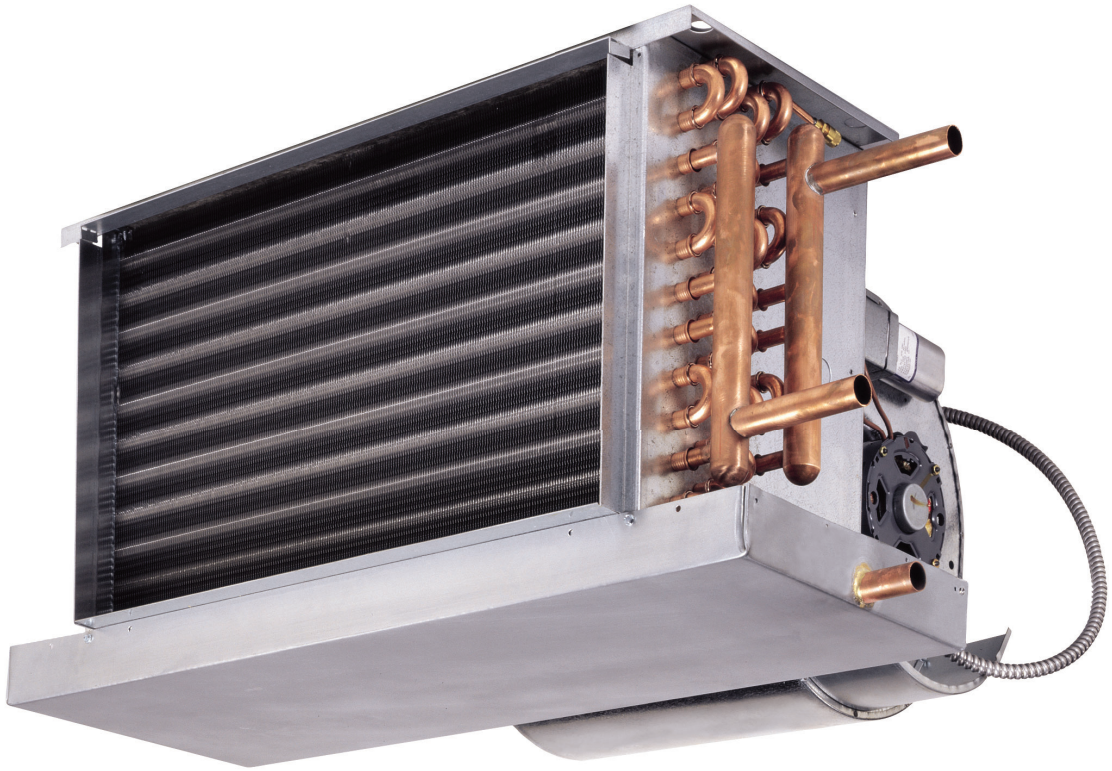
Product Data

Fan Coil Air Conditioners

600 to 2000 cfm



42D Series
Ducted Fan Coil Air Conditioners

Features/Benefits

The 42D fan coil units design flexibility provides ease of installation for applied systems.

Carrier's 42D Series fan coil units offer:

- Design flexibility, occupying minimum space
- Easy, low-cost installation
- Electronically commutated motors (ECM) deliver peak operating efficiency
- Greater zone comfort control

Versatility

The units are ideal for installation in motels, apartments, and other multi-room buildings. Many optional control packages are available to facilitate the following modes of operation: 2-pipe heating and cooling, 2-pipe heating and cooling with auxiliary electric heat, 2-pipe cooling with total electric heat, and 4-pipe heating and cooling. The control package offering includes 24-v thermostats and BACnet[1] communicating controls.

Condensate drain pans standard construction utilizes galvanized steel, with option to be stainless steel, along with optional condensate overflow switches complying to the latest building codes. 42DD unit comes standard with a stainless steel drain pan.

A variety of insulation types are available for energy savings, sound absorption and indoor air quality (IAQ) preservation.

Casings and frame are fabricated from heavy gauge galvanized steel. A variety of colors are available to allow the unit to blend with any interior design.

Ease of installation

Each unit is designed to occupy a minimum space with a flexible controls offering to meet building requirements. Optional unit mounted controls, service switches, and fusing minimize the electrical work required on site. Piping, drain, and wiring connections are readily accessible and mounting holes and slots are pre-drilled to save installation time and field labor expense. Factory assembled valve packages (optional unions are available) minimize piping work at the job site.

Quality and safety

Every unit is tested and inspected at the factory for trouble free start-up. Carrier's 42D fan coils are ETL (Engineering Testing Laboratory) and CETL (Canadian Engineering Testing Laboratory) listed. Performance ratings are AHRI (Air-Conditioning, Heating and Refrigeration Institute) certified. All coils are factory leak tested at 350, 400, or 450 psig. For testing, coils are submerged in water and the appropriate test air pressure is applied.

Blower wheels are centrifugal-type, forward curved, double width, and double inlet sized for maximum efficiency.

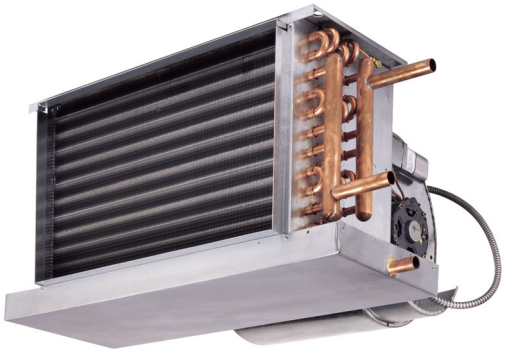
Comfort control

Economical fans deliver just the right amount of conditioned air for your comfort needs at any load, and each unit can be shut off when not in use. Electronically commutated motors deliver peak operating efficiency. By choosing Carrier units, you can match your application with a wide range of custom-designed options and accessories. Carrier room fan-coil units provide year-round comfort.

1. Third-party trademarks and logos are the property of their respective owners.

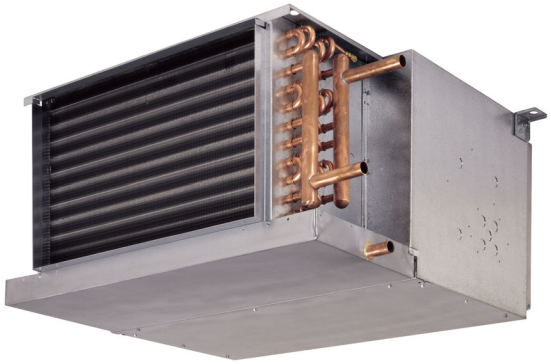
Table of contents

Features/Benefits (cont)



42DA

Furred-in model for installation in the ceiling for high static applications. Standard units are constructed with 18 gauge galvanized steel and are provided with a galvanized finish.
(600-2000 cfm)



42DC

Furred-in ceiling model with factory-installed insulated plenum. Standard units are constructed with 18 gauge galvanized steel and are provided with a galvanized finish.
(600-2000 cfm)

42DE

Ceiling model with galvanized casing for ducted applications. Standard units are constructed with 18 gauge galvanized steel and are provided with a galvanized finish.
(600-2000 cfm)

42DF

Exposed-ceiling painted cabinet model with integral double-deflection discharge grille and a bar-type return-air grille for non-ducted applications. Standard units are supplied with integral double-deflection discharge grille and hinged bar type, return air grille with a throwaway filter. Standard units are constructed with 18 gauge galvanized steel and are provided with a powder-coat paint finish. Units are not suitable for ducted applications.
(600-2000 cfm)

Features/Benefits (cont)

42DD

Vertical, floor-mounted, ducted applications. Model is commonly used for partial wall, closet, utility room, or other concealed locations. Units have a top panel which is provided with a 1 in. discharge duct flange and a removable front panel which provides complete access to coils, factory-furnished valve packages, motor-blower and electric-heater assemblies. 42DD units are available with a front or bottom return. Standard 42DD units are constructed with 18 gauge galvanized steel and are provided with a galvanized finish.
(600-2000 cfm)

Model number nomenclature

42D A A 06 B L B Y 6 Y Y Y Y

42D – Ducted Fan Coil

Product Type

A – Furred-In Ceiling Model
C – Furred-In Ceiling Model with Plenum
D – Vertical Model with Gavanized Full Casing
E – Ceiling Model with Galvanized Full Casing
F – Exposed-Ceiling Cabinet Model

Design Series – A

Unit Size – Airflow (cfm)
06 – 600
08 – 800
10 – 1000
12 – 1200
14 – 1400
16 – 1600
18 – 1800
20 – 2000

Coil Options
B – 4 Row Standard
G – 4/1 Opposite
H – 4/1 Same
J – 4/2 Opposite
K – 4/2 Same
L – 6 Row High Capacity
M – 6/1 Opposite
N – 6/1 Same

Hand
R – Right
L – Left

Thermostat Packages

Unit Control Options for 24V Controls

Valve Packages

Filters

Airflow Configuration

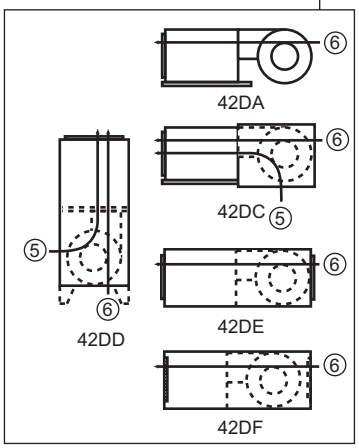
	42DA, DC, DE, DF		42DD	
	Return	Supply	Return	Supply
5 –	Bottom	Front	Front	Top
6 –	Rear	Front	Bottom	Top

Electric Heaters

Motor Options
A – 115V Electronically Commutated Motor (ECM) with Control Option 1
B – 115V ECM with Control Option 2
G – 115V ECM with Control Option 3
H – 208V ECM with Control Option 1
J – 208V ECM with Control Option 2
K – 208V ECM with Control Option 3
L – 230V ECM with Control Option 1
M – 230V ECM with Control Option 2
N – 230V ECM with Control Option 3
P – 277V ECM with Control Option 1
Q – 277V ECM with Control Option 3
R – 277V ECM with Control Option 2
S – 220V ECM with Control Option 1
T – 220V ECM with Control Option 2
U – 220V ECM with Control Option 3

Control Option 1 – 3-Discrete Potentiometer Field Speed Adjustment
Control Option 2 – Variable Flow 0-10 VDC or 4-20 mA
Control Option 3 – 4-Discrete Potentiometer Field Speed Adjustment

Hand*	Arrangement
R – Right	5
L – Left	6



*Handing is determined by facing the front of the of the unit and looking into the supply air.

AHRI capacity ratings

The 42D Series fan coil units are certified in compliance with the Air-Conditioning, Heating and Refrigeration Institute (AHRI) Industry Standard 440 for room fan coil units. Approved standard ratings are tabulated below:

AHRI CERTIFIED™
www.ahridirectory.org
Room Fan-Coils
AHRI Standard 440

ECM Standard Motor Rating[a,b,c,d]

MODEL	SIZE	COIL ROWS	AIRFLOW RATING (scfm)	WATER PRESSURE DROP (FT WATER)	TOTAL CAP. (BTUH)	SENSIBLE CAP. (BTUH)	POWER INPUT (WATTS)
42DA	06	4	600	3.0	19,600	15,300	265
		6	600	4.2	24,500	16,900	230
	08	4	800	5.7	28,000	20,900	275
		6	800	8.3	34,800	24,200	325
	10	4	1,000	7.8	34,700	25,500	380
		6	1,000	10.2	38,900	27,200	505
	12	4	1,200	9.8	42,000	31,100	275
		6	1,200	15.3	49,800	32,100	485
	14	4	1,400	20.0	46,100	36,600	475
		6	1,400	9.3	58,800	39,400	605
	16	4	2,100	8.0	59,800	47,000	900
		6	1,900	15.0	74,400	52,800	630
	18	4	2,300	10.0	67,500	52,300	1180
		6	2,000	20.0	80,500	55,000	665
	20	4	2,300	12.0	72,600	55,600	1180
		6	2,200	23.0	89,900	61,400	735
42DC	06	4	600	2.0	17,600	14,000	210
		6	600	4.1	23,400	15,800	215
	08	4	800	5.0	24,300	19,000	285
		6	800	7.7	32,300	21,700	330
	10	4	1,000	5.0	24,500	19,100	345
		6	1,000	7.7	32,700	22,300	420
	12	4	1,200	10.0	38,500	29,700	320
		6	1,200	14.0	46,500	31,400	440
	14	4	1,400	20.0	48,300	36,600	405
		6	1,400	12.0	52,600	34,300	535
	16	4	2,000	8.0	56,800	44,200	675
		6	1,735	15.0	68,100	47,900	550
	18	4	2,125	7.0	62,200	47,500	1015
		6	1,900	18.0	76,200	53,100	625
	20	4	2,100	11.0	65,100	49,000	675
		6	1,900	22.0	80,200	55,500	686

NOTE(S):

a. For all application ratings, use Carrier's computer selection program, the quick-selection ratings provided in this catalog, or contact your local Carrier representative.
b. For additional information, please consult AHRI's website at www.ahrinet.org.
c. Ratings are based on 80°F (26.7°C) DB and 67°F (19.4°C) WB EAT, 45°F (7.2°C) EWT, 10°FΔ (5.6°C Δ) water temperature rise, high fan speed, motor voltage 115-1-60, and airflow under dry coil conditions.
d. The AHRI Standard 440 certification does not apply to unit sizes above 1500 nominal cfm.

AHRI capacity ratings (cont)

ECM Standard Motor Rating (cont)[a,b,c,d]

MODEL	SIZE	COIL ROWS	AIRFLOW RATING (scfm)	WATER PRESSURE DROP (FT WATER)	TOTAL CAP. (BTUH)	SENSIBLE CAP. (BTUH)	POWER INPUT (WATTS)
42DE	06	4	600	1.6	16,400	13,000	255
		6	600	4.0	20,000	13,800	255
	08	4	800	3.1	21,000	17,300	320
		6	800	5.5	28,800	19,000	315
	10	4	1,000	7.0	29,300	22,700	500
		6	1,000	7.9	30,800	21,400	495
	12	4	1,200	8.8	33,400	27,100	460
		6	1,200	17.9	44,600	29,000	455
	14	4	1,400	12.3	43,400	32,000	740
		6	1,400	5.5	49,300	35,000	730
	16	4	1,950	8.0	56,800	44,200	670
		6	1,700	15.0	68,100	47,900	570
	18	4	2,100	11.0	62,200	47,500	650
		6	1,900	20.0	76,200	53,100	600
	20	4	2,100	12.0	65,100	49,000	680
		6	2,000	16.9	80,200	54,500	710
42DF	06	4	650	2.8	18,100	13,700	225
		6	600	5.0	24,100	16,600	150
	08	4	800	4.6	23,400	17,600	275
		6	795	8.0	33,500	22,400	205
	10	4	1,000	8.0	33,300	24,000	300
		6	990	15.0	41,800	27,600	320
	12	4	1,200	11.0	39,200	27,800	300
		6	1,200	21.0	52,100	34,800	300
	14	4	1,390	15.0	48,900	34,000	300
		6	1,400	10.0	59,200	40,000	340
	16	4	1,600	7.0	52,900	39,000	440
		6	1,530	13.0	61,800	43,000	520
	18	4	1,800	9.0	60,700	44,700	490
		6	1,800	17.0	71,400	49,500	615
	20	4	2,000	11.0	64,600	48,700	580
		6	2,000	15.5	76,000	52,300	710
42DD	06	4	600	1.6	16,400	13,000	255
		6	600	4.0	20,000	13,800	255
	08	4	800	3.1	21,000	17,300	320
		6	800	5.5	28,800	19,000	315
	10	4	1,000	7.0	29,300	22,700	500
		6	1,000	11.0	30,800	21,400	495
	12	4	1,200	10.5	33,400	27,100	460
		6	1,200	17.9	44,600	29,000	455
	14	4	1,400	12.3	43,400	32,000	740
		6	1,400	5.5	49,300	35,000	730
	16	4	1,800	6.0	54,000	41,700	570
		6	1,800	12.1	71,400	49,500	675
	18	4	2,000	10.0	59,900	45,500	650
		6	1,900	15.2	75,500	51,500	590
	20	4	2,100	10.0	64,500	48,500	650
		6	2,000	17.6	82,100	55,900	660

NOTE(S):

a. For all application ratings, use Carrier's computer selection program, the quick-selection ratings provided in this catalog, or contact your local Carrier representative.
b. For additional information, please consult AHRI's website at www.ahrinet.org.
c. Ratings are based on 80°F (26.7°C) DB and 67°F (19.4°C) WB EAT, 45°F (7.2°C) EWT, 10°F∆ (5.6°C ∆) water temperature rise, high fan speed, motor voltage 115-1-60, and airflow under dry coil conditions.
d. The AHRI Standard 440 certification does not apply to unit sizes above 1500 nominal cfm.

Physical data

UNIT SIZE 42D	06	08	10	12	14	16	18	20
NOMINAL AIRFLOW (cfm)	600	800	1000	1200	1400	1600	1800	2000
SHIPPING WEIGHT (lb)[a]								
42DA	64	79	90	108	119	124	141	151
42DC	94	107	150	169	174	178	195	220
42DE	150	160	170	195	205	215	230	235
42DF	157	167	177	202	215	225	240	255
42DD	135	145	155	180	190	200	215	230
COIL WATER WEIGHT (Approx lb per row of coil)	1.3	1.6	1.9	2.3	2.7	3.0	3.4	3.7
COILS								
FPI	10 fins/in.							
Coil Face Area (sq ft)	1.6	2.1	2.5	3.0	3.5	4.1	4.6	5.0
MOTOR (qty)	1	1	1	2	2	2	2	2
BLOWER (qty)	1	1	1	2	2	2	2	2
FILTERS[b,c,d] Nominal Size (in.) (1 in. thick)								
42DA	14 x 21 (356 x 533)	14x 26 (356 x 660)	14 x 30 (356 x 762)	14 x 35 (356 x 889)	14 x 40 (356 x 1016)	14 x 45 (356 x 1143)	14 x 50 (356 x 1270)	14 x 54 (356 x 1372)
42DC	14 x 21 (356 x 533	14 x 26 (356 x 660)	14 x 30 (356 x 762	14 x 35 (356 x 889)	14 x 40 (356 x 1016)	14 x 45 (356 x 1143)	14 x 50 (356 x 1270)	14 x 54 (356 x 1372)
42DE	14 x 14-3/4 (356 x 375)	14 x 19-3/4 (356 x 502)	14 x 23-3/4 (356 x 603	14 x 28-3/4 (356 x 730)	14 x 33-3/4 (356 x 857)	14 x 38-3/4 (356 x 984)	14 x 43-3/4 (356 x 1111)	14 x 47-3/4 (356 x 1213)
42DF	14 x 14 (356 x 356)	14 x 20 (356 x 508)	14 x 24 (356 x 610)	14 x 28 (356 x 711)	14 x 34 (356 x 864)	14 x 38 (356 x 965)	14 x 44 (356 x 1118)	14 x 48 (356 x 1219
42DD[e]								
(Front Return)	21 x 12-3/4 (533 x 324)	26 x 12-3/4 (660 x 324)	30 x 12-3/4 (762 x 324)	35 x 12-3/4 (889 x 324)	40 x 12-3/4 (1016 x 324)	45 x 12-3/4 (1143 x 324)	50 x 12-3/4 (1270 x 324)	54 x 12-3/4 (1372 x 324)
(Bottom Return)	20 x 12-3/4 (508 x 324)	25 x 12-3/4 (635 x 324)	29 x 12-3/4 (737 x 324)	34 x 12-3/4 (864 x 324)	39 x 12-3/4 (991 x 324)	44 x 12-3/4 (1118 x 324)	49 x 12-3/4 (1245 x 324)	53 x 12-3/4 (1346 x 324)
Qty	1							
SUPPLY DUCT COLLAR	1 in.							
PIPING CONNECTIONS Coil Inlet/Outlet (in. OD)								
1 and 2 Row	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8
3 Row	5/8	5/8	7/8	7/8	7/8	7/8	7/8	7/8
4 Row	7/8	7/8	7/8	7/8	7/8	1-1/8	1-1/8	1-1/8
5 Row	7/8	7/8	7/8	7/8	1-1/8	1-1/8	1-1/8	1-1/8
6 Row	7/8	7/8	7/8	7/8	1-1/8	1-1/8	1-1/8	1-1/8
8 Row	1-1/8	1-1/8	1-1/8	1-1/8	1-5/8	1-5/8	1-5/8	1-5/8
Tell-Tale Drain	5/8 OD							

NOTE(S):

a. Calculate Operating Weight of unit: Shipping Weight + Coil Water Weight x Number of Coil Rows.
b. Filter sizes for the DA model are recommended filter sizes only. No filter is factory provided with this model.
c. Sizes shown are nominal ordering sizes.
d. Filter sizes for the DF model are for filter included with standard aluminum filter grille.
e. Use when bottom return and 6 in. legs are supplied.

