

40RUA
18.3 to 59.2 kW Direct Expansion
Packaged Air-Handling Units
50 Hz

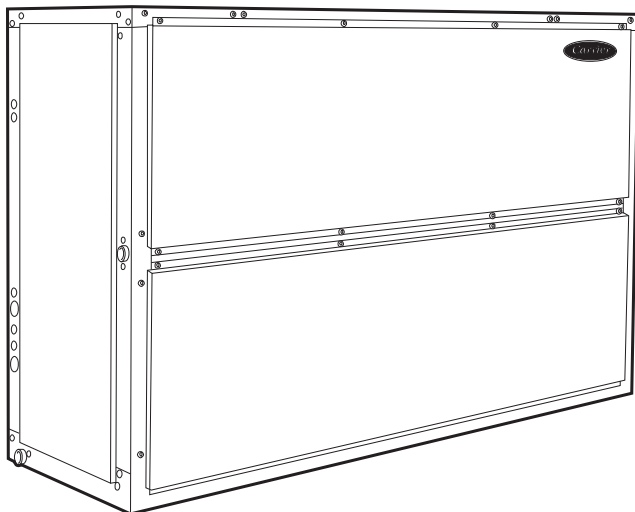


Product Data



40RU07 - 12

C09035



40RU14 - 25

C09036

Carrier's versatile packaged air-handling units satisfy design requirements with:

- Multi-position design for horizontal or vertical installation without modification
- Standard sloped drain pans and cleanable insulation with antimicrobial agent
- High-static design meets a wider range of applications than competitive packaged air handler lines
- Economizer accessory provides ventilation air and "free" cooling
- Cooling coils with mechanically bonded fins provide peak heat transfer
- Hot water coil, steam coil, and electric heat accessories are available
- Standard factory-installed thermostatic expansion valves (TXVs) on 40RUA units include TXVs and check valves for heat pump duty with matching 38AU units
- Die-formed galvanized steel casings provide durability and structural integrity. Optional paint is available
- Easy installation and maintenance; removal of one side panel allows access to serviceable components



FEATURES/BENEFITS

Easy-to-install and economical 40RUA, units provide reliable service.

The 40RUA Series air-handling units are the best choice for packaged air handlers. These units have direct-expansion coils. All sizes offer excellent fan performance, a unique combination of indoor air quality features, easy installation, and affordable prices. Their versatility and state-of-the-art features will provide economical performance now and in the future.

Indoor air quality features

The unique combination of features in the 40RUA Series air handlers ensures that clean, fresh, conditioned air is delivered to the occupied space.

Cooling coils prevent the build-up of humidity in the room, even during part-load conditions. Unit sizes of 10 tons and above feature dual-circuit face-split coils.

Two-in. (51-mm) disposable filters remove dust and airborne particles from the occupied space.

Thermal insulation contains an immobilized anti-microbial agent to inhibit the growth of bacteria and fungi.

Pitched drain pan can be adjusted for a right-hand or left-hand connection to provide positive drainage and prevent standing condensate.

Accessory economizer can provide ventilation air to improve indoor air quality. When used with CO₂ sensors, the economizer admits fresh outdoor air to replace stale, recirculated indoor air.

Accessory UV-C germicidal lamps can eliminate foul odors that result from the growth of mold and fungus on evaporator coil and condensate pan surfaces.

Economy

The 40RUA Series packaged air handlers have low initial costs, and they continue to save money by providing reduced installation expense and energy-efficient performance.

Quick installation is ensured by the multi position design. Units can be installed in either the horizontal or vertical (upflow) configuration without modifications. All units have drain-pan connections on both sides, and pans can be pitched for right-hand or left-hand operation with a simple adjustment. Fan motors and contactors are pre-wired and TXVs are factory-installed.

High-efficiency, precision balanced fans minimize air turbulence, surging, and unbalanced operation, thereby cutting operating expenses.

Economizer accessory precisely controls the blend of outdoor air and room air to achieve comfort levels. When the outside air enthalpy is suitable, outside air dampers can fully open to provide “free” cooling.

Rugged dependability Die-formed galvanized steel panels ensure structural integrity under all operating conditions.

Mechanically bonded coil fins provide improved heat transfer.

Galvanized steel fan housings are securely mounted to a die-formed galvanized steel deck.

Rugged pillow-block bearings (014-025 sizes) are securely fastened to the solid steel fan shaft with split collets and clamp locking devices. Smaller unit sizes have spider-type bearings.

Coil flexibility

Model 40RUA direct-expansion coils have galvanized steel casings; inlet and outlet connections are on the same end.

Chilled water coils have 1/2-in. (12.7 mm) diameter copper tubes mechanically bonded to aluminum sine-wave fins. All coils have nonferrous headers.

Direct expansion (DX) coils are designed for use with Puron (R-410A) refrigerant and have copper tubes mechanically bonded to aluminum sine-wave fins. Direct-expansion coils include matched, factory-installed thermostatic expansion valves (TXVs) with matching distributor nozzles.

Easier installation and service

The multi-position design and component layout allow for quick unit installation and operation. The DX coils have factory-installed TXVs with matching distributor nozzles. Units can be converted from horizontal to vertical operation by simply repositioning the unit. Drain pan connections are duplicated on both sides of the unit. The filters, motor, drive, TXVs, and coil connections are easily accessed by removing a single side panel.

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MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
4	0	R	U	A	A	0	8	A	1	A	9	-	0	A	0	A	0

Model Type

Packaged Air – Handling Unit with Puron® R–410A Refrigerant

Type of Coil

A = Standard 4 row DX Puron Coil

Refrigerant Options

A = None

Net Nominal Capacity kW matched w/38AU

- 07 = 18.3 kW (5.2 Tons)
- 08 = 32.2 kW (6.6 Tons)
- 12 = 29.1 kW (8.3 Tons)
- 14 = 35.3 kW (10.0 Tons)
- 16 = 45.8 kW (13.0 Tons)
- 25 = 59.2 kW (16.8 Tons)

Factory Assigned

A = Standard

Indoor Fan Options – Belt Drive

- 1 = Standard Motor / Standard Drive
- 2 = Standard Motor / Medium Drive
- 3 = High Motor / High Drive
- 5 = Standard Static, High Eff. Motor / Standard
- 6 = High Static, High Eff. Motor/ High Drive

Packaging

0 = Standard

Future Use

A = Standard

Cabinet Paint

- 0 = None
- 1 = Painted Cabinet

Future Use

A = Standard

Future Use

0 = Standard

Revision Number

- = Standard

Voltage

9 = 400–3–50

Coil Options

A = Al/Cu Standard 4 row coil

40RUA

PHYSICAL DATA

40RUA – English

40RUA

UNIT 40RUA	07	08	12	14	16	25
NOMINAL CAPACITY (Tons)	6	7 ^{1/2}	10	12 ^{1/2}	15	20
OPERATING WEIGHT (lb)						
Base Unit with TXV (4 Row)	399	404	425	695	713	730
Plenum	175	175	175	225	225	225
Economizer	185	185	185	340	340	340
Hot Water Coil	195	195	195	285	285	285
Steam Coil	215	215	215	340	340	340
FANS						
Qty...Diam. (in.)	1...15	1...15	1...15	2...15	2...15	2...15
Nominal Airflow (cfm)	2400	3000	4000	5000	6000	8000
Airflow Range (cfm)	1800-3000	2250-3750	3000-5000	3750-6250	4500-7500	6000-10,000
Nom. Motor Hp (Standard Motor)*						
208/230-1-60	1.3	2.4	—	—	—	—
208/230-3-60 and 460-3-60	2.4	2.4	2.4	2.9	3.7	5.0
575-3-60	1.0	2.0	2.0	3.0	3.0	5.0
230-3-50, 400-3-50	2.4	2.4	2.9	2.9	2.9	5.0
Motor Speed (rpm)						
208/230-1-60	1725	1725	—	—	—	—
208/230-3-60 and 460-3-60	1725	1725	1725	1725	1725	1745
575-3-60	1725	1725	1725	1725	1725	1745
230-3-50, 400-3-50	1425					
REFRIGERANT	Puron (R-410A)					
Operating charge (lb) (approx per circuit) †	3.0	3.0	1.5/1.5	2.0/2.0	2.5/2.5	3.5/3.5
DIRECT-EXPANSION COIL	Enhanced Copper Tubes, Aluminum Sine-Wave Fins					
Max Working Pressure (psig)	650					
Face Area (sq ft)	6.67	8.33	10.01	13.25	17.67	19.88
No. of Splits	1	1	2	2	2	2
Split Type...Percentage	Face...50/50					
No. of Circuits per Split	12	15	9	12	16	18
Rows...Fins/in.	4...15	4...15	4...15	4...15	4...15	4...15
STEAM COIL						
Max Working Press. (psig at 260°F)	20					
Total Face Area (sq ft)	6.67	6.67	6.67	13.33	13.33	13.33
Rows...Fins/in.	1...9	1...9	1...9	1...10	1...10	1...10
HOT WATER COIL						
Max Working Pressure (psig)	150					
Total Face Area (sq ft)	6.67	6.67	6.67	13.33	13.33	13.33
Rows...Fins/in.	2...8.5	2...8.5	2...8.5	2...8.5	2...8.5	2...8.5
Water Volume (gal) (ft ³)	8.3 1.1		13.9 1.85			
PIPING CONNECTIONS**						
Quantity...Size (in.)						
DX Coil — Suction (ODF)	1...1 ^{1/8}	1...1 ^{1/8}	2...1 ^{1/8}	2...1 ^{1/8}	2...1 ^{1/8}	2...1 ^{1/8}
DX Coil — Liquid Refrig. (ODF)	1...5 ^{5/8}		2...5 ^{5/8}			
Steam Coil, In (MPT)	1...2 ^{1/2}			1...2 ^{1/2}		
Steam Coil, Out (MPT)	1...1 ^{1/2}			1...1 ^{1/2}		
Hot Water Coil, In (MPT)	1...1 ^{1/2}		1...1 ^{1/2}	1...2		
Hot Water Coil, Out (MPT)	1...1 ^{1/2}		1...1 ^{1/2}	1...2		
Condensate (PVC)	1...5/8 ODM / 1 1/4 IDF					
FILTERS	Throwaway — Factory-Supplied					
Quantity...Size (in.)	4...16 x 24 x 2			4...16 x 20 x 2 4...16 x 24 x 2		
Access Location	Right or Left Side					

* Refer to Alternate Fan Motor Data table, page 38, for alternate motor data.

† Units are shipped without refrigerant charge.

** All piping sizes are OD inches; equivalent sizes in millimeters follow:

in	mm
5/8	15.9
1 ^{1/8}	28.6
1 ^{1/2}	38.7
2	50.8
2 ^{1/2}	63.5

PHYSICAL DATA (cont.)

40RUA – SI

UNIT 40RUA	07	08	12	14	16	25
NOMINAL CAPACITY (kW)	21	26	35	43	52	70
OPERATING WEIGHT (kg)						
Base Unit with TXV (4 Row)	181	183	193	315	323	331
Plenum	80	80	80	102	102	102
Economizer	84	84	84	155	155	155
Hot Water Coil	89	89	89	130	130	130
Steam Coil	98	98	98	155	155	155
FANS						
Qty...Diam. (mm)	1...381	1...381	1...381	2...381	2...381	2...381
Nominal Airflow (L/s)	1133	1604	1888	2360	2831	3775
Airflow Range (L/s)	850-1416	1203-2006	1416-2360	1770-2949	2124-3539	2831-4719
Nominal Motor kW (Standard Motor)*						
208/230-1-60	0.97	1.79	—	—	—	—
208/230-3-60 and 460-3-60	1.79	1.79	1.79	2.16	2.76	3.73
575-3-60	0.75	1.49	1.49	2.24	2.24	3.73
230-3-50, 400-3-50	1.79	1.79	2.16	2.16	2.16	3.73
Motor Speed (r/s)						
208/230-1-60	28.8	28.8	—	—	—	—
208/230-3-60 and 460-3-60	28.8	28.8	28.8	28.8	28.8	29.1
575-3-60	28.8	28.8	28.8	28.8	28.8	29.1
230-3-50, 400-3-50	23.8	23.8	23.8	23.8	23.8	23.8
REFRIGERANT	Puron (R-410A)					
Operating charge (kg) (approx per circuit)†	1.36	1.36	0.68/0.68	0.90/0.90	1.13/1.13	1.59/1.59
DIRECT-EXPANSION COIL	Enhanced Copper Tubes, Aluminum Sine-Wave Fins					
Max Working Pressure (kPag)	4481					
Face Area (sq m)	0.62	0.77	0.93	1.23	1.64	1.85
No. of Splits	1	1	2	2	2	2
No. of Circuits per Split (4 Row)	12	15		12	16	18
Split Type...Percentage	Face...50/50					
Rows...Fins/m	4...591	4...591	4...591	4...591	4...591	4...591
STEAM COIL	138					
Max Working Pressure (kPag at 126°C)						
Total Face Area (sq m)	0.62	0.62	0.62	1.24	1.24	1.24
Rows...Fins/m	1...355	1...355	1...355	1...394	1...394	1...394
HOT WATER COIL	1034					
Max Working Pressure (kPag)						
Total Face Area (sq m)	0.62	0.62	0.62	1.24	1.24	1.24
Rows...Fins/m	2...335	2...335	2...335	2...335	2...335	2...335
Water Volume						
(L)	31.4			52.6		
(m ³)	0.031			0.052		
PIPING CONNECTIONS**						
Quantity...Size (in.)						
DX Coil — Suction (ODF)	1...1 ¹ / ₈	1...1 ¹ / ₈	2...1 ¹ / ₈	2...1 ¹ / ₈	2...1 ¹ / ₈	2...1 ¹ / ₈
DX Coil — Liquid Refrigerant (ODF)	1...5 ⁵ / ₈		2...5 ⁵ / ₈			
Steam Coil, In (MPT)	1...2 ¹ / ₂		1...2 ¹ / ₂			
Steam Coil, Out (MPT)	1...1 ¹ / ₂		1...1 ¹ / ₂			
Hot Water Coil, In (MPT)	1...1 ¹ / ₂		1...1 ¹ / ₂	1...2		
Hot Water Coil, Out (MPT)	1...1 ¹ / ₂		1...1 ¹ / ₂	1...2		
Condensate (PVC)	1...5/8 ODM / 1 1/4 IDF					
FILTERS	Throwaway — Factory-Supplied					
Quantity...Size	4...406 x 610 x 51			4...406 x 508 x 51		
Access Location	Right or Left Side					

40RUA

* Refer to Alternate Fan Motor Data table, page 38, for alternate motor data.

† Units are shipped without refrigerant charge.

** All piping sizes are OD inches; equivalent sizes in millimeters follow:

in	mm
5/8	15.9
1 ¹ / ₈	28.6
1 ¹ / ₂	38.7
2	50.8
2 ¹ / ₂	63.5

OPTIONS AND ACCESSORIES

ITEM	OPTION*	ACCESSORY†
Alternate Fan Motors	X	
Alternate Drives	X	
CO ₂ Sensors		X
Condensate Drain Trap		X
Discharge Plenum		X
Economizer		X
Electric Heat		X
Hot Water Heating Coils		X
Overhead Suspension Package		X
Prepainted Units	X	
Programmable Thermostats		X
Return Air Grille		X
Steam Heating Coil		X
Subbase		X

* Factory–installed option.

† Field–installed accessory

Factory–installed options

Alternate fan motors and drives are available to provide the widest possible range of performance.

Prepainted steel units are available from the factory for applications that require painted units. Units are painted with American Sterling Gray color.

Field–installed accessories

Two–row hot water coils have copper tubes mechanically bonded to aluminum plate fins and non–ferrous headers.

One–row steam coil has copper tubes and aluminum fins. The Inner Distributing Tube (IDT) design provides uniform temperatures across the coil face. The steam coil has a broad operating pressure range; up to 20 psi (138 kPag) at 260°F (126°C). The IDT steam coils are especially suited to applications where sub–freezing air enters the unit.

Electric resistance heat coils have an open–wire design and are mounted in a rigid frame. Safety cutouts for high temperature conditions are standard. Terminal block for single–point power connection is included.

Economizer (enthalpy controlled) provides ventilation air and “free” cooling if outside ambient temperature and humidity are suitable. It can also be used with CO₂ sensors to help meet indoor air quality requirements.

Discharge plenum directs the air discharge directly into the occupied space; integral horizontal and vertical louvers enable redirection of airflow. Accessory is available unpainted or painted. Field assembly is required (only applicable for vertical application).

Return–air grille provides a protective barrier over the return–air opening and gives a finished appearance to units installed in the occupied space. Accessory is available unpainted or painted.

Subbase provides a stable, raised platform and room for condensate drain trap connection for vertical floor–mounted units. Accessory is available unpainted or painted.

Overhead suspension package includes necessary brackets to support units in horizontal ceiling installations.

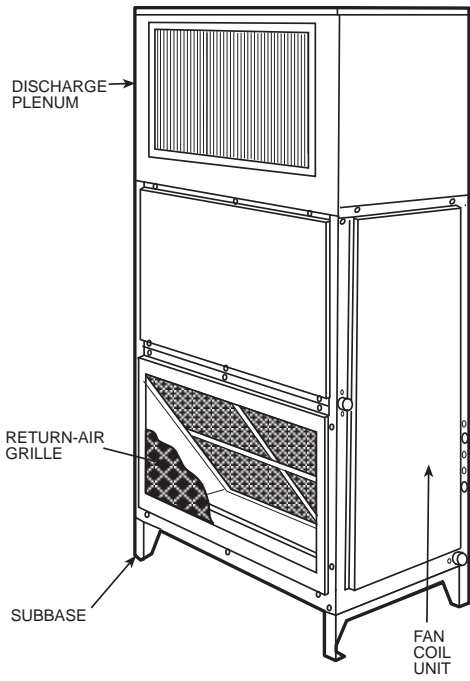
CO₂ sensors can be used in conjunction with the economizer accessory to help meet indoor air quality requirements. The sensor signals the economizer to open when the CO₂ level in the space exceeds the set point. A Carrier Comfort System programmable thermostat can be used to override the sensor if the outside–air temperature is too high or too low.

Carrier’s line of thermostats provide both programmable and non–programmable capability with the new Debonair® line of commercial programmable thermostats. The TEMP System controls offer communication capability with staged heating and cooling, and the Commercial Electronic thermostats provide 7–day programmable capability for economical applications.

Condensate drain trap includes an overflow shutoff switch that can be wired to turn off the unit if the trap becomes plugged. Kit also includes a wire harness that can be connected to an alarm if desired. The transparent trap is designed for easy service and maintenance.

OPTIONS AND ACCESSORIES (cont.)

40RU WITH DISCHARGE PLENUM
RETURN-AIR GRILLE AND SUBBASE

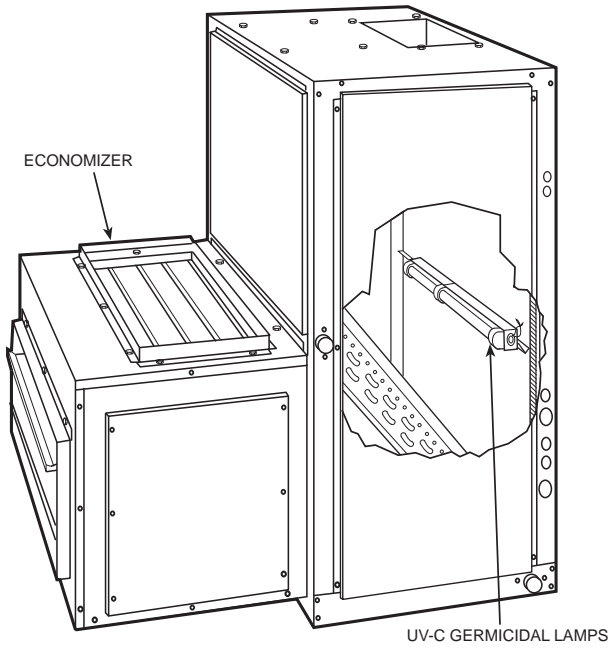


40RU WITH HOT WATER OR STEAM COIL

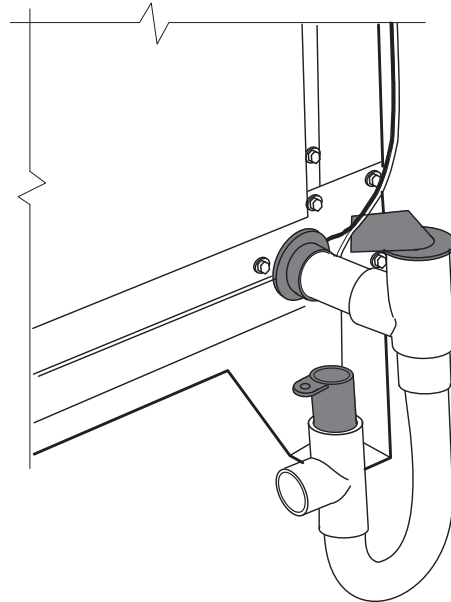


40RUA

40RU WITH ECONOMIZER
AND UV-C GERMICIDAL LAMPS



40RU WITH CONDENSATE TRAP

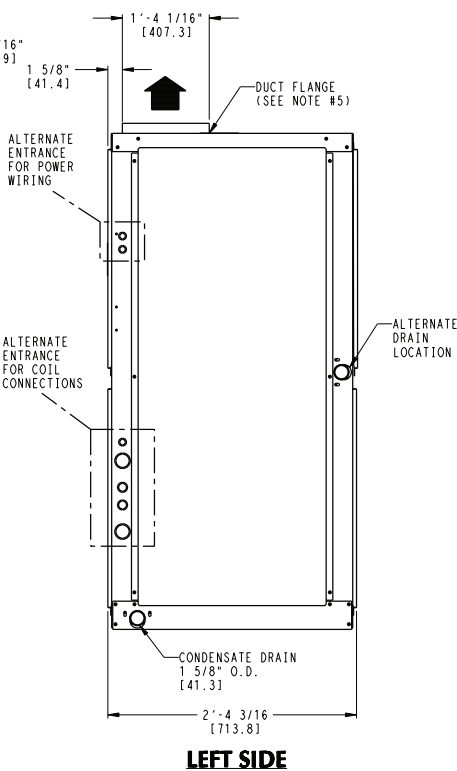
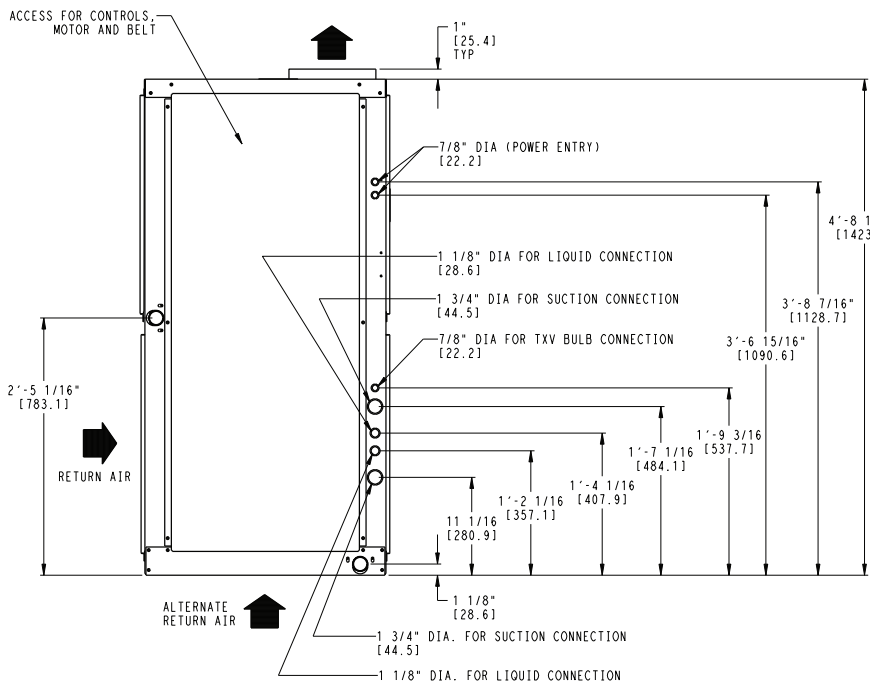
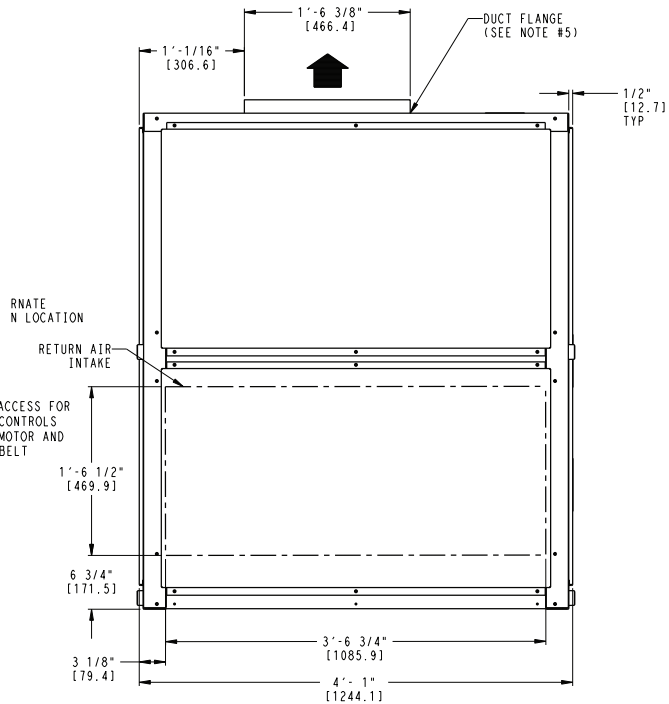
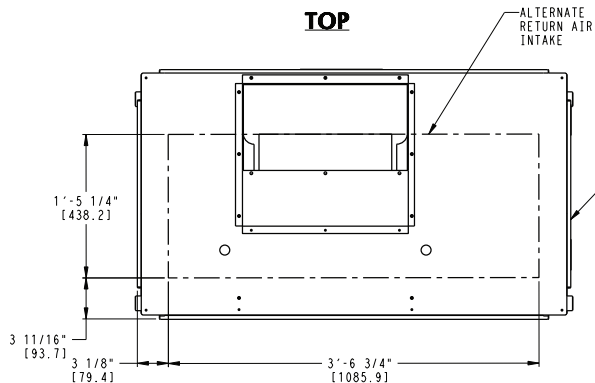


C09038

DIMENSIONS

- NOTES:
1. DIMENSIONS IN [] ARE IN MILLIMETERS.
 2. DIRECTIONS OF AIRFLOW.
 3. RECOMMENDED CLEARANCE:
 REAR: 3 IN. [76 mm]
 FRONT: 2 ft 6 in. [762 mm]
 RIGHT SIDE: 2 ft 6 in. [762 mm]
 LEFT SIDE: 2 ft 6 in. [762 mm]
 LOCAL CODES OR JURISDICTION MAY PREVAIL.
 4. LIQUID PIPING NOT SUPPLIED BY CARRIER.
 5. DUCT FLANGE IS FACTORY SUPPLIED AND FIELD INSTALLED.

