Rooftop (RE) Series Submittal Data

Models RE03 - 20
60Hz - R22

English Language/I-P Units

Rev.: 26 May, 2009B

CLIMATEMASTER®
Geothermal Heat Pump Systems

SUBMITTAL DATA - I-P UNITS

Unit Designation: _____

Job Name: _____

Architect: _____

Engineer: _____

Contractor: _____

PERFORMANCE DATA

Cooling Capacity: _____ Btuh

EER: _____

Heating Capacity: _____ Btuh

COP: _____

Ambient Air Temp: _____ °F

Entering Water Temp (Clg): _____ °F

Entering Air Temp (Clg): _____ °F

Entering Water Temp (Htg): _____ °F

Entering Air Temp (Htg): _____ °F

Airflow: _____ CFM

Fan Speed or Motor/RPM/Turns: _____

Operating Weight: _____ (lb)

ELECTRICAL DATA

Power Supply: _____ Volts _____ Phase _____ Hz

Minimum Circuit Ampacity: _____

Maximum Overcurrent Protection: _____

Rooftop (RE) Series Submittal Data

Models RE03 - 20
60Hz - R22

English Language/S-I Units

Rev.: 26 May, 2009B

CLIMATEMASTER®
Geothermal Heat Pump Systems

SUBMITTAL DATA - S-I UNITS

Unit Designation: _____

Job Name: _____

Architect: _____

Engineer: _____

Contractor: _____

PERFORMANCE DATA

Cooling Capacity: _____ kW

EER: _____

Heating Capacity: _____ kW

COP: _____

Ambient Air Temp: _____ °C

Entering Water Temp (Clg): _____ °C

Entering Air Temp (Clg): _____ °C

Entering Water Temp (Htg): _____ °C

Entering Air Temp (Htg): _____ °C

Airflow: _____ l/s

Fan Speed or Motor/RPM/Turns: _____

Operating Weight: _____ (kg)

ELECTRICAL DATA

Power Supply: _____ Volts _____ Phase _____ Hz

Minimum Circuit Ampacity: _____

Maximum Overcurrent Protection: _____

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CLIMATEMASTER
Geothermal Heat Pump Systems

THE ROOFTOP (RE) SERIES

The RE series WSHP rooftop units offer high efficiency at competitive prices for applications where outdoor equipment is required. The RE series meets ASHRAE 90.1 efficiencies and is up to 40% more efficient that typical air source rooftop units.

Available in sizes 3 tons (10.6 kW) through 20 tons (70.3 kW) with various outdoor air options, the RE series offers a wide range of units for most any installation. The RE has an extended range refrigerant circuit, capable of ground loop (geothermal) applications as well as water loop (boiler-tower) applications. Standard features are many. Microprocessor controls, galvanized steel cabinet, polyester powder coat paint and TXV refrigerant metering device are just some of the features of the flexible RE series. All units are equipped with scroll compressors and belt drive blowers.

The ability to handle outside air is one of the most attractive features of the RE series. Choices include manual fresh air damper, motorized fresh air damper, modulating economizer with enthalpy controls, and even a 100% outside air option when coupled with the Rx series ERV (Energy Recovery Ventilator). Options such as DDC controls, factory-installed water solenoid valves, and several filter choices allow customized design solutions.

The RE Series water-source heat pumps are designed to meet the challenges of today's HVAC demands with a high efficiency, high value solution.

UNIT FEATURES

- Sizes 03 (3 ton, 10.6 kW), 04 (4 ton, 14.1 kW), 05 (5 ton, 17.6 kW), 07 (7 ton, 24.6 kW), 08 (8 ton, 28.1 kW), 10 (10 ton, 35.2 kW), 12 (12 ton, 42.2 kW), 15 (15 ton, 52.8 kW), 20 (20 ton, 70.3 kW)
- Copeland scroll compressor(s)
- Dual refrigeration circuits (sizes 08 and larger)
- Exceeds ASHRAE 90.1 efficiencies
- Galvanized steel construction with polyester powder coat paint
- Insulated cabinet and refrigerant/water circuit insulation standard
- Double wall construction for access doors with stainless steel hardware
- TXV metering device
- Extended range (20 to 110°F, -6.7 to 43.3°C) operation
- Microprocessor controls standard (optional DXM and/or DDC controls)
- LonWorks, BACnet, Modbus and Johnson N2 compatibility options for DDC controls
- Belt-drive blowers for flexible CFM/ESP operation
- Slide-out blower assembly with high efficiency motors and variable pitch sheaves
- Unit Performance Sentinel performance monitoring system
- Eight Safeties Standard
- Wide variety of options

CLIMATEMASTER
Geothermal Heat Pump Systems

Selection Procedure

Reference Calculations

Heating

$$LWT = EWT - \frac{HE}{GPM \times 500}$$

$$LAT = EAT + \frac{HC}{CFM \times 1.08}$$

Cooling

$$LWT = EWT + \frac{HR}{GPM \times 500}$$

$$LAT\ (DB) = EAT\ (DB) - \frac{SC}{CFM \times 1.08}$$

$$LC = TC - SC$$

$$S/T = \frac{SC}{TC}$$

Legend and Glossary of Abbreviations

BTUH = BTU(British Thermal Unit) per hour
CFM = airflow, cubic feet/minute
COP = coefficient of performance = BTUH output/BTUH input
DB = dry bulb temperature (°F)
EAT = entering air temperature, Fahrenheit (dry bulb/wet bulb)
EER = energy efficiency ratio = BTUH output/Watt input
EPT = external pipe thread
ESP = external static pressure (inches w.g.)
EWT = entering water temperature
GPM = water flow in U.S. gallons/minute
HE = total heat of extraction, BTUH
HC = air heating capacity, BTUH
HR = total heat of rejection, BTUH
HWC = hot water generator (desuperheater) capacity, Mbtuh
IPT = internal pipe thread
KW = total power unit input, kilowatts
LAT = leaving air temperature, °F
LC = latent cooling capacity, BTUH
LWT = leaving water temperature, °F
MBTUH = 1000 BTU per hour
S/T = sensible to total cooling ratio
SC = sensible cooling capacity, BTUH
TC = total cooling capacity, BTUH
WB = wet bulb temperature (°F)
WPD = waterside pressure drop (psi & ft. of hd.)

Conversion Table - to convert inch-pound (English) to SI (Metric)

Air Flow	Water Flow	Ext Static Pressure	Water Pressure Drop
Airflow (L/s) = CFM x 0.472	Water Flow (L/s) = gpm x 0.0631	ESP (Pa) = ESP (in of wg) x 249	PD (kPa) = PD (ft of hd) x 2.99

CLIMATEMASTER
Geothermal Heat Pump Systems

Selection Procedure

Step 1 Determine the actual heating and cooling loads at the desired dry bulb and wet bulb conditions.

Step 2 Obtain the following design parameters: Entering water temperature, water flow rate in GPM, air flow in CFM, water flow pressure drop and design wet and dry bulb temperatures. Air flow CFM should be between 300 and 450 CFM per ton. Unit water pressure drop should be kept as close as possible to each other to make water balancing easier. Go to the appropriate tables and find the proper indicated water flow and water temperature.

Step 3 Select a unit based on total and sensible cooling conditions. Select a unit which is closest to, but no larger than, the actual cooling load.

Step 4 Enter tables at the design water flow and water temperature. Read the total and sensible cooling capacities (Note: interpolation is permissible, extrapolation is not).

Step 5 Read the heating capacity. If it exceeds the design criteria it is acceptable. It is quite normal for Water-Source Heat Pumps to be selected on cooling capacity only since the heating output is usually greater than the cooling capacity.

Step 6 Determine the correction factors associated with the variable factors of dry bulb and wet bulb.

Corrected Total Cooling =
tabulated total cooling x wet bulb correction.
Corrected Sensible Cooling =
tabulated sensible cooling x wet/dry bulb correction.

Step 7 Compare the corrected capacities to the load requirements. Normally if the capacities are within 10% of the loads, the equipment is acceptable. It is better to undersize than oversize, as undersizing improves humidity control, reduces sound levels and extends the life of the equipment.

Step 8 When completed, calculate water temperature rise and assess the selection. If the units selected are not within 10% of the load calculations, then review what effect changing the GPM, water temperature and/or air flow and air temperature would have on the corrected capacities. If the desired capacity cannot be achieved, select the next larger or smaller unit and repeat the procedure. Remember, when in doubt, undersize slightly for best performance.

Example Equipment Selection For Cooling

Step 1 Load Determination:
Assume we have determined that the appropriate cooling load at the desired dry bulb 80°F and wet bulb 65°F conditions is as follows:

Total Cooling ..... 56,900 BTUH
Sensible Cooling ..... 49,400 BTUH
Entering Air Temp ... 80°F Dry Bulb / 65°F Wet Bulb

Step 2 Design Conditions:
Similarly, we have also obtained the following design parameters:

Entering Water Temp ..... 90°F
Water Flow (Based upon 12°F rise in temp.) 11 GPM
Air Flow ..... 2,120 CFM

Step 3, 4 & 5 HP Selection:
After making our preliminary selection (RE05), we enter the tables at design water flow and water temperature and read Total Cooling, Sens. Cooling and Heat of Rej. capacities:

Total Cooling ..... 57,000 BTUH
Sensible Cooling ..... 45,000 BTUH
Heat of Rejection ..... 73,200 BTUH

Step 6 & 7 Entering Air and Airflow Corrections:
Next, we determine our correction factors.

	Table	Ent Air	Air Flow	Corrected
Corrected Total Cooling =	57,000	x 0.969	x 1.004	= 55,454
Corrected Sens Cooling =	45,000	x 1.090	x 1.030	= 50,522
Corrected Heat of Reject =	73,200	x 0.975	x 1.006	= 71,798

Step 8 Water Temperature Rise Calculation & Assessment:

Actual Temperature Rise 13.1°F

When we compare the Corrected Total Cooling and Corrected Sensible Cooling figures with our load requirements stated in Step 1, we discover that our selection is within +/- 10% of our sensible load requirement. Furthermore, we see that our Corrected Total Cooling figure is slightly undersized as recommended, when compared to the actual indicated load.

RE Series Nomenclature

1 2	3 4	5	6	7	8 9	10 11	12	13	14	15
RE	0 3	H	A	A	A A	C M	A	A	O	B

MODEL TYPE
RE = ROOFTOP EXTENDED RANGE HEAT PUMP

UNIT SIZE
03 = 3 TON ("N" VOLT N/A)
04 = 4 TON
05 = 5 TON
07 = 7 TON
08 = 8 TON
10 = 10 TON
12 = 12 TON
15 = 15 TON
20 = 20 TON

VOLTAGE
F = 460/60/3 - R22
H = 208-230/60/3 - R22
1 N = 575/60/3 - R22
U = 380-420/50/3 - R22
3 S = 380-420/50/3 - R-407C

DISCONNECT
A = NONE
B = DISCONNECT
C = DISCONNECT + GFI OUTLET
D = CIRCUIT BREAKER
E = CIRCUIT BREAKER + GFI OUTLET

BLOWER DRIVE PACKAGE
A = STANDARD RPM & STANDARD MOTOR
B = LOW RPM & STANDARD MOTOR
C = HIGH RPM & STANDARD MOTOR
D = HIGH RPM & LARGE MOTOR

OUTSIDE AIR
A A = NONE
A B = MANUAL ADJUSTABLE FRESH AIR DAMPER
A C = MOTORIZED FRESH AIR DAMPER
A F = MODULATING ENTHALPY ECONOMIZER
A H = 100% OSA w/ERV 2

CONTROLS
C M = CXM 2,4
D M = DXM
C L = CXM w/LON 2,4
D L = DXM w/LON
C N = CXM w/MPC 2,4
D P = DXM w/MPC
C F = CXM (CE FOR EUROPE) 2,4
D G = DXM (CE FOR EUROPE)
C H = CXM w/LON (CE FOR EUROPE) 2,4
D J = DXM w/LON (FOR EUROPE)
C T = CXM w/MPC (CE FOR EUROPE) 2,4
D U = DXM w/MPC (CE FOR EUROPE)

FILTERS
A = 2" (50mm) THROWAWAY
B = 2" (50mm) THROWAWAY PLEATED 30% EFF
C = 4" (100mm) THROWAWAY PLEATED 30% EFF

WATER COIL & VALVE OPTIONS
A = COPPER WATER COIL
B = COPPER WATER COIL w/MOTORIZED VALVE 4
D = CUPRO-NICKEL WATER COIL w/MOTORIZED VALVE 4
N = CUPRO-NICKEL WATER COIL

STANDARD
O = STANDARD
A = SPECIAL #1
B = SPECIAL #2
etc.....

REVISION LEVEL
B = CURRENT REVISION

NOTE:
1. "N" VOLTAGE NOT AVAILABLE FOR RE03.
2. DIGITS 8 & 9 OPTION "AH" IS NOT AVAILABLE WITH CXM.
3. DIGITS 10& 11 MUST HAVE "CE" AGENCY APPROVAL.
4. DIGIT 13 OPTIONS B & D NOT AVAILABLE WITH CXM.

1 2 3 4 5	6 7	8 9 10	11 12	13
A C U R B	R E	A A A	A A	A

Model Type
ACURB = Curb

Series Type
RE = RE seiries
SA = Stand Alone ERV Series

CURB TYPE RE and/or ERV Cabinet Size
A A A = RE 3 to 7 Ton, (Non-ERV Applications)
A A B = RE 08 to 12 Ton, (Non-ERV Applications)
A A C = RE 15 to 20 Ton, (Non-ERV Applications)
A E A = RE 3 to 7 Ton to ERV "A" Cabinet, (Mated Applications)
A E B = RE 3 to 7 Ton to ERV "B" Cabinet, (Mated Applications)
B E B = RE 8 to 12 Ton to ERV "B" Cabinet, (Mated Applications)
B E C = RE 8 to 12 Ton to ERV "C" Cabinet, (Mated Applications)
C E C = RE 15 to 20 Ton to ERV "C" Cabinet, (Mated Applications)
C E D = RE 15 to 20 Ton to ERV "D" Cabinet, (Mated Applications)
A A F = ERV "A" Cabinet, (Non-RE Applications)
B A F = ERV "B" Cabinet, (Non-RE Applications)
C A F = ERV "C" Cabinet, (Non-RE Applications)
D A F = ERV "D" Cabinet, (Non-RE Applications)

Curb Options
AA = Standard 14" Curb
AB = Standard 24" Curb
HL = Horizontal Left Discharge Curb
HR = Horizontal Right Discharge Curb
SA = Seismic Curb
ZL = Horizontal Left Discharge & Seismic Curb
ZR = Horizontal Right Discharge & Seismic Curb
XX = Engineering Special (Curb Adapter, etc...)

Revision Level
B = Current Revision

CLIMATEMASTER
Geothermal Heat Pump Systems

Performance Data
ARI/ASHRAE/ISO 13256-1

ASHRAE/ARI/ISO 13256-1. English (IP) Units

Model	Water Loop Heat Pump				Ground Loop Heat Pump			
	Cooling 86°F		Heating 68°F		Cooling 77°F		Heating 32°F	
	Capac-ity Btuh	EER Btuh/W	Capac-ity Btuh	COP	Capac-ity Btuh	EER Btuh/W	Capac-ity Btuh	COP
RE03	33,400	13.5	38,300	4.8	The RE Series is rated for ground loop application. Data not available at time of publishing.			
RE04	45,600	14.7	50,200	5.1				
RE05	58,100	13.4	68,000	4.5				
RE07	78,800	13.4	90,900	4.4				
RE08	91,900	14.7	96,700	4.6				
RE10	119,100	13.6	129,900	4.2				
RE12	133,100	13.4	148,200	4.3				
RE15	175,700	15.7	182,500	5.0				
RE20	249,700	14.2	267,100	4.5				

Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature
Heating capacities based upon 68°F DB, 59°F WB entering air temperature
All air flow is rated on high speed
All ratings based upon operation at lower voltage of dual voltage rated models

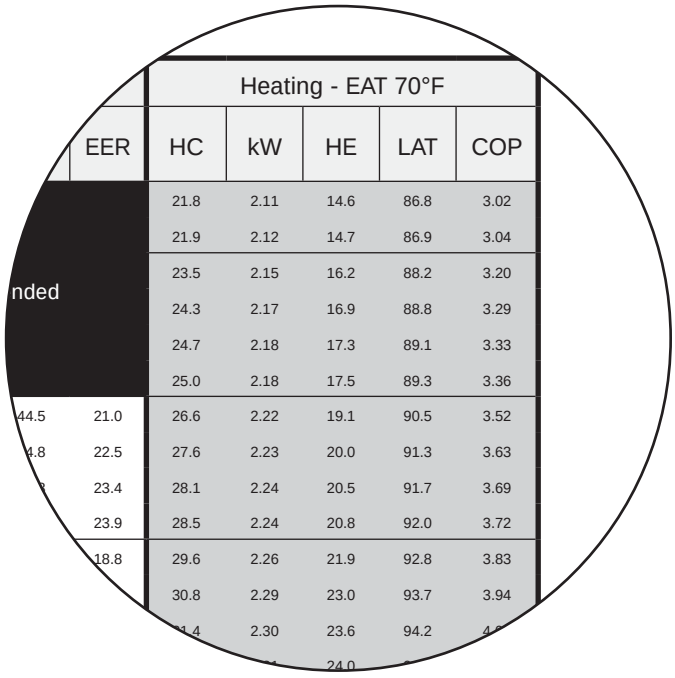
ASHRAE/ARI/ISO 13256-1. Metric (SI) Units

Model	Water Loop Heat Pump				Ground Loop Heat Pump			
	Cooling 30°C		Heating 20°C		Cooling 25°C		Heating 0°C	
	Capac-ity Watts	EER W/W	Capac-ity Watts	COP	Capac-ity Watts	EER W/W	Capac-ity Watts	COP
RE03	9,789	4.0	11,225	4.8	The RE Series is rated for ground loop application. Data not available at time of publishing.			
RE04	13,365	4.3	14,713	5.1				
RE05	17,028	3.9	19,930	4.5				
RE07	23,095	3.9	26,641	4.4				
RE08	26,934	4.3	28,341	4.6				
RE10	34,906	4.0	38,072	4.2				
RE12	39,009	3.9	43,435	4.3				
RE15	51,495	4.6	51,495	5.0				
RE20	73,183	4.2	78,283	4.5				

Cooling capacities based upon 27°C DB, 19°C WB entering air temperature
Heating capacities based upon 20°C DB, 15°C WB entering air temperature
All air flow is rated on high speed
All ratings based upon operation at lower voltage of dual voltage rated models

Performance Data Selection Notes

For operation in the shaded area when water is used in lieu of an anti-freeze solution, the LWT (Leaving Water Temperature) must be calculated. Flow must be maintained to a level such that the LWT is maintained above 42°F [5.6°C] when the JW3 jumper is not clipped (see example below). This is due to the potential of the refrigerant temperature being as low as 32°F [0°C] with 40°F [4.4°C] LWT, which may lead to a nuisance cutout due to the activation of the Low Temperature Protection. JW3 should never be clipped for standard range equipment or systems without antifreeze.



		Heating - EAT 70°F				
	EER	HC	kW	HE	LAT	COP
nded		21.8	2.11	14.6	86.8	3.02
		21.9	2.12	14.7	86.9	3.04
		23.5	2.15	16.2	88.2	3.20
		24.3	2.17	16.9	88.8	3.29
		24.7	2.18	17.3	89.1	3.33
		25.0	2.18	17.5	89.3	3.36
44.5	21.0	26.6	2.22	19.1	90.5	3.52
4.8	22.5	27.6	2.23	20.0	91.3	3.63
	23.4	28.1	2.24	20.5	91.7	3.69
	23.9	28.5	2.24	20.8	92.0	3.72
	18.8	29.6	2.26	21.9	92.8	3.83
		30.8	2.29	23.0	93.7	3.94
		31.4	2.30	23.6	94.2	4.0
				24.0		

Example:

At 50°F EWT (Entering Water Temperature) and 1.5 gpm/ton, a 3 ton unit has a HE of 22,500 Btuh. To calculate LWT, rearrange the formula for HE as follows:

HE = TD x GPM x 500, where HE = Heat of Extraction (Btuh); TD = temperature difference (EWT - LWT) and GPM = U.S. Gallons per Minute.

TD = HE / (GPM x 500)

TD = 22,500 / (4.5 x 500)

TD = 10°F

LWT = EWT - TD

LWT = 50 - 10 = 40°F

In this example, a higher flow rate will be required for EWTs at or below 50°F without antifreeze. At 2 gpm/ton, the calculation above results in a TD of 7.5. LWT = 50 - 7.5 = 42.5°F, which is above 42°F EWT, and is acceptable for this application.

RE Series 60Hz - R22 Submittal Data Eng / I-P

CLIMATEMASTER
Geothermal Heat Pump Systems

Performance Data
RE03

1200 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

*WPD Adder for Motorized Valve, RE03 (Cv = 5.0, MOPD = 25 psi)		
GPM	WPD Adder	
	PSI	FT
4	0.64	1.48
6	2.06	4.77
8	4.78	11.03
10	9.19	21.24

EWT °F	GPM	*WPD		Cooling - EAT 80/67°F						Heating - EAT 70°F				
		PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
20	8	4.6	10.5	Operation Not Recommended						21.8	2.11	14.6	86.8	3.02
	10	6.5	15.1							21.9	2.12	14.7	86.9	3.04
30	4	1.4	3.1							23.5	2.15	16.2	88.2	3.20
	6	2.6	6.1							24.3	2.17	16.9	88.8	3.29
	8	4.3	9.9							24.7	2.18	17.3	89.1	3.33
	10	6.2	14.3							25.0	2.18	17.5	89.3	3.36
40	4	1.2	2.8	38.3	27.9	0.73	1.83	44.5	21.0	26.6	2.22	19.1	90.5	3.52
	6	2.5	5.8	38.9	28.1	0.72	1.73	44.8	22.5	27.6	2.23	20.0	91.3	3.63
	8	4.0	9.3	39.1	28.2	0.72	1.67	44.8	23.4	28.1	2.24	20.5	91.7	3.69
	10	5.6	12.9	39.3	28.3	0.72	1.64	44.9	23.9	28.5	2.24	20.8	92.0	3.72
50	4	1.2	2.8	37.3	27.9	0.75	1.98	44.1	18.8	29.6	2.26	21.9	92.8	3.83
	6	2.3	5.3	37.9	28.1	0.74	1.88	44.3	20.2	30.8	2.29	23.0	93.7	3.94
	8	3.9	8.9	38.2	28.2	0.74	1.83	44.4	20.9	31.4	2.30	23.6	94.2	4.00
	10	5.6	12.9	38.4	28.3	0.74	1.80	44.6	21.4	31.8	2.31	24.0	94.6	4.04
60	4	1.2	2.8	36.1	27.8	0.77	2.16	43.5	16.7	32.8	2.33	24.8	95.3	4.12
	6	2.3	5.3	36.7	28.0	0.76	2.05	43.7	17.9	34.2	2.36	26.2	96.4	4.25
	8	3.9	8.9	37.0	28.1	0.76	1.99	43.8	18.6	35.0	2.37	27.0	97.0	4.33
	10	5.6	12.9	37.3	28.1	0.76	1.96	44.0	19.0	35.6	2.38	27.5	97.5	4.38
70	4	1.2	2.8	34.8	27.3	0.79	2.35	42.8	14.8	36.2	2.39	28.1	97.9	4.44
	6	2.3	5.3	35.4	27.6	0.78	2.23	43.0	15.9	38.1	2.42	29.8	99.4	4.61
	8	3.9	8.9	35.7	27.6	0.77	2.17	43.1	16.5	39.2	2.44	30.8	100.2	4.71
	10	5.6	12.9	36.0	27.6	0.77	2.14	43.3	16.9	39.9	2.45	31.5	100.8	4.77
80	4	1.2	2.8	33.4	26.7	0.80	2.55	42.1	13.1	40.1	2.45	31.7	100.9	4.79
	6	2.3	5.3	34.1	27.0	0.79	2.43	42.4	14.1	42.5	2.49	34.0	102.8	5.01
	8	3.9	8.9	34.3	27.2	0.79	2.37	42.4	14.5	44.0	2.52	35.4	104.0	5.12
	10	5.6	12.9	34.6	27.3	0.79	2.33	42.5	14.8	45.0	2.54	36.3	104.7	5.19
85	4	1.2	2.8	32.7	26.6	0.81	2.67	41.8	12.2	Operation Not Recommended				
	6	2.3	5.3	33.4	26.8	0.80	2.54	42.0	13.2					
	8	3.9	8.9	33.7	26.9	0.80	2.48	42.1	13.6					
	10	5.6	12.9	33.8	27.0	0.80	2.44	42.2	13.9					
90	4	1.2	2.8	32.0	26.4	0.83	2.80	41.5	11.4					
	6	2.3	5.3	32.6	26.6	0.82	2.65	41.6	12.3					
	8	3.9	8.9	33.0	26.6	0.81	2.59	41.8	12.7					
	10	5.6	12.9	33.1	26.8	0.81	2.55	41.9	13.0					
100	4	1.2	2.8	30.5	26.0	0.85	3.07	41.0	9.9					
	6	2.3	5.3	31.1	26.2	0.84	2.92	41.1	10.7					
	8	3.9	8.9	31.5	26.1	0.83	2.85	41.2	11.1					
	10	5.6	12.9	31.7	26.4	0.83	2.81	41.3	11.3					
110	8	3.9	8.9	30.0	25.7	0.86	3.14	40.7	9.6					
	10	5.6	12.9	30.2	25.8	0.85	3.10	40.8	9.8					

Interpolation is permissible; extrapolation is not.
All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.
Table does not reflect fan or pump power corrections for ARI/ISO conditions.
All performance is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 40°F EWT is based upon a 15% antifreeze solution.
See performance correction tables for operating conditions other than those listed above.
See Performance Data Selection Notes for operation in the shaded areas.