Options

Available Options

OPTIONS OR STANDARD FEATURES[a]	UNIT SERIES — 42D				
	DUCTED (HORIZONTAL)				DUCTED (VERTICAL)
	DA	DC	DE	DF	DD
AIR VENT					
Automatic Air Vent	X	X	X	X	X
Manual Air Vent	Std	Std	Std	Std	Std
COILS					
3-Row (Cooling/Heating Only)	X	X	X	X	X
4-Row (3-Row Cooling, 1-Row Heating)	X	X	X	X	X
4-Row (Cooling/Heating Only)	Std	Std	Std	Std	Std
5-Row (4-Row Cooling,1-Row Heating)	X	X	X	X	X
5-Row (3-Row Cooling, 2-Row Heating)	X	X	X	X	X
6-Row (4-Row Cooling, 2-Row Heating)	X	X	X	X	X
6-Row (Cooling/Heating Only)	X	X	X	X	X
7-Row (6-Row Cooling,1-Row Heating)	X	X	X	X	—
8-Row (6-Row Cooling, 2-Row Heating)	X	X	X	X	—
Stainless Steel Coil Wrapper	X	X	X	X	X
FIN MATERIAL					
Aluminum with Galvanized End Sheets	Std	Std	Std	Std	Std
Copper with Stainless End Sheets and Bottom Coil Baffle	X	X	X	X	X
COIL CONNECTION					
Right or Left (Opposite End)	X	X	X	X	X
Right or Left (Same End)	Std	Std	Std	Std	Std
PAINT OPTIONS					
No Paint	Std	Std	Std	Std	Std
Bright White	—	—	—	Std	—
Arctic White	—	—	—	X	—
Polar White	—	—	—	X	—
Flat Black	—	—	—	X	—
Ermine Gray	—	—	—	X	—
Champagne Beige	—	—	—	X	—
Toffee Brown	—	—	—	X	—
SUPPLY /RETURN AIR GRILLES					
Double Deflection Integral Supply Grille, Galvanized	—	—	—	Std	—
Hinged Bar-type, Aluminum Finish Return Grille with Throwaway Filter	—	—	—	Std	—

Available Options (cont)

OPTIONS OR STANDARD FEATURES[a]	UNIT SERIES — 42D				
	DUCTED (HORIZONTAL)				DUCTED (VERTICAL)
	DA	DC	DE	DF	DD
DRAIN PANS					
Galvanized Drain Pan Internally Coated (with a 2-part closed cell foam)	Std	Std	Std	Std	—
Extended Drain Pan	X	X	—	—	—
Stainless Steel Standard Drain Pan	X	X	X	X	Std
Stainless Steel Extended Drain Pan	X	X	—	—	—
Tell-Tale Only	X	X	X	X	—
Drip Lip Only[b]	X	X	X	X	—
Tell-Tell and Drip Lip	X	X	X	X	—
HEATING OPTIONS					
Electric Heater	X	X	X	X	X
Hot Water	X	X	X	X	X
STANDARD OPTIONS					
FILTERS					
1 in. Throwaway Filters	—	Std	Std	Std	Std
1 in. Permanent Filters	—	X	X	—	X
1 in. MERV 8 Pleated	—	X	X	—	X
Side Filter Access, Rear Return/Front Supply	—	X	—	—	—
LEVELING LEGS	—	—	—	—	X
INSULATION					
Fiberglass Insulation	Std	Std	Std	Std	Std
Foil Faced Insulation	X	X	X	X	X
Closed Cell Insulation	X	X	X	X	X
MOTORS - EC					
115-1-60	X	X	X	X	X
208-1-60	X	X	X	X	X
230-1-60	X	X	X	X	X
277-1-60	X	X	X	X	X
220-1-50	X	X	X	X	X
MOTOR QUICK-DISCONNECT PLUG	Std	Std	Std	Std	Std
INTEGRAL THERMAL OVERLOAD PROTECTION	Std	Std	Std	Std	Std
TAMPERPROOF LOCKS					
Access Panels	—	—	Std	Std	—
VALVE PACKAGES	X	X	X	X	X
WIRING PACKAGES	X	X	X	X	X

NOTE(S):

a. All options are factory-installed unless noted as shipped loose.
b. Drip Lip is field installed.

LEGEND

EC — Electronically Commutated
Std — Standard
X — Available as Options

Options (cont)

Common ETO (Engineered To Order)

OPTIONS	UNIT AVAILABILITY
Bottom Return/Front Supply	DF
Custom Paint	DF
Direct Expansion Coil (DX)	All Units
Ducted Supply	DF
HW in Preheat Position	All Units
Factory Installed Custom Control Valves	All Units
Install Third Party Controller	All Units
Line Voltage T155 Thermostat	All Units
Motorized OA Damper with Open Controller	DC,DD,DE,DF
PSC Motor	All Units
Relocate Control Box	DD
Remote Control Box with 6 ft. Whip	DC
Special Circuited Coil	All Units
2-Row Coil	All Units
Steam Coil	All Units
1-Row Heating Coil Only Instead of 3-Row Standard	All Units
2 in. Filter Rack for Rear Return	DC
Wall Mounted 3-Speed Switch	All Units

Factory-installed options

Coils

Choice of a 2-pipe or 4-pipe system with the following chilled/hot water coil configurations:

COIL CONFIGURATION	UNIT
	42D
3-Row Coil	X
4-Row Coil	X
5-Row Coil	—
6-Row Coil	X
8-Row Coil	42DA, DC, DE, DF
Opposite End Coil Connections	
3/1	X
3/2	X
4/1	X
4/2	X
6/1	42DA,DC, DE,DF
6/2	42DA,DC, DE,DF
Same End Coil Connections	
2/1	—
3/1	X
3/2	X
4/1	X
4/2	X
6/1	42DA,DC, DE,DF
6/2	42DA,DC, DE,DF

LEGEND

X — Available
— — Not Available

Condensate overflow switch

This switch shuts down the unit when the water level in the drain pan reaches an unsafe level. Building code changes in many locales now require this type of device.

Decorative colors

Additional colors are available and can be found in the options table on page 9. Custom colors may be provided when matched with a provided paint chip. Special quote is required for custom colors.

Decorative colors may be applied to:

- Cabinet of 42DF

Electric heaters

Coils are constructed of high grade single-phase, nichrome resistance wire, insulated by ceramic insulators in plated steel brackets. Heater sizes available are shown in the application data section for the respective units.

Filters

Each unit (except the DA units) includes a non-woven synthetic throwaway filter sized for low velocity and maximum efficiency. For optional filters, please refer to available option table on page 9.

Fusing

Incoming power fusing, as well as blower motor and control sub-fusing for units that use electric heat. The blower motor and control sub-fusing (single power source wiring) is required when single source power with electric heat is specified.

Manual air vents

Each standard coil includes a manual air vent to allow venting at the coil if necessary for quick, complete air elimination.

Motors

ECM (electronically commutated) motors are standard on all units. ECM motors offer programmable features, low sound, and increased energy efficiency. Refer to the application data section for more information on ECM control methods.

Outside-air opening/damper

An outside air opening and damper can provide up to 0 to 25% ventilation air to unit. It is available by ETO only on all units except 42DA.

Service switches

Concealed service switches are available for use by maintenance and service personnel to shut off the power while working on the unit.

Single power source connection

Factory-installed junction box allows use of single power source for motor and heater when they are of the same voltage.

Tamperproof fasteners (Allen head)

Tamperproof fasteners are installed on the access panels and are available for all cabinet model units.

Options (cont)

Electric heat

Electric heaters are available for installation on Carrier fan coil units in the following applications.

Total electric heat

Total electric heat eliminates the requirement for a boiler. Heating and/or cooling may be available on an individual basis throughout the year.

Two-pipe chilled water is used or cooling, and the electric heater is used for heating. Individual room controls can be supplied for either manual or automatic changeover.

Auxiliary electric heat

Auxiliary electric heat is ideal for tempering room air between seasons and during the cooling season when chilled water is being circulated.

Individual room controls are supplied to provide electric heat only when chilled water is being circulated. During the regular heating season, heating is provided by hot water being circulated in the system.

Heater construction

Heater coils are constructed of high-grade resistance wire that is supported by ceramic insulators on plated steel brackets. These heat elements are suspended directly in front of the outlet after the blower and the coil. Auto and manual thermal limit switches protect the heater in the event of air failure. High limit thermal cutouts protect the heater in the event of air failure.

There are many special applications and control sequences for electric heat. For special applications, please consult the factory.

Heater electrical data

1. Load voltage may be 120, 208, 240 or 277-v. For unit size and kW limitations, refer to the specific unit catalogs.
2. All heaters are single-stage and single-phase.
3. Unless a single power-source option is selected, the electric heat units require 2 separate power sources. With the single power-source option, only one line circuit need be brought into the unit. Fuse protection is added to the motor/control circuit to protect these components. This is separate from the field-furnished total unit overcurrent protection.

Voltages:

- 115-v, 208-v, 230-v and 277-v single-phase 60 Hz
- 220-v single-phase 50 Hz

Electric heat is available with the following staging options:

- 1 to 14 kW 1-stage only — single-phase

Heater Electrical Data — 42D Series[a,b,c,d]

HEATER VOLTAGE	kW	UNIT SIZE							
		06	08	10	12	14	16	18	20
120-v	2.0	X	X	X					
	3.0	X	X	X					
208-v 240-v 277-v	2.0	X	X	X					
	3.0	X	X	X					
	4.0	X	X	X	X	X	X	X	X
	5.0		X	X	X	X	X	X	X
	6.0		X	X	X	X	X	X	X
	7.0			X	X	X	X	X	X
	8.0				X	X	X	X	X
	9.0				X	X	X	X	X
	10.0					X	X	X	X
	12.0						X	X	X
	14.0								X

NOTE(S):

a. All heaters are single-stage and single-phase.
b. Heaters over 48 amps are subdivided and fused.
c. Electric Heating Capacities (BTUH) = Heater kW x 3413.
d. Consult factory for 50 Hz applications.

Options (cont)

Field-installed options

Automatic air vents

Automatic air vents have fiber washers which allow air in the pipes to pass through, automatically bleeding the system, and eliminating the need to manually remove air from the system. When wet, washers swell and seal the system.

Drip lips (removable drain extension)

Drip lips are frequently used when valves are added after unit installation and space limitations will not permit use of an extended drain pan. The drip lip is placed on the end of the drain pan and is pitched toward the pan to ensure proper drainage. The drip lip gives positive control of condensate from valve packages.

Return-air grilles

Anodized aluminum hinged bar-type grilles are installed on 42DF units.

Discharge grilles

The aluminum discharge grilles are suitable for air dry field painting. The discharge grille frame and blades are 6063 extruded aluminum alloy with 200-R1 satin anodized finish. The frame has a typical wall thickness of 0.050 in. and is separated from the blades with injection-molded nylon bushings. This method of assembly minimizes corrosion and vibration. The frame mounting holes are dimpled, allowing for a counter-sunk fastener head appearance. All blades are airfoil in design, individually adjustable and spaced 3/4 in. on center. At the outer edge of the frame is a specifically engineered channel which retains an extruded flexible vinyl bulb gasket that produces a positive air seal at the mounting surface, minimizing smudging. An optional opposed blade damper is screwdriver operated through the face of the unit and has the same extruded aluminum construction and injection-molded nylon bushings. The unit achieves an effective area of 80% with the blades set at a 0 degree pattern, thus eliminating high velocity and pressure drop at the grille face. Wider deflection with reduced throw may be achieved at the 22 and 45 degree blade settings with slightly increased sound levels.

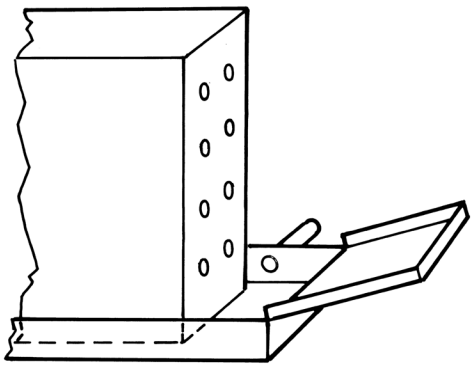
Tell-tale drain pan

A secondary drain connection is located above the primary drain to act as a "tell-tale" in the event that the primary drain becomes obstructed. They can be applied to either the main drain pan or an extended main drain pan. The secondary drain connection is optional on the 42DA, DC, DE, DF units.

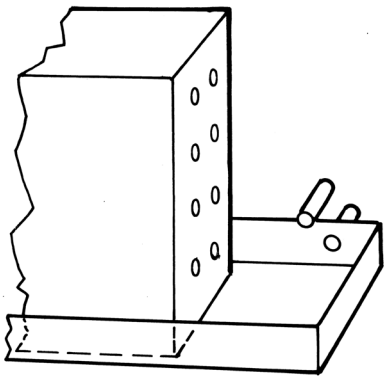
Thermostats control packages

Wall-mounted 24-v thermostats are available on the 42 series fan coil units. For thermostat control packages options refer to the Controls section.

Drip Lip
(Horizontal Unit)



"Tell-Tale" Drain Pan
(Horizontal Unit)



Options (cont)

Component static resistance

Filter Static Resistance (in. wg)

UNIT DATA			FILTER PRESSURE DROP		
MODEL	UNIT SIZE	NOMINAL cfm	1 in. THROWAWAY	1 in. PERMAMENT	1 in. MERV 8
42DC,DE,DF	06	600	0.066	0.145	0.18
	08	800	0.070	0.164	0.19
	10	1000	0.075	0.186	0.21
	12	1200	0.076	0.195	0.21
	14	1400	0.077	0.202	0.22
	16	1600	0.078	0.207	0.23
	18	1800	0.079	0.211	0.23
	20	2000	0.081	0.222	0.24
42DD	06	600	0.074	0.183	0.20
	08	800	0.078	0.203	0.22
	10	1000	0.082	0.230	0.25
	12	1200	0.083	0.239	0.26
	14	1400	0.084	0.246	0.27
	16	1600	0.085	0.251	0.27
	18	1800	0.085	0.255	0.28
	20	2000	0.087	0.267	0.29

Double-deflection, Integral Supply Grille Painted to Match Colors of Unit (Standard option for model 42DF.)

Hinged Bar Type, Aluminum-finish Return Grille with Throwaway Filter (Standard option for model 42DF. Optional, specially shipped separate for models 42DA, DC, and DE. Consult factory for details.)

Options (cont)

Coil Data

Coil Surface Area

42D UNIT SIZE	HEIGHT (in.)	LENGTH (in.)
06	15	15
08	15	20
10	15	24
12	15	29
14	15	34
16	15	39
18	15	44
20	15	48

Coil Weight (lb) (Aluminum Fins)[a,b]

42D UNIT SIZE	2-ROW	3-ROW	4-ROW	5-ROW	6-ROW	7-ROW	8-ROW
06	13	16	19	22	25	27.9	30.9
08	14.9	18.8	2.2.7	26.6	30.5	34.4	38.3
10	16.3	21	25.6	30.3	34.9	39.6	44.2
12	18.2	23.8	29.3	34.9	40.5	46	51.6
14	20	26.5	33	39.5	46	52.5	59
16	21.9	29.3	36.7	44.1	51.5	58.9	66.3
18	23.7	32.1	40.4	48.7	57	65.4	73.7
20	25.2	34.3	43.3	52.4	61.5	70.5	79.6

NOTE(S):

a. Weights do not include headers or extras.
b. Unit 42DD has a maximum of 6 rows.

Coil Weight (lb) (Copper Fins)[a,b]

42D UNIT SIZE	2-ROW	3-ROW	4-ROW	5-ROW	6-ROW	7-ROW	8-ROW
06	19	25	31	37	43	48.9	54.9
08	22.9	30.8	38.7	46.6	54.5	62.4	70.3
10	25.9	35.4	44.8	54.3	63.7	73.2	82.6
12	29.8	41.2	52.5	63.9	75.3	86.6	98
14	33.6	46.9	60.2	73.5	86.8	100.1	113.4
16	37.5	52.7	67.9	83.1	98.3	113.5	128.8
18	41.3	58.5	75.6	92.7	109.9	127	144.1
20	44.4	63.1	81.8	100.4	119.1	137.8	156.4

NOTE(S):

a. Weights do not include headers or extras.
b. Unit 42DD has a maximum of 6 rows.

Coil Connections O.D. (in.)[a]

42D UNIT SIZE	1 AND 2-ROW	3-ROW	4-ROW	5-ROW	6-ROW	8-ROW
06	5/8	5/8	7/8	7/8	7/8	1-1/8
08	5/8	5/8	7/8	7/8	7/8	1-1/8
10	5/8	7/8	7/8	7/8	7/8	1-1/8
12	5/8	7/8	7/8	7/8	7/8	1-1/8
14	5/8	7/8	7/8	1-1/8	1-1/8	1-5/8
16	5/8	7/8	1-1/8	1-1/8	1-1/8	1-5/8
18	5/8	7/8	1-1/8	1-1/8	1-1/8	1-5/8
20	5/8	7/8	1-1/8	1-1/8	1-1/8	1-5/8

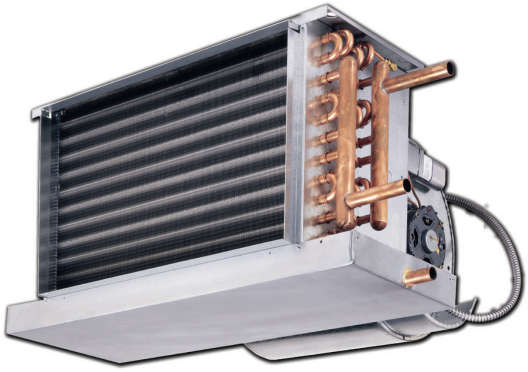
NOTE(S):

a. Unit 42DD has a maximum of 6 rows.

Options (cont)

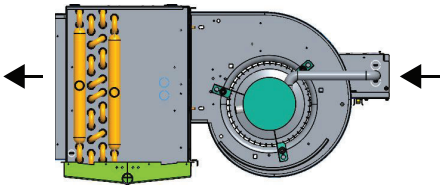
Airflow Arrangements

42DA – Hi-Performance Hideaway

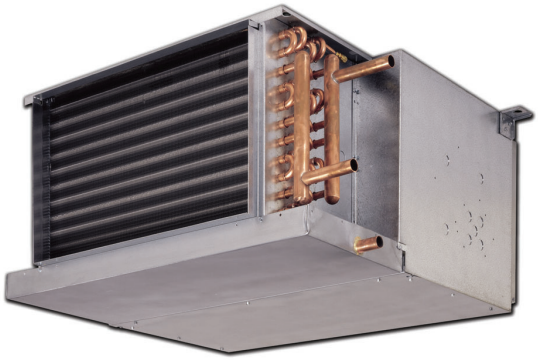


SIDE VIEW

Rear Return, Front Supply

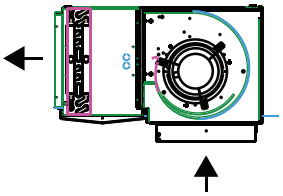


42DC – Hi-Performance Hideaway with Plenum

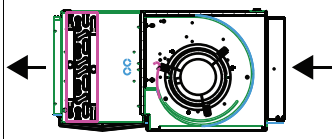


SIDE VIEW

Bottom Return, Front Supply



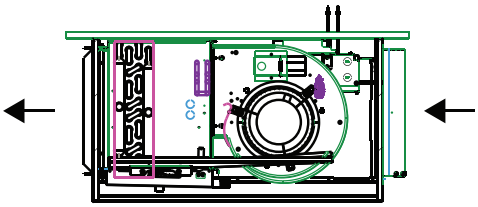
Rear Return, Front Supply



42DE – Hi-Performance Cased

SIDE VIEW

Rear Return, Front Supply



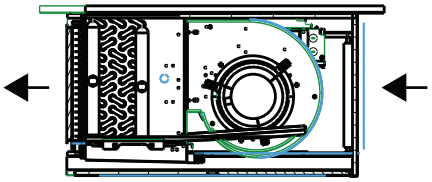
Options (cont)

Airflow Arrangements (cont)