40RUA




UNIT	UNIT WEIGHT (W/TVX)
40RUA-07	399 lbs [181 kg]
40RUA-08	404 lbs [183 kg]
40RUA-12	425 lbs [193 kg]

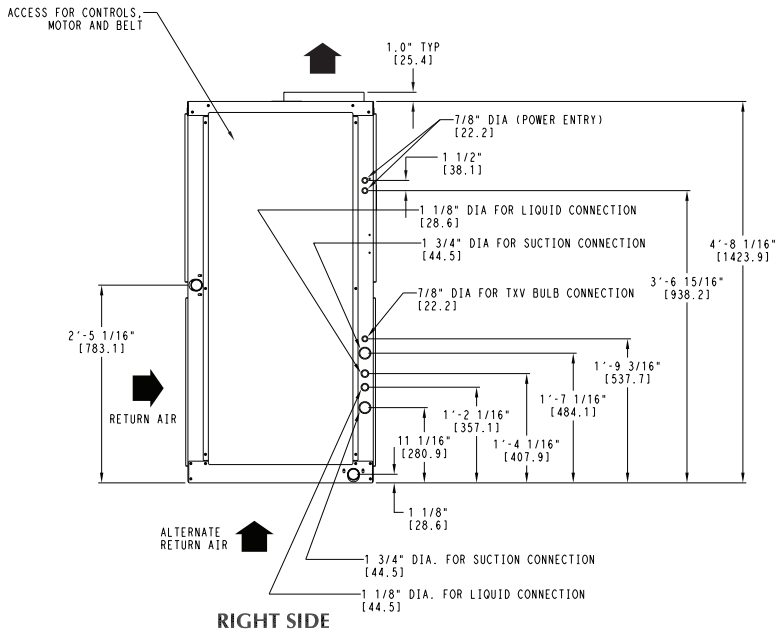
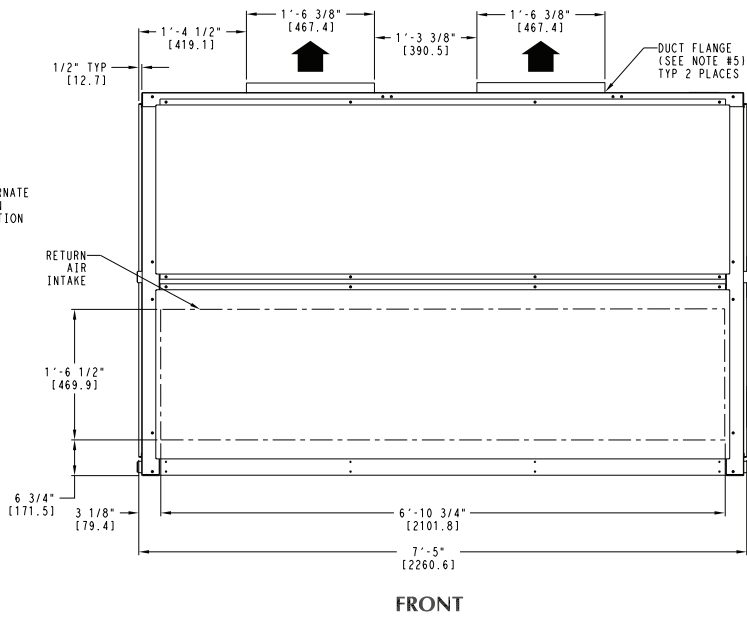
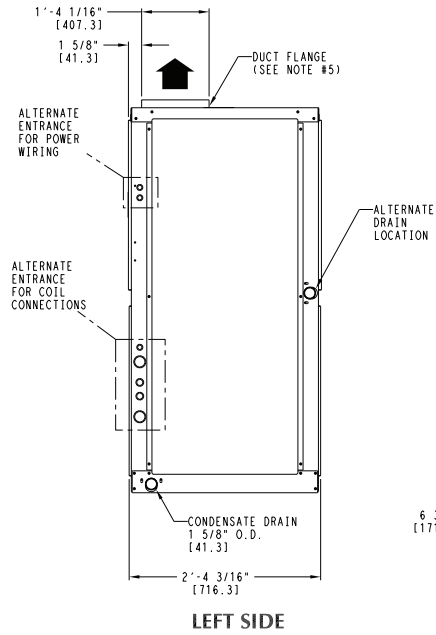
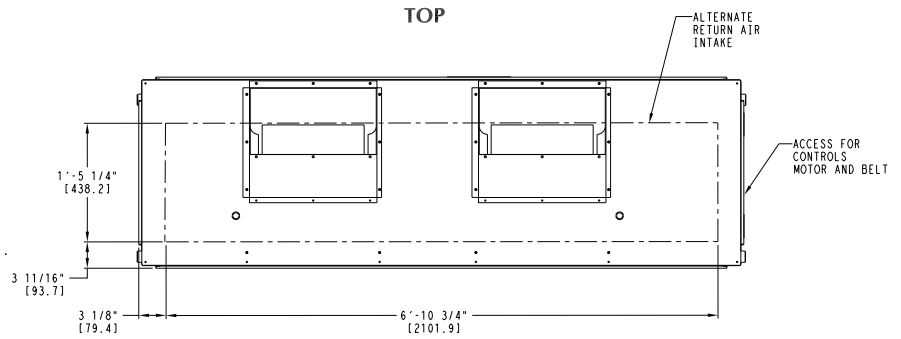
ACCESSORY	SEE DRAWING
DISCHARGE PLENUM	40RM500996
ECONOMIZER	40RM500999
STEAM COIL	40RM500999
HOT WATER COIL	40RM500999
RETURN AIR GRILLE	40RM500996
OVERHEAD SUSPENSION	40RM500996
SUBBASE	40RM500996
ELECTRIC HEAT	40RM501002

UNRELEASED DATA

40RUA07-12

DIMENSIONS (cont.)

- NOTES:
1. DIMENSIONS IN [] ARE IN MILLIMETERS.
 2.  DIRECTIONS OF AIRFLOW.
 3. RECOMMENDED CLEARANCE:
 REAR: 3 in. [76 mm]
 FRONT: 2 ft 6 in. [762 mm]
 RIGHT SIDE: 2 ft 6 in. [762 mm]
 LEFT SIDE: 2 ft 6 in. [762 mm]
 LOCAL CODES OR JURISDICTION MAY PREVAIL.
 4. LIQUID PIPING NOT SUPPLIED BY CARRIER.
 5. DUCT FLANGE IS FACTORY SUPPLIED AND FIELD INSTALLED.



ACCESSORY	SEE DRAWING
DISCHARGE PLENUM	40RM500997
ECONOMIZER	40RM501000
STEAM COIL	40RM501000
HOT WATER COIL	40RM501000
RETURN AIR GRILLE	40RM500997
OVERHEAD SUSPENSION	40RM500997
SUBBASE	40RM500997
ELECTRIC HEAT <input checked="" type="checkbox"/>	40RM501002

UNRELEASED DATA

UNIT	UNIT WEIGHT (W/TXV)
40RUA-14	695 lbs [315 kg]
40RUA-16	713 lbs [323 kg]
40RUA-25	730 lbs [331 kg]

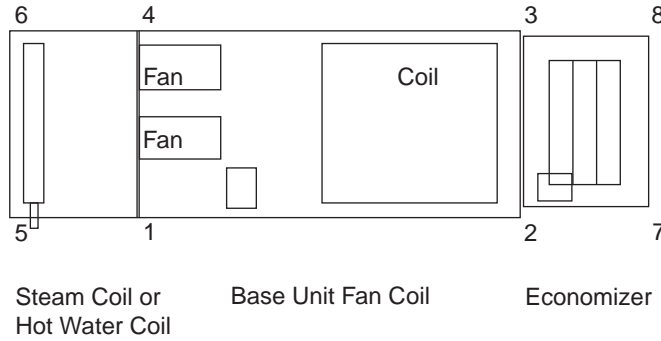
40RUA

40RUA14-25

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DIMENSIONS (cont.)

CORNER WEIGHTS HORIZONTAL POSITION



C09039

40RU – SI

40RUA UNIT SIZE	UNIT OR ACCESSORY NAME		UNIT OR ACCESSORY WEIGHT (kg)	CORNER NUMBER (WEIGHT IN KG)							
				1	2	3	4	5	6	7	8
40RUA07	FAN COIL BASE UNIT		181	49.6	48.1	41.1	42.3	—	—	—	—
40RUA08	FAN COIL BASE UNIT		183	50.1	48.6	41.5	42.8	—	—	—	—
40RUA12	FAN COIL BASE UNIT		193	52.9	51.3	43.8	45.2	—	—	—	—
440RUA (07 – 12)	STEAM COIL	ADD	98	18.2	0.0	0.0	18.4	30.2	30.6	0.0	0.0
	HOT WATER COIL	ADD	89	16.4	0.0	0.0	16.7	27.5	28.2	0.0	0.0
	ECONOMIZER	ADD	84	0.0	16.7	16.2	0.0	0.0	0.0	25.8	25
	ECO + STEAM COIL	ADD	182	17.6	17.5	17.0	17.8	29.1	29.6	27.0	26.2
	ECO + HW COIL	ADD	173	16.8	16.3	15.8	17.2	28.3	29.0	25.1	24.3
40RUA14	FAN COIL BASE UNIT		315	86.3	83.7	71.5	73.7	—	—	—	—
40RUA16	FAN COIL BASE UNIT		323	88.5	85.9	73.3	75.6	—	—	—	—
40RUA25	FAN COIL BASE UNIT		331	90.5	88.0	75.1	77.4	—	—	—	—
40RUA (14 – 25)	STEAM COIL	ADD	155	28.1	0.0	0.0	28.3	49.3	49.3	0.0	0.0
	HOT WATER COIL	ADD	130	23.6	0.0	0.0	23.4	41.8	41.2	0.0	0.0
	ECONOMIZER	ADD	155	0.0	30.2	28.3	0.0	0.0	0.0	50.3	46.2
	ECO + STEAM COIL	ADD	310	29.3	29.0	26.9	29.6	51.5	51.9	47.6	44.2
	ECO + HW COIL	ADD	285	27.5	26.4	24.4	27.1	48.5	47.9	43.1	40.1

40RU – English

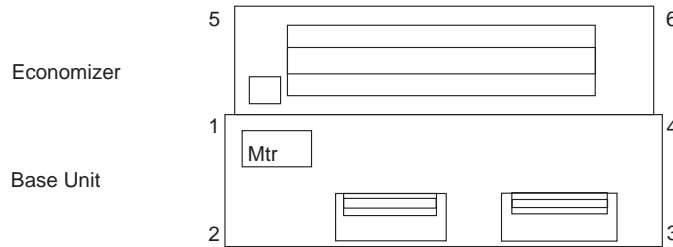
40RU UNIT SIZE	UNIT OR ACCESSORY NAME		UNIT OR ACCESSORY WEIGHT (lb)	CORNER NUMBER (WEIGHT IN LB)							
				1	2	3	4	5	6	7	8
40RUA07	FAN COIL BASE UNIT		399	109.3	106.1	90.6	93.4	—	—	—	—
40RUA08	FAN COIL BASE UNIT		404	110.7	107.5	91.7	94.5	—	—	—	—
40RUA12	FAN COIL BASE UNIT		425	116.4	113.0	96.5	99.4	—	—	—	—
40RUA (07 – 12)	STEAM COIL	ADD	215	40.2	0.0	0.0	40.6	66.5	67.5	0.0	0.0
	HOT WATER COIL	ADD	195	35.9	0.0	0.0	36.7	60.4	62.0	0.0	0.0
	ECONOMIZER	ADD	185	0.0	36.8	35.7	0.0	0.0	0.0	56.8	55.1
	ECO + STEAM COIL	ADD	400	38.8	38.6	37.4	39.2	64.2	65.2	59.5	57.7
	ECO + HW COIL	ADD	380	36.9	35.8	34.6	37.7	62.1	63.8	55.1	53.4
40RUA14	FAN COIL BASE UNIT		695	224.0	177.7	129.8	163.7	—	—	—	—
40RUA16	FAN COIL BASE UNIT		713	229.8	182.3	133.2	167.9	—	—	—	—
40RUA25	FAN COIL BASE UNIT		730	235.6	186.4	136.5	171.5	—	—	—	—
40RUA (14 – 25)	STEAM COIL	ADD	340	61.4	0.0	0.0	62.0	107.8	108.8	0.0	0.0
	HOT WATER COIL	ADD	285	51.7	0.0	0.0	51.3	91.5	90.6	0.0	0.0
	ECONOMIZER	ADD	340	0.0	66.9	62.0	0.0	0.0	0.0	109.8	102.0
	ECO + STEAM COIL	ADD	680	64.4	63.7	59.0	65.0	113.0	114.1	104.5	97.1
	ECO + HW COIL	ADD	625	60.0	57.6	53.4	59.5	106.2	105.1	94.6	87.8

LEGEND:

ECO – Economizer
HW – Hot Water

DIMENSIONS (cont.)

CORNER WEIGHTS VERTICAL POSITION



NOTE: Steam, Hot Water & Plenum
on top of positions 1,2,3,4

C09040

40RUA

40RU – SI

40RU UNIT SIZE	UNIT OR ACCESSORY NAME		UNIT OR ACCESSORY WEIGHT (kg)	CORNER NUMBER (WEIGHT IN LB)					
				1	2	3	4	5	6
40RUA07	FAN COIL BASE UNIT		181	45.5	52.3	44.4	38.8	—	—
40RUA08	FAN COIL BASE UNIT		183	46.0	52.7	44.9	39.4	—	—
40RUA12	FAN COIL BASE UNIT		193	48.5	55.6	47.4	41.5	—	—
40RUA 07,08,12	STEAM COIL	ADD	98	24.6	24.6	24.4	24.4	0.0	0.0
	HOT WATER COIL	ADD	89	22.4	22.4	22.1	22.1	0.0	0.0
	PLENUM	ADD	80	23.3	16.8	16.8	23.3	0.0	0.0
	ECONOMIZER	ADD	84	16.8	0.0	0.0	16.2	25.8	25.2
	ECO + STEAM COIL	ADD	182	41.3	23.6	23.3	40.3	27.0	26.5
40RUA14	FAN COIL BASE UNIT		315	86.6	95.5	69.8	63.3	—	—
40RUA16	FAN COIL BASE UNIT		323	88.9	97.9	71.6	64.9	—	—
40RUA 14, 16	STEAM COIL	ADD	155	39.0	39.0	38.5	38.5	0.0	0.0
	HOT WATER COIL	ADD	130	32.4	32.4	32.6	32.6	0.0	0.0
	PLENUM	ADD	102	32.9	18.1	18.1	32.9	0.0	0.0
	ECONOMIZER	ADD	155	31.1	0.0	0.0	28.5	49.7	45.7
	ECO + STEAM COIL	ADD	310	69.8	40.7	40.4	67.3	47.6	44.2
	ECO + HW COIL	ADD	285	63.8	37.6	37.8	62.2	43.1	40.5

40RU – English

40RU UNIT SIZE	UNIT OR ACCESSORY NAME		UNIT OR ACCESSORY WEIGHT (lb)	CORNER NUMBER (WEIGHT IN LB)					
				1	2	3	4	5	6
40RUA07	FAN COIL BASE UNIT		399	100.5	114.9	98.0	85.8	—	—
40RUA08	FAN COIL BASE UNIT		404	101.7	116.3	99.1	86.9	—	—
40RUA12	FAN COIL BASE UNIT		425	107.6	122.3	108.0	87.1	—	—
40RUA 07,08,12	STEAM COIL	ADD	215	54.1	54.1	53.4	53.4	0.0	0.0
	HOT WATER COIL	ADD	195	49.4	49.4	48.1	48.1	0.0	0.0
	PLENUM	ADD	175	50.8	36.7	36.7	50.8	0.0	0.0
	ECONOMIZER	ADD	195	38.9	0.0	0.0	37.1	59.9	58.3
	ECO + STEAM COIL	ADD	410	93.0	53.4	52.6	91.1	61.0	59.1
	ECO + HW COIL	ADD	390	88.9	52.3	50.9	86.5	56.7	54.9
40RUA14	FAN COIL BASE UNIT		695	191.2	210.5	153.8	139.5	—	—
40RUA16	FAN COIL BASE UNIT		713	196.2	216.0	157.8	143.1	—	—
40RUA 14, 16	STEAM COIL	ADD	340	85.4	85.4	84.6	84.6	0.0	0.0
	HOT WATER COIL	ADD	285	70.9	70.9	71.6	71.6	0.0	0.0
	PLENUM	ADD	225	72.5	40.0	40.0	72.5	0.0	0.0
	ECONOMIZER	ADD	340	66.5	0.0	0.0	62.0	109.5	102.0
	ECO + STEAM COIL	ADD	680	153.0	89.1	88.7	147.7	104.5	97.0
	ECO + HW COIL	ADD	625	139.9	82.5	83.3	136.7	94.7	87.9

LEGEND:

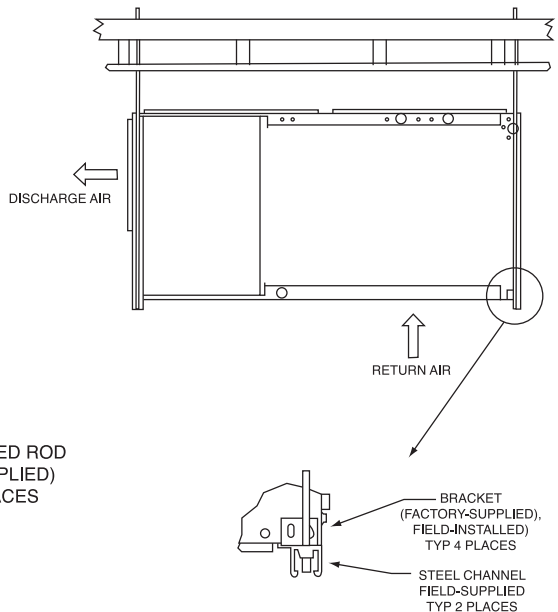
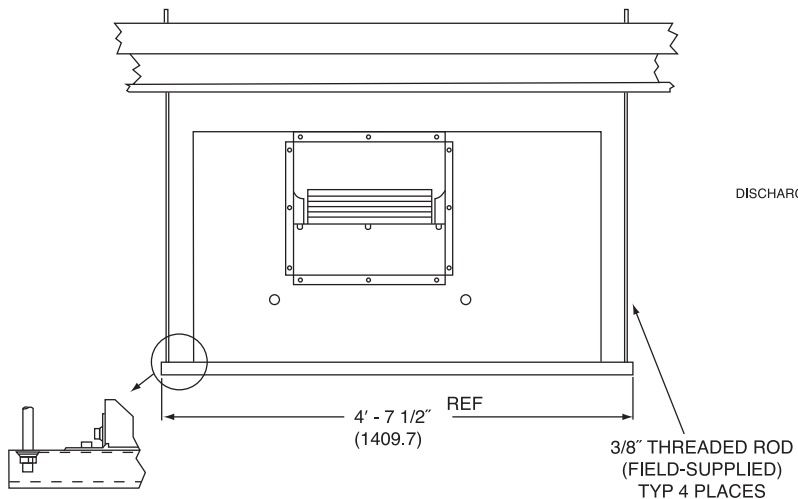
ECO – Economizer
HW – Hot Water

DIMENSIONS (cont.)

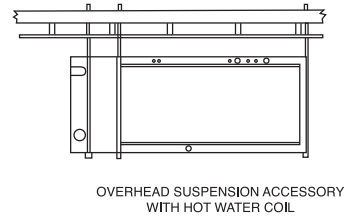
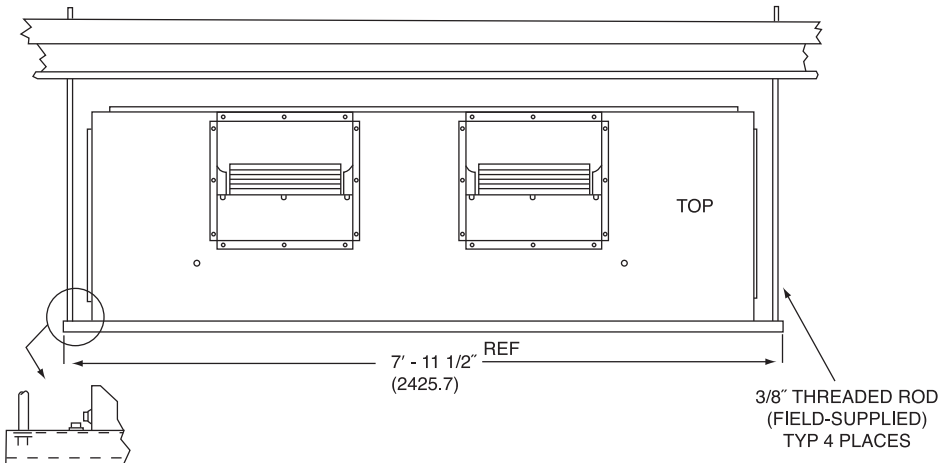
OVERHEAD SUSPENSION ACCESSORY

UNIT SIZES 07-12
(FRONT)

40RUA



UNIT SIZES 14-25
(FRONT)



NOTE: Dimensions in [] are millimeters.

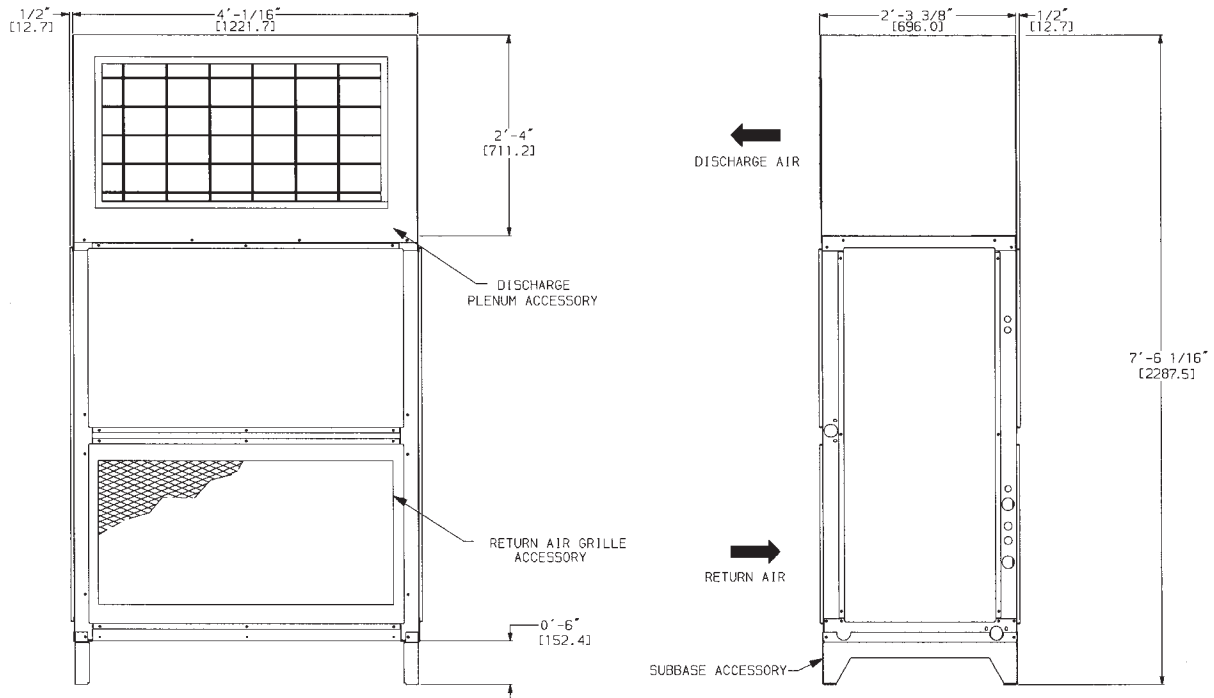
C10601

40RUA07-25

DIMENSIONS (cont.)

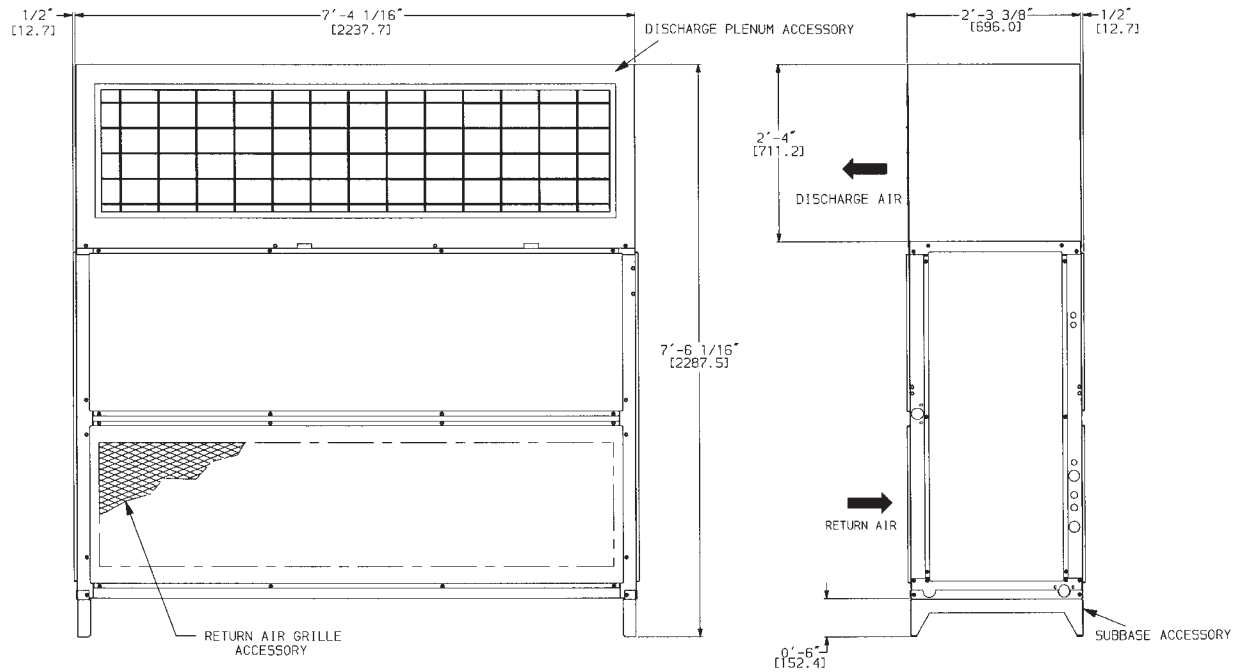
PLENUM, RETURN-AIR GRILLE, AND SUBBASE ACCESSORIES

UNIT SIZES 07-12



40RUA

UNIT SIZE 14 - 25



NOTE: Dimensions in [] are millimeters.