CLIMATEMASTER
Geothermal Heat Pump Systems

Performance Data
RE04

1600 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

*WPD Adder for Motorized Valve, RE04 (Cv = 5.0, MOPD = 25 psi)		
GPM	WPD Adder	
	PSI	FT
5.5	1.21	2.80
8.5	4.14	9.57
11.5	9.87	22.80
14.0	18.02	41.63

EWT °F	GPM	*WPD		Cooling - EAT 80/67°F						Heating - EAT 70°F				
		PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
20	11.5	6.8	15.7	Operation Not Recommended						28.6	2.69	19.4	86.5	3.11
	14.0	9.4	21.7							28.8	2.70	19.6	86.7	3.13
30	5.5	1.8	4.2							31.0	2.74	21.7	87.9	3.32
	8.5	3.8	8.9							32.1	2.76	22.7	88.6	3.41
	11.5	6.4	14.8							32.5	2.77	23.1	88.8	3.44
	14.0	8.9	20.5							32.9	2.77	23.5	89.1	3.48
40	5.5	1.7	3.9	51.8	38.3	0.74	2.27	59.6	22.8	34.6	2.70	25.4	90.0	3.75
	8.5	3.6	8.4	52.5	38.7	0.74	2.16	59.9	24.3	36.7	2.74	27.3	91.2	3.92
	11.5	5.7	13.2	52.7	38.7	0.73	2.11	59.9	25.0	37.6	2.76	28.2	91.8	4.00
	14.0	8.0	18.6	52.9	38.8	0.73	2.08	60.0	25.4	38.1	2.76	28.6	92.0	4.03
50	5.5	1.5	3.4	50.5	38.3	0.76	2.46	58.9	20.5	39.6	2.79	30.1	92.9	4.16
	8.5	3.4	7.8	51.4	38.4	0.75	2.34	59.3	22.0	41.2	2.82	31.6	93.8	4.29
	11.5	5.7	13.2	51.6	38.6	0.75	2.28	59.4	22.6	41.9	2.83	32.3	94.3	4.34
	14.0	8.0	18.6	51.9	38.6	0.74	2.25	59.6	23.0	42.3	2.83	32.6	94.5	4.37
60	5.5	1.5	3.4	48.9	38.0	0.78	2.68	58.1	18.3	43.3	2.85	33.5	95.0	4.44
	8.5	3.4	7.8	49.9	38.1	0.76	2.54	58.5	19.6	44.9	2.88	35.1	96.0	4.56
	11.5	5.7	13.2	50.2	38.2	0.76	2.48	58.6	20.3	45.9	2.90	36.0	96.5	4.63
	14.0	8.0	18.6	50.3	38.1	0.76	2.45	58.6	20.6	46.4	2.91	36.5	96.9	4.66
70	5.5	1.5	3.4	47.3	37.2	0.79	2.92	57.2	16.2	47.3	2.93	37.3	97.4	4.72
	8.5	3.4	7.8	48.1	37.5	0.78	2.77	57.6	17.4	49.7	2.99	39.5	98.8	4.88
	11.5	5.7	13.2	48.3	37.8	0.78	2.70	57.6	17.9	51.0	3.01	40.7	99.5	4.95
	14.0	8.0	18.6	48.2	37.5	0.78	2.66	57.3	18.1	51.6	3.03	41.3	99.9	4.99
80	5.5	1.5	3.4	45.1	36.2	0.80	3.19	56.0	14.1	52.0	3.04	41.7	100.1	5.02
	8.5	3.4	7.8	46.4	37.2	0.80	3.04	56.7	15.3	54.2	3.08	43.7	101.4	5.15
	11.5	5.7	13.2	46.5	37.2	0.80	2.96	56.6	15.7	54.7	3.09	44.2	101.7	5.19
	14.0	8.0	18.6	46.7	37.3	0.80	2.92	56.7	16.0	54.7	3.08	44.1	101.6	5.19
85	5.5	1.5	3.4	44.3	36.2	0.82	3.35	55.7	13.2	Operation Not Recommended				
	8.5	3.4	7.8	45.4	36.8	0.81	3.18	56.3	14.3					
	11.5	5.7	13.2	45.7	36.9	0.81	3.10	56.2	14.8					
	14.0	8.0	18.6	45.9	37.0	0.81	3.07	56.3	15.0					
90	5.5	1.5	3.4	43.6	36.2	0.83	3.51	55.5	12.4					
	8.5	3.4	7.8	44.5	36.3	0.82	3.32	55.8	13.4					
	11.5	5.7	13.2	44.8	36.7	0.82	3.25	55.9	13.8					
	14.0	8.0	18.6	45.0	36.7	0.82	3.21	56.0	14.0					
100	5.5	1.5	3.4	41.7	35.3	0.85	3.85	54.8	10.8					
	8.5	3.4	7.8	42.4	35.8	0.84	3.66	54.9	11.6					
	11.5	5.7	13.2	42.9	35.9	0.84	3.58	55.1	12.0					
	14.0	8.0	18.6	43.1	36.0	0.84	3.54	55.1	12.2					
110	11.5	5.7	13.2	40.9	35.0	0.86	3.95	54.3	10.4					
	14.0	8.0	18.6	41.1	35.1	0.86	3.90	54.4	10.5					

Interpolation is permissible; extrapolation is not.
All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.
Table does not reflect fan or pump power corrections for ARI/ISO conditions.
All performance is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 40°F EWT is based upon a 15% antifreeze solution.
See performance correction tables for operating conditions other than those listed above.
See Performance Data Selection Notes for operation in the shaded areas.

RE Series 60Hz - R22 Submittal Data Eng / I-P

CLIMATEMASTER
Geothermal Heat Pump Systems

Performance Data
RE05

2000 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

*WPD Adder for Motorized Valve, RE05 (Cv = 8.0, MOPD = 20 psi)		
GPM	WPD Adder	
	PSI	FT
7	0.77	1.77
11	1.89	4.37
15	3.52	8.12
18	5.06	11.69

EWT °F	GPM	*WPD		Cooling - EAT 80/67°F						Heating - EAT 70°F				
		PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
20	15	13.1	30.2	Operation Not Recommended						38.9	3.85	25.8	88.0	2.96
	18	17.8	41.1							40.0	3.85	26.9	88.5	3.04
30	7	3.5	8.1							42.0	3.92	28.6	89.4	3.14
	11	7.3	16.9							43.3	3.95	29.9	90.1	3.22
	15	12.3	28.5							44.1	3.96	30.6	90.4	3.26
	18	16.8	38.8							44.3	3.96	30.8	90.5	3.28
40	7	3.2	7.5	66.0	47.6	0.72	3.19	76.9	20.7	46.2	3.94	32.7	91.4	3.43
	11	6.8	15.7	66.9	48.0	0.72	3.04	77.3	22.0	48.7	4.04	34.9	92.5	3.53
	15	8.2	18.9	67.0	48.0	0.72	2.97	77.1	22.6	49.9	4.08	35.9	93.1	3.58
	18	11.1	25.6	67.2	48.1	0.72	2.94	77.3	22.9	50.4	4.10	36.4	93.3	3.60
50	7	2.3	5.3	64.4	47.5	0.74	3.45	76.2	18.7	52.6	4.16	38.4	94.4	3.70
	11	4.8	11.2	65.5	47.7	0.73	3.28	76.7	20.0	55.1	4.22	40.8	95.5	3.83
	15	8.2	18.9	65.8	47.7	0.73	3.21	76.8	20.5	56.4	4.24	41.9	96.1	3.89
	18	11.1	25.6	66.1	47.9	0.72	3.18	76.9	20.8	57.0	4.25	42.5	96.4	3.93
60	7	2.3	5.3	62.8	46.8	0.75	3.74	75.6	16.8	58.5	4.28	43.9	97.1	4.01
	11	4.8	11.2	63.7	47.4	0.74	3.56	75.8	17.9	61.3	4.33	46.5	98.4	4.15
	15	8.2	18.9	64.0	47.5	0.74	3.48	75.9	18.4	62.8	4.36	47.9	99.1	4.22
	18	11.1	25.6	64.3	47.6	0.74	3.44	76.0	18.7	63.5	4.37	48.5	99.4	4.25
70	7	2.3	5.3	60.7	46.1	0.76	4.05	74.5	15.0	64.4	4.39	49.4	99.8	4.30
	11	4.8	11.2	61.6	46.6	0.76	3.86	74.8	16.0	68.0	4.49	52.7	101.5	4.44
	15	8.2	18.9	61.9	46.7	0.75	3.77	74.8	16.4	69.9	4.54	54.4	102.4	4.51
	18	11.1	25.6	62.2	46.8	0.75	3.73	74.9	16.6	70.9	4.57	55.2	102.8	4.54
80	7	2.3	5.3	58.3	45.4	0.78	4.40	73.3	13.2	71.1	4.58	55.5	102.9	4.55
	11	4.8	11.2	59.4	45.9	0.77	4.20	73.7	14.2	75.5	4.71	59.4	105.0	4.69
	15	8.2	18.9	59.8	46.0	0.77	4.10	73.8	14.6	77.7	4.77	61.5	106.0	4.77
	18	11.1	25.6	60.0	46.1	0.77	4.06	73.9	14.8	78.8	4.79	62.5	106.5	4.82
85	7	2.3	5.3	57.2	44.9	0.79	4.60	72.9	12.4	Operation Not Recommended				
	11	4.8	11.2	58.2	45.4	0.78	4.38	73.2	13.3					
	15	8.2	18.9	58.6	45.6	0.78	4.28	73.3	13.7					
	18	11.1	25.6	58.9	45.7	0.78	4.24	73.4	13.9					
90	7	2.3	5.3	56.1	44.4	0.79	4.79	72.5	11.7					
	11	4.8	11.2	57.0	45.0	0.79	4.57	72.6	12.5					
	15	8.2	18.9	57.5	45.2	0.79	4.47	72.8	12.9					
	18	11.1	25.6	57.7	45.3	0.78	4.43	72.9	13.0					
100	7	2.3	5.3	53.7	43.7	0.81	5.24	71.6	10.2					
	11	4.8	11.2	54.6	44.2	0.81	5.00	71.7	10.9					
	15	8.2	18.9	55.2	44.4	0.80	4.89	71.9	11.3					
	18	11.1	25.6	55.5	44.2	0.80	4.84	72.0	11.5					
110	15	8.2	18.9	52.8	43.4	0.82	5.36	71.1	9.9					
	18	11.1	25.6	53.1	43.8	0.82	5.31	71.3	10.0					

Interpolation is permissible; extrapolation is not.
All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.
Table does not reflect fan or pump power corrections for ARI/ISO conditions.
All performance is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 40°F EWT is based upon a 15% antifreeze solution.
See performance correction tables for operating conditions other than those listed above.
See Performance Data Selection Notes for operation in the shaded areas.

CLIMATEMASTER
Geothermal Heat Pump Systems

Performance Data
RE07

2600 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

*WPD Adder for Motorized Valve, RE07 (Cv = 19.0, MOPD = 150 psi)		
GPM	WPD Adder	
	PSI	FT
10	0.28	0.64
15	0.62	1.44
20	1.11	2.56
24	1.60	3.69

EWT °F	GPM	*WPD		Cooling - EAT 80/67°F						Heating - EAT 70°F				
		PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
20	20	7.4	17.1	Operation Not Recommended						52.5	5.10	35.1	88.7	3.02
	24	10.3	23.8							53.3	5.13	35.7	89.0	3.04
30	10	1.5	3.4							56.1	5.22	38.3	90.0	3.15
	15	4.4	10.1							58.3	5.26	40.3	90.7	3.25
	20	6.9	16.0							59.1	5.27	41.1	91.0	3.29
	24	9.6	22.3							60.7	5.29	42.6	91.6	3.36
40	10	1.4	3.2	88.9	61.5	0.69	4.59	104.6	19.4	64.1	5.44	45.5	92.8	3.45
	15	4.1	9.4	89.7	61.4	0.68	4.43	104.9	20.3	66.3	5.51	47.5	93.6	3.52
	20	4.6	10.7	89.9	61.1	0.68	4.37	104.9	20.6	67.6	5.55	48.7	94.1	3.57
	24	6.4	14.9	90.3	61.2	0.68	4.35	105.1	20.8	68.3	5.57	49.3	94.3	3.59
50	10	1.0	2.3	86.6	60.9	0.70	4.89	103.3	17.7	72.0	5.65	52.8	95.7	3.73
	15	2.9	6.7	87.3	60.7	0.70	4.67	103.2	18.7	74.4	5.73	54.8	96.5	3.81
	20	4.6	10.7	87.3	60.4	0.69	4.57	102.9	19.1	75.9	5.77	56.2	97.0	3.86
	24	6.4	14.9	87.6	60.4	0.69	4.53	103.0	19.3	76.7	5.79	56.9	97.3	3.88
60	10	1.0	2.3	84.3	60.3	0.72	5.27	102.3	16.0	79.8	5.86	59.8	98.4	3.99
	15	2.9	6.7	85.0	60.1	0.71	5.00	102.1	17.0	82.6	5.96	62.3	99.4	4.07
	20	4.6	10.7	85.0	59.7	0.70	4.87	101.6	17.5	84.5	6.01	64.0	100.1	4.12
	24	6.4	14.9	85.2	59.7	0.70	4.81	101.7	17.7	85.5	6.04	64.9	100.4	4.15
70	10	1.0	2.3	81.7	59.5	0.73	5.72	101.3	14.3	88.2	6.11	67.3	101.4	4.23
	15	2.9	6.7	82.7	59.4	0.72	5.40	101.1	15.3	91.8	6.25	70.5	102.7	4.30
	20	4.6	10.7	82.7	59.1	0.71	5.26	100.7	15.7	94.2	6.34	72.6	103.5	4.35
	24	6.4	14.9	83.0	59.1	0.71	5.19	100.7	16.0	95.4	6.39	73.7	104.0	4.38
80	10	1.0	2.3	78.7	58.4	0.74	6.23	100.0	12.6	97.4	6.43	75.4	104.7	4.44
	15	2.9	6.7	80.0	58.6	0.73	5.87	100.0	13.6	101.7	6.63	79.1	106.2	4.49
	20	4.6	10.7	80.2	58.4	0.73	5.71	99.7	14.1	104.2	6.74	81.2	107.1	4.53
	24	6.4	14.9	80.5	58.4	0.73	5.63	99.7	14.3	105.5	6.80	82.3	107.6	4.55
85	10	1.0	2.3	77.0	57.7	0.75	6.52	99.2	11.8	Operation Not Recommended				
	15	2.9	6.7	78.4	57.9	0.74	6.14	99.4	12.8					
	20	4.6	10.7	78.7	57.8	0.73	5.96	99.1	13.2					
	24	6.4	14.9	79.1	57.9	0.73	5.88	99.1	13.5					
90	10	1.0	2.3	75.2	56.9	0.76	6.81	98.5	11.0					
	15	2.9	6.7	76.8	57.3	0.75	6.41	98.7	12.0					
	20	4.6	10.7	77.2	57.3	0.74	6.22	98.5	12.4					
	24	6.4	14.9	77.6	57.4	0.74	6.13	98.5	12.7					
100	10	1.0	2.3	71.2	54.9	0.77	7.49	96.8	9.5					
	15	2.9	6.7	73.1	55.7	0.76	7.03	97.1	10.4					
	20	4.6	10.7	73.7	55.8	0.76	6.81	97.0	10.8					
	24	6.4	14.9	74.2	55.9	0.75	6.71	97.1	11.1					
110	20	4.6	10.7	69.7	53.8	0.77	7.50	95.3	9.3					
	24	6.4	14.9	70.3	54.0	0.77	7.38	95.5	9.5					

Interpolation is permissible; extrapolation is not.
All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.
Table does not reflect fan or pump power corrections for ARI/ISO conditions.
All performance is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 40°F EWT is based upon a 15% antifreeze solution.
See performance correction tables for operating conditions other than those listed above.
See Performance Data Selection Notes for operation in the shaded areas.

RE Series 60Hz - R22 Submittal Data Eng / I-P

CLIMATEMASTER
Geothermal Heat Pump Systems

Performance Data
RE08

*WPD Adder for Motorized Valve, RE08 (Cv = 19.0, MOPD = 150 psi)		
GPM	WPD Adder	
	PSI	FT
11	0.34	0.77
17	0.80	1.85
22	1.34	3.10
27	2.02	4.66

3200 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

EWT °F	GPM	*WPD		Cooling - EAT 80/67°F						Heating - EAT 70°F				
		PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
20	22	6.5	15.0	Operation Not Recommended						56.2	5.57	37.2	86.3	2.96
	27	9.2	21.2							56.7	5.58	37.7	86.4	2.98
30	11	1.9	4.5							60.9	5.67	41.6	87.6	3.15
	17	4.1	9.4							62.8	5.70	43.3	88.2	3.23
	22	6.1	14.2							63.6	5.72	44.1	88.4	3.26
	27	8.7	20.0							64.0	5.73	44.5	88.5	3.28
40	11	1.5	3.5	103.5	76.0	0.73	4.60	119.2	22.5	67.5	5.80	47.7	89.5	3.41
	17	3.5	8.1	104.9	76.5	0.73	4.39	119.9	23.9	70.5	5.86	50.5	90.4	3.53
	22	5.5	12.7	105.2	76.5	0.73	4.28	119.8	24.6	71.7	5.88	51.7	90.8	3.57
	27	7.9	18.2	105.6	76.7	0.73	4.23	120.1	25.0	72.6	5.90	52.4	91.0	3.60
50	11	1.5	3.5	100.9	76.3	0.76	4.99	117.9	20.2	76.3	5.98	55.9	92.1	3.74
	17	3.5	8.1	102.4	76.8	0.75	4.75	118.6	21.6	79.5	6.04	58.9	93.0	3.86
	22	5.5	12.7	102.9	77.0	0.75	4.63	118.8	22.2	80.9	6.07	60.2	93.4	3.91
	27	7.9	18.2	103.4	77.2	0.75	4.58	119.0	22.6	81.9	6.09	61.1	93.7	3.94
60	11	1.5	3.5	98.0	75.9	0.77	5.42	116.5	18.1	84.7	6.15	63.8	94.5	4.04
	17	3.5	8.1	99.6	76.4	0.77	5.16	117.2	19.3	88.5	6.22	67.2	95.6	4.17
	22	5.5	12.7	100.2	76.6	0.76	5.03	117.3	19.9	90.1	6.25	68.8	96.1	4.23
	27	7.9	18.2	100.6	76.8	0.76	4.97	117.6	20.2	91.3	6.27	69.9	96.4	4.26
70	11	1.5	3.5	95.1	75.1	0.79	5.92	115.2	16.1	93.5	6.31	72.0	97.1	4.34
	17	3.5	8.1	96.6	75.6	0.78	5.63	115.8	17.2	97.9	6.39	76.0	98.3	4.48
	22	5.5	12.7	97.2	75.8	0.78	5.48	116.0	17.7	99.9	6.43	77.9	98.9	4.55
	27	7.9	18.2	97.3	75.4	0.78	5.42	115.7	18.0	101.2	6.45	79.1	99.3	4.59
80	11	1.5	3.5	91.3	73.4	0.80	6.45	113.3	14.2	102.6	6.48	80.5	99.7	4.64
	17	3.5	8.1	93.0	74.4	0.80	6.15	114.0	15.1	107.5	6.57	85.1	101.1	4.79
	22	5.5	12.7	93.7	74.6	0.80	6.00	114.1	15.6	109.7	6.61	87.1	101.7	4.86
	27	7.9	18.2	94.1	74.7	0.79	5.93	114.3	15.9	111.1	6.64	88.5	102.2	4.90
85	11	1.5	3.5	89.5	72.7	0.81	6.76	112.6	13.2	Operation Not Recommended				
	17	3.5	8.1	91.1	73.5	0.81	6.44	113.1	14.2					
	22	5.5	12.7	91.8	73.7	0.80	6.29	113.3	14.7					
	27	7.9	18.2	92.3	73.9	0.80	6.21	113.5	14.9					
90	11	1.5	3.5	87.6	71.9	0.82	7.07	111.8	12.4					
	17	3.5	8.1	89.2	72.6	0.81	6.73	112.1	13.3					
	22	5.5	12.7	90.0	72.9	0.81	6.57	112.5	13.7					
	27	7.9	18.2	90.5	73.1	0.81	6.50	112.6	13.9					
100	11	1.5	3.5	83.6	71.1	0.85	7.78	110.2	10.8					
	17	3.5	8.1	85.2	71.6	0.84	7.40	110.4	11.5					
	22	5.5	12.7	86.0	71.9	0.84	7.24	110.7	11.9					
	27	7.9	18.2	86.5	72.0	0.83	7.15	110.9	12.1					
110	22	5.5	12.7	82.0	70.7	0.86	7.98	109.2	10.3					
	27	7.9	18.2	82.4	70.9	0.86	7.89	109.3	10.4					

Interpolation is permissible; extrapolation is not.
All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.
Table does not reflect fan or pump power corrections for ARI/ISO conditions.
All performance is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 40°F EWT is based upon a 15% antifreeze solution.
See performance correction tables for operating conditions other than those listed above.
See Performance Data Selection Notes for operation in the shaded areas.

CLIMATEMASTER
Geothermal Heat Pump Systems

Performance Data
RE10

4000 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

*WPD Adder for Motorized Valve, RE10 (Cv = 37.0, MOPD = 150 psi)		
GPM	WPD Adder	
	PSI	FT
14	0.14	0.33
22	0.35	0.82
30	0.66	1.52
36	0.95	2.19

EWT °F	GPM	*WPD		Cooling - EAT 80/67°F						Heating - EAT 70°F				
		PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
20	30	13.5	31.1	Operation Not Recommended						76.5	8.12	48.8	87.7	2.76
	36	18.3	42.3							77.1	8.13	49.4	87.8	2.78
30	14	3.6	8.3							82.9	8.28	54.7	89.2	2.94
	22	7.6	17.6							85.3	8.33	56.9	89.8	3.00
	30	12.7	29.4							86.5	8.36	57.9	90.0	3.03
	36	17.3	39.9							86.9	8.37	58.3	90.1	3.04
40	14	3.4	7.8	132.6	95.1	0.72	6.63	155.2	20.0	92.3	8.48	63.3	91.4	3.19
	22	7.1	16.5	134.4	95.8	0.71	6.33	156.0	21.2	95.6	8.56	66.4	92.1	3.27
	30	8.5	19.7	134.7	95.7	0.71	6.18	155.7	21.8	97.4	8.60	68.1	92.5	3.32
	36	11.6	26.7	135.1	96.0	0.71	6.12	156.0	22.1	98.2	8.62	68.8	92.7	3.34
50	14	2.4	5.5	129.8	95.1	0.73	7.15	154.2	18.2	102.4	8.71	72.7	93.7	3.44
	22	5.1	11.7	131.7	95.8	0.73	6.82	155.0	19.3	106.7	8.81	76.6	94.7	3.55
	30	8.5	19.7	132.6	95.7	0.72	6.66	155.3	19.9	108.9	8.86	78.7	95.2	3.60
	36	11.6	26.7	133.0	95.9	0.72	6.60	155.6	20.2	110.0	8.89	79.7	95.5	3.63
60	14	2.4	5.5	126.5	94.5	0.75	7.73	152.9	16.4	113.4	8.97	82.8	96.3	3.71
	22	5.1	11.7	128.7	94.9	0.74	7.36	153.9	17.5	118.6	9.09	87.6	97.5	3.82
	30	8.5	19.7	129.3	95.4	0.74	7.20	153.8	18.0	121.4	9.15	90.1	98.1	3.88
	36	11.6	26.7	129.7	95.6	0.74	7.13	154.1	18.2	122.6	9.18	91.3	98.4	3.91
70	14	2.4	5.5	122.4	93.1	0.76	8.36	150.9	14.6	125.0	9.24	93.5	98.9	3.96
	22	5.1	11.7	124.4	93.8	0.75	7.96	151.6	15.6	131.3	9.39	99.2	100.4	4.10
	30	8.5	19.7	125.1	94.0	0.75	7.78	151.7	16.1	134.5	9.47	102.2	101.1	4.16
	36	11.6	26.7	125.6	94.2	0.75	7.71	151.9	16.3	136.1	9.50	103.6	101.5	4.20
80	14	2.4	5.5	117.8	91.5	0.78	9.06	148.7	13.0	137.2	9.53	104.7	101.8	4.22
	22	5.1	11.7	120.1	92.4	0.77	8.64	149.6	13.9	144.6	9.71	111.5	103.5	4.36
	30	8.5	19.7	120.8	92.6	0.77	8.44	149.6	14.3	148.3	9.80	114.9	104.3	4.43
	36	11.6	26.7	121.3	92.8	0.76	8.36	149.8	14.5	150.1	9.84	116.6	104.8	4.47
85	14	2.4	5.5	115.8	90.9	0.78	9.46	148.1	12.2	Operation Not Recommended				
	22	5.1	11.7	117.7	91.5	0.78	9.01	148.5	13.1					
	30	8.5	19.7	118.6	91.8	0.77	8.82	148.7	13.5					
	36	11.6	26.7	119.0	92.0	0.77	8.73	148.8	13.6					
90	14	2.4	5.5	113.9	90.3	0.79	9.86	147.5	11.6					
	22	5.1	11.7	115.3	90.7	0.79	9.38	147.3	12.3					
	30	8.5	19.7	116.3	91.0	0.78	9.19	147.7	12.7					
	36	11.6	26.7	116.8	91.2	0.78	9.10	147.8	12.8					
100	14	2.4	5.5	109.2	88.7	0.81	10.76	145.9	10.2					
	22	5.1	11.7	111.3	89.5	0.80	10.24	146.2	10.9					
	30	8.5	19.7	112.3	89.8	0.80	10.02	146.5	11.2					
	36	11.6	26.7	112.8	90.0	0.80	9.93	146.7	11.4					
110	30	8.5	19.7	107.5	88.3	0.82	10.97	144.9	9.8					
	36	11.6	26.7	108.0	88.5	0.82	10.87	145.0	9.9					

Interpolation is permissible; extrapolation is not.
All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.
Table does not reflect fan or pump power corrections for ARI/ISO conditions.
All performance is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 40°F EWT is based upon a 15% antifreeze solution.
See performance correction tables for operating conditions other than those listed above.
See Performance Data Selection Notes for operation in the shaded areas.