42DF – Hi-Performance Cabinet

SIDE VIEW

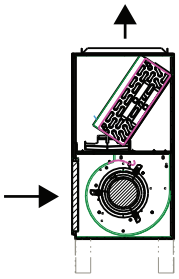
Rear Return, Front Supply



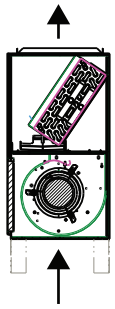
42DD – Hi-Performance Vertical Cased

SIDE VIEW

Front Return, Top Supply

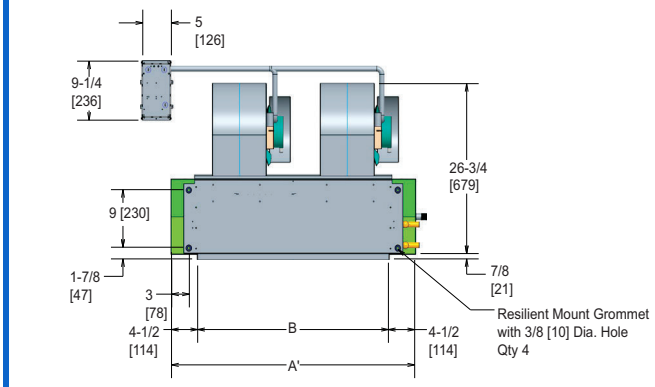


Bottom Return, Top Supply

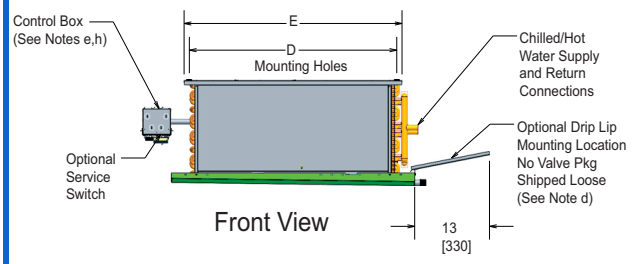


Base unit dimensions

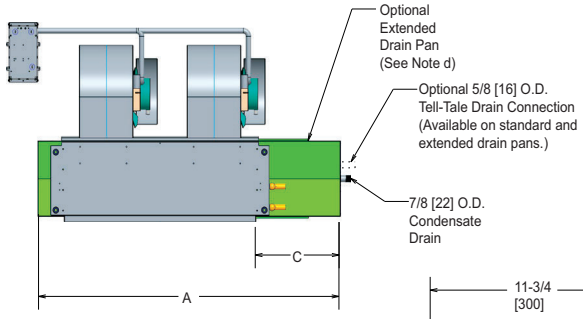
42DA Hi-Performance Hideaway, Rear Return

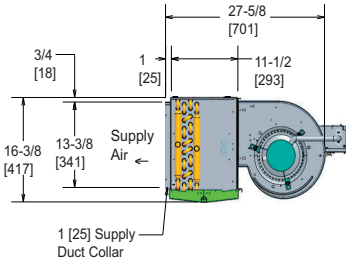


Top View

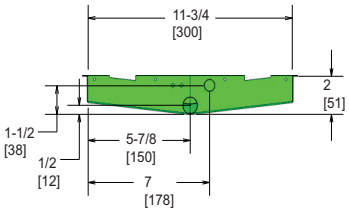


Front View





Right Side View



Drain Outlet

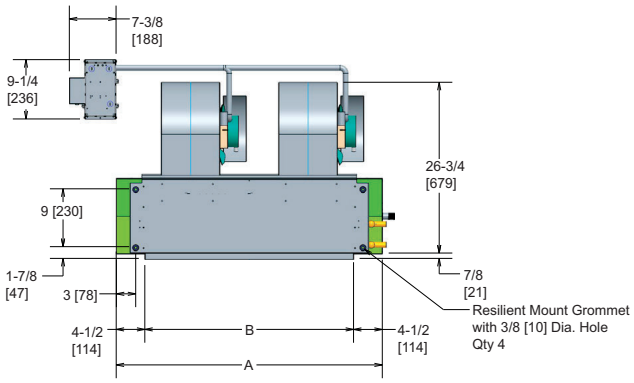
UNIT SIZE 42DA	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]						QUANTITY/UNIT	
	A	A'	B	C	D	E	Blower	Motor
06	23 [584]	32 [813]	14 [356]	13-1/2 [343]	17 [432]	18-3/4 [476]	1	1
08	28 [711]	37 [940]	19 [483]	13-1/2 [343]	22 [559]	23-3/4 [603]	1	1
10	32 [813]	42 [1067]	23 [584]	14-1/2 [368]	26 [660]	27-3/4 [705]	1	1
12	37 [940]	47 [1194]	28 [711]	14-1/2 [368]	31 [787]	32-3/4 [832]	2	2
14	42 [1067]	52 [1321]	33 [838]	14-1/2 [368]	36 [914]	37-3/4 [959]	2	2
16	47 [1194]	56 [1422]	38 [965]	13-1/2 [343]	41 [1041]	42-3/4 [1086]	2	2
18	52 [1321]	52 [1321]	43 [1092]	14-1/2 [368]	46 [1168]	47-3/4 [1213]	2	2
20	56 [1422]	66 [1676]	47 [1194]	14-1/2 [368]	50 [1270]	51-3/4 [1314]	2	2

NOTE(S):

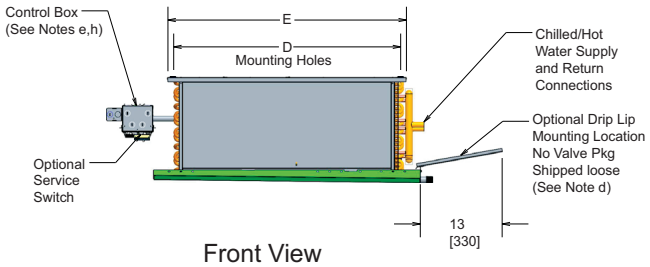
a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Base unit dimensions (cont)

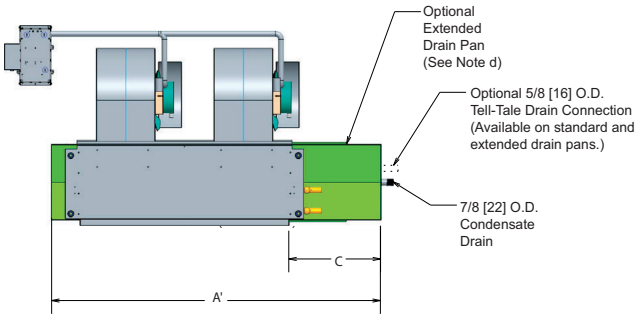
42DA Hi-Performance Hideaway, Rear Return, with Optional Electric Heat

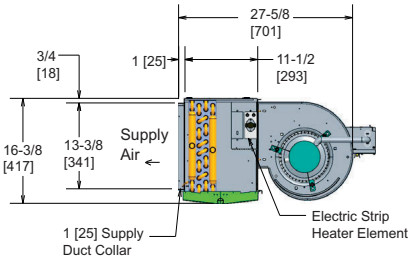


Top View



Front View





Right Side View

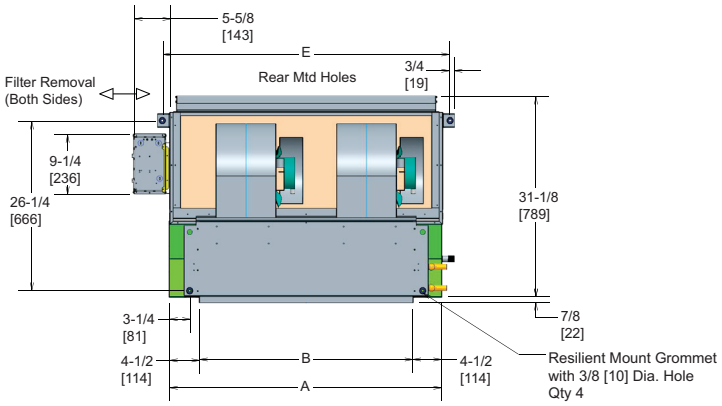
UNIT SIZE 42DA	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]						QUANTITY/UNIT	
	A	A'	B	C	D	E	Blower	Motor
06	23 [584]	32 [813]	14 [356]	13-1/2 [343]	17 [432]	18-3/4 [476]	1	1
08	28 [711]	37 [940]	19 [483]	13-1/2 [343]	22 [559]	23-3/4 [603]	1	1
10	32 [813]	42 [1067]	23 [584]	14-1/2 [368]	26 [660]	27-3/4 [705]	1	1
12	37 [940]	47 [1194]	28 [711]	14-1/2 [368]	31 [787]	32-3/4 [832]	2	2
14	42 [1067]	52 [1321]	33 [838]	14-1/2 [368]	36 [914]	37-3/4 [959]	2	2
16	47 [1194]	56 [1422]	38 [965]	13-1/2 [343]	41 [1041]	42-3/4 [1086]	2	2
18	52 [1321]	62 [1575]	43 [1092]	14-1/2 [368]	46 [1168]	47-3/4 [1213]	2	2
20	56 [1422]	66 [1676]	47 [1194]	14-1/2 [368]	50 [1270]	51-3/4 [1314]	2	2

NOTE(S):

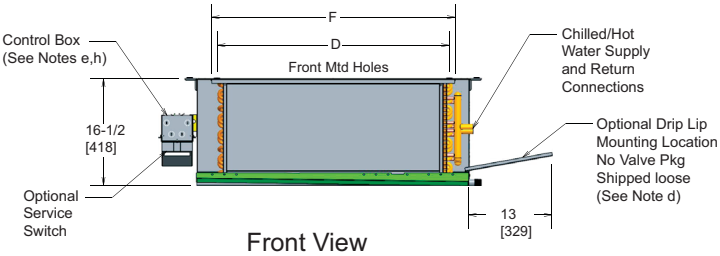
a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Base unit dimensions (cont)

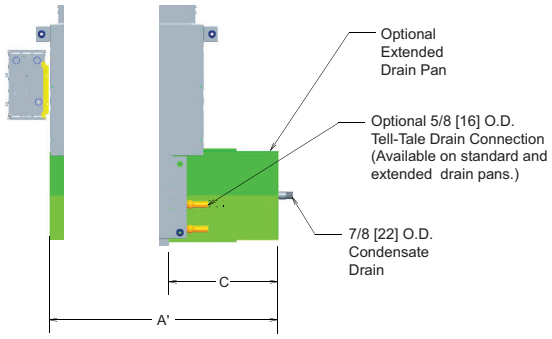
42DC Hi-Performance Hideaway with Plenum, Rear Return



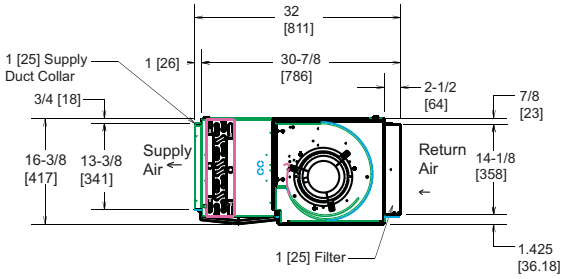
Top View



Front View



Drain Pan (Abbreviated View)



Right Side View

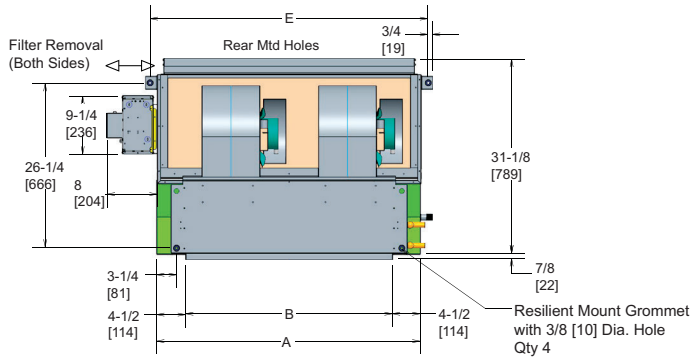
UNIT SIZE 42DC	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]							QUANTITY/UNIT	
	A	A'	B	C	D	E	F	Blower	Motor
06	23 [584]	32 [813]	14 [356]	13-1/2 [343]	17 [432]	25-1/2 [648]	21 [533]	1	1
08	28 [711]	37 [940]	19 [483]	13-1/2 [343]	22 [559]	30-1/2 [775]	26 [660]	1	1
10	32 [813]	42 [1067]	23 [584]	14-1/2 [368]	26 [660]	34-1/2 [877]	30 [762]	1	1
12	37 [940]	47 [1194]	28 [711]	14-1/2 [368]	31 [787]	39-1/2 [1004]	35 [890]	2	2
14	42 [1067]	52 [1321]	33 [838]	14-1/2 [368]	36 [914]	44-1/2 [1131]	40 [1016]	2	2
16	47 [1194]	56 [1422]	38 [965]	13-1/2 [343]	41 [1041]	49-1/2 [1258]	45 [1143]	2	2
18	52 [1321]	52 [1321]	43 [1092]	14-1/2 [368]	46 [1168]	54-1/2 [1385]	50 [1270]	2	2
20	56 [1422]	66 [1676]	47 [1194]	14-1/2 [368]	50 [1270]	58-1/2 [1487]	54 [1372]	2	2

NOTE(S):

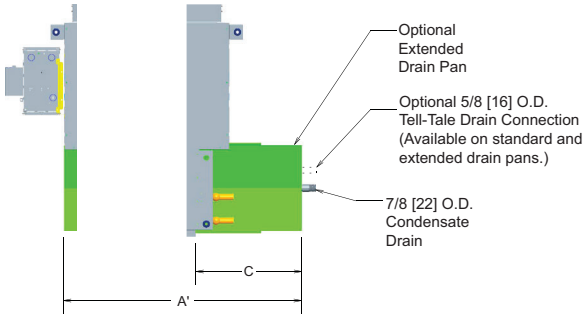
a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Base unit dimensions (cont)

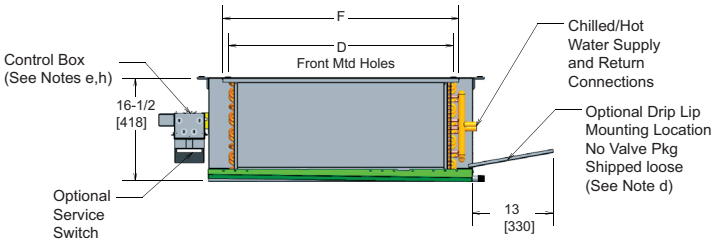
42DC Hi-Performance Hideaway with Plenum and Optional Electric Heat, Rear Return



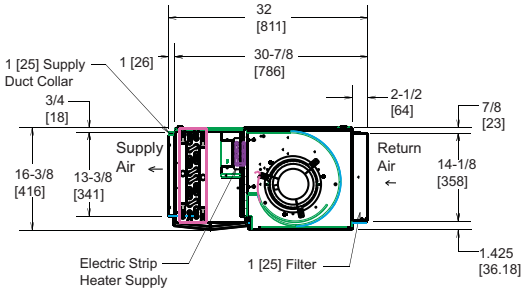
Top View



Drain Pan (Abbreviated View)



Front View



Right Side View

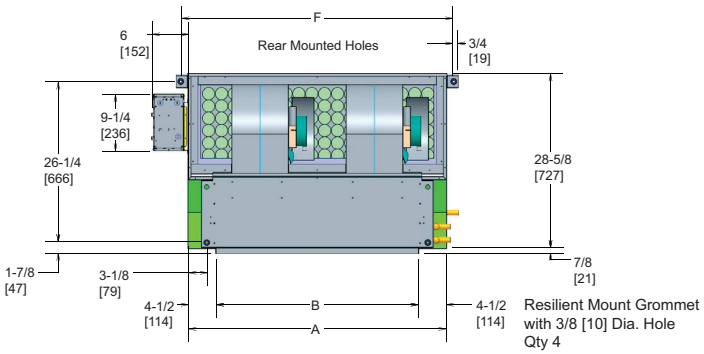
UNIT SIZE 42DC	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]							QUANTITY/UNIT	
	A	A'	B	C	D	E	F	Blower	Motor
06	23 [584]	32 [813]	14 [356]	13-1/2 [343]	17 [432]	25-1/2 [648]	21 [533]	1	1
08	28 [711]	37 [940]	19 [483]	13-1/2 [343]	22 [559]	30-1/2 [775]	26 [660]	1	1
10	32 [813]	42 [1067]	23 [584]	14-1/2 [368]	26 [660]	34-1/2 [877]	30 [762]	1	1
12	37 [940]	47 [1194]	28 [711]	14-1/2 [368]	31 [787]	39-1/2 [1004]	35 [889]	2	2
14	42 [1067]	52 [1321]	33 [838]	14-1/2 [368]	36 [914]	44-1/2 [1131]	40 [1016]	2	2
16	47 [1194]	56 [1422]	38 [965]	13-1/2 [343]	41 [1041]	49-1/2 [1258]	45 [1143]	2	2
18	52 [1321]	52 [1321]	43 [1092]	14-1/2 [368]	46 [1168]	54-1/2 [1385]	50 [1270]	2	2
20	56 [1422]	66 [1676]	47 [1194]	14-1/2 [368]	50 [1270]	58-1/2 [1487]	54 [1372]	2	2

NOTE(S):

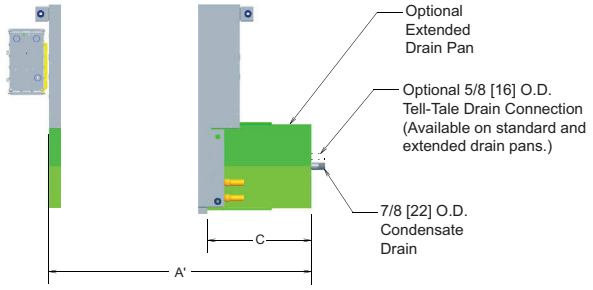
a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Base unit dimensions (cont)

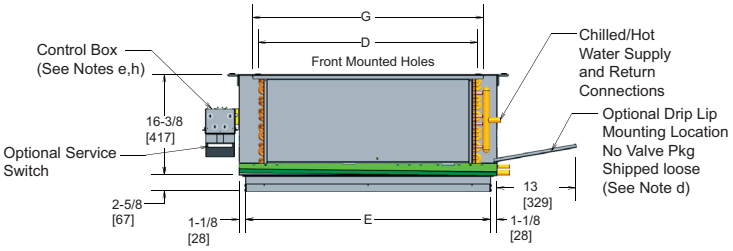
42DC Hi-Performance Hideaway with Plenum, Bottom Return



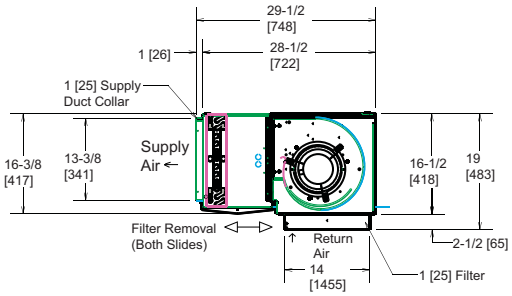
Top View



Drain Pan (Abbreviated View)



Front View



Right Side View

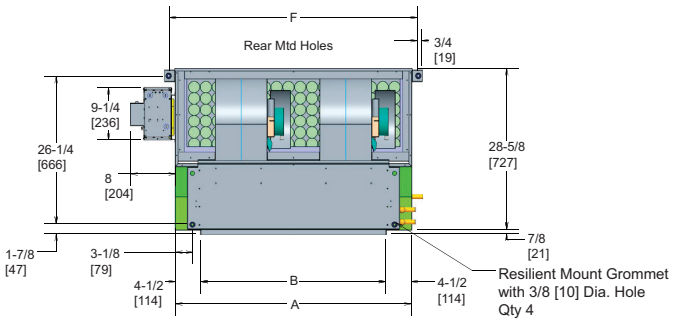
UNIT SIZE 42DC	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]								QUANTITY/UNIT	
	A	A'	B	C	D	E	F	G	Blower	Motor
06	23 [584]	32 [813]	14 [356]	13-1/2 [343]	17 [432]	21 [533]	25-1/2 [648]	18-3/4 [476]	1	1
08	28 [711]	37 [940]	19 [483]	13-1/2 [343]	22 [559]	26 [660]	30-1/2 [775]	23-3/4 [603]	1	1
10	32 [813]	42 [1067]	23 [584]	14-1/2 [368]	26 [660]	30 [762]	34-1/2 [877]	27-3/4 [705]	1	1
12	37 [940]	47 [1194]	28 [711]	14-1/2 [368]	31 [787]	35 [889]	39-1/2 [1004]	32-3/4 [832]	2	2
14	42 [1067]	52 [1321]	33 [838]	14-1/2 [368]	36 [914]	40 [1016]	44-1/2 [1131]	37-3/4 [959]	2	2
16	47 [1194]	56 [1422]	38 [965]	13-1/2 [343]	41 [1041]	45 [1143]	49-1/2 [1258]	42-3/4 [1086]	2	2
18	52 [1321]	52 [1321]	43 [1092]	14-1/2 [368]	46 [1168]	50 [1270]	54-1/2 [1385]	47-3/4 [1213]	2	2
20	56 [1422]	66 [1676]	47 [1194]	14-1/2 [368]	50 [1270]	54 [1372]	58-1/2 [1487]	51-3/4 [1314]	2	2

NOTE(S):

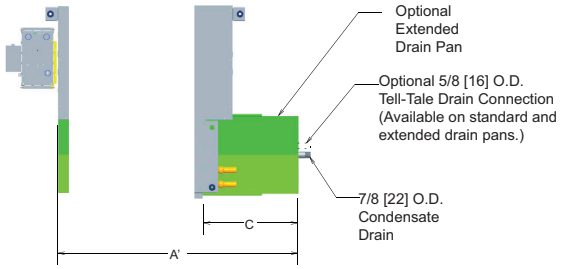
a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Base unit dimensions (cont)

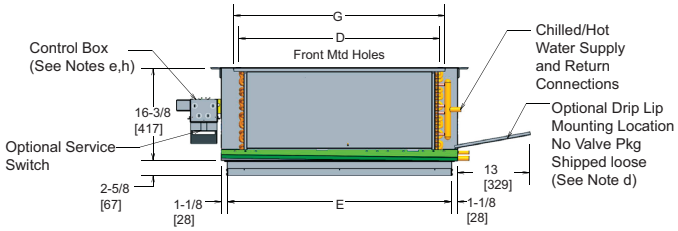
42DC Hi-Performance Hideaway with Plenum with Optional Electric Heat, Bottom Return



