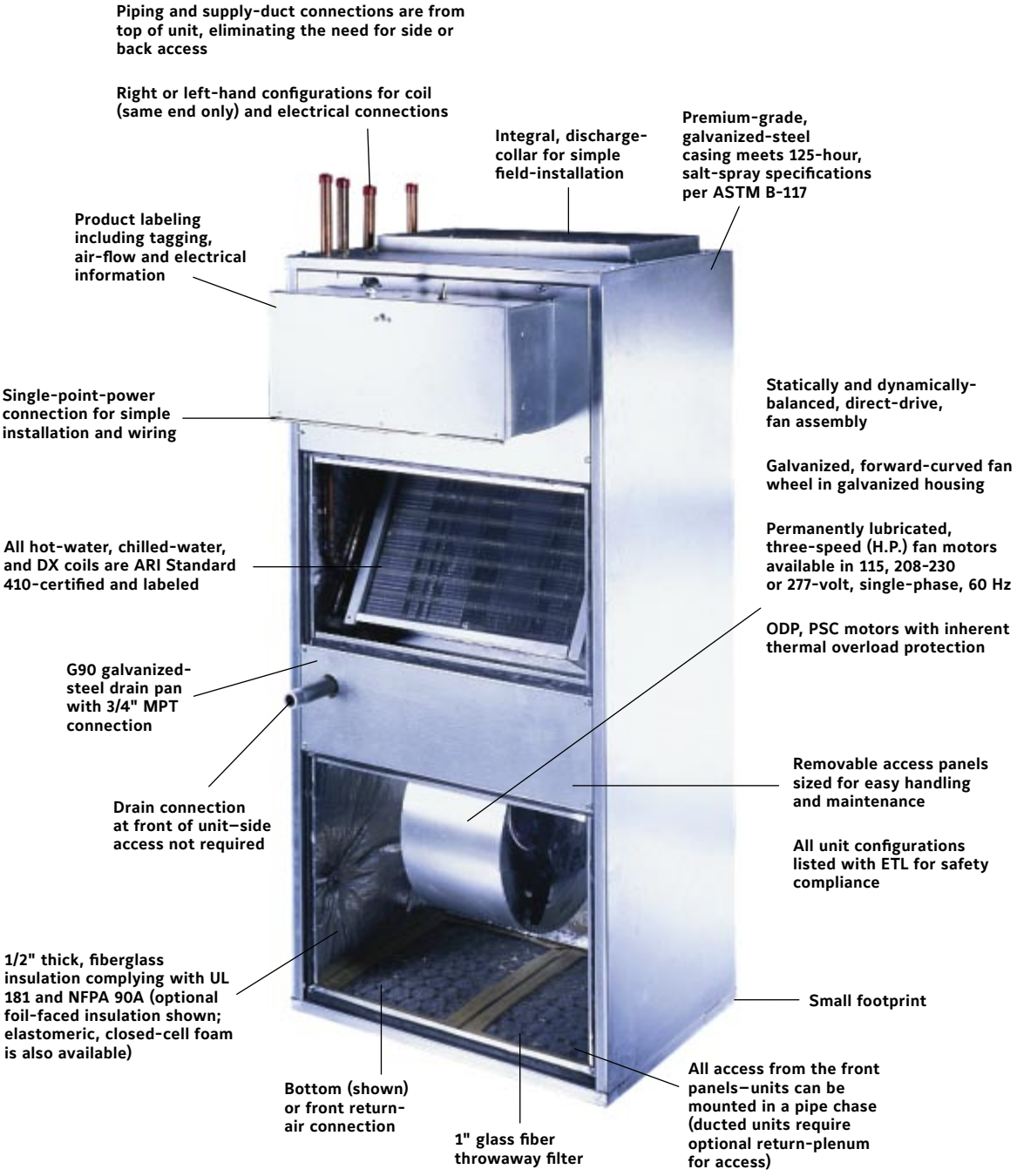
FCC Fan-Coil Units High-Performance, Vertical

Johnson Controls

Model FCC construction features



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FCC Fan-Coil Units: The vertical, high-performance solution

Owners

An extensive variety of components provide a flexible and versatile fan-coil unit to meet the needs of your building. Plus, the variety of options available with FCC units is where you find the versatility to fit any Heating, Ventilating, and Air-Conditioning (HVAC) need for your facility.