CLIMATEMASTER
Geothermal Heat Pump Systems

Performance Data
RE12

4800 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

*WPD Adder for Motorized Valve, RE12 (Cv = 37.0, MOPD = 150 psi)		
GPM	WPD Adder	
	PSI	FT
17	0.21	0.49
25	0.46	1.05
34	0.84	1.95
40	1.17	2.70

EWT °F	GPM	*WPD		Cooling - EAT 80/67°F						Heating - EAT 70°F				
		PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
20	34	5.9	13.6	Operation Not Recommended						87.6	9.36	55.6	86.9	2.74
	40	9.9	22.8							88.4	9.38	56.4	87.1	2.76
30	17	2.1	4.8							95.3	9.54	62.7	88.4	2.92
	25	4.1	9.4							97.7	9.61	65.0	88.9	2.98
	34	5.7	13.1							98.9	9.60	66.2	89.1	3.02
	40	9.5	22.0							100.3	9.63	67.4	89.3	3.05
40	17	1.9	4.5	147.9	108.1	0.73	7.91	174.9	18.7	106.1	9.76	72.8	90.5	3.19
	25	3.9	9.0	149.3	108.6	0.73	7.70	175.6	19.4	109.5	9.84	76.0	91.1	3.26
	34	4.5	10.3	149.7	108.2	0.72	7.59	175.6	19.7	111.7	9.90	77.9	91.5	3.31
	40	5.8	13.5	150.2	108.3	0.72	7.55	175.9	19.9	112.6	9.92	78.8	91.7	3.33
50	17	1.4	3.2	144.9	108.4	0.75	8.38	173.5	17.3	118.5	10.05	84.2	92.9	3.45
	25	2.6	6.0	146.7	108.5	0.74	8.13	174.5	18.1	122.8	10.14	88.2	93.7	3.55
	34	4.5	10.3	147.4	108.6	0.74	8.00	174.7	18.4	125.4	10.20	90.6	94.2	3.60
	40	5.8	13.5	147.8	108.8	0.74	7.95	175.0	18.6	126.6	10.22	91.7	94.4	3.63
60	17	1.4	3.2	141.5	107.5	0.76	8.93	172.0	15.9	131.6	10.33	96.3	95.4	3.73
	25	2.6	6.0	143.2	108.1	0.75	8.64	172.7	16.6	136.6	10.43	101.0	96.4	3.84
	34	4.5	10.3	143.7	108.6	0.76	8.49	172.7	16.9	139.7	10.50	103.9	96.9	3.90
	40	5.8	13.5	144.2	108.8	0.75	8.43	173.0	17.1	141.0	10.52	105.1	97.2	3.93
70	17	1.4	3.2	136.7	106.3	0.78	9.58	169.4	14.3	144.9	10.61	108.7	97.9	4.00
	25	2.6	6.0	138.6	106.6	0.77	9.24	170.1	15.0	150.6	10.73	114.0	99.0	4.11
	34	4.5	10.3	139.3	106.8	0.77	9.07	170.3	15.4	154.1	10.81	117.2	99.7	4.18
	40	5.8	13.5	139.8	107.0	0.77	9.00	170.5	15.5	155.6	10.84	118.6	100.0	4.20
80	17	1.4	3.2	132.2	105.0	0.79	10.33	167.5	12.8	158.2	10.91	121.0	100.5	4.25
	25	2.6	6.0	134.4	105.8	0.79	9.96	168.4	13.5	164.7	11.06	126.9	101.8	4.36
	34	4.5	10.3	134.3	105.5	0.79	9.76	167.6	13.8	168.7	11.15	130.6	102.5	4.43
	40	5.8	13.5	134.8	105.7	0.78	9.68	167.8	13.9	170.4	11.20	132.2	102.9	4.46
85	17	1.4	3.2	129.7	104.1	0.80	10.78	166.4	12.0	Operation Not Recommended				
	25	2.6	6.0	131.7	104.7	0.80	10.38	167.1	12.7					
	34	4.5	10.3	132.1	104.9	0.79	10.17	166.8	13.0					
	40	5.8	13.5	132.6	105.1	0.79	10.09	167.0	13.1					
90	17	1.4	3.2	127.1	103.2	0.81	11.22	165.4	11.3					
	25	2.6	6.0	129.0	103.6	0.80	10.79	165.8	12.0					
	34	4.5	10.3	130.0	104.4	0.80	10.58	166.1	12.3					
	40	5.8	13.5	130.4	104.6	0.80	10.49	166.2	12.4					
100	17	1.4	3.2	121.7	101.5	0.83	12.26	163.6	9.9					
	25	2.6	6.0	123.6	102.1	0.83	11.77	163.7	10.5					
	34	4.5	10.3	124.7	102.4	0.82	11.53	164.1	10.8					
	40	5.8	13.5	125.2	102.6	0.82	11.44	164.2	10.9					
110	34	8.5	19.7	119.1	100.9	0.85	12.64	162.2	9.4					
	40	11.6	26.7	119.6	101.1	0.84	12.53	162.4	9.5					

Interpolation is permissible; extrapolation is not.
All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.
Table does not reflect fan or pump power corrections for ARI/ISO conditions.
All performance is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 40°F EWT is based upon a 15% antifreeze solution.
See performance correction tables for operating conditions other than those listed above.
See Performance Data Selection Notes for operation in the shaded areas.

CLIMATEMASTER
Geothermal Heat Pump Systems

Performance Data
RE15

*WPD Adder for Motorized Valve, RE15 (Cv = 57.0, MOPD = 150 psi)		
GPM	WPD Adder	
	PSI	FT
21	0.14	0.31
32	0.32	0.73
42	0.54	1.25
51	0.80	1.85

6000 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

EWT °F	GPM	*WPD		Cooling - EAT 80/67°F						Heating - EAT 70°F				
		PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
20	42	7.9	18.2	Operation Not Recommended						104.0	9.17	72.7	86.0	3.32
	51	11.0	25.4							104.6	9.18	73.3	86.1	3.34
30	21	2.3	5.2							112.4	9.40	80.4	87.4	3.51
	32	4.6	10.7							115.8	9.47	83.5	87.9	3.58
	42	7.5	17.4							117.3	9.50	84.9	88.1	3.62
	51	10.5	24.3							118.1	9.51	85.7	88.2	3.64
40	21	2.1	4.8	198.6	147.6	0.74	8.90	229.0	22.3	125.3	9.63	92.5	89.3	3.81
	32	4.4	10.2	201.5	148.5	0.74	8.56	230.7	23.5	130.0	9.74	96.7	90.1	3.91
	42	5.0	11.6	202.0	148.5	0.74	8.40	230.6	24.0	132.2	9.80	98.8	90.4	3.96
	51	7.1	16.5	202.9	148.9	0.73	8.31	231.3	24.4	133.6	9.83	100.1	90.6	3.98
50	21	1.3	2.9	194.1	147.7	0.76	9.55	226.6	20.3	140.3	9.98	106.3	91.7	4.12
	32	3.2	7.4	197.0	148.7	0.75	9.17	228.3	21.5	145.9	10.10	111.4	92.5	4.23
	42	5.0	11.6	198.2	148.7	0.75	9.00	228.9	22.0	148.7	10.16	114.1	92.9	4.29
	51	7.1	16.5	199.2	149.1	0.75	8.91	229.5	22.4	150.4	10.19	115.6	93.2	4.32
60	21	1.3	2.9	188.3	146.0	0.78	10.24	223.2	18.4	156.0	10.31	120.8	94.1	4.43
	32	3.2	7.4	191.0	147.9	0.77	9.83	224.6	19.4	162.7	10.46	127.0	95.1	4.56
	42	5.0	11.6	192.1	148.2	0.77	9.64	225.0	19.9	166.0	10.53	130.0	95.6	4.62
	51	7.1	16.5	193.1	148.5	0.77	9.54	225.7	20.2	167.9	10.57	131.8	95.9	4.65
70	21	1.3	2.9	181.7	143.7	0.79	11.01	219.3	16.5	172.3	10.68	135.9	96.6	4.73
	32	3.2	7.4	184.4	145.6	0.79	10.56	220.5	17.5	180.2	10.87	143.1	97.8	4.86
	42	5.0	11.6	185.5	145.9	0.79	10.35	220.8	17.9	184.0	10.96	146.6	98.4	4.92
	51	7.1	16.5	186.4	146.2	0.78	10.24	221.4	18.2	186.4	11.03	148.8	98.8	4.95
80	21	1.3	2.9	174.1	142.0	0.82	11.89	214.6	14.6	189.3	11.10	151.4	99.2	5.00
	32	3.2	7.4	177.5	143.1	0.81	11.40	216.4	15.6	198.6	11.34	159.9	100.6	5.13
	42	5.0	11.6	178.6	143.4	0.80	11.17	216.7	16.0	203.4	11.46	164.3	101.4	5.20
	51	7.1	16.5	179.8	142.9	0.79	11.03	217.5	16.3	206.3	11.53	167.0	101.8	5.24
85	21	1.3	2.9	170.7	140.2	0.82	12.38	213.0	13.8	Operation Not Recommended				
	32	3.2	7.4	173.9	141.4	0.81	11.86	214.3	14.7					
	42	5.0	11.6	175.0	142.2	0.81	11.63	214.7	15.1					
	51	7.1	16.5	176.1	142.1	0.81	11.50	215.3	15.3					
90	21	1.3	2.9	167.3	138.5	0.83	12.88	211.3	13.0					
	32	3.2	7.4	170.2	139.7	0.82	12.32	212.3	13.8					
	42	5.0	11.6	171.4	141.1	0.82	12.10	212.7	14.2					
	51	7.1	16.5	172.3	141.4	0.82	11.97	213.2	14.4					
100	21	1.3	2.9	159.6	137.1	0.86	14.04	207.5	11.4					
	32	3.2	7.4	162.5	138.1	0.85	13.42	208.3	12.1					
	42	5.0	11.6	164.1	138.5	0.84	13.17	209.0	12.5					
	51	7.1	16.5	164.9	138.8	0.84	13.02	209.4	12.7					
110	42	5.0	11.6	156.5	135.1	0.86	14.38	205.6	10.9					
	51	7.1	16.5	157.4	135.5	0.86	14.22	205.9	11.1					

Interpolation is permissible; extrapolation is not.
All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.
Table does not reflect fan or pump power corrections for ARI/ISO conditions.
All performance is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 40°F EWT is based upon a 15% antifreeze solution.
See performance correction tables for operating conditions other than those listed above.
See Performance Data Selection Notes for operation in the shaded areas.

RE Series 60Hz - R22 Submittal Data Eng / I-P

CLIMATEMASTER
Geothermal Heat Pump Systems

Performance Data
RE20

8000 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

*WPD Adder for Motorized Valve, RE20 (Cv = 57.0, MOPD = 150 psi)		
GPM	WPD Adder	
	PSI	FT
31	0.30	0.68
47	0.68	1.57
62	1.18	2.73
74	1.69	3.89

EWT °F	GPM	*WPD		Cooling - EAT 80/67°F						Heating - EAT 70°F				
		PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
20	62	15.6	36.0	Operation Not Recommended						154.5	15.57	101.4	87.9	2.91
	74	21.1	48.7							153.9	15.62	100.6	87.8	2.89
30	31	4.6	10.6							169.0	15.91	114.7	89.6	3.11
	47	9.2	21.2							173.3	16.01	118.7	90.1	3.17
	62	14.8	34.2							175.9	16.05	121.2	90.4	3.21
	74	20.0	46.2							175.8	16.08	120.9	90.3	3.20
40	31	4.4	10.1	282.4	202.0	0.72	13.49	328.4	20.9	187.7	16.33	132.0	91.7	3.37
	47	8.7	20.0	285.9	203.3	0.71	13.00	330.3	22.0	194.6	16.48	138.4	92.5	3.46
	62	9.0	20.8	286.9	202.9	0.71	12.74	330.4	22.5	198.3	16.55	141.8	92.9	3.51
	74	12.1	28.0	288.0	203.4	0.71	12.64	331.2	22.8	200.1	16.59	143.5	93.2	3.53
50	31	2.8	6.4	275.5	200.5	0.73	14.46	324.8	19.1	211.4	16.82	154.0	94.5	3.68
	47	5.7	13.1	279.0	202.3	0.73	13.92	326.5	20.1	219.9	16.99	162.0	95.5	3.79
	62	9.0	20.8	280.6	202.8	0.72	13.63	327.1	20.6	224.4	17.07	166.1	96.0	3.85
	74	12.1	28.0	281.7	203.2	0.72	13.51	327.8	20.8	226.7	17.12	168.3	96.2	3.88
60	31	2.8	6.4	266.9	198.9	0.75	15.59	320.1	17.1	235.8	17.30	176.7	97.3	3.99
	47	5.7	13.1	270.9	200.2	0.74	14.97	322.0	18.1	245.9	17.51	186.1	98.5	4.11
	62	9.0	20.8	272.5	200.8	0.74	14.65	322.5	18.6	250.9	17.61	190.8	99.0	4.17
	74	12.1	28.0	273.7	201.2	0.74	14.52	323.2	18.8	253.5	17.67	193.2	99.3	4.20
70	31	2.8	6.4	258.4	194.9	0.75	16.84	315.9	15.3	260.3	17.81	199.6	100.1	4.28
	47	5.7	13.1	262.3	196.5	0.75	16.17	317.5	16.2	271.9	18.06	210.3	101.5	4.41
	62	9.0	20.8	263.9	197.6	0.75	15.82	317.8	16.7	277.9	18.19	215.8	102.2	4.48
	74	12.1	28.0	265.0	198.0	0.75	15.68	318.5	16.9	280.9	18.26	218.6	102.5	4.51
80	31	2.8	6.4	247.3	191.8	0.78	18.25	309.6	13.6	285.6	18.36	223.0	103.1	4.56
	47	5.7	13.1	251.9	193.4	0.77	17.54	311.8	14.4	299.7	18.67	236.0	104.7	4.70
	62	9.0	20.8	254.0	193.1	0.76	17.14	312.5	14.8	307.0	18.82	242.8	105.5	4.78
	74	12.1	28.0	255.1	193.6	0.76	16.99	313.0	15.0	311.1	18.91	246.5	106.0	4.82
85	31	2.8	6.4	242.2	189.3	0.78	19.05	307.2	12.7	Operation Not Recommended				
	47	5.7	13.1	246.5	190.9	0.77	18.29	308.9	13.5					
	62	9.0	20.8	248.5	191.7	0.77	17.91	309.6	13.9					
	74	12.1	28.0	249.6	192.1	0.77	17.74	310.1	14.1					
90	31	2.8	6.4	237.1	186.8	0.79	19.84	304.8	12.0					
	47	5.7	13.1	241.0	188.4	0.78	19.04	306.0	12.7					
	62	9.0	20.8	243.0	190.3	0.78	18.67	306.7	13.0					
	74	12.1	28.0	244.1	190.7	0.78	18.50	307.2	13.2					
100	31	2.8	6.4	225.7	184.0	0.82	21.65	299.6	10.4					
	47	5.7	13.1	229.7	185.3	0.81	20.79	300.6	11.1					
	62	9.0	20.8	232.4	185.1	0.80	20.36	301.9	11.4					
	74	12.1	28.0	233.5	185.6	0.79	20.18	302.3	11.6					
110	62	9.0	20.8	220.8	181.3	0.82	22.27	296.8	9.9					
	74	12.1	28.0	221.8	181.7	0.82	22.07	297.1	10.0					

Interpolation is permissible; extrapolation is not.
All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.
Table does not reflect fan or pump power corrections for ARI/ISO conditions.
All performance is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 40°F EWT is based upon a 15% antifreeze solution.
See performance correction tables for operating conditions other than those listed above.
See Performance Data Selection Notes for operation in the shaded areas.

CLIMATEMASTER
Geothermal Heat Pump Systems

Performance Data
Correction Tables

Air Flow Correction Table

Airflow	Cooling				Heating		
% of Rated	Total Capacity	Sensible Capacity	Power	Heat of Rejection	Heating Capacity	Power	Heat of Extraction
69%	0.976	0.858	0.938	0.968	0.982	1.021	0.972
75%	0.980	0.884	0.950	0.974	0.987	1.018	0.978
81%	0.981	0.907	0.965	0.978	0.991	1.024	0.983
88%	0.991	0.936	0.973	0.987	0.995	1.010	0.991
94%	0.997	0.966	0.986	0.995	1.000	1.005	0.999
100%	1.000	1.000	1.000	1.000	1.000	1.000	1.000
106%	1.004	1.030	1.011	1.006	1.008	0.998	1.011
113%	1.008	1.059	1.022	1.011	1.012	0.997	1.016
119%	1.011	1.079	1.042	1.017	1.018	1.007	1.020
125%	1.018	1.120	1.051	1.024	1.021	0.994	1.028

Entering Air Correction Table

Heating			
Entering Air DB°F	Heating Capacity	Power	Heat of Extraction
40	1.036	0.879	1.069
45	1.028	0.913	1.053
50	1.020	0.950	1.035
55	1.012	0.990	1.017
60	1.007	0.995	1.014
65	1.006	0.997	1.008
68	1.002	0.999	1.003
70	1.000	1.000	1.000
75	0.998	1.006	0.996
80	0.996	1.015	0.991

Cooling										
Entering Air WB°F	Total Capacity	Sensible Cooling Capacity Multiplier - Entering DB °F							Power	Heat of Rejection
		70	75	80	80.6	85	90	95		
61	0.909	0.828	*	*	*	*	*	*	0.983	0.924
64	0.953	0.691	0.913	1.141	*	*	*	*	0.991	0.960
66.2	0.985	0.589	0.810	1.038	1.066	1.272	*	*	0.998	0.989
67	1.000	0.552	0.773	1.000	1.027	1.224	*	*	1.000	1.000
70	1.043		0.475	0.857	0.884	1.082	*	*	1.020	1.087
73	1.103		0.959	0.715	0.742	0.938	1.167	1.394	1.020	1.087
76	1.153						1.023	1.254	1.031	1.129

* = Sensible capacity equals total capacity
ARI/ISO/ASHRAE 13256-1 uses entering air conditions of Cooling - 80.6°F DB/66.2°F WB, 1 and Heating - 68°F DB/59°F WB entering air temperature

CLIMATEMASTER
Geothermal Heat Pump Systems

Antifreeze Correction Table

Antifreeze Type	Antifreeze %	Cooling			Heating		WPD Corr. Fct. EWT 30°F
		EWT 90°F			EWT 30°F		
		Total Cap	Sens Cap	Power	Htg Cap	Power	
Water	0	1.000	1.000	1.000	1.000	1.000	1.000
Propylene Glycol	5	0.995	0.995	1.003	0.989	0.997	1.070
	15	0.986	0.986	1.009	0.968	0.990	1.210
	25	0.978	0.978	1.014	0.947	0.983	1.360
Methanol	5	0.997	0.997	1.002	0.989	0.997	1.070
	15	0.990	0.990	1.007	0.968	0.990	1.160
	25	0.982	0.982	1.012	0.949	0.984	1.220
Ethanol	5	0.998	0.998	1.002	0.981	0.994	1.140
	15	0.994	0.994	1.005	0.944	0.983	1.300
	25	0.986	0.986	1.009	0.917	0.974	1.360
Ethylene Glycol	5	0.998	0.998	1.002	0.993	0.998	1.040
	15	0.994	0.994	1.004	0.980	0.994	1.120
	25	0.988	0.988	1.008	0.966	0.990	1.200

CLIMATEMASTER
Geothermal Heat Pump Systems

Blower Performance Data
RE03

Airflow in CFM with dry coil and clean air filter.

Airflow (SCFM)		Airflow (cfm) at External Static Pressure (in. wg)															
		0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
975	BHP		0.12	0.14	0.17	0.19	0.21	0.23	0.26	0.29	0.31	0.33					
975	SHEAVE/MTR		B	B	A	A	A	A	A	A	C	C					
975	RPM		550	609	667	724	779	833	885	933	980	1024					
975	TURNS OPEN		5.0	3.5	4.5	3.5	2.5	1.5	1.0	0.0	2.0	1.5					
1050	BHP		0.14	0.17	0.19	0.22	0.24	0.26	0.30	0.32	0.35	0.37					
1050	SHEAVE/MTR		B	B	A	A	A	A	A	A	C	C					
1050	RPM		580	636	691	745	798	849	898	946	991	1035					
1050	TURNS OPEN		4.0	3.0	4.0	3.0	2.5	1.5	0.5	0.0	2.0	1.5					
1125	BHP		0.18	0.20	0.23	0.25	0.28	0.31	0.33	0.36	0.39	0.42					
1125	SHEAVE/MTR		B	A	A	A	A	A	A	C	C	C					
1125	RPM		619	670	721	772	821	870	917	963	1008	1051					
1125	TURNS OPEN		3.5	4.5	3.5	3.0	2.0	1.0	0.5	2.5	2.0	1.0					
1200	BHP		0.22	0.24	0.26	0.29	0.32	0.35	0.37	0.41	0.44	0.46					
1200	SHEAVE/MTR		A	A	A	A	A	A	A	C	C	C					
1200	RPM		658	705	752	799	846	892	937	982	1025	1066					
1200	TURNS OPEN		4.5	4.00	3.00	2.5	1.5	1.0	0.0	2.0	1.5	1.0					
1275	BHP		0.26	0.29	0.31	0.33	0.36	0.40	0.42	0.45	0.48	0.52					
1275	SHEAVE/MTR		A	A	A	A	A	A	C	C	C	C					
1275	RPM		688	732	777	822	867	911	954	997	1038	1079					
1275	TURNS OPEN		4.0	3.5	2.5	2.0	1.5	0.5	2.5	2.0	1.5	1.0					
1350	BHP		0.29	0.32	0.35	0.39	0.41	0.44	0.47	0.51	0.54	0.57					
1350	SHEAVE/MTR		A	A	A	A	A	A	C	C	C	C					
1350	RPM		721	764	807	850	893	935	976	1017	1057	1096					
1350	TURNS OPEN		3.5	3.0	2.5	1.5	1.0	0.0	2.0	1.4	1.0	0.5					
1425	BHP		0.4	0.40	0.42	0.44	0.46	0.50	0.53	0.56	0.61	0.64					
1425	SHEAVE/MTR		A	A	A	A	A	C	C	C	C	C					
1425	RPM		763	803	843	883	923	963	1003	1041	1080	1118					
1425	TURNS OPEN		3.0	2.5	1.5	1.0	0.5	2.5	2.0	1.5	1.0	0.5					

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open (1200 CFM @ 0.4in. ESP wet coil). Other speed require field selection.
ISO/ARI rating point with standard static sheave and drive 3.5 turns open (1200 CFM @ 0.15in. ESP wet coil). Other speeds require field selection.
For applications requiring higher static pressures, contact your local representative.
Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions.
All airflow in rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.
For wet coil performance first calculate the face velocity of the air coil (Face Velocity [FPM] = Airflow [CFM] / Face Area [sqft]).
Then use preceding dry coil to wet coil conversion table.
Then for velocities of 200 fpm reduce the static capability by 0.03in. wg, 300 fpm by 0.08in. wg, 400 fpm by 0.12in. wg,
and 500 fpm by 0.16in. wg.

CLIMATEMASTER
Geothermal Heat Pump Systems

Blower Performance Data
RE04

Airflow in CFM with dry coil and clean air filter.

Airflow (SCFM)		Airflow (cfm) at External Static Pressure (in. wg)															
		0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
1300	BHP		0.26	0.30	0.33	0.36	0.40	0.42									
1300	SHEAVE/MTR		B	B	A	A	A	A									
1300	RPM		633	694	755	812	869	925									
1300	TURNS OPEN		5	3.5	4.5	3.5	2.5	1.5									
1400	BHP		0.33	0.36	0.40	0.43	0.46	0.50	0.53								
1400	SHEAVE/MTR		B	B	A	A	A	A	A								
1400	RPM		668	725	782	836	890	943	995								
1400	TURNS OPEN		4	3.0	4.0	3.0	2.0	1.0	0.5								
1500	BHP		0.42	0.45	0.48	0.52	0.55	0.58	0.62	0.65							
1500	SHEAVE/MTR		B	A	A	A	A	A	C	C							
1500	RPM		712	766	819	871	922	970	1017	1063							
1500	TURNS OPEN		3.0	4.5	3.5	2.5	1.5	0.5	3.5	3.0							
1600	BHP		0.51	0.54	0.57	0.61	0.64	0.67	0.70	0.75	0.78	0.83					
1600	SHEAVE/MTR		A	A	A	A	A	A	C	C	C	C					
1600	RPM		750	801	851	900	948	995	1040	1083	1125	1166					
1600	TURNS OPEN		4.5	3.5	3.0	2.0	1.0	0.0	3.5	1.5	2.0	1.5					
1700	BHP		0.57	0.62	0.66	0.70	0.74	0.78	0.81	0.86	0.89	0.94					
1700	SHEAVE/MTR		A	A	A	A	A	C	C	C	C	C					
1700	RPM		792	840	887	934	979	1024	1068	1110	1152	1194					
1700	TURNS OPEN		4.0	3.0	2.0	1.5	0.5	3.5	3.0	2.5	1.5	1.0					
1800	BHP		0.67	0.72	0.76	0.80	0.85	0.89	0.94	0.97	1.01	1.06					
1800	SHEAVE/MTR		A	A	A	A	A	C	C	D	D	D					
1800	RPM		832	878	923	967	1010	1053	1095	1136	1176	1219					
1800	TURNS OPEN		3.0	2.5	1.5	1.0	0.0	3.0	2.5	2.0	1.5	1.0					
1900	BHP		0.80	0.85	0.89	0.94	0.98	1.02	1.07	1.11	1.16	1.20					
1900	SHEAVE/MTR		A	A	A	A	D	D	D	D	D	D					
1900	RPM		875	919	961	1003	1045	1086	1127	1166	1204	1242					
1900	TURNS OPEN		2.5	1.5	1.0	0.0	3.0	2.5	2.0	1.5	1.0	0.5					

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open (1600 CFM @ 0.35in. ESP wet coil). Other speed require field selection.
ISO/ARI rating point with standard static sheave and drive 3.5 turns open (1600 CFM @ 0.2in. ESP wet coil). Other speeds require field selection.
For applications requiring higher static pressures, contact your local representative.
Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions.
All airflow in rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.
For wet coil performance first calculate the face velocity of the air coil (Face Velocity [FPM] = Airflow [CFM] / Face Area [sqft]).
Then use preceding dry coil to wet coil conversion table.
Then for velocities of 200 fpm reduce the static capability by 0.03in. wg, 300 fpm by 0.08in. wg, 400 fpm by 0.12in. wg,
and 500 fpm by 0.16in. wg.

CLIMATEMASTER
Geothermal Heat Pump Systems

Blower Performance Data
RE05

Airflow in CFM with dry coil and clean air filter.

