIZES 24K-58K

SYSTEM SIZES		24K	36K	48K	58K
MATERIAL	--	ABS	ABS	ABS	ABS
TYPE	--	LX-154*162*12-41J	LX-154*162*12-41J	LX-154*162*12-41J	LX-154*162*12-41J
DIAMETER	INCH (MM)	0.51 (154)	0.51 (154)	0.51 (154)	0.51 (154)
HEIGHT	INCH (MM)	0.53 (162)	0.53 (162)	0.53 (162)	0.53 (162)
MODEL	--	ZKFN-55-8-1	ZKFN-115-8-1	ZKFN-90-8-1	ZKFN-160-8-1-2
TYPE	--	DC	DC	DC	DC
PHASE	--	3	3	3	3
FLA	--	1.11	1.36	0.94	1.2
INSULATION CLASS	--	E	E	E	E
SAFE CLASS	--	IPX0	IPX0	IPX0	IPX0
INPUT	W	100	130	98	210
OUTPUT	W	55	115	90*	160
RANGE OF CURRENT	AMPS	1±10%	1.23±10%	0.85±10%	1.48±10%
RATED CURRENT	AMPS	1	1.23	0.85	1.48
CAPACITOR	MF	/	/	/	/
RATED HP	HP	0.075	0.156	0.122	0.218
SPEED	REV/MIN	950/850/750	1300/1150/800	1320/1200/1120	1350/1050/850
RATED RPM	REV/MIN	1300	1350	1350	1350
MAX. INPUT	W	130	150	98	155