Options include:

- Mixing box without linkage
- Rear or bottom return
- Bottom-return plenum
- Single-wall, stainless-steel drain pans
- Elastomeric, closed-cell foam or foil-faced insulation
- Electric heat with single-point-power connection

Designers

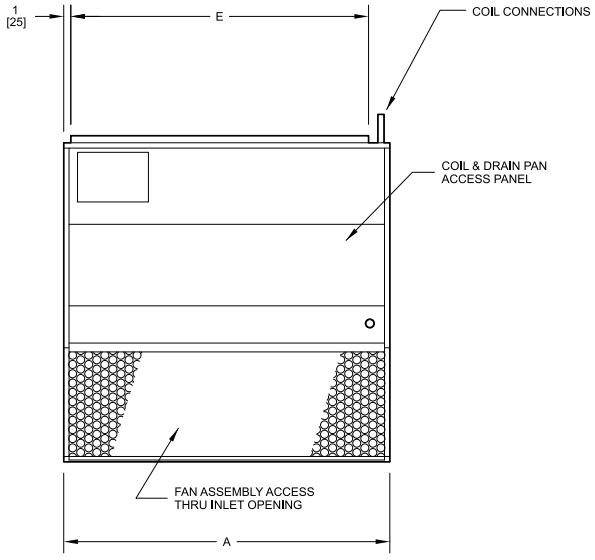
FCC vertical, high-performance fan-coil units are designed to maximize selection flexibility, making them versatile enough to fit any HVAC design need. And the units are designed to exceed the stringent quality standards of the institutional market, while remaining cost-competitive in the light-commercial segment. FCC units set the new standard for quality, flexibility, and competitive pricing.

Contractors

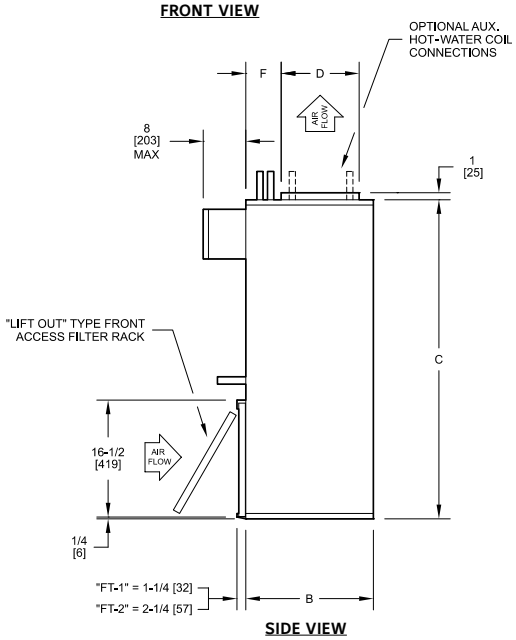
Units are shipped completely assembled, reducing field-installation time and labor.

All units comply with the latest edition of Air-Conditioning and Refrigeration Institute (ARI) Standard 440 for testing and rating fan-coil units, are certified, and display the ARI symbol. Sizes 16 and 20 exceed the maximum airflow rate in ARI Standard 440 and are not certified.

FCC Vertical Units (Without Electric Heat)