Airflow (SCFM)		Airflow (cfm) at External Static Pressure (in. wg)															
		0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
1700	BHP		0.37	0.42	0.45	0.50	0.54	0.58	0.63	0.67							
1700	SHEAVE/MTR		B	B	B	A	A	A	A	A							
1700	RPM		797	845	892	938	984	1029	1072	1114							
1700	TURNS OPEN		3.5	2.5	1.5	3.0	2.5	1.5	1.0	0.5							
1800	BHP		0.44	0.48	0.53	0.56	0.61	0.65	0.70	0.75	0.79						
1800	SHEAVE/MTR		B	B	A	A	A	A	A	A	A						
1800	RPM		836	882	927	971	1015	1057	1099	1140	1180						
1800	TURNS OPEN		2.5	1.5	3.5	2.5	2.0	1.0	0.5	0.5	0.0						
1900	BHP		0.52	0.56	0.61	0.65	0.69	0.74	0.78	0.84	0.88	0.94					
1900	SHEAVE/MTR		B	A	A	A	A	A	A	A	C	C					
1900	RPM		880	923	966	1008	1049	1090	1131	1170	1208	1246					
1900	TURNS OPEN		1.5	3.5	3.0	2.0	1.5	0.5	0.5	0.0	3.0	2.5					
2000	BHP		0.61	0.65	0.69	0.74	0.78	0.84	0.88	0.94	0.98	1.03					
2000	SHEAVE/MTR		A	A	A	A	A	A	A	D	D	D					
2000	RPM		926	967	1007	1047	1087	1126	1164	1203	1240	1277					
2000	TURNS OPEN		3.5	3.0	2.0	1.5	1.0	0.5	0.0	3.0	2.5	2.0					
2100	BHP		0.69	0.74	0.78	0.84	0.88	0.94	0.98	1.03	1.09	1.14					
2100	SHEAVE/MTR		A	A	A	A	A	A	D	D	D	D					
2100	RPM		966	1005	1044	1082	1120	1158	1195	1231	1268	1303					
2100	TURNS OPEN		3.0	2.0	1.5	1.0	0.5	0.0	3.0	2.5	2.0	1.5					
2200	BHP		0.79	0.84	0.89	0.94	0.99	1.05	1.09	1.14	1.20	1.25					
2200	SHEAVE/MTR		A	A	A	A	D	D	D	D	D	D					
2200	RPM		1009	1047	1084	1120	1157	1193	1229	1264	1298	1333					
2200	TURNS OPEN		2.0	1.5	1.0	0.5	3.5	3.0	2.5	2.0	1.5	1.0					
2300	BHP		0.9	0.96	1.00	1.06	1.11	1.17	1.22	1.28	1.33	1.39					
2300	SHEAVE/MTR		A	D	D	D	D	D	D	D	D	D					
2300	RPM		1055	1091	1126	1161	1196	1231	1265	1299	1332	1365					
2300	TURNS OPEN		1.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5					

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open (2000 CFM @ 0.25in. ESP wet coil). Other speed require field selection.
ISO/ARI rating point with standard static sheave and drive 3 turns open (2000 CFM @ 0.2in. ESP wet coil). Other speeds require field selection.
For applications requiring higher static pressures, contact your local representative.
Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions.
All airflow in rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.
For wet coil performance first calculate the face velocity of the air coil (Face Velocity [FPM] = Airflow [CFM] / Face Area [sqft]).
Then use preceding dry coil to wet coil conversion table.
Then for velocities of 200 fpm reduce the static capability by 0.03in. wg, 300 fpm by 0.08in. wg, 400 fpm by 0.12in. wg,
and 500 fpm by 0.16in. wg.

CLIMATEMASTER
Geothermal Heat Pump Systems

Blower Performance Data
RE07

Airflow in CFM with dry coil and clean air filter.

Airflow (SCFM)		Airflow (cfm) at External Static Pressure (in. wg)															
		0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
1950	BHP			0.42	0.46	0.51	0.56	0.62	0.67	0.73	0.78						
1950	SHEAVE/MTR			B	B	B	A	A	A	A	A						
1950	RPM			620	664	707	750	792	832	870	908						
1950	TURNS OPEN			4.5	3.5	2.5	4.5	3.5	2.5	2.0	1.5						
2200	BHP			0.56	0.62	0.67	0.73	0.78	0.85	0.90	0.97	1.03	1.10	1.17			
2200	SHEAVE/MTR			B	B	A	A	A	A	A	A	C	C	C			
2200	RPM			675	716	755	793	831	869	905	941	975	1007	1038			
2200	TURNS OPEN			3.0	2.0	4.5	3.5	3.0	2.0	1.5	0.5	5.0	3.0	2.5			
2400	BHP			0.70	0.76	0.83	0.88	0.95	1.00	1.07	1.14	1.21	1.28	1.34	1.41		
2400	SHEAVE/MTR			B	A	A	A	A	A	A	A	C	C	C	C		
2400	RPM			721	758	795	830	865	900	935	969	1002	1034	1066	1097		
2400	TURNS OPEN			2.0	4.5	3.5	3.0	2.0	1.5	0.5	0.0	4.5	4.0	3.5	3.0		
2600	BHP			0.87	0.94	0.99	1.06	1.12	1.19	1.25	1.33	1.40	1.47	1.55	1.63	1.69	1.77
2600	SHEAVE/MTR			A	A	A	A	A	A	A	C	C	C	C	C	C	C
2600	RPM			765	800	835	868	901	933	965	997	1029	1060	1090	1120	1149	1178
2600	TURNS OPEN			4.0	3.5	3.0	2.0	1.5	0.5	0.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5
2800	BHP			1.07	1.13	1.20	1.27	1.33	1.40	1.47	1.54	1.62	1.69	1.77	1.86	1.94	2.01
2800	SHEAVE/MTR			A	A	A	A	A	C	C	C	C	C	C	C	D	D
2800	RPM			812	845	877	908	939	970	1000	1030	1059	1089	1118	1147	1175	1203
2800	TURNS OPEN			3.5	2.5	2.0	1.5	0.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0
3000	BHP			1.28	1.35	1.42	1.50	1.56	1.64	1.72	1.79	1.87	1.95	2.02	2.11	2.20	2.28
3000	SHEAVE/MTR			A	A	A	A	C	C	C	C	C	D	D	D	D	D
3000	RPM			857	889	919	949	978	1007	1035	1064	1091	1119	1147	1174	1202	1228
3000	TURNS OPEN			2.5	1.5	1.0	0.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	1.0
3250	BHP			1.6	1.67	1.75	1.83	1.90	1.98	2.06	2.13	2.22	2.30	2.39	2.48	2.56	2.65
3250	SHEAVE/MTR			A	A	C	C	C	D	D	D	D	D	D	D	D	D
3250	RPM			915	945	974	1001	1029	1056	1082	1109	1135	1161	1187	1212	1238	1263
3250	TURNS OPEN			1.0	0.5	5.0	4.5	4.0	3.5	3.0	2.5	2.5	2.0	1.5	1.0	1.0	0.5

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open (2600 CFM @ 0.45in. ESP wet coil). Other speed require field selection.
ISO/ARI rating point with standard static sheave and drive 3.5 turns open (2600 CFM @ 0.25in. ESP wet coil). Other speeds require field selection.
For applications requiring higher static pressures, contact your local representative.
Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions.
All airflow in rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.
For wet coil performance first calculate the face velocity of the air coil (Face Velocity [FPM] = Airflow [CFM] / Face Area [sqft]).
Then use preceding dry coil to wet coil conversion table.
Then for velocities of 200 fpm reduce the static capability by 0.03in. wg, 300 fpm by 0.08in. wg, 400 fpm by 0.12in. wg,
and 500 fpm by 0.16in. wg.

CLIMATEMASTER
Geothermal Heat Pump Systems

Blower Performance Data
RE08

Airflow in CFM with dry coil and clean air filter.

Airflow (SCFM)		Airflow (cfm) at External Static Pressure (in. wg)															
		0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
2400	BHP			0.40	0.45	0.50	0.55	0.61	0.66	0.72	0.77	0.83	0.87	0.91	0.98	1.03	1.10
2400	SHEAVE/MTR			B	B	B	A	A	A	A	A	A	C	C	C	C	C
2400	RPM			482	521	559	594	629	661	693	723	751	779	806	832	858	883
2400	TURNS OPEN			4.5	3.5	2.0	4.5	3.5	2.5	1.5	1.0	0.0	4.5	4.0	3.5	3.0	2.5
2650	BHP			0.51	0.56	0.62	0.67	0.74	0.79	0.86	0.91	0.98	1.05	1.10	1.16	1.21	1.27
2650	SHEAVE/MTR			B	B	A	A	A	A	A	A	C	C	C	C	C	C
2650	RPM			514	550	585	619	651	683	713	742	770	797	823	848	872	895
2650	TURNS OPEN			3.5	2.5	4.5	3.5	3.0	2.0	1.0	0.5	4.5	4.0	3.5	3.0	2.5	2.0
2900	BHP			0.64	0.69	0.76	0.83	0.88	0.95	1.01	1.08	1.14	1.22	1.29	1.35	1.42	1.49
2900	SHEAVE/MTR			B	A	A	A	A	A	A	C	C	C	C	C	C	C
2900	RPM			549	583	615	647	677	707	736	764	791	818	843	868	894	915
2900	TURNS OPEN			2.5	4.5	4.0	3.0	2.0	1.5	0.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0
3200	BHP			0.81	0.88	0.95	1.02	1.09	1.16	1.23	1.30	1.38	1.45	1.52	1.60	1.67	1.74
3200	SHEAVE/MTR			A	A	A	A	A	A	C	C	C	C	C	C	C	C
3200	RPM			588	619	649	679	707	735	763	789	815	841	865	890	913	936
3200	TURNS OPEN			4.5	3.5	3.0	2.0	1.5	0.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5
3450	BHP			1.00	1.07	1.14	1.21	1.29	1.36	1.44	1.52	1.60	1.67	1.75	1.83	1.90	1.99
3450	SHEAVE/MTR			A	A	A	A	A	C	C	C	C	C	C	C	C	D
3450	RPM			623	652	681	709	736	763	789	814	839	863	887	911	934	956
3450	TURNS OPEN			3.5	3.0	2.0	1.5	0.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0
3700	BHP			1.20	1.28	1.35	1.43	1.51	1.60	1.67	1.75	1.84	1.91	2.00	2.08	2.17	2.26
3700	SHEAVE/MTR			A	A	A	A	C	C	C	C	C	C	D	D	D	D
3700	RPM			657	685	712	739	764	790	815	839	863	886	909	932	954	976
3700	TURNS OPEN			2.5	2.0	1.0	0.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5
4000	BHP			1.5	1.56	1.64	1.73	1.82	1.89	1.98	2.07	2.16	2.24	2.33	2.42	2.51	2.61
4000	SHEAVE/MTR			A	A	A	C	C	C	D	D	D	D	D	D	D	D
4000	RPM			699	725	750	775	799	823	847	870	892	915	937	958	980	1001
4000	TURNS OPEN			1.5	1.0	0.0	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5	0.0

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open (3200 CFM @ 0.45in. ESP wet coil). Other speed require field selection.
ISO/ARI rating point with standard static sheave and drive 4 turns open (3200 CFM @ 0.25in. ESP wet coil). Other speeds require field selection.
For applications requiring higher static pressures, contact your local representative.
Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions.
All airflow in rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.
For wet coil performance first calculate the face velocity of the air coil (Face Velocity [FPM] = Airflow [CFM] / Face Area [sqft]).
Then use preceding dry coil to wet coil conversion table.
Then for velocities of 200 fpm reduce the static capability by 0.03in. wg, 300 fpm by 0.08in. wg, 400 fpm by 0.12in. wg,
and 500 fpm by 0.16in. wg.

CLIMATEMASTER
Geothermal Heat Pump Systems

Blower Performance Data
RE10

Airflow in CFM with dry coil and clean air filter.

Airflow (SCFM)		Airflow (cfm) at External Static Pressure (in. wg)															
		0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
3000	BHP			0.69	0.76	0.83	0.89	0.96	1.02	1.09	1.16	1.22	1.287	1.36	1.43	1.50	1.57
3000	SHEAVE/MTR			B	B	B	B	B	A	A	A	A	A	A	A	A	C
3000	RPM			563	596	628	658	688	718	746	773	800	826	851	876	900	923
3000	TURNS OPEN			4.5	3.5	2.5	1.5	1.0	4.0	3.5	3.0	2.5	2.0	1.5	0.5	0.0	2.5
3300	BHP			0.89	0.96	1.03	1.10	1.18	1.24	1.32	1.39	1.46	1.54	1.62	1.69	1.77	1.85
3300	SHEAVE/MTR			B	B	B	A	A	A	A	A	A	A	A	A	C	C
3300	RPM			604	635	664	693	721	748	775	801	827	852	876	900	923	946
3300	TURNS OPEN			3.0	2.5	1.5	4.5	4.0	3.5	3.0	2.5	2.0	1.0	0.5	0.0	2.5	2.0
3600	BHP			1.12	1.20	1.28	1.35	1.43	1.51	1.58	1.66	1.75	1.83	1.90	1.99	2.07	2.16
3600	SHEAVE/MTR			B	B	A	A	A	A	A	A	A	A	A	D	D	D
3600	RPM			647	676	703	730	756	782	807	832	856	880	903	926	949	971
3600	TURNS OPEN			2.0	1.0	4.5	4.0	3.5	2.5	2.0	1.5	1.0	0.5	0.0	2.5	2.0	1.5
4000	BHP			1.47	1.56	1.64	1.73	1.82	1.89	1.98	2.07	2.16	2.24	2.33	2.42	2.51	2.61
4000	SHEAVE/MTR			A	A	A	A	A	A	D	D	D	D	D	D	D	D
4000	RPM			699	725	750	775	799	823	847	870	892	915	937	958	980	1001
4000	TURNS OPEN			4.5	4.0	3.5	3.0	2.5	2.0	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5
4300	BHP			1.82	1.90	1.99	2.09	2.18	2.27	2.35	2.45	2.54	2.64	2.73	2.83	2.93	
4300	SHEAVE/MTR			A	A	D	D	D	D	D	D	D	D	D	D	D	
4300	RPM			746	770	794	817	840	863	885	907	929	950	971	991	1012	
4300	TURNS OPEN			3.5	3.0	4.5	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	1.0	0.5	
4700	BHP			2.32	2.42	2.52	2.61	2.71	2.81	2.90							
4700	SHEAVE/MTR			D	D	D	D	D	D	D							
4700	RPM			803	825	848	869	891	912	933							
4700	TURNS OPEN			4.5	4.0	3.5	3.5	3.0	2.5	2.0							
5000	BHP			2.8	2.86	2.96											
5000	SHEAVE/MTR			D	D	D											
5000	RPM			847	868	889											
5000	TURNS OPEN			3.5	3.5	3.0											

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open (4000 CFM @ 0.6in. ESP wet coil). Other speed require field selection.
ISO/ARI rating point with standard static sheave and drive 4 turns open (4000 CFM @ 0.3in. ESP wet coil). Other speeds require field selection.
For applications requiring higher static pressures, contact your local representative.
Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions.
All airflow in rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.
For wet coil performance first calculate the face velocity of the air coil (Face Velocity [FPM] = Airflow [CFM] / Face Area [sqft]).
Then use preceding dry coil to wet coil conversion table.
Then for velocities of 200 fpm reduce the static capability by 0.03in. wg, 300 fpm by 0.08in. wg, 400 fpm by 0.12in. wg,
and 500 fpm by 0.16in. wg.

CLIMATEMASTER
Geothermal Heat Pump Systems

Blower Performance Data
RE12

Airflow in CFM with dry coil and clean air filter.

Airflow (SCFM)		Airflow (cfm) at External Static Pressure (in. wg)															
		0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
3600	BHP			1.02	1.10	1.18	1.25	1.33	1.41	1.49	1.56	1.64	1.72	1.80	1.88	1.97	2.05
3600	SHEAVE/MTR			B	B	B	B	B	A	A	A	A	A	A	A	C	C
3600	RPM			609	639	667	695	722	748	774	800	825	849	873	896	919	942
3600	TURNS OPEN			5.5	4.5	3.5	2.5	1.5	5.5	4.5	3.5	3.0	2.5	1.5	1.0	4.5	4.0
4000	BHP			1.38	1.45	1.54	1.62	1.71	1.78	1.87	1.96	2.05	2.13	2.22	2.31	2.40	2.49
4000	SHEAVE/MTR			B	B	B	A	A	A	A	A	A	A	C	C	C	C
4000	RPM			664	691	717	742	767	792	816	839	863	886	908	930	952	973
4000	TURNS OPEN			4.5	3.0	2.0	5.5	4.5	4.0	3.5	2.5	2.0	1.5	4.5	4.0	3.5	3.0
4400	BHP			1.77	1.86	1.96	2.05	2.13	2.23	2.32	2.41	2.51	2.61	2.70	2.79	2.89	2.98
4400	SHEAVE/MTR			B	A	A	A	A	A	A	A	C	C	C	C	C	D
4400	RPM			716	741	765	789	812	835	858	879	901	923	944	965	985	1006
4400	TURNS OPEN			2.0	5.5	4.5	4.0	3.5	3.0	2.0	1.5	5.0	4.5	4.0	3.5	3.0	2.5
4800	BHP			2.23	2.33	2.43	2.53	2.63	2.73	2.83	2.93	3.03	3.12	3.23	3.33	3.43	3.54
4800	SHEAVE/MTR			A	A	A	A	A	A	A	D	D	D	D	D	D	D
4800	RPM			765	788	810	833	854	876	897	918	938	959	978	998	1018	1037
4800	TURNS OPEN			5.5	4.0	3.5	3.0	2.5	1.5	1.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5
5200	BHP			2.82	2.93	3.04	3.14	3.25	3.36	3.47	3.58	3.69	3.78	3.89	4.00	4.11	
5200	SHEAVE/MTR			A	A	D	D	D	D	D	D	D	D	D	D	D	
5200	RPM			825	846	867	888	908	928	948	968	987	1006	1025	1044	1062	
5200	TURNS OPEN			4.5	2.5	5.5	5.0	4.5	4.0	3.5	3.5	3.0	2.5	2.0	1.5	1.0	
5600	BHP			3.47	3.58	3.70	3.81	3.93	4.04	4.16	4.27	4.39	4.51	4.62			
5600	SHEAVE/MTR			D	D	D	D	D	D	D	D	D	D	D			
5600	RPM			879	899	918	938	957	976	995	1013	1031	1050	1067			
5600	TURNS OPEN			5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.5	1.0			
6000	BHP			4.2	4.33	4.46	4.58	4.70	4.82	4.95							
6000	SHEAVE/MTR			D	D	D	D	D	D	D							
6000	RPM			933	952	970	989	1007	1025	1042							
6000	TURNS OPEN			4.0	3.5	3.0	3.0	2.5	2.0	1.5							

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open (4800 CFM @ 0.6in. ESP wet coil). Other speed require field selection.
ISO/ARI rating point with standard static sheave and drive 4 turns open (4800 CFM @ 0.3in. ESP wet coil). Other speeds require field selection.
For applications requiring higher static pressures, contact your local representative.
Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions.
All airflow in rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.
For wet coil performance first calculate the face velocity of the air coil (Face Velocity [FPM] = Airflow [CFM] / Face Area [sqft]).
Then use preceding dry coil to wet coil conversion table.
Then for velocities of 200 fpm reduce the static capability by 0.03in. wg, 300 fpm by 0.08in. wg, 400 fpm by 0.12in. wg,
and 500 fpm by 0.16in. wg.

CLIMATEMASTER
Geothermal Heat Pump Systems

Blower Performance Data
RE15

Airflow in CFM with dry coil and clean air filter.

Airflow (SCFM)		Airflow (cfm) at External Static Pressure (in. wg)															
		0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
4500	BHP			0.68	0.78	0.88	0.98	1.08	1.17	1.28	1.39	1.43	1.54	1.65	1.76		
4500	SHEAVE/MTR			B	B	B	A	A	A	A	A	A	C	C	C		
4500	RPM			465	506	545	582	617	650	681	711	740	768	795	821		
4500	TURNS OPEN			5	3.5	2.5	4.5	4.0	3.5	2.5	2.0	1.0	4.0	3.5	3.0		
5000	BHP			0.87	0.98	1.09	1.20	1.31	1.42	1.52	1.65	1.76	1.87	1.94	2.07	2.16	2.31
5000	SHEAVE/MTR			B	B	B	A	A	A	A	A	C	C	C	C	C	C
5000	RPM			493	531	568	603	636	669	701	732	762	791	819	846	872	897
5000	TURNS OPEN			4.0	3.0	2.0	4.5	3.5	3.0	2.0	1.0	4.0	3.5	3.0	2.5	1.5	1.0
5500	BHP			1.10	1.22	1.33	1.45	1.57	1.71	1.83	1.94	2.07	2.20	2.31	2.44	2.51	2.64
5500	SHEAVE/MTR			B	B	A	A	A	A	A	C	C	C	C	C	C	C
5500	RPM			525	561	595	627	659	690	720	749	777	804	830	855	879	902
5500	TURNS OPEN			3.0	2.0	4.5	4.0	3.0	2.0	1.5	4.5	4.0	3.0	2.5	2.0	1.5	1.0
6000	BHP			1.36	1.49	1.62	1.75	1.88	2.01	2.15	2.28	2.42	2.55	2.71	2.84	2.97	3.10
6000	SHEAVE/MTR			B	A	A	A	A	A	A	C	C	C	C	C	D	D
6000	RPM			556	589	621	652	682	712	740	768	795	821	846	871	895	918
6000	TURNS OPEN			2.0	4.5	4.0	3.0	2.5	1.5	1.0	4.0	3.5	3.0	2.5	2.0	1.0	0.5
6500	BHP			1.69	1.83	1.97	2.10	2.24	2.39	2.53	2.67	2.83	2.97	3.12	3.26	3.41	3.56
6500	SHEAVE/MTR			A	A	A	A	A	A	C	C	C	D	D	D	D	D
6500	RPM			593	624	654	683	711	739	766	793	819	844	868	890	913	936
6500	TURNS OPEN			4.5	4.0	3.0	2.5	1.5	1.0	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5
7000	BHP			2.05	2.19	2.34	2.49	2.64	2.79	2.95	3.10	3.26	3.41	3.56	3.73	3.88	
7000	SHEAVE/MTR			A	A	A	A	A	C	C	D	D	D	D	D	D	
7000	RPM			625	654	683	710	737	764	790	815	840	864	888	911	934	
7000	TURNS OPEN			4.0	3.0	2.5	2.0	1.0	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5	
7500	BHP			2.5	2.62	2.77	2.94	3.09	3.26	3.41	3.58	3.74	3.91	4.08	4.25		
7500	SHEAVE/MTR			A	A	A	A	D	D	D	D	D	D	D	D		
7500	RPM			660	687	714	740	766	791	816	840	864	887	910	933		
7500	TURNS OPEN			3.0	2.5	1.5	1.0	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5		

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open (6000 CFM @ 0.6in. ESP wet coil). Other speed require field selection.
ISO/ARI rating point with standard static sheave and drive 3.5 turns open (6000 CFM @ 0.35in. ESP wet coil). Other speeds require field selection.
For applications requiring higher static pressures, contact your local representative.
Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions.
All airflow in rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.
For wet coil performance first calculate the face velocity of the air coil (Face Velocity [FPM] = Airflow [CFM] / Face Area [sqft]).
Then use preceding dry coil to wet coil conversion table.
Then for velocities of 200 fpm reduce the static capability by 0.03in. wg, 300 fpm by 0.08in. wg, 400 fpm by 0.12in. wg,
and 500 fpm by 0.16in. wg.

CLIMATEMASTER
Geothermal Heat Pump Systems

Blower Performance Data
RE20

Airflow in CFM with dry coil and clean air filter.

Airflow (SCFM)		Airflow (cfm) at External Static Pressure (in. wg)															
		0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
6000	BHP			1.38	1.51	1.63	1.76	1.89	2.02	2.16	2.30	2.43	2.57	2.71	2.84	2.99	3.12
6000	SHEAVE/MTR			B	B	B	A	A	A	A	A	A	A	C	C	C	C
6000	RPM			560	592	624	655	685	715	743	771	797	823	849	874	897	921
6000	TURNS OPEN			5.5	4.0	3.0	5.5	4.5	3.5	2.5	1.5	1.0	0.0	4.0	3.5	2.5	2.0
6600	BHP			1.83	1.73	2.10	2.24	2.39	2.53	2.67	2.83	2.97	3.12	3.28	3.34	3.50	3.65
6600	SHEAVE/MTR			B	B	A	A	A	A	A	A	C	C	C	C	C	C
6600	RPM			614	644	673	702	729	757	783	809	834	859	883	895	919	941
6600	TURNS OPEN			3.5	2.0	5.0	4.0	3.0	2.0	1.5	0.5	4.5	3.5	3.0	2.5	2.0	1.5
7200	BHP			2.30	2.44	2.60	2.75	2.90	3.06	3.22	3.38	3.54	3.70	3.86	4.03	4.20	4.27
7200	SHEAVE/MTR			A	A	A	A	A	A	A	C	C	C	C	C	C	C
7200	RPM			656	684	711	738	764	790	815	839	863	887	910	933	957	966
7200	TURNS OPEN			5.5	4.5	3.5	3.0	2.0	1.0	0.0	4.5	3.5	3.0	2.5	1.5	1.0	0.5
8000	BHP			2.94	3.10	3.27	3.44	3.61	3.77	3.95	4.13	4.30	4.47	4.65	4.83		
8000	SHEAVE/MTR			A	A	A	A	A	A	C	C	C	C	C	C		
8000	RPM			696	722	747	772	797	821	844	867	890	912	935	956		
8000	TURNS OPEN			4.0	3.5	2.5	1.5	1.0	0.0	4.0	3.5	3.0	2.0	1.5	1.0		
8600	BHP			3.71	3.88	4.06	4.25	4.42	4.61	4.79	4.97	5.16	5.35	5.53			
8600	SHEAVE/MTR			A	A	A	C	C	C	C	D	D	D	D			
8600	RPM			756	780	803	827	849	872	894	916	937	958	979			
8600	TURNS OPEN			2.0	1.5	0.5	4.5	4.0	3.5	3.0	2.0	1.5	1.0	0.5			
9300	BHP			4.59	4.77	4.97	5.16	5.36	5.56	5.75	5.95	6.15					
9300	SHEAVE/MTR			A	D	D	D	D	D	D	D	D					
9300	RPM			805	828	850	872	893	914	935	955	976					
9300	TURNS OPEN			0.5	4.5	4.0	3.5	2.5	2.0	1.5	1.0	0.5					
10000	BHP			5.4	5.63	5.84	6.05	6.26	6.47	6.68	6.89						
10000	SHEAVE/MTR			D	D	D	D	D	D	D	D						
10000	RPM			838	859	881	901	922	942	962	981						
10000	TURNS OPEN			4.5	3.5	3.0	2.5	2.0	1.5	0.5	0.0						

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open (8000 CFM @ 0.4in. ESP wet coil). Other speed require field selection.
ISO/ARI rating point with standard static sheave and drive 2.5 turns open (8000 CFM @ 0.4in. ESP wet coil). Other speeds require field selection.
For applications requiring higher static pressures, contact your local representative.
Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions.
All airflow in rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.
For wet coil performance first calculate the face velocity of the air coil (Face Velocity [FPM] = Airflow [CFM] / Face Area [sqft]).
Then use preceding dry coil to wet coil conversion table.
Then for velocities of 200 fpm reduce the static capability by 0.03in. wg, 300 fpm by 0.08in. wg, 400 fpm by 0.12in. wg,
and 500 fpm by 0.16in. wg.