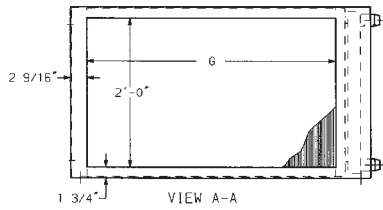
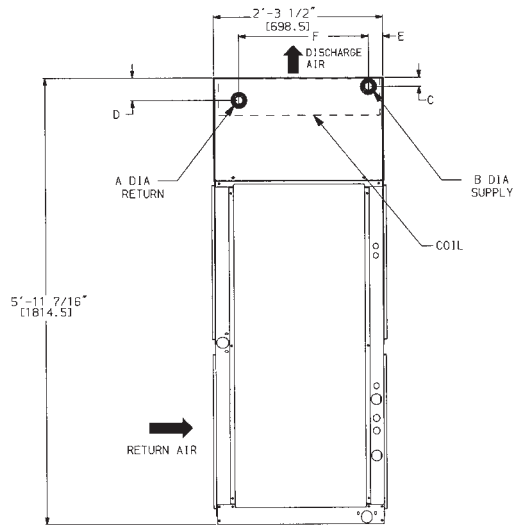
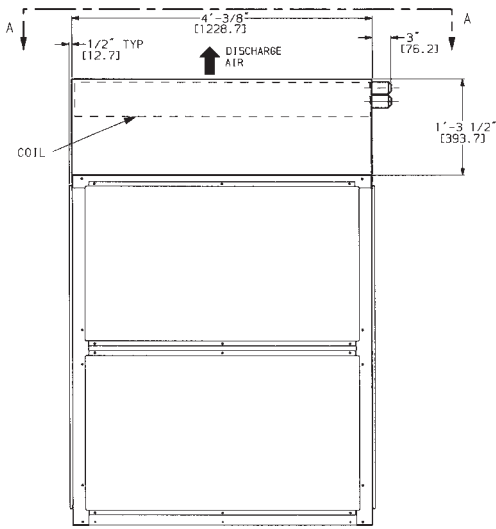
C09486

40RUA07-25

DIMENSIONS (cont.)

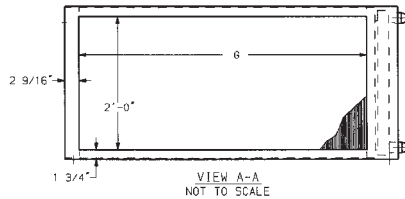
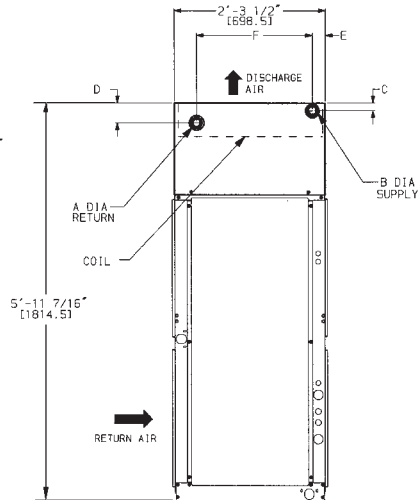
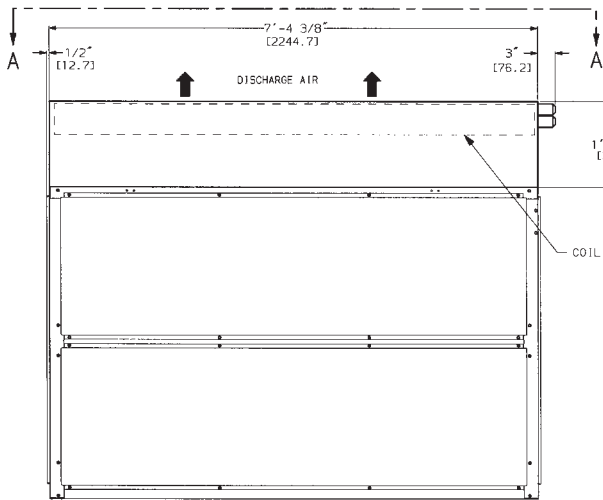
HOT WATER AND STEAM COIL ACCESSORIES

UNIT SIZES 07 - 12



DIMENSION	HOT WATER COIL	STEAM COIL
A	1 1/2" MPT [38.1]	1 1/2" MPT [38.1]
B	1 1/2" MPT [38.1]	2 1/2" MPT [63.5]
C	2 9/8" [60.3]	3 1/8" [79.4]
D	4 7/8" [123.8]	3 1/8" [79.4]
E	2 1/8" [54.0]	4 9/16" [115.8]
F	1'-11 1/4" [590.6]	1'-9" [584.2]
G	3'-4" [1016.0]	3'-4" [1016.0]

UNIT SIZE 14 - 25



DIMENSION	HOT WATER COIL	STEAM COIL
A	2" MPT [50.8]	1 1/2" MPT [38.1]
B	2" MPT [50.8]	2 1/2" MPT [63.5]
C	2 9/8" [60.3]	3 1/8" [79.4]
D	4 7/8" [123.8]	3 1/8" [79.4]
E	2 1/8" [54.0]	4 9/16" [115.8]
F	1'-11 1/4" [590.6]	1'-9" [584.2]
G	6'-8" [2032.0]	6'-8" [2032.0]

NOTE: Dimensions in [] are millimeters.

C09487

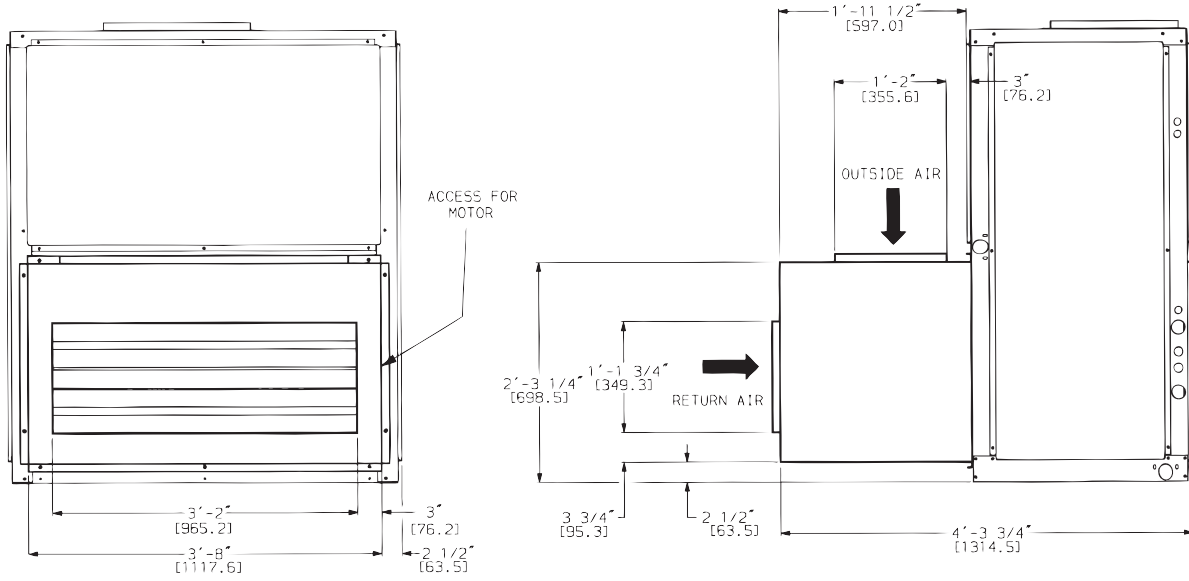
40RUA07-25

40RUA

DIMENSIONS (cont.)

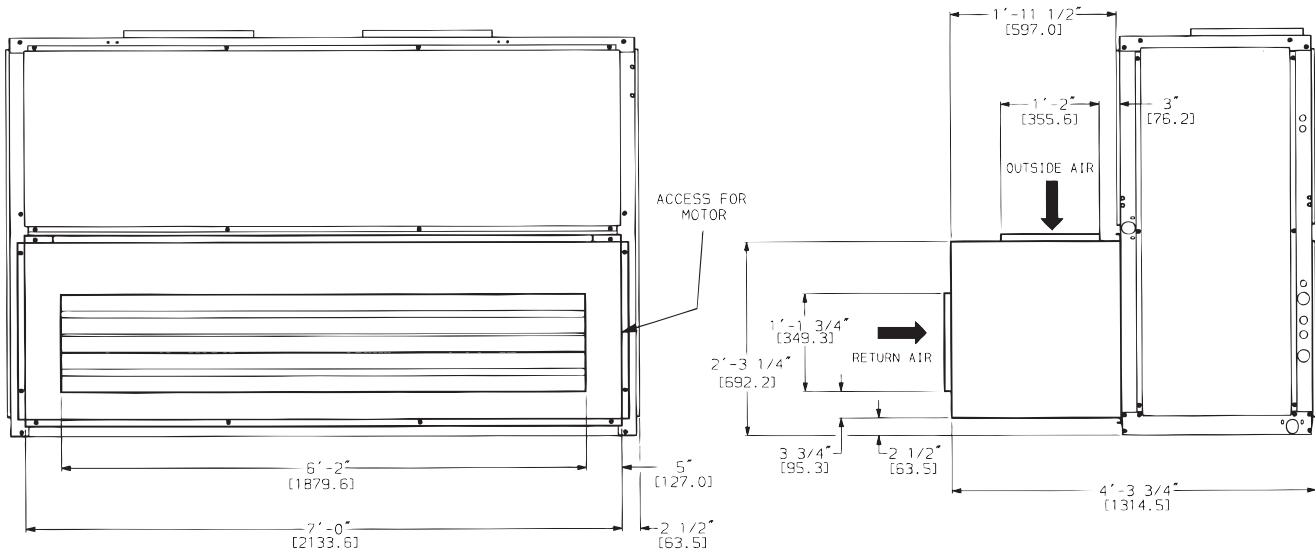
ECONOMIZER ACCESSORY

UNIT SIZES 07-12



40RUA

UNIT SIZES 14 - 25



NOTE:

1. For horizontal unit applications, economizer can be attached to end of unit opposite duct connections.
2. Dimensions in [] are millimeters.

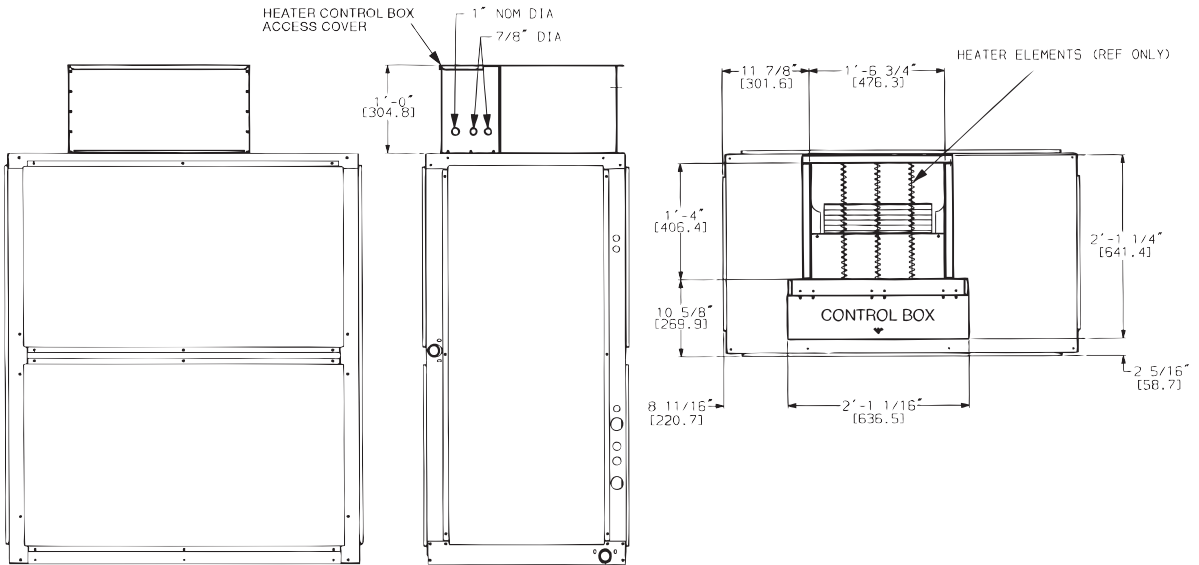
C10602

40RUA07-25

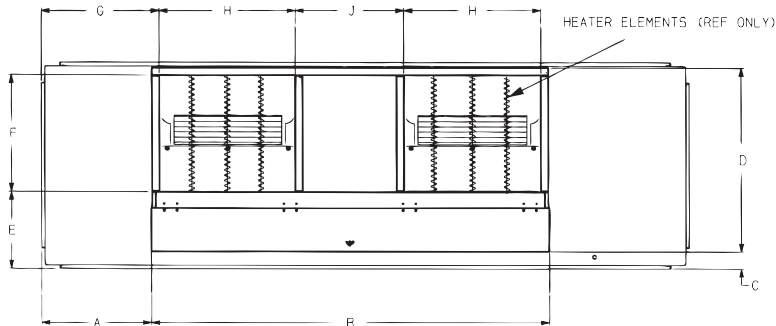
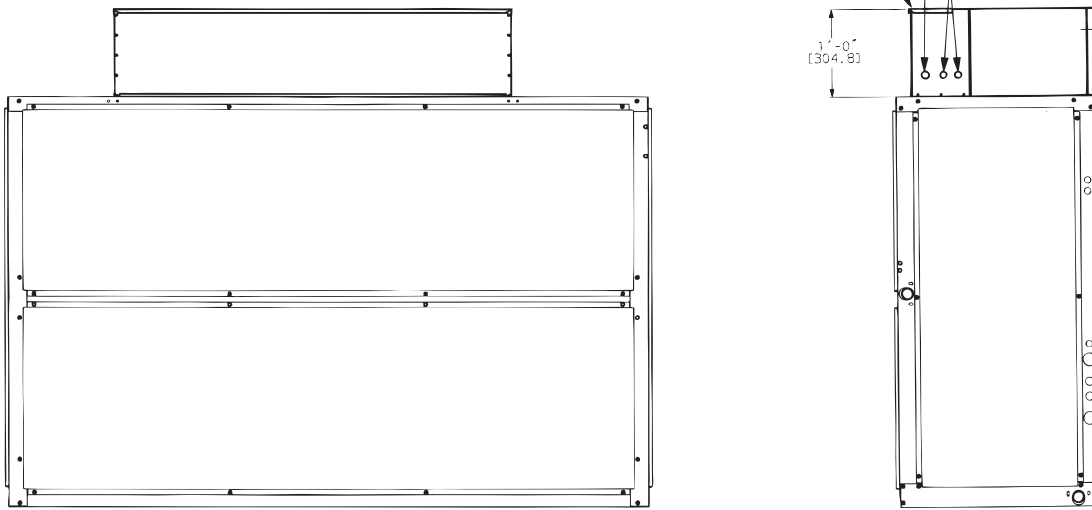
DIMENSIONS (cont.)

ELECTRIC HEAT ACCESSORY UNIT SIZES 07 - 12

40RUA



UNIT SIZE 14 - 25



C10603

40RUA14-25

40RUA UNIT SIZE	A	B	C	D	E	F	G	H	J
14 - 25	1'-3 1/4" [387.4]	4'-6 3/8" [1381.1]	2 5/16" [58.7]	2'-1 1/4" [641.4]	10 5/8" [269.9]	1'-4" [406.4]	1'-4 9/16" [414.3]	1'-6 3/4" [476.3]	1'-1/8" [327.0]

NOTE: Dimensions in [] are millimeters.

SELECTION PROCEDURE

Cooling (DX)

I. Determine the cooling load and temperature and quantity of air entering the evaporator.

Given:

Total Capacity 200,000 Btuh
Sensible Heat Capacity 130,000 Btuh
Air Temperature Entering Indoor
Coil 80°F (27°C)db, 67°F (19°C) wb
Air Quantity Entering Indoor Coil 6000 cfm
Ductwork Static Pressure Loss 0.8 in. wg
Power Supply 230-3-60

II. Determine unit selection and coil refrigerant temperature.

Enter the Cooling Capacities table at 6000 cfm. Select a 40RUA16 unit which has a total capacity of 207,000 and 174,000 Btuh at 40 and 45°F (4 and 7°C) coil refrigerant temperature, respectively. By interpolation, coil refrigerant temperature of 41.1°F (5.1°C) is needed to give a total capacity of 200,000 Btuh. Sensible capacity is approximately 149,000 Btuh. Cooling load is satisfied.

Heating (Hot Water Coil)

I. Determine heating load and temperature of air entering the indoor coil.

Given:

Load 425,000 Btuh
Entering-Air Temperature 70°F (21°C)
Coils 2-Row Hot Water
Coil Entering-Water Temperature 200°F (93°C)
Water Temperature Drop 20°F (-7°C)

II. Find the heating capacity.

Enter Hydronic Heating Capacities table for the 40RUA16 unit at 6000 cfm. A 2-row hot water coil delivers 471,000 Btuh (based on 60°F/16°C entering air temperature and 20°F/-7°C water temperature drop). Since existing entering air temperature is 70°F (21°C), enter the Heating Correction Factors table for hot water coils at 200°F (93°C) entering water temperature, 20°F (-7°C) water temperature drop and 70°F (21°C) entering air. Read a constant of 0.93.

$$471,000 \times 0.93 = 438,000$$

The 438,000 Btuh rating satisfies the heating load.

Fan

I. Determine fan speed and brake horsepower:

From the Accessory Pressure Drop table, read a loss of 0.23 in. wg for a hot water coil at 6000 cfm.

$$\begin{aligned} \text{External static pressure} &= 0.80 + 0.23 \\ &= 1.03 \text{ in. wg} \end{aligned}$$

Enter 40RUA16 Fan Performance table at 6000 cfm and 1.03 in. wg. Interpolate and determine fan speed of 864 rpm and 3.1 bhp.

II. Determine motor and drive.

Enter the fan motor data tables and find that the 230 v standard motor for a 40RUA16 unit is rated at 3.7 Hp. Since the bhp required is 3.1, a standard motor satisfies the requirement and should be used.

Next, find the type of drive that satisfies the 864 rpm requirement in the Drive Data tables. For a 40RUA016 unit, the Medium-Static Drive table shows an rpm range of 742 to 943. Since the rpm required is 864, the medium-static drive satisfies the requirement and should be used. Select the standard motor and medium-static drive combination (option code HC or FD).

To select an outdoor unit for this 40RUA16 indoor section, refer to the Combination Rating sheets for Carrier condensing units in the condensing unit Product Data Digest, or consult the Carrier Electronic Catalog.

40RUA

PERFORMANCE DATA

40RUA COOLING CAPACITIES – SI

40RUA

UNIT 40RUA	EVAPORATOR AIR		COIL REFRIGERANT TEMP (°C)									
	Airflow (L/s) BF	Ewb (°C)	-1		2		4		7		10	
			TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
07	850 .06	22	36	17	33	16	29	14	25	13	21	11
		19	31	19	27	17	24	16	20	14	15	12
		17	25	20	22	18	18	16	14	14	12	12
	1130 .10	22	42	20	38	19	34	17	30	15	24	13
		19	36	22	32	21	28	19	23	17	18	15
		17	30	24	26	22	22	20	18	18	15	15
1420 .12	22	46	23	42	21	38	19	33	17	27	15	
	19	39	25	35	24	31	21	25	19	20	17	
	17	33	28	29	26	24	23	20	20	17	17	
08	1060 .06	22	45	22	41	20	37	18	32	16	26	14
		19	38	23	34	21	30	19	24	17	19	15
		17	32	25	27	23	23	21	18	18	15	15
	1420 .10	22	52	25	48	23	43	21	37	19	30	16
		19	44	28	40	26	35	23	29	21	22	18
		17	37	30	32	28	27	25	22	22	19	19
1770 .12	22	58	28	53	26	47	24	41	21	34	19	
	19	49	32	44	29	38	27	32	24	25	21	
	17	41	35	36	32	30	29	26	26	22	22	
12	1420 .05	22	58	28	53	26	47	23	41	21	33	18
		19	49	31	44	28	38	25	31	22	24	19
		17	41	33	35	30	30	27	24	24	20	20
	1890 .07	22	67	33	61	30	54	27	47	24	38	21
		19	57	36	51	33	44	30	36	27	28	24
		17	47	40	41	36	35	33	29	29	25	25
2360 .12	22	73	36	67	33	60	31	51	27	42	24	
	19	63	41	56	38	49	35	40	31	31	28	
	17	52	45	46	42	39	38	33	33	28	28	
14	1770 .06	22	73	35	67	32	59	29	51	26	41	22
		19	62	38	55	35	47	31	39	28	30	24
		17	51	40	44	37	37	33	29	29	25	25
	2360 .08	22	85	41	77	38	68	34	59	30	47	26
		19	72	45	64	41	55	38	45	33	35	29
		17	60	49	52	45	43	40	35	35	30	30
2980 .10	22	93	45	85	42	76	38	65	34	53	29	
	19	79	51	71	47	61	43	50	39	39	34	
	17	66	56	57	52	48	47	41	41	34	34	
16	2120 .03	22	91	44	82	40	73	36	63	32	51	27
		19	76	47	68	43	58	38	48	34	37	29
		17	63	50	55	45	45	41	36	36	30	30
	2830 .05	22	106	51	96	47	86	43	73	37	60	32
		19	89	56	79	51	69	46	57	41	44	36
		17	74	60	65	55	54	50	44	44	37	37
3540 .08	22	118	57	107	53	95	48	82	43	67	37	
	19	100	64	89	59	77	54	64	48	49	42	
	17	84	70	72	65	60	58	50	50	42	42	
25	2830 .03	22	120	58	109	53	97	48	80	41	68	36
		19	101	62	90	57	78	52	64	46	50	40
		17	84	67	73	61	61	55	48	48	41	41
	3780 .06	22	138	67	126	62	112	56	96	50	79	43
		19	117	74	105	68	91	62	75	56	58	49
		17	98	81	85	74	71	67	59	59	50	50
4720 .07	22	151	74	138	69	123	63	106	56	87	49	
	19	129	84	116	78	100	71	83	64	64	57	
	17	108	93	94	86	79	78	68	68	58	58	

LEGEND

- BF — Bypass Factor
- db — Dry–Bulb Temp (°F)
- Ewb — Entering Wet–Bulb Temp (°F)
- lwb — Leaving Wet–Bulb Temp (°F)
- SHC — Sensible Heat Capacity (1000 Btuh)
- TC — Total Capacity (1000 Btuh)

NOTES:

1. Ratings based on approximately 15°F superheat leaving coil.
2. Direct interpolation is permissible. Do not extrapolate.
3. Dashes indicate coil loading limits are exceeded.

4. Evaporator fan heat not deducted from ratings.

5. Formulas:

$$\text{Leaving db} = \text{entering db} - \frac{\text{sensible heat capacity (Btuh)}}{1.1 \times \text{cfm}}$$

$$\text{Leaving db} = \text{wet–bulb temperature corresponding to enthalpy of air leaving coil (h}_{lwb}\text{)}$$

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

where h_{lwb} = enthalpy of air entering coil

6. SHC is based on 80°F db temperature of air entering evaporator coil.

PERFORMANCE DATA (cont.)

40RU COOLING CAPACITIES – ENGLISH

UNIT 40RU	EVAPORATOR AIR		COIL REFRIGERANT TEMP (°F)									
	Airflow (Cfm) BF	Ewb (°F)	30		35		40		45		50	
			TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
07	1,800 .06	72	124	60	113	55	101	49	87	43	71	37
		67	104	64	93	59	81	53	67	47	52	40
		62	86	68	75	62	63	56	49	49	42	42
	2,400 .10	72	143	69	131	64	117	58	101	52	83	44
		67	121	76	108	70	94	64	78	57	60	50
		62	101	83	88	76	73	69	60	60	51	51
3,000 .12	72	158	77	144	71	129	65	111	58	92	51	
	67	134	86	121	80	105	73	87	66	67	58	
	62	113	95	98	88	82	80	70	70	59	59	
08	2,250 .06	72	155	75	141	68	126	61	108	54	89	46
		67	130	80	116	73	101	66	83	59	64	51
		62	108	85	94	78	78	70	62	62	52	52
	3,000 .10	72	179	86	164	80	146	72	126	64	103	56
		67	151	95	136	88	118	80	98	71	75	62
		62	126	103	110	95	92	86	76	76	64	64
3,750 .12	72	197	96	180	89	161	82	139	73	115	63	
	67	168	108	151	100	131	92	109	82	84	72	
	62	141	119	122	110	103	100	87	87	74	74	
12	3,000 .05	72	200	96	182	88	161	79	138	70	113	60
		67	168	104	150	96	130	86	107	76	83	66
		62	140	112	121	102	101	92	82	82	69	69
	4,000 .07	72	228	111	208	102	185	93	159	83	130	71
		67	194	124	174	114	150	104	124	93	96	81
		62	162	135	141	124	119	113	99	99	84	84
5,000 .12	72	250	123	228	114	204	105	175	94	143	81	
	67	214	140	192	130	166	119	138	107	106	94	
	62	179	155	156	143	133	130	113	113	96	96	
14	3,750 .06	72	251	121	228	110	202	99	173	87	140	74
		67	210	129	187	118	161	106	133	94	102	81
		62	174	138	150	126	125	113	100	100	84	84
	5,000 .08	72	289	139	263	128	233	116	200	103	162	88
		67	244	154	218	141	188	128	155	114	119	99
		62	203	167	176	153	146	138	121	121	102	102
6,250 .10	72	319	155	290	143	258	131	221	116	180	101	
	67	271	174	242	161	209	147	172	132	133	115	
	62	226	192	196	177	164	160	139	139	118	118	
16	4,500 .03	72	310	150	281	136	249	122	214	108	174	92
		67	260	160	231	145	199	131	165	116	127	100
		62	215	169	186	154	154	138	121	121	102	102
	6,000 .05	72	361	175	329	161	292	145	250	128	205	110
		67	304	191	271	175	235	159	194	141	149	122
		62	254	206	220	189	183	170	149	149	125	125
7,500 .08	72	401	196	366	181	325	164	280	146	229	127	
	67	340	218	304	201	263	183	218	164	167	143	
	62	285	239	247	220	206	197	172	172	145	145	
25	6,000 .03	72	408	197	372	180	331	162	272	141	232	123
		67	344	213	307	195	266	176	220	156	169	135
		62	286	227	248	208	207	188	164	164	139	139
	8,000 .06	72	470	228	429	210	382	191	329	170	269	147
		67	399	253	357	233	309	212	256	189	197	166
		62	333	275	290	254	242	230	202	202	170	170
10,000 .07	72	516	253	471	235	421	215	363	192	297	168	
	67	440	287	395	266	343	244	284	219	220	193	
	62	369	317	322	294	271	266	232	232	196	196	

40RUA

LEGEND

- BF** — Bypass Factor
- db** — Dry–Bulb Temp (°F)
- Ewb** — Entering Wet–Bulb Temp (°F)
- lwb** — Leaving Wet–Bulb Temp (°F)
- SHC** — Sensible Heat Capacity (1000 Btuh)
- TC** — Total Capacity (1000 Btuh)

NOTES:

1. Ratings based on approximately 15°F superheat leaving coil.
2. Direct interpolation is permissible. Do not extrapolate.
3. Dashes indicate coil loading limits are exceeded.
4. Evaporator fan heat not deducted from ratings.