WIRING DIAGRAMS

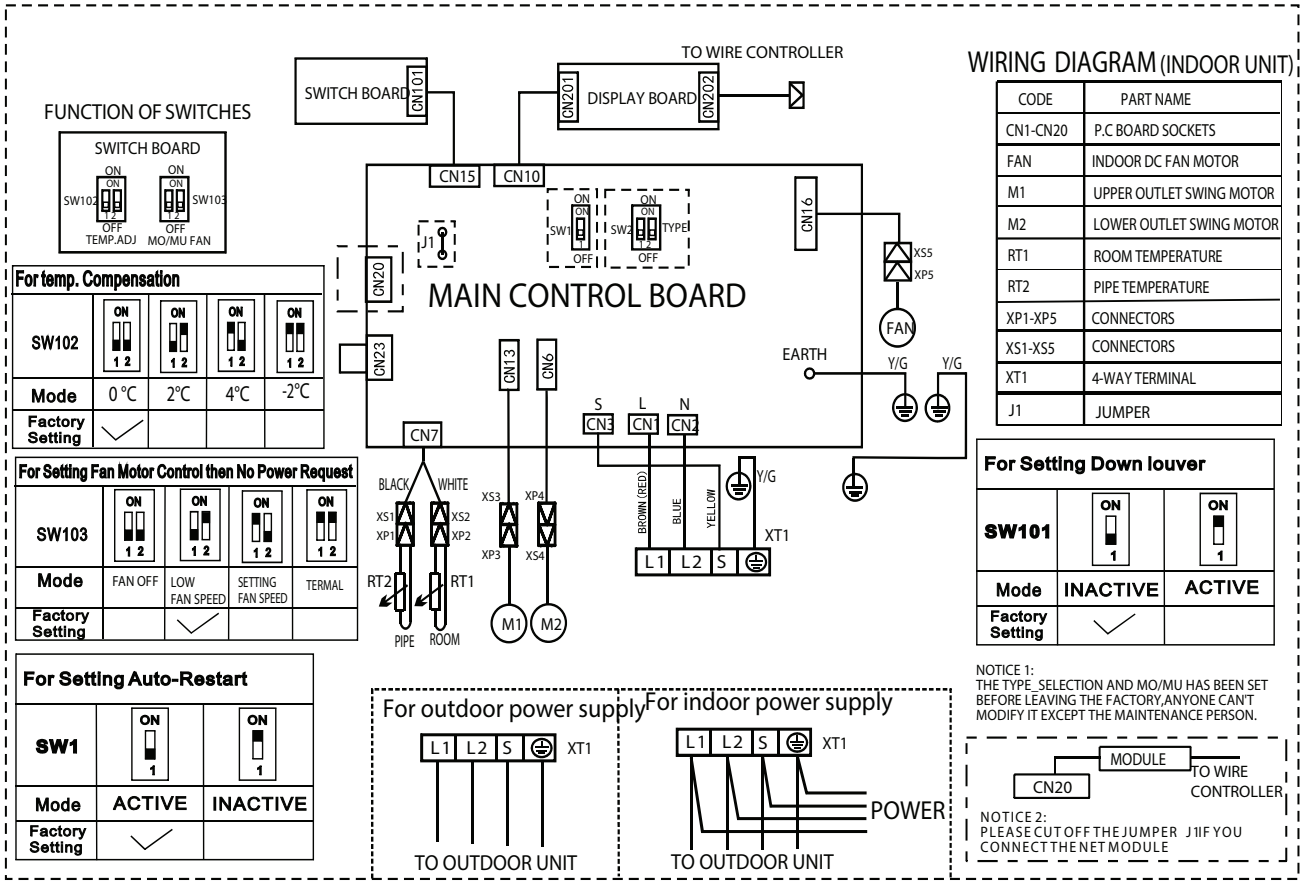


Fig. 12 — Wiring Diagram - Size 12K

Indoor Unit Control Board (Size 12K)

CODE	PART NAME
CN1	Input: 230VAC High voltage Connection of the terminal
CN2	Input: 230VAC High voltage Connection of the terminal
CN3	Output: 24VDC Between CN2 Connection of the S signal
CN6	Output: 12VDC Connection of the Lower outlet swing motor
CN7	Output: 5VDC Connection of the Room and Pipe temperature
CN10	Output: 12VDC Connection of the Display board
CN13	Output: 12VDC Connection of the Upper outlet swing motor
CN15	Output: 1-5VDC Connection of the Switch board
CN16	Output: 320VDC Connection of the Fan high voltage
CN20	Output: 5VDC Connection of the Net module
CN23	Output: 1-12VDC Connection of the Remote switch

WIRING DIAGRAMS (CONT)