RE Series 60Hz - R22 Submittal Data Eng / I-P

CLIMATEMASTER
Geothermal Heat Pump Systems

Physical Data & Corner Weights

Physical Data

Model	03	04	05	07	08	10	12	15	20
Compressor (qty)	Scroll (1)				Scroll (2)				
Factory Charge Per Circuit R22 (oz) [kg]	56 [1.59]	68 [1.90]	86 [2.44]	101.8 [2.88]	64 [1.81]	72 [2.04]	88 [2.49]	160 [4.54]	176 [4.99]
Fan Motor & Blower									
Motor Quantity	1								
Standard Fan Motor (hp) [W]	1.0 [0.75]	1.0 [0.75]	1.0 [0.75]	2.0 1.49]	2.0 1.49]	2.0 1.49]	3.0 [2.24]	3.0 [2.24]	5.0 [3.76]
Large Fan Motor (hp) [W]	N/A	1.5 [1.12]	2.0 [1.49]	3.0 [2.24]	3.0 [2.24]	3.0 [2.24]	5.0 [3.76]	5.0 [3.76]	7.5 [5.60]
Blower Quantity	1								
Blower Wheel Size (dia x w) - (in) [cm]	10 X 6 [254 X 152]	10 X 6 [254 X 152]	10 X 10 [254 X 254]	12 X 11 [305 X 279]	15 X 11 [381 X 279]	15 X 11 [381 X 279]	15 X 11 [381 X 279]	(2) 15 X 11 [381 X 279]	(2) 15 X 11 [381 X 279]
V-Belt Size (Standard Drive)	A30	AX33	AX33	AX35	A40	AX37	B40	B43	BX46
Water Connection Size									
IPT (in)	3/4"	3/4"	1"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	2"	2"
Condensate Connection Size									
IPT (in)	1	1	1	1	1	1	1	1	1
Water Coil Volume U.S. Gal (L)	0.74	0.86	0.939	2.84	4.10	5.50	5.76	8.15	11.30
Air Coil Data									
Air Coil Total Face Area (ft2) [m2]	5.0 [0.465]	5.0 [0.465]	5.0 [0.465]	7.5 [0.697]	9.3 [0.864]	9.3 [0.864]	10.5 [0.975]	20.0 [1.858]	20.0 [1.858]
Miscellaneous Data									
Standard Filter - 2" [51 mm] Throwaway, qty (in) [mm]	(4 ea) 16" X 20" [406 X 508]				(6 ea) 16" X 20" [406 X 508]			(8 ea) 16" X 20" [406 X 508] (2 ea) 20" X 20" [508 X 508]	
Weight - Operating, (lbs) [kg]	735 [333]	785 [356]	835 [379]	880 [399]	1080 [490]	1125 [510]	1175 [533]	1770 [803]	1960 [889]
Weight - Packaged, (lbs) [kg]	750 [340]	800 [363]	850 [386]	900 [408]	1100 [499]	1150 [522]	1200 [544]	1800 [816]	2000 [907]
Corner Weight - Oper. lbs [kg]									
Left-Front	184 [83.46]	196 [88.90]	208.5 [94.57]	224 [101.60]	292 [132.45]	303.5 [137.67]	320 [145.15]	479 [217.27]	530 [240.40]
Right-Front	259 [117.48]	276 [125.19]	293.5 [133.13]	298 [135.17]	380 [172.37]	395.5 [179.40]	406 [184.16]	623 [282.59]	690 [312.98]
Left-Rear	108.5 [49.21]	117 [53.07]	124.5 [56.47	134 [60.78]	193 [87.54]	202 [91.63]	212.5 [96.39]	315 [142.88]	350 [158.76]
Right-Rear	183.5 [83.23]	196 [88.90]	208.5 [94.57]	224 [101.60]	215 [97.52]	224 [101.60]	236.5 [107.27]	353 [160.12]	390 [176.90]
Curb Installed lb [kg]	83 [37.65]	83 [37.65]	83 [37.65]	83 [37.65]	94 [42.64]	94 [42.64]	94 [42.64]	1278 [58.06]	1278 [58.06]

Unit Maximum Water Working Pressure	
Options	**Max Pressure PSIG [kPa]**
Base Unit	450 [3,100]
Internal Motorized Water Valve (MWV)	400 [2,756]

Use the lowest maximum pressure rating when multiple options are combined.

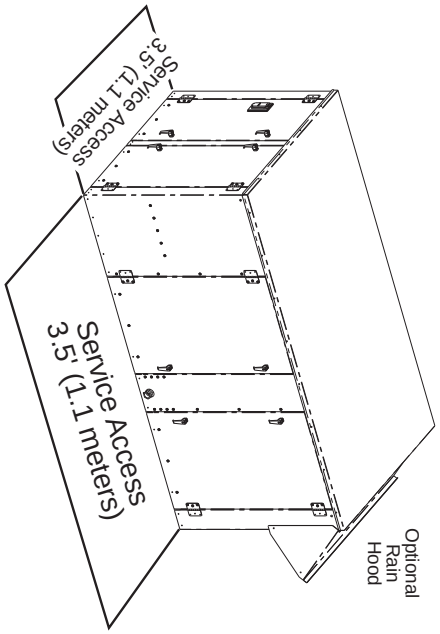
Corner Weights for RE Series Units

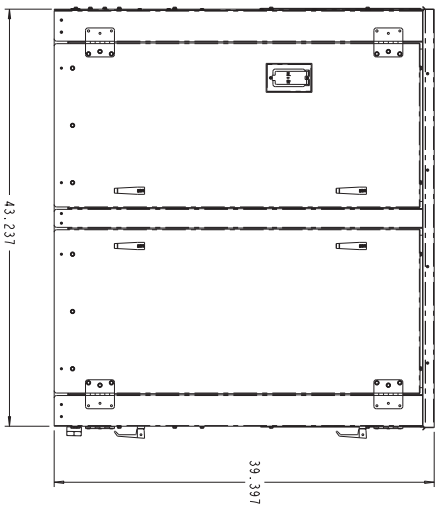
Model		Total	Left-Front*	Right-Front*	Left-Back*	Right-Back*	Roof Curb
RE03	Lbs	735	184	259	108.5	183.5	83
	kg	333.39	83.46	117.48	49.21	83.23	37.65
RE04	Lbs	785	196	276	117	196	83
	kg	356.07	88.90	125.19	53.07	88.90	37.65
RE05	Lbs	835	208.5	293.5	124.5	208.5	83
	kg	378.75	94.57	133.13	56.47	94.57	37.65
RE07	Lbs	880	224	298	134	224	83
	kg	399.16	101.60	135.17	60.78	101.60	37.65
RE08	Lbs	1080	292	380	193	215	94
	kg	489.88	132.45	172.37	87.54	97.52	42.64
RE10	Lbs	1125	303.5	395.5	202	224	94
	kg	510.29	137.67	179.40	91.63	101.60	42.64
RE12	Lbs	1175	320	406	212.5	236.5	94
	kg	532.97	145.15	184.16	96.39	107.27	42.64
RE15	Lbs	1770	479	623	315	353	128
	kg	802.86	217.27	282.59	142.88	160.12	58.06
RE20	Lbs	1960	530	690	350	390	128
	kg	889.04	240.40	312.98	158.76	176.90	58.06

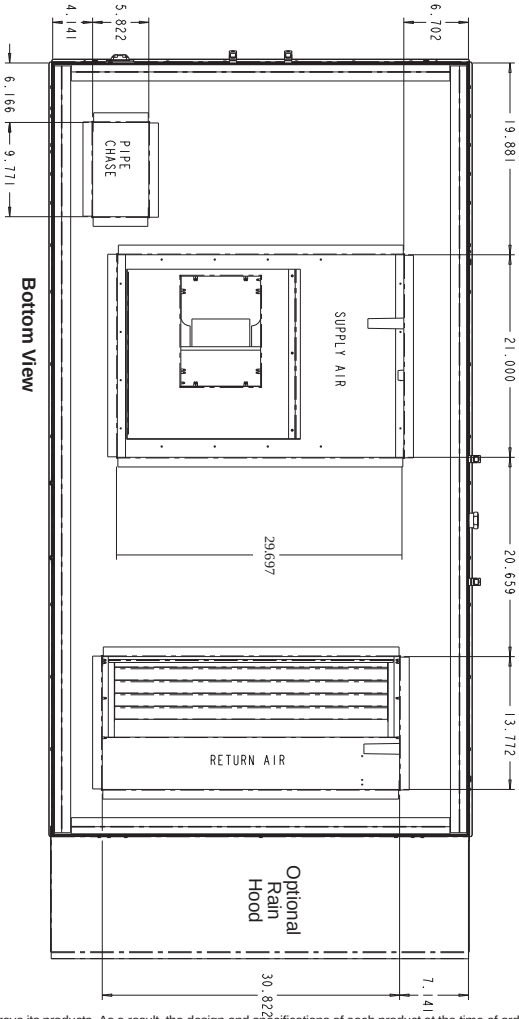
*Front is control box end.

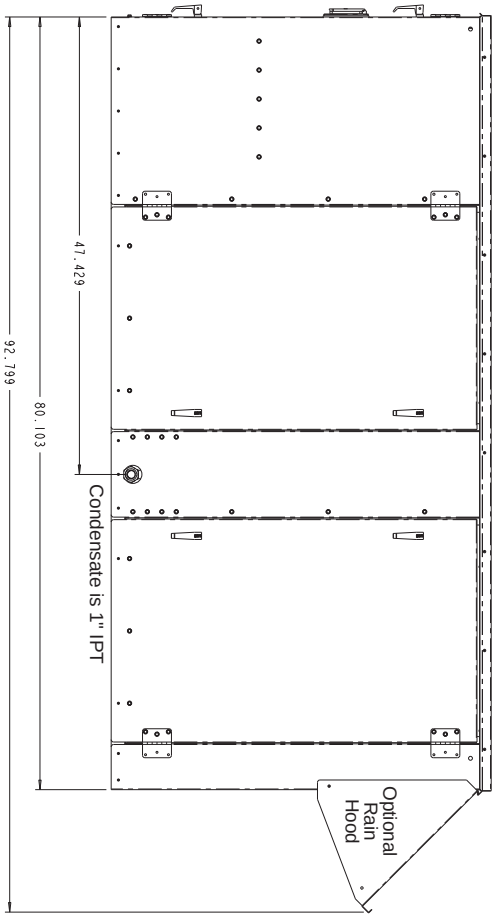
CLIMATEMASTER
Geothermal Heat Pump Systems

RE03-07 Dimensional Data





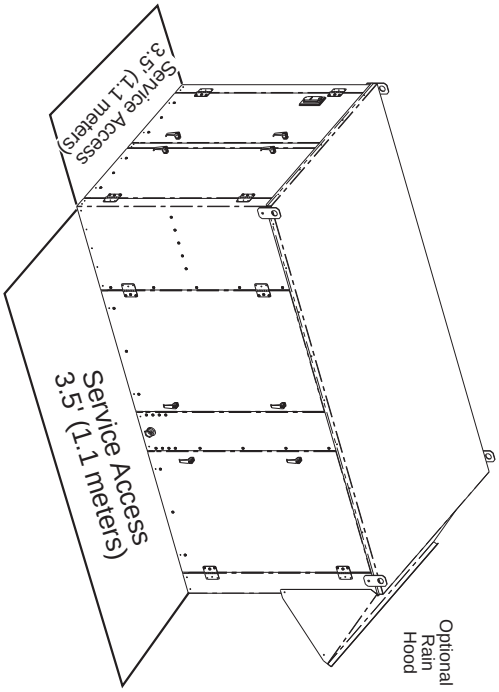


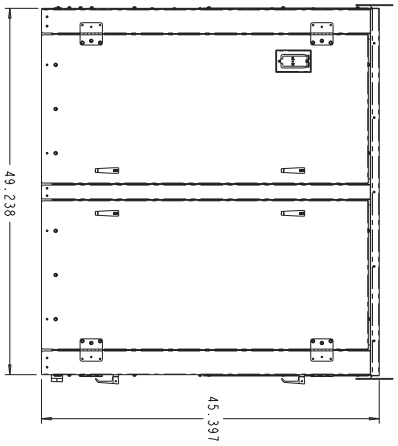


Size	Outdoor Air Opening	Water In/Out (IPT)
RE03	12.57" X 30"	3/4"
RE04	12.57" X 30"	3/4"
RE05	12.57" X 30"	1"
RE07	12.57" X 30"	1 1/4"

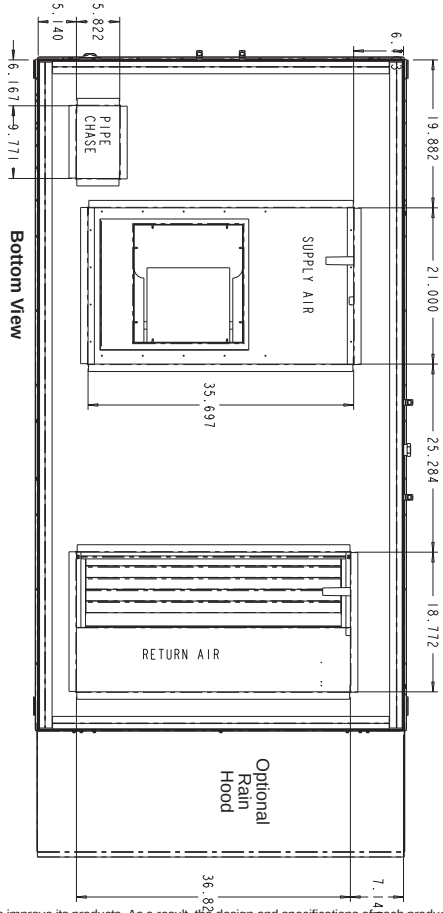
CLIMATEMASTER
Geothermal Heat Pump Systems

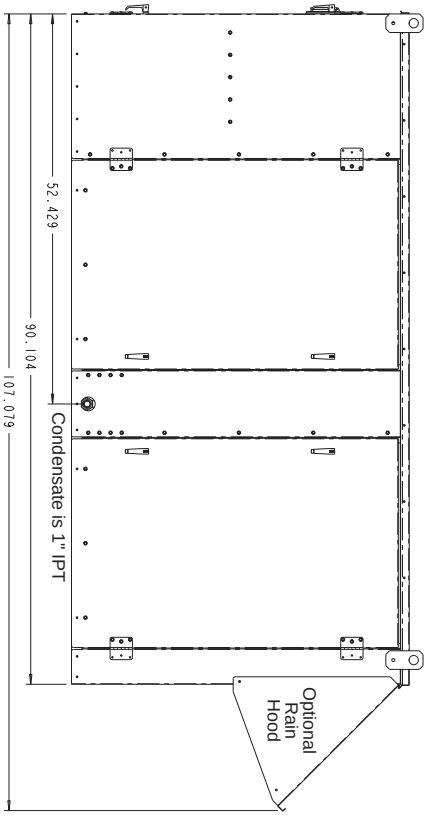
RE08-12 Dimensional Data





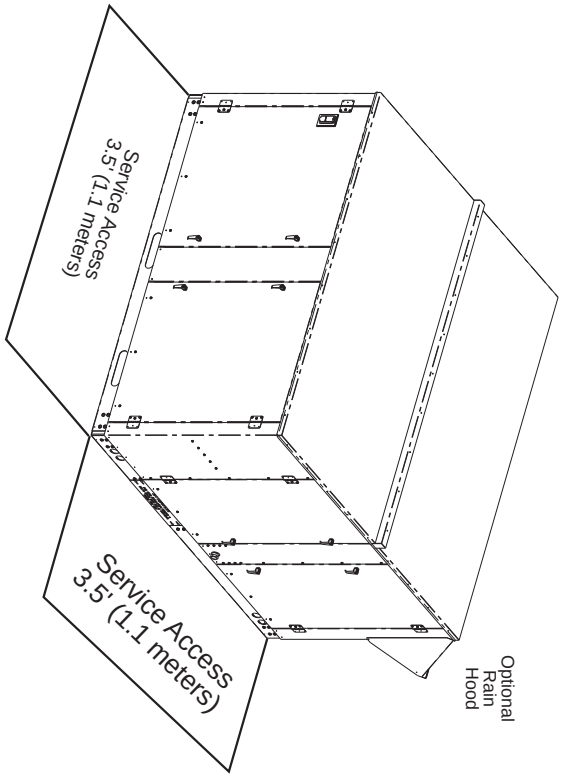
Size	Outdoor Air Opening	Water In/Out (IPT)
RE08	18.95" X 36"	1 1/4"
RE10	18.95" X 36"	1 1/2"
RE12	18.95" X 36"	1 1/2"

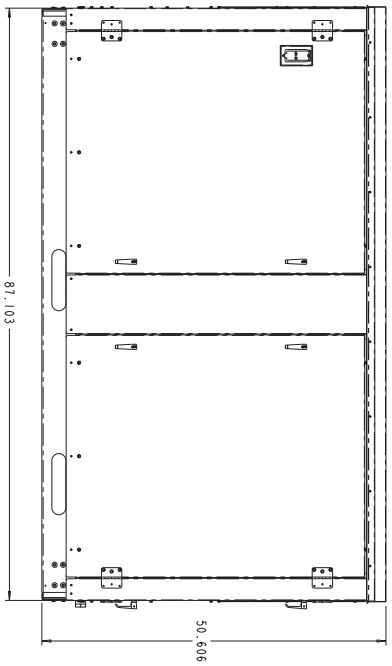


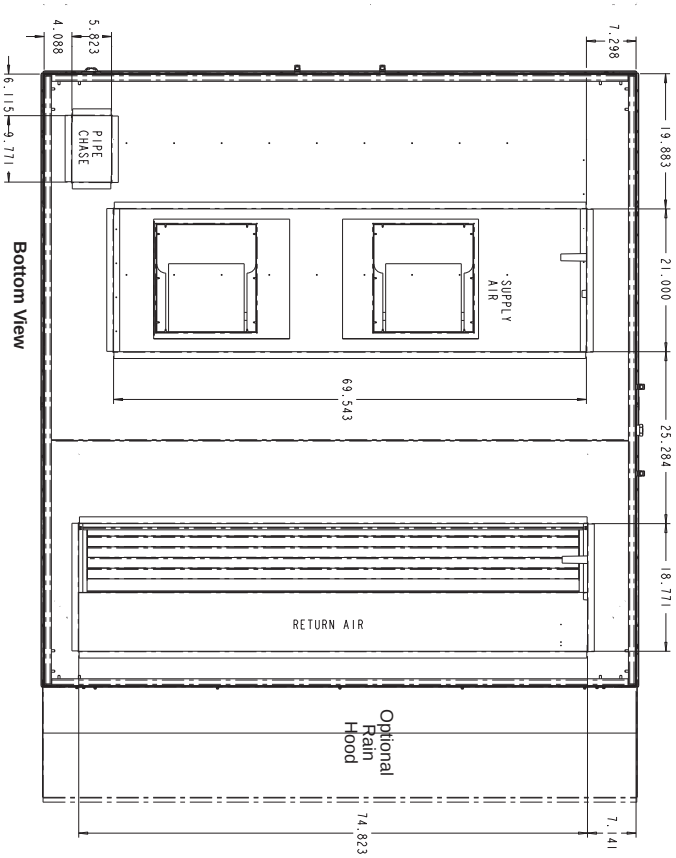


CLIMATEMASTER
Geothermal Heat Pump Systems

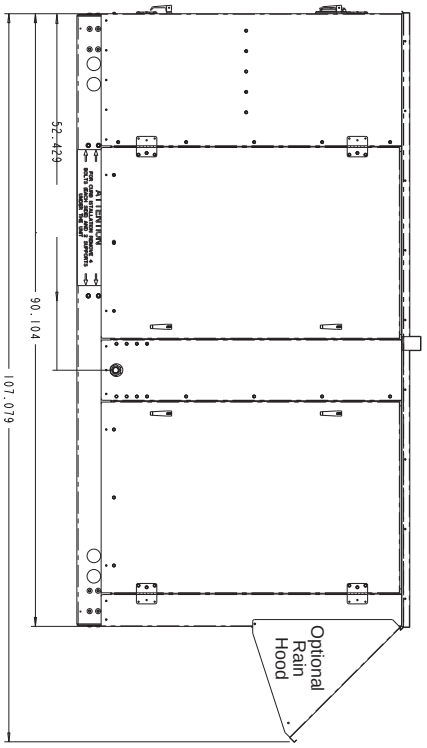
RE15-20 Dimensional Data







Bottom View

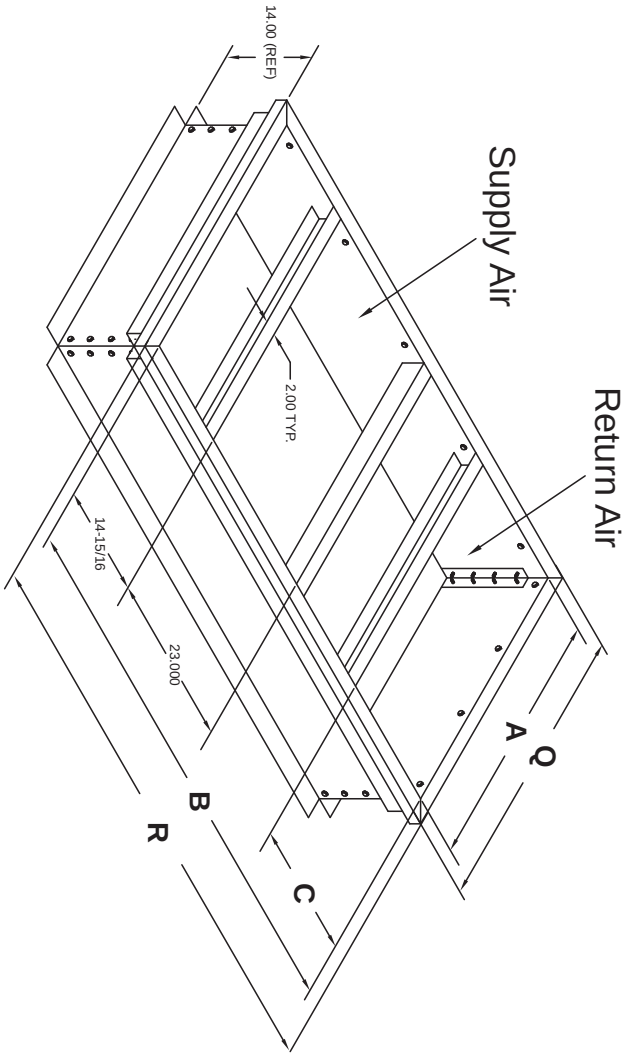


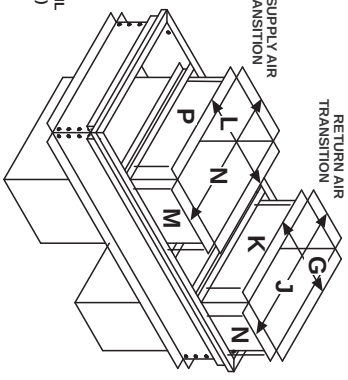
Size	Outdoor Air Opening	Water In/Out
RE15	18.95" X 74"	2"
RE20	18.95" X 74"	2"

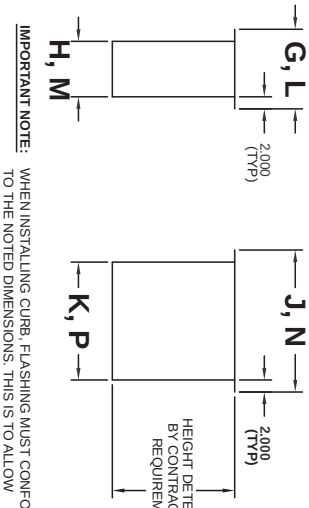
CLIMATEMASTER
Geothermal Heat Pump Systems

RE Roof Curb Details

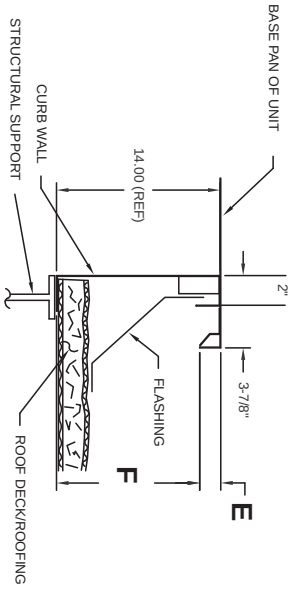
MODEL	FRACTIONS OF AN INCH																	
	A	B	C	E	F	RETURN AIR TRANSITION					SUPPLY AIR TRANSITION					EXT. DIMENSIONS	
						G	H	J	K	L	M	N	P	Q	R		
RE03/04/05/07	35.25	72.25	18.00	1.50	12.50	22.00	16.00	39.25	33.25	27.00	21.00	39.25	33.25	39.25	76.25		
RE08/10/12	41.25	82.25	21.00	1.50	12.50	25.00	19.00	45.25	39.25	27.00	21.00	45.25	39.25	45.25	86.25		
RE15/20	78.875	82.25	21.00	5.00	9.00	25.00	19.00	82.875	76.875	27.00	21.00	82.875	76.875	82.875	86.25		







IMPORTANT NOTE: WHEN INSTALLING CURB, FLASHING MUST CONFORM TO THE NOTED DIMENSIONS. THIS IS TO ALLOW CLEARANCE FOR MOUNTING UNIT TO CURB.