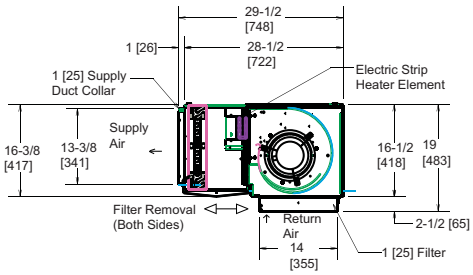
Top View



Drain Pan (Abbreviated View)



Front View



Right Side View

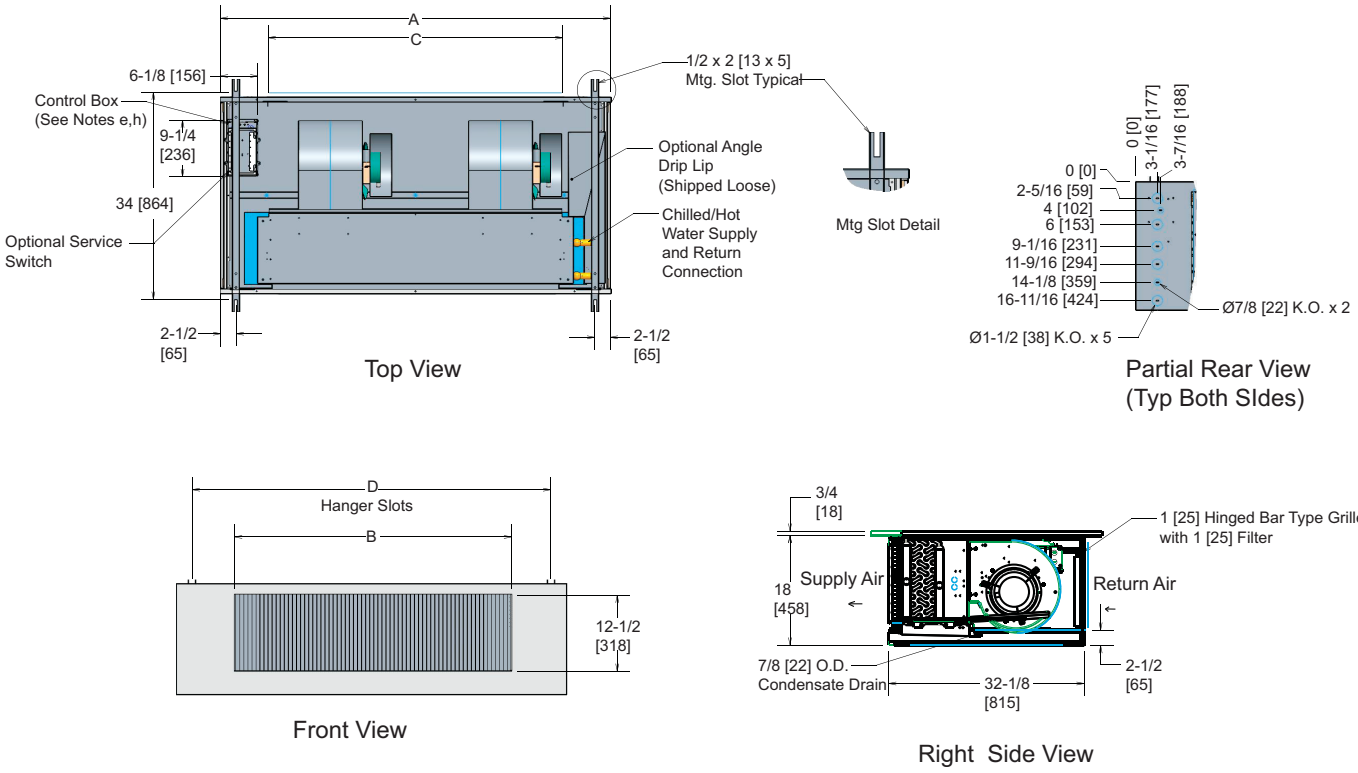
UNIT SIZE 42DC	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]								QUANTITY/UNIT	
	A	A'	B	C	D	E	F	G	Blower	Motor
06	23 [584]	32 [813]	14 [356]	13-1/2 [343]	17 [432]	21 [533]	25-1/2 [648]	18-3/4 [476]	1	1
08	28 [711]	37 [940]	19 [483]	13-1/2 [343]	22 [559]	26 [660]	30-1/2 [775]	23-3/4 [603]	1	1
10	32 [813]	42 [1067]	23 [584]	14-1/2 [368]	26 [660]	30 [762]	34-1/2 [877]	27-3/4 [705]	1	1
12	37 [940]	47 [1194]	28 [711]	14-1/2 [368]	31 [787]	35 [889]	39-1/2 [1004]	32-3/4 [832]	2	2
14	42 [1067]	52 [1321]	33 [838]	14-1/2 [368]	36 [914]	40 [1016]	44-1/2 [1131]	37-3/4 [959]	2	2
16	47 [1194]	56 [1422]	38 [965]	13-1/2 [343]	41 [1041]	45 [1143]	49-1/2 [1258]	42-3/4 [1086]	2	2
18	52 [1321]	52 [1321]	43 [1092]	14-1/2 [368]	46 [1168]	50 [1270]	54-1/2 [1385]	47-3/4 [1213]	2	2
20	56 [1422]	66 [1676]	47 [1194]	14-1/2 [368]	50 [1270]	54 [1372]	58-1/2 [1487]	51-3/4 [1314]	2	2

NOTE(S):

a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Base unit dimensions (cont)

42DF Hi-Performance Cabinet



Top View

Partial Rear View
(Typ Both SIdes)

Front View

Right Side View

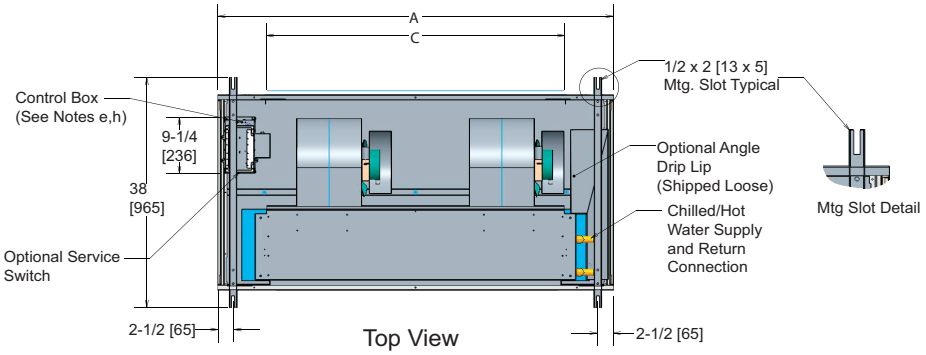
UNIT SIZE 42DF	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]				QUANTITY/UNIT	
	A	B	C	D	Blower	Motor
06	31 [787]	13 [330]	14 [356]	26 [660]	1	1
08	36 [914]	18 [457]	20 [508]	31 [787]	1	1
10	40 [1016]	22 [558]	24 [610]	35 [889]	1	1
12	45 [1143]	27 [686]	28 [711]	40 [1016]	2	2
14	50 [1270]	32 [813]	34 [864]	45 [1143]	2	2
16	55 [1397]	37 [940]	38 [965]	50 [1270]	2	2
18	60 [1524]	42 [1067]	44 [1118]	55 [1397]	2	2
20	64 [1626]	46 [1168]	48 [1219]	59 [1499]	2	2

NOTE(S):

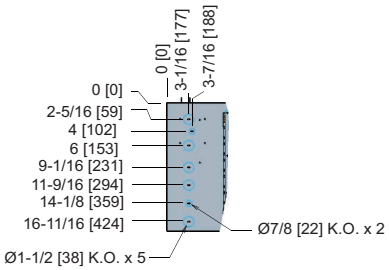
a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Base unit dimensions (cont)

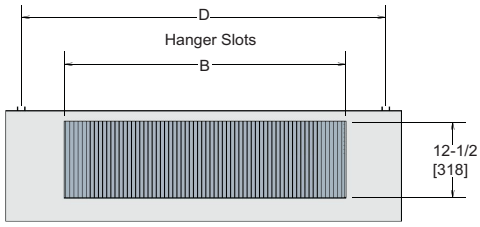
42DF-Hi Performance Cabinet with Optional Electric Heat



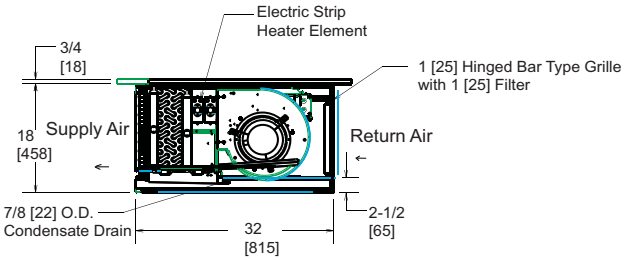
Top View



Partial Rear View
(Typ. Both SIdes)



Front View



Right Side View

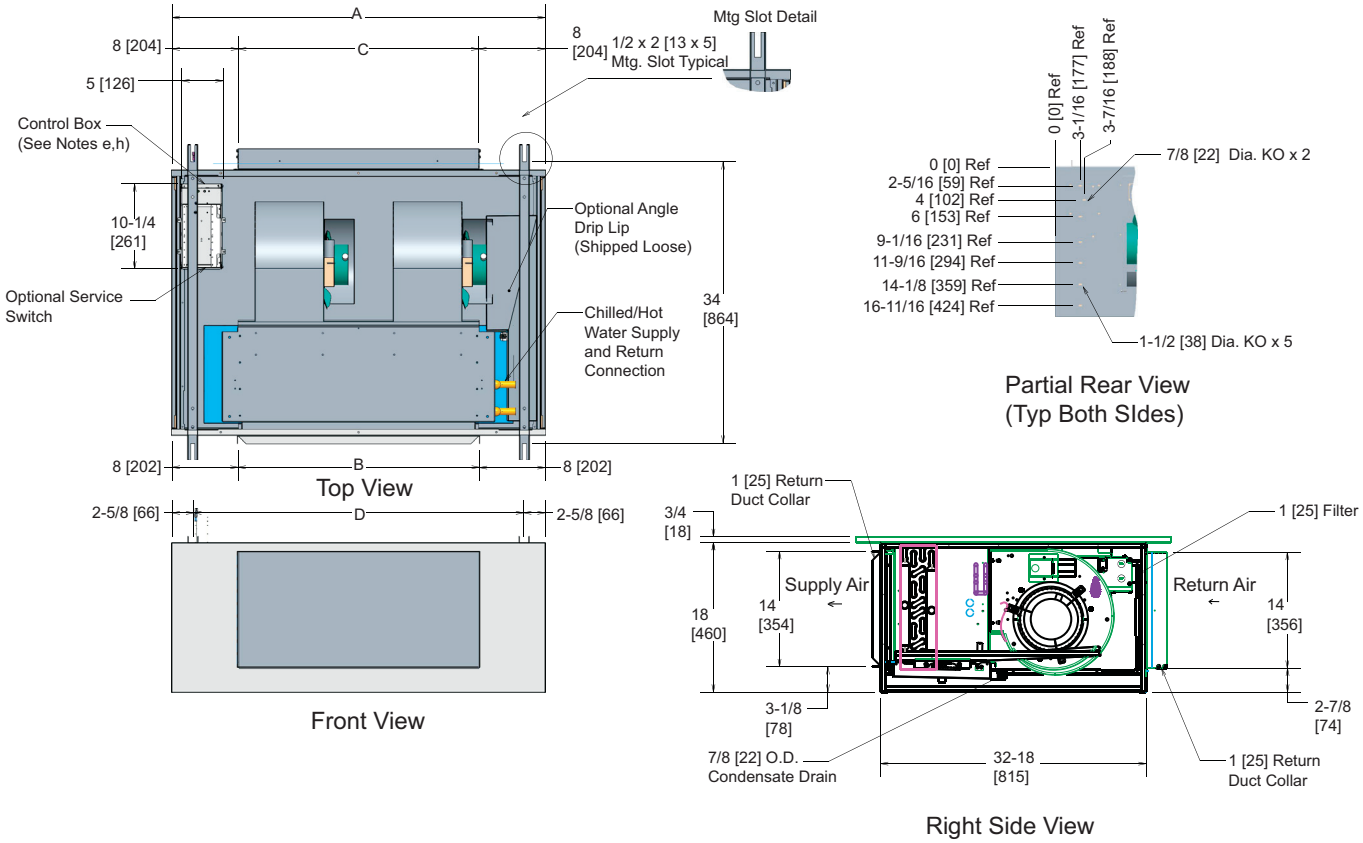
UNIT SIZE 42DF	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]				QUANTITY/UNIT	
	A	B	C	D	Blower	Motor
06	31 [787]	13 [330]	14 [356]	26 [660]	1	1
08	36 [914]	18 [457]	20 [508]	31 [787]	1	1
10	40 [1016]	22 [558]	24 [610]	35 [889]	1	1
12	45 [1143]	27 [686]	28 [711]	40 [1016]	2	2
14	50 [1270]	32 [813]	34 [864]	45 [1143]	2	2
16	55 [1397]	37 [940]	38 [965]	50 [1270]	2	2
18	60 [1524]	42 [1067]	44 [1118]	55 [1397]	2	2
20	64 [1626]	46 [1168]	48 [1219]	59 [1499]	2	2

NOTE(S):

a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Base unit dimensions (cont)

42DE Hi-Performance Horizontal Cased



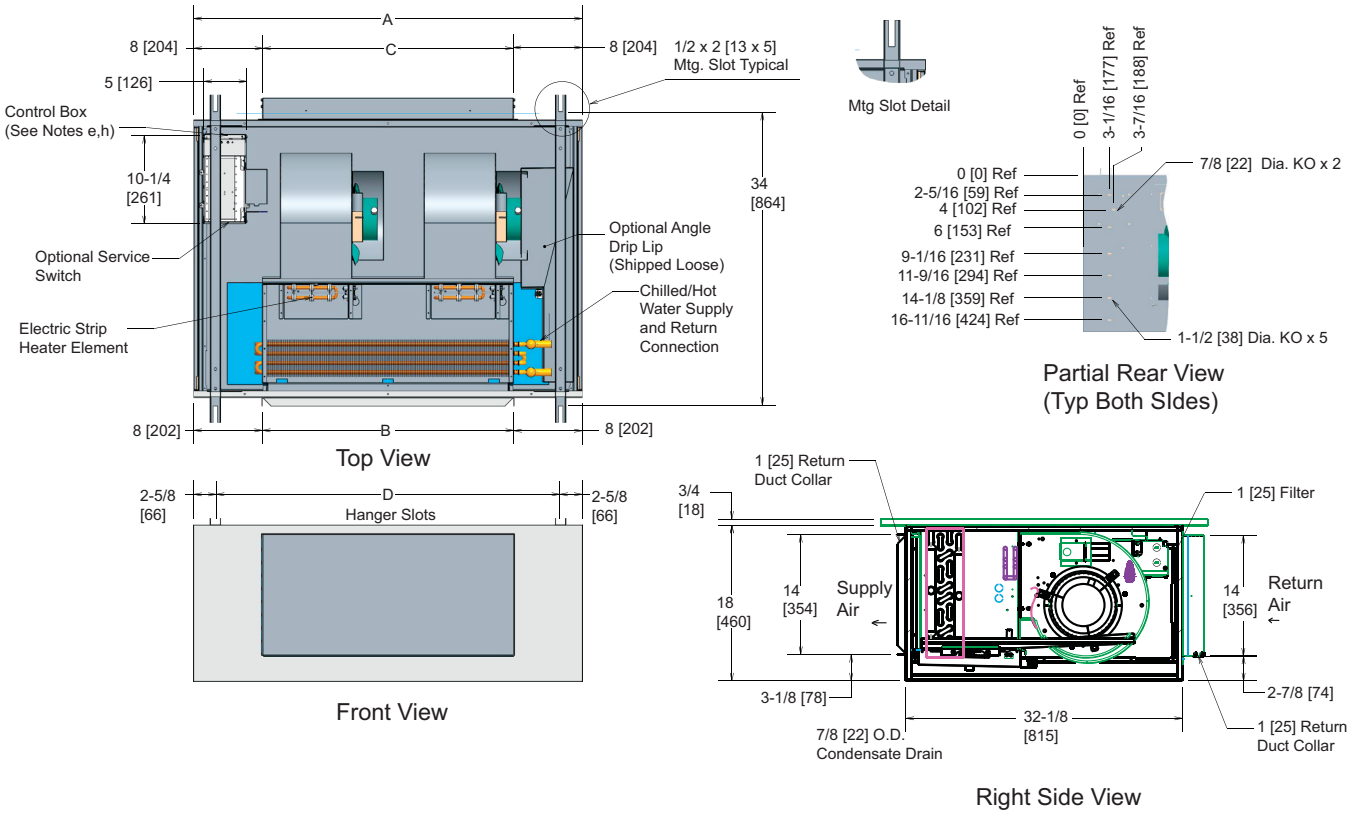
UNIT SIZE 42DE	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]				QUANTITY/UNIT	
	A	B	C	D	Blower	Motor
06	31 [787]	15 [381]	15 [381]	26 [660]	1	1
08	36 [914]	20 [508]	20 [508]	31 [787]	1	1
10	40 [1016]	24 [610]	24 [610]	35 [889]	1	1
12	45 [1143]	29 [737]	29 [737]	40 [1016]	2	2
14	50 [1270]	34 [864]	34 [864]	45 [1143]	2	2
16	55 [1397]	39 [991]	39 [991]	50 [1270]	2	2
18	60 [1524]	44 [1118]	44 [1118]	55 [1397]	2	2
20	64 [1626]	48 [1219]	48 [1219]	59 [1499]	2	2

NOTE(S):

a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Base unit dimensions (cont)

42DE Hi-Performance Horizontal Cased with Optional Electric Heat



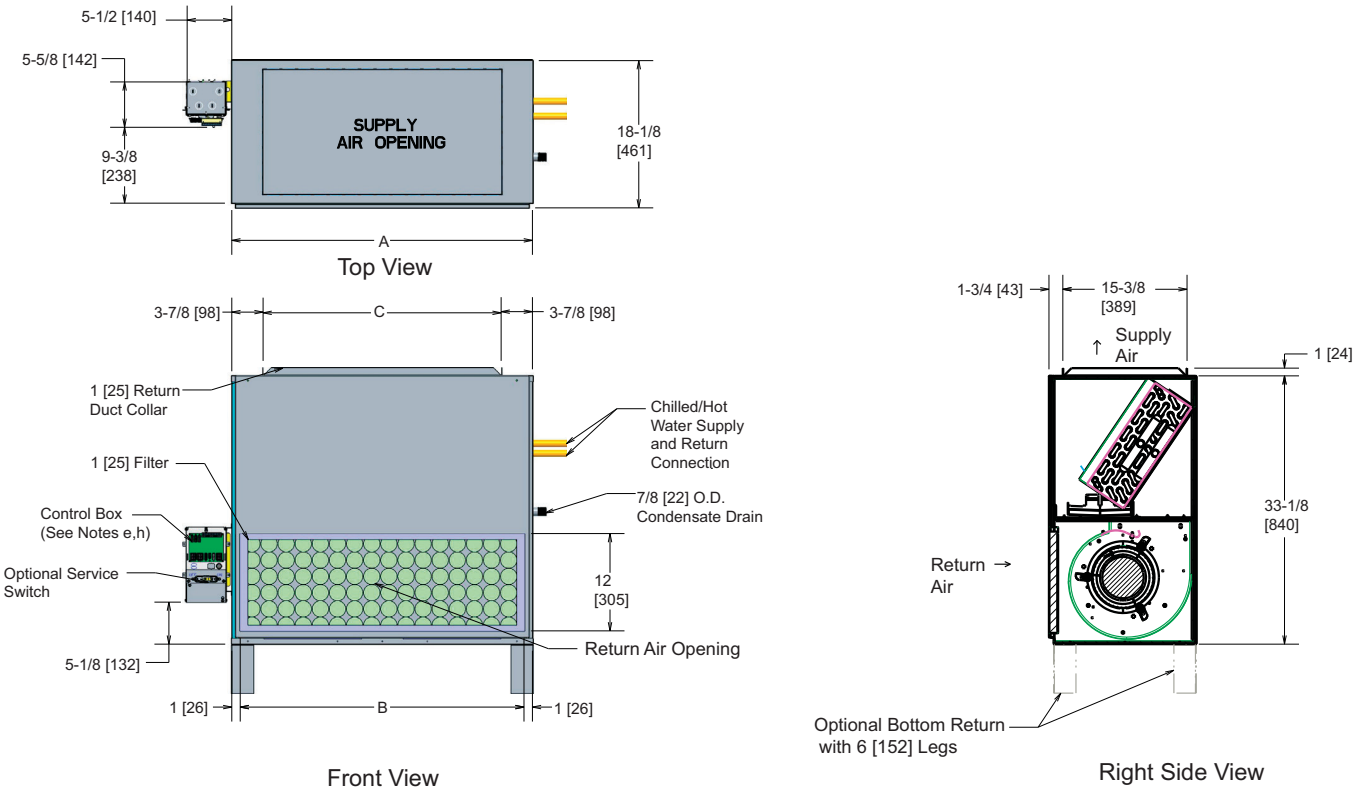
UNIT SIZE 42DE	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]				QUANTITY/UNIT	
	A	B	C	D	Blower	Motor
06	31 [787]	15 [381]	15 [381]	26 [660]	1	1
08	36 [914]	20 [508]	20 [508]	31 [787]	1	1
10	40 [1016]	24 [610]	24 [610]	35 [889]	1	1
12	45 [1143]	29 [737]	29 [737]	40 [1016]	2	2
14	50 [1270]	34 [864]	34 [864]	45 [1143]	2	2
16	55 [1397]	39 [991]	39 [991]	50 [1270]	2	2
18	60 [1524]	44 [1118]	44 [1118]	55 [1397]	2	2
20	64 [1626]	48 [1219]	48 [1219]	59 [1499]	2	2