5. Formulas:

$$\text{Leaving db} = \text{entering db} - \frac{\text{sensible heat capacity (Btuh)}}{1.1 \times \text{cfm}}$$

$$\text{Leaving db} = \text{wet–bulb temperature corresponding to enthalpy of air leaving coil (h}_{lwb}\text{)}$$

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

where h_{lwb} = enthalpy of air entering coil

6. SHC is based on 80°F db temperature of air entering evaporator coil.

PERFORMANCE DATA (cont.)

HYDRONIC HEATING CAPACITIES — SI

UNIT	AIRFLOW (L/s)	1-ROW STEAM*		2-ROW HOT WATER COIL†			
		Cap.	Ldb	Cap.	Ldb	Water Flow (L/s)	PD
07	850	43	57	46	59	1.0	10.2
	1150	53	53	53	53	1.2	12.8
	1450	62	51	61	50	1.3	16.0
08	1000	48	55	50	56	1.1	11.5
	1400	59	50	60	50	1.3	15.3
	1800	71	47	70	47	1.5	19.5
12	1450	62	50	88	65	1.9	15.0
	1900	72	46	90	54	2.0	24.7
	2350	82	44	93	48	2.0	24.5
14	1750	108	66	106	65	2.3	12.4
	2350	122	58	120	57	2.6	15.2
	2950	136	53	134	52	2.9	17.9
16	2100	117	61	120	62	2.6	13.3
	2800	129	53	137	55	3.0	16.2
	3500	140	48	154	51	3.3	19.5
25	2900	135	53	150	58	3.3	15.6
	3800	140	46	170	52	3.7	18.6
	4700	146	41	191	49	4.1	22.3

LEGEND:

Cap. – Capacity (kW)

Ldb – Leaving Air Dry Bulb Temp (°C)

PD . – Pressure Drop (kPa)

* Based on 34.5 kPag steam, 15.6° C entering-air temperature. All steam coils are non-freeze type.

† Based on 93.3° C entering water temperature, 11.1° C water temperature drop, 15.6° C entering-air temperature.

NOTES:

- Max. operating limits for heating coils: 138 kPag at 126.7° C.
- Leaving db = ent db (°C) + $\frac{\text{Capacity (kW)}}{1.23 \times 10^{-3} \times \text{L/s}}$
- See Heating Correction Factors table.

HEATING CORRECTION FACTORS — SI

HOT WATER COIL						
Water Temp Drop (°C)	Ent Water Temp (°C)	Entering-Air Temp (°C)				
		4	10	16	20	25
5	60	0.72	0.64	0.55	0.50	0.43
	70	0.87	0.79	0.71	0.65	0.58
	80	1.02	0.94	0.86	0.80	0.73
	90	1.17	1.09	1.01	0.95	0.89
	100	1.32	1.24	1.16	1.10	1.04
11	60	0.65	0.56	0.48	0.42	0.35
	70	0.80	0.72	0.63	0.58	0.51
	80	0.95	0.87	0.79	0.73	0.66
	90	1.10	1.02	0.94	0.89	0.82
	100	1.26	1.18	1.09	1.04	0.97
16	60	0.56	0.48	0.39	0.33	0.26
	70	0.72	0.63	0.55	0.49	0.42
	80	0.87	0.79	0.70	0.65	0.58
	90	1.02	0.94	0.86	0.81	0.74
	100	1.18	1.10	1.02	0.97	0.90

STEAM COIL					
Steam Pressure (kPag)	Entering-Air Temp (°C)				
	4	10	16	20	25
0	1.07	0.99	0.91	0.86	0.80
14	1.10	1.02	0.95	0.90	0.84
35	1.14	1.07	0.99	0.95	0.89

NOTE: Multiply capacity given in the Hydronic Heating Capacities table by the correction factor for conditions at which unit is actually operating. Correct leaving-air temperature using formula in Note 2 of Hydronic Heating Capacities table.

HYDRONIC HEATING CAPACITIES — ENGLISH

UNIT	AIRFLOW (Cfm)	1-ROW STEAM*		2-ROW HOT WATER COIL†			
		Cap.	Ldb	Cap.	Ldb	Water Flow (Gpm)	PD
07	1,800	146	134	156.0	140	15.6	3.4
	2,400	173	126	183.0	131	18.3	4.3
	3,000	209	123	206.0	124	20.6	5.2
08	2,250	168	129	174.0	133	17.4	4.0
	3,000	209	123	206.0	124	20.6	5.2
	3,750	240	117	238.0	118	23.8	6.5
12	3,000	209	123	299.0	152	29.9	5.0
	4,000	243	115	275.0	124	27.5	6.6
	5,000	279	111	316.0	119	31.6	8.2
14	3,750	370	150	362.0	149	36.2	4.2
	5,000	425	137	409.0	136	40.9	5.1
	6,250	465	128	456.0	128	45.6	6.0
16	4,500	402	141	412.0	145	41.2	4.5
	6,000	458	129	471.0	133	47.1	5.5
	7,500	479	118	529.0	125	52.9	6.6
25	6,000	458	129	506.0	138	50.6	5.1
	8,000	487	115	584.0	128	58.4	6.3
	10,000	499	105	652.0	120	65.2	7.5

LEGEND:

Cap. – Capacity (Btuh in thousands)

Ldb – Leaving Air Dry Bulb Temp (°F)

PD . – Pressure Drop (ft water)

* Based on 5 psig steam, 60° F entering-air temperature. All steam coils are non-freeze type.

† Based on 200° F entering water temperature, 20° F water temperature drop, 60° F entering-air temperature.

NOTES:

- Maximum operating limits for heating coils: 20 psig at 260° F.
- Leaving db = ent db (°F) + $\frac{\text{Capacity (Btuh)}}{1.1 \times \text{cfm}}$
- See Heating Correction Factors table.

HEATING CORRECTION FACTORS — ENGLISH

HOT WATER COIL						
Water Temp Drop (F)	Ent Water Temp (F)	Entering-Air Temp (F)				
		40	50	60	70	80
5	140	0.72	0.64	0.57	0.49	0.41
	160	0.89	0.81	0.74	0.66	0.58
	180	1.06	0.98	0.90	0.83	0.75
	200	1.22	1.15	1.07	1.00	0.92
	220	1.39	1.32	1.24	1.17	1.09
10	140	0.64	0.57	0.49	0.41	0.33
	160	0.81	0.74	0.66	0.58	0.51
	180	0.98	0.91	0.83	0.75	0.68
	200	1.15	1.08	1.00	0.93	0.85
	220	1.32	1.25	1.17	1.10	1.02
20	140	0.56	0.49	0.41	0.33	0.24
	160	0.74	0.66	0.58	0.51	0.43
	180	0.91	0.83	0.76	0.68	0.60
	200	1.08	1.00	0.93	0.85	0.78
	220	1.25	1.18	1.10	1.03	0.95

STEAM COIL					
Steam Pressure (psig)	Entering-Air Temp (F)				
	40	50	60	70	80
0	1.06	0.98	0.91	0.85	0.78
2	1.09	1.02	0.95	0.89	0.82
5	1.13	1.06	1.00	0.93	0.87

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 40RU 0.0–1.2 in. Wg ESP — 50 Hz, ENGLISH

UNIT 40RU	AIRFLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)													
		0.0		0.2		0.4		0.6		0.8		1.0		1.2	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1,800	399	0.19	454	0.24	548	0.35	<u>634</u>	<u>0.47</u>	<u>713</u>	<u>0.60</u>	<u>785</u>	<u>0.74</u>	<u>850</u>	<u>0.89</u>
	2,100	446	0.28	497	0.34	583	0.46	<u>660</u>	<u>0.59</u>	<u>733</u>	<u>0.73</u>	<u>802</u>	<u>0.88</u>	<u>867</u>	<u>1.05</u>
	2,400	498	0.40	541	0.47	<u>622</u>	<u>0.60</u>	<u>693</u>	<u>0.74</u>	<u>760</u>	<u>0.89</u>	<u>824</u>	<u>1.05</u>	<u>885</u>	<u>1.22</u>
	2,700	544	0.55	588	0.63	<u>663</u>	<u>0.78</u>	<u>730</u>	<u>0.93</u>	<u>792</u>	<u>1.09</u>	<u>851</u>	<u>1.26</u>	<u>909</u>	<u>1.44</u>
	3,000	594	0.73	<u>635</u>	<u>0.82</u>	<u>707</u>	<u>0.99</u>	<u>770</u>	<u>1.15</u>	<u>828</u>	<u>1.32</u>	<u>883</u>	<u>1.50</u>	<u>937</u>	<u>1.69</u>
08	2,250	273	0.08	493	0.37	580	0.49	656	0.62	<u>727</u>	<u>0.76</u>	<u>794</u>	<u>0.92</u>	<u>858</u>	<u>1.08</u>
	2,600	322	0.15	540	0.52	622	0.66	<u>693</u>	<u>0.81</u>	<u>757</u>	<u>0.96</u>	<u>819</u>	<u>1.12</u>	<u>878</u>	<u>1.29</u>
	3,000	552	0.65	595	0.73	673	0.91	<u>740</u>	<u>1.07</u>	<u>800</u>	<u>1.24</u>	<u>856</u>	<u>1.41</u>	<u>910</u>	<u>1.60</u>
	3,400	615	0.91	653	1.01	<u>726</u>	<u>1.21</u>	<u>789</u>	<u>1.40</u>	<u>846</u>	<u>1.59</u>	<u>899</u>	<u>1.78</u>	<u>950</u>	<u>1.97</u>
	3,750	671	1.20	<u>706</u>	<u>1.31</u>	<u>773</u>	<u>1.53</u>	<u>834</u>	<u>1.74</u>	<u>889</u>	<u>1.95</u>	<u>940</u>	<u>2.16</u>	<u>988</u>	<u>2.37</u>
12	3,000	399	0.29	573	0.69	654	0.86	722	1.03	784	1.19	<u>841</u>	<u>1.37</u>	<u>896</u>	<u>1.55</u>
	3,500	604	0.92	641	1.02	714	1.22	780	1.42	<u>838</u>	<u>1.61</u>	<u>892</u>	<u>1.81</u>	<u>942</u>	<u>2.01</u>
	4,000	680	1.33	713	1.45	778	1.68	<u>839</u>	<u>1.91</u>	<u>896</u>	<u>2.14</u>	<u>947</u>	<u>2.36</u>	<u>995</u>	<u>2.58</u>
	4,500	756	1.86	<u>787</u>	<u>1.99</u>	<u>845</u>	<u>2.26</u>	<u>901</u>	<u>2.52</u>	<u>955</u>	<u>2.78</u>	<u>1005</u>	<u>3.03</u>	<u>1051</u>	<u>3.28</u>
	5,000	<u>834</u>	<u>2.51</u>	<u>861</u>	<u>2.67</u>	<u>914</u>	<u>2.96</u>	<u>966</u>	<u>3.25</u>	<u>1016</u>	<u>3.54</u>	<u>1064</u>	<u>3.82</u>	<u>1109</u>	<u>4.11</u>
14	3,750	394	0.40	453	0.52	558	0.80	643	1.10	<u>717</u>	<u>1.39</u>	<u>785</u>	<u>1.71</u>	<u>848</u>	<u>2.04</u>
	4,300	436	0.57	487	0.70	586	1.00	670	1.34	<u>742</u>	<u>1.67</u>	<u>806</u>	<u>2.01</u>	<u>867</u>	<u>2.36</u>
	5,000	492	0.86	535	0.99	623	1.31	<u>704</u>	<u>1.69</u>	<u>775</u>	<u>2.08</u>	<u>838</u>	<u>2.47</u>	<u>896</u>	<u>2.86</u>
	5,700	550	1.23	587	1.37	664	1.71	<u>740</u>	<u>2.11</u>	<u>809</u>	<u>2.55</u>	<u>872</u>	<u>2.99</u>	<u>929</u>	<u>3.43</u>
	6,250	596	1.59	630	1.74	<u>700</u>	<u>2.09</u>	<u>770</u>	<u>2.51</u>	<u>837</u>	<u>2.97</u>	<u>899</u>	<u>3.45</u>	<u>955</u>	<u>3.94</u>
16	4,500	428	0.59	475	0.70	570	0.99	656	1.33	<u>730</u>	<u>1.68</u>	<u>796</u>	<u>2.02</u>	<u>856</u>	<u>2.38</u>
	5,300	488	0.92	528	1.04	609	1.34	689	1.71	<u>762</u>	<u>2.11</u>	<u>827</u>	<u>2.51</u>	<u>886</u>	<u>2.92</u>
	6,000	542	1.29	578	1.43	649	1.74	<u>721</u>	<u>2.11</u>	<u>791</u>	<u>2.55</u>	<u>855</u>	<u>3.00</u>	<u>914</u>	<u>3.46</u>
	6,800	604	1.83	637	1.99	<u>700</u>	<u>2.32</u>	<u>763</u>	<u>2.70</u>	<u>826</u>	<u>3.15</u>	<u>888</u>	<u>3.64</u>	<u>946</u>	<u>4.15</u>
	7,500	660	2.42	690	2.59	<u>747</u>	<u>2.95</u>	<u>804</u>	<u>3.34</u>	<u>861</u>	<u>3.79</u>	<u>919</u>	<u>4.29</u>	<u>975</u>	<u>4.83</u>
25	6,000	532	1.25	569	1.39	639	1.69	711	2.06	781	2.48	846	2.93	<u>905</u>	<u>3.39</u>
	7,000	608	1.93	641	2.09	702	2.42	763	2.80	824	3.23	<u>885</u>	<u>3.71</u>	<u>943</u>	<u>4.23</u>
	8,000	686	2.83	716	3.01	770	3.38	823	3.77	876	4.21	<u>930</u>	<u>4.70</u>	<u>983</u>	<u>5.24</u>
	9,000	764	3.97	791	4.18	841	4.59	<u>888</u>	<u>5.02</u>	<u>935</u>	<u>5.47</u>	<u>982</u>	<u>5.96</u>	<u>1030</u>	<u>6.51</u>
	10,000	843	5.38	868	5.62	<u>914</u>	<u>6.09</u>	<u>957</u>	<u>6.55</u>	<u>1000</u>	<u>7.02</u>	<u>1042</u>	<u>7.53</u>	<u>1084</u>	<u>8.08</u>

40RUA

LEGEND

Bhp – Brake Horsepower Input to Fan

ESP – External Static Pressure

Bold indicates field-supplied drive or motor is required.

Plain type indicates standard motor and standard drive.

Underline indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables, pages 42–43, to complete selection.

NOTES:

- Maximum allowable fan speed is 1200 rpm
- Fan performance is based on deductions for wet coil, clean 2-in. filters, and unit casing.
See *Factory-Supplied Filter Pressure Drop* tables for factory-supplied filter pressure drop.
- For 50 Hz units, the medium-static drive and standard motor combination is not available for 16 – 25 sizes.
Use alternate motor if medium-static drive is required for these sizes.

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 40RU 1.4–2.4 in. Wg ESP — 50 Hz, ENGLISH

UNIT 40RU	AIRFLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)											
		1.4		1.6		1.8		2.0		2.2		2.4	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1,800	<u>910</u>	<u>1.04</u>	<u>965</u>	<u>1.20</u>	<u>1016</u>	<u>1.36</u>	1065	1.52	1111	1.69	1155	1.86
	2,100	<u>927</u>	<u>1.21</u>	<u>983</u>	<u>1.38</u>	<u>1035</u>	<u>1.56</u>	1084	1.74	1131	1.92	1175	2.11
	2,400	<u>944</u>	<u>1.41</u>	<u>999</u>	<u>1.59</u>	1052	1.78	1101	1.98	1149	2.18	1193	2.38
	2,700	<u>964</u>	<u>1.63</u>	<u>1018</u>	<u>1.82</u>	1069	2.03	1118	2.24	1165	2.45	—	—
	3,000	<u>989</u>	<u>1.89</u>	<u>1039</u>	<u>2.10</u>	1089	2.31	1136	2.53	1183	2.76	—	—
08	2,250	<u>918</u>	<u>1.26</u>	<u>975</u>	<u>1.43</u>	<u>1029</u>	<u>1.62</u>	<u>1079</u>	<u>1.80</u>	<u>1126</u>	<u>1.99</u>	1172	2.18
	2,600	<u>936</u>	<u>1.48</u>	<u>991</u>	<u>1.67</u>	<u>1044</u>	<u>1.87</u>	<u>1094</u>	<u>2.07</u>	1142	2.28	1188	2.49
	3,000	<u>963</u>	<u>1.79</u>	<u>1014</u>	<u>1.99</u>	<u>1064</u>	<u>2.20</u>	<u>1113</u>	<u>2.42</u>	1159	2.64	—	—
	3,400	<u>998</u>	<u>2.18</u>	<u>1045</u>	<u>2.39</u>	<u>1092</u>	<u>2.61</u>	<u>1137</u>	<u>2.83</u>	1182	3.07	—	—
	3,750	<u>1034</u>	<u>2.58</u>	<u>1078</u>	<u>2.80</u>	<u>1122</u>	<u>3.03</u>	1164	3.27	—	—	—	—
12	3,000	<u>949</u>	<u>1.74</u>	<u>1000</u>	<u>1.93</u>	<u>1050</u>	<u>2.14</u>	<u>1099</u>	<u>2.36</u>	<u>1147</u>	<u>2.58</u>	<u>1192</u>	<u>2.81</u>
	3,500	<u>990</u>	<u>2.21</u>	<u>1037</u>	<u>2.42</u>	<u>1083</u>	<u>2.64</u>	<u>1128</u>	<u>2.86</u>	<u>1172</u>	<u>3.10</u>	—	—
	4,000	<u>1040</u>	<u>2.80</u>	<u>1084</u>	<u>3.03</u>	<u>1126</u>	<u>3.26</u>	<u>1167</u>	<u>3.50</u>	—	—	—	—
	4,500	<u>1094</u>	<u>3.53</u>	<u>1136</u>	<u>3.78</u>	<u>1176</u>	<u>4.03</u>	—	—	—	—	—	—
	5,000	<u>1151</u>	<u>4.39</u>	<u>1191</u>	<u>4.66</u>	—	—	—	—	—	—	—	—
14	3,750	<u>909</u>	<u>2.37</u>	<u>968</u>	<u>2.74</u>	<u>1026</u>	<u>3.12</u>	1080	3.51	1131	3.92	1181	4.32
	4,300	<u>925</u>	<u>2.73</u>	<u>980</u>	<u>3.11</u>	<u>1034</u>	<u>3.52</u>	1084	3.92	1135	4.35	1184	4.78
	5,000	<u>950</u>	<u>3.26</u>	<u>1002</u>	<u>3.67</u>	1052	4.09	1101	4.53	1148	4.98	1190	5.44
	5,700	<u>981</u>	<u>3.88</u>	<u>1031</u>	<u>4.33</u>	1079	4.79	1125	5.25	1169	5.73	—	—
	6,250	<u>1007</u>	<u>4.42</u>	<u>1057</u>	<u>4.91</u>	1103	5.40	1148	5.90	1191	6.40	—	—
16	4,500	<u>912</u>	<u>2.75</u>	<u>967</u>	<u>3.13</u>	1019	3.52	1070	3.92	1120	4.35	1168	4.79
	5,300	<u>940</u>	<u>3.33</u>	<u>992</u>	<u>3.75</u>	1041	4.18	1088	4.61	1134	5.06	1179	5.52
	6,000	<u>968</u>	<u>3.92</u>	<u>1018</u>	<u>4.38</u>	1066	4.85	1112	5.32	1156	5.80	1198	6.29
	6,800	<u>1000</u>	<u>4.67</u>	1050	5.19	1097	5.71	1142	6.23	1185	6.76	—	—
	7,500	1028	5.39	1078	5.97	1125	6.54	1170	7.11	—	—	—	—
25	6,000	<u>954</u>	<u>3.83</u>	<u>1005</u>	<u>4.27</u>	<u>1052</u>	<u>4.72</u>	<u>1098</u>	<u>5.22</u>	1142	5.67	—	—
	7,000	<u>990</u>	<u>4.74</u>	<u>1040</u>	<u>5.24</u>	<u>1090</u>	<u>5.80</u>	1135	6.30	1176	6.84	—	—
	8,000	<u>1028</u>	<u>5.79</u>	<u>1078</u>	<u>6.38</u>	1130	7.00	1173	7.60	—	—	—	—
	9,000	<u>1073</u>	<u>7.11</u>	1120	7.72	1169	8.37	—	—	—	—	—	—
	10,000	1126	8.75	1166	9.37	—	—	—	—	—	—	—	—

LEGEND

Bhp – Brake Horsepower Input to Fan

ESP – External Static Pressure

Bold indicates field-supplied drive or motor is required.

Plain type indicates standard motor and standard drive.

Underline indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables, pages 42–43, to complete selection.

NOTES:

- Maximum allowable fan speed is 1200 rpm
- Fan performance is based on deductions for wet coil, clean 2-in. filters, and unit casing.
See *Factory-Supplied Filter Pressure Drop* tables for factory-supplied filter pressure drop.
- For 50 Hz units, the medium-static drive and standard motor combination is not available for 16 – 25 sizes.
Use alternate motor if medium-static drive is required for these sizes.