CLIMATEMASTER
Geothermal Heat Pump Systems

Electrical Data
RE03-07 (Single Compressor)

Model	Voltage Code	Power Supply			Compressor (each)			Blower Motor			Max Fuse/ HACR	Min Circuit Ampacity
		Voltage	HZ	PH	RLA	LRA	QTY	HP	FLA	QTY		
RE03	H	208/230	60	3	10.7	63.0	1	1	4.0	1	25 AMP	17.4
RE03	F	460	60	3	5.0	31.0	1	1	2.0	1	15 AMP	8.3
RE04	H	208/230	60	3	13.9	88.0	1	1	4.0	1	35 AMP	21.4
RE04	H	460	60	3	6.4	44.0	1	1	2.0	1	15 AMP	10.0
RE04	N	575	60	3	5.3	34.0	1	1	1.6	1	15 AMP	8.2
RE05	H	208/230	60	3	19.3	123.0	1	1	4.0	1	45 AMP	28.1
RE05	F	460	60	3	7.5	49.5	1	1	2.0	1	15 AMP	11.4
RE05	N	575	60	3	6.4	40.0	1	1	1.6	1	15 AMP	9.4
RE07	H	208/230	60	3	20.7	156.0	1	2	6.0	1	50 AMP	31.9
RE07	F	460	60	3	10.0	75.0	1	2	2.9	1	25 AMP	15.4
RE07	N	575	60	3	8.2	54.0	1	2	2.3	1	20 AMP	12.6
RE08	H	208/230	60	3	13.9	88.0	2	2	6.0	1	50 AMP	37.3
RE08	F	460	60	3	6.4	44.0	2	2	3.1	1	20 AMP	17.5
RE08	N	575	60	3	5.4	34.0	2	2	2.3	1	15 AMP	14.4
RE10	H	208/230	60	3	19.3	123.0	2	2	6.2	1	70 AMP	49.4
RE10	F	460	60	3	7.5	49.5	2	2	3.1	1	25 AMP	20.0
RE10	N	575	60	3	6.4	40.0	2	2	2.3	1	20 AMP	16.7
RE12	H	208/230	60	3	19.3	137.0	2	3	8.0	1	70 AMP	52.2
RE12	F	460	60	3	9.1	62.0	2	3	4.3	1	35 AMP	24.7
RE12	N	575	60	3	7.8	50.0	2	3	3.4	1	25 AMP	21.0
RE15	H	208/230	60	3	20.7	156.0	2	3	8.8	1	70 AMP	55.4
RE15	F	460	60	3	10.0	75.0	2	3	4.3	1	35 AMP	26.8
RE15	N	575	60	3	8.2	54.0	2	3	3.4	1	30 AMP	21.9
RE20	H	208/230	60	3	33.3	232.0	2	5	14.1	1	125 AMP	89.0
RE20	F	460	60	3	17.0	125.0	2	5	7.0	1	60 AMP	45.3
RE20	N	575	60	3	12.8	100.0	2	5	5.6	1	50 AMP	34.4

Note: Contact factory for over size blower motor electrical data.

CLIMATEMASTER
Geothermal Heat Pump Systems

Electrical Data
RE08-20 (Dual Compressor)

Model	Voltage Code	Voltage	Min/Max Voltage	Blower Option	Compressor			Fan Motor FLA	Total Unit FLA	Min Circuit Amps	Max Fuse/ HACR
					QTY	RLA	LRA				
RE08	H	208-230/60/3	187/253	A, B, C	2	13.9	88.0	6.2	34.0	37.5	45
RE08	H	208-230/60/3	187/253	D	2	13.9	88.0	9.2	37.0	40.5	50
RE08	F	460/60/3	414/506	A, B, C	2	6.4	44.0	3.1	15.9	17.5	20
RE08	F	460/60/3	414/506	D	2	6.4	44.0	4.3	17.1	18.7	25
RE08	N	575/60/3	518/633	A, B, C	2	5.3	34.0	2.3	12.9	14.2	15
RE08	N	575/60/3	518/633	D	2	5.3	34.0	3.4	14.0	15.3	20
RE10	H	208-230/60/3	187/253	A, B, C	2	20.0	123.0	6.2	46.2	51.2	70
RE10	H	208-230/60/3	187/253	D	2	20.0	123.0	9.2	49.2	54.2	70
RE10	F	460/60/3	414/506	A, B, C	2	7.5	49.5	3.1	18.1	20.0	25
RE10	F	460/60/3	414/506	D	2	7.5	49.5	4.3	19.3	21.2	25
RE10	N	575/60/3	518/633	A, B, C	2	6.4	40.0	2.3	15.1	16.7	20
RE10	N	575/60/3	518/633	D	2	6.4	40.0	3.4	16.2	17.8	20
RE12	H	208-230/60/3	187/253	A, B, C	2	19.3	123.0	9.2	47.8	52.6	70
RE12	H	208-230/60/3	187/253	D	2	19.3	123.0	13.2	51.8	56.6	70
RE12	F	460/60/3	414/506	A, B, C	2	10.0	62.0	4.3	24.3	26.8	35
RE12	F	460/60/3	414/506	D	2	10.0	62.0	6.6	26.6	29.1	35
RE12	N	575/60/3	518/633	A, B, C	2	7.8	50.0	3.4	19.0	21.0	25
RE12	N	575/60/3	518/633	D	2	7.8	50.0	5.6	21.2	23.2	30
RE15	H	208-230/60/3	187/253	A, B, C	2	20.7	156.0	9.2	50.6	55.8	70
RE15	H	208-230/60/3	187/253	D	2	20.7	156.0	13.2	54.6	59.8	80
RE15	F	460/60/3	414/506	A, B, C	2	10.0	70.0	4.3	24.3	26.8	35
RE15	F	460/60/3	414/506	D	2	10.0	70.0	6.6	26.6	29.1	35
RE15	N	575/60/3	518/633	A, B, C	2	8.2	54.0	3.4	19.8	21.9	30
RE15	N	575/60/3	518/633	D	2	8.2	54.0	5.6	22.0	24.1	30
RE20	H	208-230/60/3	187/253	A, B, C	2	33.3	232.0	13.2	79.8	88.1	120
RE20	H	208-230/60/3	187/253	D	2	33.3	232.0	21.4	88.0	96.3	120
RE20	F	460/60/3	414/506	A, B, C	2	17.0	116.0	6.6	40.6	44.9	60
RE20	F	460/60/3	414/506	D	2	17.0	116.0	9.8	43.8	48.1	60
RE20	N	575/60/3	518/633	A, B, C	2	12.8	97.0	5.6	31.2	34.4	45
RE20	N	575/60/3	518/633	D	2	12.8	97.0	8.7	34.3	37.5	50

Note: Contact factory for over size blower motor electrical data.
Note: Compressor RLA & LRA values are per compressor.

RE Series Wiring Diagram Matrix

Only CXM and DXM diagrams, with a representative diagram of LON and MPC Options are presented in this submittal. Other diagrams can be located online at climatemaster.com using the part numbers presented below.

Model	Refrigerant	Wiring Diagram Part Number	Electrical	Control	DDC	Option
RE 03-07	R22	69870800	208-230/60/3, 460/60/3, 575/60/3	CXM	-	No OA
	R22	69870801			-	MT OA
	R22	69870802			-	Econo
	R22	69870843			LON	No OA
	R22	69870809			LON	Econo
	R22	69870842		DXM	-	No OA
	R22	69870835			-	MT OA
	R22	69870834			-	Econo
	R22	96B00103N05			-	ERV
	R22	96B00103N10			LON	ERV
	R22	96B00103N08			MPC	ERV
RE 08-15	R22	69870803	208-230/60/3, 460/60/3, 575/60/3	CXM	-	No OA
	R22	69870804			-	MT OA
	R22	69870805			-	Econo
	R22	69870844			LON	No OA
	R22	69870810			LON	Econo
	R22	69870841		DXM	-	No OA
	R22	69870836			-	MT OA
	R22	69870814			-	Econo
	R22	69870864			LON	Econo
	R22	96B00103N07			-	ERV
	R22	96B00103N11			LON	ERV
	R22	96B00103N11			MPC	ERV
RE20	R22	69870806	208-230/60/3, 460/60/3, 575/60/3	CXM	-	No OA
	R22	69870807			-	MT OA
	R22	69870808			-	Econo
	R22	69870829			LON	Econo
	R22	69870838		DXM	-	No OA
	R22	69870837			-	MT OA
	R22	69870815			-	Econo
	R22	96B00103N06			-	ERV
	R22	96B00103N13			LON	ERV
	R22	96B00103N12			MPC	ERV

All wiring diagrams available at climatemaster.com. R407C submittals will only contain CE Mark wiring diagrams

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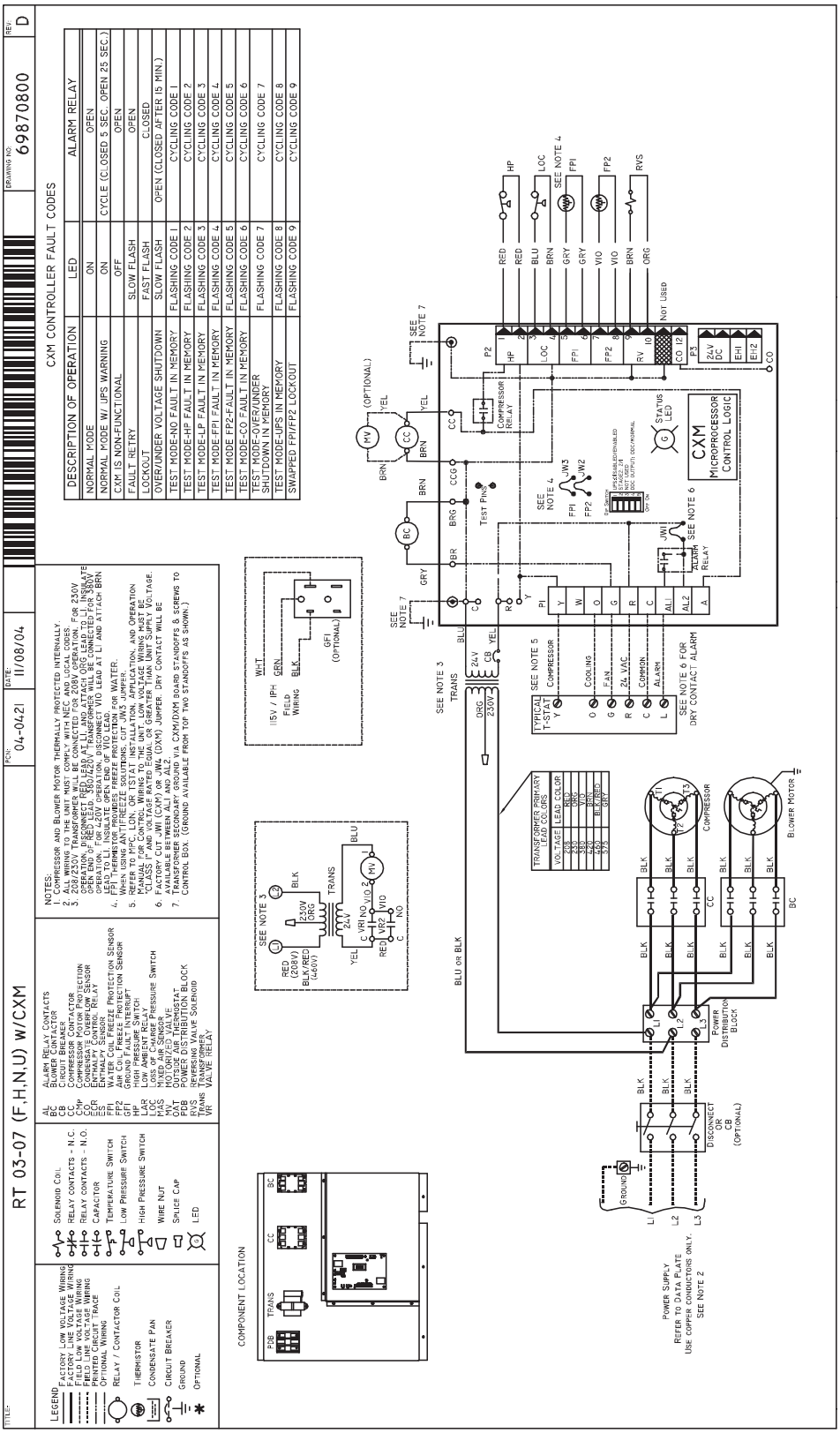
Typical Wiring Diagram
RE03-07 Units With CXM Controller (No Outdoor Air)



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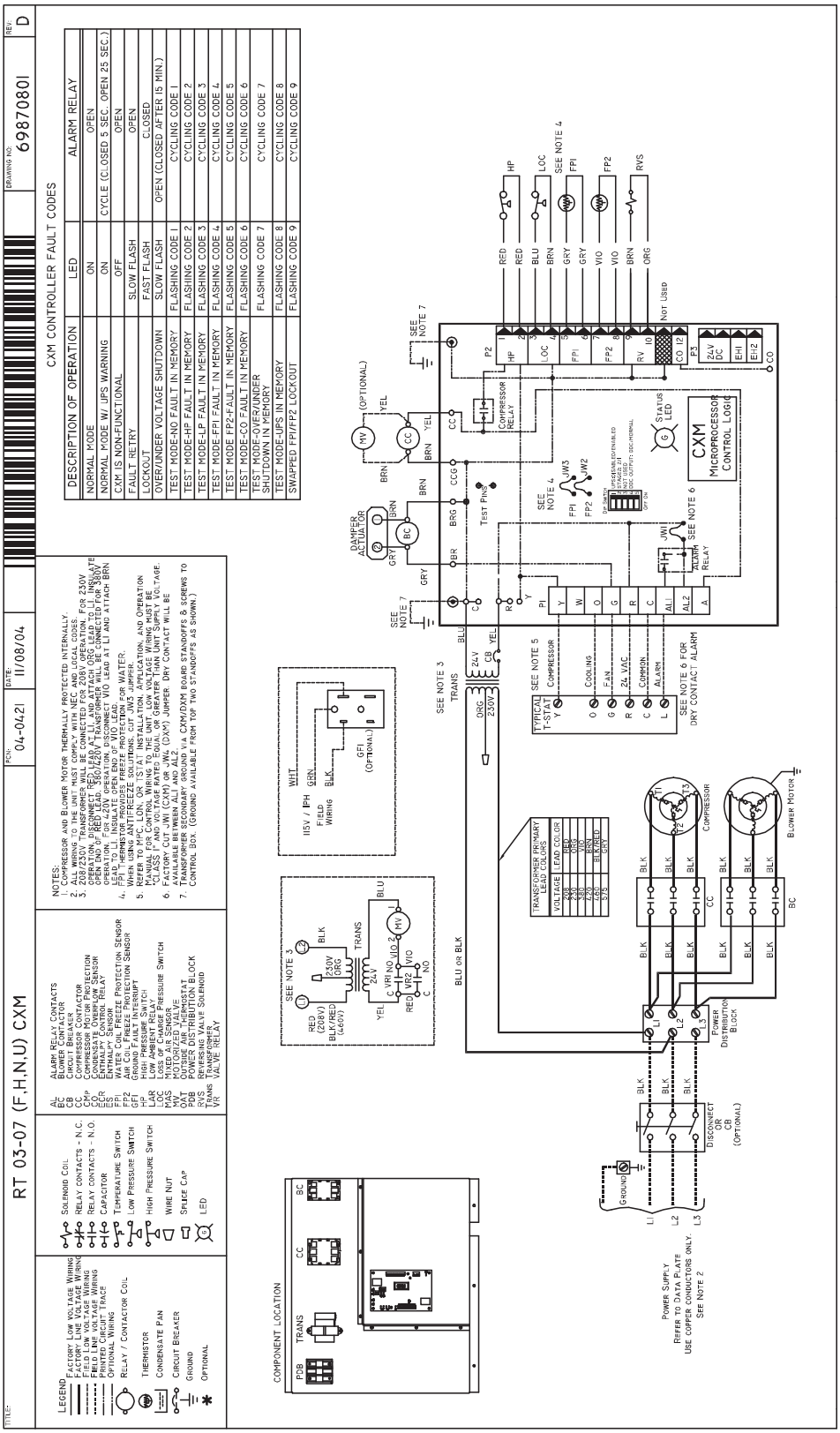
Typical Wiring Diagram
RE03-07 Units With CXM Controller & Motorized OA Damper



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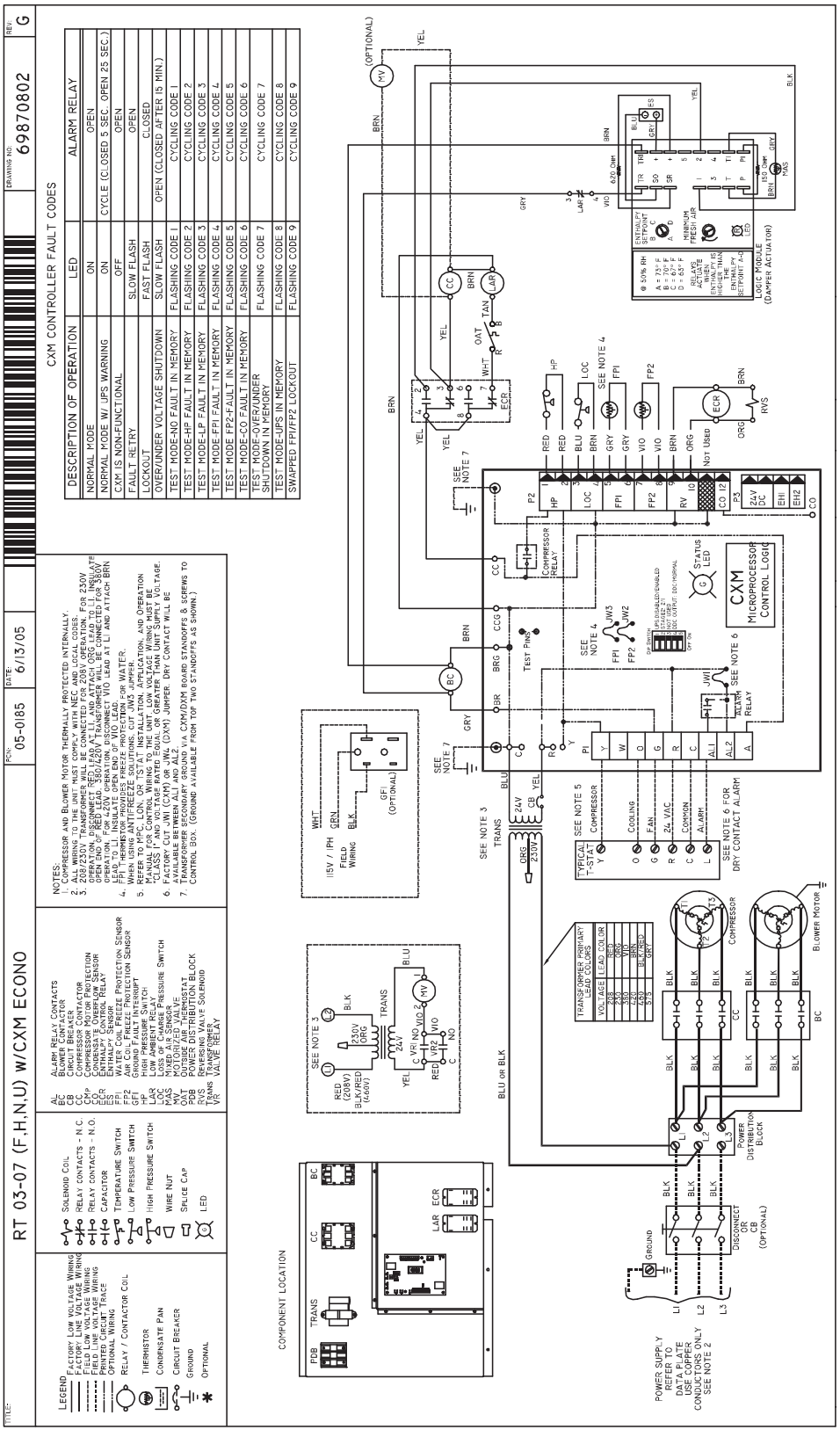
Typical Wiring Diagram
RE03-07 Units With CXM Controller & Economizer



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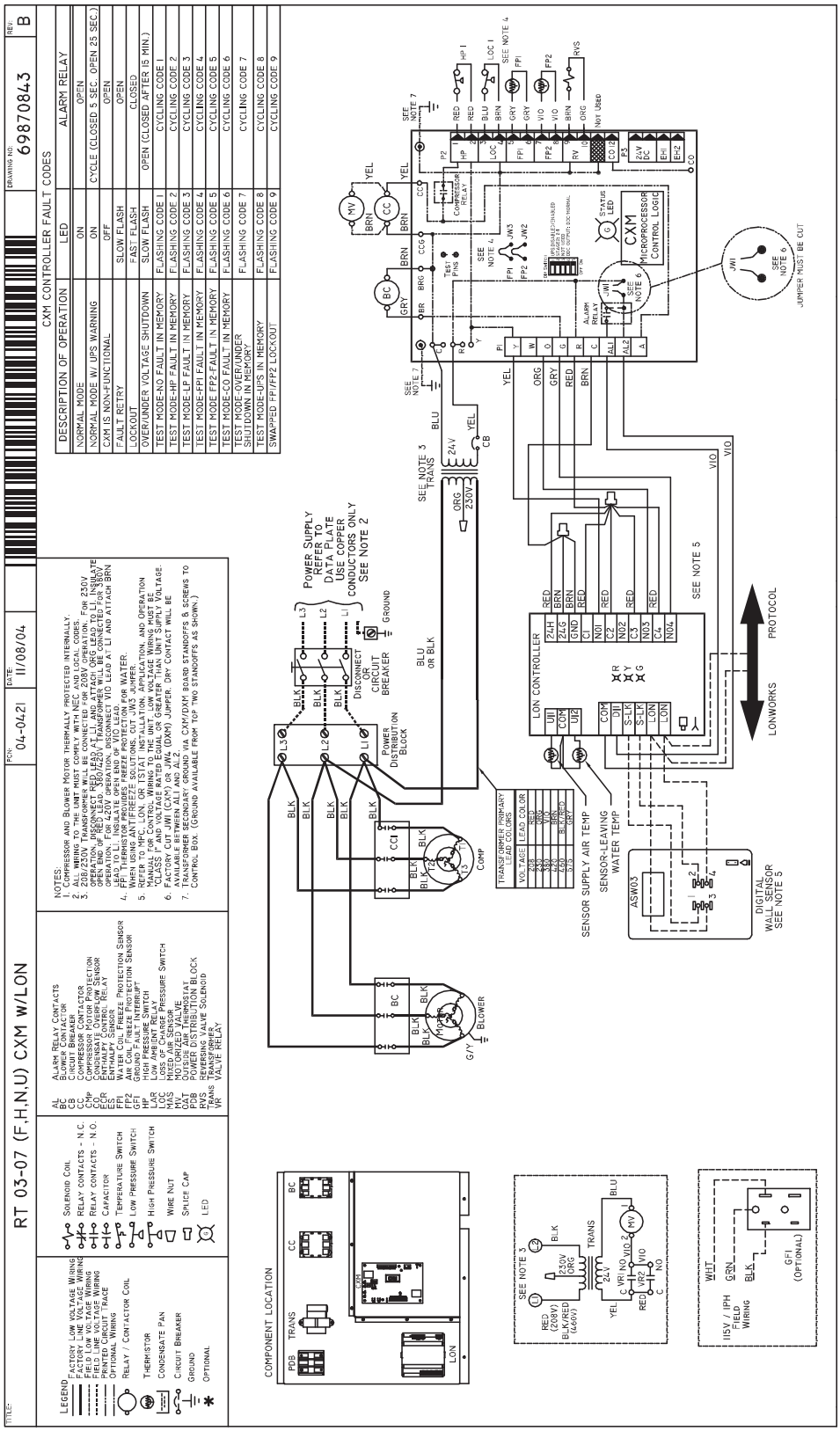
Typical Wiring Diagram
RE03-07 Units With CXM Controller & LON (No Outdoor Air)



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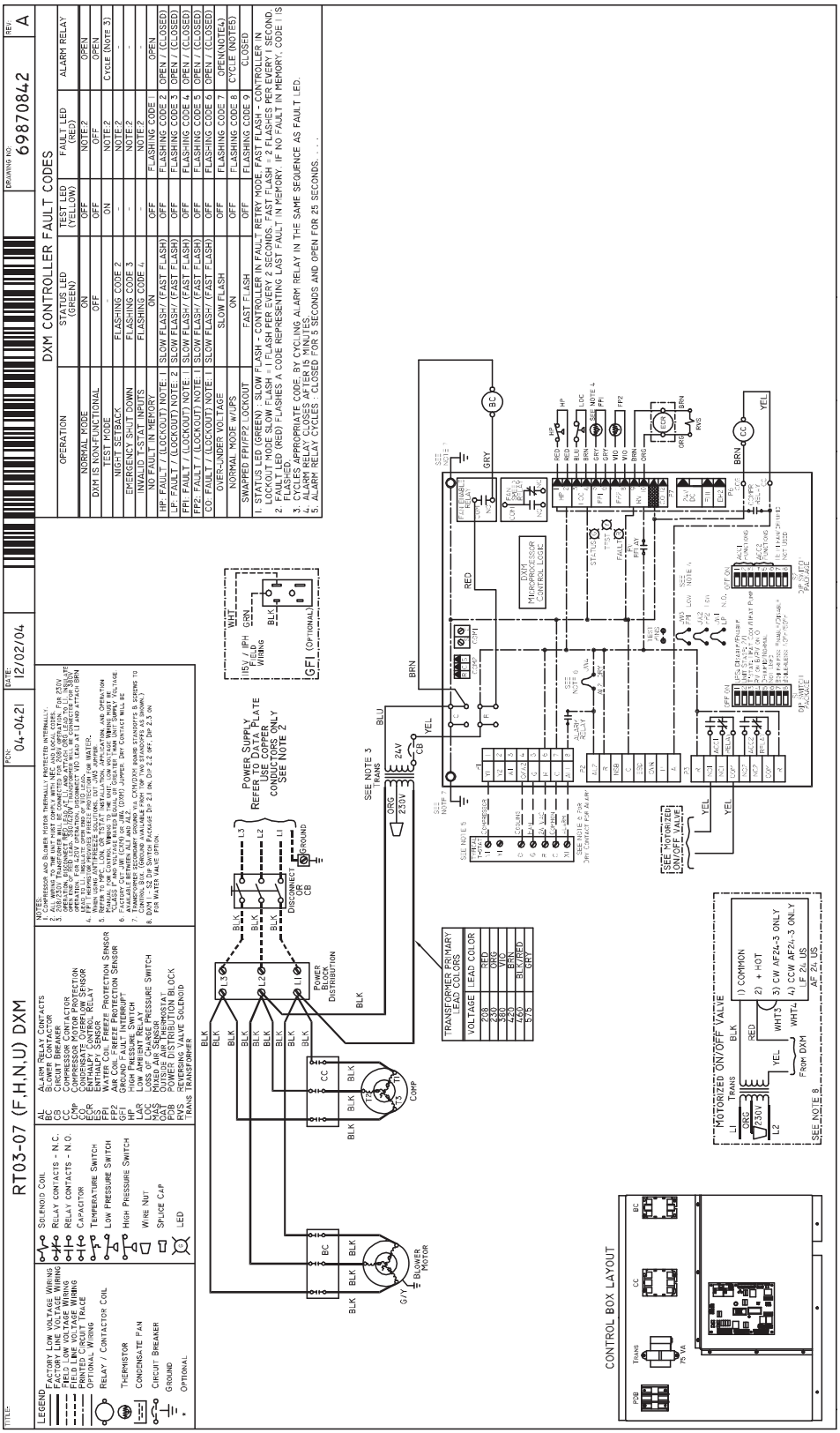
Typical Wiring Diagram
RE03-07 Units With DXM Controller (No Outdoor Air)