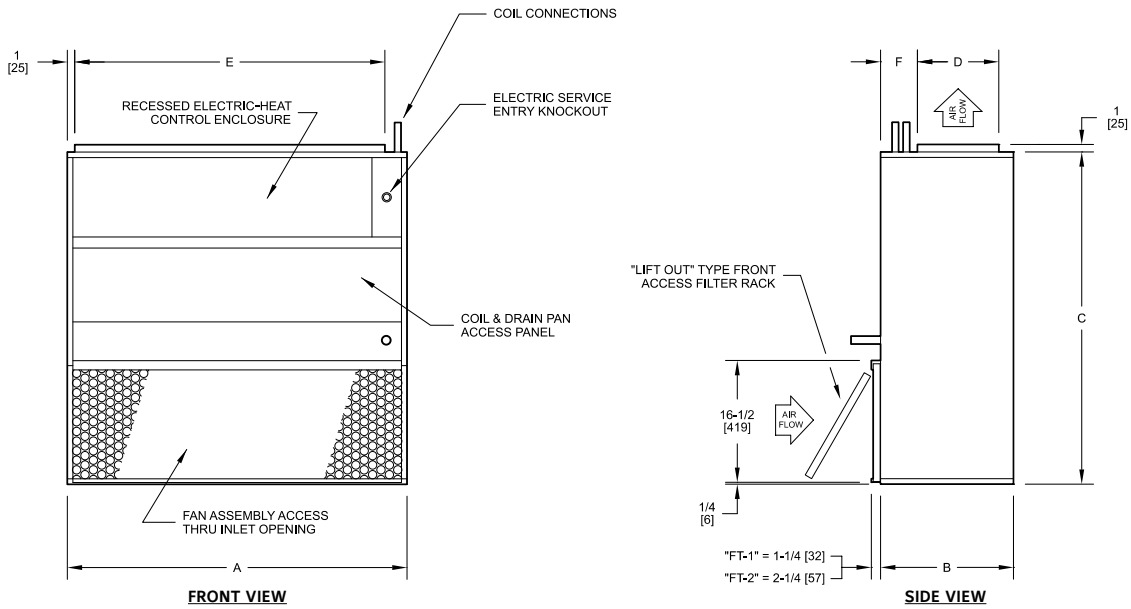


FRONT VIEW



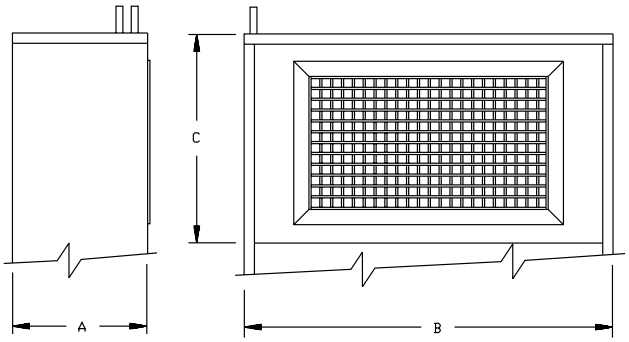
SIDE VIEW

FCC Vertical Units, with electric heat



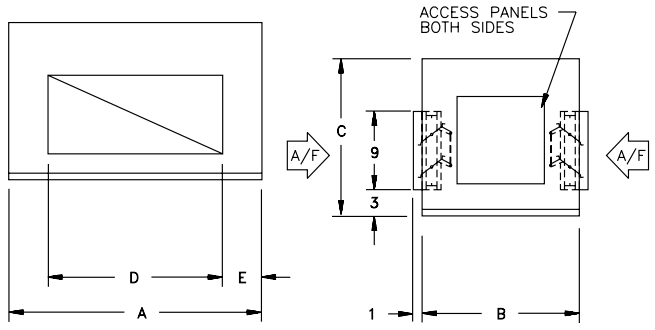
Unit Size	Dimensions					
	A	B	C	D	E	F
04-08	22" [559]	15" [381]	48" [1219]	8" [203]	18" [457]	4" [102]
10-12	22" [737]	18" [457]	48" [1219]	12" [305]	25" [635]	4" [102]
16-20	46" [1168]	18" [457]	48" [1219]	12" [305]	40" [1016}	5" [127]

Supply Plenum, with double-deflection grille



Unit Size	Dimensions			
	A	B	C	Supply Grille W x H
04-08	15" [381]	22" [559]	15" [381]	18" x 8" [457 x 203]
10-12	18" [457]	29" [737]	18" [457]	24" x 12" [610 x 305]
16-20	18" [457]	46" [1168]	18" [457]	40" x 12" [1016 x 305]

Mixing Box Section



Unit Size	Dimensions				
	A	B	C	D	E
04-08	22" [559]	15" [381]	15" [381]	15" [381]	3-1/2" [89]
10-12	29" [737]	18" [457]	18" [457]	20" [508]	4-1/2" [114]
16-20	46" [1168]	18" [457]	18" [457]	36" [914]	5" [127]