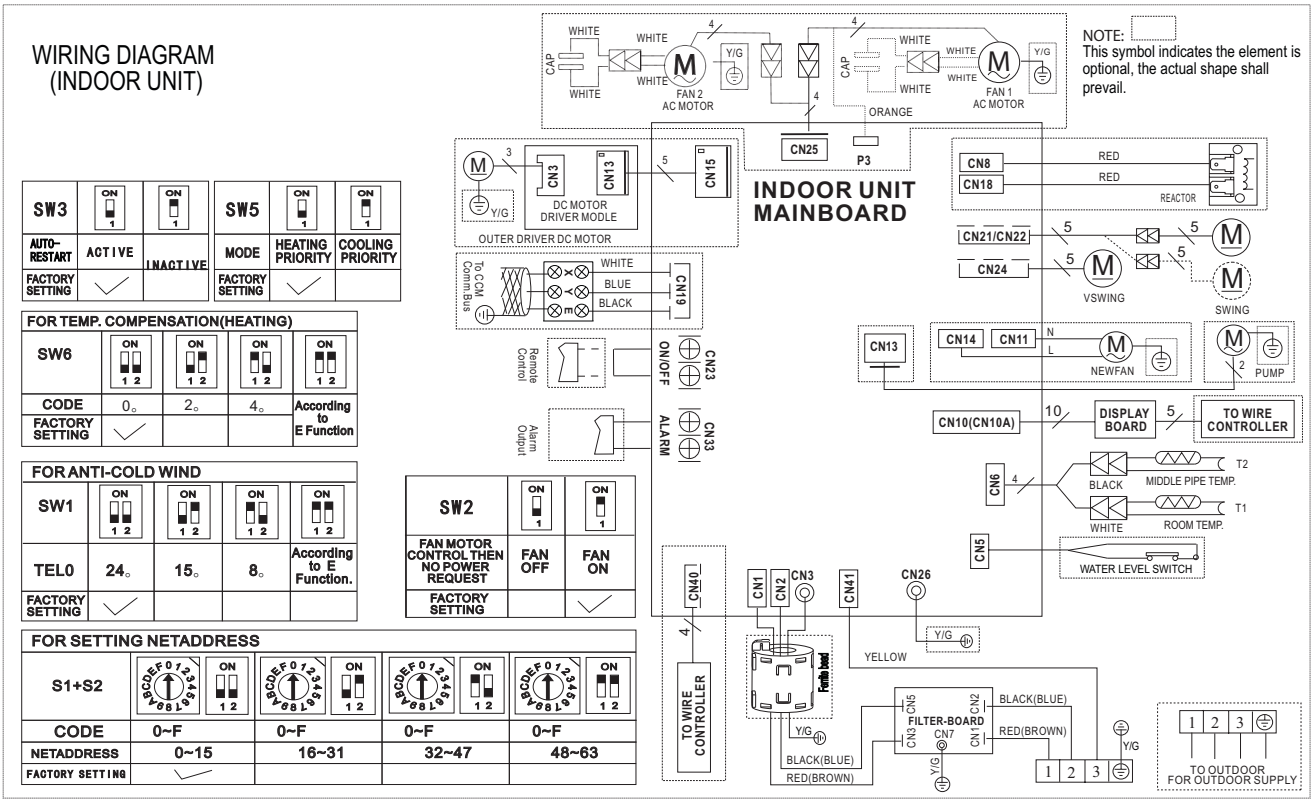


Fig. 13 — Wiring Diagram - Sizes 18K and 24K

Indoor Unit Control Board (Sizes 18K and 24K)

CODE	PART NAME
CN1	Input: 230VAC High voltage connection of the terminal
CN2	Input: 230VAC High voltage connection of the terminal
CN3/CN26	Output: 0VDC Connection of the earth
CN5	Output: 0-5VDC Connection of the water level switch
CN6	Output: 5VDC Connection of the room and pipe temperature
CN8/CN18	Output: 320VDC High voltage connection of the reactor
CN10 (CN10A)	Output: 12VDC Connection of the display board
CN11/CN14	Output: 230VAC High voltage connection of the new fan
CN13	Output: 220VAC High voltage connection of the pump
CN15	Output: 320VDC High voltage connection of the fan board
CN19	Output: 5VDC Connection of the CCM
CN21/CN22	Output 12VDC Connection to the swing motor
CN23	Output: 1-12VDC Connection of the remote switch
CN24	Output 12VDC Connection to the swing motor
CN33	Output 0V Connection of the alarm
CN40	Output 12VDC Connection of the wire controller
CN41	Output 24VDC Between CN2 connection of the S signal

WIRING DIAGRAMS (CONT)