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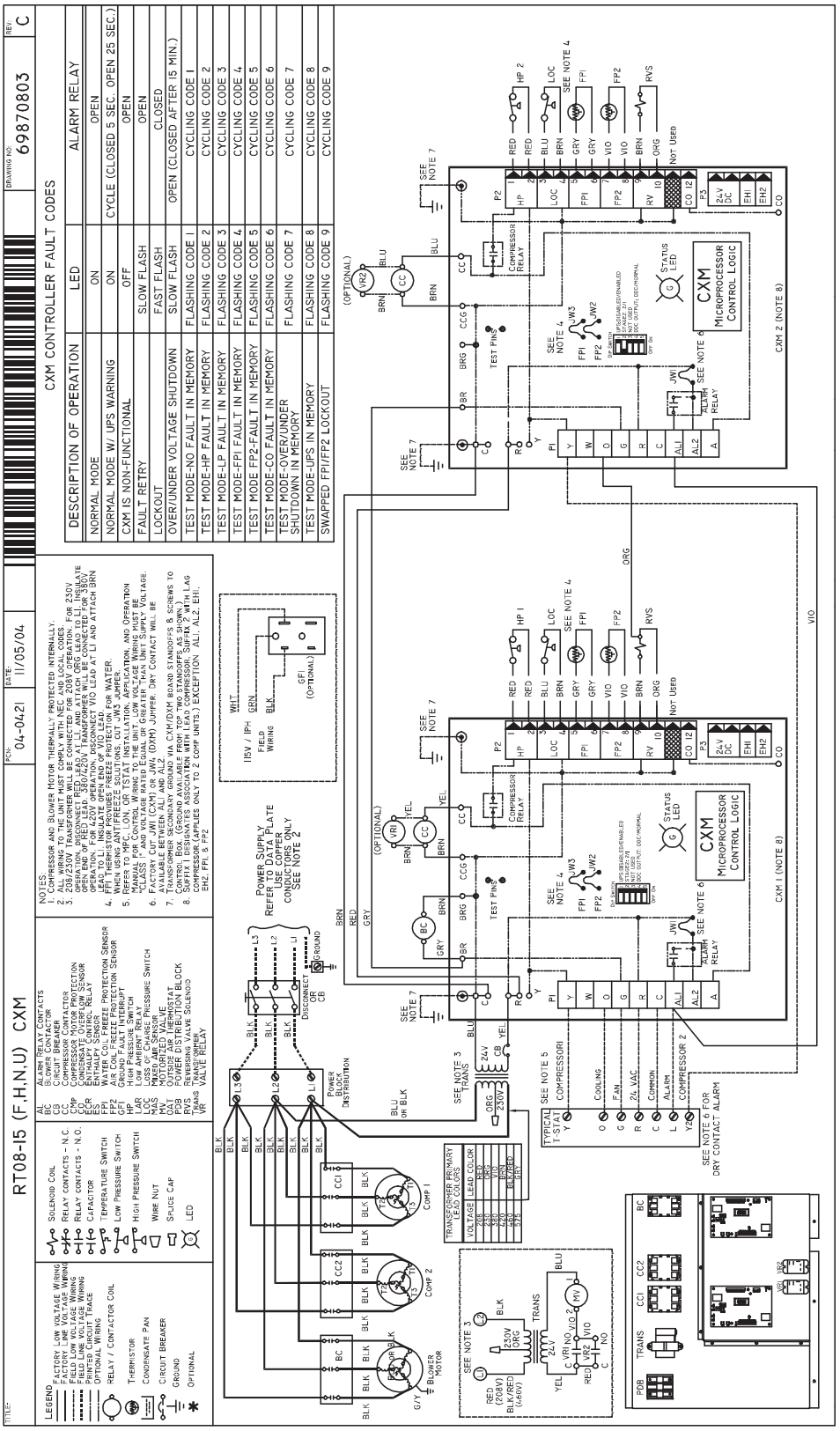
Typical Wiring Diagram
RE08-15 Units With CXM Controller (No Outdoor Air)



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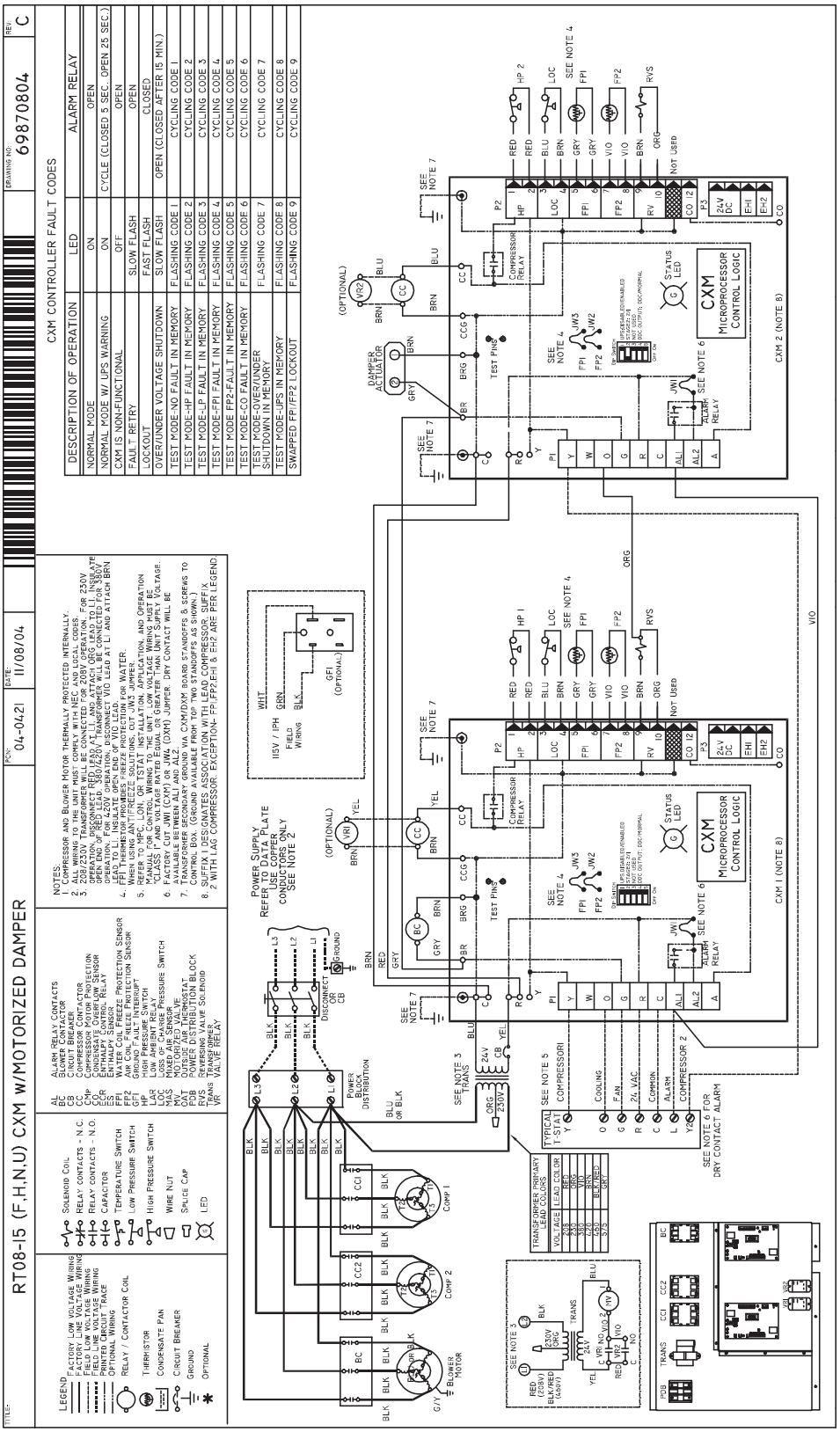
Typical Wiring Diagram
RE08-15 Units With CXM Controller & Motorized OA Damper



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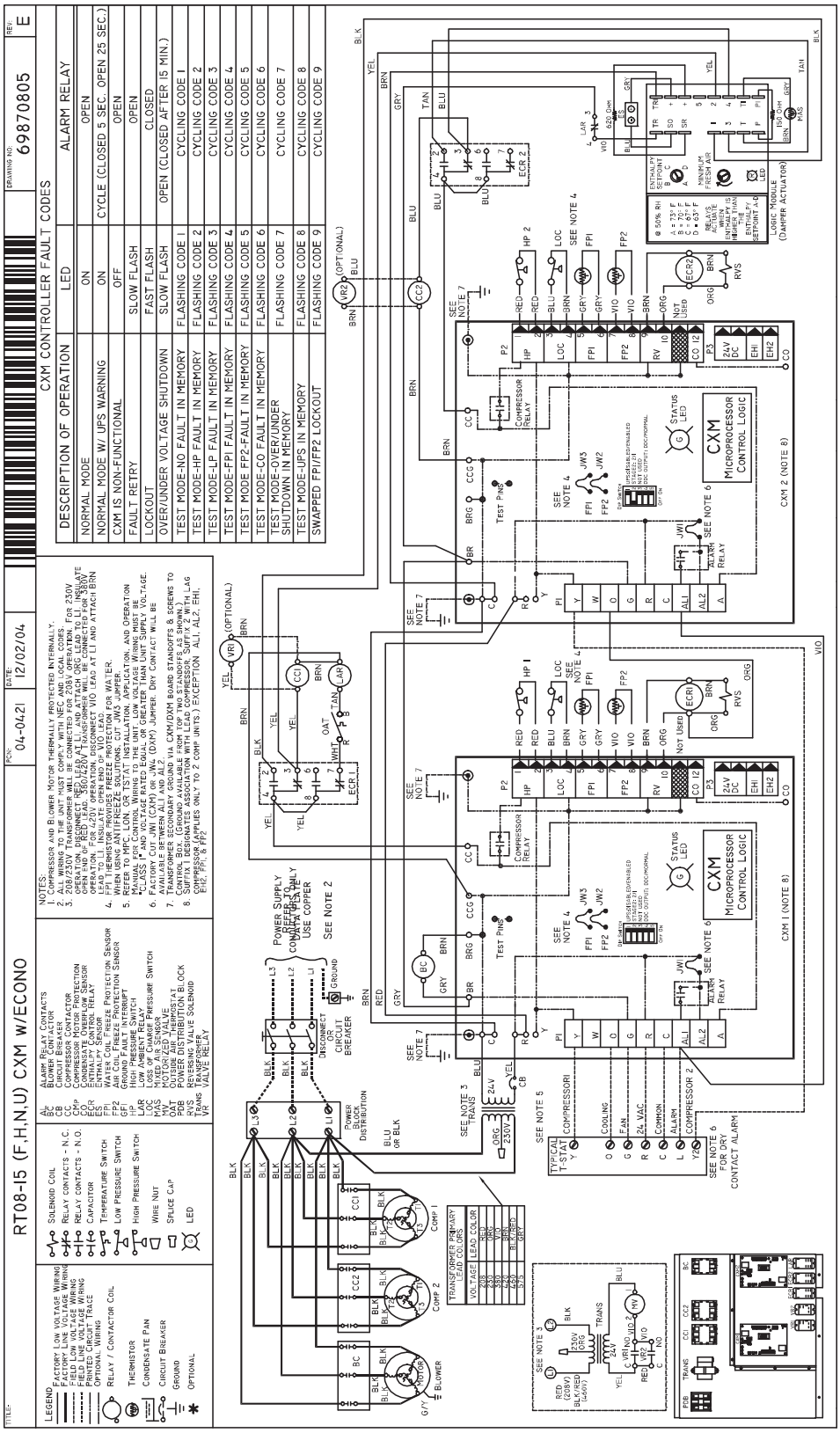
Typical Wiring Diagram
RE08-15 Units With CXM Controller & Economizer



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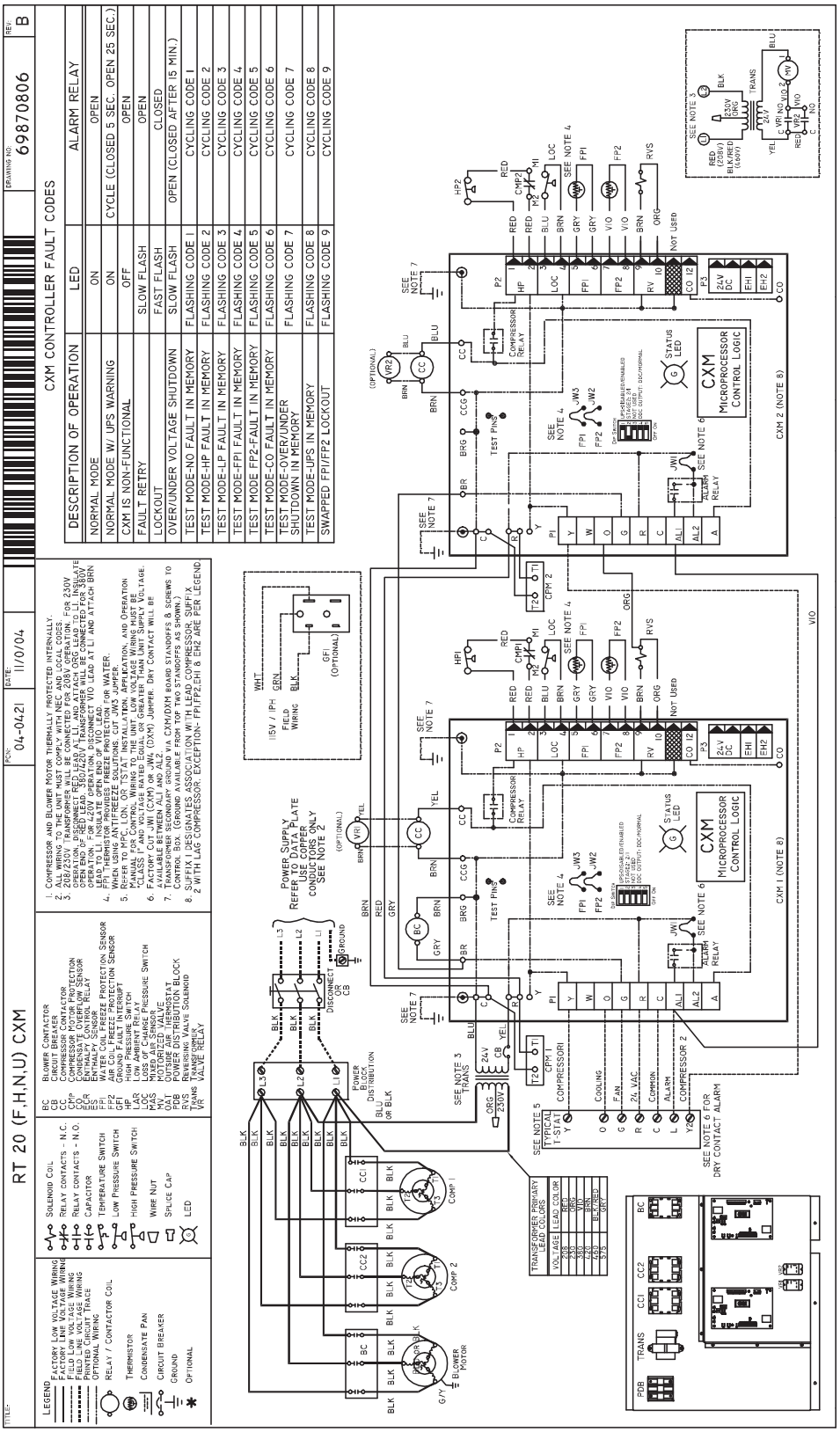
Typical Wiring Diagram
RE20 Units With CXM Controller (No Outdoor Air)



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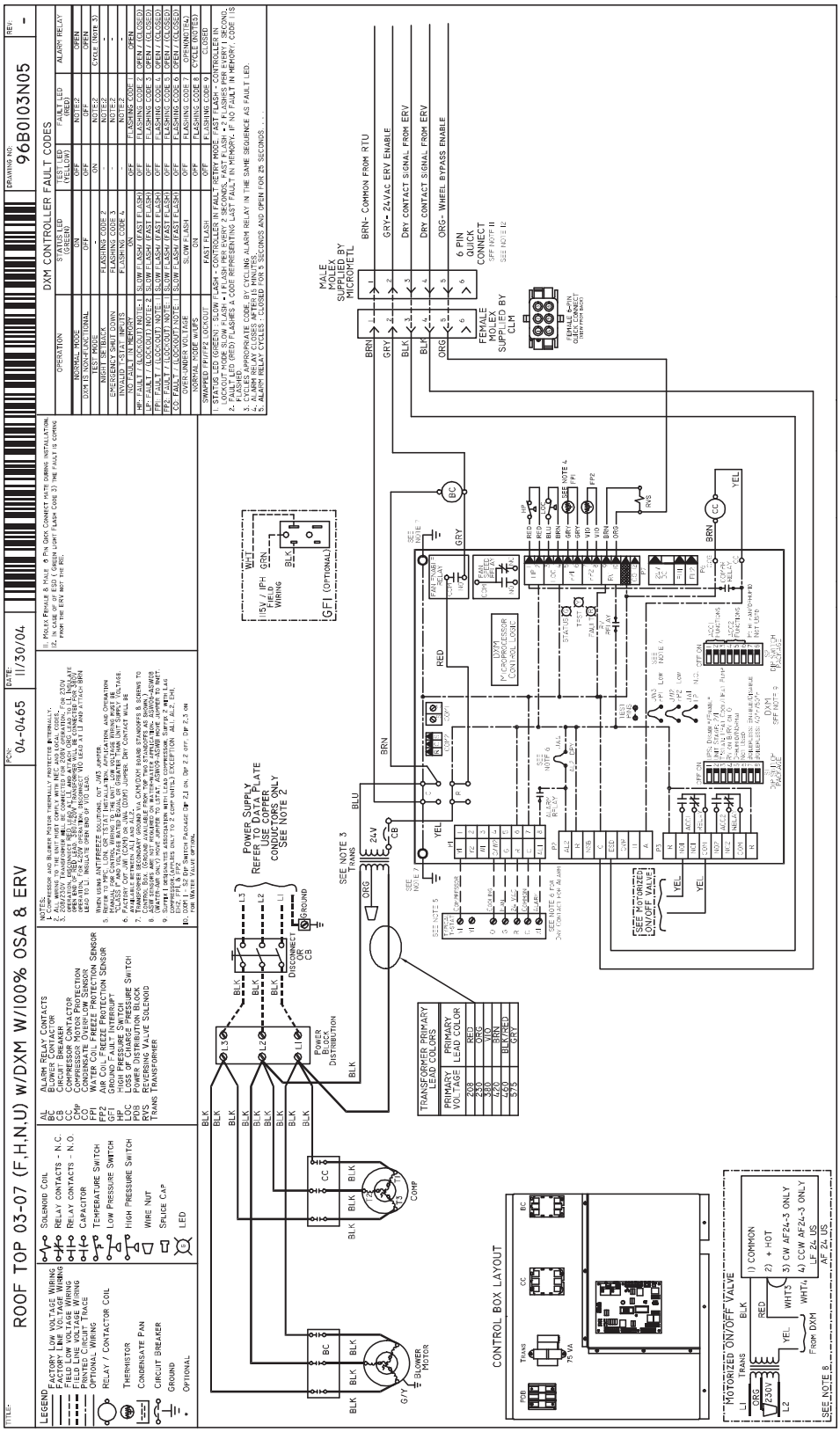
Typical Wiring Diagram
RE03-07 Units With DXM Controller & ERV Option



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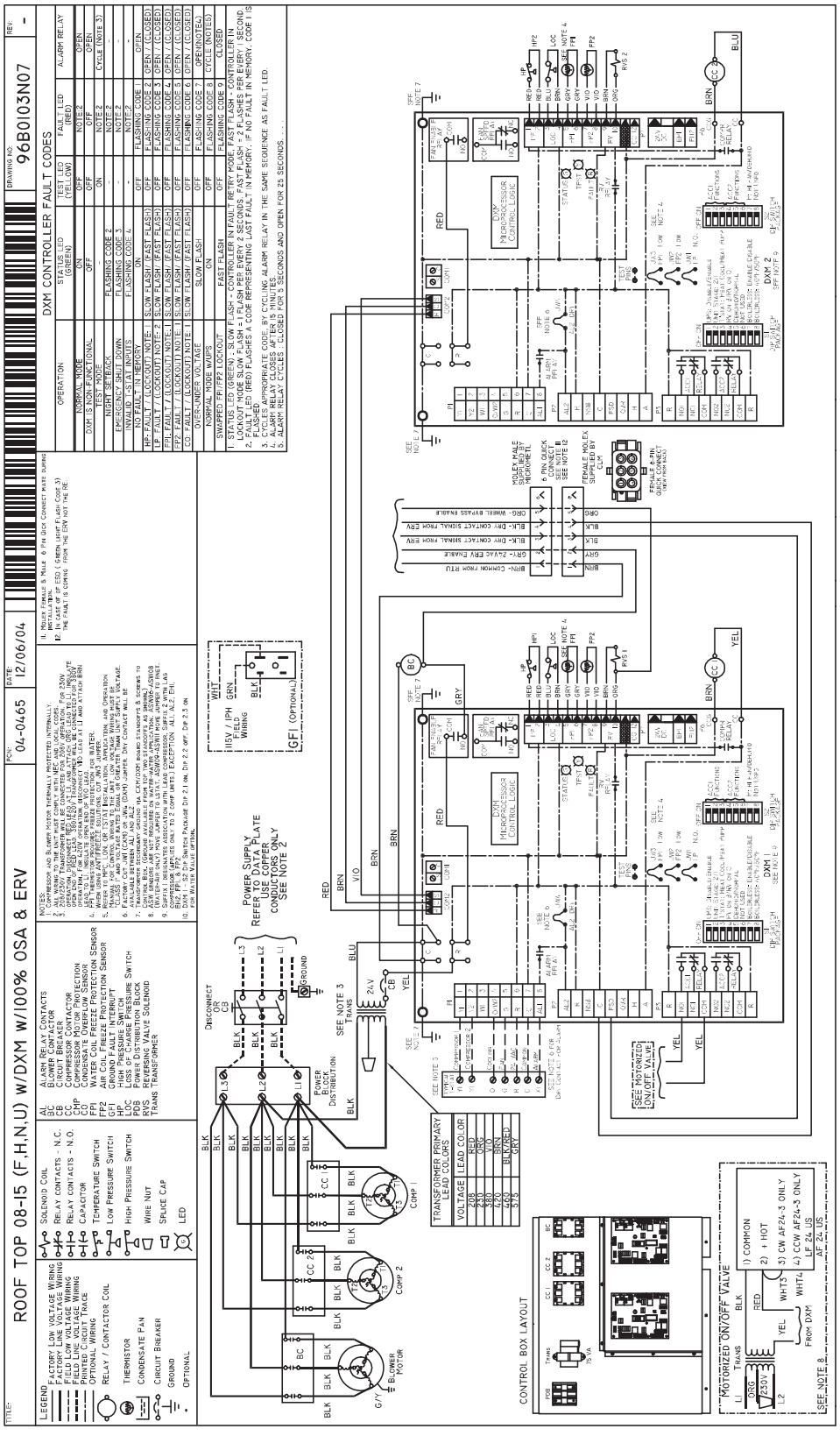
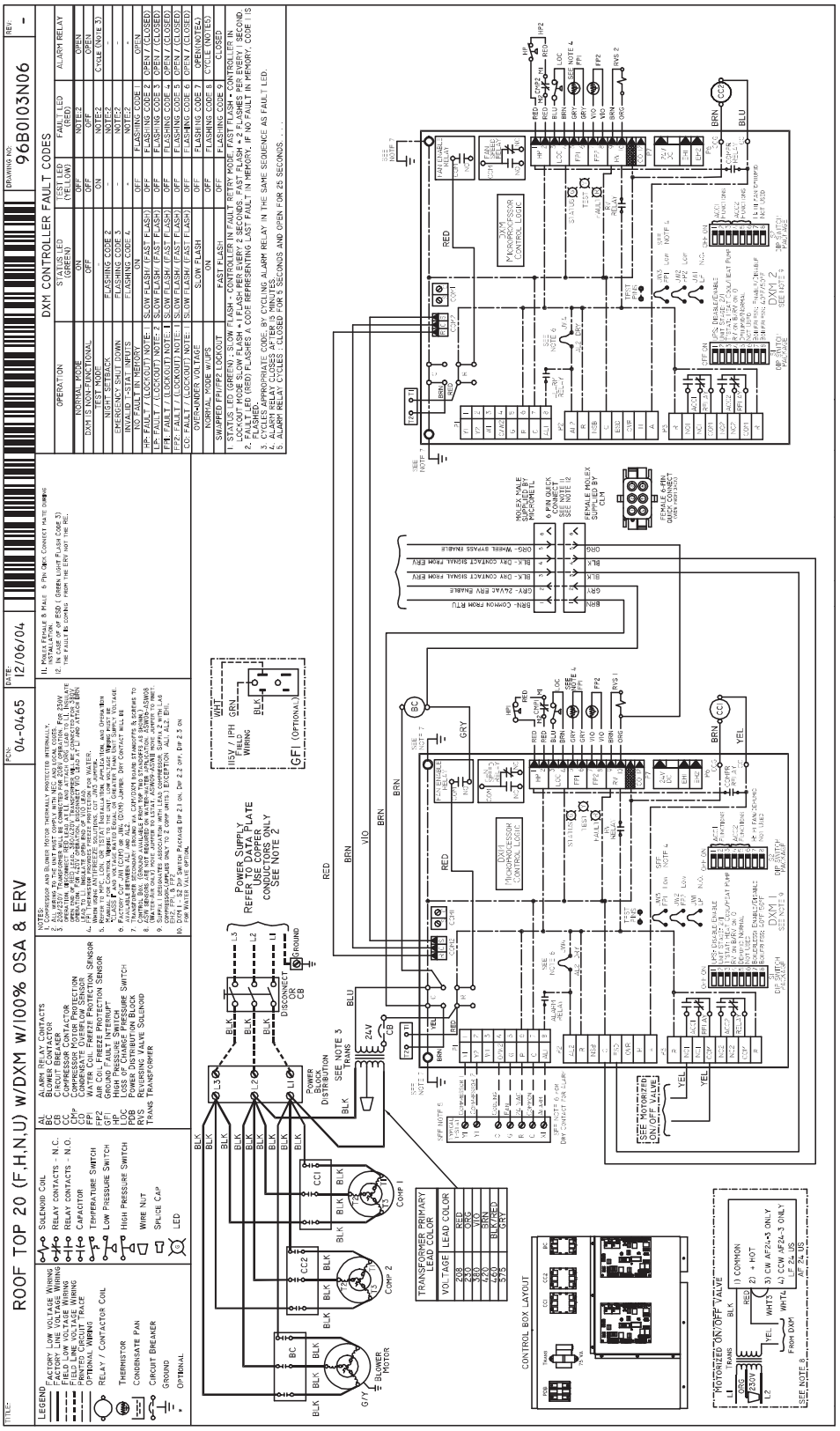
Typical Wiring Diagram
RE08-15 Units DXM Controller & ERV Option



CLIMATEMASTER
Geothermal Heat Pump Systems

Typical Wiring Diagram
RE20 Units With DXM Controller & ERV Option



CLIMATEMASTER
Geothermal Heat Pump Systems

Rooftop (RE) Series 60Hz
Engineering Specifications Rev.: 01/06/09 Page 1

General:
Furnish and install ClimateMaster Model "RE" Rooftop Water Source Heat Pumps, as indicated on the plans. Equipment shall be completely assembled, piped and internally wired. Capacities and characteristics as listed in the schedule and the specifications that follow.