ARI Standard Ratings

Unit Size	ARI 440 Certified	Coil		Airflow CFM (Dry Flow)	Cooling Capacity		Water		Power Input (Watts)
		Rows	FPI		QT (BTUH)	QS (BTUH)	Flow Rate GPM	WPD ft. wg	
04	Yes	4	10	400	13.6	9.4	2.7	3.2	250
06	Yes	4	10	600	18.0	12.9	3.6	3.6	275
08	Yes	4	10	800	24.3	17.2	4.9	4.8	425
10	Yes	4	10	1000	33.6	23.0	6.7	5.8	450
12	Yes	4	10	1200	40.4	27.5	8.1	8.2	850
16		4	10	1600	57.6	38.4	11.5	9.8	850
20		4	10	2000	66.4	45.7	13.3	4.3	900

Heating Capacity

Unit Size	Nominal CFM	1 Row			2 Row		
		QS (MBH)	GPM	WPD	QS (MBH)	GPM	WPD
04	400	12.5	1.3	1.5	21.2	2.2	1.5
06	600	14.9	1.5	2.1	26.4	2.7	2.2
08	800	20.5	2.1	4.9	36.3	3.7	4.9
10	1000	30.7	3.2	2.9	52.9	5.4	4.3
12	1200	33.5	3.4	3.4	58.5	6.0	5.2
16	1600	50.4	5.2	4.4	89.0	9.1	12.3
20	2000	56.0	5.7	5.4	100.9	10.3	15.7

Unit Weight Data

Component		Unit Size						
		04	06	08	10	12	16	20
Base Unit		81 [37]	81 [37]	103 [47]	103 [47]	106 [48]	128 [58]	134 [61]
Missing Box		24 [11]	24 [11]	24 [11]	37 [17]	37 [17]	54 [24]	54 [24]
Supply Plenum		21 [10]	21 [10]	21 [10]	33 [15]	33 [15]	48 [22]	48 [22]
Return Plenum		17 [8]	17 [8]	17 [8]	25 [11]	25 [11]	33 [15]	33 [15]
Coil Rows	**1 Row: Dry**	7 [3]	7 [3]	8 [4]	11 [5]	11 [5]	16 [7]	16 [7]
	1 Row: Wet	8 [4]	8 [4]	9 [4]	14 [6]	14 [6]	19 [9]	19 [9]
	2 Row: Dry	10 [5]	10 [5]	12 [5]	17 [8]	17 [8]	25 [11]	25 [11]
	2 Row: Wet	12 [5]	12 [5]	14 [6]	21 [10]	21 [10]	31 [14]	31 [14]
	3 Row: Dry	16 [7]	19 [9]	21 [10]	27 [12]	29 [13]	38 [17]	46 [21]
	3 Row: Wet	20 [9]	23 [10]	26 [12]	35 [16]	38 [17]	49 [22]	60 [27]
	4 Row: Dry	20 [9]	23 [10]	26 [12]	34 [15]	37 [17]	49 [22]	59 [27]
	4 Row: Wet	25 [11]	29 [13]	34 [15]	44 [20]	48 [22]	64 [29]	77 [35]

GENERAL NOTES:
1. All dimensions are inches [millimeters] ±1/4" [6mm]. Metric values are soft conversion.
2. Front access only is required for installation and service.
3. Right-hand unit shown, left-hand unit opposite.

DISCHARGE PLENUM NOTE:
1. C-dimension adds to basic unit height.

MIXING BOX NOTES:
1. Return-air plenum (one inlet, no dampers) is available in lieu of mixing-box section.
2. C-dimension adds to basic unit height.
3. LInkage and actuator for damper control shall be provided/installed by others.

ARI STANDARD RATING NOTES:
1. Based on 80°F Dry Bulb (DB) and 67°F Wet Bulb (WB) Entering Air Temperature (EAT), 45°F Entering Water Temperature (EWT), 10°F temperature rise, high fan speed. Motor type is Permanent Split Capacitor (PSC) and motor voltage is 115/1/60. Airflow under dry coil conditions. All models tested at 0.05" external static pressure.
2. Airflow CFM on sizes 16 and 20 exceed minimum ratings in Air-Conditioning and Refrigeration Institute (ARI) Standard 440 and are not certified.