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 40RU 0–300 Pa ESP — 50 Hz, SI

UNIT 40RU	AIR- FLOW (L/s)	EXTERNAL STATIC PRESSURE (Pa)													
		0		50		100		150		200		250		300	
		r/s	kW	r/s	kW	r/s	kW	r/s	kW	r/s	kW	r/s	kW	r/s	kW
07	850	6.64	0.14	7.56	0.18	9.13	0.26	<u>10.56</u>	<u>0.35</u>	<u>11.88</u>	<u>0.45</u>	<u>13.08</u>	<u>0.55</u>	<u>14.16</u>	<u>0.66</u>
	990	7.43	0.21	8.28	0.25	9.71	0.34	<u>11.00</u>	<u>0.44</u>	<u>12.22</u>	<u>0.54</u>	<u>13.37</u>	<u>0.66</u>	<u>14.44</u>	<u>0.78</u>
	1130	8.30	0.30	9.02	0.35	<u>10.36</u>	<u>0.45</u>	<u>11.55</u>	<u>0.55</u>	<u>12.67</u>	<u>0.66</u>	<u>13.73</u>	<u>0.78</u>	<u>14.76</u>	<u>0.91</u>
	1270	9.06	0.41	9.79	0.47	<u>11.06</u>	<u>0.58</u>	<u>12.17</u>	<u>0.69</u>	<u>13.20</u>	<u>0.81</u>	<u>14.19</u>	<u>0.94</u>	<u>15.14</u>	<u>1.07</u>
	1420	9.91	0.55	<u>10.58</u>	<u>0.61</u>	<u>11.78</u>	<u>0.74</u>	<u>12.83</u>	<u>0.86</u>	<u>13.80</u>	<u>0.99</u>	<u>14.72</u>	<u>1.12</u>	<u>15.61</u>	<u>1.26</u>
08	1060	4.55	0.06	8.21	0.27	9.67	0.37	10.93	0.46	<u>12.11</u>	<u>0.57</u>	<u>13.23</u>	<u>0.68</u>	<u>14.30</u>	<u>0.81</u>
	1230	5.37	0.11	8.99	0.38	10.37	0.49	<u>11.55</u>	<u>0.60</u>	<u>12.62</u>	<u>0.71</u>	<u>13.65</u>	<u>0.84</u>	<u>14.64</u>	<u>0.96</u>
	1420	9.21	0.48	9.92	0.55	11.22	0.67	<u>12.33</u>	<u>0.80</u>	<u>13.33</u>	<u>0.92</u>	<u>14.27</u>	<u>1.05</u>	<u>15.17</u>	<u>1.19</u>
	1600	10.25	0.68	10.89	0.75	<u>12.09</u>	<u>0.90</u>	<u>13.15</u>	<u>1.04</u>	<u>14.10</u>	<u>1.18</u>	<u>14.99</u>	<u>1.33</u>	<u>15.83</u>	<u>1.47</u>
	1770	11.18	0.90	<u>11.76</u>	<u>0.98</u>	<u>12.88</u>	<u>1.14</u>	<u>13.90</u>	<u>1.30</u>	<u>14.82</u>	<u>1.45</u>	<u>15.67</u>	<u>1.61</u>	<u>16.46</u>	<u>1.77</u>
12	1420	6.65	0.22	9.55	0.51	10.89	0.64	12.04	0.77	13.06	0.89	<u>14.02</u>	<u>1.02</u>	<u>14.93</u>	<u>1.15</u>
	1650	10.06	0.68	10.69	0.76	11.90	0.91	13.00	1.06	<u>13.97</u>	<u>1.20</u>	<u>14.86</u>	<u>1.35</u>	<u>15.70</u>	<u>1.50</u>
	1890	11.33	0.99	11.88	1.08	12.96	1.25	<u>13.99</u>	<u>1.43</u>	<u>14.93</u>	<u>1.59</u>	<u>15.78</u>	<u>1.76</u>	<u>16.58</u>	<u>1.92</u>
	2120	12.61	1.38	<u>13.11</u>	<u>1.49</u>	<u>14.08</u>	<u>1.68</u>	<u>15.02</u>	<u>1.88</u>	<u>15.92</u>	<u>2.07</u>	<u>16.74</u>	<u>2.26</u>	<u>17.51</u>	<u>2.44</u>
	2360	<u>13.90</u>	<u>1.87</u>	<u>14.36</u>	<u>1.99</u>	<u>15.23</u>	<u>2.21</u>	<u>16.10</u>	<u>2.42</u>	<u>16.94</u>	<u>2.64</u>	<u>17.73</u>	<u>2.85</u>	<u>18.48</u>	<u>3.06</u>
14	1770	6.57	0.30	7.54	0.39	9.31	0.60	10.72	0.82	<u>11.95</u>	<u>1.04</u>	<u>13.09</u>	<u>1.27</u>	<u>14.13</u>	<u>1.52</u>
	2030	7.27	0.43	8.11	0.52	9.76	0.75	11.16	1.00	<u>12.36</u>	<u>1.25</u>	<u>13.44</u>	<u>1.50</u>	<u>14.45</u>	<u>1.76</u>
	2360	8.20	0.64	8.92	0.74	10.38	0.98	<u>11.73</u>	<u>1.26</u>	<u>12.91</u>	<u>1.55</u>	<u>13.97</u>	<u>1.84</u>	<u>14.93</u>	<u>2.13</u>
	2690	9.16	0.92	9.79	1.02	11.07	1.27	<u>12.33</u>	<u>1.58</u>	<u>13.48</u>	<u>1.90</u>	<u>14.53</u>	<u>2.23</u>	<u>15.48</u>	<u>2.56</u>
	2950	9.93	1.18	10.50	1.30	<u>11.66</u>	<u>1.56</u>	<u>12.83</u>	<u>1.87</u>	<u>13.95</u>	<u>2.22</u>	<u>14.98</u>	<u>2.58</u>	<u>15.92</u>	<u>2.94</u>
16	2120	7.13	0.44	7.91	0.52	9.50	0.74	10.94	0.99	<u>12.17</u>	<u>1.25</u>	<u>13.26</u>	<u>1.51</u>	<u>14.26</u>	<u>1.77</u>
	2500	8.13	0.68	8.80	0.78	10.15	1.00	11.48	1.27	<u>12.70</u>	<u>1.57</u>	<u>13.78</u>	<u>1.87</u>	<u>14.76</u>	<u>2.18</u>
	2830	9.03	0.96	9.63	1.07	10.81	1.30	<u>12.01</u>	<u>1.58</u>	<u>13.18</u>	<u>1.90</u>	<u>14.25</u>	<u>2.24</u>	<u>15.23</u>	<u>2.58</u>
	3210	10.07	1.37	10.62	1.48	<u>11.66</u>	<u>1.73</u>	<u>12.71</u>	<u>2.01</u>	<u>13.77</u>	<u>2.35</u>	<u>14.80</u>	<u>2.71</u>	<u>15.76</u>	<u>3.09</u>
	3540	10.99	1.81	11.50	1.93	<u>12.45</u>	<u>2.20</u>	<u>13.40</u>	<u>2.49</u>	<u>14.35</u>	<u>2.83</u>	<u>15.31</u>	<u>3.20</u>	<u>16.24</u>	<u>3.60</u>
25	2830	8.86	0.94	9.48	1.04	10.65	1.26	11.84	1.53	13.01	1.85	14.10	2.19	<u>15.08</u>	<u>2.53</u>
	3300	10.14	1.44	10.69	1.56	11.70	1.81	12.71	2.08	13.73	2.41	<u>14.74</u>	<u>2.77</u>	<u>15.71</u>	<u>3.15</u>
	3780	11.43	2.11	11.93	2.25	12.84	2.52	13.71	2.81	14.60	3.14	<u>15.49</u>	<u>3.51</u>	<u>16.39</u>	<u>3.91</u>
	4250	12.74	2.96	13.19	3.12	14.02	3.43	<u>14.81</u>	<u>3.74</u>	<u>15.59</u>	<u>4.08</u>	<u>16.37</u>	<u>4.45</u>	<u>17.17</u>	<u>4.85</u>
	4720	14.05	4.01	14.47	4.19	<u>15.23</u>	<u>4.54</u>	<u>15.96</u>	<u>4.88</u>	<u>16.66</u>	<u>5.24</u>	<u>17.36</u>	<u>5.62</u>	<u>18.07</u>	<u>6.03</u>

40RUA

LEGEND

ESP – External Static Pressure

Bold indicates field-supplied drive or motor is required.

Plain type indicates standard motor and standard drive.

Underline indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables, pages 42–43, to complete selection.

NOTES:

- Maximum allowable fan speed is 20 r/s
- Fan performance is based on deductions for wet coil, clean 51 mm filters, and unit casing.
See *Factory–Supplied Filter Pressure Drop* tables for factory–supplied filter pressure drop.
- For 50 Hz units, the medium–static drive and standard motor combination is not available for 16 – 25 sizes.
Use alternate motor if medium–static drive is required for these sizes.

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 40RU 350–600 Pa ESP — 50 Hz, SI

40RUA

UNIT 40RU	AIR- FLOW (L/s)	EXTERNAL STATIC PRESSURE (Pa)											
		350		400		450		500		550		600	
		r/s	kW	r/s	kW	r/s	kW	r/s	kW	r/s	kW	r/s	kW
07	850	<u>15.16</u>	<u>0.78</u>	<u>16.08</u>	<u>0.89</u>	<u>16.94</u>	<u>1.01</u>	<u>17.74</u>	<u>1.13</u>	<u>18.51</u>	<u>1.26</u>	<u>19.25</u>	<u>1.39</u>
	990	<u>15.44</u>	<u>0.90</u>	<u>16.38</u>	<u>1.03</u>	<u>17.25</u>	<u>1.16</u>	<u>18.07</u>	<u>1.30</u>	<u>18.84</u>	<u>1.43</u>	<u>19.58</u>	<u>1.57</u>
	1130	<u>15.73</u>	<u>1.05</u>	<u>16.65</u>	<u>1.19</u>	<u>17.53</u>	<u>1.33</u>	<u>18.36</u>	<u>1.48</u>	<u>19.14</u>	<u>1.62</u>	<u>19.89</u>	<u>1.77</u>
	1270	<u>16.07</u>	<u>1.21</u>	<u>16.96</u>	<u>1.36</u>	<u>17.82</u>	<u>1.51</u>	<u>18.64</u>	<u>1.67</u>	<u>19.42</u>	<u>1.83</u>	—	—
	1420	<u>16.48</u>	<u>1.41</u>	<u>17.32</u>	<u>1.56</u>	<u>18.14</u>	<u>1.72</u>	<u>18.94</u>	<u>1.89</u>	<u>19.71</u>	<u>2.06</u>	—	—
08	1060	<u>15.31</u>	<u>0.94</u>	<u>16.25</u>	<u>1.07</u>	<u>17.14</u>	<u>1.20</u>	<u>17.98</u>	<u>1.34</u>	<u>18.77</u>	<u>1.48</u>	<u>19.53</u>	<u>1.63</u>
	1230	<u>15.60</u>	<u>1.10</u>	<u>16.51</u>	<u>1.24</u>	<u>17.39</u>	<u>1.39</u>	<u>18.23</u>	<u>1.54</u>	<u>19.03</u>	<u>1.70</u>	<u>19.80</u>	<u>1.86</u>
	1420	<u>16.05</u>	<u>1.33</u>	<u>16.90</u>	<u>1.48</u>	<u>17.74</u>	<u>1.64</u>	<u>18.54</u>	<u>1.80</u>	<u>19.32</u>	<u>1.97</u>	—	—
	1600	<u>16.64</u>	<u>1.62</u>	<u>17.42</u>	<u>1.78</u>	<u>18.20</u>	<u>1.94</u>	<u>18.95</u>	<u>2.11</u>	<u>19.69</u>	<u>2.29</u>	—	—
	1770	<u>17.23</u>	<u>1.93</u>	<u>17.97</u>	<u>2.09</u>	<u>18.70</u>	<u>2.26</u>	<u>19.41</u>	<u>2.44</u>	—	—	—	—
12	1420	<u>15.81</u>	<u>1.29</u>	<u>16.67</u>	<u>1.44</u>	<u>17.51</u>	<u>1.60</u>	<u>18.32</u>	<u>1.76</u>	<u>19.11</u>	<u>1.92</u>	<u>19.87</u>	<u>2.09</u>
	1650	<u>16.51</u>	<u>1.65</u>	<u>17.29</u>	<u>1.80</u>	<u>18.05</u>	<u>1.97</u>	<u>18.80</u>	<u>2.13</u>	<u>19.53</u>	<u>2.31</u>	—	—
	1890	<u>17.34</u>	<u>2.09</u>	<u>18.06</u>	<u>2.26</u>	<u>18.77</u>	<u>2.43</u>	<u>19.45</u>	<u>2.61</u>	—	—	—	—
	2120	<u>18.24</u>	<u>2.63</u>	<u>18.93</u>	<u>2.82</u>	<u>19.59</u>	<u>3.00</u>	—	—	—	—	—	—
	2360	<u>19.18</u>	<u>3.27</u>	<u>19.85</u>	<u>3.48</u>	—	—	—	—	—	—	—	—
14	1770	<u>15.15</u>	<u>1.77</u>	<u>16.13</u>	<u>2.04</u>	<u>17.10</u>	<u>2.33</u>	<u>18.00</u>	<u>2.62</u>	<u>18.85</u>	<u>2.92</u>	<u>19.68</u>	<u>3.22</u>
	2030	<u>15.41</u>	<u>2.04</u>	<u>16.34</u>	<u>2.32</u>	<u>17.24</u>	<u>2.62</u>	<u>18.07</u>	<u>2.92</u>	<u>18.92</u>	<u>3.24</u>	<u>19.73</u>	<u>3.56</u>
	2360	<u>15.84</u>	<u>2.43</u>	<u>16.70</u>	<u>2.74</u>	<u>17.54</u>	<u>3.05</u>	<u>18.35</u>	<u>3.38</u>	<u>19.14</u>	<u>3.71</u>	<u>19.83</u>	<u>4.06</u>
	2690	<u>16.36</u>	<u>2.89</u>	<u>17.19</u>	<u>3.23</u>	<u>17.98</u>	<u>3.57</u>	<u>18.75</u>	<u>3.92</u>	<u>19.49</u>	<u>4.27</u>	—	—
	2950	<u>16.79</u>	<u>3.30</u>	<u>17.61</u>	<u>3.66</u>	<u>18.39</u>	<u>4.03</u>	<u>19.13</u>	<u>4.40</u>	<u>19.84</u>	<u>4.77</u>	—	—
16	2120	<u>15.20</u>	<u>2.05</u>	<u>16.12</u>	<u>2.33</u>	<u>16.98</u>	<u>2.62</u>	<u>17.83</u>	<u>2.92</u>	<u>18.67</u>	<u>3.24</u>	<u>19.47</u>	<u>3.57</u>
	2500	<u>15.67</u>	<u>2.49</u>	<u>16.53</u>	<u>2.80</u>	<u>17.35</u>	<u>3.12</u>	<u>18.13</u>	<u>3.44</u>	<u>18.90</u>	<u>3.77</u>	<u>19.65</u>	<u>4.12</u>
	2830	<u>16.13</u>	<u>2.92</u>	<u>16.97</u>	<u>3.27</u>	<u>17.77</u>	<u>3.62</u>	<u>18.53</u>	<u>3.97</u>	<u>19.26</u>	<u>4.33</u>	<u>19.97</u>	<u>4.69</u>
	3210	<u>16.66</u>	<u>3.48</u>	<u>17.50</u>	<u>3.87</u>	<u>18.29</u>	<u>4.26</u>	<u>19.03</u>	<u>4.65</u>	<u>19.75</u>	<u>5.04</u>	—	—
	3540	<u>17.13</u>	<u>4.02</u>	<u>17.97</u>	<u>4.45</u>	<u>18.75</u>	<u>4.88</u>	<u>19.50</u>	<u>5.30</u>	—	—	—	—
25	2830	<u>15.90</u>	<u>2.86</u>	<u>16.75</u>	<u>3.18</u>	<u>17.53</u>	<u>3.52</u>	<u>18.30</u>	<u>3.89</u>	<u>19.03</u>	<u>4.23</u>	—	—
	3300	<u>16.50</u>	<u>3.53</u>	<u>17.33</u>	<u>3.91</u>	<u>18.17</u>	<u>4.32</u>	<u>18.92</u>	<u>4.70</u>	<u>19.60</u>	<u>5.10</u>	—	—
	3780	<u>17.13</u>	<u>4.32</u>	<u>17.97</u>	<u>4.76</u>	<u>18.83</u>	<u>5.22</u>	<u>19.55</u>	<u>5.67</u>	—	—	—	—
	4250	<u>17.88</u>	<u>5.30</u>	<u>18.67</u>	<u>5.76</u>	<u>19.48</u>	<u>6.24</u>	—	—	—	—	—	—
	4720	<u>18.77</u>	<u>6.52</u>	<u>19.43</u>	<u>6.99</u>	—	—	—	—	—	—	—	—

LEGEND

ESP – External Static Pressure

Bold indicates field-supplied drive or motor is required.

Plain type indicates standard motor and standard drive.

Underline indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables, pages 42–43, to complete selection.

NOTES:

- Maximum allowable fan speed is 20 r/s
- Fan performance is based on deductions for wet coil, clean 51 mm filters, and unit casing.
See *Factory–Supplied Filter Pressure Drop* tables for factory–supplied filter pressure drop.
- For 50 Hz units, the medium–static drive and standard motor combination is not available for 16 – 25 sizes.
Use alternate motor if medium–static drive is required for these sizes.

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 40RU WITH HIGH CAPACITY COIL 0.0–1.2 in. wg ESP — 50 Hz, ENGLISH

UNIT 40RU	AIR- FLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)													
		0.0		0.2		0.4		0.6		0.8		1.0		1.2	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1800	419	0.21	471	0.26	564	0.37	649	0.49	727	0.63	797	0.77	862	0.92
	2100	471	0.31	519	0.37	602	0.49	679	0.62	751	0.77	819	0.92	882	1.09
	2400	524	0.44	568	0.51	645	0.64	715	0.79	781	0.94	844	1.11	905	1.28
	2700	578	0.61	619	0.69	690	0.84	755	0.99	816	1.15	875	1.33	932	1.51
	3000	633	0.81	671	0.90	738	1.07	799	1.24	856	1.41	910	1.60	963	1.79
08	2250	290	0.10	510	0.39	594	0.51	669	0.65	739	0.79	806	0.95	870	1.12
	2600	349	0.19	561	0.55	640	0.70	709	0.84	773	1.00	834	1.16	893	1.34
	3000	579	0.70	621	0.79	695	0.96	759	1.12	818	1.30	874	1.47	928	1.66
	3400	646	0.99	683	1.09	752	1.29	813	1.48	869	1.67	920	1.86	970	2.06
	3750	705	1.31	739	1.42	804	1.63	862	1.85	915	2.05	964	2.26	1011	2.48
12	3000	421	0.35	592	0.73	670	0.90	737	1.06	797	1.23	854	1.41	908	1.59
	3500	626	0.98	664	1.08	735	1.28	798	1.48	855	1.67	908	1.87	958	2.07
	4000	706	1.42	738	1.54	803	1.77	862	2.00	917	2.23	967	2.45	1014	2.67
	4500	786	1.99	815	2.12	873	2.39	929	2.65	980	2.90	1028	3.16	1073	3.41
	5000	867	2.70	893	2.84	946	3.14	997	3.43	1046	3.72	1092	4.00	1135	4.28
14	3750	410	0.43	467	0.55	567	0.83	649	1.12	721	1.41	788	1.72	851	2.05
	4300	455	0.62	504	0.74	599	1.05	679	1.38	748	1.70	811	2.04	871	2.39
	5000	514	0.92	556	1.06	641	1.39	718	1.76	786	2.14	847	2.52	903	2.91
	5700	575	1.32	612	1.47	686	1.82	759	2.23	825	2.66	884	3.09	939	3.52
	6250	624	1.71	657	1.87	725	2.24	793	2.66	856	3.12	915	3.59	969	4.06
16	4500	437	0.61	483	0.72	576	1.01	660	1.35	732	1.69	797	2.03	856	2.38
	5300	499	0.95	538	1.07	617	1.37	696	1.74	767	2.13	830	2.53	888	2.94
	6000	555	1.34	590	1.48	659	1.79	730	2.17	798	2.59	860	3.04	918	3.49
	6800	620	1.91	651	2.06	712	2.39	774	2.78	836	3.22	896	3.71	952	4.21
	7500	677	2.52	706	2.69	761	3.04	817	3.44	873	3.89	929	4.39	984	4.93
25	6000	542	1.29	577	1.42	646	1.72	716	2.09	785	2.51	849	2.95	907	3.40
	7000	620	1.99	652	2.15	711	2.48	771	2.85	831	3.28	890	3.76	947	4.27
	8000	700	2.92	728	3.10	781	3.46	833	3.85	885	4.29	938	4.78	990	5.32
	9000	781	4.10	806	4.30	854	4.71	900	5.13	946	5.58	993	6.08	1039	6.62
	10000	862	5.56	885	5.79	929	6.24	971	6.70	1012	7.18	1054	7.69	1096	8.24

40RUJA

LEGEND

Bhp – Brake Horsepower Input to Fan

ESP – External Static Pressure

Bold indicates field-supplied drive or motor is required.

Plain type indicates standard motor and standard drive.

Underline indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables, pages 42–43, to complete selection.

NOTES:

1. Maximum allowable fan speed is 1200 rpm
2. Fan performance is based on deductions for wet coil, clean 2-in. filters, and unit casing.
See *Factory-Supplied Filter Pressure Drop* tables for factory-supplied filter pressure drop.
3. For 50 Hz units, the medium-static drive and standard motor combination is not available for 16 – 25 sizes.
Use alternate motor if medium-static drive is required for these sizes.

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 40RU WITH HIGH CAPACITY COIL 1.4–2.4 in. wg ESP — 50 Hz, ENGLISH

40RUUA

UNIT 40RU	AIR- FLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)											
		1.4		1.6		1.8		2.0		2.2		2.4	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1,800	<u>921</u>	1.07	<u>975</u>	<u>1.23</u>	<u>1,026</u>	<u>1.39</u>	1,074	1.55	1,120	1.72	1,164	1.90
	2,100	<u>942</u>	<u>1.26</u>	<u>997</u>	<u>1.43</u>	1,048	1.61	1,097	1.79	1,143	1.97	1,186	2.16
	2,400	<u>963</u>	<u>1.47</u>	<u>1,017</u>	<u>1.66</u>	1,069	1.85	1,118	2.05	1,164	2.25	—	—
	2,700	<u>987</u>	<u>1.71</u>	<u>1,039</u>	<u>1.91</u>	1,090	2.12	1,138	2.33	1,185	2.55	—	—
	3,000	<u>1,015</u>	<u>1.99</u>	1,065	2.20	1,113	2.42	1,161	2.65	—	—	—	—
08	2,250	<u>930</u>	<u>1.29</u>	<u>986</u>	<u>1.47</u>	<u>1,039</u>	<u>1.65</u>	<u>1,089</u>	<u>1.84</u>	<u>1,136</u>	<u>2.03</u>	1,181	2.22
	2,600	<u>950</u>	<u>1.53</u>	<u>1,005</u>	<u>1.72</u>	<u>1,057</u>	<u>1.92</u>	<u>1,107</u>	<u>2.13</u>	1,154	2.33	—	—
	3,000	<u>980</u>	<u>1.86</u>	<u>1,031</u>	<u>2.06</u>	<u>1,081</u>	<u>2.27</u>	<u>1,129</u>	<u>2.49</u>	1,175	2.72	—	—
	3,400	<u>1,018</u>	<u>2.26</u>	<u>1,065</u>	<u>2.48</u>	<u>1,111</u>	<u>2.70</u>	1,156	2.93	—	—	—	—
	3,750	<u>1,057</u>	<u>2.69</u>	<u>1,101</u>	<u>2.92</u>	1,144	3.15	1,186	3.39	—	—	—	—
12	3,000	<u>961</u>	1.78	<u>1,012</u>	1.98	<u>1,062</u>	<u>2.19</u>	1,111	<u>2.41</u>	<u>1,158</u>	<u>2.64</u>	—	—
	3,500	<u>1,005</u>	<u>2.27</u>	<u>1,052</u>	<u>2.49</u>	<u>1,098</u>	<u>2.71</u>	<u>1,142</u>	<u>2.94</u>	<u>1,186</u>	<u>3.18</u>	—	—
	4,000	<u>1,058</u>	<u>2.90</u>	<u>1,101</u>	<u>3.13</u>	<u>1,143</u>	<u>3.36</u>	<u>1,184</u>	<u>3.60</u>	—	—	—	—
	4,500	<u>1,116</u>	<u>3.66</u>	<u>1,157</u>	<u>3.91</u>	<u>1,196</u>	<u>4.16</u>	—	—	—	—	—	—
	5,000	<u>1,176</u>	<u>4.56</u>	—	—	—	—	—	—	—	—	—	—
14	3,750	<u>912</u>	<u>2.39</u>	<u>971</u>	<u>2.76</u>	<u>1,028</u>	<u>3.14</u>	1,083	3.54	1,135	3.95	1,185	4.36
	4,300	<u>928</u>	<u>2.75</u>	<u>982</u>	<u>3.13</u>	<u>1,036</u>	<u>3.53</u>	1,087	3.94	1,138	4.37	1,187	4.81
	5,000	<u>956</u>	<u>3.30</u>	<u>1,007</u>	<u>3.71</u>	1,056	4.13	1,104	4.56	1,151	5.00	1,196	5.46
	5,700	<u>990</u>	<u>3.96</u>	<u>1,039</u>	<u>4.40</u>	1,086	4.85	1,130	5.31	1,174	5.78	—	—
	6,250	<u>1,019</u>	<u>4.54</u>	1,067	5.02	1,112	5.50	1,156	5.99	1,198	6.49	—	—
16	4,500	<u>912</u>	<u>2.75</u>	<u>967</u>	<u>3.12</u>	1,019	3.52	1,070	3.92	1,120	4.35	1,168	4.79
	5,300	<u>942</u>	<u>3.34</u>	<u>992</u>	<u>3.76</u>	1,041	4.18	1,088	4.61	1,134	5.06	1,179	5.52
	6,000	<u>971</u>	<u>3.95</u>	1,020	4.40	1,067	4.86	1,112	5.33	1,156	5.81	1,198	6.29
	6,800	<u>1,005</u>	<u>4.72</u>	1,054	5.23	1,101	5.75	1,145	6.27	1,187	6.79	—	—
	7,500	1,036	5.48	1,084	6.04	1,131	6.61	1,174	7.17	—	—	—	—
25	6,000	<u>961</u>	<u>3.86</u>	<u>1,011</u>	<u>4.31</u>	<u>1,058</u>	<u>4.77</u>	<u>1,104</u>	<u>5.24</u>	1,147	5.71	—	—
	7,000	<u>1,000</u>	<u>4.79</u>	<u>1,050</u>	<u>5.32</u>	<u>1,097</u>	<u>5.85</u>	1,142	6.38	1,184	6.91	—	—
	8,000	<u>1,041</u>	<u>5.88</u>	<u>1,090</u>	<u>6.47</u>	1,137	7.07	1,181	7.67	—	—	—	—
	9,000	<u>1,086</u>	<u>7.21</u>	1,133	7.82	1,178	8.47	—	—	—	—	—	—
	10,000	1,138	8.83	1,180	9.46	—	—	—	—	—	—	—	—

LEGEND

Bhp – Brake Horsepower Input to Fan

ESP – External Static Pressure

Bold indicates field-supplied drive or motor is required.

Plain type indicates standard motor and standard drive.

Underline indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables, pages 42–43, to complete selection.

NOTES:

- Maximum allowable fan speed is 1200 rpm
- Fan performance is based on deductions for wet coil, clean 2-in. filters, and unit casing.
See *Factory-Supplied Filter Pressure Drop* tables for factory-supplied filter pressure drop.
- For 50 Hz units, the medium-static drive and standard motor combination is not available for 16 – 25 sizes.
Use alternate motor if medium-static drive is required for these sizes.