NOTE(S):

a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Base unit dimensions (cont)

42DD Hi-Performance Vertical Cased



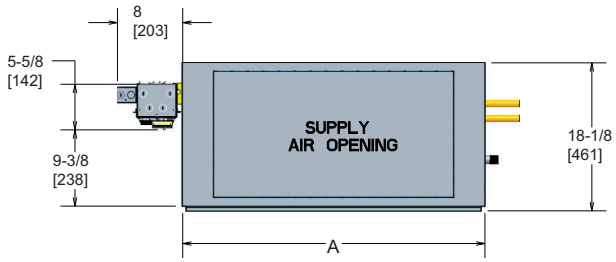
UNIT SIZE 42DD	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]			QUANTITY/UNIT	
	A	B	C	Blower	Motor
06	23 [584]	21 [533]	15 [381]	1	1
08	28 [711]	26 [660]	20 [508]	1	1
10	32 [813]	30 [762]	24 [610]	1	1
12	37 [940]	35 [889]	29 [737]	2	2
14	42 [1067]	40 [1016]	34 [864]	2	2
16	47 [1194]	45 [1143]	39 [991]	2	2
18	52 [1321]	50 [1270]	44 [1118]	2	2
20	56 [1422]	54 [1372]	48 [1220]	2	2

NOTE(S):

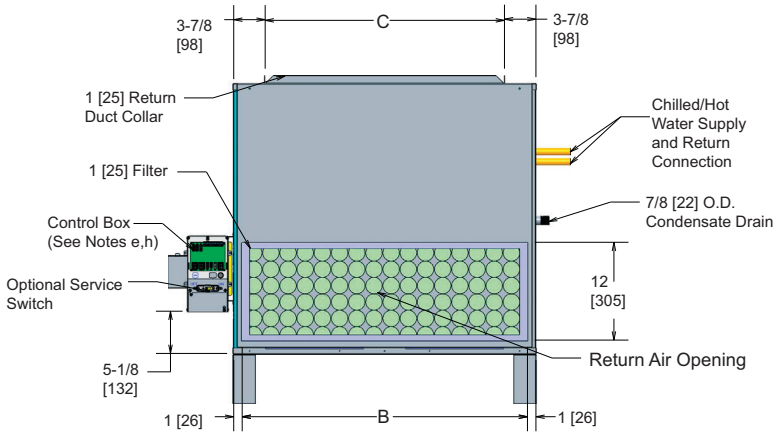
a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Base unit dimensions (cont)

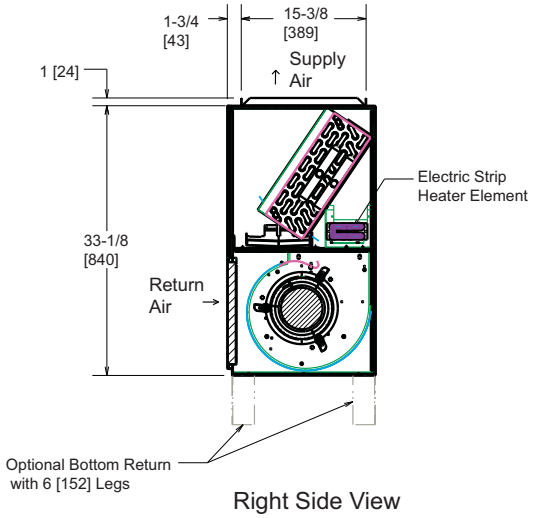
42DD Hi-Performance Vertical Cased with Optional Electric Heat



Top View



Front View



Right Side View

UNIT SIZE 42DD	DIMENSIONS in. [mm][a,b,c,d,e,f,g,h]			QUANTITY/UNIT	
	A	B	C	Blower	Motor
06	23 [584]	21 [533]	15 [381]	1	1
08	28 [711]	26 [660]	20 [508]	1	1
10	32 [813]	30 [762]	24 [610]	1	1
12	37 [940]	35 [889]	29 [737]	2	2
14	42 [1067]	40 [1016]	34 [864]	2	2
16	47 [1194]	45 [1143]	39 [991]	2	2
18	52 [1321]	50 [1270]	44 [1118]	2	2
20	56 [1422]	54 [1372]	48 [1220]	2	2

NOTE(S):

a. Right-hand units shown, left-hand opposite.
b. All dimensions are ± .25 [6]. Drawing not to scale.
c. Product specifications are subject to change without notice.
d. Drip lip recommended. Provided when valve package is ordered.
e. Control box size and position may vary. Consult factory.
f. Position may vary.
g. Service access is located on the front of the control box.
h. Knockouts on the bottom and side of the control box for incoming connections.

Air Delivery ECM — 60 Hz

MODEL	COIL	UNIT SIZE	cfm at 0.0 ESP FOR ECM FAN SPEED			ECM HIGH SPEED cfm at ESP INDICATED						
			LOW	MED	HIGH	0.10	0.20	0.25	0.30	0.40	0.50	0.60
42DA	3-Row	06	492	662	840	808	777	761	746	717	688	661
		08	642	854	1066	1030	992	974	955	917	879	841
		10	865	1103	1400	1355	1312	1291	1271	1231	1194	1159
		12	987	1299	1614	1559	1504	1478	1451	1398	1346	1294
		14	1203	1602	2011	1965	1916	1892	1867	1816	1764	1710
		16	1374	1826	2281	2220	2161	2132	2104	2048	1994	1942
		18	1485	1975	2485	2438	2391	2368	2344	2298	2251	2204
		20	1646	2144	2672	2615	2561	2534	2508	2457	2408	2360
	4-Row	06	483	648	824	785	749	731	713	680	647	616
		08	622	829	1029	999	966	949	931	893	853	810
		10	834	1068	1356	1312	1269	1248	1228	1189	1152	1116
		12	950	1248	1559	1507	1456	1430	1405	1355	1306	1257
		14	1171	1562	1967	1918	1868	1843	1818	1767	1715	1663
		16	1344	1784	2225	2159	2096	2064	2034	1974	1917	1861
		18	1455	1931	2426	2378	2332	2309	2286	2241	2196	2152
		20	1582	2064	2566	2508	2452	2425	2398	2346	2296	2247
	6-Row	06	457	611	775	736	699	681	663	629	596	565
		08	578	774	959	935	907	891	875	840	801	758
		10	773	1000	1268	1226	1186	1166	1147	1109	1072	1036
		12	879	1157	1451	1404	1357	1334	1311	1266	1222	1178
		14	1095	1469	1854	1806	1757	1733	1709	1660	1612	1563
		16	1272	1691	2104	2040	1979	1949	1919	1861	1805	1751
		18	1397	1845	2310	2266	2222	2201	2179	2136	2094	2052
		20	1476	1929	2388	2335	2281	2254	2227	2172	2117	2062
42DC	3-Row	06	488	634	800	769	738	723	708	679	650	621
		08	609	799	999	963	927	909	891	855	818	781
		10	782	1013	1260	1222	1180	1157	1133	1082	1026	967
		12	913	1248	1544	1494	1446	1422	1398	1351	1306	1261
		14	1125	1489	1845	1801	1755	1731	1707	1656	1603	1549
		16	1276	1671	2108	2044	1983	1952	1923	1864	1808	1753
		18	1338	1761	2206	2162	2117	2095	2072	2027	1981	1935
		20	1486	1951	2429	2379	2327	2300	2273	2216	2158	2096
	4-Row	06	469	617	780	748	717	702	687	658	630	603
		08	575	761	950	916	882	865	847	811	775	738
		10	755	988	1240	1198	1153	1130	1106	1056	1005	951
		12	885	1208	1500	1451	1404	1380	1357	1311	1267	1223
		14	1092	1446	1791	1746	1699	1675	1650	1599	1547	1492
		16	1237	1616	2039	1977	1917	1887	1858	1799	1742	1686
		18	1309	1724	2163	2118	2074	2051	2029	1984	1940	1896
		20	1454	1917	2384	2329	2274	2245	2217	2159	2099	2039
	6-Row	06	434	579	731	701	672	657	643	615	588	561
		08	534	713	890	858	826	810	794	761	727	693
		10	707	929	1179	1136	1092	1071	1049	1006	963	920
		12	828	1129	1407	1362	1318	1296	1275	1233	1191	1150
		14	1024	1363	1695	1649	1602	1578	1554	1504	1453	1401
		16	1164	1523	1920	1864	1809	1782	1754	1700	1646	1592
		18	1256	1648	2066	2024	1981	1960	1939	1898	1856	1815
		20	1374	1826	2266	2211	2156	2128	2101	2045	1990	1934

Performance data (cont)

Air Delivery ECM — 60 Hz (cont)

MODEL	COIL	UNIT SIZE	cfm at 0.0 ESP FOR ECM FAN SPEED			ECM HIGH SPEED cfm at ESP INDICATED						
			LOW	MED	HIGH	0.10	0.20	0.25	0.30	0.40	0.50	0.60
42DE	3-Row	06	488	634	800	769	738	723	708	679	650	621
		08	609	799	999	963	927	909	891	855	818	781
		10	782	1013	1260	1222	1180	1157	1133	1082	1026	967
		12	913	1248	1544	1494	1446	1422	1398	1351	1306	1261
		14	1125	1489	1845	1801	1755	1731	1707	1656	1603	1549
		16	1276	1671	2108	2044	1983	1952	1923	1864	1808	1753
		18	1338	1761	2206	2162	2117	2095	2072	2027	1981	1935
		20	1486	1951	2429	2379	2327	2300	2273	2216	2158	2096
	4-Row	06	469	617	780	748	717	702	687	658	630	603
		08	575	761	950	916	882	865	847	811	775	738
		10	755	988	1240	1198	1153	1130	1106	1056	1005	951
		12	885	1208	1500	1451	1404	1380	1357	1311	1267	1223
		14	1092	1446	1791	1746	1699	1675	1650	1599	1547	1492
		16	1237	1616	2039	1977	1917	1887	1858	1799	1742	1686
		18	1309	1724	2163	2118	2074	2051	2029	1984	1940	1896
		20	1454	1917	2384	2329	2274	2245	2217	2159	2099	2039
	6-Row	06	434	579	731	701	672	657	643	615	588	561
		08	534	713	890	858	826	810	794	761	727	693
		10	707	929	1179	1136	1092	1071	1049	1006	963	920
		12	828	1129	1407	1362	1318	1296	1275	1233	1191	1150
		14	1024	1363	1695	1649	1602	1578	1554	1504	1453	1401
		16	1164	1523	1920	1864	1809	1782	1754	1700	1646	1592
		18	1256	1648	2066	2024	1981	1960	1939	1898	1856	1815
		20	1374	1826	2266	2211	2156	2128	2101	2045	1990	1934
42DF	3-Row	06	390	508	633	—	—	—	—	—	—	—
		08	517	678	849	—	—	—	—	—	—	—
		10	618	837	1053	—	—	—	—	—	—	—
		12	813	1063	1326	—	—	—	—	—	—	—
		14	853	1104	1396	—	—	—	—	—	—	—
		16	1010	1346	1675	—	—	—	—	—	—	—
		18	1161	1560	1938	—	—	—	—	—	—	—
		20	1262	1678	2097	—	—	—	—	—	—	—
	4-Row	06	383	500	624	—	—	—	—	—	—	—
		08	500	657	822	—	—	—	—	—	—	—
		10	614	814	1020	—	—	—	—	—	—	—
		12	794	1039	1287	—	—	—	—	—	—	—
		14	857	1110	1398	—	—	—	—	—	—	—
		16	1008	1347	1684	—	—	—	—	—	—	—
		18	1143	1525	1908	—	—	—	—	—	—	—
		20	1236	1642	2055	—	—	—	—	—	—	—
	6-Row	06	370	487	610	—	—	—	—	—	—	—
		08	483	639	799	—	—	—	—	—	—	—
		10	607	797	984	—	—	—	—	—	—	—
		12	752	996	1232	—	—	—	—	—	—	—
		14	859	1115	1392	—	—	—	—	—	—	—
		16	1010	1349	1689	—	—	—	—	—	—	—
		18	1137	1508	1891	—	—	—	—	—	—	—
		20	1204	1606	2005	—	—	—	—	—	—	—

Performance data (cont)

Air Delivery ECM — 60 Hz (cont)

MODEL	COIL	UNIT SIZE	cfm at 0.0 ESP FOR ECM FAN SPEED			ECM HIGH SPEED cfm at ESP INDICATED						
			LOW	MED	HIGH	0.10	0.20	0.25	0.30	0.40	0.50	0.60
42DD	3-Row	06	473	616	773	744	716	702	688	660	632	605
		08	595	784	998	953	910	888	867	826	786	747
		10	691	927	1164	1120	1075	1051	1028	979	929	877
		12	897	1210	1505	1455	1406	1382	1358	1310	1263	1216
		14	1094	1433	1794	1740	1686	1660	1633	1580	1528	1476
		16	1082	1534	1950	1908	1865	1843	1821	1775	1729	1682
		18	1292	1710	2137	2082	2027	2000	1973	1919	1866	1813
		20	1434	1883	2359	2303	2246	2217	2188	2129	2069	2007
	4-Row	06	465	605	762	735	708	694	681	655	628	603
		08	586	782	987	943	899	878	856	814	773	732
		10	672	904	1150	1097	1046	1022	997	949	903	858
		12	859	1177	1470	1425	1380	1357	1335	1291	1248	1205
		14	1081	1410	1769	1717	1666	1640	1614	1563	1512	1461
		16	1043	1510	1917	1876	1834	1813	1791	1746	1700	1652
		18	1279	1678	2104	2051	1998	1972	1945	1892	1839	1786
		20	1434	1871	2351	2291	2232	2202	2172	2113	2054	1994
	6-Row	06	467	604	747	712	675	654	633	588	540	488
		08	580	759	943	912	880	862	845	809	770	730
		10	671	905	1139	1083	1030	1005	980	932	887	845
		12	879	1189	1475	1432	1390	1369	1348	1306	1265	1223
		14	1072	1399	1758	1702	1646	1619	1591	1537	1483	1430
		16	1059	1490	1899	1855	1810	1787	1764	1717	1669	1620
		18	1290	1648	2035	1980	1926	1899	1872	1819	1766	1714
		20	1430	1867	2316	2254	2192	2161	2130	2069	2007	1946

Performance data (cont)

42DA Sound Power Data[a,b,c,d]

UNIT SIZE	RATING	FAN SPEED	SOUND POWER LEVEL, Lw (dB reference one picowatt)							A-wgt (dBA)
			125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz	
06	Casing Radiated w/Free Return	H	54	57	58	60	57	50	40	68
		M	48	52	54	55	49	40	31	62
		L	44	48	49	49	40	33	32	56
	Ducted Discharge	H	55	49	47	46	41	35	29	56
		M	48	44	47	40	32	27	28	50
		L	45	39	37	34	25	24	28	46
08	Casing Radiated w/Free Return	H	55	58	60	58	54	47	37	67
		M	52	54	56	54	48	41	32	62
		L	44	48	47	45	36	31	30	53
	Ducted Discharge	H	53	48	48	45	39	35	29	54
		M	51	45	42	40	33	29	28	49
		L	42	39	35	31	22	24	28	43
10	Casing Radiated w/Free Return	H	61	64	61	62	59	54	45	71
		M	57	60	58	57	53	46	36	66
		L	54	54	51	50	44	35	31	59
	Ducted Discharge	H	59	55	51	50	47	42	33	62
		M	55	50	49	45	41	35	30	55
		L	51	44	40	38	32	27	29	49
12	Casing Radiated w/Free Return	H	56	58	60	61	56	49	46	70
		M	50	54	56	56	50	41	34	63
		L	49	50	51	50	41	33	32	58
	Ducted Discharge	H	55	48	48	46	42	36	30	57
		M	50	43	45	41	36	28	29	52
		L	44	38	38	34	27	24	28	47
14	Casing Radiated w/Free Return	H	62	63	64	65	61	55	47	73
		M	56	58	60	60	53	46	38	67
		L	50	53	53	53	44	38	35	60
	Ducted Discharge	H	61	54	52	52	49	42	32	62
		M	55	49	48	47	41	34	28	56
		L	49	43	41	39	32	25	28	50
16	Casing Radiated w/Free Return	H	61	63	64	65	61	56	47	73
		M	56	58	61	60	55	49	40	68
		L	50	52	53	53	45	37	32	60
	Ducted Discharge	H	60	53	53	52	49	45	34	63
		M	55	48	49	46	42	36	30	56
		L	51	43	41	40	35	27	29	51
18	Casing Radiated w/Free Return	H	60	65	66	66	63	59	50	75
		M	56	60	63	62	57	51	41	70
		L	51	55	56	56	50	41	34	64
	Ducted Discharge	H	60	55	55	56	51	49	38	66
		M	55	51	52	50	45	41	31	59
		L	51	46	45	45	37	31	28	53
20	Casing Radiated w/Free Return	H	62	64	64	66	63	58	49	74
		M	56	60	61	62	58	51	41	70
		L	53	55	55	56	50	41	34	63
	Ducted Discharge	H	58	56	56	55	51	48	38	65
		M	53	53	54	50	46	41	32	60
		L	48	47	46	44	38	31	29	54

NOTE(S):

a. Unit Tests Configuration: Rear Return/ Front Supply, 4 Row, 10 FPI Coil, 0.0 in. ESP, 115 VAC EC Motor, 1/2 in. dual density fiberglass insulation.
b. Casing Radiated Testing per AHRI 260-2001: 4.2.2.3 Casing radiated with free inlet, Sound Rating of Ducted Air Moving and Conditioning Equipment.
c. Ducted Discharge Testing per AHRI 260-2001: 4.2.2.1 Ducted discharge, Sound Rating of Ducted Air Moving and Conditioning Equipment.
d. Sound power data is expressed in decibels, dB RE: 1 x 10^{-12} w (picowatts).

Performance data (cont)

42DC Sound Power Data[a,b,c,d]

UNIT SIZE	RATING	FAN SPEED	SOUND POWER LEVEL, Lw (dB reference one picowatt)							A-wgt (dBA)
			125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz	
06	Casing Radiated w/Free Return	H	61	52	55	53	47	39	31	62
		M	55	47	52	48	40	31	29	57
		L	48	42	45	39	29	25	29	49
	Ducted Discharge	H	51	50	46	47	40	35	29	56
		M	46	47	48	41	33	28	28	52
		L	43	40	36	33	23	24	28	45
08	Casing Radiated w/Free Return	H	61	57	57	51	47	40	31	61
		M	56	53	53	46	41	33	29	57
		L	48	47	45	37	30	26	29	50
	Ducted Discharge	H	54	51	50	46	39	37	29	56
		M	48	46	43	41	33	30	28	50
		L	43	39	35	32	23	24	28	43
10	Casing Radiated w/Free Return	H	66	61	57	53	51	45	36	65
		M	60	56	53	48	45	37	30	59
		L	53	51	46	41	36	28	29	53
	Ducted Discharge	H	60	54	51	51	48	43	33	62
		M	53	49	47	45	41	35	29	56
		L	51	43	40	38	32	27	29	49
12	Casing Radiated w/Free Return	H	59	56	56	54	51	44	34	63
		M	53	52	53	49	44	36	31	59
		L	47	47	47	42	34	27	30	52
	Ducted Discharge	H	54	49	48	47	44	38	30	58
		M	48	45	44	42	38	30	29	53
		L	43	39	38	35	28	25	29	47
14	Casing Radiated w/Free Return	H	62	58	58	56	53	46	37	66
		M	57	55	55	52	46	39	32	61
		L	51	50	50	45	37	30	31	55
	Ducted Discharge	H	58	54	51	51	48	42	31	61
		M	53	49	47	46	41	34	28	56
		L	48	44	41	38	33	26	28	50
16	Casing Radiated w/Free Return	H	62	59	59	58	55	49	39	67
		M	57	54	55	53	48	40	33	61
		L	50	49	50	47	39	31	29	55
	Ducted Discharge	H	58	54	51	52	50	45	34	63
		M	53	49	48	46	43	36	30	57
		L	46	43	41	40	35	27	29	50
18	Casing Radiated w/Free Return	H	64	60	59	58	55	50	41	68
		M	58	56	56	53	49	42	34	62
		L	53	52	51	48	42	33	30	57
	Ducted Discharge	H	58	56	53	55	50	47	36	65
		M	52	51	50	49	43	38	30	58
		L	48	46	44	43	36	30	28	52
20	Casing Radiated w/Free Return	H	65	61	60	59	55	50	41	68
		M	61	57	57	55	50	44	35	63
		L	54	52	51	48	42	33	31	57
	Ducted Discharge	H	58	57	56	56	52	49	39	65
		M	52	53	53	51	47	42	32	60
		L	46	47	46	44	38	31	29	54

NOTE(S):

a. Unit Tests Configuration: Rear Return/ Front Supply, 4 Row, 10 FPI Coil, 0.0 in. ESP, 115 VAC EC Motor, 1/2 in. dual density fiberglass insulation.
b. Casing Radiated Testing per AHRI 260-2001: 4.2.2.3 Casing radiated with free inlet, Sound Rating of Ducted Air Moving and Conditioning Equipment.
c. Ducted Discharge Testing per AHRI 260-2001: 4.2.2.1 Ducted discharge, Sound Rating of Ducted Air Moving and Conditioning Equipment.
d. Sound power data is expressed in decibels, dB RE: 1 x 10^{-12} w (picowatts).