Rooftop Water Source Heat Pumps
Units shall be supplied completely factory built for an entering water temperature range from 20° to 110°F (-6.7° to 43.3°C) as standard. Equivalent units from other manufacturers can be proposed provided approval to bid is given 10 days prior to bid closing. All equipment listed in this section must be tested in accordance with American Refrigeration Institute / International Standards Organization (ARI / ISO) and certified in accordance with UL 1995 Second Edition. The units shall have a ETL-US label.

Basic Construction:
Units shall be designed for outdoor installation and usage, and shall be ETL or UL tested to withstand UL rain test standards.

All exterior and other painted surfaces shall be constructed of galvanized steel finished with both sides having powder paint coated surfaces. This corrosion protection system shall meet the stringent 1000-hour salt spray test per ASTM B117.

Roof shall be constructed of single piece of steel as described above (except on largest of unit sizes in which case shall be a maximum of two pieces joined by a standing seam construction). All roof edges shall overlap sides of unit and have 45º lip extending away from unit sides so that rainwater drippage shall not fall on top of access doors.

Access to filters, indoor blower, electrical controls, compressor compartment, and damper section shall be provided by double wall access doors with stainless steel hinges, and lift and turn compression latches with non-corrosive handles.

The compressor and electrical control compartment shall be isolated from the system air streams.

Bottom base pan of entire unit shall have no penetrations by bolts or screws. All base pan edges and any openings shall contain 1" upturns at all edges to prevent water from dripping through base pan.

All interior surfaces shall be lined with 1 inch (25.4mm) thick, dual density, 1-3/4 lb/ft3 (28 kg/m3) acoustic type glass fiber insulation. Insulation placement shall be designed in a manner that will eliminate any exposed edges to prevent the introduction of glass fibers into the air stream.

Standard cabinet panel insulation must meet NFPA 90A requirements, air erosion and mold growth limits of UL-181, stringent fungal resistance test per ASTM-C1071 and ASTM G21, and shall meet zero level bacteria growth per ASTM G22. ***Unit insulation must meet these stringent requirements or unit(s) will not be accepted.***

Entire unit base shall be insulated on the underneath side to provide condensation protection, and noise attenuation.

The unit shall be furnished with 2" (50mm) filter racks and one set 2" (50mm) throwaway filters.

Option: Unit shall be furnished with factory-installed 2" (50mm) pleated filters.

Option: Unit shall be furnished with factory-installed 4" (100mm) filter rack and 4" (100mm) 30/30 filters.

Fan and Motor Assembly:
The assembly shall include a fan, housing and solid steel fan shaft encased in ball bearings. Unit shall have a belt drive fan assembly, fan pulley and adjustable motor sheave with v-belt drive. Fan shall be forward curved, low speed centrifugal that has been statically and dynamically balanced, and tested in accordance with current A.M.C.A. standards bulletin 210. Fan bearings shall be permanently lubricated type and be self-aligning. The motor shall be a three-phase, high efficiency, ball bearing, open type with internal thermal overload protection. The motor shall be mounted on an adjustable base for proper belt tension. The fan and motor assembly must be capable of overcoming the external static pressures as shown on the schedule. Airflow / Static pressure rating of the unit shall be based on a wet coil and a clean filter in place. Fan and motor assembly will be mounted on an easily removable slide out assembly for easy access and maintenance; motor shall be factory wired with wire of sufficient length to allow fan/motor assembly to be removed from unit and be placed on roof of unit for servicing.

Refrigerant Circuit:
Units shall have a sealed refrigerant circuit including a high efficiency scroll compressor (multiple scroll compressors for units larger than 5 tons/17.5kW) designed for heat pump operation, a dual port balanced thermostatic expansion valve for refrigerant metering, a filter dryer, an enhanced corrugated finned tube refrigerant to air heat exchanger, a reversing valve, a coaxial (tube in tube) refrigerant to water heat exchanger, and safety controls including a high pressure switch, low pressure switch (loss of charge), water coil low temperature sensor, and air coil low temperature sensor. Both high and low pressure switches shall be installed on shraeder fittings for service or replacement without having to evacuate and recharge refrigerant. Access fittings shall also be factory installed on high and low pressure refrigerant lines to facilitate field service. Suction line shall be insulated to prevent condensation. Activation of any safety device shall prevent compressor operation via a microprocessor board lockout circuit. The lockout circuit shall be reset at the thermostat or at the contractor supplied disconnect switch. ***Units that cannot be reset at the thermostat shall not be acceptable.***

The scroll compressor(s) will be mounted on external neoprene grommets specifically selected for maximized vibration attenuation. Compressor shall be mounted on a compressor deck, which is not supported or attached to the unit floor, so as to further reduce vibration transmission to unit base. Compressor shall have thermal overload protection, and be located in an insulated compartment away from air stream to minimize sound transmission.

Refrigerant to air heat exchangers shall utilize enhanced corrugated lanced aluminum fins and rifled copper tube construction rated to withstand 450 PSIG (3101 kPa) refrigerant working pressure. Refrigerant to water heat exchangers shall be of copper inner water tube that is deeply fluted, and steel refrigerant outer tube co-axial design, rated to withstand 450 PSIG (3101 kPa) working refrigerant pressure and 450 PSIG (3101 kPa) working water pressure. The refrigerant to water heat exchanger shall be "electro-coated" with a low cure cathodic epoxy material a minimum of 0.4 mils thick (0.4 – 1.5 mils range) on all surfaces. The black colored coating shall provide a minimum of 1000 hours salt spray protection per ASTM B117-97 on all external steel and copper tubing. The material shall be formulated without the inclusion of any heavy metals and shall exhibit a pencil hardness of 2H (ASTM D3363-92A), crosshatch adhesion of 4B-5B (ASTM D3359-95), and impact resistance of 160 in-lbs (184 kg-cm) direct (ASTM D2794-93).

Refrigerant metering shall be accomplished by thermostatic expansion valve only. Expansion valves shall be dual port balanced types with external equalizer for optimum refrigerant metering. Units shall be designed and tested for operating ranges of entering water temperatures from 20° to 110°F (-6.7° to 43.3°C). Reversing valve shall be four-way solenoid activated refrigerant valve, which shall default to heating mode should the solenoid fail to function. If the reversing valve solenoid defaults to cooling mode, an additional low temperature thermostat must be provided to prevent over-cooling an already cold room.

Option: The unit will be supplied with cupro nickel coaxial water to refrigerant heat exchanger.

Option: The unit will be supplied with internally factory mounted two-way water valve for variable speed pumping requirements. A factory-mounted or field-installed high pressure switch shall be installed in the water piping to disable compressor operation in the event water pressures build due to water freezing in the piping system.

Drain Pan:
The drain pan shall be constructed of galvanized steel and have a powder coat paint application to further inhibit corrosion. This corrosion protection system shall meet the stringent 1000 hour salt spray test per ASTM B117. If plastic type material is used, it must be HDPE (High Density Polyethylene) to avoid thermal cycling shock stress failure over the lifetime of the unit. Stainless Steel materials are also acceptable. Drain pan shall be fully insulated. Drain outlet shall be located at pan as to allow complete and unobstructed drainage of condensate. Drain outlet for shall be connected from pan directly to IPT fitting. ***No hidden internal tubing extensions from pan outlet extending to unit casing (that can create drainage problems) will be accepted.*** The unit as standard will be supplied with solid-state electronic condensate overflow protection. ***Mechanical float switches will NOT be accepted.***

Electrical:
A control box shall be located within the unit compressor compartment and shall contain a 75VA transformer with load side circuit breaker protection, 24 volt activated, 2 or 3 pole compressor contactor, terminal block for thermostat wiring and solid-state controller for complete unit operation. Reversing valve and fan motor wiring shall be routed through this electronic controller. Units shall be name-plated for use with time delay fuses or HACR circuit breakers. Unit controls shall be 24 Volt and provide heating or cooling as required by the remote thermostat / sensor. Two compressor units shall have a solid-state time delay relay and random start to prevent both compressors from starting simultaneously.

Option: Disconnect Switch, Non-Fused

CLIMATEMASTER
Geothermal Heat Pump Systems

Rooftop (RE) Series 60Hz
Engineering Specifications Rev.: 01/06/09 Page 3

Option: Disconnect Switch, Non-Fused with 115 VAC GFI convenience outlet

Option: Circuit Breaker

Option: Circuit Breaker with 115 VAC GFI convenience outlet

Outdoor Air
The unit shall be supplied as standard with no outdoor air provisions (100% return air).

Option: Manual outside air damper with rain hood and bird screen sized for a maximum capacity of 20% of the total unit air volume for outside air volume.

Option: Two-position motorized outside air damper (opens outside air damper upon compressor contactor activation).

Option: Fully modulating enthalpy controlled economizer, supplied with large diameter ABS gear driven outdoor air and return air dampers. Solid state economizer logic module shall be Honeywell W7459 series with Honeywell M7415 actuator. The economizer package shall also be supplied with gravity relief damper.

Option: Energy Recovery Ventilator (ERV) with transition and full curb for rooftop unit and ERV. ERV option allows RE series unit to be used for 100% outside air. See ClimateMaster Symmetry series ERV literature for specifications on ERV unit.

Solid State Control System (CXM):
Units shall have a solid-state control system. ***Units utilizing electro-mechanical control shall not be acceptable.*** The control system microprocessor board shall be specifically designed to protect against building electrical system noise contamination, EMI, and RFI interference. The control system shall interface with a heat pump type thermostat. The control system shall have the following features:

a. Anti-short cycle time delay on compressor operation.
b. Random start on power up mode.
c. Low voltage protection.
d. High voltage protection.
e. Unit shutdown on high or low refrigerant pressures.
f. Unit shutdown on low water temperature.
g. Condensate overflow electronic protection.
h. Option to reset unit at thermostat or disconnect.
i. Automatic intelligent reset. Unit shall automatically reset the unit 5 minutes after trip if the fault has cleared. If a fault occurs 3 times sequentially without thermostat meeting temperature, then lockout requiring manual reset will occur.
j. Ability to defeat time delays for servicing.
k. Light emitting diode (LED) on circuit board to indicate high pressure, low pressure, low voltage, high voltage, low water/air temperature cut-out, condensate overflow, and control voltage status.
l. The low-pressure switch shall not be monitored for the first 120 seconds after a compressor start command to prevent nuisance safety trips.
m. 24V output to cycle a motorized water valve or other device with compressor contactor.
n. Unit Performance Sentinel (UPS). The UPS warns when the heat pump is running inefficiently.
o. Water coil low temperature sensing (selectable for water or anti-freeze).
p. Air coil low temperature sensing.

NOTE: Units not providing the 8 safety protections of anti-short cycle, low voltage, high voltage, high refrigerant pressure, low pressure (loss of charge), air coil low temperature cut-out, water coil low temperature cut-out, and condensate overflow protections will not be accepted.

Option: Enhanced solid state control system (DXM)
This control system features two stage control of cooling and two stage control of heating modes for exacting temperature and dehumidification purposes.

Control shall have all of the above mentioned features of the CXM control system along with the following expanded features:

a. Removable thermostat connector.
b. Night setback control.
c. Random start on return from night setback.
d. Minimized reversing valve operation (Unit control logic shall only switch the reversing valve when cooling is demanded for the first time. The reversing valve shall be held in this position until the first call for heating, ensuring quiet operation and increased valve life.).
e. Override temperature control with 2-hour (adjustable) timer for room occupant to override setback temperature at the thermostat.
f. Dry contact night setback output for digital night setback thermostats.
g. Ability to work with heat pump or heat/cool (Y, W) type thermostats.
h. Ability to work with heat pump thermostats using O or B reversing valve control.
i. Emergency shutdown contacts.
j. Boilerless system heat control at low loop water temperature.
k. Ability to allow up to 3 units to be controlled by one thermostat.
l. Relay to operate an external damper.
m. Ability to automatically change fan speed from multistage thermostat.
n. Relay to start system pump.
o. 75 VA control transformer. Control transformer shall have load side short circuit and overload protection via a built in circuit breaker.

Remote Service Sentinel (CXM/DXM):
Solid state control system shall communicate with thermostat to display (at the thermostat) the unit status, fault status, and specific fault condition, as well as retrieve previously stored fault that caused unit shutdown. The Remote Service Sentinel allows building maintenance personnel or service personnel to diagnose unit from the wall thermostat. The control board shall provide a signal to the thermostat fault light, indicating a lockout. Upon cycling the G (fan) input 3 times within a 60 second time period, the fault light shall display the specific code as indicated by a sequence of flashes. A detailed flashing code shall be provided at the thermostat LED to display unit status and specific fault status such as over/under voltage fault, high pressure fault, low pressure fault, low water temperature fault, condensate overflow fault, etc. ***Units that do not provide this remote service sentinel shall not be acceptable.***

Option: Lonworks interface system
Units shall have all the features listed above (either CXM or DXM) and the control board will be supplied with a LONWORKS interface board, which is LONMark certified. This will permit all units to be daisy chained via a 2-wire twisted pair shielded cable. The following points must be available at a central or remote computer location:
a. Space temperature
b. Leaving water temperature
c. Discharge air temperature
d. Command of space temperature setpoint
e. Cooling status
f. Heating status
g. Low temperature sensor alarm
h. Low pressure sensor alarm
i. Hhigh pressure switch alarm
j. Condensate sensor alarm
k. Hi/low voltage alarm
l. Fan “ON/AUTO” position of space thermostat as specified above
m. Unoccupied / occupied command
n. Cooling command
o. Heating command
p. Fan “ON / AUTO” command
q. Fault reset command
r. Itemized fault code revealing reason for specific shutdown fault (any one of 7)

This option also provides the upgraded 75VA control transformer with load side short circuit and overload protection via a built in circuit breaker.

Option: MPC (Multiple Protocol Control) interface system
Units shall have all the features listed above (either CXM or DXM) and the control board will be supplied with a Multiple Protocol

interface board. Available protocols are BACnet MS/TP, Modbus, or Johnson Controls N2. The choice of protocol shall be field selectable/changeable via the use of a simple selector switch. Protocol selection shall not require any additional programming or special external hardware or software tools. This will permit all units to be daisy chain connected by a 2-wire twisted pair shielded cable. The following points must be available at a central or remote computer location:

a. Space temperature
b. Leaving water temperature
c. Discharge air temperature
d. Command of space temperature setpoint
e. Cooling status
f. Heating status
g. Low temperature sensor alarm
h. Low pressure sensor alarm
i. High pressure switch alarm
j. Condensate overflow alarm
k. Hi/low voltage alarm
l. Fan "ON/AUTO" position of space thermostat as specified above
m. Unoccupied / occupied command
n. Cooling command
o. Heating command
p. Fan "ON / AUTO" command
q. Fault reset command
r. Itemized fault code revealing reason for specific shutdown fault (any one of 7)

This option also provides the upgraded 75VA control transformer with load side short circuit and overload protection via a built in circuit breaker.

Warranty:
Climate Master shall warranty equipment for a period of 12 months from start up or 18 months from shipping (which ever occurs first).

Option: Extended 4-year compressor warranty covers compressor for a total of 5 years.

Option: Extended 4-year refrigeration circuit warranty covers coils, reversing valve, expansion valve and compressor for a total of 5 years.

Option: Extended 4-year control board warranty covers the CXM/DXM control board for a total of 5 years.

FIELD INSTALLED OPTIONS

Thermostats:
The thermostat shall be a ClimateMaster mechanical or electronic type thermostat as selected below with the described features:

a. Single Stage Standard Manual Changeover (ATM11C01)
Thermostat shall be a single-stage, vertical mount, manual changeover with HEAT-OFF-COOL system switch and fan ON-AUTO switch. Thermostat shall have a mechanical temperature indicator and set point indication. Thermostat shall only require 4 wires for connection. Mercury bulb thermostats are not acceptable.
b. Single Stage Digital Manual Changeover with Two-Speed Fan Control (ATM11C03) – DXM and PSC Fan required
Thermostat shall be a single-stage, digital, manual changeover with HEAT-OFF-COOL system switch, fan ON-AUTO switch, and fan LO-HI switch. Thermostat shall have an LCD display with temperature and set-point(s) in ºF or ºC. The Thermostat shall provide permanent memory of set-point(s) without batteries. A fault LED shall be provided to display specific fault condition. Thermostat shall come standard with remote temperature sensor, but may be operated with internal sensor if desired via installation of a jumper.
c. Single Stage Digital Auto or Manual Changeover (ATA11U01)
Thermostat shall be a single-stage, digital, auto or manual changeover with HEAT-OFF-COOL-AUTO system switch and fan ON-AUTO switch. Thermostat shall have an LCD display with temperature and set-point(s) in ºF or ºC. The Thermostat shall provide permanent memory of set-point(s) without batteries. A fault LED shall be provided to display specific fault condition. Thermostat shall provide temperature display offset for custom applications.
d. Single Stage Digital Automatic Changeover with Two-Speed Fan Control (ATA11C04) – DXM and PSC Fan required
Thermostat shall be a single-stage, digital, auto or manual changeover with HEAT-OFF-COOL-AUTO system switch, fan

ON-AUTO switch, and fan LO-HI switch. Thermostat shall have an LCD display with temperature and set-point(s) in ºF or ºC. The Thermostat shall provide permanent memory of set-point(s) without batteries. A fault LED shall be provided to display specific fault condition. Thermostat shall come standard with remote temperature sensor, but may be operated with internal sensor if desired via installation of a jumper.

e. Multistage Digital Automatic Changeover (ATA22U01)
Thermostat shall be multi-stage (2H/2C), manual or automatic changeover with HEAT-OFF-COOL-AUTO system settings and fan ON-AUTO settings. Thermostat shall have an LCD display with temperature, set-point(s), mode, and status indication. The temperature indication shall be selectable for ºF or ºC. The thermostat shall provide permanent memory of set-point(s) without batteries. A fault LED shall be provided to indicate specific fault condition(s). Thermostat shall provide temperature display offset for custom applications. Thermostat shall allow unit to provide better dehumidification with optional DXM controller by automatically using lower fan speed on stage 1 cooling (higher latent cooling) as main cooling mode, and automatically shifting to high speed fan on stage 2 cooling.

f. Single Stage Manual Changeover Programmable 5/2 Day (ATP11N01)
Thermostat shall be 5 day/2 day programmable (with up to 4 set points per day), single stage (1H/1C), manual changeover with HEAT-OFF-COOL system settings and fan ON-AUTO settings. Thermostat shall have an LCD display with temperature, set-point(s), mode, and status indication. The temperature indication shall be selectable for ºF or ºC. The thermostat shall provide permanent memory of set-point(s) without batteries. Thermostat shall provide convenient override feature to temporarily change set point.

g. Multistage Automatic or Manual Changeover Programmable 5/2 Day (ATP21U01)
Thermostat shall be 5 day/2 day programmable (with up to 4 set points per day), multi-stage (2H/1C), automatic or manual changeover with HEAT-OFF-COOL-AUTO system settings and fan ON-AUTO settings. Thermostat shall have an LCD display with temperature, set-point(s), mode, and status indication. The temperature indication shall be selectable for ºF or ºC. The thermostat shall provide permanent memory of set-point(s) without batteries. Thermostat shall provide convenient override feature to temporarily change set point.

h. Multistage Automatic or Manual Changeover Programmable 7 Day (ATP32U01)
Thermostat shall be 7 day programmable (with up to 4 set points per day), multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO system settings and fan ON-AUTO settings. Thermostat shall have a blue backlit dot matrix LCD display with temperature, set-points, mode, and status indication. The temperature indication shall be selectable for ºF or ºC. Time display shall be selectable for 12 or 24 hour clock. Fault identification shall be provided (when used with ClimateMaster CXM or DXM controls) to simplify troubleshooting by providing specific unit fault at the thermostat with red backlit LCD during unit lockout. The thermostat shall provide permanent memory of set-points without batteries. Thermostat shall provide heating set-point range limit, cooling set-point range limit, temperature display offset, keypad lockout, dead-band range setting, and inter-stage differential settings. Thermostat shall provide progressive recovery to anticipate time required to bring space temperature to the next programmed event. Thermostat shall provide an installer setup for configuring options and for setup of servicing contractor name and contact information. Thermostat shall allow the use of an accessory remote and/or outdoor temperature sensor (AST008). Thermostat navigation shall be accomplished via five buttons (up/down/right/left/select) with menu-driven selections for ease of use and programming.

i. Multistage Automatic or Manual Changeover Programmable 7 Day with Humidity Control (ATP32U02)
Thermostat shall be 7 day programmable (with up to 4 set points per day), multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO system settings and fan ON-AUTO settings. Separate dehumidification and humidification set points shall be configurable for discreet outputs to a dehumidification option and/or an external humidifier. Installer configuration mode shall allow thermostat dehumidification mode to operate with ClimaDry reheat or with ECM fan dehumidification mode via settings changes. Thermostat shall have a blue backlit dot matrix LCD display with temperature, relative humidity, set-points, mode, and status indication. The temperature indication shall be selectable for ºF or ºC. Time display shall be selectable for 12 or 24 hour clock. Fault identification shall be provided (when used with ClimateMaster CXM or DXM controls) to simplify troubleshooting by providing specific unit fault at the thermostat with red backlit LCD during unit lockout. The thermostat shall provide permanent memory of set-points without batteries. Thermostat shall provide heating set-point range limit, cooling set-point range limit, temperature display offset, keypad lockout, dead-band range setting, and inter-stage differential settings. Thermostat shall provide progressive recovery to anticipate time required to bring space temperature to the next programmed event. Thermostat shall provide an installer setup for configuring options and for setup of servicing contractor name and contact information. Thermostat shall allow the use of an accessory remote and/or outdoor temperature sensor (AST008). Thermostat navigation shall be accomplished via five buttons (up/down/right/left/select) with menu-driven selections for ease of use and programming.

DDC Sensors:
ClimateMaster wall mounted DDC sensor to monitor room temperature and interfaces with optional interface system described above. Several types as described below:

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a. Sensor only with no display (LON and MPC).
b. Sensor with override (LON only).
c. Sensor with setpoint and adjustment override (MPC only).
d. Sensor with setpoint and adjustment override, LCD display, status/fault indication (LON and MPC).

Roof Curbs:
A 14 inch (356mm) high knockdown roof curb for flat roofs is available in down discharge configuration.

Notes:

CLIMATEMASTER
Geothermal Heat Pump Systems

Revision History

Date:	Item:	Action:
05/26/09	Physical Data Table	(2) Added to Models 15 and 20 Blower Wheel Size
05/26/09	Stand-Alone and All Products Guide Submittals	Consolidated
9 April, 2009	Physical Data Table and Electrical Data Table	Updated
6 Jan, 2009	Engineering Specifications	CO2 Sensor Note Deleted
26 Aug, 2008	Physical Data Table	Max Working Pressure Table Added
24 July, 2008	Engineering Specifications	Updated Verbiage
24 July, 2008	Physical Data Table	V-Belt Information Added
24 July, 2008	Selection Procedure, Curb Decoder and Unit Features Pages	Added
20 April, 2007	Table of Contents	Added Table of Contents
20 April, 2007	Specifications	Updated Specifications with new Safety Agency
16 Nov, 2006	Performance Data	Added new rated voltage note
16 Nov, 2006	Various	Minor formatting changes
07 July, 2006	Specifications	Updated thermostat offering
07 July, 2006	Wiring Diagram	Added pressure switch for motorized water valve option
07 July, 2006	Performance Data	Added low temperature selection notes
06 Feb, 2006	Dimensional Drawings	Added “Bottom View” tag to unit drawings
23 Dec, 2005	Motorized Valves	Added Cv, MOPD, and WPD data
30 Nov, 2005	Various	Formatting changes
17 Aug, 2005	Dimensional Data	Added service access requirements
17 Aug, 2005	Specifications	Updated CXM verbiage
17 Aug, 2005	Added Change Log	