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 40RU WITH HIGH CAPACITY COIL 0–300 Pa ESP — 50 Hz, SI

UNIT 40RU	AIRFLOW (L/s)	EXTERNAL STATIC PRESSURE (Pa)													
		0		50		100		150		200		250		300	
		r/s	kW	r/s	kW	r/s	kW	r/s	kW	r/s	kW	r/s	kW	r/s	kW
07	850	6.98	0.16	7.86	0.19	9.40	0.27	<u>10.81</u>	<u>0.37</u>	<u>12.11</u>	<u>0.47</u>	<u>13.29</u>	<u>0.57</u>	<u>14.36</u>	<u>0.69</u>
	990	7.84	0.23	8.64	0.27	10.03	0.36	<u>11.31</u>	<u>0.46</u>	<u>12.52</u>	<u>0.57</u>	<u>13.65</u>	<u>0.69</u>	<u>14.71</u>	<u>0.81</u>
	1130	8.73	0.33	9.46	0.38	<u>10.75</u>	<u>0.48</u>	<u>11.91</u>	<u>0.59</u>	<u>13.01</u>	<u>0.70</u>	<u>14.07</u>	<u>0.83</u>	<u>15.08</u>	<u>0.96</u>
	1270	9.63	0.45	<u>10.31</u>	<u>0.51</u>	<u>11.51</u>	<u>0.62</u>	<u>12.58</u>	<u>0.74</u>	<u>13.60</u>	<u>0.86</u>	<u>14.58</u>	<u>0.99</u>	<u>15.53</u>	<u>1.13</u>
	1420	<u>10.55</u>	<u>0.61</u>	<u>11.18</u>	<u>0.67</u>	<u>12.30</u>	<u>0.80</u>	<u>13.31</u>	<u>0.92</u>	<u>14.26</u>	<u>1.05</u>	<u>15.17</u>	<u>1.19</u>	<u>16.05</u>	<u>1.33</u>
08	1060	4.83	0.07	8.50	0.29	9.91	0.38	11.15	0.48	<u>12.32</u>	<u>0.59</u>	<u>13.44</u>	<u>0.71</u>	<u>14.50</u>	<u>0.83</u>
	1230	5.81	0.14	9.35	0.41	10.67	0.52	<u>11.81</u>	<u>0.63</u>	<u>12.88</u>	<u>0.74</u>	<u>13.90</u>	<u>0.87</u>	<u>14.89</u>	<u>1.00</u>
	1420	9.65	0.52	10.35	0.59	<u>11.59</u>	<u>0.71</u>	<u>12.66</u>	<u>0.84</u>	<u>13.64</u>	<u>0.97</u>	<u>14.57</u>	<u>1.10</u>	<u>15.47</u>	<u>1.24</u>
	1600	10.76	0.74	<u>11.39</u>	<u>0.81</u>	<u>12.54</u>	<u>0.96</u>	<u>13.55</u>	<u>1.10</u>	<u>14.48</u>	<u>1.24</u>	<u>15.34</u>	<u>1.39</u>	<u>16.17</u>	<u>1.53</u>
	1770	<u>11.74</u>	<u>0.97</u>	<u>12.32</u>	<u>1.06</u>	<u>13.40</u>	<u>1.22</u>	<u>14.37</u>	<u>1.38</u>	<u>15.25</u>	<u>1.53</u>	<u>16.07</u>	<u>1.69</u>	<u>16.86</u>	<u>1.85</u>
12	1420	7.02	0.26	9.86	0.54	11.17	0.67	12.28	0.79	<u>13.29</u>	<u>0.92</u>	<u>14.23</u>	<u>1.05</u>	<u>15.14</u>	<u>1.19</u>
	1650	10.44	0.73	11.06	0.80	12.25	0.96	<u>13.31</u>	<u>1.10</u>	<u>14.25</u>	<u>1.25</u>	<u>15.13</u>	<u>1.39</u>	<u>15.96</u>	<u>1.54</u>
	1890	11.76	1.06	12.31	1.15	<u>13.38</u>	<u>1.32</u>	<u>14.37</u>	<u>1.49</u>	<u>15.28</u>	<u>1.66</u>	<u>16.11</u>	<u>1.83</u>	<u>16.89</u>	<u>1.99</u>
	2120	<u>13.10</u>	<u>1.48</u>	<u>13.59</u>	<u>1.58</u>	<u>14.55</u>	<u>1.78</u>	<u>15.48</u>	<u>1.97</u>	<u>16.34</u>	<u>2.17</u>	<u>17.14</u>	<u>2.35</u>	<u>17.89</u>	<u>2.54</u>
	2360	<u>14.45</u>	<u>2.01</u>	<u>14.89</u>	<u>2.12</u>	<u>15.76</u>	<u>2.34</u>	<u>16.62</u>	<u>2.56</u>	<u>17.43</u>	<u>2.77</u>	<u>18.20</u>	<u>2.98</u>	<u>18.92</u>	<u>3.19</u>
14	1770	6.84	0.32	7.78	0.41	9.46	0.62	10.82	0.83	<u>12.02</u>	<u>1.05</u>	<u>13.13</u>	<u>1.28</u>	<u>14.19</u>	<u>1.53</u>
	2030	7.58	0.46	8.40	0.55	9.98	0.78	11.31	1.03	<u>12.47</u>	<u>1.27</u>	<u>13.52</u>	<u>1.52</u>	<u>14.51</u>	<u>1.78</u>
	2360	8.57	0.69	9.27	0.79	10.68	1.04	<u>11.96</u>	<u>1.31</u>	<u>13.09</u>	<u>1.60</u>	<u>14.11</u>	<u>1.88</u>	<u>15.05</u>	<u>2.17</u>
	2690	9.59	0.99	10.20	1.10	11.44	1.36	<u>12.64</u>	<u>1.66</u>	<u>13.74</u>	<u>1.98</u>	<u>14.74</u>	<u>2.30</u>	<u>15.65</u>	<u>2.63</u>
	2950	10.40	1.28	10.96	1.39	<u>12.09</u>	<u>1.67</u>	<u>13.21</u>	<u>1.98</u>	<u>14.27</u>	<u>2.33</u>	<u>15.25</u>	<u>2.68</u>	<u>16.15</u>	<u>3.03</u>
16	2120	7.28	0.45	8.05	0.54	9.60	0.75	11.00	1.00	<u>12.21</u>	<u>1.26</u>	<u>13.28</u>	<u>1.51</u>	<u>14.27</u>	<u>1.78</u>
	2500	8.32	0.71	8.97	0.80	10.29	1.02	11.59	1.30	<u>12.78</u>	<u>1.59</u>	<u>13.84</u>	<u>1.89</u>	<u>14.80</u>	<u>2.19</u>
	2830	9.25	1.00	9.83	1.10	10.99	1.33	<u>12.16</u>	<u>1.62</u>	<u>13.29</u>	<u>1.93</u>	<u>14.34</u>	<u>2.27</u>	<u>15.30</u>	<u>2.60</u>
	3210	10.33	1.42	10.85	1.54	<u>11.87</u>	<u>1.78</u>	<u>12.90</u>	<u>2.07</u>	<u>13.93</u>	<u>2.40</u>	<u>14.93</u>	<u>2.76</u>	<u>15.87</u>	<u>3.14</u>
	3540	11.29	1.88	<u>11.77</u>	<u>2.01</u>	<u>12.69</u>	<u>2.27</u>	<u>13.62</u>	<u>2.56</u>	<u>14.56</u>	<u>2.90</u>	<u>15.49</u>	<u>3.27</u>	<u>16.40</u>	<u>3.67</u>
25	2830	9.03	0.96	9.62	1.06	10.77	1.29	11.94	1.56	13.08	1.87	14.15	2.20	<u>15.12</u>	<u>2.54</u>
	3300	10.34	1.48	10.86	1.60	11.85	1.85	12.84	2.12	13.85	2.45	<u>14.84</u>	<u>2.80</u>	<u>15.78</u>	<u>3.18</u>
	3780	11.67	2.17	12.14	2.31	13.02	2.58	13.88	2.87	<u>14.75</u>	<u>3.20</u>	<u>15.63</u>	<u>3.56</u>	<u>16.50</u>	<u>3.96</u>
	4250	13.01	3.05	13.44	3.21	14.23	3.51	<u>15.00</u>	<u>3.82</u>	<u>15.77</u>	<u>4.16</u>	<u>16.54</u>	<u>4.53</u>	<u>17.32</u>	<u>4.94</u>
	4720	14.36	4.15	<u>14.75</u>	<u>4.32</u>	<u>15.48</u>	<u>4.66</u>	<u>16.18</u>	<u>4.99</u>	<u>16.87</u>	<u>5.35</u>	<u>17.56</u>	<u>5.73</u>	<u>18.26</u>	<u>6.14</u>

40RUJA

LEGEND

ESP – External Static Pressure

Bold indicates field-supplied drive or motor is required.

Plain type indicates standard motor and standard drive.

Underline indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables, pages 42–43, to complete selection.

NOTES:

- Maximum allowable fan speed is 20 r/s
- Fan performance is based on deductions for wet coil, clean 51 mm filters, and unit casing.
See *Factory-Supplied Filter Pressure Drop* tables for factory-supplied filter pressure drop.
- For 50 Hz units, the medium-static drive and standard motor combination is not available for 16 – 25 sizes.
Use alternate motor if medium-static drive is required for these sizes.

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 40RU WITH HIGH CAPACITY COIL 350–600 Pa ESP — 50 Hz, SI

40RUA

UNIT 40RU	AIRFLOW (L/s)	EXTERNAL STATIC PRESSURE (Pa)											
		350		400		450		500		550		600	
		r/s	kW	r/s	kW	r/s	kW	r/s	kW	r/s	kW	r/s	kW
07	850	<u>15.34</u>	0.80	<u>16.25</u>	<u>0.92</u>	<u>17.10</u>	<u>1.03</u>	17.90	1.16	18.66	1.28	19.39	1.41
	990	<u>15.69</u>	<u>0.94</u>	<u>16.61</u>	<u>1.07</u>	17.47	1.20	18.28	1.33	19.04	1.47	19.77	1.61
	1130	<u>16.04</u>	<u>1.09</u>	<u>16.95</u>	<u>1.23</u>	17.81	1.38	18.63	1.53	19.40	1.67	—	—
	1270	<u>16.44</u>	<u>1.27</u>	<u>17.32</u>	<u>1.42</u>	18.17	1.58	18.97	1.74	19.75	1.90	—	—
	1420	<u>16.91</u>	<u>1.49</u>	17.75	1.64	18.56	1.81	19.34	1.97	—	—	—	—
08	1060	<u>15.50</u>	<u>0.96</u>	<u>16.43</u>	<u>1.10</u>	<u>17.31</u>	<u>1.23</u>	<u>18.14</u>	<u>1.37</u>	<u>18.93</u>	<u>1.51</u>	19.68	1.66
	1230	<u>15.84</u>	<u>1.14</u>	<u>16.75</u>	<u>1.28</u>	<u>17.62</u>	<u>1.43</u>	<u>18.45</u>	<u>1.58</u>	19.24	1.74	—	—
	1420	<u>16.34</u>	<u>1.38</u>	<u>17.19</u>	<u>1.54</u>	<u>18.01</u>	<u>1.70</u>	<u>18.81</u>	<u>1.86</u>	19.59	2.03	—	—
	1600	<u>16.97</u>	<u>1.69</u>	<u>17.76</u>	<u>1.85</u>	<u>18.52</u>	<u>2.02</u>	19.27	2.19	—	—	—	—
	1770	<u>17.61</u>	<u>2.01</u>	<u>18.35</u>	<u>2.18</u>	19.07	2.35	19.77	2.53	—	—	—	—
12	1420	<u>16.02</u>	<u>1.33</u>	<u>16.87</u>	<u>1.48</u>	<u>17.71</u>	<u>1.64</u>	<u>18.52</u>	<u>1.80</u>	<u>19.30</u>	<u>1.97</u>	—	—
	1650	<u>16.76</u>	<u>1.70</u>	<u>17.53</u>	<u>1.85</u>	<u>18.29</u>	<u>2.02</u>	<u>19.04</u>	<u>2.19</u>	<u>19.77</u>	<u>2.37</u>	—	—
	1890	<u>17.64</u>	<u>2.16</u>	<u>18.35</u>	<u>2.33</u>	<u>19.05</u>	<u>2.51</u>	<u>19.74</u>	<u>2.69</u>	—	—	—	—
	2120	<u>18.60</u>	<u>2.73</u>	<u>19.28</u>	<u>2.91</u>	<u>19.93</u>	<u>3.10</u>	—	—	—	—	—	—
	2360	<u>19.61</u>	<u>3.40</u>	—	—	—	—	—	—	—	—	—	—
14	1770	<u>15.21</u>	<u>1.78</u>	<u>16.19</u>	<u>2.06</u>	<u>17.13</u>	<u>2.34</u>	18.04	2.64	18.91	2.94	19.75	3.25
	2030	<u>15.46</u>	<u>2.05</u>	<u>16.37</u>	<u>2.33</u>	<u>17.26</u>	<u>2.63</u>	18.12	2.94	18.96	3.26	19.78	3.59
	2360	<u>15.94</u>	<u>2.46</u>	<u>16.78</u>	<u>2.77</u>	17.60	3.08	18.40	3.40	19.18	3.73	19.94	4.07
	2690	<u>16.51</u>	<u>2.95</u>	<u>17.32</u>	<u>3.28</u>	18.09	3.62	18.84	3.96	19.57	4.31	—	—
	2950	<u>16.99</u>	<u>3.39</u>	17.78	3.74	18.54	4.10	19.26	4.47	19.96	4.84	—	—
16	2120	<u>15.21</u>	<u>2.05</u>	<u>16.11</u>	<u>2.33</u>	16.98	2.62	17.83	2.93	18.66	3.24	19.47	3.57
	2500	<u>15.69</u>	<u>2.49</u>	<u>16.54</u>	<u>2.80</u>	17.35	3.12	18.14	3.44	18.90	3.77	19.64	4.11
	2830	<u>16.18</u>	<u>2.94</u>	17.01	3.28	17.79	3.63	18.54	3.97	19.27	4.33	19.97	4.69
	3210	<u>16.75</u>	<u>3.52</u>	17.57	3.90	18.34	4.29	19.08	4.67	19.78	5.06	—	—
	3540	<u>17.26</u>	4.09	18.07	4.50	18.84	4.93	19.57	5.35	—	—	—	—
25	2830	<u>16.01</u>	<u>2.88</u>	<u>16.85</u>	<u>3.22</u>	<u>17.64</u>	<u>3.56</u>	<u>18.39</u>	<u>3.91</u>	19.12	4.26	—	—
	3300	<u>16.67</u>	<u>3.57</u>	<u>17.50</u>	<u>3.96</u>	<u>18.28</u>	<u>4.36</u>	19.03	4.75	19.73	5.15	—	—
	3780	<u>17.35</u>	<u>4.39</u>	<u>18.17</u>	<u>4.82</u>	18.95	5.27	19.68	5.72	—	—	—	—
	4250	<u>18.11</u>	<u>5.37</u>	18.88	5.83	19.63	6.31	—	—	—	—	—	—
	4720	18.96	6.58	19.67	7.05	—	—	—	—	—	—	—	—

LEGEND

ESP – External Static Pressure

Bold indicates field-supplied drive or motor is required.

Plain type indicates standard motor and standard drive.

Underline indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables, pages 42–43, to complete selection.

NOTES:

- Maximum allowable fan speed is 20 r/s
- Fan performance is based on deductions for wet coil, clean 51 mm filters, and unit casing.
See *Factory-Supplied Filter Pressure Drop* tables for factory-supplied filter pressure drop.
- For 50 Hz units, the medium-static drive and standard motor combination is not available for 16 – 25 sizes.
Use alternate motor if medium-static drive is required for these sizes.

PERFORMANCE DATA (cont.)

DUCT SOUND POWER LEVELS (Lw)

MODEL	SIZE	CFM	dB(A)	OCTAVE BAND CENTER FREQUENCY (Hz)						
				63	125	250	500	1000	2000	4000
40RUA	07	2,400	86.3	93.2	89.2	85.2	84.2	80.2	78.2	74.2
	08	3,000	88.3	95.3	91.3	87.3	86.3	82.3	80.3	76.3
	12	4,000	91.6	98.6	94.6	90.6	89.6	85.6	83.6	79.6
	14	5,000	91.1	97.3	93.3	89.3	90.3	84.3	82.3	78.3
	16	6,000	92.7	98.9	94.9	90.9	91.9	85.9	83.9	79.9
	25	8,000	96.4	102.6	98.6	94.6	95.6	89.6	87.6	83.6

LEGEND:

ASHRAE – American Society of Heating, Refrigerating and Air Conditioning, Inc.

HVAC – Heating, Ventilation and Air Conditioning

NOTES:

1. The above estimated sound power levels are based upon the ASHRAE calculation approach from the ASHRAE 1987 HVAC Systems and Applications handbook, Chapter 52.
2. Since this data is calculated, these sound power levels may be different than the actual sound power levels.
3. The acoustic center of the unit is located at the geometric center of the unit.

FACTORY-SUPPLIED FILTER PRESSURE DROP — SI

SIZE	UNIT	AIRFLOW (L/s)	PRESSURE DROP	
			(Pa)	(Pa)
07	40RUA	850	13	
		1150	20	
		1450	28	
08	40RUA	1000	17	
		1400	27	
		1800	38	
12	40RUA	1450	28	
		1900	42	
		2350	56	
14	40RUA	1750	15	
		2350	24	
		2950	33	
16	40RUA	2100	20	
		2800	30	
		3500	42	
25	40RUA	2900	32	
		3800	47	
		4700	64	

ACCESSORY PLENUM AIR THROW DATA — SI(m)

UNIT	AIRFLOW (L/s)	VANE DEFLECTION		
		Straight	21j°	45°
40RUA 07	1150	11.71	9.91	7.20
40RUA 08	1400	13.87	11.71	8.63
40RUA 12	1900	16.65	13.93	9.99
40RUA 14	2350	13.77	11.63	8.57
40RUA 16	2800	15.41	13.25	9.55
40RUA 25	3800	18.17	15.44	11.20

NOTE: Throw distances shown are for 0.381 m/sec terminal velocity. Use the following multipliers to determine throw values for other terminal velocities.

TERMINAL VELOCITY (m/sec)	THROW FACTOR
0.254	X 1.50
0.508	X 0.75
0.762	X 0.50

40RUA

PERFORMANCE DATA (cont.)

ACCESSORY PRESSURE DROP — SI (Pa)

UNIT	AIRFLOW (L/s)	DISCHARGE PLENUM	RETURN AIR GRILLE	HEATING COILS			ECONOMIZER
				Hot Water	Steam	Electric	
40RUA 07	850	15	2	25	25	9	12
	1150	25	3	41	41	16	18
	1450	36	5	60	60	26	23
40RUA 08	1000	20	2	33	33	12	13
	1400	34	5	57	57	24	22
	1800	51	8	85	85	39	39
40RUA 12	1450	36	5	60	60	26	23
	1900	56	10	93	93	43	43
	2350	79	15	132	132	65	69
40RUA 14	1750	18	2	26	26	10	12
	2350	29	5	43	43	17	17
	2950	43	5	62	62	26	27
40RUA 16	2100	24	2	36	36	14	15
	2800	39	5	57	57	24	22
	3500	56	7	82	82	37	37
40RUA 25	2900	41	5	60	60	26	23
	3800	64	10	93	93	43	43
	4700	91	15	132	132	65	69

ACCESSORY PRESSURE DROP — English (in. wg)

UNIT	AIRFLOW (Cfm)	DISCHARGE PLENUM	RETURN AIR GRILLE	Hot Water	Steam	Electric	ECONOMIZER
40RUA 07	1,800	0.06	0.01	0.10	0.10	0.04	0.05
	2,400	0.10	0.01	0.16	0.16	0.06	0.07
	3,000	0.14	0.02	0.23	0.23	0.10	0.09
40RUA/S 08	2,250	0.09	0.01	0.15	0.15	0.06	0.06
	3,000	0.14	0.02	0.23	0.23	0.10	0.09
	3,750	0.21	0.03	0.35	0.35	0.15	0.15
40RUS 10	2,550	0.11	0.02	0.18	0.18	0.07	0.07
	3,400	0.17	0.03	0.28	0.28	0.12	0.13
	4,250	0.24	0.04	0.41	0.41	0.19	0.19
40RUA/S 12	3,000	0.14	0.02	0.23	0.23	0.10	0.09
	4,000	0.22	0.04	0.37	0.37	0.17	0.17
	5,000	0.32	0.06	0.53	0.53	0.26	0.28
40RUA/S 14	3,750	0.07	0.01	0.11	0.11	0.04	0.05
	5,000	0.12	0.02	0.17	0.17	0.07	0.07
	6,250	0.17	0.02	0.25	0.25	0.11	0.11
40RUA/S 16	4,500	0.10	0.01	0.15	0.15	0.06	0.06
	6,000	0.16	0.02	0.23	0.23	0.10	0.09
	7,500	0.23	0.03	0.33	0.33	0.15	0.15
40RUA/S 25	6,000	0.16	0.02	0.23	0.23	0.10	0.09
	8,000	0.26	0.04	0.37	0.37	0.17	0.17
	10,000	0.37	0.06	0.53	0.53	0.26	0.28

40RUA

ELECTRICAL DATA

STANDARD MOTORS

UNIT	V*-PH-Hz	VOLTAGE LIMITS	FAN MOTOR		POWER SUPPLY	
			Hp (kW)	FLA	Minimum Circuit Amps	MOCP
40RUA 07	400-3-50	360-440	2.4 (1.79)	2.6	3.3	15
40RUA 08	400-3-50	360-440	2.4 (1.79)	2.6	3.3	15
40RUA 12	400-3-50	360-440	2.9 (2.16)	3.4	4.3	15
40RUA 14	400-3-50	360-440	2.9 (2.16)	3.4	4.3	15
40RUA 16	400-3-50	360-440	2.9 (2.16)	3.4	4.3	15
40RUA 25	400-3-50	360-440	5.0 (3.73)	7.6	9.5	15

LEGEND

FLA — Full Load Amps

MOCP — Maximum Overcurrent Protection

* Motors are designed for satisfactory operation within 10% of nominal voltages shown. Voltages should not exceed the limits shown in the Voltage Limits column.

NOTES:

1. Minimum circuit amps (MCA) and MOCP values are calculated in accordance with NEC (National Electrical Code) (U.S.A. standard), Article 440.
2. Motor FLA values are established in accordance with UL (Underwriters' Laboratories) Standard 1995 (U.S.A. standard).
3. Indoor fan motors 5 hp and larger meet the minimum efficiency requirements as established by the Energy Policy Act of 1992 (EPACT) effective October 24, 1997.
4. Unbalanced 3-Phase Supply Voltage
Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percentage of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 230-3-60



AB = 224 v

BC = 231 v

AC = 226 v

$$\begin{aligned} \text{Average Voltage} &= \frac{(224 + 231 + 226)}{3} = \frac{681}{3} \\ &= 227 \end{aligned}$$

Determine maximum deviation from average voltage.

(AB) 227 - 224 = 3 v

(BC) 231 - 227 = 4 v

(AC) 227 - 226 = 1 v

Maximum deviation is 4 v.

Determine percent of voltage imbalance.

$$\begin{aligned} \% \text{ Voltage Imbalance} &= 100 \times \frac{4}{227} \\ &= 1.76\% \end{aligned}$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.



40RUA

ELECTRICAL DATA (cont.)

ALTERNATE MOTORS

UNIT	V*-PH-Hz	VOLTAGE LIMITS	FAN MOTOR		POWER SUPPLY	
			Hp (kW)	FLA	Minimum Circuit Amps	MOCP
40RUA 07	400-3-50	360-440	2.4 (1.79)	2.6	3.3	15
40RUA 08	400-3-50	360-440	2.9 (2.16)	3.4	4.3	15
40RUA 12	400-3-50	360-440	5.0 (3.73)	7.6	9.5	15
40RUA 14	400-3-50	360-440	5.0 (3.73)	7.6	9.5	15
40RUA 16	400-3-50	360-440	5.0 (3.73)	7.6	9.5	15
40RUA 25	400-3-50	360-440	7.5 (5.59)	11.4	14.3	25

40RUA

LEGEND

FLA — Full Load Amps

MOCP — Maximum Overcurrent Protection

* Motors are designed for satisfactory operation within 10% of nominal voltages shown. Voltages should not exceed the limits shown in the Voltage Limits column.

NOTES:

1. Minimum circuit amps (MCA) and MOCP values are calculated in accordance with NEC (National Electrical Code) (U.S.A. standard), Article 440.
2. Motor FLA values are established in accordance with UL (Underwriters' Laboratories) Standard 1995 (U.S.A. standard).
3. Indoor fan motors 5 hp and larger meet the minimum efficiency requirements as established by the Energy Policy Act of 1992 (EPACT) effective October 24, 1997.
4. Unbalanced 3-Phase Supply Voltage
Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percentage of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 230-3-60



AB = 224 v
BC = 231 v
AC = 226 v

$$\begin{aligned} \text{Average Voltage} &= \frac{(224 + 231 + 226)}{3} = \frac{681}{3} \\ &= 227 \end{aligned}$$

Determine maximum deviation from average voltage.

(AB) 227 - 224 = 3 v

(BC) 231 - 227 = 4 v

(AC) 227 - 226 = 1 v

Maximum deviation is 4 v.

Determine percent of voltage imbalance.

$$\begin{aligned} \% \text{ Voltage Imbalance} &= 100 \times \frac{4}{227} \\ &= 1.76\% \end{aligned}$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.



ELECTRICAL DATA (cont.)

ELECTRIC HEATER DATA

HEATER PART NO. CAELHEAT	SIZE	V-PH-Hz	FAN MOTOR			ELECTRIC HEATER(S)						
			Hp	kW	FLA	Nominal Capacity (kW)	Actual Capacity (kW)			FLA	MCA*	MOCP*
							Stage 1	Stage 2	Total			
001A00	208-3-60		1.3†	0.97	7.6	5	3.8	—	3.8	10.4	22.5	25
			2.4†	1.79	11.0	5	3.8	—	3.8	10.4	26.8	35
			2.4	1.79	5.2	5	3.8	—	3.8	10.4	19.5	20
			2.9	2.16	7.5	5	3.8	—	3.8	10.4	22.4	25
			3.7	2.76	10.2	5	3.8	—	3.8	10.4	25.8	30
			1.3†	0.97	7.6	5	5.0	—	5.0	12.0	24.5	25
	240-3-60		2.4†	1.79	11.0	5	5.0	—	5.0	12.0	28.8	35
			2.4	1.79	5.2	5	5.0	—	5.0	12.0	21.5	25
			2.9	2.16	7.5	5	5.0	—	5.0	12.0	24.4	25
			3.7	2.76	10.2	5	5.0	—	5.0	12.0	27.8	30
			2.4	1.79	2.6	5	5.0	—	5.0	6.00	10.8	15
			2.9	2.16	3.4	5	5.0	—	5.0	6.00	11.8	15
002A00	480-3-60		3.7	2.76	4.8	5	5.0	—	5.0	6.00	13.5	15
			1.0	0.75	1.4	5	5.0	—	5.0	5.00	8.0	15
			2.0	1.49	2.3	5	5.0	—	5.0	5.00	9.2	15
003A00	575-3-60		3.0	2.24	3.8	5	5.0	—	5.0	5.00	11.0	15
			1.3†	0.97	7.6	10	7.5	—	7.5	20.8	35.6	40
			2.4†	1.79	11.0	10	7.5	—	7.5	20.8	39.8	40
004A00	208-3-60	40RUA 07-12	2.4	1.79	5.2	10	7.5	—	7.5	20.8	32.6	35
			2.9	2.16	7.5	10	7.5	—	7.5	20.8	35.4	40
			3.7	2.76	10.2	10	7.5	—	7.5	20.8	38.8	40
			1.3†	0.97	7.6	10	10.0	—	10.0	24.1	39.6	40
			2.4†	1.79	11.0	10	10.0	—	10.0	24.1	43.8	50
			2.4	1.79	5.2	10	10.0	—	10.0	24.1	36.6	40
	240-3-60		2.9	2.16	7.5	10	10.0	—	10.0	24.1	39.4	40
			3.7	2.76	10.2	10	10.0	—	10.0	24.1	42.8	50
			2.4	1.79	2.6	10	10.0	—	10.0	12.0	18.3	20
			2.9	2.16	3.4	10	10.0	—	10.0	12.0	19.3	20
			3.7	2.76	4.8	10	10.0	—	10.0	12.0	21.0	25
			1.0	0.75	1.4	10	10.0	—	10.0	10.0	14.3	15
005A00	480-3-60		2.0	1.49	2.3	10	10.0	—	10.0	10.0	15.4	20
			3.0	2.24	3.8	10	10.0	—	10.0	10.0	17.3	20
			1.3†	0.97	7.6	15	11.3	—	11.3	31.3	48.6	50
006A00	208-3-60		2.4†	1.79	11.0	15	11.3	—	11.3	31.3	52.9	60
			2.4	1.79	5.2	15	11.3	—	11.3	31.3	45.6	50
			2.9	2.16	7.5	15	11.3	—	11.3	31.3	48.5	50
			3.7	2.76	10.2	15	11.3	—	11.3	31.3	51.9	60
			1.3†	0.97	7.6	15	15.0	—	15.0	36.1	54.6	60
			2.4†	1.79	11.0	15	15.0	—	15.0	36.1	58.9	60
	240-3-60		2.4	1.79	5.2	15	15.0	—	15.0	36.1	51.6	60
			2.9	2.16	7.5	15	15.0	—	15.0	36.1	54.5	60
			3.7	2.76	10.2	15	15.0	—	15.0	36.1	57.9	60

40RUA

LEGEND

- FLA** — Full Load Amps
- Hp** — Horsepower
- MCA** — Minimum Circuit Amps
- MOCP** — Maximum Overcurrent Protection (Amps)

* Values shown are for single-point connection of electric heat accessory and air handler.