Performance data (cont)

42DE Sound Power Data[a,b,c,d]

UNIT SIZE	RATING	FAN SPEED	SOUND POWER LEVEL, Lw (dB reference one picowatt)							A-wgt (dBA)
			125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz	
06	Casing Radiated w/Free Return	H	56	51	50	49	44	36	30	58
		M	51	47	46	44	38	28	28	54
		L	45	41	39	36	27	25	28	47
	Ducted Discharge	H	51	49	46	46	43	37	29	56
		M	46	45	43	40	34	29	28	51
		L	41	38	36	31	23	23	28	44
08	Casing Radiated w/Free Return	H	57	53	49	48	43	36	30	58
		M	50	48	45	43	36	29	29	53
		L	45	43	39	37	28	24	29	47
	Ducted Discharge	H	54	48	46	45	39	37	29	54
		M	47	43	41	39	32	29	28	49
		L	42	38	35	32	24	24	28	43
10	Casing Radiated w/Free Return	H	61	58	52	51	47	40	33	61
		M	56	54	48	46	41	33	30	56
		L	49	49	42	39	33	26	29	50
	Ducted Discharge	H	59	50	48	47	45	40	31	58
		M	53	46	44	42	40	33	30	53
		L	45	41	37	35	30	26	29	46
12	Casing Radiated w/Free Return	H	57	55	53	51	48	40	32	61
		M	52	51	49	47	42	33	30	56
		L	49	47	45	42	35	27	29	52
	Ducted Discharge	H	50	46	44	45	39	31	29	54
		M	45	42	42	38	33	26	29	50
		L	41	38	37	32	26	24	29	45
14	Casing Radiated w/Free Return	H	59	57	54	52	49	43	33	62
		M	54	53	51	48	43	36	30	58
		L	48	48	45	41	34	28	30	52
	Ducted Discharge	H	56	51	48	46	45	38	30	58
		M	52	47	45	42	40	31	28	53
		L	45	41	38	35	31	25	28	47
16	Casing Radiated w/Free Return	H	57	55	53	52	48	41	32	61
		M	52	50	49	47	41	32	29	56
		L	46	45	44	40	32	26	30	51
	Ducted Discharge	H	56	49	47	47	45	38	30	58
		M	50	45	43	42	38	29	28	52
		L	45	39	36	35	29	24	28	46
18	Casing Radiated w/Free Return	H	61	58	56	56	52	47	37	65
		M	56	53	52	50	46	39	32	60
		L	49	47	47	45	38	30	29	54
	Ducted Discharge	H	58	53	52	52	48	45	34	62
		M	53	47	48	46	42	36	30	56
		L	46	42	41	40	33	27	29	49
20	Casing Radiated w/Free Return	H	62	59	57	56	53	48	38	65
		M	57	54	53	51	47	40	32	60
		L	51	50	48	45	39	31	30	55
	Ducted Discharge	H	52	54	53	53	49	46	35	62
		M	46	48	49	47	43	38	30	57
		L	41	44	44	41	36	29	29	51

NOTE(S):

a. Unit Tests Configuration: Rear Return/ Front Supply, 4 Row, 10 FPI Coil, 0.0 in. ESP, 115 VAC EC Motor, 1/2 in. dual density fiberglass insulation.
b. Casing Radiated Testing per AHRI 260-2001: 4.2.2.3 Casing radiated with free inlet, Sound Rating of Ducted Air Moving and Conditioning Equipment.
c. Ducted Discharge Testing per AHRI 260-2001: 4.2.2.1 Ducted discharge, Sound Rating of Ducted Air Moving and Conditioning Equipment.
d. Sound power data is expressed in decibels, dB RE: 1 x 10^{-12} w (picowatts).

Performance data (cont)

42DF Sound Power Data[a,b,c]

UNIT SIZE	RATING	FAN SPEED	SOUND POWER LEVEL, Lw (dB reference one picowatt)							A-wgt (dBA)
			125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz	
06	Casing Radiated	H	54	55	53	50	46	39	30	60
		M	52	50	48	44	39	30	28	55
		L	51	49	47	42	36	28	28	53
08	Casing Radiated	H	56	54	52	49	46	40	31	60
		M	50	49	46	44	39	31	28	54
		L	45	45	41	37	30	25	29	48
10	Casing Radiated	H	63	61	58	58	54	48	36	67
		M	58	56	53	51	46	40	31	61
		L	50	50	47	44	38	31	29	54
12	Casing Radiated	H	57	58	56	54	51	43	32	64
		M	53	54	52	49	44	35	29	59
		L	48	49	48	44	37	28	28	54
14	Casing Radiated	H	58	59	57	54	49	43	32	64
		M	55	55	53	50	44	36	29	60
		L	48	50	47	43	35	28	29	54
16	Casing Radiated	H	63	63	61	58	55	50	39	68
		M	58	58	57	53	48	42	32	63
		L	52	53	50	47	40	32	29	57
18	Casing Radiated	H	64	63	61	59	56	52	41	69
		M	59	58	57	54	49	43	33	63
		L	53	52	51	48	41	33	29	57
20	Casing Radiated	H	65	64	62	60	58	54	43	70
		M	59	59	57	55	51	45	34	64
		L	53	54	51	49	44	35	29	58

NOTE(S):

a. Unit Tests Configuration: Rear Return/ Front Supply, 4 Row, 10 FPI Coil, 0.0 in. ESP, 115 VAC EC Motor, 1/2 in. dual density fiberglass insulation.
b. Casing Radiated Testing per AHRI 260-2001: 4.2.2.3 Casing radiated with free inlet, Sound Rating of Ducted Air Moving and Conditioning Equipment.
c. Sound power data is expressed in decibels, dB RE: 1 x 10^{-12} w (picowatts).

Performance data (cont)

42DD Sound Power Data[a,b,c,d]

UNIT SIZE	RATING	FAN SPEED	cfm	SOUND POWER LEVEL, Lw (dB reference one picowatt)							A-wgt (dBA)
				125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz	
06	Casing Radiated w/Free Return	H	700	66	61	60	58	55	51	44	63
		M	605	64	58	58	55	51	46	40	60
		L	510	61	56	56	52	48	42	38	57
	Ducted Discharge	H	700	58	57	58	56	51	47	41	55
		M	605	56	53	54	52	47	42	39	51
		L	51	55	51	52	49	43	39	39	48
08	Casing Radiated w/Free Return	H	910	71	70	62	60	57	53	46	67
		M	710	67	62	57	55	51	46	39	61
		L	510	61	63	52	49	43	36	36	57
	Ducted Discharge	H	910	63	63	62	60	55	50	42	59
		M	710	59	57	56	54	49	42	39	53
		L	510	57	52	51	48	41	38	39	48
10	Casing Radiated w/Free Return	H	1110	77	69	63	62	59	55	47	68
		M	965	74	65	60	58	54	49	41	64
		L	705	67	58	54	51	45	38	37	57
	Ducted Discharge	H	1110	71	68	64	63	57	53	44	63
		M	965	68	64	60	58	53	47	40	58
		L	705	63	56	53	50	44	37	39	51
12	Casing Radiated w/Free Return	H	1400	69	65	63	62	59	55	48	67
		M	1210	67	63	62	60	57	52	45	65
		L	1035	65	61	60	58	54	48	41	63
	Ducted Discharge	H	1400	63	63	63	62	56	52	43	60
		M	1210	61	61	61	59	54	48	41	58
		L	1035	59	58	59	56	51	45	40	55
14	Casing Radiated w/Free Return	H	1640	72	67	65	64	61	57	50	69
		M	1525	71	66	64	63	59	56	48	67
		L	1255	67	62	60	59	55	50	41	63
	Ducted Discharge	H	1640	68	65	65	65	59	54	47	63
		M	1525	66	64	64	63	57	52	43	61
		L	1255	63	59	60	58	52	46	40	57
16	Casing Radiated w/Free Return	H	1950	72	68	66	67	64	61	54	71
		M	1740	72	66	65	65	61	58	51	69
		L	1345	68	61	61	59	56	51	43	64
	Ducted Discharge	H	1950	64	65	66	65	59	55	47	63
		M	1740	63	63	64	63	57	53	44	61
		L	1345	60	58	60	57	52	46	39	56
18	Casing Radiated w/Free Return	H	1995	78	72	70	69	66	64	58	74
		M	1735	72	69	68	66	63	60	54	71
		L	1290	67	63	62	60	56	51	43	65
	Ducted Discharge	H	1995	72	71	70	69	64	61	52	68
		M	1735	69	69	68	66	61	58	49	65
		L	1290	61	59	61	58	53	48	39	57
20	Casing Radiated w/Free Return	H	2290	75	69	66	66	63	61	54	71
		M	1905	72	66	64	63	60	57	50	68
		L	1350	66	62	60	58	54	48	40	62
	Ducted Discharge	H	2290	66	66	68	67	61	58	48	65
		M	1905	64	64	66	63	59	54	44	62
		L	1350	57	59	62	57	53	45	37	57

NOTE(S):

a. Unit Tests Configuration: Rear Return/ Front Supply, 4 Row, 10 FPI Coil, 0.0 in. ESP, 115 VAC EC Motor, 1/2 in. dual density fiberglass insulation.
b. Casing Radiated Testing per AHRI 260-2001: 4.2.2.3 Casing radiated with free inlet, Sound Rating of Ducted Air Moving and Conditioning Equipment.
c. Ducted Discharge Testing per AHRI 260-2001: 4.2.2.1 Ducted discharge, Sound Rating of Ducted Air Moving and Conditioning Equipment.
d. Sound power data is expressed in decibels, dB RE: 1 x 10^{-12} w (picowatts).

Electrical data

42D Electric Heater Data[a,b,c,d]

UNIT TYPE	kW	UNIT SIZE							
		06	08	10	12	14	16	18	20
120-v	2.0	•	•	•	—	—	—	—	—
	3.0	•	•	•	—	—	—	—	—
208-v 240-v 277-v	2.0	•	•	•	—	—	—	—	—
	3.0	•	•	•	—	—	—	—	—
	4.0	•	•	•	•	•	•	•	•
	5.0	—	•	•	•	•	•	•	•
	6.0	—	•	•	•	•	•	•	•
	7.0	—	—	•	•	•	•	•	•
	8.0	—	—	—	•	•	•	•	•
	9.0	—	—	—	•	•	•	•	•
	10.0	—	—	—	—	•	•	•	•
	12.0	—	—	—	—	—	•	•	•
	14.0	—	—	—	—	—	—	—	•

NOTE(S):

a. All heaters are single-stage and single-phase.
b. Heaters over 48 amps are subdivided and fused.
c. Electric Heater Capacities (BTUH) = Heater kW x 3413.
d. Consult factory for 50 Hz applications.

42DA ECM Motor Data[a,b,c,d,e]

VOLTAGE	UNIT SIZE	06	08	10	12	14	16	18	20
	Nominal HP	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
120-v	Motor FLA	6.8	6.8	6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8
	Max Program Current	6.8	6.8	6.8	6.8, 6.8	6.4, 6.4	6.8, 6.8	6.8, 6.8	6.8, 6.8
208-240-v	Motor FLA	4.1	4.1	4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1
	Max Program Current	4.1	4.1	4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1
277-v	Motor FLA	3.4	3.4	3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4
	Max Program Current	3.4	3.4	3.4	3.4, 3.4	3.2, 3.2	3.4, 3.4	3.4, 3.4	3.4, 3.4

NOTE(S):

a. Total unit motor AMPS and Watts are shown.
b. UL approves the motor and thermal overload combination at locked rotor conditions only.
c. Consult factory for 50 Hz applications.
d. EC Motors behave differently to changes in static pressure. The table above indicates full load amperage (FLA). In the motor tables below the ECM FLA condition occurs at 0.3 in. ESP.
e. This data is for design purposes and should not be used for an energy analysis. An EC Motor reaches full load condition at the unit's maximum external static because it has increased output to maintain airflow. An EC motor decreases output with lower static causing the minimum power usage to occur at 0.0 in. wg ESP.

42DC ECM Motor Data[a,b,c,d,e]

VOLTAGE	UNIT SIZE	06	08	10	12	14	16	18	20
	Nominal HP	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
120-v	Rated Motor FLA	6.8	6.8	6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8
	Max Program Current	4.7	6.5	6.8	4.2, 4.2	5.0, 5.0	6.8, 6.8	6.8, 6.8	6.8, 6.8
208-240-v	Rated Motor FLA	4.1	4.1	4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1
	Max Program Current	3.7	4.1	4.1	3.3, 3.3	4.0, 4.0	4.1, 4.1	4.1, 4.1	4.1, 4.1
277-v	Rated Motor FLA	3.4	3.4	3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4
	Max Program Current	2.3	3.2	3.4	2.1, 2.1	2.5, 2.5	3.1, 3.1	3.4, 3.4	3.4, 3.4

NOTE(S):

a. Total unit motor AMPS and Watts are shown.
b. UL approves the motor and thermal overload combination at locked rotor conditions only.
c. Consult factory for 50 Hz applications.
d. EC Motors behave differently to changes in static pressure. The table above indicates full load amperage (FLA). In the motor tables below the ECM FLA condition occurs at 0.3 in. ESP.
e. This data is for design purposes and should not be used for an energy analysis. An EC Motor reaches full load condition at the unit's maximum external static because it has increased output to maintain airflow. An EC motor decreases output with lower static causing the minimum power usage to occur at 0.0 in. wg ESP.

Electrical data (cont)

42DE ECM Motor Data[a,b,c,d,e]

VOLTAGE	UNIT SIZE	06	08	10	12	14	16	18	20
	Nominal HP	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
120-v	Motor FLA	6.8	6.8	6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8
	Max Program Current	4.9	5.8	6.8	3.0, 3.0	4.6, 4.6	6.6, 6.6	6.8, 6.8	6.8, 6.8
208-240-v	Motor FLA	4.1	4.1	4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1
	Max Program Current	3.9	4.1	4.1	2.4, 2.4	3.7, 3.7	4.1, 4.1	4.1, 4.1	4.1, 4.1
277-v	Motor FLA	3.4	3.4	3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4
	Max Program Current	2.4	2.9	3.4	1.5, 1.5	2.3, 2.3	3.3, 3.3	3.4, 3.4	3.4, 3.4

NOTE(S):

a. Total unit motor AMPS and Watts are shown.
b. UL approves the motor and thermal overload combination at locked rotor conditions only.
c. Consult factory for 50 Hz applications.
d. EC Motors behave differently to changes in static pressure. The table above indicates full load amperage (FLA). In the motor tables below the ECM FLA condition occurs at 0.3 in. ESP.
e. This data is for design purposes and should not be used for an energy analysis. An EC Motor reaches full load condition at the unit's maximum external static because it has increased output to maintain airflow. An EC motor decreases output with lower static causing the minimum power usage to occur at 0.0 in. wg ESP.

42DF ECM Motor Data[a,b,c,d,e]

VOLTAGE	UNIT SIZE	06	08	10	12	14	16	18	20
	Nominal HP	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
120-v	Motor FLA	6.8	6.8	6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8
	Max Program Current	3.9	4.9	6.4	3.8, 3.8	4.1, 4.1	6.0, 6.0	6.8, 6.8	6.8, 6.8
208-240-v	Motor FLA	4.1	4.1	4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1
	Max Program Current	3.1	3.9	4.1	3.0, 3.0	3.3, 3.3	4.1, 4.1	4.1, 4.1	4.1, 4.1
277-v	Motor FLA	3.4	3.4	3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4
	Max Program Current	1.9	2.4	3.2	1.9, 1.9	2.1, 2.1	3.0, 3.0	3.4, 3.4	3.4, 3.4

NOTE(S):

a. Total unit motor AMPS and Watts are shown.
b. UL approves the motor and thermal overload combination at locked rotor conditions only.
c. Consult factory for 50 Hz applications.
d. EC Motors behave differently to changes in static pressure. The table above indicates full load amperage (FLA). In the motor tables below the ECM FLA condition occurs at 0.3 in. ESP.
e. This data is for design purposes and should not be used for an energy analysis. An EC Motor reaches full load condition at the unit's maximum external static because it has increased output to maintain airflow. An EC motor decreases output with lower static causing the minimum power usage to occur at 0.0 in. wg ESP.

42DD ECM Motor Data[a,b,c,d,e]

VOLTAGE	UNIT SIZE	06	08	10	12	14	16	18	20
	Nominal HP	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
120-v	Rated Motor FLA	6.8	6.8	6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8	6.8, 6.8
	Max Program Current	4.6	6.4	6.8	4.2, 4.2	5.0, 5.0	6.1, 6.1	6.8, 6.8	6.8, 6.8
208-240-v	Rated Motor FLA	4.1	4.1	4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1	4.1, 4.1
	Max Program Current	3.7	4.1	4.1	3.3, 3.3	3.9, 3.9	4.1, 4.1	4.1, 4.1	4.1, 4.1
277-v	Rated Motor FLA	3.4	3.4	3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4	3.4, 3.4
	Max Program Current	2.3	3.2	3.4	2.1, 2.1	2.5, 2.5	3.1, 3.1	3.4, 3.4	3.4, 3.4

NOTE(S):

a. Total unit motor AMPS and Watts are shown.
b. UL approves the motor and thermal overload combination at locked rotor conditions only.
c. Consult factory for 50 Hz applications.
d. EC Motors behave differently to changes in static pressure. The table above indicates full load amperage (FLA). In the motor tables below the ECM FLA condition occurs at 0.3 in. ESP.
e. This data is for design purposes and should not be used for an energy analysis. An EC Motor reaches full load condition at the unit's maximum external static because it has increased output to maintain airflow. An EC motor decreases output with lower static causing the minimum power usage to occur at 0.0 in. wg ESP.

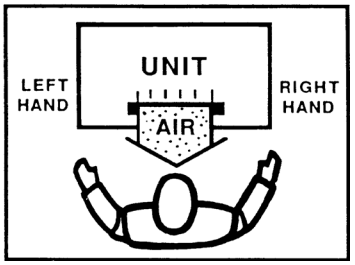
Application data

Basic definitions

Unit hand

When facing the supply air outlet from the front of the unit (air blowing in your face), your right hand will be the right hand side of the unit and your left hand the left hand side of the unit.

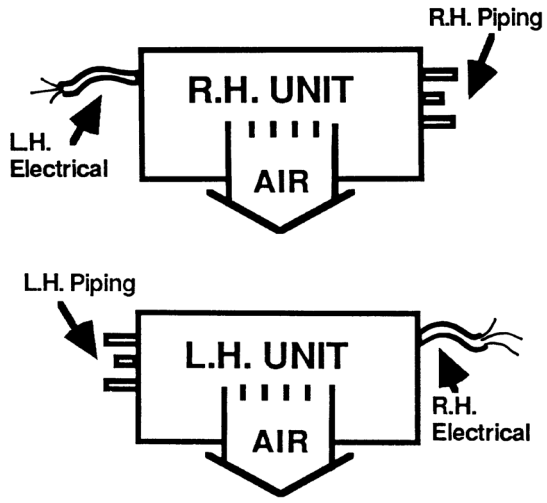
Unit Hand



Same end connection (2-pipe or 4-pipe)

All piping connections are on the same end (side) of the unit. Controls and electrical connection will be on the end (side) opposite the piping connection. Standard 2-pipe units will be the same end connection.

Same End Connection



NOTE: Piping determines the hand of the unit.