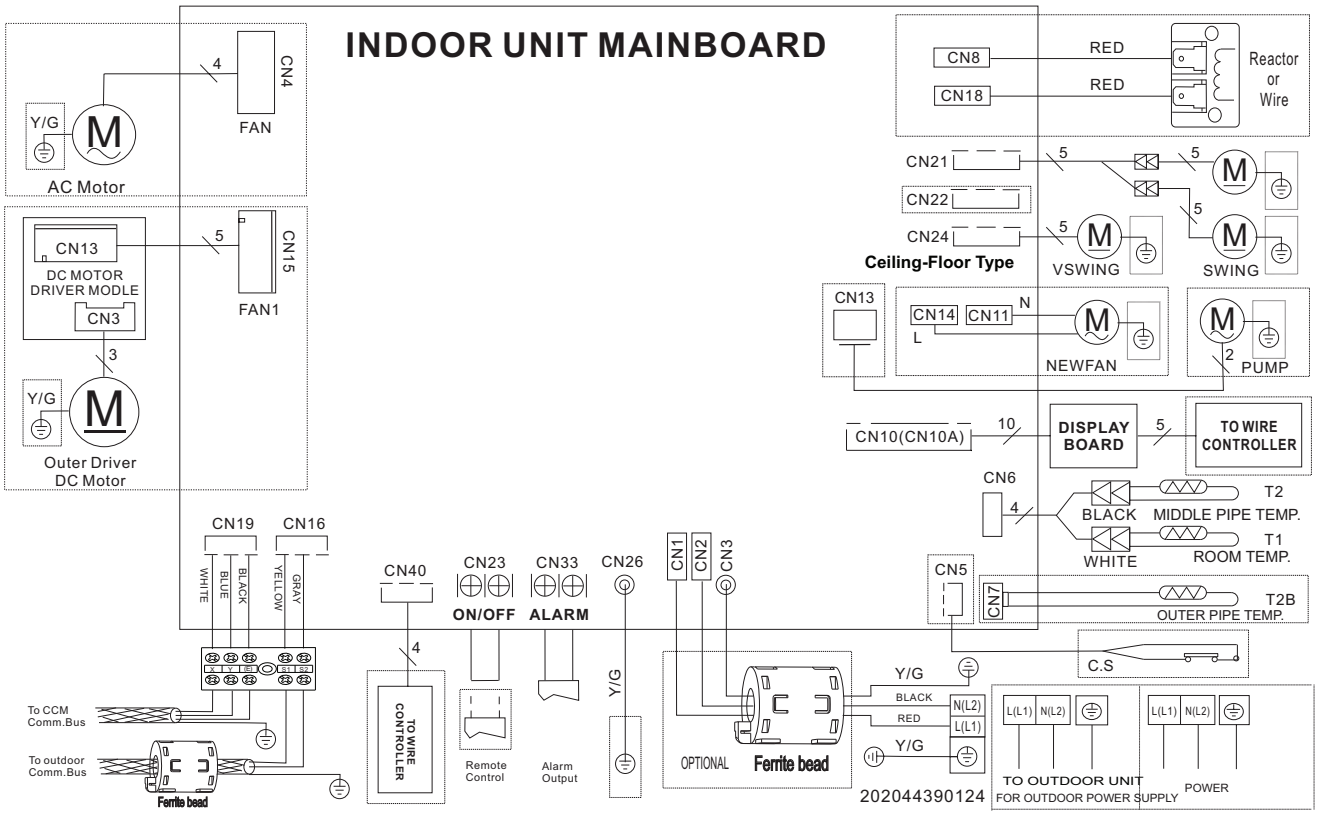


Fig. 14 — Wiring Diagram - Size 36K

Indoor Unit Control Board (Size 36K)

CODE	PART NAME
CN1	Input: 230VAC High voltage connection of the terminal
CN2	Input: 230VAC High voltage connection of the terminal
CN3/CN26	Output: 0VDC Connection of the earth
CN5	Output: 0-5VDC Connection of the water level switch
CN6	Output: 5VDC Connection of the room and pipe temperature
CN8/CN18	Output: 320VDC High voltage connection of the reactor
CN10 (CN10A)	Output: 12VDC Connection of the display board
CN11/CN14	Output: 230VAC High voltage connection of the new fan
CN13	Output: 220VAC High voltage connection of the pump
CN15	Output: 320VDC High voltage connection of the fan board
CN19	Output: 5VDC Connection of the CCM
CN21/CN22	Output 12VDC Connection to the swing motor
CN23	Output: 1-12VDC Connection of the remote switch
CN24	Output 12VDC Connection to the swing motor
CN28	Output 24VDC Between CN2 connection of the S signal
CN33	Output 0V Connection of the alarm
CN40	Output 12VDC Connection of the wire controller

WIRING DIAGRAMS (CONT)