† Single-phase motors. All other motors are 3-phase.

NOTES:

1. Electrical resistance heaters are rated at 240 v, 480 v, or 575 v. To determine heater capacity (kW) at unit nameplate multiply the 240-v, 480-v, or 575-v capacity (kW) by the factor shown in the table below for the unit voltage.

2. The following equation converts kW of heat energy to Btuh: kW x 3,412 = Btuh.
3. Heater contactor coils are 24 v and require 8 va holding current.
4. Electric heaters are tested and ETL approved at maximum total external static pressure of 1.9 in. wg.
5. MCA and MOCP values apply to both standard and alternate factory-supplied motors.
6. Approximate shipping weight for CAELHEAT001A00-015A00 is 55 lb (25 kg) each. Approximate shipping weight for CAELHEAT016A00-027A00 is 60 lb (27 kg) each, and CAELHEAT028A00-039A00 is 75 lb (34 kg) each.

HEATER RATING VOLTAGE	ACTUAL HEATER VOLTAGE										
	200	208	230	240	400	440	460	480	550	575	600
240	0.694	0.751	0.918	1	—	—	—	—	—	—	—
480	—	—	—	—	0.694	0.84	0.918	1	—	—	—
575	—	—	—	—	—	—	—	—	0.915	1	1.089



ELECTRICAL DATA (cont.)

ELECTRIC HEATER DATA (cont.)

40RUA

HEATER PART NO. CAELHEAT	SIZE	V-PH-Hz	FAN MOTOR			ELECTRIC HEATER(S)						
			Hp	kW	FLA	Nominal Capacity (kW)	Actual Capacity (kW)			FLA	MCA*	MOCP*
							Stage 1	Stage 2	Total			
008A00	480-3-60		2.4	1.79	2.6	15	15.0	—	15.0	18.0	25.8	30
			2.9	2.16	3.4	15	15.0	—	15.0	18.0	26.8	30
			3.7	2.76	4.8	15	15.0	—	15.0	18.0	28.6	30
009A00	575-3-60		1.0	0.75	1.4	15	15.0	—	15.0	15.1	20.6	25
			2.0	1.49	2.3	15	15.0	—	15.0	15.1	21.7	25
			3.0	2.24	3.8	15	15.0	—	15.0	15.1	23.6	25
010A00	40RUA 07-12	208-3-60	1.3†	0.97	7.6	25	11.3	7.5	18.8	52.1	74.7	80
			2.4†	1.79	11.0	25	11.3	7.5	18.8	52.1	78.9	80
			2.4	1.79	5.2	25	11.3	7.5	18.8	52.1	71.7	80
			2.9	2.16	7.5	25	11.3	7.5	18.8	52.1	74.5	80
			3.7	2.76	10.2	25	11.3	7.5	18.8	52.1	77.9	80
			3.7	2.76	10.2	25	11.3	7.5	18.8	52.1	77.9	80
	240-3-60	1.3†	0.97	7.6	25	15.0	10.0	25.0	60.1	84.7	90	
		2.4†	1.79	11.0	25	15.0	10.0	25.0	60.1	88.9	90	
		2.4	1.79	5.2	25	15.0	10.0	25.0	60.1	81.7	90	
		2.9	2.16	7.5	25	15.0	10.0	25.0	60.1	84.6	90	
		3.7	2.76	10.2	25	15.0	10.0	25.0	60.1	87.9	90	
		3.7	2.76	10.2	25	15.0	10.0	25.0	60.1	87.9	90	
011A00	480-3-60		2.4	1.79	2.6	25	15.0	10.0	25.0	30.1	40.8	50
			2.9	2.16	3.4	25	15.0	10.0	25.0	30.1	41.8	50
			3.7	2.76	4.8	25	15.0	10.0	25.0	30.1	43.6	50
012A00	575-3-60		1.0	0.75	1.4	25	15.0	10.0	25.0	25.1	33.1	35
			2.0	1.49	2.3	25	15.0	10.0	25.0	25.1	34.3	35
			3.0	2.24	3.8	25	15.0	10.0	25.0	25.1	36.1	40
013A00	40RUA 08,12	208-3-60	2.4†	1.79	11.0	35	15.0	11.3	26.3	73.0	105.0	110
			2.4	1.79	5.2	35	15.0	11.3	26.3	73.0	97.7	100
			2.9	2.16	7.5	35	15.0	11.3	26.3	73.0	100.6	110
			3.7	2.76	10.2	35	15.0	11.3	26.3	73.0	104.0	110
			3.7	2.76	10.2	35	15.0	11.3	26.3	73.0	104.0	110
			3.7	2.76	10.2	35	15.0	11.3	26.3	73.0	104.0	110
	240-3-60	2.4†	1.79	11.0	35	20.0	15.0	35.0	84.2	119.0	125	
		2.4	1.79	5.2	35	20.0	15.0	35.0	84.2	111.7	125	
		2.9	2.16	7.5	35	20.0	15.0	35.0	84.2	114.6	125	
		3.7	2.76	10.2	35	20.0	15.0	35.0	84.2	118.0	125	
		3.7	2.76	10.2	35	20.0	15.0	35.0	84.2	118.0	125	
		3.7	2.76	10.2	35	20.0	15.0	35.0	84.2	118.0	125	
014A00	480-3-60		2.4	1.79	2.6	35	20.0	15.0	35.0	42.1	55.9	60
			2.9	2.16	3.4	35	20.0	15.0	35.0	42.1	56.9	60
			3.7	2.76	4.8	35	20.0	15.0	35.0	42.1	58.6	60
015A00	575-3-60		2.0	1.49	2.3	35	20.0	15.0	35.0	35.1	46.8	50
			3.0	2.24	3.8	35	20.0	15.0	35.0	35.1	48.7	50

LEGEND

- FLA** — Full Load Amps
- Hp** — Horsepower
- MCA** — Minimum Circuit Amps
- MOCP** — Maximum Overcurrent Protection (Amps)

* Values shown are for single-point connection of electric heat accessory and air handler.
 † Single-phase motors. All other motors are 3-phase.

NOTES:

1. Electrical resistance heaters are rated at 240 v, 480 v, or 575 v. To determine heater capacity (kW) at unit nameplate multiply the 240-v, 480-v, or 575-v capacity (kW) by the factor shown in the table below for the unit voltage.

2. The following equation converts kW of heat energy to Btuh: kW x 3,412 = Btuh.
3. Heater contactor coils are 24 v and require 8 va holding current.
4. Electric heaters are tested and ETL approved at maximum total external static pressure of 1.9 in. wg.
5. MCA and MOCP values apply to both standard and alternate factory-supplied motors.
6. Approximate shipping weight for CAELHEAT001A00-015A00 is 55 lb (25 kg) each. Approximate shipping weight for CAELHEAT016A00-027A00 is 60 lb (27 kg) each, and CAELHEAT028A00-039A00 is 75 lb (34 kg) each.

HEATER RATING VOLTAGE	ACTUAL HEATER VOLTAGE										
	200	208	230	240	400	440	460	480	550	575	600
240	0.694	0.751	0.918	1	—	—	—	—	—	—	—
480	—	—	—	—	0.694	0.84	0.918	1	—	—	—
575	—	—	—	—	—	—	—	—	0.915	1	1.089



ELECTRICAL DATA (cont.)

ELECTRIC HEATER DATA (cont.)

HEATER PART NO. CAELHEAT	SIZE	V-PH-Hz	FAN MOTOR			Nominal Capacity (kW)	ELECTRIC HEATER(S) Actual Capacity (kW)			FLA	MCA*	MOCP*		
			Hp	kW	FLA		Stage 1	Stage 2	Total					
016A00	40RUA 14-25	208-3-60	2.9	2.16	7.5	10	7.5	—	7.5	20.8	35.4	40		
			3.7	2.76	10.2	10	7.5	—	7.5	20.8	38.8	40		
			5.0	3.73	14.6	10	7.5	—	7.5	20.8	41.3	50		
		240-3-60	2.9	2.16	7.5	10	10.0	—	10.0	24.1	39.4	40		
			3.7	2.76	10.2	10	10.0	—	10.0	24.1	42.8	50		
			5.0	3.73	12.8	10	10.0	—	10.0	24.1	46.1	50		
017A00	40RUA 14-25	480-3-60	2.9	2.16	3.4	10	10.0	—	10.0	12.0	19.3	20		
			3.7	2.76	4.8	10	10.0	—	10.0	12.0	21.0	25		
			5.0	3.73	6.4	10	10.0	—	10.0	12.0	23.0	25		
		400-3-50	2.9	2.16	3.4	10	6.9	—	6.9	10.0	16.8	20		
			5.0	3.73	8.1	10	6.9	—	6.9	10.0	22.6	20		
			7.5	5.59	11.4	10	6.9	—	6.9	10.0	26.8	20		
018A00	40RUA 14-25	575-3-60	3.0	2.24	3.8	10	10.0	—	10.0	10.0	17.3	20		
			5.0	3.73	5.1	10	10.0	—	10.0	10.0	19.6	20		
			2.9	2.16	7.5	20	14.9	—	14.9	41.5	51.2	70		
		208-3-60	3.7	2.76	10.2	20	14.9	—	14.9	41.5	64.6	70		
			5.0	3.73	14.6	20	14.9	—	14.9	41.5	70.1	80		
			2.9	2.16	7.5	20	19.9	—	19.9	47.9	69.2	70		
019A00	40RUA 14-25	240-3-60	3.7	2.76	10.2	20	19.9	—	19.9	47.9	72.6	80		
			5.0	3.73	12.8	20	19.9	—	19.9	47.9	75.8	80		
			2.9	2.16	3.4	20	20.0	—	20.0	24.1	34.3	35		
		480-3-60	3.7	2.76	4.8	20	20.0	—	20.0	24.1	36.1	40		
			5.0	3.73	6.4	20	20.0	—	20.0	24.1	39.1	40		
			2.9	2.16	3.4	20	13.9	—	13.9	20.0	29.3	25		
020A00	40RUA 14-25	400-3-50	2.9	2.16	3.4	20	20.0	—	20.0	28.9	40.4	50		
			5.0	3.73	8.1	20	20.0	—	20.0	28.9	46.3	50		
			5.0	3.73	8.1	20	20.0	—	20.0	28.9	46.3	50		
		575-3-60	7.5	5.59	11.4	20	20.0	—	20.0	28.9	50.4	50		
			3.0	2.24	3.8	20	20.0	—	20.0	20.1	29.9	30		
			5.0	3.73	5.1	20	20.0	—	20.0	20.1	31.5	35		
021A00	40RUA 14-25	208-3-60	2.9	2.16	7.5	30	15.0	7.5	22.5	62.5	87.5	90		
			3.7	2.76	10.2	30	15.0	7.5	22.5	62.5	90.9	100		
			5.0	3.73	14.6	30	15.0	7.5	22.5	62.5	96.4	100		
		240-3-60	2.9	2.16	7.5	30	20.0	10.0	30.0	72.2	99.6	100		
			3.7	2.76	10.2	30	20.0	10.0	30.0	72.2	103.0	110		
			5.0	3.73	12.8	30	20.0	10.0	30.0	72.2	106.2	110		
022A00	40RUA 14-25	480-3-60	2.9	2.16	3.4	30	20.0	10.0	30.0	36.1	49.4	50		
			3.7	2.76	4.8	30	20.0	10.0	30.0	36.1	51.1	60		
			5.0	3.73	6.4	30	20.0	10.0	30.0	36.1	53.1	60		
		400-3-50	2.9	2.16	3.4	30	13.9	6.9	20.8	30.1	41.8	50		
			5.0	3.73	8.1	30	13.9	6.9	20.8	30.1	47.7	50		
			5.0	3.73	8.1	30	13.9	6.9	20.8	30.1	47.7	50		
023A00	40RUA 14-25	575-3-60	7.5	5.59	11.4	30	13.9	6.9	20.8	30.1	51.8	60		
			3.0	2.24	3.8	30	20.0	10.0	30.0	30.1	42.4	50		
			5.0	3.73	5.1	30	20.0	10.0	30.0	30.1	44.0	50		
		024A00	40RUA 14-25	208-3-60	2.9	2.16	7.5	30	15.0	7.5	22.5	62.5	87.5	90
					3.7	2.76	10.2	30	15.0	7.5	22.5	62.5	90.9	100
					5.0	3.73	14.6	30	15.0	7.5	22.5	62.5	96.4	100
240-3-60	2.9			2.16	7.5	30	20.0	10.0	30.0	72.2	99.6	100		
	3.7			2.76	10.2	30	20.0	10.0	30.0	72.2	103.0	110		
	5.0			3.73	12.8	30	20.0	10.0	30.0	72.2	106.2	110		

40RUA

LEGEND

- FLA** — Full Load Amps
- Hp** — Horsepower
- MCA** — Minimum Circuit Amps
- MOCP** — Maximum Overcurrent Protection (Amps)

* Values shown are for single-point connection of electric heat accessory and air handler.

† Single-phase motors. All other motors are 3-phase.

NOTES:

1. Electrical resistance heaters are rated at 240 v, 480 v, or 575 v. To determine heater capacity (kW) at unit nameplate multiply the 240-v, 480-v, or 575-v capacity (kW) by the factor shown in the table below for the unit voltage.

2. The following equation converts kW of heat energy to Btuh: kW x 3,412 = Btuh.
3. Heater contactor coils are 24 v and require 8 va holding current.
4. Electric heaters are tested and ETL approved at maximum total external static pressure of 1.9 in. wg.
5. MCA and MOCP values apply to both standard and alternate factory-supplied motors.
6. Approximate shipping weight for CAELHEAT001A00-015A00 is 55 lb (25 kg) each. Approximate shipping weight for CAELHEAT016A00-027A00 is 60 lb (27 kg) each, and CAELHEAT028A00-039A00 is 75 lb (34 kg) each.

HEATER RATING VOLTAGE	ACTUAL HEATER VOLTAGE										
	200	208	230	240	400	440	460	480	550	575	600
240	0.694	0.751	0.918	1	—	—	—	—	—	—	—
480	—	—	—	—	0.694	0.84	0.918	1	—	—	—
575	—	—	—	—	—	—	—	—	0.915	1	1.089



ELECTRICAL DATA (cont.)

ELECTRIC HEATER DATA (cont.)

40RUA

HEATER PART NO. CAELHEAT	SIZE	V-PH-Hz	FAN MOTOR			Nominal Capacity (kW)	ELECTRIC HEATER(S) Actual Capacity (kW)			FLA	MCA*	MOCP*
			Hp	kW	FLA		Stage 1	Stage 2	Total			
025A00	40RUA 16, 25	208-3-60	3.7	2.76	10.2	50	22.6	15.0	37.6	104.3	143.1	150
			5.0	3.73	14.6	50	22.6	15.0	37.6	104.3	148.6	150
			7.5	5.59	21.5	50	22.6	15.0	37.6	104.3	157.2	175
		240-3-60	3.7	2.76	10.2	50	30.0	20.0	50.0	120.3	163.1	175
			5.0	3.73	12.8	50	30.0	20.0	50.0	120.3	166.4	175
			7.5	5.59	19.4	50	30.0	20.0	50.0	120.3	174.6	200
026A00	40RUA 16, 25	480-3-60	3.7	2.76	4.8	50	30.0	20.0	50.0	60.1	81.2	90
			5.0	3.73	6.4	50	30.0	20.0	50.0	60.1	83.2	90
			7.5	5.59	9.7	50	30.0	20.0	50.0	60.1	87.3	90
		400-3-50	2.9	2.76	3.4	50	20.8	13.9	34.7	50.1	66.9	60
			5.0	3.73	8.1	50	20.8	13.9	34.7	50.1	72.8	60
			7.5	5.59	11.4	50	20.8	13.9	34.7	50.1	76.9	60
027A00	40RUA 16, 25	575-3-60	3.0	2.24	3.8	50	30.0	20.0	50.0	50.2	67.5	70
			5.0	3.73	5.1	50	30.0	20.0	50.0	50.2	69.1	70
			7.5	5.59	7.8	50	30.0	20.0	50.0	50.2	72.5	80

LEGEND

- FLA** — Full Load Amps
- Hp** — Horsepower
- MCA** — Minimum Circuit Amps
- MOCP** — Maximum Overcurrent Protection (Amps)

* Values shown are for single-point connection of electric heat accessory and air handler.

† Single-phase motors. All other motors are 3-phase.

NOTES:

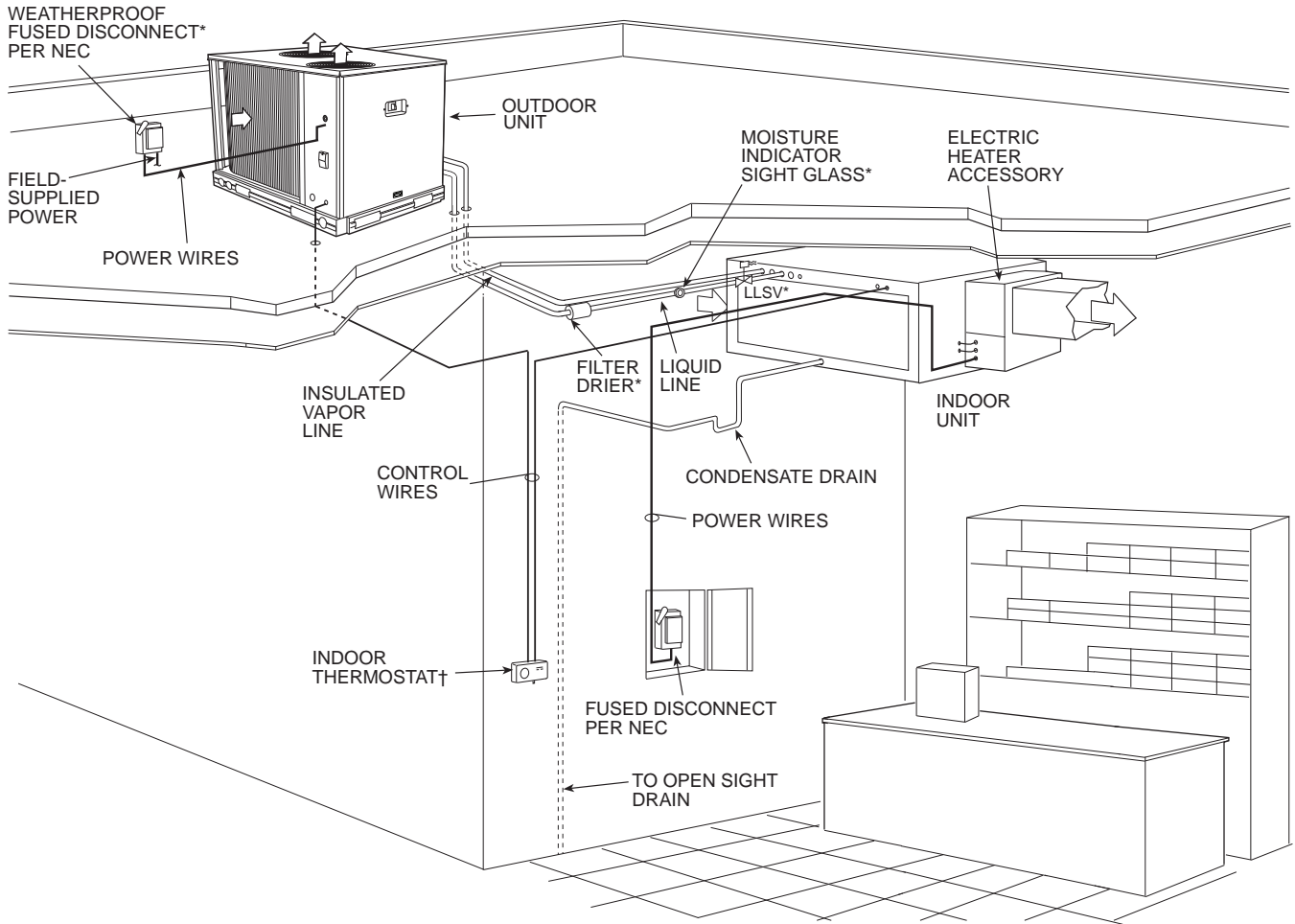
1. Electrical resistance heaters are rated at 240 v, 480 v, or 575 v. To determine heater capacity (kW) at unit nameplate multiply the 240-v, 480-v, or 575-v capacity (kW) by the factor shown in the table below for the unit voltage.

2. The following equation converts kW of heat energy to Btuh: kW x 3,412 = Btuh.
3. Heater contactor coils are 24 v and require 8 va holding current.
4. Electric heaters are tested and ETL approved at maximum total external static pressure of 1.9 in. wg.
5. MCA and MOCP values apply to both standard and alternate factory-supplied motors.
6. Approximate shipping weight for CAELHEAT001A00-015A00 is 55 lb (25 kg) each. Approximate shipping weight for CAELHEAT016A00-027A00 is 60 lb (27 kg) each, and CAELHEAT028A00-039A00 is 75 lb (34 kg) each.

HEATER RATING VOLTAGE	ACTUAL HEATER VOLTAGE										
	200	208	230	240	400	440	460	480	550	575	600
240	0.694	0.751	0.918	1	—	—	—	—	—	—	—
480	—	—	—	—	0.694	0.84	0.918	1	—	—	—
575	—	—	—	—	—	—	—	—	0.915	1	1.089



TYPICAL PIPING AND WIRING



40RUA

C09054

LEGEND:

NEC - National Electrical Code

TXV - Thermostatic Expansion Valve

* Field-supplied

† Double riser may be required. Consult condensing unit product data catalog for details.

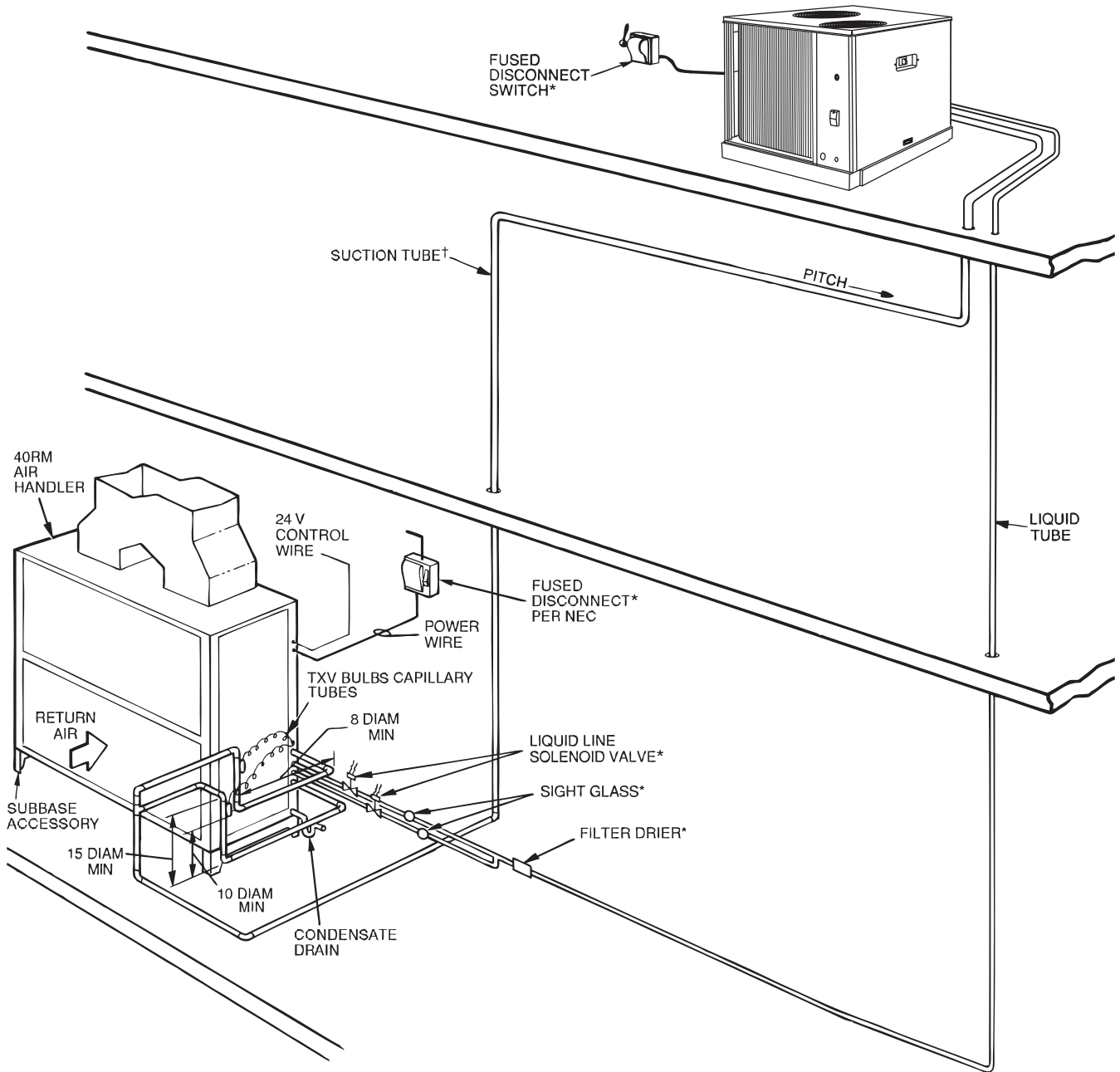
NOTES:

1. All piping must follow standard refrigerant piping techniques. Refer to Carrier System Design Manual for details.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Internal factory-supplied TXVs not shown.