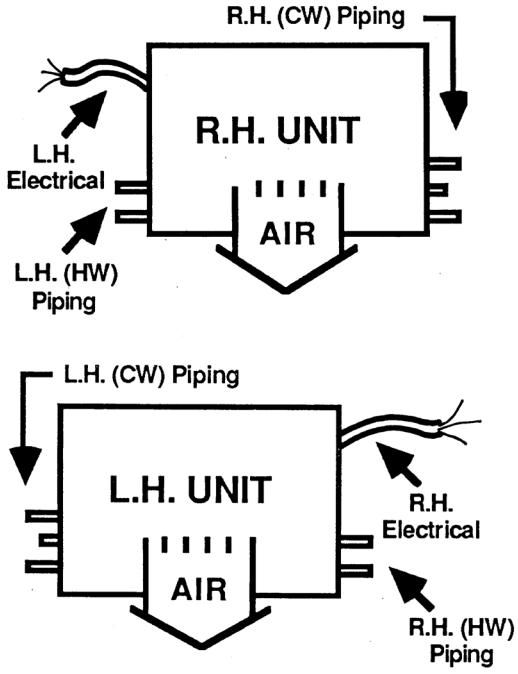
Opposite end connection (4-pipe option)

Hot water (HW) piping connections and electrical will be on the end (side) opposite the chilled water (CW) and drain connections.

4-Pipe coil arrangement

For 4-pipe coil combination chilled water/hot water coils, the hot water coil is in the reheat position. The opposite hot water coil position is available through ETO request. The 42 series fan coil units are not recommended for dehumidification applications.

Opposite End Connection

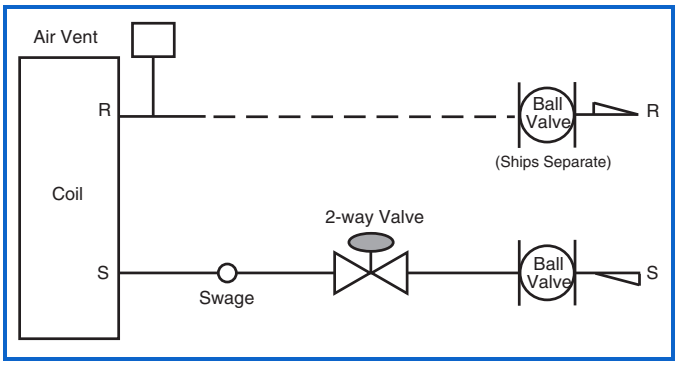


NOTE: Chilled water piping determines the hand of the unit.

Application data (cont)

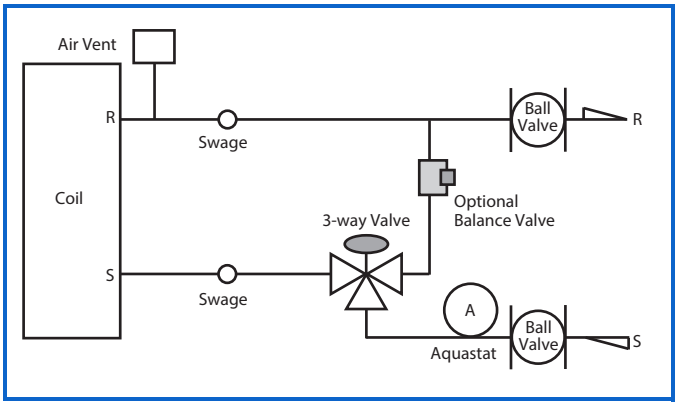
2-way motorized control valve

In a 2-way motorized normally closed control valve package, the motor drives the valve open, and a spring returns the valve to a normally closed position. No water flows with the unit off. Normally open control valves are also available. The standard supply connection from the coil will accept a swaged copper fitting for field brazing. As an option, this connection may be factory furnished with a union. When a swage is necessary, it becomes part of the valve package. The isolation, or ball, valve in the return piping is shipped loose for field installation.



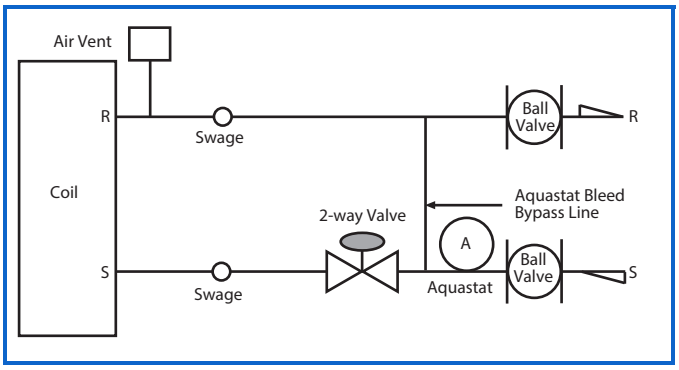
3-way motorized control valve

In a 3-way motorized normally closed control valve package, a diverting valve controls water flow to the coil. When the unit is off, water bypasses the coil and flows directly to the system return. A balancing valve may be specified in the bypass line to permit equal flow balancing. Alternately, the control valve can be piped normally open to the coil as an option.



2-way motorized control valve with changeover

In a 2-way motorized changeover control valve package, the motor drives the valve open, and a spring returns the valve to a normally closed position. No water flows through the coil with the unit off. The aquastat bypass line allows a small amount of water flow from the supply to the return piping when the control valve is closed. The strap-on aquastat senses whether the flowing water is cold or hot and switches a contact closed to provide automatic summer/winter changeover (ACO) for the system.

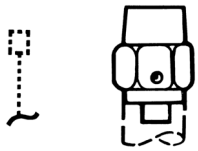
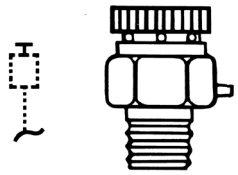
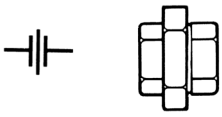
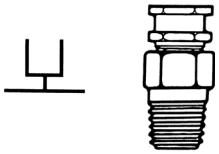
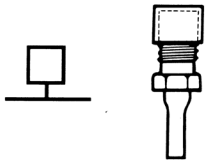
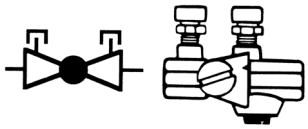


NOTES:

1. Project specifications for system pressure, pressure drop limitations, and flow rate should be checked prior to selecting specific components or the valve package size.
2. The supply and return piping connections of the factory-provided valve package are either swaged for field brazing (standard) or union fitted (optional) for field connection to the coil.
3. Factory-provided valve packages are assembled, brazed, wired electrically, and dry-fit to the coil connections before shipping. Field brazing to the coil completes the installation. Some applications dictate shipping isolation valves loose.

Application data (cont)

Piping Components

SYMBOL/SKETCH	DESCRIPTION	C_V FACTOR		RATING[a]		STEAM USE
		1/2	3/4	PSI	F	
	**MANUAL AIR VENT:** Threaded brass needle valve with screwdriver slot for adjustment. Application — Body brazed into high point of heating and cooling coils for bleeding air from coil. Standard item on all hydronic coils. Should not be used in lieu of main system air vents.	N/A	N/A	400	100	NO
	**AUTOMATIC AIR VENT:** Nickel plated brass valve, fiber-disc type, with positive shut-off ballcheck and quick vent feature via knurled vent screw. Application — Optional replacement for manual air vent. Automatically passes minute quantities of air through the fiber discs which expand upon contact with water, completely sealing the valve. As air accumulates, the fiber discs dry and shrink, repeating the cycle. Not recommended for removing large quantities of air encountered during initial start-up or subsequent draining and refilling. Should not be used in lieu of main system air vents.	N/A	N/A	125	240	NO
	**SWAGE:** Copper tube end expanded to accept a copper tube of the same size for factory or field brazing. Application — Used where possible for all tubing joints for best joint integrity.	N/A	N/A	300	200	YES
	**UNION:** Combination wrought copper/cast brass union assembly, solder by solder. Application — Used for quick connect (and disconnect) of valve package components to minimize field labor and facilitate servicing of unit.	N/A	N/A	300	200	YES
	**INSERTION TEST PORT:** Brass body valve for acceptance of test probe (up to 1/8 in. diameter). Application — Installed on one (or both) sides of the coil to allow for temperature or pressure sensing. Used for close tolerance water balancing and service analysis.	N/A	N/A	250	250	NO
	**PRESSURE TEST PORT:** Brass body 1/4 service access fitting with removable depressor type core. Application — Installed on both sides of the coil to allow for pressure sensing. Attach pressure gauges to facilitate close tolerance water balancing.	N/A	N/A	400	210	NO
	**CIRCUIT SETTER:** Variable water flow balancing valve with manual adjustment knob, pointer, percent-open scale, memory stop and integral pressure readout ports. Application — Used for close tolerance water flow balancing. Positive shut-off ball valve feature allows usage as combination balancing and shut-off valve.	2.12	3.9	300	250	NO

NOTE(S):

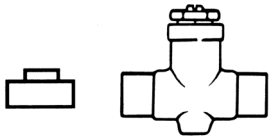
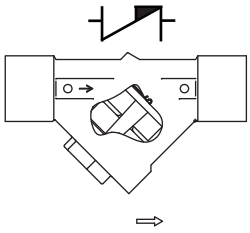
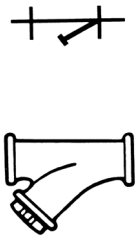
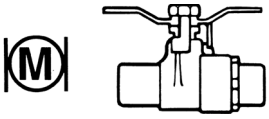
a. Check all system component pressure ratings (coils, values, pumps, etc.) with manufacturer and any applicable local or national piping codes prior to specifying system pressure rating.

LEGEND

Cv — Coefficient of Velocity
ETO — Engineered to Order

Application data (cont)

Piping Components (cont)

SYMBOL/SKETCH	DESCRIPTION	C_V FACTOR		RATING[a]		STEAM USE
		1/2	3/4	PSI	F	
	**BALANCE VALVE:** Variable water flow manual balancing valve with screwdriver slot adjustment screw. Application — Often used in conjunction with test port fittings for water flow balancing. Balance by temperature differential or coil pressure drop (check specifications for service fittings required if balancing by pressure drop). May be used in 3-way valve bypass line to permit equal flow balancing.	3	8.9	150	200	NO
	**FIXED FLOW VALVE:** Flexible orifice type (non-adjustable). Application — Used for water flow balancing. Valve automatically adjusts the flow to within 10% of set point.	Valve orifice size determines C_V factor. The orifice of these fixed flow valves changes as flow is regulated. As the water pressure increases, the orifice size decreases, thereby automatically limiting the flow rate to the specified gpm (±10%).		600	220	NO
	**STRAINER:** Y-type body with 20 mesh stainless steel screen. Application — Used for removal of small particles from system water during normal system operation. Should not be used in lieu of main system strainers. Strainer screen may have to be removed during initial high pressure system flushing during start-up. Screen should be removed and cleaned per normal maintenance schedule (provisions for strainer blowdown not provided).	5.5 Clean	9.0 Clean	600	325	N/A
	**BALL VALVE WITH MEMORY STOP:** Manual balance and shut-off valve. Application — Used for unit isolation and water flow balancing. The adjustable memory stop feature allows return to the balance point after shut-off. Check specifications for service fittings required when used for water balancing.	Full Port	Full Port	600	325	N/A

NOTE(S):

a. Check all system component pressure ratings (coils, values, pumps, etc.) with manufacturer and any applicable local or national piping codes prior to specifying system pressure rating.

LEGEND

Cv — Coefficient of Velocity
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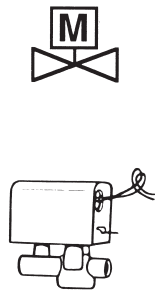
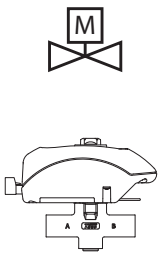
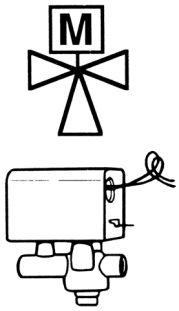
Application data (cont)

Piping Components (cont)

SYMBOL/SKETCH	DESCRIPTION	C_V FACTOR		RATING[a]		STEAM USE
		1/2	3/4	PSI	F	
	**2-WAY MOTORIZED VALVE (25 PSI close off differential pressure):** Electric 2-position flow control valve (open/closed). Normally closed body with manual override lever. Installed in supply line to unit. Application — All standard control and valve packages are based upon normally closed valves (valve electrically powered open and closed by spring return when electric power removed). Manual override lever allows valve to be placed in the open position for secondary (unit) flushing, constant water flow prior to start-up, etc. Manual override is automatically disengaged when valve is electrically activated. **Consult factory for normally open valve applications.**	3.5	3.5	300	200	YES 15 PSI MAX.
	**2-WAY MOTORIZED VALVE (150 PSI close off differential pressure):** Electric 2-position flow control valve (open/closed). Normally closed or normally open body with manual override lever. Installed in supply line to unit. Application — NC Valve: Valve electrically powered open and closed by spring return when electric power removed. Manual override knob allows valve to be placed in the open position for emergency operation, constant water flow prior to start-up, etc. Manual override is automatically disengaged when valve is electrically activated. Application — NO Valve: Valve electrically powered closed and opened by spring return when electric power is removed. Commonly applied to hot water valves only where hot water is required to run continuously through the coil to avoid freezing. Manual override knob allows valve to be placed in the closed position for emergency operation. Manual override is automatically disengaged when valve is electrically activated.	4.9	10.3	300	220	NO
	**3-WAY MOTORIZED VALVE (25 PSI close off differential pressure):** Electric 2-position flow control valve (closed to coil/open to bypass or open to coil/closed to bypass). Normally closed with manual override lever. Installed in supply line to unit. Application — Same comments as 2-way motorized valve except with manual override lever engaged the valve is open to both ports and water flow will take the path of least resistance through the valve package (not necessarily 100% through the coil).	4.0	4.0	300	200	N/A
	**3-WAY MOTORIZED VALVE (150 PSI close off differential pressure):** Electric 2-position flow control valve (closed to coil/open to bypass or open to coil/closed to bypass). Normally closed or normally open with manual override lever. Installed in supply line to unit. Application — Same comments as 2-way motorized valve except with manual override lever engaged the valve is open to both ports and water flow will take the path of least resistance through the valve package (not necessarily 100% through the coil).	4.9	3.3	300	220	N/A

NOTE(S):

a. Check all system component pressure ratings (coils, values, pumps, etc.) with manufacturer and any applicable local or national piping codes prior to specifying system pressure rating.

LEGEND

Cv — Coefficient of Velocity
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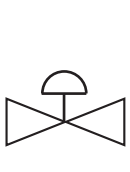
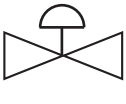
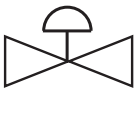
Application data (cont)

Piping Components (cont)

SYMBOL/SKETCH	DESCRIPTION	C_V FACTOR		RATING[a]		STEAM USE
		1/2	3/4	PSI	F	
	**MODULATING VALVE (Optional) (Non-Spring Return, Floating Point Actuator):** Modulating valves are designed to control the flow in the circuit by making incremental adjustments to the flow path within the valve. Application — To control fluid flow in fan coil units. On the 42DD commercial fan coil models, the factory provided modulating valve has application restrictions. In these models, the valve packages are located in the airstream, downstream of the coil. Due to the ambient temperature limitations of the modulating valves, the valves can only be used in the units listed above with 2-pipe cooling only systems.	4.0		300	200	N/A
	**MODULATING VALVE (Optional) (Non-Spring Return, Proportional Type Actuator):** Modulating valves are designed to control the flow in the circuit by making incremental adjustments to the flow path within the valve. Application — To control fluid flow in fan coil units. On the 42DD commercial fan coil models, the factory provided modulating valve has application restrictions. In these models, the valve packages are located in the airstream, downstream of the coil. Due to the ambient temperature limitations of the modulating valves, the valves can only be used in the units listed above with 2-pipe cooling only systems.	4.0		300	200	N/A
	**MODULATING VALVE (Requires ETO) (Spring Return):** Modulating valves are designed to control the flow in the circuit by making incremental adjustments to the flow path within the valve. Application — Same comments as non-spring return except when powered, the actuator moves to the desired position, at the same time tensing the spring return system. When power is removed for more than two minutes the spring returns the actuator to the normal position.	4.0		300	200	N/A
	**AQUASTAT:** Water temperature sensing electrical switch. (Line Voltage Controls) Application — Clips directly on nominal size 1/2 in. or 3/4 in. copper tubing for water temperature sensing. Must be correctly located for proper control operation.	N/A				
	**CHANGEOVER SENSOR:** Water temperature sensor thermistor. Application — Sensor shall clamp on the outside diameter of the pipe. Sensor plate shall bend to allow its radius to be adjusted to fit the pipe. Sensor shall be secured to the pipe with mounting clamp. Insulate the mounting location of sensor on the pipe.	N/A				

NOTE(S):

a. Check all system component pressure ratings (coils, values, pumps, etc.) with manufacturer and any applicable local or national piping codes prior to specifying system pressure rating.

LEGEND

Cv — Coefficient of Velocity
ETO — Engineered to Order

Application data (cont)

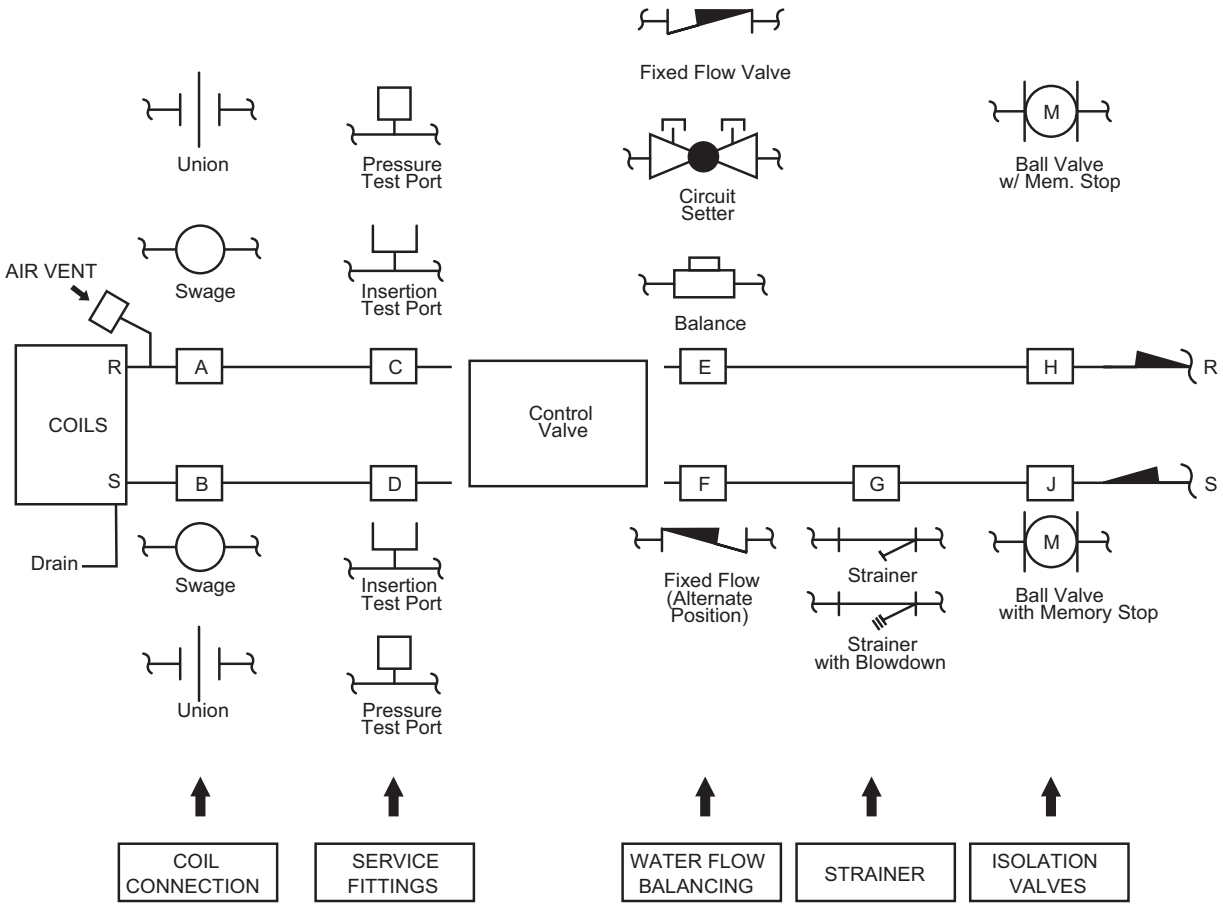
Valve packages

There are limitations on physical size of control valves, quantity and type of matching components, and required control interface. See Symbols and Placement of Valves diagram. Consult factory before ordering any special valve package components that are not covered in this book.

Valve packages are shipped with the units or in unit cartons. Valve packages include belled ends for field soldering to coil connections.

All factory-furnished cooling valve packages are arranged to position as much of the package as possible over an auxiliary drain pan or drip lip. This helps minimize field piping insulation requirements.

Symbols and Placement of Valves



Coil Connections (Positions A and B) — Swage fitting for field braze is standard. Unions added by the factory for field connection is optional.

Service Fittings (Positions C & D) — Optional fittings for attaching pressure/temperature sensing devices to obtain pressure drop or temperature differential across coil. Used with ball valve or balance valve where extremely accurate water flow balancing is required.