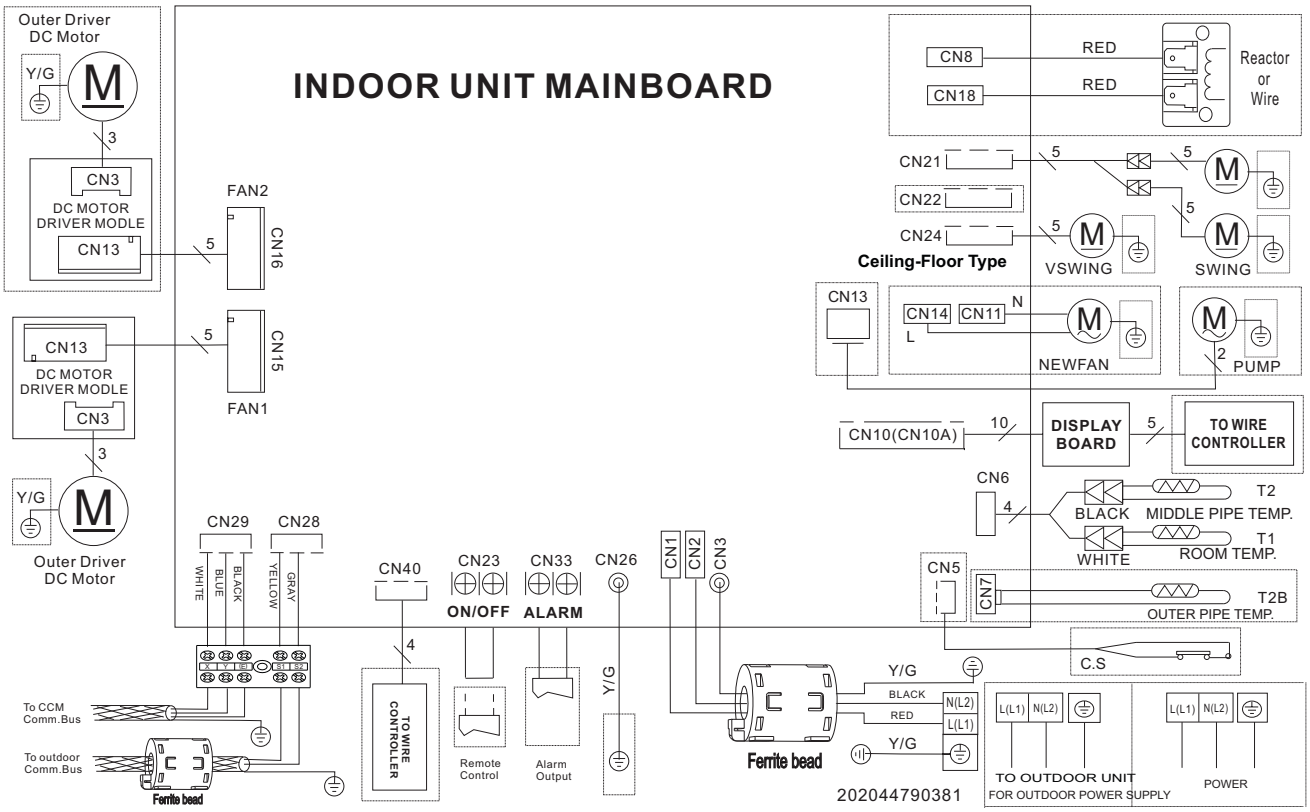


Fig. 15 — Wiring Diagram - Size 48K

Indoor Unit Control Board (Size 48K)

CODE	PART NAME
CN1	Input: 230VAC High voltage connection of the terminal
CN2	Input: 230VAC High voltage connection of the terminal
CN3/CN26	Output: 0VDC Connection of the earth
CN5	Output: 0-5VDC Connection of the water level switch
CN6	Output: 5VDC Connection of the room and pipe temperature
CN7	Output 5VDC Connection of the indoor coil outlet temperature sensor T2B
CN8/CN18	Output: 320VDC High voltage connection of the reactor
CN10 (CN10A)	Output: 12VDC Connection of the display board
CN11/CN14	Output: 230VAC High voltage connection of the new fan
CN13	Output: 220VAC High voltage connection of the pump
CN15/CN16	Output: 320VDC High voltage connection of the fan board
CN21/CN22	Output 12VDC Connection to the swing motor
CN23	Output: 1-12VDC Connection of the remote switch
CN24	Output 12VDC Connection to the swing motor
CN29	Output: 5VDC Connection of the CCM
CN33	Output 0V Connection of the alarm
CN40	Output 12VDC Connection of the wire controller
CN41	Output 24VDC Between CN2 connection of the S signal

WIRING DIAGRAMS (CONT)