TYPICAL PIPING AND WIRING (cont.)

VERTICAL INSTALLATION - 40RU (TYPICAL)

40RUA



C09055

LEGEND:

- LLSV – Liquid Line Solenoid Valve
- NEC – National Electrical Code
- TXV – Thermostatic Expansion Valve

* Field-supplied

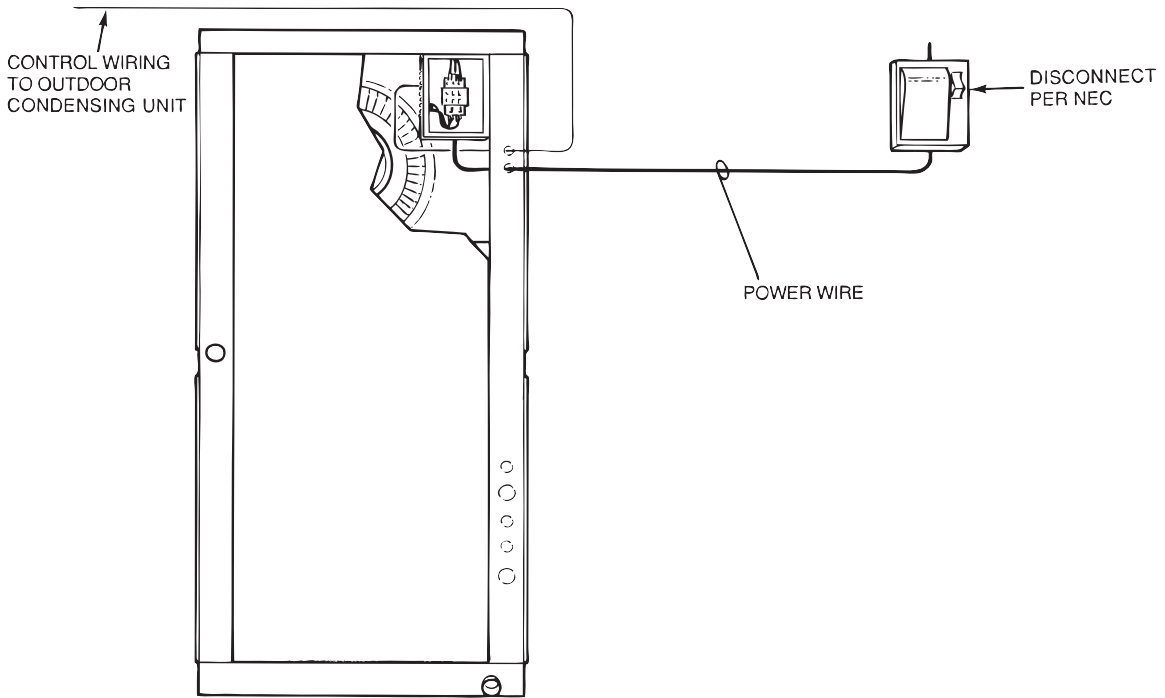
† Double riser may be required Consult condensing unit product data catalog for details.

NOTES:

1. All piping must follow standard refrigerant piping techniques. Refer to Carrier System Design Manual for details.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Internal factory-supplied TXVs not shown.

TYPICAL PIPING AND WIRING (cont.)

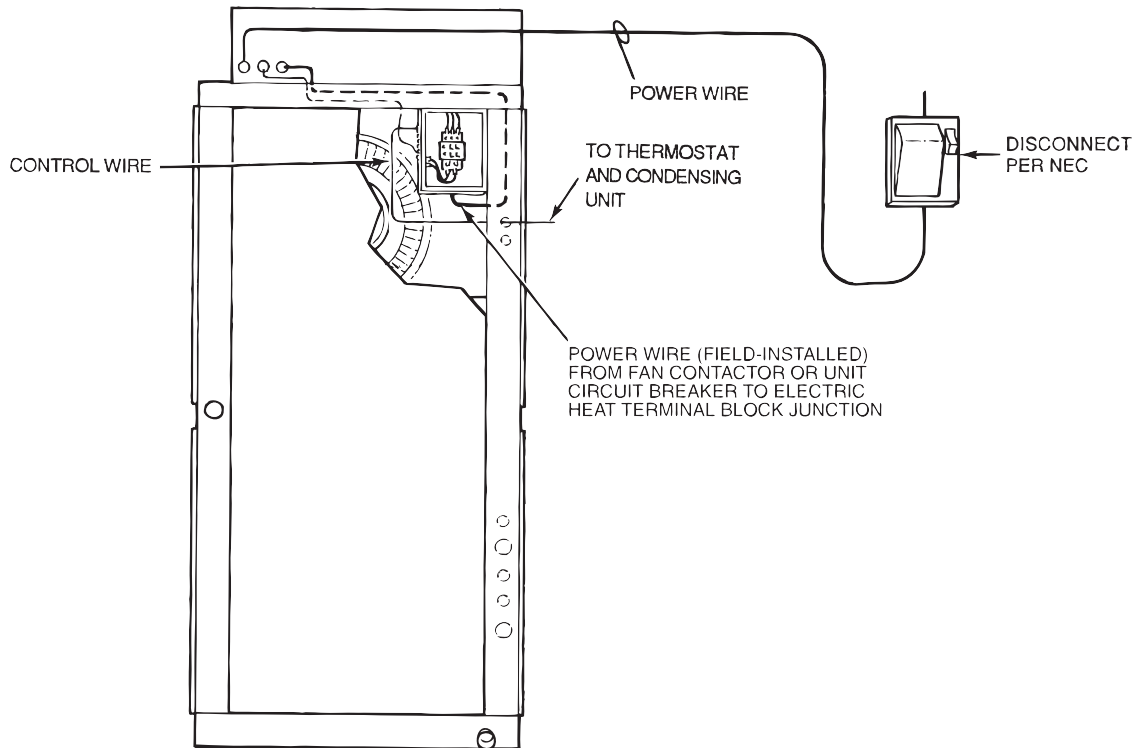
WIRE ROUTING, BASE UNIT 40RU



40RUJA

C09048

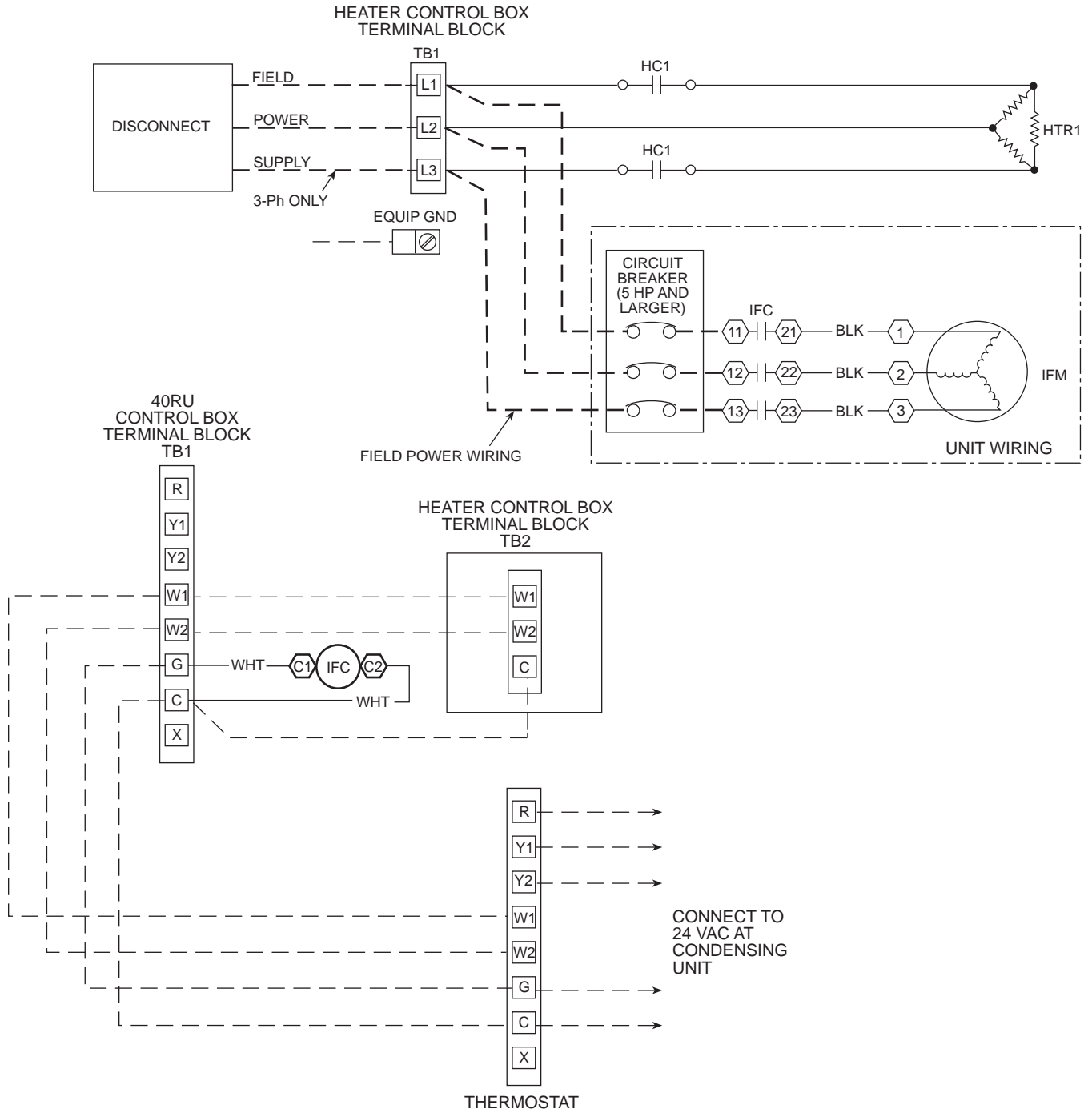
WIRE ROUTING, UNIT WITH ELECTRIC HEAT - 40RU



C09049

TYPICAL CONTROL WIRING SCHEMATIC

40RUA



C09050

APPLICATION DATA

Operating limits

Maximum fan speed

40RUA07-14 1200 RPM(20 R/S)

General

IMPORTANT: Do not bury refrigerant piping underground.

Select equipment to match or to be slightly less than peak load. This provides better humidity control, less unit cycling, and less part-load operation. Equipment should be selected to perform at no less than 300 cfm/ton (40 L/s per kW).

The air handler fan must always be operating when the condensing unit is operating.

Ductwork should be sized according to unit size, not building load. For larger units with two fans, a split duct

transition is recommended at the fan outlets, but a plenum can be used with slight reduction in external static pressure capability.

For variable air volume (VAV) systems with supply-to-return air recycling, use the equipment room as a return air plenum.

Hot gas bypass

Hot gas bypass may be required for low load control in certain applications. Hot gas should only be used during first stage cooling operation and should be applied to all evaporator circuits that are active at that time. To apply hot gas bypass, the 40RUA unit will require a field-installed auxiliary side connector(s). See the Auxiliary Side Connector Data table for part numbers.

40RUA

AUXILIARY SIDE CONNECTOR DATA

UNIT 40RUA	CARRIER P/N	INLET/OUTLET DIAMETER — ODF (in.)	AUXILIARY (Hot Gas) DIAMETER — ODF (in.)
07	EA19BA705	1 ¹ / ₈	5 ⁵ / ₈
08	EA19BA905	1 ³ / ₈	7 ⁷ / ₈
12	EA19BA705	1 ¹ / ₈	5 ⁵ / ₈
14	EA19BA705	1 ¹ / ₈	5 ⁵ / ₈
16	EA19BA705	1 ¹ / ₈	5 ⁵ / ₈
25	EA19BA705	1 ¹ / ₈	5 ⁵ / ₈

FACTORY-INSTALLED NOZZLE AND DISTRIBUTOR DATA

UNIT	COIL TYPE	TXV Qty...Part No.*	DISTRIBUTOR Qty...Part No.†	FEEDER TUBES PER DISTRIBUTOR Qty...Size (in.)	NOZZLE Qty...Part No.
40RUA07	4 Row	1...TDEBX8	1...1116	12... ¹ / ₄	1...E5
40RUA08	4 Row	1...TDEBX8	1...1126	15... ¹ / ₄	1...C6
40RUA12	4 Row	2...TDEX6	2...1115	9... ¹ / ₄	2...E4
40RUA14	4 Row	2...TDEBX8	2...1115	12... ³ / ₁₆	2...E5
40RUA16	4 Row	2...TDEBX8	2...1126	16... ¹ / ₄	2...C6
40RUA25	4 Row	2...TDEBX11	2...1126	18... ³ / ₁₆	2...C8

LEGEND

TXV – Thermostatic Expansion Valve

* Danfoss part numbers shown.

† Sporlan Valve Co. part numbers shown.

NOTE: Hot gas bypass applications require field-supplied auxiliary side connector.

APPLICATION DATA (cont.)

FAN MOTOR DATA STANDARD MOTOR — SI

UNIT	40RUA 07	40RUA 08	40RUA 12	40RUA 14	40RUA 16	40RUA 25
400-3-50						
Speed (r/s)	23.75	23.75	23.75	23.75	23.75	23.75
Shaft kW	1.79	1.79	1.79	2.16	2.16	3.73
Frame (NEMA)	56Y	56Y	56Y	56Y	56Y	184T
Shaft Dia (mm)	15.9	15.9	15.9	22.2	22.2	28.6

LEGEND:

NEMA — National Electrical Manufacturers Association (U.S.A.)

ALTERNATE MOTOR — SI

UNIT	40RUA 07	40RUA 08	40RUA 12	40RUA 14	40RUA 16	40RUA 25
400-3-50						
Speed (r/s)	23.75	23.75	23.75	23.75	23.75	23.75
Shaft kW	1.79	2.16	3.73	3.73	3.73	5.6
Frame (NEMA)	56Y	56Y	S184T	S184T	S184T	S213T
Shaft Dia (mm)	22.2	22.2	22.2	28.6	28.6	34.9

LEGEND:

NEMA — National Electrical Manufacturers Association (U.S.A.)

STANDARD DRIVE DATA, 50 Hz — SI

UNIT	40RU 007	40RU 008	40RU 012	40RU 014	40RU 016	40RU 025
MOTOR DRIVE						
Motor Pulley Pitch Diameter (mm)	61.0-86.4	71.1-96.5	86.4-111.8	86.4-111.8	86.4-111.8	109.2-134.6
Pulley Factory Setting Full Turns Open	2.5	2.5	2.5	2.5	2.5	3.0
FAN DRIVE						
Pulley Pitch Dia (mm)	203	203	203	229	229	218
Pulley Bore (mm)	25.4	25.4	25.4	36.5	36.5	36.5
Belt No. — Section	1—A	1—A	1—A	1—A	1—A	1—B
Belt Pitch (mm)	998	998	1024	1074	1074	1062
FAN SPEEDS (r/s)						
Factory Setting	8.6	9.8	11.6	10.3	10.3	13.3
Range	7.1-10.1	8.3-11.3	10.1-13.1	9.0-11.6	9.0-11.6	11.9-14.6
Max Allowable Speed (r/s)	20.0	20.0	20.0	20.0	20.0	20.0
Change per 1/2 Turn of Moveable Motor Pulley Flange	0.297	0.297	0.297	0.265	0.265	0.230
MAX FULL TURNS FROM CLOSED POSITION	5	5	5	5	5	6
SHAFTS CENTER DISTANCE (mm)	265-313	265-313	265-313	265-313	265-313	232-279

40RUA

APPLICATION DATA (cont.)

MEDIUM-STATIC DRIVE DATA, 50 Hz — SI

UNIT	40RU 007	40RU 008	40RU 012	40RU 014	40RU 016	40RU 025
MOTOR DRIVE						
Motor Pulley Pitch Diameter (mm)	86.4-111.8	86.4-111.8	86.4-111.8	86.4-111.8	94.0-119.4	101.6-127.0
Pulley Factory Setting Full Turns Open	2.5	2.5	2.5	2.5	3.0	2.5
FAN DRIVE						
Pulley Pitch Dia (mm)	203	178	152	191	201	178
Pulley Bore (mm)	25.4	25.4	25.4	36.5	36.5	36.5
Belt No. — Section	1—A	1—A	1—A	1—A	1—B	1—A
Belt Pitch (mm)	1024	1049	947	998	1011	922
FAN SPEEDS (r/s)						
Factory Setting	11.6	13.2	15.4	12.4	12.6	15.3
Range	10.1-13.1	11.5-14.9	13.5-17.4	10.8-13.9	11.1-14.1	13.6-17.0
Max Allowable Speed (r/s)	20.0	20.0	20.0	20.0	20.0	20.0
Change per 1/2 Turn of Moveable Motor Pulley Flange	0.297	0.340	0.395	0.317	0.252	0.340
MAX FULL TURNS FROM CLOSED POSITION	5	5	5	5	6	5
SHAFTS CENTER DISTANCE (mm)	265-313	265-313	265-313	265-313	232-279	232-279

HIGH-STATIC DRIVE DATA, 50 Hz — SI

UNIT	40RU 07	40RU 08	40RU 12	40RU 14	40RU 16	40RU 25
MOTOR DRIVE						
Motor Pulley Pitch Diameter (mm)	86.4-111.8	86.4-111.8	101.6-127.0	86.4-111.8	101.6-127.0	101.6-127.0
Pulley Factory Setting Full Turns Open	2.5	2.5	3.0	2.5	3.0	3.0
FAN DRIVE						
Pulley Pitch Dia (mm)	152	140	140	152	178	163
Pulley Bore (mm)	25.4	25.4	25.4	36.5	36.5	36.5
Belt No. — Section	1—A	1—A	1—A	2—A	2—A	2—A
Belt Pitch (mm)	947	947	922	922	998	871
FAN SPEEDS (r/s)						
Factory Setting	15.4	16.8	19.4	15.4	15.3	16.7
Range	13.5-17.4	14.7-19.0	17.3-20.0*	13.5-17.4	13.6-17.0	14.9-18.6
Max Allowable Speed (r/s)	20.0	20.0	20.0	20.0	20.0	20.0
Change per 1/2 Turn of Moveable Motor Pulley Flange	0.395	0.432	0.360	0.395	0.283	0.308
MAX FULL TURNS FROM CLOSED POSITION	5	5	6	5	6	6
SHAFTS CENTER DISTANCE (mm)	265-313	265-313	234-279	232-279	232-279	207-255

* It is possible to adjust drive so that fan speed exceeds maximum allowable. DO NOT exceed 20 r/s.

40RUJA

GUIDE SPECIFICATIONS

Commercial Packaged Air-Handling Unit

HVAC Guide Specifications

Size Range: 2,400 to 6,000 Cfm (1150 to 5650 L/s), Nominal Airflow, 6 to 25 Tons (21 to 105 kW), Nominal Cooling

Carrier Model Numbers: 40RUA (Direct-Expansion Coil)

Part 1 — GENERAL

1.01 SYSTEM DESCRIPTION

- A. Indoor, packaged air-handling unit for use in commercial split systems. Unit shall have a multi-position design and shall be capable of horizontal or vertical installation on a floor or in a ceiling, with or without ductwork. (Only vertical units are to be applied without ductwork.)
- B. Unit with direct-expansion coil shall be used in a refrigerant circuit with a matching air-cooled condensing unit. Unit with chilled water coil shall be used in a chilled water circuit.

1.02 QUALITY ASSURANCE

- A. Coils shall be designed and tested in accordance with ASHRAE 15 Safety Code for Mechanical Refrigeration (U.S.A.), latest edition.
- B. Unit shall be constructed in accordance with ETL (U.S.A.) and ETL, Canada, standards and shall carry the ETL and ETL, Canada, labels.
- C. Unit insulation and adhesive shall comply with NFPA-90A (U.S.A.) requirements for flame spread and smoke generation. Insulation shall contain an EPA-registered immobilized antimicrobial agent to effectively resist the growth of bacteria and fungi as proven by tests in accordance with ASTM standards G21 and 22 (U.S.A.).
- D. Unit shall be manufactured in a facility registered to the ISO 9001 manufacturing quality standard.
- E. Direct-expansion and chilled water coils shall be burst and leak tested at 435 psi (2999 kPa).

1.03 DELIVERY AND STORAGE

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

Part 2 — PRODUCTS

2.01 EQUIPMENT

Indoor mounted, draw-thru, packaged air-handling unit that can be used in a suspended horizontal configuration or a vertical configuration. Unit shall consist of forward-curved belt-driven centrifugal fan(s), motor and drive assembly, pre-wired fan motor contactor, factory-installed refrigerant metering devices (direct-expansion coil units), cooling coil, 2-in. (51-mm) disposable air filters, and condensate drain pans for vertical or horizontal configurations.

- A. Base Unit:
 - 1. Cabinet shall be constructed of mill-galvanized steel.
 - 2. Cabinet panels shall be fully insulated with 1/2-in. (12.7-mm) fire-retardant material. Insulation shall contain an EPA-registered immobilized antimicrobial agent to effectively resist the growth of bacteria and fungi as proven by tests in accordance with ASTM standards G21 and 22 (U.S.A.).
 - 3. Unit shall contain non-corroding condensate drain pans for both vertical and horizontal applications. Drain pans shall have connections on right and left sides of unit to facilitate field connection. Drain pans shall have the ability to be sloped toward the right or left side of the unit to prevent standing water from accumulating in pans.
 - 4. Unit shall have factory-supplied 2-in. (51 mm) throwaway-type filters installed upstream from the cooling coil. Filter access shall be from either the right or left side of the unit.

- B. Coils:

DX coil is 4-row and consists of copper tubes with sine-wave aluminum fins bonded to the tubes by mechanical expansion. Suction and liquid line connections or supply and discharge connections shall be made on the same side of the coil.

- 1. Direct-expansion coils shall feature factory installed thermostatic expansion valves (TXVs) for refrigerant control. The TXVs shall be Puron® R-410A compatible and capable of external adjustment. Direct-expansion heat pump

coils shall have a factory-installed bypass line and check valve assembly around the TXVs to allow liquid flow from the coil to the outdoor unit during the heating mode. Coil tubing shall be internally rifled to maximize heat transfer.

2. Chilled water coils shall be rated for an operating pressure of not less than 300 psig (2069 kPag).

C. Operating Characteristics:

Unit shall be capable of providing _____ cfm (L/s) airflow at an external static pressure of _____ in. wg (kPag).

D. Motor:

1. Fan motor of the size and electrical characteristics specified on the equipment schedule shall be factory supplied and installed.
2. Motors rated at 1.3 through 3.7 hp (0.97 through 2.76 kW) shall have internal thermal overload protection. Motors rated at 5 hp (3.73 kW) shall be protected by a circuit breaker.
3. Evaporator-fan motor shall have permanently lubricated, sealed bearings and inherent automatic-reset thermal overload protection or manual reset calibrated circuit breakers. Evaporator motors are designed specifically for Carrier and do not have conventional horsepower (hp) ratings listed on the motor nameplate. Motors are designed and qualified in the “air-over” location downstream of the cooling coil and carry a maximum continuous bhp rating that is the maximum application bhp rating for the motor; no “safety factors” above that rating may be applied.

E. Special Features:

1. Alternate Motor and Drive:

An alternate motor and/or medium-static or high-static drive shall be available to meet the airflow and external static pressure requirements specified on the equipment schedule.

2. External Paint:

Where conditions require, units shall be painted with an American Sterling Gray finish.

3. Hot Water Coil:

Coil shall be 2-row, U-bend coil with copper tubes and aluminum plate fins bonded to the tubes by mechanical expansion. Coil shall be mounted in a galvanized steel housing that shall be fastened to the unit’s fan deck for blow-thru heating operation. Coil shall have maximum working pressure of 150 psig (1034 kPag).

4. Steam Distributing Coil:

Coil shall consist of one row of copper tubes with aluminum plate fins, and shall have inner steam distributing tubes. Coil shall be mounted in a galvanized steel housing and shall be fastened to the unit’s fan deck for blow-thru heating operation. Coil shall have maximum working pressure of 20 psig at 260°F (138 kPag at 126°C).

5. Electric Heaters:

Heaters shall be factory-supplied for field installation as shown on the equipment drawings. Electric heat assembly shall be ETL (U.S.A.) and ETL, Canada, agency approved, and shall have single-point power wiring. Heater assembly shall include contactors with 24-v coils, power wiring, 24-v control wiring terminal blocks, and a hinged access panel. Electric heaters shall not be used with air discharge plenum.

6. Air Discharge Plenum:

Plenum shall be factory-supplied to provide free-blow air distribution for vertical floor-mounted units. A grille with moveable vanes for horizontal or vertical airflow adjustment shall be included. Plenum shall be field-assembled and field-installed on the unit’s fan deck for blow-thru air distribution. Plenum shall not be used with electric heaters.

7. Return-Air Grille:

Grille shall be factory-supplied for field installation on the unit’s return air opening.

8. Unit Subbase:

Subbase assembly shall be factory-supplied for field installation. Subbase shall elevate floor-mounted vertical units to provide access for correct condensate drain connection.

9. Economizer:

Economizer for ventilation or “free” cooling shall be factory provided for field installation on either return air opening of air handler. For free cooling applications, economizer shall be compatible with separate thermostat;

economizer dampers shall open when outdoor air enthalpy is suitable for free cooling. Economizer shall be compatible with separate CO₂ sensor accessory; economizer dampers shall open when indoor CO₂ level rises above predetermined set point. Economizer shall include enthalpy control and damper actuator.

10. Thermostat Controls:

- a. TEMP System programmable communicating multi-stage thermostat with fan switch, time clock, LCD display, °F/°C capability, and CCN (Carrier Comfort Network®) compatibility.
- b. Commercial Electronic Thermostat with 7-day time clock, auto-changeover, multi-stage capability, and large LCD temperature display.

11. Overhead Suspension Package:

Package shall include necessary brackets to support units in a horizontal ceiling installation.

12. CO₂ Sensor:

Sensor shall provide the ability to signal the economizer to open when the space CO₂ level exceeds the predetermined setpoint. Sensor shall have the capability of being connected to Comfort System relay pack or to economizer using field-supplied and field-installed Honeywell dc adapter no. Q769C1004.

13. Condensate Drain Trap:

Trap shall have transparent, serviceable design for easy cleaning. Kit shall include overflow shutoff switch and wiring harness for connection to an alarm if desired.