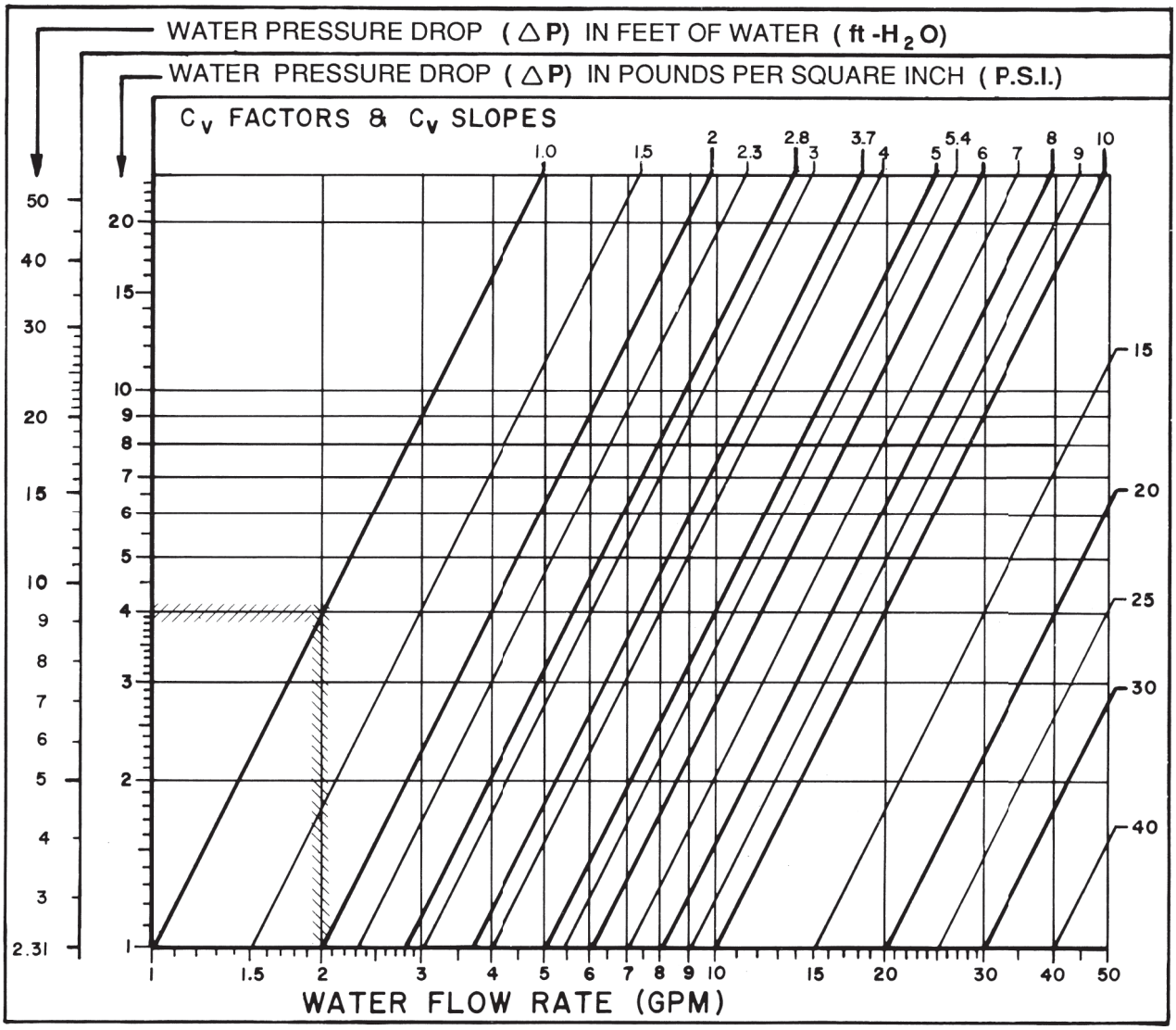
Water Flow Balancing (Positions E, F, & H) — Only one device per total valve package to be used for balancing water flow through the coil.

Strainer (Position G) — Should not be used in lieu of main piping strainers.

Isolation Valves (Positions H & J) — Normally requires one each on supply and return line except when combination valves are used. When position H is used for balancing (ball valve or ball valve with memory stop), check specifications for service valve requirements.

Application data (cont)

C_v Factor vs Water Pressure Drop



C_V FACTOR:

The flow rate in gallons per minute (gpm) through a piping component when the pressure drop (ΔP) in pounds per square inch (psi) across the component is 1.0 (psi).

Pressure drop (ft-H_2O) = 2.31 x psi (pressure drop)

GRAPH EXAMPLE:

ΔP for 2.0 gpm through a component with a C_V of 1.0 is 4.0 psi x 2.31 = 9.24 ft-H_2O

FORMULA EXAMPLE:

$$\Delta P \text{ (ft-}H_2O) = \frac{(gpm)^2}{(C_v)^2} \times 2.31 = \frac{(2.0)^2}{(1.0)^2} \times 2.31 = 9.24 \text{ ft-}H_2O$$

TOTAL PRESSURE DROP is the **Sum** of the pressure drop of all piping and components in the water flow path.

Application data (cont)

ECM motor control methods

There are three main control methods to control the speed of electronically commutated motor (ECM) for desirable airflow for a given application.

3-discrete speed input, potentiometer field speed adjustment

This method uses the ECM with potentiometer field adjustment. The relay board will have three main circuits for HI, MEDIUM, and LOW speed. Each of these speeds can be adjusted by potentiometer to any value in the motor's operating range. This will allow the customization of aiflow on each speed of the fan coil unit to better suit any requirements.

4-discrete speed input, potentiometer field speed adjustment, solid state

This is the same as 3-discrete speed input but with additional fourth speed. All 4 speeds can be adjusted by potentiometer to any value in the motor's operating range.

ECM variable speed

This method requires 0 to 10-v signal for fan speed. It has no predetermined fan speeds and will ramp the motor fan speed according to the controller used on the fan coil unit. All ECM motor packages use a constant torque operating mode. An ETO request is required for pricing and availability of constant airflow operation.

Controls

Use the Thermostat Control Package Application table and Thermostat Features table to make sure that all necessary components are provided for and that the components are compatible with the required control system.

NOTE: When thermostatic fan control is selected or when unit outside-air dampers are used, unit-mounted thermostats are not recommended as their use will result in poor room temperature sensing.

Thermostat Control Package Application

UNIT TYPE	CONTROL OPTION	SYSTEM TYPE	CHANGEOVER TYPE	P	N	F	G
—	Manual Fan	Manual1[a]	None	—	—	—	—
2-Pipe	Valve Cycle	Heat Only	None	•	•	•	•
		Cool Only	None	•	•	•	•
		Heat/Cool	Manual	—	—	—	—
			Automatic	•	•	•	•
		Heat/Cool with Auxiliary Electric Heat	Manual	—	—	—	—
			Automatic	•	•	•	•
		Cool with Total Electric Heat	Manual	—	—	—	—
			Automatic	•	•	•	•
4-Pipe		Heat/Cool	Manual	—	—	—	—
			Automatic	•	•	•	•

NOTE(S):

a. Fan switch only; no thermostat.

Thermostat Features[a,b,c]

FEATURES	CONTROL TYPE[d]			
	P	N	F	G
Control Voltage	24V only	24V only	24V only	24V only
Programmable	•	—	•	•
Remote Wall Mounted	•	•	•	•
Manual Fan Switch Operation	•	•	•	•
Auto Fan Speed Control	•	•	•	•
Continuous 3-speed Fan	•	•	•	•
Cycling Fan	•	•	•	•
Remote Temperature Sensor	Opt	Opt	Opt	Opt
Digital Display	•	•	•	•
Local Temperature Set-back	•	•	•	•
Water Temperature Purge Cycle	•	•	•	•
Proportional Control Valves	—	—	•	•
Floating Control Valves	—	—	•	•
Changeover Pipe Sensor	•	•	•	•

NOTE(S):

a. All listed controls include fan switching.
b. All wall-mounted control packages are shipped loose for field installation. Boxes, title ring, plaster rings, etc. are not provided.
c. Aquastats are included in control packages, as required.
d. Control packages with valve cycle control are continuous fan operation only.

LEGEND

P — Debonair 24V Digital 7-Day, Programmable
N — Debonair 24V Digital 7-Day, Non-Programmable
F — Proportional 24V Digital, 7-day Programmable/Programmable Proportional
G — Proportional 24V Digital BACnet with Proportional Fan/Valves Option

Controls (cont)

Remote-mounted control options

Remote-mounted 24-v thermostat

24-V Debonair® Thermostat

24-v Debonair thermostat

Features large backlit display, power loss protected memory, Smart Fan™ dynamic fan speed control, 4-pipe, 2-pipe automatic changeover applications with adjustable dead band. Programmable and non-programmable models available.

24-v proportional thermostat

Features large LCD screen with backlight, 3-speed and analog fan speed control, 4-pipe, 2-pipe automatic changeover applications. Programmable and BACnet compatible models available.

Proportional Thermostat

Unit-mounted controls

24-v controls by others

Unit supplied with factory-installed 24-v transformer, 3-speed relay board, and aquastat (as required) for use with field-installed low voltage controls.

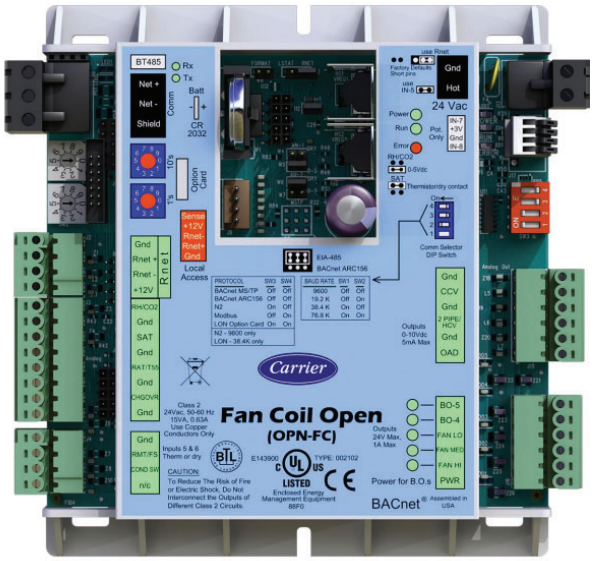
Controls (cont)

Integrated Direct Digital Controls (DDC)

Fan coil open controller

The factory-mounted controller continuously monitors and regulates the fan coil operation with reliability and precision. This advanced controller features a sophisticated, factory engineered control program that helps provide optimum performance and energy efficiency. The fan coil open controller also features plug-and-play connectively to Carrier's i-Vu® Open control system. For added flexibility, the fan coil controller is capable of stand alone operation, or can be integrated with any Building Automation System (BAS) utilizing BACnet protocol. Application features include built-in advance control routines for zone level humidity control, zone level demand ventilation (ASHRAE 62) and automatic fan speed control based on demand. System benefits include demand limiting for maximum energy saving, and compatibility with i-Vu control system tenant billing for tracking tenants after hours energy usage. Hardware features include onboard hardware clock, remote occupancy input, and support for space temperature thermistor sensor for stand alone operation.

Fan Coil Open Controller



Automatic changeover (Summer-Winter switch)

The automatic-changeover thermostat sensor is a 10,000 ohm thermistor (33ZCSENCHG) in a moisture-proof and dust-proof enclosure. Cable and temperature sensing element are hermetically sealed in a polypropylene enclosure with epoxy resin. Device clamps on coil supply pipe with end snap-on clip.

The set point temperatures are factory set. When water temperature rises above 80°F (approximately), the sensor switches to the winter cycle. When water temperature drops below approximately 70°F, the sensor switches to the summer cycle. Switch reset is automatic.

ECM motor control methods

There are three main control methods to control the speed of electronically commutated motor (ECM) for desirable airflow for a given application.

3-discrete speed input, potentiometer field speed adjustment

This method uses the ECM with potentiometer field adjustment. The relay board will have three main circuits for LOW, MEDIUM, HIGH speed. Each of these speeds can be adjusted by potentiometer to any value in the motor's operating range. This will allow the customization of airflow on each speed of the fan coil unit to better suit any requirements.

4-discrete speed input, potentiometer field speed adjustment, solid state

This is the same as 3-discrete speed input but with additional fourth speed. All 4 speeds can be adjusted by potentiometer to any value in the motor's operating range.

ECM variable speed

This method requires 0 to 10-v signal for fan speed. It has no predetermined fan speeds and will ramp the motor fan speed according to the controller used on the fan coil unit. All ECM motor packages use a constant torque operating mode. An ETO request is required for pricing and availability of constant airflow operation.

Service Switch

We offer concealed service switches for use by maintenance and service personnel to shut off the power while working on the unit.

Fusing

We offer incoming power fusing for all units as well as blower motor and control sub-fusing (single power source wiring).

Condensate Flow Switch

This switch shuts down the motor, actuator and electric heat (if applicable) when the water level in the drain pan reaches an unsafe level.

Fan Coil Unit — Ducted Models

HVAC Guide Specifications — 42D

Size Range: **600 to 2000 Nominal cfm**

Carrier Model Numbers:

42DA (Ceiling Furred-in)

42DC (Ceiling Furred-in with Plenum)

42DE (Ceiling with Galvanized Casing)

42DF (Ceiling Exposed Cabinet)

42DD (Vertical with Galvanized Casing)

Part 1 — General

1.01 SYSTEM DESCRIPTION

Horizontal, 2-pipe or 4-pipe or electric heat fan coil unit for ducted installations; horizontal furred-in or exposed ceiling model, ceiling cabinet, or vertical model with galvanized casing for closet or utility room installation.

1.02 QUALITY ASSURANCE

Standard units shall be ETL listed. Units shall be listed by ETL indicating the units comply with the minimum requirements of the U.S. and Canadian national product safety standard, ANSI/UL Standard 1995, and with CAN/CSA C22.2 No. 236. Each coil shall be factory tested for leakage at 350 psig air pressure or greater with coil submerged in water. Insulation and adhesive shall meet NFPA (National Fire Protection Association) 90A requirements for flame spread and smoke generation. Adhesive shall be certified according to the GREENGUARD Indoor Air Quality (IAQ) Certification for Low Emitting Products. Reference Standard: GGPS.001 GREENGUARD IAQ Standard for Building Materials, Finishes, and Furnishings. Reference Standards: GGPS.002 GREENGUARD Children and Schools[1] Standard. Fan coil capacities are certified and listed in accordance with AHRI Standard 440-2019.

1.03 DELIVERY, STORAGE AND HANDLING

Unit shall be handled and stored in accordance with the manufacturer's instructions.

Part 2 — Products

2.01 EQUIPMENT

A. General:

Factory assembled, horizontal or vertical blow-thru ducted fan coil unit. Unit shall be complete with water coil(s), fan(s), motor(s), drain pan, and all required wiring, piping, controls and special features. Standard insulation shall be dual density fiberglass insulation.

B. Horizontal, Furred-in Base Unit (42DA):

1. Outside panels shall be galvanized steel, lined on the inside with 1/2 in. thick fiberglass insulation and a 1 in. long collar for supply duct connection.
2. The drain pan shall be constructed of galvanized steel extending the entire length and width of coil(s) and pitched for drainage. The inside surface of the drain pan shall be coated with a 2-part closed cell foam insulation.

C. Horizontal Base Unit with Plenum for Concealed Installation (42DC):

Unit shall have a factory-installed, heavy-gauge steel plenum section and 1 in. throwaway filter. The plenum shall be either bottom or rear return, lined with 1/2 in. thick fiberglass insulation and include a removable panel to provide access to the fan/motor assembly.

D. Horizontal, Enclosed Unit for Concealed Installation (42DE):

Unit shall be constructed of galvanized steel with removable panels for access to internal components. Units have 1/2 in. fiberglass insulation, filter track with 1 in. throwaway filter, 1 in. supply collar, and 1 in. return-air collar on rear of unit for duct connection.

E. Horizontal Cabinet Unit for Exposed Installation (42DF):

Unit shall be constructed of steel with Bright White powder-coat finish. Cabinet shall be lined with 1/2 in. fiberglass insulation. Unit shall include hinged bar type return-air grille on rear of unit with 1 in. throw-away filter and integral double deflection supply-air grille.

F. Vertical, Enclosed Unit for Closet Installation (42DD):

Unit shall be constructed of galvanized steel with 1/2 in. fiberglass insulation. Unit shall include front return-air opening with 1 in. throwaway filter and 1 in. supply-air duct collar.

G. Fans:

Direct-driven, double-width fan wheels shall have forward-curved blades, and be statically and dynamically balanced, with scrolls and fans constructed of galvanized steel.

H. Coils:

Standard base unit shall be equipped with a 4-row coil for installation in a 2-pipe system. Additional coil depth and circuiting shall be provided for installation in a 4-pipe system as described in the Special Features section. All coils shall have 1/2 in. copper tubes and aluminum fins (10 fins per inch) spacing; coil fins are mechanical bonded to tube joints. The copper tubes comply with the ASTM (American Society for Testing and Materials) B-75. The fin thickness is 0.0045 in. and tube thickness is 0.016 in.

I. Controls and Safeties:

The fan motor(s) shall be equipped with integral, automatic reset thermal overload motor protection.

1. Third-party trademarks and logos are the property of their respective owners.

Guide specifications (cont)

J. Operating Characteristics:

A single-circuit coil unit installed in a 2-pipe system shall be capable of providing heating or cooling as determined by the operating mode of the central water supply system. A double circuit coil unit installed in a 4-pipe system shall be capable of providing sequenced heating and cooling.

K. Electrical Requirements:

Standard unit shall operate on 115-v, single-phase, 60 Hz electric power, and all exposed wiring shall be in a flexible conduit.

L. Motor(s):

Motor selection options vary for ECM with 3 or 4 discrete speeds, and a ECM with variable airflow (0 to 10 VDC).

M. Special Features:

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

* 1. Unit coil(s) shall be equipped with automatic air vents.
* 2. Unit shall be equipped with a 3-row, 4-row or 6-row cooling coil for installation in a 2-pipe chilled water system. Direct expansion (DX R-410A) system is available through ETO.
* 3. For installation in a 4-pipe chilled water system unit shall be equipped with either a 3-row cooling/1-row heating split circuit, or 3/2 split circuit or 4/1 split circuit, or a 4/2 split circuit or a 6/1 split circuit (except 42DD) as required.
* 4. Fan motor shall be constant torque electrically commutated type, 115, 208, 220, 240, or 277-v, single phase, 50 or 60 Hz as specified on the equipment schedule. The operating sequence shall be one of the following, as specified:
    a. 3 Discrete Speed Input, Potentiometer Field Speed Adjustment. For use with a 3-speed thermostat.
    b. 4 Discrete Speed Input, Potentiometer Field Speed Adjustment. For use with a 3-speed thermostat.
    c. Variable Airflow for 0 to 10 VDC/4 to 20 mA Input. Requires a 0 to 10 VDC input signal and is not compatible with a 3-speed thermostat.
* 5. Electric Heat:
    a. Unit shall be equipped with electric resistance strip heaters mounted on the entering air side of the water coil.
    b. Heaters shall include automatic reset high limit cutout, contactor, factory-furnished junction box and fuse to protect the motor.
    c. Heaters shall be single-stage, single-phase, 120, 208, 220, 240 or 277 volts, for 50 Hz or 60 Hz applications. Capacity shall be as shown on the equipment schedule.
    d. Control circuit for single power source connection is available and must be used when motors and heaters are of the same voltage.
* 6. Filter track and cleanable filter shall be installed in the plenum (42DC, DD, and DE only).
* 7. Drain pan shall include a second drain connection located above the main drain connection to act as an indicator that the main drain is plugged.
8. Removable drain pan extension (drip lip) shall be available for field installation under electric water valves.
9. Balancing and combination balance and stop (ball) and flow control valves shall be factory furnished.
10. Motorized 2-way and 3-way valves shall be wired to the unit. In order to prevent shipping damage, they shall be factory assembled in the valve package. The valve packages shall terminate with belled ends or unions for field attachment to the coil.
11. Heating and/or cooling thermostat (SPDT) shall be factory furnished for field installation (2-pipe system).
12. Automatic changeover device(s) shall be factory wired for field installation on supply piping (2-pipe system).
13. Sequenced heating and cooling wall thermostat shall be factory furnished for field installation (4-pipe system).
14. Cabinet of 42DF unit shall be painted with the color specified on the equipment schedule.
15. A stainless steel drain pan shall be available for factory installation.
16. Factory-installed insulation options shall include foil faced fiberglass or closed cell insulation.

Guide specifications (cont)

17. Control Options:
    a. 3-speed, 4-position manual fan switch on a wall plate for field-mounting.
    b. Factory-installed 24-v transformer and relay board for use, with 24-v controls by others.
    c. Carrier's Debonair® 24-v digital display programmable or non-programmable thermostat, including factory-installed 24-v transformer, relay board, and changeover sensors, as required. Provides automatic fan speed control based on demand.
    d. Factory-Installed Carrier Fan Coil Open Controller: BACnet[1] based communicating controller with pre-programmed control algorithms; including factory-installed 24-v transformer, relay board, supply air sensor, return air sensor and changeover sensor (as required). Provides automatic fan speed control based on demand.

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Pg 56 Catalog No. 04-52420034-01 Printed in U.S.A. Form 42D-3PD
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