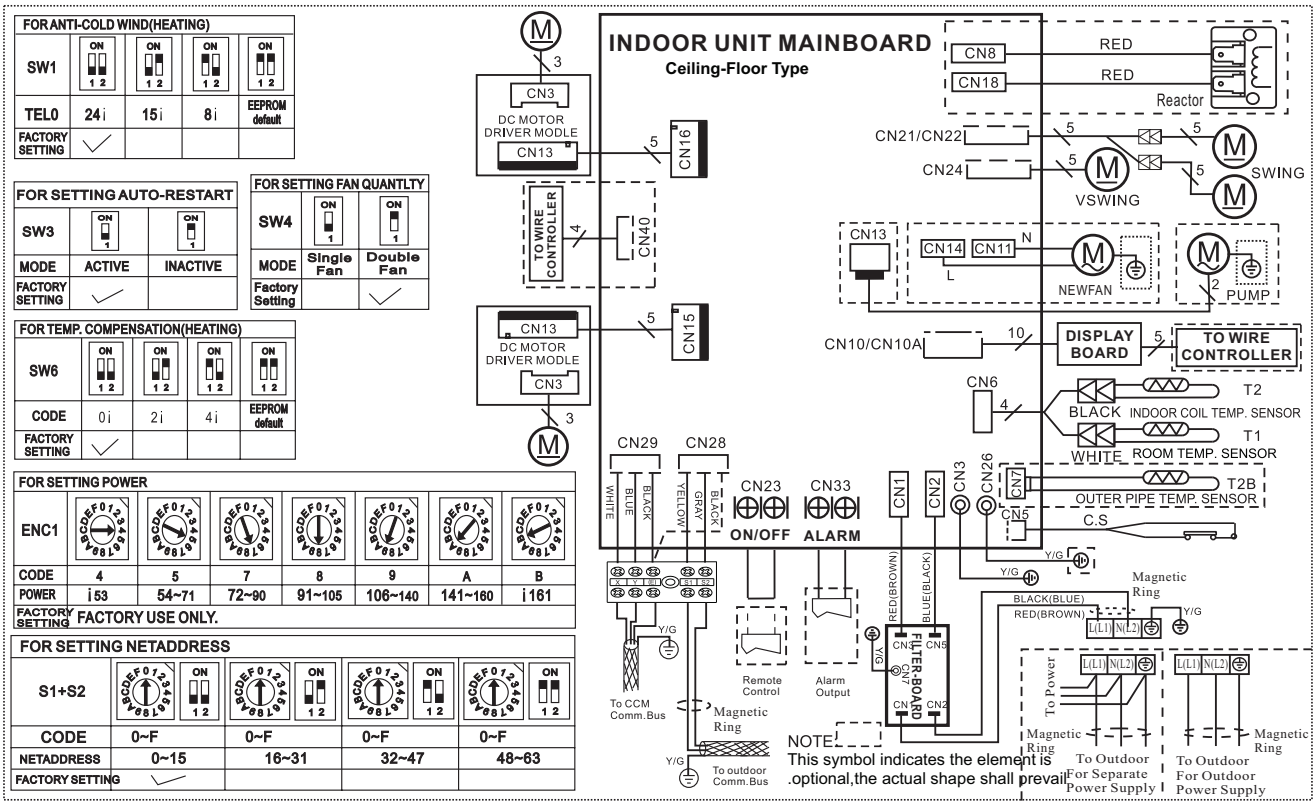


Fig. 16 — Wiring Diagram - Size 58K

Indoor Unit Control Board (Size 58K)

CODE	PART NAME
CN1	Input: 230VAC High voltage connection of the terminal
CN2	Input: 230VAC High voltage connection of the terminal
CN3/CN26	Output: 0VDC Connection of the earth
CN5	Output: 0-5VDC Connection of the water level switch
CN6	Output: 5VDC Connection of the room and pipe temperature
CN7	Output 5VDC Connection of the indoor coil outlet temperature sensor T2B
CN8/CN18	Output: 320VDC High voltage connection of the reactor
CN10 (CN10A)	Output: 12VDC Connection of the display board
CN11/CN14	Output: 230VAC High voltage connection of the new fan
CN13	Output: 220VAC High voltage connection of the pump
CN15/CN16	Output: 320VDC High voltage connection of the fan board
CN21/CN22	Output 12VDC Connection to the swing motor
CN23	Output: 1-12VDC Connection of the remote switch
CN24	Output 12VDC Connection to the swing motor
CN28	Output 24VDC Between CN2 connection of the S signal
CN29	Output: 5VDC Connection of the CCM
CN33	Output 0V Connection of the alarm
CN40	Output 12VDC Connection of the wire controller

GUIDE SPECIFICATIONS

INDOOR CONSOLE DUCTLESS UNITS

Size Range: 1 to 5 Ton Nominal Cooling and Heating Capacity
Model Number: DLFSFA and DLFLFA

Part 1 - GENERAL

1.01 System Description

Indoor, console, direct-expansion fan coils are matched with a cooling only or heat pump outdoor unit.