HEATING CAPACITY NOTE:
1. Based on 70°F EAT, 180°F EWT, 20°F temperature drop, high fan speed.

UNIT WEIGHT DATA NOTE:
1. Unit weight data is shipping weight in pounds [kilograms].

NOTE: Drawings are not to scale and are not for installation purposes. Contact your Johnson Controls representative for more information.
All data and dimensions are subject to change without notice.

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FCC Fan-Coil Unit Features

STANDARD FEATURES:

Construction
- ARI Standard 440-certified and labeled
- Heavy-gauge, galvanized-steel construction
- 1/2" thick, fiberglass insulation, mechanically fastened for added security
- 1" duct-discharge collar
- Removable access panels for easy handling

Coils
- Mechanically-expanded copper tubes leak tested to a minimum 450 psig air pressure under water
- Manual air-vent plug on all water coils
- Copper sweat connections
- 300 psig working pressure at 200°F
- Evaporator coils are factory-sealed and charged with a minimum of 5 psig nitrogen or refrigerated dry air
- Refrigerant coils provided with a fixed-orifice metering device
- ARI Standard 410-certified and labeled
- Cooling: 3 or 4-row chilled-water or direct-expansion (DX), heat-pump compatible
- Heating: 1 or 2-row hot-water – reheat position
- 1/2" O.D., seamless copper tubes
- 0.016" tube-wall thickness
- Left-hand or right-hand connections
- 300 psig working pressure at 200°F
- Removable for service
- Manual air vents

Filter Rack and Filters
- 1" flat filter rack
- 1" nominal throwaway filters

Drain Pans
- Single-wall, galvanized-steel, externally insulated (fire retardant and anti-microbial closed-cell foam)
- Positively sloped to drain connection
- 3/4" male pipe thread (MPT), galvanized drain connection

Fan Assemblies
- Forward-curved, double-width, double inlet-(DWDI), centrifugal-type
- 115-volt, single-phase, three-tap, permanent-split-capacitor (PSC) motors
- Quick-disconnect motor connections
- Removable fan(s)/motor(s) for service

Electrical Components
- cETL listed for safety compliance
- Electrical junction box for field-wiring terminations
- Terminal block for field connections

Electric Heat
- cETL listed as an assembly for safety compliance
- Integral electric-heat assembly with removable elements for easy service
- Automatic-reset primary and back-up secondary thermal limits
- Single-point-power connection
- Side-hinged, electrical enclosure

OPTIONAL FEATURES:

Construction
- Scrim-reinforced, foil-faced insulation meeting American Society for Testing and Materials (ASTM) C1136 for mold, mildew, and humidity resistance
- 1/2" elastomeric, closed-cell-foam insulation
- Double-deflection discharge grille
- Quarter-turn, quick-open, access-panel fasteners
- Return and supply plenums

Coils
- Automatic air vents
- Stainless-steel coil casings
- 0.025" tube-wall thickness
- DX coils are heat-pump compatible

Filter Rack and Filters
- 2" flat filter rack
- Spare throwaway filters

Inlet Damper Section
- Factory-assembled and installed
- Heavy-gauge, galvanized-steel, formed-blade dampers
- Low-leak dampers with extruded-vinyl blade seals and flexible-metal jamb seals
- Parallel-blade operation

Drain Pans
- Single-wall, stainless-steel with external insulation

Fan Assemblies
- 208-230 and 277-volt, single-phase, three-tap, PSC motors

Electrical Components
- Front-access electrical enclosure
- SCR fan-speed controller
- Fan-relay packages
- Toggle-disconnect switch and condensate-overflow switch (drain pan)
- Main fusing
- Unit and remote-mounted, three-speed, fan switches

Electric Heat
- Door-interlocking disconnect switches
- Main fusing

Thermostats
- Remote-mounted analog, digital-display, or programmable
- 2-pipe and 4-pipe control sequences
- Automatic and manual changeover
- Integral, three-speed, fan switches

Controls
- Direct Digital Controls (DDC) for Johnson Controls BACnet, N2, or LON® networks
- Modular Room Controls (MRC) for hotel guest rooms

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PUBL-5508 (908)

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