1.02 Agency Listings

Unit is rated per AHRI Standards 210/240 and listed in the AHRI directory as a matched system.

1.03 Delivery, Storage, And Handling

Units are stored and handled per the unit manufacturer's recommendations.

1.04 Warranty (For Inclusion By Specifying Engineer)

Part 2 - PRODUCTS

2.01 Equipment

A. **General:**

Indoor, direct-expansion, console fan coil. Unit is complete with a cooling/heating coil, fan, fan motor, piping connectors, electrical controls, microprocessor control system, and integral temperature sensing. Unit is furnished with an integral mounting bracket and mounting hardware.

B. **Unit Cabinet:**

Cabinet discharge and inlet grilles are attractively styled, high-impact polystyrene. Cabinet is fully insulated for improved thermal and acoustic performance.

C. **Fans:**

1. The fan is the tangential direct-drive blower type with an air intake in the center of the unit and discharge at the top and bottom front. An automatic, motor-driven vertical air sweep is provided standard.
2. The air sweep operation is user selectable. The vertical sweep may be adjusted (using the remote control) and the horizontal air direction may be set manually.

D. Coil:

The coil is a copper tube with aluminum fins and galvanized steel tube sheets. The fins are bonded to the tubes by mechanical expansion and are golden hydrophilic pre-coated for enhanced wet-ability. A drip pan, under the coil, has a drain connection for the hose attachment to remove condensate. The condensate pan has an internal trap.

E. Motors:

The motors have an open drip-proof, permanently lubricated ball bearing with inherent overload protection. The fan motors are 4-speed.

F. Controls:

The controls consist of a microprocessor-based control system which controls the space temperature, determines the optimum fan speed, and runs self diagnostics. The temperature control ranges from 62°F to 86°F (17°C to 30°C) in increments of 1°F or 1°C, and have 46°F Heating Mode (Heating Setback). The wireless remote controller can act as the temperature sensing location for room comfort.

The units have the following functions as a minimum:

1. An automatic restart after a power failure at the same operating conditions as at the failure
2. A timer function to provide a minimum 24-hour timer cycle for system Auto Start/Stop
3. Temperature-sensing controls to sense the return air temperature.
4. Indoor coil freeze protection
5. Wireless infrared remote control to enter set points and operating conditions
6. Automatic air sweep control to provide on or off activation of air sweep louvers
7. **DEHUMIDIFICATION** mode provides increased latent removal capability by modulating the system operation and the set point temperature
8. **FAN-ONLY** operation provides room air circulation when no cooling is required
9. Diagnostics provide continuous checks of the unit's operation and warns of possible malfunctions. Error messages appear on the unit's display
10. Fan speed control (turbo, high, medium, low, or microprocessor controlled automatic operation) is user-selectable during all operating modes
11. **Automatic HEATING-to-COOLING changeover in the HEAT PUMP mode:** The control includes deadband to prevent rapid mode cycling between heating and cooling
12. Indoor coil high temperature protection is provided to detect excessive indoor discharge temperature when the unit is in the **HEAT PUMP** mode

G. Filters:

The unit has a filter track along with factory-supplied cleanable filters.

H. Electrical Requirements:

The indoor fan motor operates on 208-230V, as specified. The power is supplied by the outdoor unit.

I. Operating Characteristics:

The system has a minimum SEER (Seasonal Energy Efficiency Ratio) and HSPF at AHRI conditions, as listed on "SPECIFICATIONS" on page 8.

J. Refrigerant Lines:

All units have refrigerant lines that can be oriented to connect from the left, right or back of unit. Both refrigerant lines need to be insulated.

K. Special Features (Field Installed): Condensate Pump

The condensate pump removes condensate from the drain pan when gravity drainage cannot be used. The pump is designed for quiet operation. The pump consists of two parts; an internal reservoir/sensor assembly, and a remote sound-shielded pump assembly. A liquid level sensor in the reservoir stops the cooling operation if the liquid level in the reservoir is unacceptable.

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